Idaho
Elk Management Plan
2024 – 2030

Prepared by **IDAHO DEPARTMENT OF FISH AND GAME**

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Executive Summary

The Idaho Fish and Game Commission (Commission) and the Idaho Department of Fish and Game (IDFG, Department) have a responsibility to preserve, protect, perpetuate, and manage all of Idaho's wildlife. To fulfill that obligation, IDFG is guided by the Strategic Plan (IDFG 2015). The Strategic Plan is broad in scope and identifies foundational challenges, objectives, and strategies which influence the more detailed action plans, including the Elk Management Plan.

This revision of the 2014 plan establishes objectives that IDFG staff will achieve over the next 6 years including:

- Identify challenges and opportunities currently faced by elk managers and outline strategies to address them.
- Provide zone-specific elk population data and objectives.
- Clearly communicate scientific and social rationale guiding management strategies designed to meet elk population objectives.
- Provide partners with relevant information for land management planning purposes.

Elk are one of most highly sought after big game animals in Idaho and are important for their recreational, aesthetic, cultural, and intrinsic value. Statewide, Idaho's elk population is robust. As a reflection of this, hunters have harvested >20,000 elk/year in 8 of the past 10 years.

Today, elk are widely distributed across the state and range from thick, timbered forests of the Panhandle to canyon-lands and sagebrush deserts of southern Idaho. Although elk numbers have increased at the statewide level since 2014, localized changes in elk abundance and distribution have occurred. For example, elk populations remain below objective in some units of northern and central Idaho, whereas some elk zones in southern Idaho are above objective. Elk are also increasingly occupying agricultural landscapes where they cause damage to standing and stored crops. Some of the most significant elk management challenges are issues of distribution rather than overall abundance. This variability in elk population performance and distribution across the state is addressed in each elk zone summary.

Elk Management – Opportunities and Challenges

Wildlife managers today face some ongoing challenges and some new ones. Idaho's human population has doubled since 1990. Approximately 268,000 people have moved into the state since the last elk plan was completed in 2014. Tourism has also increased substantially. More than 35 million people visited Idaho in 2022, and outdoor recreation ranked as one of their top motivations. These statistics highlight not only the importance of Idaho's natural resources and public lands, but also the increased pressure

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being placed on them. Although statewide elk numbers remain robust despite these increases, infrastructure development and loss of habitat are influencing elk management and elk densities at the local level in some zones. Hunter crowding continues to be a primary concern voiced by Idaho elk hunters. Increases in resident hunter numbers will require managers and hunters to be creative and adaptable when establishing hunt season structures and tag numbers. This revised plan builds on successes of the previous plan and the current Idaho model: offering general season elk tags, which provide annual opportunity for family and friends to hunt together, while also providing enhanced opportunity to hunt mature bulls in controlled hunts. This model was strongly supported by Idaho residents in the past and IDFG continues to hear feedback consistent with previous hunter opinion surveys during the season setting process and other interactions with the public (Sanyal et al. 2012).

Changes in private land use are creating additional challenges for elk management. The increasing human population has been accompanied by increasing residential, commercial, and industrial development, which have impacted elk habitat in some areas. Landownership changes also create challenges to elk management as larger parcels are being subdivided or new owners have different values with regards to elk management and hunter access. Many elk populations depend on private land for part or all of the year, so IDFG will continue to work with private landowners and hunters to seek solutions to challenges of managing a public resource which can be heavily dependent on private land.

Predation management is a key component of elk management. The Department has dedicated vast amounts of time and resources to monitoring predator populations, primarily gray wolves. The Department has been radio-collaring elk for >2 decades to assess mortality rates from predators. When predation limits an elk population, IDFG develops predator management plans and implements control measures to bolster underperforming elk herds.

Statewide Elk Management Direction

The Department has developed statewide objectives based on annual conversations with hunters about their experiences and concerns, hunter opinion survey results, ongoing population monitoring, harvest trends, potential for herd growth, and current management challenges associated with presence of elk in certain portions of the state.

Proposed statewide elk management objectives include:

- Where sustainable, continue to offer general-season elk hunting opportunities by managing elk populations, managing predator populations, improving elk habitat, and modifying general season structure as needed (i.e., weapon type, timing, length, etc.).
- Work with partner organizations and interested private landowners to facilitate movement of elk among seasonal ranges, improve forage resources, and manage disturbance in wintering areas and calving habitat.
- Implement measures to reduce elk-caused agricultural and property damage.
- Manage disease impacts on elk and livestock.
- Increase public knowledge and understanding of elk biology, management, and hunting.

Elk Zone Management Direction

The Department will continue to manage elk using the zone management system. The zone system allows herd management based on local habitat, weather, elk movements, and harvest patterns while providing a variety of hunting opportunities throughout the state.

The number of elk that can be supported in any given management zone is influenced by many factors: weather, habitat quality, predation, and the need to minimize elk-based agricultural

depredations and disease risks to livestock. One or more of these factors can prevent an elk herd from growing or limit the ability of wildlife managers to maintain elk numbers above a certain level. For each elk zone, IDFG staff identified limiting factors using population monitoring trends over ≥10 years, changes to available habitat, reported agricultural impacts (agricultural and property damage), known or suspected causes of elk mortality, assessments of predator populations and predation impacts, and other data and elk management experience. The combination and severity of these limiting factors varies across the state, and even within zones. Incorporating an updated assessment of these factors, this plan makes changes to several elk zone boundaries, including Snake River, Big Desert, Owyhee, and Boise River zones. Updates are detailed in the Elk Zone Summary section of the plan (pp 67–173).

For each elk zone, IDFG staff proposed a 6-year management direction, population objectives, and management objectives, accompanied by strategies to maintain or improve elk herd performance, fill information gaps, and provide greater hunter satisfaction. Through development and revision of this plan, managers will further refine management direction and strategies for each zone based on feedback from the public and IDFG staff.

The Future

Although elk continue to thrive at the statewide level, elk managers must respond to new and ever-changing opportunities and challenges, including elk population expansion in some areas with associated increases in agricultural and property damage, ongoing and emerging diseases that affect elk, habitat loss and modification, an increasing number of elk hunters, and reduced elk populations in some backcountry areas. This revised elk plan is a product of IDFG's continuing efforts to address these challenges at the state and zone level by providing direction and specific management objectives for the next 6 years.

The plan will require public support and additional financial resources for full implementation. The Department will work to engage additional partners in elk management, including private landowners, hunters, federal and state agencies, tribes, and conservation organizations. Partnerships, combined with a common desire to improve elk management, will go a long way toward achieving the basic intent of the plan revision: "To be responsive to elk hunter desires and expectations, and maintain biologically sustainable elk populations."

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Introduction

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Idaho has a diversity of abundant big game species, and Rocky Mountain elk (Cervus elaphus canadensis) are considered by many hunters to be the state's premier big game animal. Elk provide an incredible combination of recreational, aesthetic, social, cultural, and economic value to people who work in, live in, or visit Idaho. Thanks to Idaho's diverse habitat and healthy elk populations, elk hunters can pursue their quarry in sagebrush (Artemisia spp.)-covered deserts, aspen (Populus spp.) draws, high mountain meadows, or thickly timbered ridges. Elk occur in each of the 99 Game Management Units (GMUs) within the state. Because elk are so widespread and abundant, elk hunters in Idaho are fortunate to enjoy a diversity of hunting experiences and opportunities.

Historical Perspective

Historically, elk numbers were likely lower than they are today. Accounts from the Lewis and Clark expedition and trappers during the height of the fur trade generally suggest elk populations were scattered and only locally abundant in northern Idaho. Eastern Idaho elk populations appeared robust in the mid-1800s (Evans 1939). Statewide, populations were reduced during unregulated hunting of the late 1800s and early 1900s. Ungulates, including elk, were heavily utilized for food by indigenous tribes, miners, trappers, loggers, and other settlers.

Early 1900s

European settlement brought changes to the landscape. Millions of domestic sheep, cattle, and horses were brought into southern Idaho. There was virtually no regulation on removal of mountain lions (Puma concolor), black bears (Ursus americanus), or gray wolves (Canis lupus), which led to functional extirpation of wolves by the 1930s. In southern and parts of

central Idaho, extreme overgrazing combined with fire suppression efforts turned what was primarily perennial grass ranges into shrublands. Unregulated harvest of elk and conversion of grass-dominated ranges to shrublands resulted in fewer elk in southern Idaho.

Landscape-level changes also occurred in northern Idaho during the early 1900s, but those changes were more positive for elk populations. Extensive wildfires created a mosaic of grass, shrublands, and forested habitats. The Great Fire of 1910, also known as the Big Burn, was one of the largest forest fires in American history and burned >3 million acres of forest in northern Idaho and western Montana over a span of 2 days. Following those fires, elk populations were augmented with elk from Yellowstone National Park (YNP). Those fires set the stage for an explosion of elk populations years later due to increased forage availability. Timber harvest also promoted conversion of mature forests to early seral habitat communities which, in general, provided more forage to elk than was previously available. Under these conditions, elk flourished in northern Idaho.

Mid 1900s

In north-central Idaho, elk populations probably peaked in the 1960s. As early seral habitat created by fires aged and moved towards a climax state, habitat quality for elk declined. Additionally, wildfire suppression campaigns resulted in more late-seral forests, which were less favorable for elk.

By the 1970s, hunter numbers and access had increased to the point where liberal hunting seasons enjoyed by hunters until then had to be replaced by more restrictive seasons to reduce elk vulnerability to harvest. Either-sex seasons throughout most of Idaho were replaced by antlered-only seasons in 1976. Elk populations responded, and by the late 1980s elk were once again abundant enough to support some antlerless opportunity. Predator control programs likely suppressed predator populations during the mid-1900s, which probably had some localized effects on elk in remote areas. With the 1974 listing of wolves as endangered under the Endangered Species Act and changes in predator control practices, large carnivore populations began to increase.

Late 1900s

During the mid-1990s, portions of northern Idaho witnessed another downward cycle in elk numbers. Declining habitat potential in forested habitat, black bear and mountain lion predation, and localized impacts of hard winters (1996 and 1997) all played a role. With protection and harvest restrictions implemented during the 1970–1990s, black bear and mountain lion populations likely stabilized and began to flourish, particularly in backcountry areas with limited hunting access. Wolves were re-established in the 1990s, both through natural recolonization from Canada and Montana and through a U.S. Fish and Wildlife Service (USFWS) reintroduction effort. Wolf predation on elk likely further accelerated declines in elk herds in many parts of northern and central Idaho.

In other portions of the state, including much of southern Idaho, elk numbers increased during this same timeframe. Wildfires that converted vast acreages of low-elevation sagebrush habitat and mid-elevation shrublands to grasslands, hunting season frameworks designed to promote growth in elk numbers, and expanded elk use of irrigated agriculture in the wildland interface combined to enable southern Idaho elk populations to grow to all-time highs during the latter half of the 1900s.

An important change to Idaho's elk management framework occurred in 1998 with the establishment of the dual-tag zone management system. In response to concerns over adult bull numbers, bull age structure, and hunter distribution in certain parts of the state, the Commission collaborated with the public and wildlife managers to implement this new strategy

for managing elk populations. This new hunting framework had 2 primary components: create discrete hunting areas (zones) and try to maintain general season elk hunting opportunities. Twenty-eight Elk Zones were created by grouping GMUs with similar habitat, shared elk management objectives, or distinct elk populations. General hunting opportunities were maintained by offering 2 different tag options in these zones where possible. The 2 tag types were identified as A and B tags, with A tag hunts offering more opportunity for archery hunters and limited rifle options, whereas B tag seasons generally provided comparatively more rifle hunting opportunities. The zone structure and dual tag system remains the cornerstone for elk hunt structure and population management.

Today

Idaho's elk population continues to flourish across much of the state. The productive nature of the state's elk herds has supported enhanced hunting opportunities in some areas, but has also led to some challenges which IDFG, hunters, and private landowners have not historically faced.

Elk populations in the southern part of the state are mostly robust and limited more by sociological constraints, such as damage to agricultural crops and property, than by habitat suitability.

Central Idaho's elk populations peaked in the mid-1990s and began declining shortly thereafter, reaching documented lows in 2011. Much of central Idaho burned during that time, leading to a decline in habitat quality as unpalatable invasive species became established and arid conditions limited re-establishment of beneficial forage and cover vegetation. Varying predator densities between backcountry and front-country areas also impacted elk numbers and distribution. Populations have stabilized but remain below historical management objectives.

Elk populations in northern portions of the state have shifted from historically higher densities on federally managed forests towards higher densities on privately managed forest lands and agricultural areas. This shift is largely in response to changes in habitat productivity resulting from a significant reduction of timber harvest on federally managed forests, coupled with fire suppression, and an increase in timber harvest on privately owned forests over the last 30 years. Varying predator densities between backcountry and front-country areas have also impacted elk numbers and distribution.

Purpose

Idaho Code 36-103 establishes statewide policy for wildlife and can be paraphrased as "all wildlife will be preserved, protected, and perpetuated; and that wildlife will be managed to provide continued supplies for hunting, fishing, and trapping." The Commission is charged with administering state wildlife policy and directs IDFG actions.

Idaho Code 67-1903 requires state agencies to develop strategic plans expressing how they will meet core mission requirements. Plans must identify outcome-based goals and performance measures. This revision of the Elk Management Plan tiers off the 2015 Strategic Plan (IDFG 2015) and is intended to provide guidance to IDFG staff for managing the state's elk populations, hunting opportunities, and habitat over the next 6 years. This revised plan outlines statewide management direction and strategies, compiles updated information on elk ecology and highlights revised management objectives and boundaries for a few elk zones. Many changes within this version of The Plan are associated with realities of shifting elk populations in the state (e.g., more elk in front-country and agriculture-associated landscapes and fewer elk in some backcountry habitat) and habitat and social carrying capacities across these landscapes.

Results from Previous Planning Periods

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Management of elk has been a priority since the inception of IDFG. Since the 1980s, IDFG has developed 4 formal statewide elk management plans. A key feature of the 1986–1990 plan was establishment of a minimum post-season bull:cow ratio goal of 25:100 for backcountry units and 15:100 for all other units. An elk "sightability" helicopter survey method was implemented as a statewide method for inventorying elk in most units. The Department also advocated for timber harvest guidelines that maintained adequate cover for elk and minimized open road densities on the landscape. Lastly, a comprehensive study of elk rifle hunting was initiated, which quantified and qualified elk hunting experiences.

The 1991–1995 planning period was focused on maintaining or increasing bull elk numbers. General any-weapon seasons were moved out of breeding season in most GMUs. Spike-only general seasons and branched-antler, permit-only hunts were implemented in eastern Idaho. Hunters were forced to choose among hunting 14 central Idaho GMUs with a mountain-zone elk tag or the remaining GMUs with a regular elk tag.

By the mid-1990s, the number of elk tags sold eclipsed 100,000. Increasing hunter densities and declining bull:cow ratios drove the 1996-2010 Elk Management Plan process. A new minimum bull:cow ratio goal of 20:100 was adopted, along with higher bull:cow ratio goals for quality and high-quality hunting areas. The A/B-tag zone management concept was implemented to manage hunter distribution across the state by incentivizing certain zones and seasons.

A 20% decline in statewide hunter numbers and significant declines in north-central and central Idaho elk herds precipitated the 2014–2024 elk plan review process (IDFG 2014). The primary emphasis of that elk plan was to implement strategies to increase elk populations and maintain as much elk hunting opportunity as possible.

Although this current revision does not make fundamental changes to statewide elk hunting opportunity, the Plan does provide targeted updates to elk management strategies across the state. This plan integrates the groundbreaking work to identify movement routes into zone management direction, realigns select zones to better address elk distribution and hunter opportunity, adjusts population objectives in the Lolo Zone to reflect on-the-ground habitat conditions, updates applicable zone strategies to reflect detection of chronic wasting disease (CWD), and details changes made since the last elk plan to address hunter concerns regarding issues such as crowding.

Population Monitoring

The Department manages elk with the goal of maintaining robust and healthy populations today and into the future. Wildlife management decisions made to achieve these goals rely on scientific data. Key pieces of information contributing to this decision-making process include an understanding of what factors influence population trends, seasonal distribution patterns, human interests and influences, climatic and habitat variables, interactions with other species, and social conflicts. Elk display an incredible ability to survive across a wide range of habitats and will change movements and home ranges as human-induced pressures and forage resources dictate. This plasticity can create challenges for managers striving to maintain populations within biological and social management goals.

Elk zone-specific population objectives form the basis for elk management across the state. These objectives are established cooperatively with input from public stakeholders, the Commission, and IDFG staff. Objectives typically include an upper and lower bound. This range gives managers some flexibility to make recommendations relative to current conditions, management challenges, and hunter desires, while also allowing for natural fluctuations in elk populations due to annual variation in productivity and mortality. Managers use survey and harvest information, and data-driven population models to monitor populations and establish harvest recommendations.

Elk populations are routinely monitored to evaluate their performance relative to objectives. Elk abundance (total number of elk), composition (percentage of bulls, cows, and calves; Table 1), and survival (how many elk survive a given year) are 3 primary data sources wildlife managers use to monitor elk populations. Specific causes of mortality (e.g., harvest, predation, malnutrition, vehicle collisions, etc.), seasonal movements, and habitat use of different elk populations are additional data which help inform management decisions. Managers have been collecting this information on elk populations across the state for decades and have continued to evaluate data gaps and methods to improve quality of information gathered. However, population monitoring techniques are not equally effective across all habitats and landscapes. For example, aerial surveys (counting animals from aircraft) are very useful in more open habitats of southern and central Idaho but are far less effective in dense forests found across northern portions of the state. Consequently, different techniques appropriate for local conditions are implemented across the state to collect the highest quality data possible. The Department continues to develop and test new survey and monitoring tools in varying landscapes. Methods used to gather information are chosen based on effectiveness and efficiency, human and animal safety, cost, and resulting data quality.

The following sections describe data collection methods and tools used to monitor elk populations, discuss how information is analyzed, and explain how resulting products are used to make management decisions.

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Table 1. Demographic categories used to classify elk during population monitoring surveys.

Category	Description
Calf	Young of the year elk born the preceding May or Jun. Body size, head shape, coat color, and other indicators are used to differentiate calves from cows.
Cow	All antlerless elk older than a calf. Body size, head shape, coat color, and other indicators are used to differentiate cows from calves.
Spike	Yearling bull elk. Typically have a single spike antlers, but can carry >1 point/antler. Antler size and configuration, along with body size, are used to identify spike bulls.
Raghorn Bull	Bull elk older than a spike that do not meet mature bull criteria. Typically, branched-antler bulls with <6 points on a side or bulls with 6 points that lack a pronounced backward sweep on the 6th point. Additionally, raghorn antlers generally lack the mass of mature antlers.
Mature Bull	Determined by antler mass and configuration. Typically, ≥6 points on a side and the 6th point has a pronounced backward sweep. Some 5-point bulls can fall into the mature category.
Unclassified	Elk that are seen, but due to vegetation, safety concerns, or other factors cannot be effectively classified into one of the categories.

Abundance and Composition Monitoring

Aerial Surveys

Prior to the 1980s, key drainages within elk winter ranges were surveyed periodically using helicopters to establish a minimum population size and quantify herd composition. These surveys could be used to infer trends but could not provide reliable population estimates because not all animals have an equal probability of being observed (Caughley 1974) and only portions of most winter ranges were surveyed. The Department developed a sightability model, which estimated numbers of animals missed during a survey, and coupled the model with a more complete and robust aerial survey sampling design and protocol (Unsworth et al. 1994). Since the late 1980s, the sightability model and survey protocol has been the primary elk abundance and composition monitoring tool for IDFG and is currently utilized in 22 of 28 elk management zones. This technique has enabled IDFG to generate population estimates with confidence intervals, establish population trends, and statistically compare surveys. Since initial development, IDFG's sightability survey protocol has been refined to further enhance the method's reliability. The Department continues to follow a rigorous protocol to ensure quality of these population estimates, which includes training and minimum standards for staff involved in design, implementation, and analysis of sightability surveys.

Although aerial sightability surveys work very well in many zones across the state, challenges exist in some parts of the state and in solely relying on them for future population estimation. Efficient and effective aerial surveys are difficult in heavily forested habitats and when animal distribution significantly changes due to changing snow loads or winter range conditions. Another challenge is continued availability of

the types of helicopters with large viewing areas for which existing sightability models were designed (e.g., Bell 47) and pilots with the required training and experience to conduct these surveys. Consequently, IDFG is working to develop additional methods for estimating elk abundance and composition. Other motivations behind developing alternative or complimentary methods to aerial surveys include reducing risk to survey personnel, avoiding delays or reductions in conducive survey conditions caused by weather (lack of snow coverage, animals not being concentrated, etc.), and an interest in obtaining more frequent estimates.

Camera-based Surveys

An alternative to aerial surveys is use of camera-traps to generate population estimates for elk. Use of cameras has emerged as a promising new tool for monitoring elk populations (Moeller et al. 2018). Since 2018, IDFG has deployed camera-traps in various GMUs across the state with the goal of developing a protocol for camera-based population estimates for several big game species, including elk. Moeller et al. (2018) demonstrated promise in estimating abundance of unmarked animals using remote cameras and Idaho continues to refine these concepts. This method relies on an array of remote cameras placed throughout the area of interest (e.g., seasonal range of an elk population). Cameras are programmed to take photographs at pre-determined time intervals. Number and timing of animals captured in photographs and the collective area of the cameras' fields-of-view are then used to estimate abundance. These methods also have potential to produce separate abundance estimates for different sex and age classes of elk, allowing for calculation of composition ratios (i.e., bull:cow:calf ratios). Camera-based population monitoring has particular significance for elk zones where aerial surveys are difficult or cannot be implemented effectively, such as forested habitats in northern Idaho.

Survival Monitoring

Understanding annual survival of different age and sex classes within a population can be an extremely useful data point for managing elk populations. Adult cow and calf survival are the most important factors because they have the largest impact on population trajectory. Over the last couple of decades, IDFG has invested significant time and resources towards understanding survival across different populations. This work involved deployment of thousands of radio-collars on individual elk followed by intensive monitoring of movements and survival of these individuals. These radio-collars gave staff the ability to investigate cause of death for individual collared elk and provide IDFG with information on major causes of mortality for different elk populations. Figure 1 is a summary of this data for 6-month-old calves. Understanding impacts of different habitats, climatic conditions, predator communities, predator densities, diseases, and harvest rates on elk populations across the state is useful to inform management and harvest decisions.

PHOTO: CC-BY IDAHO FISH AND GAME

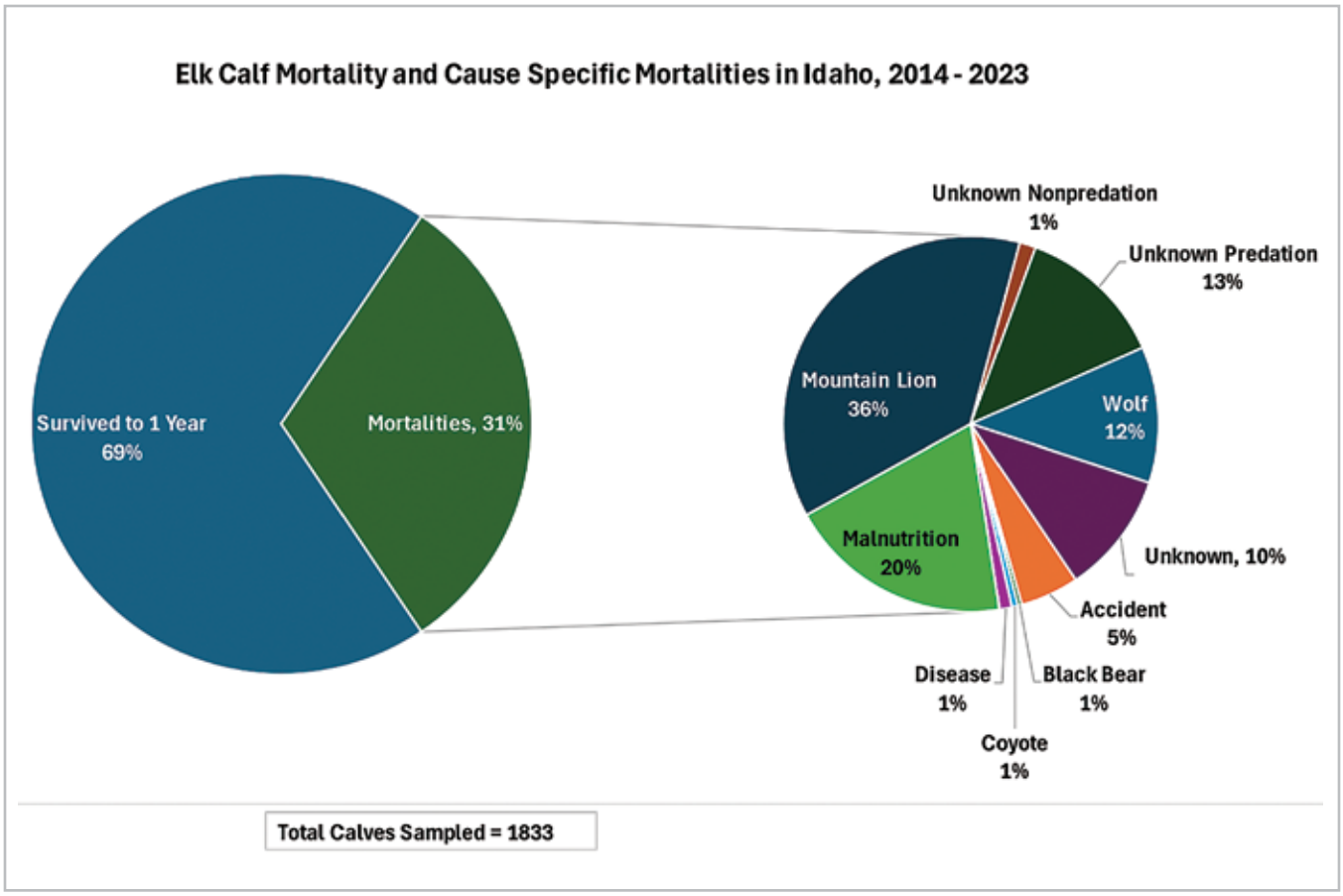

Figure 1. Cause-specific mortality of collared 6-month-old elk calves (2014–2023).

Hunter harvest is usually an important part of the survival equation. When natural mortality factors are combined with number of bulls, cows, and calves being harvested, managers are better able to understand and predict performance of individual populations. Success rates for hunters are influenced by a variety of factors, including weapon type, season timing and length, number of tags available, and weather events. The Department implemented the current Mandatory Hunter Reporting framework in 2000 to more accurately monitor hunter and harvest information. By asking hunters to report how many days they hunted, where they hunted, type of weapon used, and whether they were successful, IDFG managers are able to more precisely estimate harvest mortality, which in turn results in an abundance and diversity of opportunity for the hunting public.

Integrated Population Modeling

The Department is developing an integrated population model (IPM) for elk monitoring similar to that currently used for mule deer (Odocoileus hemionus) populations throughout the state. An IPM combines information from abundance and composition surveys, annual harvest data, survival monitoring, and other data sources (e.g., climate data) into a comprehensive analysis of population performance. An IPM can provide estimates of vital rates, composition, and abundance on an annual basis, allowing managers to estimate and monitor populations between abundance surveys. Other benefits of the IPM include ability to share information among different sources of data and obtain measures of error for each resulting estimate about the population (Royle and

Dorazio 2008, Ahrestani et al. 2017). When fully implemented, this approach should allow IDFG managers to model elk populations each year with the expectation of reducing overall aerial-survey time.

Influence of Monitoring Data on Harvest Opportunity

The primary purpose for collection of survival and population information is to provide a foundation for managers, the public, and the Commission to use in the process of crafting hunting seasons. Because harvest is generally the primary factor driving elk populations, implementing appropriate season frameworks and monitoring both elk populations and harvest rates are important to ensure elk populations remain within management objectives and meet hunter expectations. Allowable harvest for a given zone is directly tied to survival, composition, and abundance of elk and the desired population trajectory. Table 2 provides a general reference for how cow survival and winter calf ratios influence population performance. Calf ratios are the result of many factors (e.g., habitat quality, forage availability, predation) and are not easily manipulated by wildlife managers. Managers can manipulate adult cow survival by increasing or decreasing antlerless harvest opportunity, which will also increase or decrease the total elk population. The simulation summarized in Table 2 shows anticipated elk population trajectories based on varying annual cow survival and calf:cow ratios. However, effects of cow harvest on specific elk populations may differ due to multiple factors, including annual variation or uncertainty in survival rates and age ratios, and movements of elk among elk zones which can result in misalignment of harvest and survey estimates. Methods used to develop Table 2 are referenced in Appendix B.

Table 2. Population trajectory simulation illustrating the expected relationship among calf:cow ratios collected during winter abundance surveys, annual cow survival (including harvest), and population performance of elk in Idaho.

	Annual Cow Survival (Including Harvest)				
Calves per 100 Cows	0.75	0.80	0.85	0.90	0.95
10	Decreasing	Decreasing	Decreasing	Decreasing	Stable
20	Decreasing	Decreasing	Decreasing	Stable	Increasing
30	Decreasing	Decreasing	Decreasing	Increasing	Increasing
40	Decreasing	Decreasing	Increasing	Increasing	Increasing
50	Decreasing	Stable	Increasing	Increasing	Increasing
60	Decreasing	Increasing	Increasing	Increasing	Increasing

Hunting Opportunities and Experiences

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Elk hunting is engrained in Idaho history and culture. Based on past public input, Idaho elk hunters valued the opportunity to hunt every year, the chance to spend time hunting with family and friends, seeing elk in natural settings, being close to nature, harvesting an elk, and obtaining quality meat (Sanyal et al. 2012). Hunters also wanted to harvest large bulls, but most were unwilling to give up the ability to hunt every year to manage for larger bulls (Sanyal et al. 2012). For managers, providing annual hunting opportunity while also maintaining high numbers of older age-class bulls is often a challenging proposition. The Department attempts to accommodate all these desires by managing for a range of hunting experiences through a combination of season types: general hunts, capped general hunts, and controlled hunts. However, each hunt experience comes with associated trade-offs, and recognition of this aspect is important to aligning hunter expectations and opportunity to hunt. Controlled hunts typically have fewer numbers of tags, enjoy higher success rates, and often provide an opportunity to see a greater number of mature animals, but odds of drawing a tag can be low. General hunts offer opportunity for hunters to be afield each year, but often with higher numbers of other hunters and lower success rates. Availability and portion of tags differs between residents and nonresidents amongst various hunt types. These differences are briefly outlined in the following hunt opportunity sections. As in most states, tag allocations for nonresidents are limited; the

Commission established a total limit of 12,815 general-season elk tags for nonresidents in Idaho. This limit includes all general-season, nonresident tags and tags allocated to outfitted hunters for both capped and uncapped elk zones.

General-Season Opportunity

Idaho currently offers general season hunting opportunities across the state. In 2023, 26 of the state's 28 elk management zones provided some form (i.e., weapon type) of over-the-counter general season hunting opportunity. The dual-tag zone management concept was implemented to address concerns regarding numbers of adult bulls and bull age structure and to better manage hunter numbers among GMUs. A-tag hunts typically provide more opportunity for archery or muzzleloader hunters and may include harvest opportunities for antlerless, either-sex, or antlered animals. B-tag hunts typically provide more any-weapon opportunities, often for antlered elk only. These hunts are fundamental in maintaining Idaho's hunting tradition by allowing annual opportunity for family and friends to hunt together for antlered or antlerless elk with a variety of weapon types.

These unlimited annual hunting options are maintained whenever possible once hunter numbers, harvest rates by weapon type and season timing, and zone management goals are considered. Harvest success rate factors heavily into types of hunting opportunities which can be provided to Idaho hunters. Weapon types and hunting opportunities that result in reduced harvest success can typically sustain longer seasons and more hunter participation. Management criteria and population dynamics for specific zones are discussed in further detail in Population Monitoring and Management (p. 15) and Elk Management Zone (p. 67) sections of this plan.

In response to growing resident concerns about hunter crowding, the Commission recently assessed nonresident participation in uncapped elk zones. Although there is a statewide nonresident tag limit (12,815), the Commission had not previously managed nonresident hunter numbers at the zone level in uncapped zones. Beginning with the 2021 hunting season, the Commission implemented a restriction limiting nonresident participation in uncapped zones to 10% or 15% of total hunters in each zone based on historical use. These restrictions resulted in a nonresident limit being implemented for every uncapped elk zone. This change resulted in substantial reductions in nonresident hunter numbers for some zones, especially for uncapped A-tag seasons.

Capped General Season Opportunity

When the A-B tag system was originally instituted in 1998, both tag types were intended to be available to resident hunters in unlimited numbers. However, the Commission recognized caps might be necessary in the future to manage hunter density and reduce elk harvest mortality. A cap is a limit on total number of general season

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A or B tags available in a zone. Capped hunts still fall under general or annual type of hunting opportunity because they are available to all hunters each year on a first-come, first-served basis. In 2023, there were 18 different capped zone hunts across the state, 12 in B-tag hunts and 6 in A-tag hunts.

In recent years, increasing demand for some capped elk zones resulted in tags selling out earlier each year. For example, tags in the Sawtooth Zone currently sell out just minutes after they go on sale. As the number of capped zones and demand for capped tags increases, so does concern about hunter congestion in the remaining uncapped zones. To increase the likelihood of obtaining a capped tag for those who prioritize annual opportunity over controlled hunts, the Commission implemented a 5-day waiting period to purchase a capped-zone tag for any resident who applied for a controlled hunt beginning with the 2020 season. As a general rule, IDFG typically tries other options (e.g., changing season length or weapon types) before implementing caps on general hunts. If a cap is deemed necessary, IDFG also considers potential impacts to hunter distribution in adjacent uncapped zones.

In capped zones, nonresident participation is limited to a predefined percentage of total hunters, including residents and outfitted hunters. The nonresident percentage is based on historical use preceding implementation of the zone cap. A change to a cap results in a corresponding proportional change in the number of tags allotted to nonresidents, residents, and outfitted hunters. In response to high demand for some capped-zone tags, the Commission adopted a rule allowing nonresident tags to be limited to ≤25% of total tags in capped zones with historically high nonresident participation, with the balance of those tags made available to residents. In 2020, Diamond Creek A tags and Salmon B tags were limited to 25% nonresident participation under this rule.

Controlled-Hunt Opportunity

Controlled hunts are typically implemented to provide hunters with a unique or enhanced hunting opportunity, but may also be used in areas to directly manage elk populations, either because they cannot sustain levels of harvest associated with general seasons, or to address very specific management needs, such as cow harvest on a population above objective or managing a depredation issue. Idaho currently offers 172 different controlled elk hunt opportunities: 50 antlered-only hunts, 86 antlerless-only hunts, and 36 either-sex hunts. Antlered-only hunts are highly sought after and provide hunters an opportunity to harvest a mature animal with fewer tag holders afield than in general seasons, whereas antlerless-only and youth hunts provide high potential for harvest.

Controlled hunts are offered through a lottery system. A set number of tags are allotted for each hunt and each applicant has the same chance of being selected. For most controlled hunts, nonresidents cannot be awarded >10% of available tags.

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Predation

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Predators of Elk

Gray wolves, mountain lions, black bears, grizzly bears (U. arctos horribilis), coyotes (Canis latrans), bobcats (Lynx rufus), and, occasionally, golden eagles (Aquila chrysaetos) prey on elk. Wolves, mountain lions, and black bears occur across most of Idaho and are primary predators of elk. Coyotes, bobcats, grizzly bears, and eagles prey on elk calves in early spring, but research indicates these losses are minimal or restricted in distribution (Zager et al. 2007b, White et al. 2010, Griffin et al. 2011). An ecological system with multiple large predator species likely has more impact on elk populations and reduces harvestable surplus more than simple systems (Griffin et al. 2011).

Wolf predation occurs on all age classes of elk and can be a limiting factor on elk populations (Zager et al. 2009, Brodie et al. 2013). Wolf predation rates vary depending upon time of year, weather and snow conditions, prey densities, and other factors. Elk are more vulnerable and suffer higher predation rates in late winter and during winters with deeper snow (Husseman et al. 2003, Smith et al. 2004, Brodie et al. 2013, Horne et al. 2019). Wolves have the greatest impact on elk calves between 6 and 12 months of age (Zager et al. 2007b, Pauley and Zager 2010, White et al. 2010, Griffin et al. 2011).

Mountain lion predation occurs on all age classes of elk, often in proportion to their availability in the population (Zager et al. 2007a, b; White et al. 2010; Griffin et al. 2011; Horne et al. 2019). The effect of predation on an elk population can be additive (i.e., animals killed by predators would have otherwise lived) or compensatory (i.e., animals killed by predators would have died from some other source of mortality anyway). The impact (additive or compensatory) of mountain lion predation on elk calf survival is not always clear (White et al. 2010) but may be at least partially compensatory (Griffin et al. 2011). In some elk populations, mountain lion predation occurred at a high enough rate to influence overall adult female elk survival (Brodie et al. 2013, Horne et al. 2019). Combined wolf and mountain lion predation on cow elk can have an additive effect on elk mortality (Horne et al. 2019). As an obligate predator, mountain lions

in a single-prey system are not believed to trigger declines or depress prey populations for extended time periods (Ballard and Van Ballenberghe 1997, Ballard et al. 2001); however, in most of Idaho, mountain lions are one predator in multiple-predator systems (Horne et al. 2019).

Black bears are often the primary predator of elk calves <90 days old, with the greatest impact during the first 2 weeks of an elk's life, when calves are most vulnerable (Schlegel 1986, White et al. 2010, Griffin et al. 2011). Black bear predation on elk calves is an additive source of mortality in some instances (White et al. 2010, Griffin et al. 2011), but other factors can also play a role (e.g., habitat condition which would pre-dispose elk calves to black bear predation; Zager and Beecham 2006, White et al. 2010). Management actions that reduce black bear densities prior to elk calving can have a strong positive impact on elk calf survival (White et al. 2010). Bear-caused mortality of elk calves was additive in Yellowstone National Park, where both black and grizzly bears occurred (Griffin et al. 2011). Grizzly bears are geographically restricted to eastern and northern Idaho and occur at relatively low densities.

Population Limitation

Several variables are important for evaluating impacts of predation, including whether predation is limiting the elk population, which segment(s) of the elk population is being impacted, and which predator(s) are primary causes of elk mortality. Cow elk pregnancy rates, calving rates, and calf survival to reproductive age are critical factors of elk population performance. Changes in cow and calf survival, in concert with elk productivity, can result in different elk population trajectories (Table 2).

Predation is a limiting factor on calf survival, and potentially cow survival, in some Idaho elk zones. During 2004–2016, IDFG assessed cow and calf elk survival and causes of mortality across 29 elk populations which were grouped into 3 analysis areas (North Idaho, Central Idaho and Southern Idaho; Table 3; Horne et al. 2019). The populations represented the primary range of elk habitats, weather regimes, harvest levels, and predator densities found across Idaho. Overall adult female and calf annual survival averaged 90% and 60%, respectively. The role of predation, and primary predator(s), varied across analysis areas and

Table 3. Average annual fate (%) of collared cow and calf elk in 3 elk analysis areas, Idaho, 2004–2016 (Horne et al. 2019).

Area	Age	Wolf	Mountain lion	Malnutrition	Other	Unknown	Harvest	Lived
North Idaho	Calf	5.6	8.3	0.6	4.6	12.3	2.5	66.1
	Adult	5	2.1	0.9	1.2	15.9	0.3	74.6
Central Idaho	Calf	11.2	12.6	3.1	4.5	11.5	7.7	49.4
	Adult	4.9	5.2	2.3	1.3	7.8	3.9	74.6
Southern Idaho	Calf	1.5	10	4.1	1.5	3.1	2.6	77.2
	Adult	1.5	4	0.2	1.7	6.4	15	71.2

among years. Overall, predation by mountain lions produced a greater impact on ungulates than wolf predation. Primary causes of mortality included harvest, mountain lion predation, wolf predation, unknown predation, and other causes; and mortality rates varied by area (Horne et al. 2019).

The Department has also investigated neonate (birth through 90 days) and 6-month-old elk calf survival and cause-specific mortality in several other research projects over the last 30 years. Survival of neonates and 6-month-old calves (Jan–Jun) ranged 19–100% and 9–78%, respectively. Predation was the primary proximate cause of mortality among neonates and 6-month-olds, though the suite of predators and relative importance of each species varied among study areas and years (Schlegel 1986; Zager et al. 2009; Pauley and Zager 2010; White et al. 2010; Griffin et al. 2011; IDFG, unpublished data).

Although neonate mortality from predation can result in low recruitment in some populations, trends in seasonal or annual composition data (calf:cow ratios) are not always useful in identifying impacts of predation (Ballard et al. 2001). For example, poor nutrition may cause a lower birth rate, lower birth weights, and subsequently a lower growth rate of an elk population without high levels of predation-caused mortality. Identification of timing and likely sources of calf mortality may be possible, depending on when herd composition data is collected. Composition ratios should be considered alongside population estimates and information on cause-specific mortality to determine how reproduction compares to total and cause-specific mortality, thereby identifying true limiting factors for the population.

Conversely, annual recruitment may outpace total mortality even with significant predation mortality, resulting in an increasing elk population. Effects of predation on elk population dynamics can be further complicated in situations where predation losses are compensatory with other mortality factors. However, just the opposite may also be true, where combined effects of predation, including human harvest, may be a long-term additive cause of an elk population decline (Barber-Meyer et al. 2008, White et al. 2010, Brodie et al. 2013). Given the literature provides examples of both, managers responding to declining elk populations should carefully consider all available data and insight to develop strategies to achieve positive outcomes. Focusing solely on predation by one species may have very little impact on a declining prey situation unless predation by that species is additive and a significant limiting factor. Additionally, when predation is a limiting factor, predator management actions must be maintained over a long term to effectively increase elk populations (National Research Council 1997, White et al. 2010).

Predation Management

Predation management can be an important tool for elk population management. The Commission approved the Policy for Avian and Mammalian Predation (IDFG 2020) to guide IDFG's implementation of predator management activities. The policy directs managers to "recognize the role of predators in an ecological and conservation context. The actions by IDFG must be based on the best available scientific information and will be evaluated in terms of risk management to all affected wildlife species and habitat."

Current statewide management plans for major predators of elk (wolves, black bears, and mountain lions) emphasize hunting and trapping seasons as the primary tool for population and conflict management. Existing rules and laws provide a regulatory framework to manage big game species, including black bears, mountain lions, and wolves, through hunting and trapping. Idaho currently allows liberal hunting seasons and methods for these species. Spring and autumn seasons for black bears include use of bait and hounds in most areas, mountain lion seasons allow use of hounds, and wolf harvest opportunities consist of a long hunting season statewide and

a trapping season over a portion of the state. Harvest strategies available to affect predator populations include:

- Controlled hunts
- General seasons, with or without out quotas
- Decreased tag prices (in predation management zones)
- Multiple tags (in predation management zones)
- Trapping (for wolves)

The harvest strategies above, alone or in combination, may help wildlife managers achieve desired predator population levels. Additional predators can often be removed by the U.S. Department of Agriculture (USDA), Wildlife Services, in situations where human safety or depredation on livestock are concerns. Harvest strategies and removal of predators for human safety or livestock concerns are guided by species plans for black bears (IDFG 1998), mountain lions (IDFG 2024), and wolves (IDFG 2023a).

Managers can implement different tools in addition to regulated harvest strategies to reduce predator populations determined to be negatively impacting elk populations. The effectiveness of each approach can vary between front-country and backcountry areas because of factors such as road density, seasonal accessibility, habitats, and distance from human population centers. The IDFG Policy for Avian and Mammalian Predation Management states, "the Director may implement a Predation Management Plan in those circumstances where wildlife management objectives for prey species cannot be accomplished within 2 years by habitat manipulation, sportsman harvest, or interagency action designed to benefit the prey species, and where there is evidence that action affecting predators may aid in meeting management objectives."

Predation management plans have been developed for Lolo, Selway, Middle Fork, Panhandle, and Sawtooth zones where elk populations are below management objectives. In addition to harvest strategies listed above for wolves, black bears, and mountain lions; agency control actions were initiated in 2011 with the purpose of reducing wolf abundance in Lolo Zone. Department staff incorporated existing zone-specific predation management plans into zone-level goals and strategies in this plan. Predation management plans are available at https://idfg.idaho.gov/wildlife/predator-management.

There are numerous examples of predation management programs initiated to increase prey species (National Research Council 1997). Idaho has conducted several noteworthy studies which have demonstrated increased ungulate survival after predator removal, although the increase did not always appreciably change the overall population trend (Schlegel 1986, White et al. 2010, Hurley et al. 2011). Long-term benefits are dependent on continued predator removal and habitat improvement, or on weather events, which cannot be controlled.

Predator control is often logistically difficult, staff-time intensive, expensive, and can be controversial with some of the public. Therefore, managers must consider potential benefits, costs, and potential effectiveness of proposed actions on prey populations. Importantly, IDFG needs to develop, test, and utilize appropriate tools to manage both predator and prey populations. The Department strives to use hunters and trappers to implement management whenever possible and adaptively and incrementally moves to other management tools when necessary. Table 4 provides guidelines on how effective predator management activities may be in increasing elk populations. This information should be considered as part of the development of predation management plans to gauge potential for success and to help determine the suite of tools and information needed to benefit elk populations showing signs of predator-caused decline.

Table 4. Guidelines for determining whether predator management activities can be expected to increase elk numbers (adapted from Ballard et al. 2003).

Increased elk numbers likely	Increased elk numbers unlikely
Elk population below habitat carrying capacity	Elk population near habitat carrying capacity
Predation identified as a major cause of mortality	Predation not identified as a major cause of mortality; or elk in poor or substandard body condition
Predator management efforts can result in a significant decline in predator numbers	Predator management efforts unlikely to achieve a significant reduction in predator numbers
Predator management efforts timed just prior to predator or prey reproductive periods	Predator management efforts haphazardly scheduled throughout the year
Predator management efforts focused (e.g., generally <400 mi2)	Predator management efforts scattered over a relatively large area or no clear goals and objectives

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Private Lands and Elk

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Elk Use of Private Lands

When American settlers moved west into Idaho, their preferred homestead sites centered around areas suitable for agricultural production. These selections favored valley floors with consistent water, deeper soils, and longer growing seasons. As livestock production in the state continued to expand, areas with consistent water and higher forage production were prioritized. As a result, when looking at current landownership in the state, many of the most productive forage producing areas are privately owned. These highly productive private lands provide valuable elk habitat and assist with maintaining viable elk populations. Many private landowners enthusiastically support Idaho elk populations and, in many cases, take active measures to improve elk habitat on their properties. The abundant elk population currently enjoyed in many of our elk zones would not be possible without the support of private landowners.

Private lands occur within both winter and summer range habitat for migratory elk, but proportionally, private landownership of winter range is much higher. Quality elk winter range is very important in reducing elk damage to private lands during winter; however, winter range is increasingly impacted by human development. Idaho's human population increased from 1.33 million people in 2000 to 1.85 million people in 2020 (U.S. Census Bureau 2020). Although much of this population growth occurred around metropolitan areas, the associated outward expansion of development continues to impact elk habitat. This expansion is, perhaps, most prevalent on elk winter ranges where larger undeveloped properties are increasingly developed into smaller ranchettes or residential communities.

Private Land Refugia

Management challenges can arise when private land management creates a refuge for elk. Private-land elk refugia are areas where standard elk management practices are not effective due to differing land management practices and priorities (e.g., limited or no access for hunting) or when subdivision of private land into small parcels makes traditional elk management practices ineffective or unsafe. Elk readily respond to hunting pressure and solving challenges associated with elk seeking out more secure locations can be difficult (Proffitt et al. 2013, Sergeyev et al. 2022). In many parts of Idaho, private lands are interspersed with or adjacent to public land, and elk habitat spans both. These refuge properties often harbor elk, which can cause damage to neighboring agricultural operations. The Department works with many willing landowners to improve habitat and secure hunter access, either to or through private land. This complexity of ownership and how elk are valued across an area narrows the range and effectiveness of traditional options available to assist landowners experiencing damage.

In some areas in the state, refuge properties can host large segments of the overall elk population for significant portions of the year; examples include Brownlee, Snake River, and Weiser zones. This scenario further complicates IDFG's ability to manage populations within desired objectives, as these elk are included in overall population estimates, but not necessarily available for harvest, highlighting the complexity of managing a public resource on privately owned lands. Department wildlife managers are well-suited to handle this complexity, considering the various strategies available and working with landowners and the public to address issues as they arise.

Agricultural Depredations

Preventing crop and property damage by wildlife (depredation) is a priority management objective for IDFG. Idaho Code 36-1108 establishes the framework, rules, and process for how IDFG staff and private landowners will address depredation issues. Each IDFG region is responsible for assisting landowners to minimize or eliminate depredations. Typical strategies to reduce depredations include hazing, permanent fencing, depredation hunts, landowner permission hunts, kill permits, continued use agreements, targeted general or controlled hunts, and perpetual easements. Depredation problems and their solutions are an increasingly complex matter, involving not just ecology and management of elk, but socio-economic issues and human population dynamics as well.

Decades of effort to provide permanent solutions to depredation problems have proven successful in some instances, particularly with stored crops. The Department's depredation program provides those who have issues with elk damaging stored crops, such as hay, with materials to construct permanent exclusion fences. Construction of stackyard fencing over the years has reduced stored feed depredations.

The Department received a total of 3,904 elk depredation complaints over the past 3 years (fiscal year 2021–2023; Figure 2). Over that same period, IDFG paid 321 claims (<10% of complaints) for damage caused by elk (Figure 3). The Department's responsiveness to complaints often resolves issues to the point many landowners do not file damage claims. However, claims related to depredations on growing crops have increased in magnitude and expense on a near annual basis since the depredation program began in 1984. Over the past 30 years, the IDFG depredation program has undergone several changes brought about through internal restructuring as well as legislation which simplified the claim filing process and increased available funding, which in turn contributed to an increase in claims (Table 5). Increasing cost and number of claims will be an ongoing challenge for managers as they balance elk population objectives with mitigating depredations.

Although elk populations have declined in some management zones over the last decade, other zones have experienced an increase in elk abundance and conflicts, particularly in urban-rural and agricultural interfaces. Multiple factors likely influence these conflicts, including but not limited to, an increase in number of farmed acres, shifts in types of crops being grown, an increasing human population, habitat suitability, wildfires, changes in landowner values and tolerance, and predator-prey relationships. As production costs rise and commodity markets improve for crops such as corn, alfalfa, wheat, rapeseed, and specialty crops, so does the cost of damage caused by elk. Favorable commodity markets influence acreage planted into more profitable crops, which are often very attractive to elk. Increasing dairy production in the southern half of Idaho, and increased crop production needed to support that industry (e.g., silage corn and alfalfa hay), are driving factors in rising costs associated with elk depredations.

In response to rising depredation costs, House Bill 230 (HB 230, 2017) increased annual funding for damage compensation from $750,000 to $1.1 million. Additionally, HB 230 increased IDFG's depredation response capacity via additional permanent depredation support staff in each region. HB 230 also decreased the one-time damage deductible from $1,000 to $750, therefore if a damage evaluation is ≥$750, a landowner is eligible to file a claim. From state fiscal years (FY) 1995 to 2015, total claim values averaged approximately $127,000. Average total cost of claims across the state increased in recent years to approximately $1.2 million annually (Table 5; Figure 3). Depredation claim payments for elk-related damage since FY1995 ranged from a low of $34,550 in FY1996 to a high of $2,349,240 in FY2019 (Table 5). Total claims exceeded the depredation budget for the first time in 2008 and continued to increase thereafter.

Since 2017, even with the increase of the depredation compensation fund, total claims exceeded the budget in 3 of 7 years, resulting in proration of claim payments. In 2022, the compensation cap was increased again from $1.1 million to $1.8 million through legislation. Despite the cap being increased in 2022, IDFG had to prorate damage payments again in 2023, due to unusually severe winter conditions in the southern portion of the state, which resulted in higher pressure on stored commodities.

Moving forward, IDFG will face decisions related to rising costs of elk damage. The current trend suggests continued increases in claims, which would result in additional proration to agricultural producers. One solution would be to further increase funds for damage compensation. However, unless alternative funding is identified, such an increase could come at a cost to other existing programs, which are dependent on limited funding generated by IDFG. Routinely prorating damage claims is not ideal for producers and IDFG will strive to collaboratively develop solutions agreeable for all stakeholders. Potential solutions include exploration of additional funding sources and development of alternative compensation programs over the course of this planning period.

Outside of increased funding for damage compensation, other potential depredation solutions include strategic reductions in elk abundance, fostering increased tolerance of elk, and promoting increased access for hunting. Targeted reductions are predicated on our ability to facilitate access to depredating elk on private land. Refuge properties increase the challenge with this approach, as changing landowner values may not align with IDFG elk management objectives. Increased tolerance of elk and associated damages might be achieved by incentivizing landowners with additional hunting opportunities. This approach must be strategically implemented, as hunters who expect a sufficient abundance of elk to pursue recreationally may struggle to support lower elk abundance. The Department is committed to aggressively working to reduce elk damage and explore new opportunities to work with affected landowners.

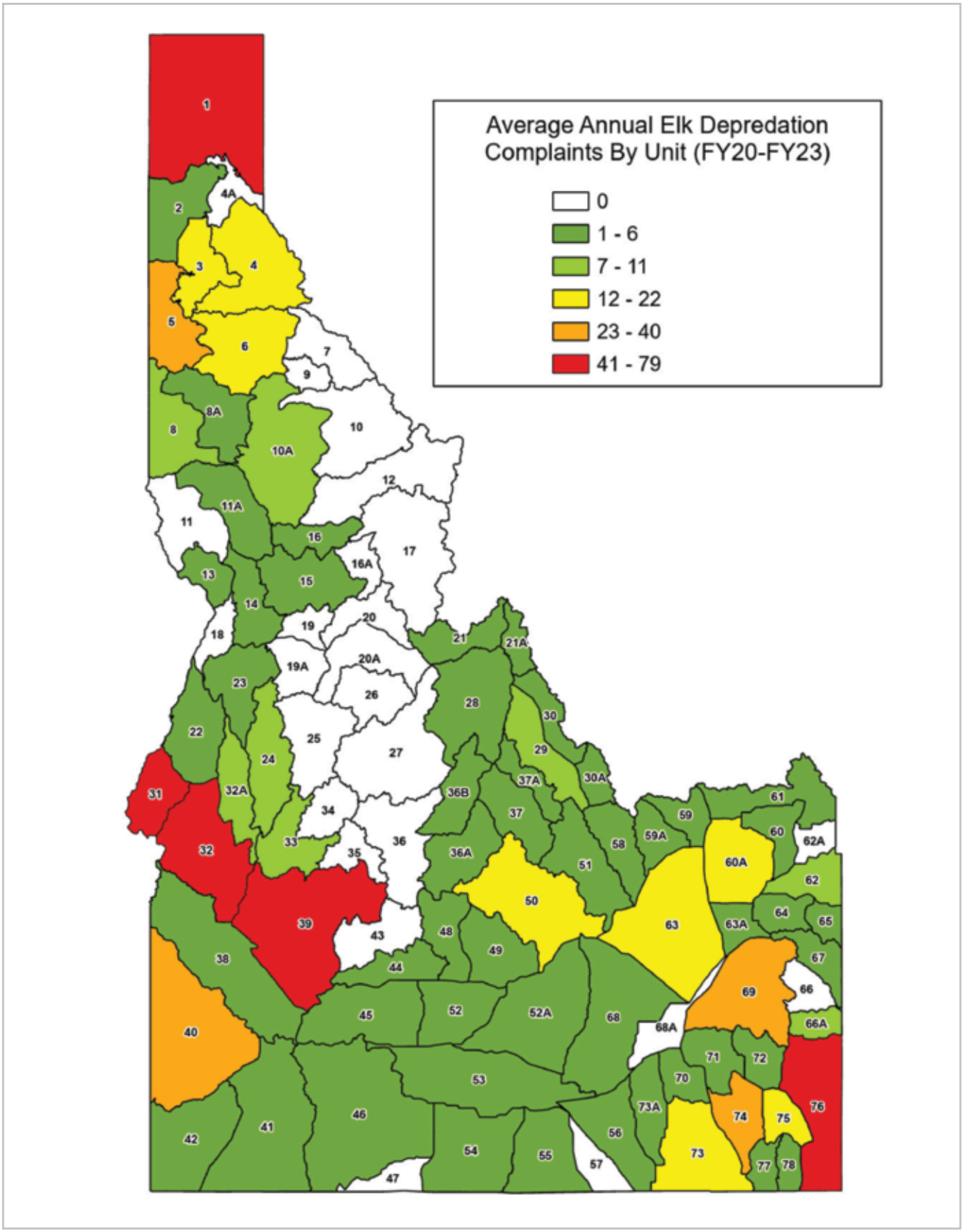


Figure 2. Average annual elk depredation complaints by game management unit, Idaho, FY20–23.

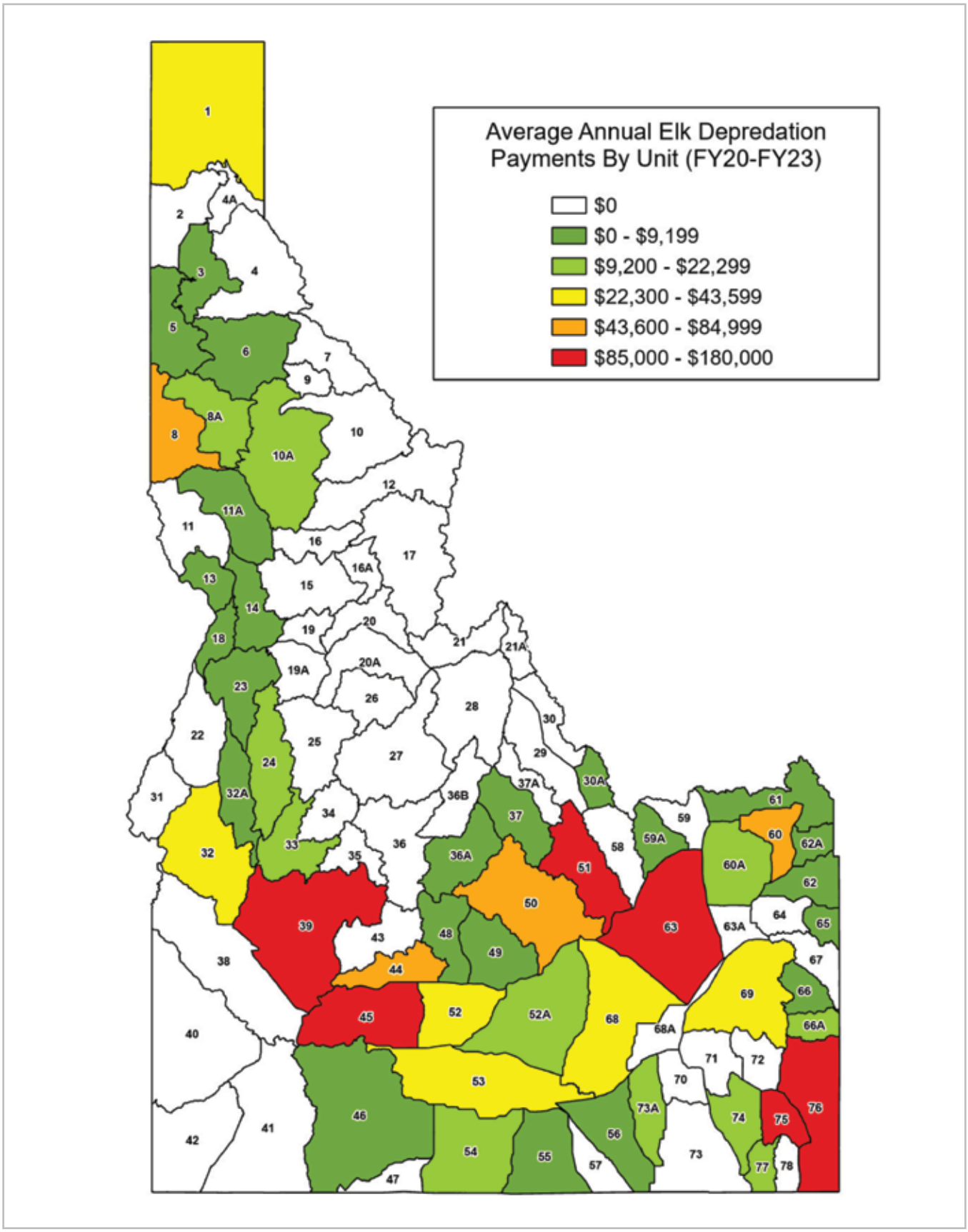
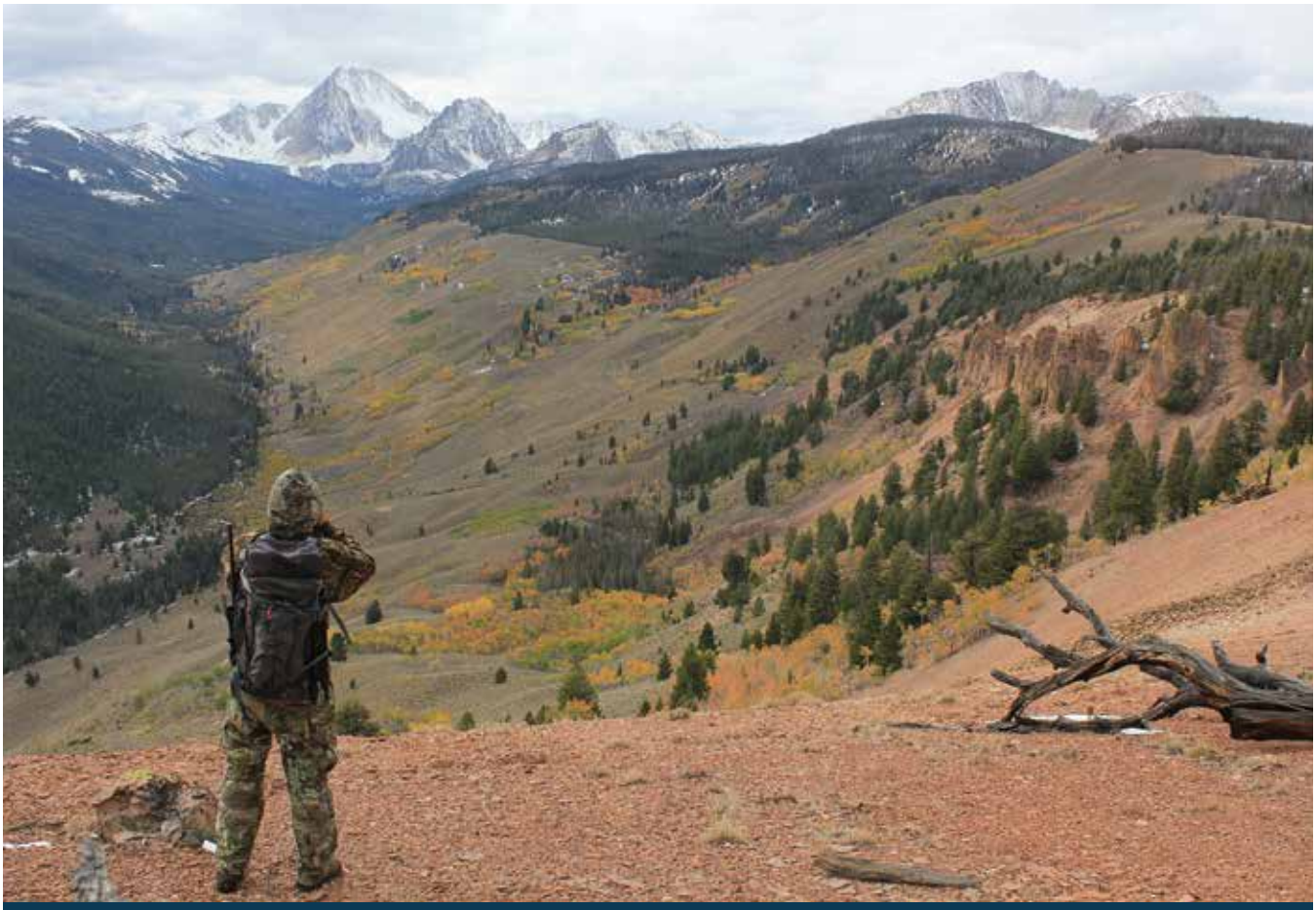


Figure 3. Average annual elk depredation payments by game management unit, Idaho, FY20–23.

Table 5. Table 5. Elk-related depredation claims by IDFG Region, Idaho, FY95–23

Fiscal Year	Panhandle Claims (n)	Panhandle Final claim ($)	Clearwater Claims (n)	Clearwater Final claim ($)	Southwest Claims (n)	Southwest Final claim ($)	Magic Valley Claims (n)	Magic Valley Final claim ($)	Southeast Claims (n)	Southeast Final claim ($)	Upper Snake Claims (n)	Upper Snake Final claim ($)	Salmon Claims (n)	Salmon Final claim ($)	Statewide Total Claims (n)	Statewide Total Final claim ($)
1995	0	0	4	$5,449	9	$50,035	0	$0	0	$0	1	$2,150	1	$106	15	$57,740
1996	0	0	4	$16,653	7	$16,978	0	$0	1	$919	0	$0	0	$0	12	$34,550
1997	1	1,890	2	$4,847	8	$52,894	0	$0	7	$19,266	3	$9,515	1	$5,090	22	$93,502
1998	0	0	8	$50,402	7	$29,729	0	$0	1	$1,126	0	$0	4	$5,627	20	$86,884
1999	0	0	1	$4,151	4	$31,922	0	$0	1	$3,375	3	$7,363	0	$0	9	$46,810
2000	0	0	5	$15,617	9	$75,103	0	$0	0	$0	1	$2,125	1	$3,470	16	$96,315
2001	0	0	6	$56,342	5	$10,175	0	$0	2	$530	0	$0	3	$6,788	16	$73,835
2002	1	3,000	3	$11,136	9	$45,503	0	$0	2	$4,285	1	$7,582	0	$0	16	$71,507
2003	0	0	2	$5,288	5	$25,233	0	$0	1	$2,699	2	$5,923	1	$816	11	$39,958
2004	1	275	6	$19,715	6	$26,337	0	$0	0	$0	2	$4,439	1	$1,610	16	$52,376
2005	1	5,107	4	$5,762	7	$27,737	0	$0	2	$12,111	1	$1,400	1	$1,390	16	$53,506
2006	0	0	9	$40,742	5	$32,634	0	$0	0	$0	2	$7,000	0	$0	16	$80,376
2007	0	0	19	$126,118	4	$35,874	1	$2,983	2	$20,793	1	$1,750	2	$6,145	29	$193,663
2008	1	8,009	22	$400,729	6	$23,042	1	$19,314	4	$19,114	2	$5,739	0	$0	36	$475,946
2009	3	8,054	9	$62,510	10	$89,114	2	$35,399	0	$0	4	$17,765	1	$2,106	29	$214,949
2010	1	1,500	13	$96,265	6	$33,210	1	$3,845	1	$7,276	1	$4,000	1	$3,250	24	$149,347
2011	0	0	5	$30,176	5	$70,441	4	$54,213	7	$27,077	3	$38,336	1	$1,868	25	$222,110
2012	1	1,400	1	$4,483	4	$18,000	3	$31,068	4	$11,210	1	$4,000	1	$20,014	15	$90,174
2013	3	4,018	4	$41,758	5	$32,886	2	$93,401	3	$13,080	2	$4,815	2	$18,088	21	$208,046
2014	2	4,714	5	$43,031	6	$49,620	3	$67,380	1	$3,450	0	$0	2	$27,216	19	$195,411
2015	2	9,776	5	$43,689	3	$10,388	4	$71,125	1	$3,038	2	$5,860	1	$5,398	18	$149,273
2016	1	4,887	1	$4,643	7	$79,201	7	$102,268	3	$7,710	3	$79,497	3	$23,918	25	$302,124
2017	3	9,923	4	$79,221	11	$126,759	12	$218,685	7	$45,322	10	$158,553	3	$33,961	50	$672,425
2018	9	57,355	5	$24,286	11	$126,036	8	$335,474	6	$64,382	7	$81,341	2	$7,184	48	$696,057
2019	3	23,359	14	$157,975	12	$240,864	18	$1,550,732	17	$190,596	15	$182,834	1	$2,880	80	$2,349,240
2020	4	32,059	12	$141,192	3	$324,880	11	$415,498	18	$349,859	18	$346,893	1	$3,178	67	$1,613,559
2021	4	31,595	15	$137,340	11	$253,834	12	$527,554	20	$395,817	10	$74,513	0	$0	72	$1,420,653
2022	6	46,311	8	$77,920	8	$128,781	10	$245,102	15	$287,260	18	$572,677	2	$11,240	67	$1,369,290
2023	5	30,443	4	$20,188	17	$151,861	13	$237,045	31	$655,300	33	$845,226	3	$20,975	106	$1,961,038

Elk Habitat



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No single factor impacts wildlife, including elk, more than habitat. Like all wildlife species, elk need adequate amounts of food, water, cover, and space throughout their life to survive and reproduce. These fundamental requirements change throughout the year as elk use winter, summer, and transitional ranges. Positive or negative impacts to these seasonal habitats influence distribution and abundance of elk, ultimately affecting associated recreational opportunities.

Natural phenomena that alter elk habitat, such as wildfire and drought, are common throughout the western states and impact wildlife across the landscape. Human-caused impacts can also influence the ability of habitat to sustain elk populations throughout the year. Primary management issues affecting quantity, quality, and connectivity of elk habitat are forest succession, invasive plants, wildland fires, timber and rangeland management, and infrastructure development.

Forest Succession

Elk populations in forested landscapes tend to be most productive when their habitat includes a mosaic of plant successional stages. Evidence suggests this relationship is related to associated vegetation diversity and availability of high-quality forage. Nature is dynamic and communities do not remain in a single successional state, even with active management. Thus, a landscape's ability to support elk

year-round is highly dependent on existing habitat conditions and successional stage.

Elk diets vary seasonally and annually due to changing nutritional demands, plant phenology, and weather patterns. Elk are mixed feeders, consuming both herbaceous and woody plants (Cook 2002). Elk select for grasses and forbs during summer because of their high digestibility and nutrient content, but diets may also contain a large proportion of shrubs (Cook 2002). Early seral moist, coniferous forests, high elevation meadows, and riparian areas are preferred summer habitats (Adams 1982). Summer nutrition is important for over-winter cow and calf elk survival (Cook et al. 2004). When nutrition during summer and autumn is poor, cow elk are likely to breed later than cows in good condition, or not at all (Cook et al. 2001). Elk eat woody shrubs throughout winter. However, if summer habitat conditions do not allow elk to obtain adequate body condition by autumn, elk may not survive through winter, even on high-quality winter range (Cook 2011). Elk body condition in autumn is dependent on summer habitat quality, not on body condition of the individual during the prior spring (Cook 2011).

Typically, most of the edible biomass in late successional or climax forest systems is out of reach of terrestrial herbivores. In mature coniferous forests of the Rocky Mountains, >99% of total above ground vegetation biomass may be tied up in trees (Wallmo 1981). Shrubs and herbaceous plants make up <1% of total vegetation biomass in these late-seral systems (Gary 1974, Landis and Mogren 1975). Forage supply is inversely related to the amount of tree overstory in forested habitats (Folliott and Clary 1972). Mature forests can also be beneficial to elk when associated with mid-seral stands in areas that elk frequent during late summer and early autumn prior to and during early breeding season.

In general, managing habitat in a mosaic of plant successional stages will prove most beneficial to elk. Overall plant diversity and forage is greater in recently disturbed areas. Exceptions to this might be on certain winter ranges where shrubs can take much longer to regenerate, or areas where herbicides have been used to suppress growth of species other than conifers. Disturbance is crucial to maintaining high quality elk habitat. Traditionally, more frequent fire cycles and human disturbance, such as timber harvest, resulted in higher elk densities than occur in many areas today. In the short-term, weather patterns can affect elk populations, but landscape-scale habitat changes will impact long-term trends.

Invasive Plants and Noxious Weeds

Invasive plants and noxious weeds are plants that may cause harm to people or the environment. When injurious to public health, agriculture, recreation, wildlife, or property, a plant is designated noxious. Most of these plants are native to Europe or Asia and were accidentally introduced or were introduced as ornamentals, which subsequently naturalized. These plants have developed specialized mechanisms to survive and have limited or no natural controls (insects, disease, animals), allowing them to spread rapidly and outcompete native vegetation. Infestations of invasive plants and noxious weeds have major impacts on ecological conditions that support wildlife. Infestations can reduce or replace native or desirable vegetation, eliminate wildlife forage, alter thermal and escape cover, change water flow and availability, and alter fire regimes. Such disruptive processes affect the quantity and quality of available elk habitat and can significantly influence elk populations.

The Department is a member of the Idaho Invasive Species Council and adheres to the Idaho Invasive Species Strategic Plan 2022–2026 (Idaho Invasive Species Council 2022). This plan outlines 3 key goals to combat invasive species: 1) prevent introduction of new invasive species; 2) limit spread of existing invasive species; and 3) abate

ecological and economic impacts resulting from invasive species populations in Idaho.

To implement these strategies, IDFG works diligently on lands owned or managed by IDFG and active Cooperative Weed Management Areas across the state to combat noxious weeds. Management efforts follow an integrated pest management approach, which is an ecosystem-based strategy which focuses on long-term prevention. Techniques include chemical, mechanical, and biological control; habitat manipulation; modification of cultural practices; and inclusion of resistant species. The intent is to sustain or restore important wildlife habitat using the most effective and efficient tools available, and limit impacts to humans and the environment.

Wildfire

Wildfire plays a critical role in creating and maintaining elk habitat. Fire can contribute to a mosaic of plant communities across the landscape and influences elk nutritional resources by altering composition, abundance, and quality of forage species (Proffitt et al. 2019). Post-fire vegetation can provide excellent forage and cover for elk in many forested areas. However, current wildfire frequencies have departed from historical regimes, resulting in suboptimal elk habitat in many areas. In general, wildfires have become less frequent in mid- to upper-elevation shrub-fields, aspen, and coniferous forests and more frequent in low-elevation shrub-steppe and canyon dry grasslands.

Early seral forest habitat is a crucial component of elk summer range. Summer nutritional limitations on elk body condition and reproduction are evident in Idaho and across much of the West (Cook et al. 2013, Rowland et al. 2018). Wildfires transition conifer forests to early successional stages by opening the canopy and promoting abundant regrowth of highly nutritious forbs and grasses, enhancing availability and quality of preferred elk forage. These post-fire plant communities generally provide high-quality elk nutrition. However, resulting forage quality can vary depending on fire frequency, severity, intensity, seasonality, and site-specific characteristics such as existing vegetation, land-use, and ecosystem nutrient richness (Proffitt et al. 2019). Early seral forest communities on elk summer range across much of Idaho have been altered because of fire suppression, reduced timber harvest, forest conversion for agriculture, urbanization, and increasing reforestation practices after logging. Forest management practices can be designed to both reduce risk of catastrophic wildfire and support elk populations.

Shrub-steppe and canyon dry grassland communities are an important component of elk winter range in central and southern Idaho.

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Wildfires in low-elevation sagebrush-steppe were historically small and patchy, creating a mosaic of burned, recovering, and unburned lands (Innes 2019). By the mid-1900s, a combination of wildfire suppression and land use change resulted in landscapes largely composed of monotypic woody stands (such as sagebrush and rabbitbrush (Chrysothamnus spp., Ericameria spp.) and losses of important herbaceous forb and grass understory vegetation. Additionally, non-native annual grasses were introduced and rapidly spread throughout important habitat. As a result, large expanses of elk winter range have been converted to monotypic stands of invasive annual grasses, increasing fine fuel loads and continuity, and altering fire regimes. Greater frequencies and sizes of wildfires have occurred in these plant communities, resulting in vast areas which are less desirable to elk and currently cannot be effectively restored.

Changes in fire frequency across much of Idaho have drastically impacted elk seasonal ranges, including decreased availability of quality forage, altered structure of plant communities, increased patch sizes, and decreased patch diversity.

These changes influence how elk use habitat for foraging, bedding, security, and breeding. In general, decreased diversity and structure resulted in fewer areas that provide natural vegetation to meet year-round needs of elk.

Timber and Rangeland Management

Idaho elk populations frequently occur within landscapes managed for timber and agricultural production. Habitat quality and distribution can be impacted by these management activities through time, and a changing landscape can have complex implications for elk. For example, loss of security cover due to timber harvest may increase elk vulnerability to predators and hunters (Christensen et al. 1993), but timber harvest in many systems can increase forage production and nutritional quality (Collins and Urness 1983, McConnell and Smith 1970). Agricultural production may provide abundant forage opportunities on the landscape but may lead to elk depredation issues and conflicts. Habitat values can be maximized in conjunction

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with management actions and treatments by considering elk management objectives during land management planning and project design stages. These scenarios present tremendous opportunities to work with partners and landowners to support and enhance Idaho elk populations within these landscapes.

Idaho rangelands also provide important forage and cover resources for elk. Livestock production on rangelands is a primary component of Idaho's agriculture-based economy. Livestock grazing systems are primarily designed to benefit livestock but can be designed and managed to also benefit wildlife habitat (Vavra 2005). Improper grazing management can negatively affect wildlife production, plant vigor, water quality, soil erosion, and productivity. Timing of livestock grazing can also impact elk use of rangelands, especially with cattle, as elk distribution changes in response to cattle presence (Stewart et al. 2002) and elk and cattle tend to select some of the same resources during late summer (Coe et al. 2001). Some research suggests livestock grazing can have a positive effect on forage conditions (crude protein, digestibility) for elk when timing, intensity, and duration of livestock grazing are controlled, whereas other studies showed no effects (Clark et al. 2000, Chaikina and Ruckstuhl 2006). The Department works with land management agencies and landowners by providing technical assistance, labor, or financial support for grazing management strategies and habitat improvement efforts that can benefit elk.

Infrastructure Development

In 2020, Idaho was the second fastest growing state in the nation (U.S. Census Bureau 2020). Idaho's population increased by 271,524 (17.3%) between 2010 and 2020 to exceed 1.8 million people. Population growth has disproportionately occurred in urban and suburban areas. Madison, Kootenai, and Ada counties (containing the cities of Rexburg, Coeur d'Alene, and Boise, respectively) were the 3 fastest growing counties from 2010 to 2020 (U.S. Census Bureau 2021). However, low-density, rural-residential housing is also expanding in nonmetropolitan portions of Idaho (U.S. Census Bureau 2021). Projections through 2030 anticipate future population growth clustered in several general areas: greater Coeur d'Alene area, Palouse area, greater Boise area, Magic Valley-Blaine County, and eastern Snake River Plain-Teton Valley areas. Several of these areas also provide important elk summer and winter habitat. As a result, elk populations which have been adversely affected by past and current development will likely be further impacted by human population expansion.

Development associated with economic expansion includes new housing, transportation system upgrades, energy production and transmission, and industrial infrastructure. For example, number of housing units increased by 12.5% from 2010 to 2019 (Idaho Department of Labor 2020) while Idaho's miles of roadways increased 8% during the same time period (OHPI 2010, OHPI 2020). This increase is likely to accelerate during the next decade as part of the Idaho Transportation Department's (ITD) Transportation Expansion and Congestion Mitigation (TECM) Program (ITD 2024). Road construction and increasing traffic volumes can increase risk of elk-vehicle collisions and can affect important seasonal habitat and migration routes. Improving motorist safety is an important reason for upgrading Idaho's transportation system, which includes reducing risks of vehicle collisions with big game such as elk.

Idaho's expanding human population is also increasing local energy demands. The state's electricity generation is primarily from renewable energy sources, which include hydroelectricity, wind, solar, geothermal, and biomass (OEMR 2021). In 2019, renewable sources generated 76% of in-state electricity with hydroelectricity accounting for 58% (OEMR 2022). Construction of new utility-scale wind and solar energy facilities is increasing due to increased profitability and to reduce carbon-based

electricity generation, which is a goal of the state's electric utilities. First constructed in 2006, Idaho's utility-scale wind energy facilities now provide 16% of in-state generation, and an estimated >200,000 megawatts of wind energy remain available for development (OEMR 2022). As solar and wind development projects are frequently located in open sagebrush-dominated landscapes of the Snake River Plain, they often significantly overlap elk migration routes and winter range. More than 500 miles of new and upgraded transmission lines are also planned to deliver Idaho's renewable energy to in-state and regional markets (OEMR 2022), highlighting potential for additional impacts to elk.

Global mineral demands are prompting new exploration and industrial-scale mining. Idaho has an extensive mining history dating back to the mid-1800s. Gold was the key mineral that originally attracted prospectors to Idaho. Now, silver and phosphate are the most produced minerals, with Idaho supplying about 45% and 22% of the nation's silver and phosphate, respectively. Idaho mining includes extraction of not only base metals like lead and copper, but also other minerals including antimony, gold, silver, cobalt, tungsten, vanadium, molybdenum, and gemstones. Quarrying of sand, gravel, and crushed rock provides crucial raw materials for Idaho's expanding construction sector and transportation system. Infrastructure and mining activities associated with locating, extracting, processing, and transporting of materials have potential to impact elk habitat in a variety of ways, including habitat conversion to other habitats, degradation from spread of noxious and invasive weeds, fragmentation due to roads and transmission lines, reduced connectivity, and potential pollution, including air, soil, and water-borne pollutants.

These land uses have potential to adversely affect elk, and infrastructure and project activities (e.g., construction, operations, and maintenance) may have direct, indirect, and cumulative effects on habitat and movement and migration behaviors (e.g., Cox et al. 2009). The Department provides technical assistance to inform project proponents, land managers, and regulatory decision-makers about potential project effects on elk populations. Department technical assistance applies the mitigation hierarchy, recommending ways to avoid or minimize negative project effects with alternative siting, design features, construction and operational BMPs, and habitat restoration. Recommendations can also include voluntary compensatory mitigation for negative project effects not adequately avoided or minimized.

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Migration and Movement

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Many of Idaho's elk populations are migratory, with some herds traveling >100 miles between summer and winter ranges. A surge in research and GPS technology over the last decade greatly expanded our understanding of how, when, where, and why big game animals migrate, and population-level effects of migration. This information is more critical now than ever, as many migratory populations of elk are navigating rapidly changing landscapes. Information about migration and movements is critical for considering effects of natural resource development, transportation, energy infrastructure, agriculture, and other land uses on migratory elk populations.

Migration likely evolved in response to seasonally shifting resources (Rickbeil et al. 2019) and is an important component to healthy, functioning elk herds. Without the ability to move among seasonal ranges, some elk populations may lose their resiliency to changing environmental conditions and potentially suffer over the long term. Generally, summer ranges are located at higher elevations, where an abundance of forbs, grasses, and shrubs provide nutrition needed for elk to regain fat lost over winter, successfully raise calves, breed again in autumn, and re-enter winter in adequate condition to survive until spring. Conversely, winter ranges may not provide adequate forage to sustain elk year-round but do provide refuge from deep snow and cold weather.

In addition to affecting elk abundance and distribution directly, loss of migratory elk herds has potential to affect predator populations (Stoellinger et al. 2020), disease transmission

(Rayl et al. 2021), tag allocations and hunting structures, local economies and cultures, and human-wildlife conflicts. Additionally, growing resident elk herds may be more susceptible to density-dependent effects of resource limitations such as reduced reproductive success or survival rates (Mysterud et al. 2011, Festa-Bianchet et al. 1998).

A suite of transformations across elk habitat has occurred over the last 30 years, including habitat loss and fragmentation, frequent drought conditions, changes in agriculture practices, increasing disturbance on seasonal ranges, expansion of invasive plant species, and reestablishment of wolves. These factors may be lessening advantages gained by migration and could contribute to shifting migration patterns (Merrill et al. 2020). Some elk populations appear to no longer utilize traditional migration routes, and some historically migratory herds are now year-round residents. This change in elk distribution has, in some cases, led to conflicts among elk, private landowners, and sportspersons, and further complicated elk management.

Consequently, IDFG has made extensive efforts to map migration routes across the state, which is a critical first step to implementing sound, data-driven management. These data are elemental to IDFG's ability to work with state, federal, county, and local partners to prioritize where funding is spent and to inform management actions. Since 2018, IDFG's understanding, and management of big game migration routes and seasonal habitat have been augmented through the Department of Interior's (DOI) Secretarial Order Number 3362 (SO3362). The order directs DOI agencies to assist western tribes, private landowners, state fish and wildlife agencies, and state highway departments with managing and conserving priority big game winter ranges and migration habitat, focusing on mule deer, pronghorn (Antilocapra americana), and elk.

To sustain elk populations at harvestable levels into the future, IDFG and stakeholders must understand, conserve, and manage the complete breadth of annual habitat requirements, including seasonal ranges and migration habitat. The Department routinely works with state, federal, and nonprofit partners, and private landowners, to implement habitat improvement projects aimed at facilitating wildlife movement (e.g., wildlife-friendly fencing, highway overpasses and underpasses, and conservation easements) along mapped migration routes. The purpose of Idaho's SO3362 Action Plan (IDFG 2023b) is therefore to focus and facilitate ongoing and future cross-jurisdictional and landscape-scale conservation of big game winter range and migration habitat. Idaho elk migration routes are available in Ungulate Migrations of the Western United States, Volume 2 (Kaufmann et al. 2022) and Ungulate Migrations of the Western United States, Volume 3 (Kaufmann et al. 2023), which include many migrations mapped to date via GPS telemetry data. The Department will continue to update statewide analyses to improve mapping of seasonal ranges, migration habitat, and stopover locations for elk and will integrate guidance provided by the SO3362 Action Plan into elk management activities at statewide and zone levels.

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Travel Management

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Travel management is a challenging and multifaceted topic, with direct and indirect implications for elk management. Road and trail density, location, traffic volume, season, and mode of travel are important considerations. Elk avoid roads as traffic increases (Edge and Marcum 1991; Johnson et al. 2000). Elk also avoid areas of trail-based recreation at levels similar to avoidance of open, motorized roads on public forests (Wisdom et al. 2018). Among different types of recreational activity, elk exposure to all-terrain vehicles (ATV) caused the largest reduction in time spent feeding and resting, and the greatest increase in movement, followed by mountain biking, hiking, and horseback riding (Naylor et al. 2009, Wisdom et al. 2018). Recent dramatic increases in both motorized and nonmotorized recreation on public land throughout Idaho highlight the need for thoughtful travel management that balances requirements of elk populations and hunter access with other land uses.

The IDFG directly manages a relatively small portion of elk habitat in the state through IDFG Wildlife Management Areas (WMAs). The bulk of elk habitat in the state is managed by the U.S. Forest Service (USFS, 20.4 million acres), the Bureau of Land Management (BLM, 12 million acres), and the Idaho Department of Lands (IDL, 6 million acres). Both USFS and BLM manage under a multi-use mandate, meaning they must consider needs of several stakeholder groups. The IDL manages to maximize revenue for Idaho schools, which is generally accomplished through grazing leases, timber sales, or energy

development leases. Although IDFG does not have direct authority over travel management on lands managed by other entities, IDFG is a stakeholder in travel management planning on federal and IDL lands and provides input on how plans or projects may impact elk populations. The Department uses a combination of scientific research, elk population data (such as survival and movement data from GPS collars, abundance and composition data from aerial surveys, and hunter harvest information), as well as feedback from sportsmen and women (provided throughout the year, but particularly during season-setting and public surveys) to inform recommendations to land management agencies.

Travel management recommendations for elk vary by habitat (forested vs. open) and season but should be approached at the landscape-level for elk and other wildlife species that require large, intact landscapes to survive and thrive throughout the year. Effects of roads, trails, and traffic on elk management can be grouped into 3 broad, but inter-related categories, with effects on elk populations varying greatly by season: 1) physiologic and energetic effects, 2) distribution and habitat use, and 3) vulnerability to hunter harvest and mortality. Because elk utilize different areas and habitats to complete their annual life cycles, the remainder of this section will be divided into seasons, which allows for clarity on 1) the population demographic that is most sensitive to recreation at that time, 2) research being referenced, and 3) recommendations suggested by IDFG for consideration by land managers when developing travel management plans.

Winter

The most important travel management consideration for elk in winter is relief from human disturbance. Although elk are resilient to winter conditions, with population-level declines rarely occurring because of harsh winters, they still rely on accumulated fat reserves to survive until spring (Cook et al. 2004). Cumulative impacts of repeated disturbance and limited forage resources can reduce survival of elk, particularly elk calves, which are more vulnerable to starvation due to their smaller body size and reduced body fat (Parker et al. 2009). Energetic cost of moving away from disturbance associated with roads and trails may be substantial (Cole et al. 1997) and could limit population productivity or reduce winter survival by depleting fat reserves (Cook et al. 2004). Rost and Bailey (1979) found elk strongly avoided well-traveled roads on winter ranges with less security cover. Hayden-Wing (1979) found elk distribution in southeastern Idaho during winter was primarily driven by human activity, followed by snow depths and forage availability.

Spring

As discussed previously, many elk populations migrate to take advantage of spatially and temporally dynamic food resources. During migration, elk utilize areas called transitional range or stopovers. These locations provide high-quality forage, which provide valuable resources to animals going into or coming out of winter. A significant portion of the migration period for ungulates is spent foraging at stopover locations. Disturbance at these sites correlated with changes in animal movement rates and locations (Lendrum et al. 2012, Sawyer et al. 2013), with elk moving more rapidly, or avoiding entirely, these high-quality habitat areas.

Cow elk give birth in May and June. Disturbance on calving grounds has been linked to population-level declines in some areas. Phillips and Alldredge (2000) found when cow elk were disturbed 10 times throughout the parturition period, the population would experience no growth because of calf mortality. Kuck et al. (1985) found elk cow:calf pairs abandoned traditional calving areas when exposed to repeated disturbance by people.

Summer

Quality of summer and autumn ranges largely determines condition of an elk heading into winter, and thus whether that elk can survive until spring (Cook et al. 2004). A relatively small difference in forage quality in summer and autumn can generate very strong effects on fat accretion, timing of conception, pregnancy rates of lactating cows, calf growth, yearling growth, yearling pregnancy rates, and winter survival rates. Likewise, fairly small changes in body fat can produce significant effects on fitness of adult cow elk. Cook et al. (2001) found cow elk with <13% body fat may delay breeding, and at 9%, pregnancy rates declined. Cow elk with <6% body fat experienced poor survival.

Roads can cause a disproportionate effect on habitat quality of the surrounding area (Jackson 2000), meaning total loss of functional habitat is greater than that of just the road (Forman 2000). At road densities >2 miles/mi2, Lyon (1983) found habitat effectiveness (i.e., percent of expected use relative to available habitat) declined rapidly (loss of 55–80% habitat effectiveness). Therefore, conserving undeveloped areas that provide high-quality forage and security cover is important for ensuring elk can accumulate enough body fat for survival and reproduction. Displacement of elk into lower quality habitat might be equally or more detrimental than increased energetic costs caused by movements (Hobbs 1989). When elk are displaced into lower quality habitats, they may be forced to use poorer quality forage and expend more energy on thermoregulation (Cassirer et al. 1992). Additionally, lactating females that more strongly avoided roads entered winter in poorer nutritional condition (Spitz et al. 2019).

PHOTO: CC-BY IDAHO FISH AND GAME

Autumn

Harvest vulnerability is of primary concern in autumn, particularly for bull elk. Road density affected bull:cow ratios and number of mature bulls on the landscape (Leptich and Zager 1991), both of which are important for an elk population to function properly. Unsworth and Kuck (1991) concluded bull elk in habitats with high road densities were more than twice as likely to be killed during hunting seasons as those in areas with few roads. Gratson et al. (1997) analyzed bull survival in 3 different treatment areas (high-density roads, no roads, and managed access). They found bull survival in roadless, and managed access areas were similar and 20% higher than bull survival in a site with high road density. Similarly, Gratson and Whitman (2000) found hunter success was higher in roadless and managed-access areas (both ~25%) than in an area of high road density (~15%), supporting the idea that bulls selected for areas of low road density and roadless areas. In a landscape characterized by a matrix of public and private ownership, Proffitt et al. (2013) found density of roads open to motorized use was an important predictor of adult cow elk distribution during rifle season, and adult cow elk moved from areas of high road density on public lands to areas with less disturbance on private lands.

Tools and Strategies

The Department encourages state and federal land managers to continue developing comprehensive access management programs that include provisions for maintaining high-quality elk habitat.

Wherever possible, avoid the highest-priority elk habitats when planning recreation infrastructure, (Frair et al. 2008).

- Calving areas
- Winter range
- Stopover locations or migration route bottlenecks
- Areas of exceptionally abundant, high-quality summer and autumn forage

Maintain overall motorized route densities within the 0.7–1.7mi/mi2 moderate range, as well as large areas within the low range (<0.7mi/mi2) as described in Wisdom et al. (2000).

- Low density = <0.7 mi/mi2
- Moderate density = 0.7–1.7 mi/mi2
- High density = >1.7mi/mi2

Seasonal closures should be considered to benefit elk in winter months and during calving, when they are most vulnerable (Shively et al. 2005). Dates shown below are approximate and vary based on specific location and seasonal environmental conditions.

- 15 May – 30 June = calving
- 15 December – 15 April = winter

The IDFG recognizes challenges land managers face, now more than ever, when managing landscapes for public use and enjoyment while simultaneously conserving natural resources. The Department will continue to work with, and support, partners tasked with accommodating a variety of recreational users to also improve elk habitat.

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Diseases and Parasites

Elk are subject to a number of diseases and pathogens. This section presents information about diseases which are currently a risk to Idaho elk populations and whether they are currently present in or introduced to Idaho.

Brucellosis

Brucellosis is a transmissible bacterial disease caused by Brucella abortus. In most ruminants, the disease results in arthritis, birth of weak calves, or abortion. Brucellosis is a zoonotic disease which can infect humans. The disease was introduced to the U.S. by infected cattle from Europe at the time of settlement. Brucellosis was introduced to the greater Yellowstone area when bison (Bison bison) being reintroduced into Yellowstone National Park were exposed to infected cattle; and from bison, the disease spread to elk (Thorne et al. 1997). The primary concern with brucellosis is transmission of the organism from elk to cattle (Thorne and Morton 1976) and associated economic and logistical consequences to domestic livestock producers.

In 1998 IDFG found the first evidence of brucellosis infection in eastern Idaho elk. A task force was assembled to formulate a plan to manage the disease in elk and minimize risk of transmission to cattle. Based on epidemiology and DNA, the disease apparently spread to cattle from elk, resulting in loss of Idaho's Cattle Brucellosis-Free Status in 2005. Similarly, elk were the suspected vector for cattle infections in eastern Idaho in 2009 and 2012. Yearly hunter surveillance is focused on GMUs within or near the Designated Surveillance Area (DSA) determined by Idaho State Department of Agriculture (ISDA) or where there are increased interactions with cattle. The Department also tests all live adult elk handled by agency staff. In recent years (2018–2022), elk with B. abortus antibodies (seropositive) were detected in GMUs 29, 45, 49, 59, 60, 60A, 61, 62, 66A, and 67 (Figure 4).

Management of brucellosis in free-ranging elk is challenging. Although infection with brucellosis can negatively affect reproductive performance in cows through abortions and stillborn calves, and possibly bulls through orchitis (swelling of the testicles), the population impact is relatively low given low detection rates (seroprevalence, Gross et al. 1998). There is no effective vaccine for elk and no way to easily vaccinate elk even if an effective vaccine were available. When needed, IDFG may trap, test, and remove seropositive elk in eastern Idaho, particularly at feed sites that are used repeatedly or if elk interact with cattle during the risk period (Jan–Jun).

A cooperative brucellosis plan between IDFG and ISDA was developed in 2006 and serves as the basis for management of elk in proximity to cattle in the brucellosis-affected area. Most of the joint effort between IDFG and ISDA is to minimize likelihood for potentially infected elk to intermingle with cattle in winter by fencing haystacks, hazing elk away from cattle feedlines, fencing cattle feeding areas, and development of alternative wintering areas. In these areas, brucellosis management is a significant factor, considered alongside other management concerns in development of elk population objectives. The cooperative brucellosis plan identifies 4 primary objectives:

1. Manage elk populations within carrying capacity of available winter habitat and provide for a harvestable surplus.
2. Monitor elk and livestock for exposure to and infection with brucellosis and reduce brucellosis prevalence in elk.
3. Improve habitat to ensure adequate areas of high-quality winter and spring range

necessary to support a stable and harvestable elk population.

4. Maintain separation of elk and cattle during high-risk periods.

Obtaining adequate harvest of elk in brucellosis-affected zones can be difficult due to seasonal elk movements that may not correspond to established elk harvest seasons. Some elk that winter in the Upper Snake Region spend summer in Yellowstone National Park, Grand Teton National Park, or in other parts of Montana or Wyoming. Some elk do not return to Idaho until late autumn or early winter, after or late in hunting season, which may limit access to these animals by Idaho hunters. Implementing harvest season frameworks that target these elk is a dynamic and adaptive process. The Department may adjust season length, season timing, tag numbers, and other variables to modify hunter distribution to address cattle-elk interactions.

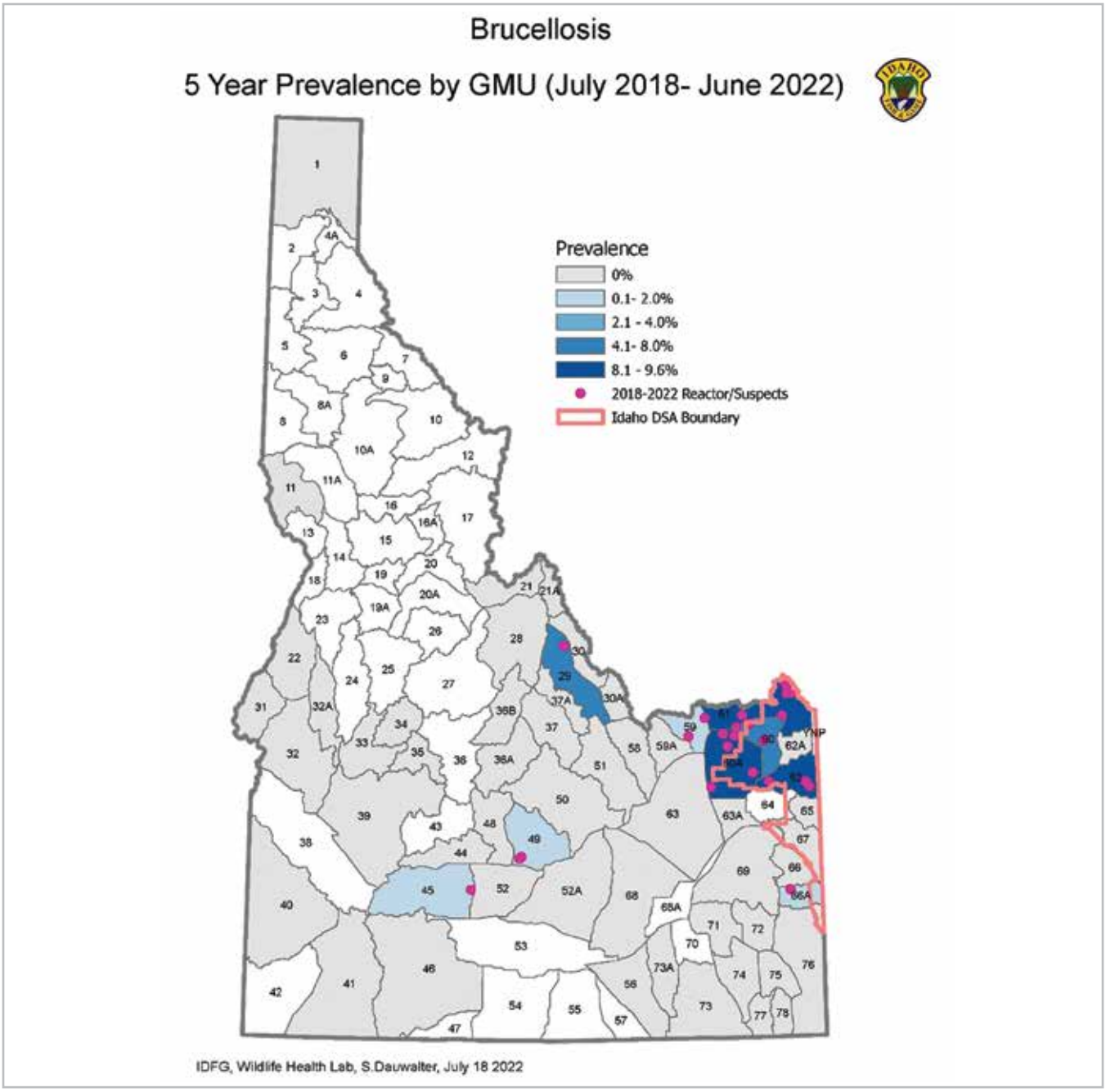

Figure 4. Five-year brucellosis prevalence, Idaho, 2018–2022.

Chronic Wasting Disease

First detected in Idaho in 2021, CWD is known to occur in mule deer, white-tailed deer (Odocoileus virginianus), elk, and moose (Alces americanus) in the U.S. The original endemic area was confined to a small portion of Wyoming, Colorado, and Nebraska. Over time, CWD has been found in wild or captive mule deer, white-tailed deer, elk, and moose in an expanding number of locales, which at the time this plan was written, included 31 U.S. states, 4 Canadian provinces, Norway, and South Korea.

The IDFG CWD Strategy (IDFG 2021) recognizes CWD as an infectious disease of cervids caused by misfolded proteins (prions), which are transmitted by ingestion of prions from contaminated environmental components or directly via contact with infected animals. The disease displays a long incubation period and a long period of prion shedding. The disease is always fatal in cervids and is preceded by prolonged neurological degeneration and dysfunction. Prions cannot be treated or controlled with conventional measures and no known cure exists. Methods exist to decrease infectivity of prions, but environmental treatments are not practical for large-scale use.

Heavily infected cervid populations do not thrive in the long term (Almberg et al. 2011, Monello et al. 2014, Williams et al. 2014). DeVivo et al. (2017) estimated a 21% annual decline in a local population of mule deer in Wyoming and predicted extinction within 40 years due to high CWD prevalence (24%). Similarly, Edmunds et al. (2016) found high CWD prevalence (33%) in a Wyoming white-tailed deer population and estimated extinction in 48 years at the current level of mortality and fecundity.

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Miller and Fischer (2016) reviewed past CWD management practices and concluded most actions were too little, too late, too restricted, too passive, or of insufficient duration to be successful. Based on lessons learned from past CWD management actions, the critical need is for states to set realistic CWD control objectives which incorporate existing and prospective field data, and to apply any management action with sufficient spatial and temporal coverage to be effective (Miller and Fischer 2016).

Public engagement will be essential to build necessary public support for management actions required to effectively contain and control CWD expansion. The importance of communicating with and being responsive to the public was evidenced in Wisconsin in the years following detection of CWD. Wisconsin took rapid action after initial detection, but neglected stakeholder concerns and did not fully utilize available human dimensions resources, which led to an erosion of support and undermined progress towards achieving their biological and social goals (Heberlein 2004). Any attempt at controlling CWD will require decades of effort, time, and funds to achieve sustainable results.

Many management actions center on suppressing a CWD-affected population to prevent further spread. Such actions are achieved by combinations of agency culling, hunter harvest, predator management, cessation of agency management practices (e.g., winter feeding and translocations), and in extreme cases, experimentation with controlled burning of contaminated environments. Miller et al. (2020) indicated sufficient harvest of mule deer in Colorado could control CWD when prevalence was low. Development of models incorporating CWD prevalence analysis has allowed some agencies to estimate amounts of hunting pressure, predation, and CWD risk a population can withstand without threat of extinction (Miller et al. 2008, Dulberger et al. 2010, Galloway et al. 2017).

The Department has conducted CWD surveillance since 1997. Using a combination of targeted and general surveillance, >28,000 samples from wild deer, elk, and moose were tested. Although 55 deer (47 white-tailed deer, 8 mule deer) tested positive for CWD since focused testing began in the area surrounding the initial 2021 detection, only one elk has tested positive for CWD in Idaho. The detection was located in GMU 14 near White Bird and falls within the outer radius of detections in deer to date. Prevalence in white-tailed deer and mule deer was estimated at <2% based on hunter-harvested animals sampled in GMU 14 during 2023. Due to currently low prevalence in elk, management actions in the current CWD management zone are focused on deer and consistent with actions outlined in the CWD Strategy (IDFG 2021).

Treponeme-Associated Hoof Disease

Treponeme-associated hoof disease (TAHD) is a relatively new condition in elk. Elk with hoof problems were first recognized (~2000) in southwestern Washington, followed by a dramatic increase in reported number of affected animals by 2008. Since 2008, extensive surveillance by Washington Department of Fish and Wildlife confirmed TAHD in elk in 14 counties in western Washington, with scattered but unconfirmed cases in eastern Washington. The disease was diagnosed in a cluster of northwest Oregon elk in 2014. Since then, confirmed cases occurred in several areas of western Oregon, with scattered unconfirmed cases in eastern Oregon. In December 2018, an adult female elk killed by a hunter near White Bird in GMU 14 displayed obvious foot abnormalities. The lower leg was submitted for diagnostic testing and TAHD was confirmed. To date, TAHD has been confirmed in elk in GMUs 6, 8, 10A, 13, 14, 18, 21, 31, and 39. Management of TAHD is difficult as information about transmission, reservoirs, and population impacts are limited. Washington culled elk for humane reasons, diagnostic efforts, and in an

attempt to prevent establishment of TAHD in Klickitat County. Oregon conducted similar humane removals and diagnostic efforts but has not attempted control efforts to date. The Department will continue to work with Washington State University, neighboring state wildlife agencies, and TAHD working groups to share and compile the latest findings on TAHD research and management. Monitoring for TAHD will be accomplished through observations during aerial surveys, reports from hunters and landowners, check stations, and necropsies.

Other Diseases and Parasites

Several other pathogens, such as giant liver fluke (Fascioloides magna), meningeal worm (Parelaphostronglylus tenuis), bovine tuberculosis (TB), and Epizootic Hemorrhagic Disease (EHD) can cause underlying impacts to elk herds but are not currently a population-level issue and were infrequently detected in Idaho elk in recent years.

Giant liver fluke — Giant liver flukes are trematode parasites found in the liver of white-tailed deer and elk in a patchy distribution in North America (Pybus 2001). To date, giant liver flukes have been documented in 1 wild elk from the Lochsa area, 2 deer from the Clearwater Basin, and 2 moose harvested by hunters in the Panhandle Region in 2020. There are large numbers of susceptible wild cervid hosts and suitable aquatic snails, which are intermediate hosts. Infected animals shed giant liver fluke larvae into the environment through their feces. When larvae enter an aquatic system, they infect aquatic snails and are later released once mature, continuing on to infect deer, elk, and moose upon ingestion of contaminated aquatic vegetation. If an introduction did occur, the parasite would be very difficult to manage without severe damage to aquatic ecosystems, because a potential control method would require treatment of impacted streams and waterbodies with implications for other aquatic species.

Meningeal worm — White-tailed deer are the natural reservoir host of meningeal worm, a nematode parasite which naturally occurs over much of the central and eastern parts of North America. To date, meningeal worm has not been documented in Idaho. Introduction of the parasite could produce very severe consequences for wild cervids, other than white-tailed deer. In addition, control of the parasite would be very difficult, as intermediate hosts, which include several species of snails and slugs, are difficult to control in the environment and there is no viable treatment for infected cervid hosts.

Bovine tuberculosis — Bovine tuberculosis is a bacterial disease (caused by Mycobacterium bovis) distributed worldwide and introduced in North America to wild deer and elk by infected cattle (Thoen et al. 1992, Hunter 1996). No diagnoses of bovine TB exist for wild cervids in Idaho. Among challenges for managing bovine TB in wildlife are absences of vaccine or treatment. The only management options would be to reduce elk populations, ban winter feeding and baiting, and enforce temporal and spatial separation of elk and livestock.

Epizootic Hemorrhagic Disease — Epizootic hemorrhagic disease is a viral disease of white-tailed deer, which is spread by Culicoides midges. The disease occurs in deer, generally as small outbreaks on an irregular basis. Based on serology, elk are exposed to EHD, but rarely contract the disease. In the last EHD outbreak (2021), 1 wild elk was diagnosed with EHD. Management of EHD is generally not feasible because there is no vaccine or treatment. The only methods to address an outbreak are to either remove all susceptible hosts or wait for a killing frost to significantly reduce midge numbers.

Other Management Influences and Challenges

Technology

Technological advances create unique challenges for wildlife managers, who must consider how those advances increase harvest rates and subsequently impact amounts of biologically sustainable hunting opportunity. For example, in contrast to rifle hunters (14% success), hunters using primitive weapons were historically constrained by limited effective range and greater skill requirements, which resulted in lower success rates (3% for archers and 6% for muzzleloader hunters, 1982 harvest data). Lower success rates for hunters using primitive weapons allow for more liberal seasons, both in terms of tag numbers and season length. More modern hunting bows and muzzleloaders shoot faster, farther, and with greater accuracy than their predecessors, resulting in success rates nearly equal to rifle hunts in some elk zones of Idaho (Figure 5). This example, as well as other technological advances, raises questions about what constitutes a primitive weapon and how fair chase is defined.

The Commission regularly reviews the use of technology for hunting and collects public input when considering modifications or additions to regulations. The following list is representative of technological improvements managers and the Commission hear about related to elk harvest and overall hunting experience.

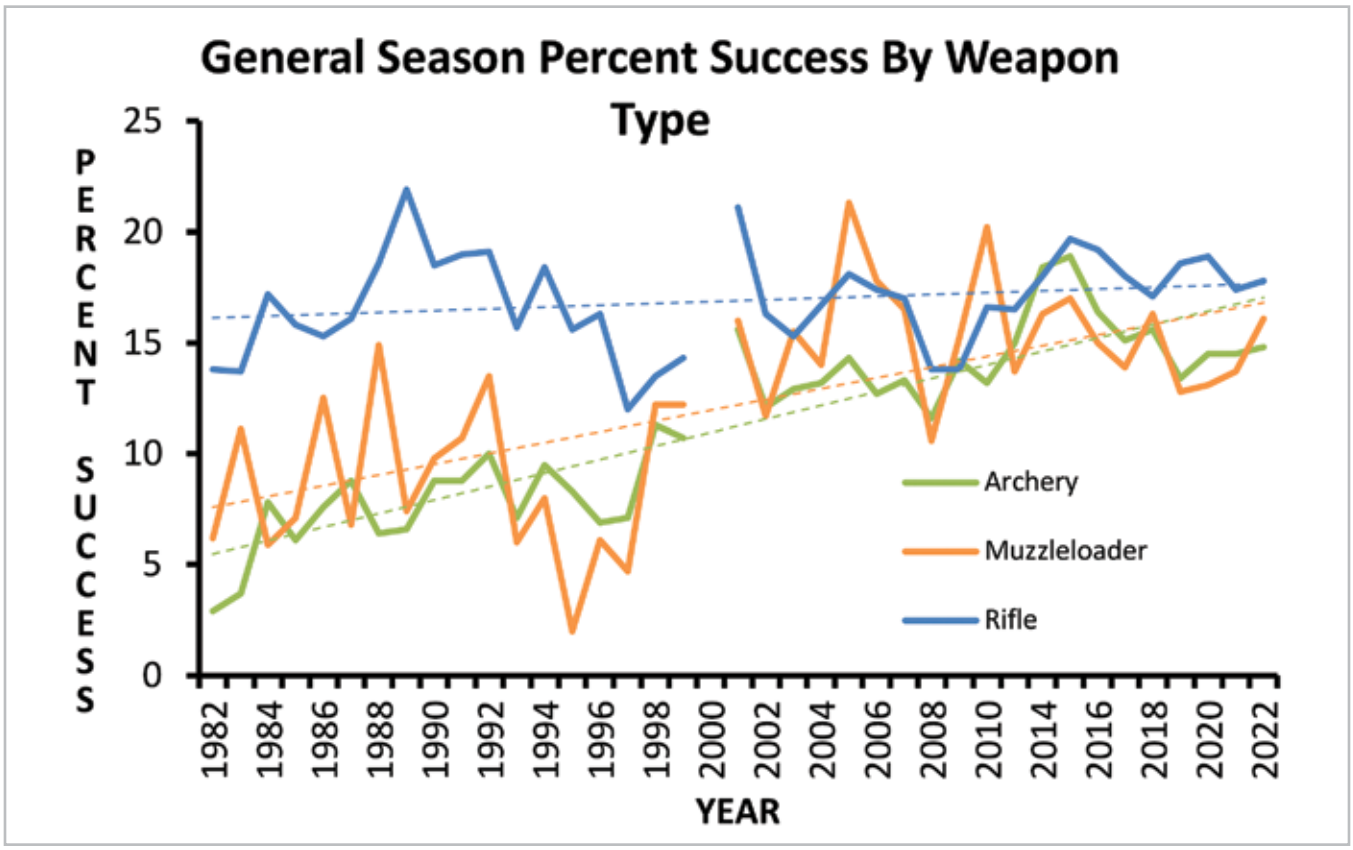

Figure 5. General season elk harvest success rates by weapon type, Idaho, 1982–2022.

- Hunting tools and equipment: range finders; high-tech scopes; ballistic calculators; thermal optics; weather and wind instruments; electronic tools used for mapping, navigation, and scouting; and trail cameras.
- Communication devices: 2-way radios, satellite phones, satellite message devices, and others.
- Improved methods of access: ATVS, UTVS, motorcycles, tracked machines, watercraft, and even aircraft have all undergone dramatic improvements over time, both in reliability and capability.
- Social media and sharing of information: ability to gather and share information has never been easier, and availability of information can potentially influence hunter numbers, harvest, and ultimately, hunter experience.

These advances offer some kind of advantage to hunters, which may impact harvest, hunter density, and ultimately, quality of hunting experiences. All of these factors influence types, length, and timing of seasons offered to elk hunters.

Hunting Access

Varying motorized access, terrain types, and landownership patterns across Idaho provide numerous elk hunting opportunities and experiences. Hunters can choose from front-country options where hunting can be found within easy driving distances from urban areas to more backcountry hunts, which require significant effort and planning to enter remote areas by foot, horseback, aircraft, or other means.

Idaho is fortunate to contain 53.4 million acres of public land, which provide wildlife habitat and hunting opportunity. Private lands throughout the state also provide high-quality habitat and support healthy elk populations. As previously discussed, elk distribution and abundance has changed over time, with more elk interacting with private lands than ever before. Many landowners embrace public hunting on their property, whereas others allow very little or no hunting. Elk quickly adapt to different levels of hunting pressure on public and private lands, which can be challenging for wildlife managers who attempt to promote harvest opportunity and access for all hunters. The Department, private landowners, and hunters recognize the value of private lands for wildlife and hunting. The Department developed ways to provide meaningful hunting access through the Access YES! Program, the Large Tracts Program, and an agreement on State of Idaho Endowment Lands. Through these programs, approximately 3.6 million acres are accessible to Idaho hunters. The Department will continue to seek out innovative ways to promote public access for elk hunting.

Contact Between Wild and Domestic Elk

The Department generally regulates private possession of wildlife, excluding domestic cervids. In 1999, jurisdiction over domestic Cervidae, defined as elk, reindeer (Rangifer tarandus), and fallow deer (Dama dama), was transferred to ISDA. At that time, ISDA developed rules for fencing, identification, licensing, fees, and disease testing for importation, all of which were updated or modified over time.

As of 2023, there were 41 domestic cervid producers, primarily in eastern and northern Idaho (Figure 6). Currently, the ISDA State Veterinarian leads investigation and inspection of domestic cervid farms and facilities with regards to presence of wild cervids. Risk assessment includes evaluating number of animals involved, extent and time of contact, record keeping, and previous presence or absence of disease. When necessary, a herd management plan is developed, with cooperation from IDFG, for removal of entrapped wild cervids from existing farms and facilities. In general, wild elk that enter a domestic

elk farm are lethally removed, but response depends on a risk assessment conducted by ISDA.

Disease transmission between domestic elk and wild elk is of concern to IDFG. Several diseases are known to occur in domestic elk, but not in free-ranging elk in Idaho. These include, but are not limited to, giant liver fluke, meningeal worm, and bovine TB. Detection of CWD in wild Idaho cervids is a concern to the domestic cervid industry. Prevention and detection of new and novel diseases in cervids will continue to be a joint effort of IDSA and IDFG. Maintaining a good working relationship and promotion of mutually beneficial practices will help ensure the future of healthy elk populations.

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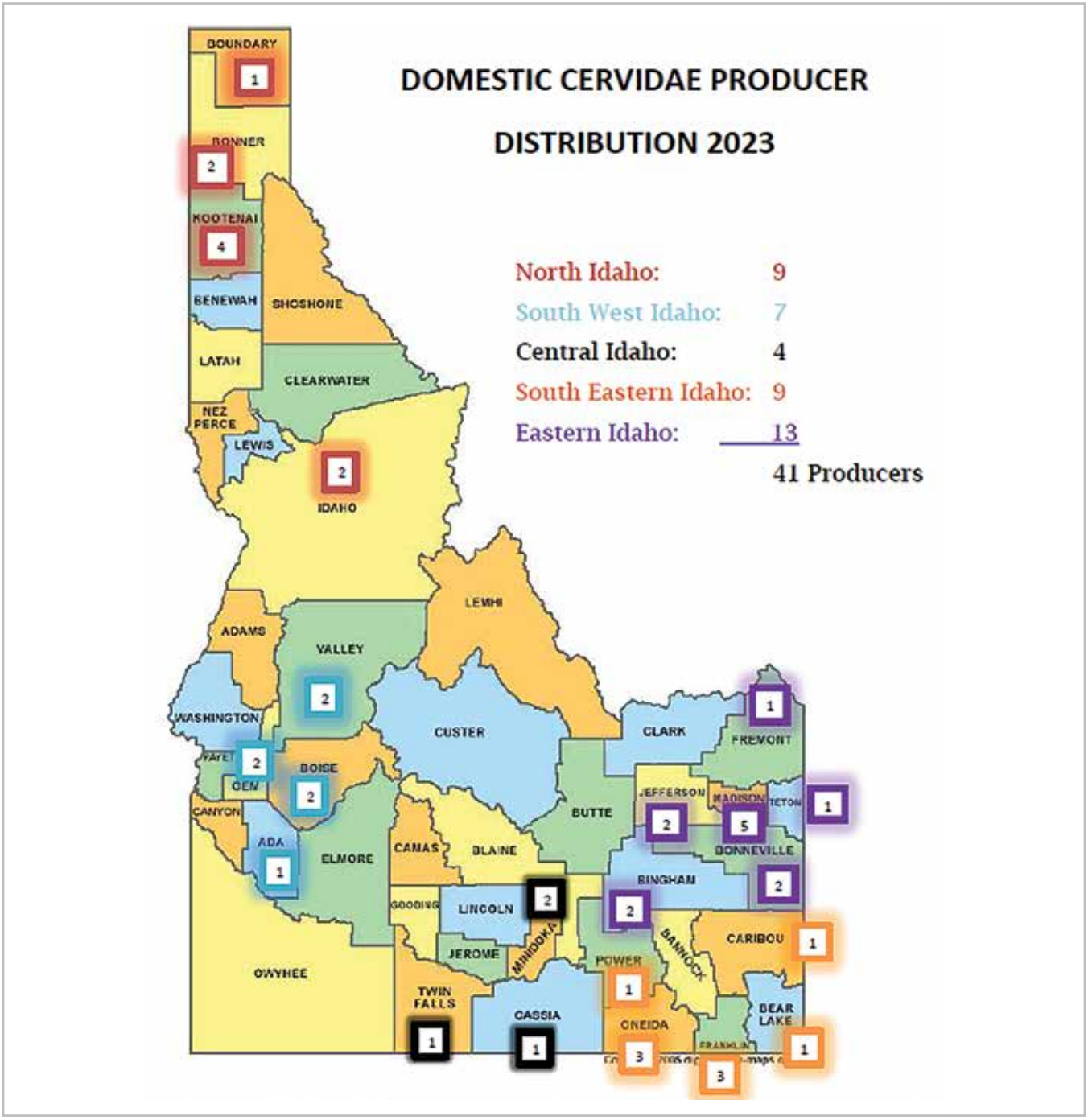

Figure 6. Geographic distribution of domestic cervid farms, Idaho, 2023 (ISDA).

Winter Feeding

Winter feeding of big game animals conducted by IDFG follows Idaho statute, administrative rule, and IDFG policy. In general, Idaho deer and elk populations are to be maintained on natural forage. When conditions result in threats to human safety or property, or will likely result in significant mortality events, IDFG may implement feeding operations. Regional winter-feeding advisory committees make recommendations to IDFG regarding needs to feed deer or elk based on temperature, snow depth, assessment of animal condition, and anthropogenic concerns. If feeding is necessary, animals are provided a diet appropriate for the stage of winter, amount of native browse in the diet, and observed body condition of animals. With adoption of the CWD

Strategy (IDFG 2021), IDFG also considers risk of CWD transmission when planning winter feeding operations. Currently, only 2 elk-feeding sites remain active, one each in Magic Valley and Upper Snake regions.

Elk and Deer Interactions

Elk interact with a suite of other species that share their preferred habitats; in Idaho, this spatial overlap may lead to significant interactions with mule deer. Numerous investigations of elk-mule deer interactions over the last 5 decades focused on potential negative effects on mule deer populations (Mackie 1970). Most concern revolved around possible correlations between expanding and increasing elk populations and concurrent declines in mule deer populations throughout the western U.S. (MDWG 2004). Research conclusions vary across studies, with some documenting direct overlap in resource use between elk and mule deer. Atwood et al. (2020) suggested overlapping resource use may depend on winter severity. Using GPS technology, the most recent research suggested mule deer avoided elk at finer scales than previously documented (University of Wyoming, unpublished data). Atwood et al. (2020) documented some diet overlap between elk and mule deer, but found deer require more specialized and higher quality forage than elk. If elk displace deer from preferred habitats, elk could cause reduced productivity and survival of mule deer, which would constitute true competition. However, to date no research has experimentally altered elk populations to explore changes in mule deer vital rates or demographics. To achieve meaningful results, such research would require replication across space and time). Although some potential exists, evidence of negative effects of deer on elk is lacking.

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Elk Research

Research conducted since the last elk plan primarily focused on understanding effects of predators and winter weather on elk survival, managing elk-agricultural conflicts, developing new population estimation techniques, and modeling and mapping seasonal habitat selection, migration routes, and seasonal ranges. Work on mapping migration routes and seasonal ranges is an ongoing effort, as additional data is accumulated in under-sampled or newly sampled areas of Idaho. Development of new population monitoring techniques will broaden the array of methods available for elk population monitoring, particularly in areas where current methods are difficult to implement (e.g., northern forested landscapes) and provide more frequent population estimates to improve dynamic elk management. Additional objectives include reducing costs of monitoring and increasing safety for IDFG personnel by reducing time spent in aircraft. Development of these approaches, detailed below, is ongoing. Research is also being conducted to improve our understanding of human dimensions issues associated with elk hunting (e.g., hunter crowding, access, and satisfaction).

Predator-Prey and Winter Weather Interactions

To better understand important drivers of cow and calf mortality, and implications of predator management, IDFG monitored survival of 1,244 adult female elk and 806 6-month-old calves from 29 populations distributed throughout Idaho from 2004 to 2016 (Horne et al. 2019). Researchers developed predictive models of mortality, which related mortality risk to wolf pack size, winter conditions, and characteristics of individual elk. Annual mortality rates (excluding harvest) for adult females and calves were 0.09 and 0.40, respectively. Calf mortality was predicted best by chest girth at time of capture, average size of surrounding wolf packs, and snow depth. Adult female mortality was best predicted by female age, average size of surrounding wolf packs, and snow depth. Based on a sensitivity analysis, chest girth contributed most to risk of mortality for calves, followed by wolf pack size and snow depth. Other than effects of senescence in the oldest (>15 years) individuals, pack size and snow depth accounted for the largest effect on mortality risk for adult females. Predation was the dominant cause of known-fate mortalities for adult females (excluding harvest) and calves. Wolves preferentially selected smaller calves and older adult females, whereas mountain lions showed little preference for calf size or age class of adult females. Implications of the research suggest managers can increase elk survival by reducing wolf pack sizes on surrounding winter ranges, particularly in areas where, or during years when, snow is deep. Additionally, managers interested in improving over-winter calf survival can implement actions to increase size of calves entering winter by increasing summer and early autumn forage resources. Although this study was prompted by management questions related to impacts of wolf predation on elk demography, mountain lions killed more elk than wolves and differences in selection of individual elk as prey indicate mountain lions may cause a greater effect on elk population dynamics than wolves. Although researchers were unable to relate changes in mountain lion populations to elk survival, future research should seek a better understanding of multi-predator systems, including how management of one predator affects others and ultimately how these interactions affect elk survival.

Managing Elk-Agriculture Conflicts

The Department conducted research on elk-agricultural conflicts in 2 areas, Magic Valley (Big

Desert, Smoky-Bennett, and Pioneer Zones) and Weiser (Brownlee and Weiser River zones, Figure 7, Guthrie 2020). We used GPS-collar data from 60 adult female elk. Researchers first examined elk use of agricultural lands and then tested 2 deterrents (targeted lethal removal by sharpshooting and modified fencing) to potentially deter elk from using agricultural lands. As anticipated, elk used agricultural lands most during night-time hours, beginning at dusk and declining before morning. Agricultural land use by elk increased throughout the growing season (Figure 8), and elk also selected for areas closer to forest cover. Researchers theorized risk avoidance, whether by predators or humans, explained reduced selection of agricultural lands in spring, when young calves were most vulnerable, and selection for forest cover, which might limit visibility of elk from predators.

Approximately 53% of collared elk received deterrent treatments, whereas the remaining 46% did not receive treatments and were used as control animals. Habitat selection patterns of GPS-collared treatment elk (e.g., elk in groups subject to lethal removal) and control elk were compared at the summer home-range and movement-step scale to quantify effects of lethal removal. Camera-trap data were used to evaluate effectiveness of pasture fence modification. A portion of elk herds exposed to lethal removal reduced their selection of fields where sharpshooting occurred. The pasture fence modification treatment showed elk moderately reduced use of treatment fields, but results varied across treatment sites. Both deterrents were most effective in areas where elk densities were low and alternative agriculture food sources were abundant, suggesting deterrents were more effective in displacing elk from specific locations than deterring elk from using agricultural lands more generally.

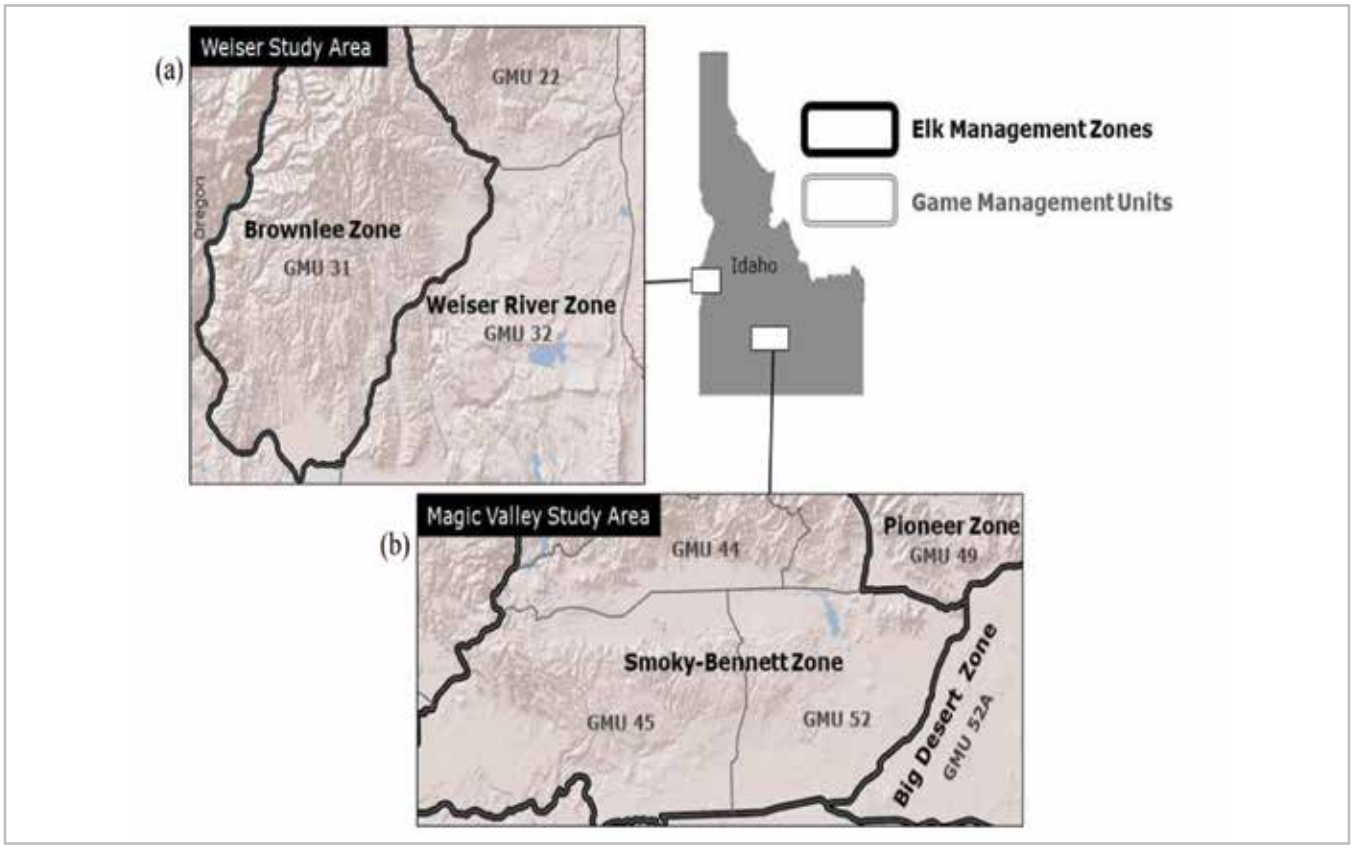

Figure 7. Elk-agriculture conflict project study areas located near a) Weiser and b) in IDFG's Magic Valley Region, Idaho (Guthrie 2020).

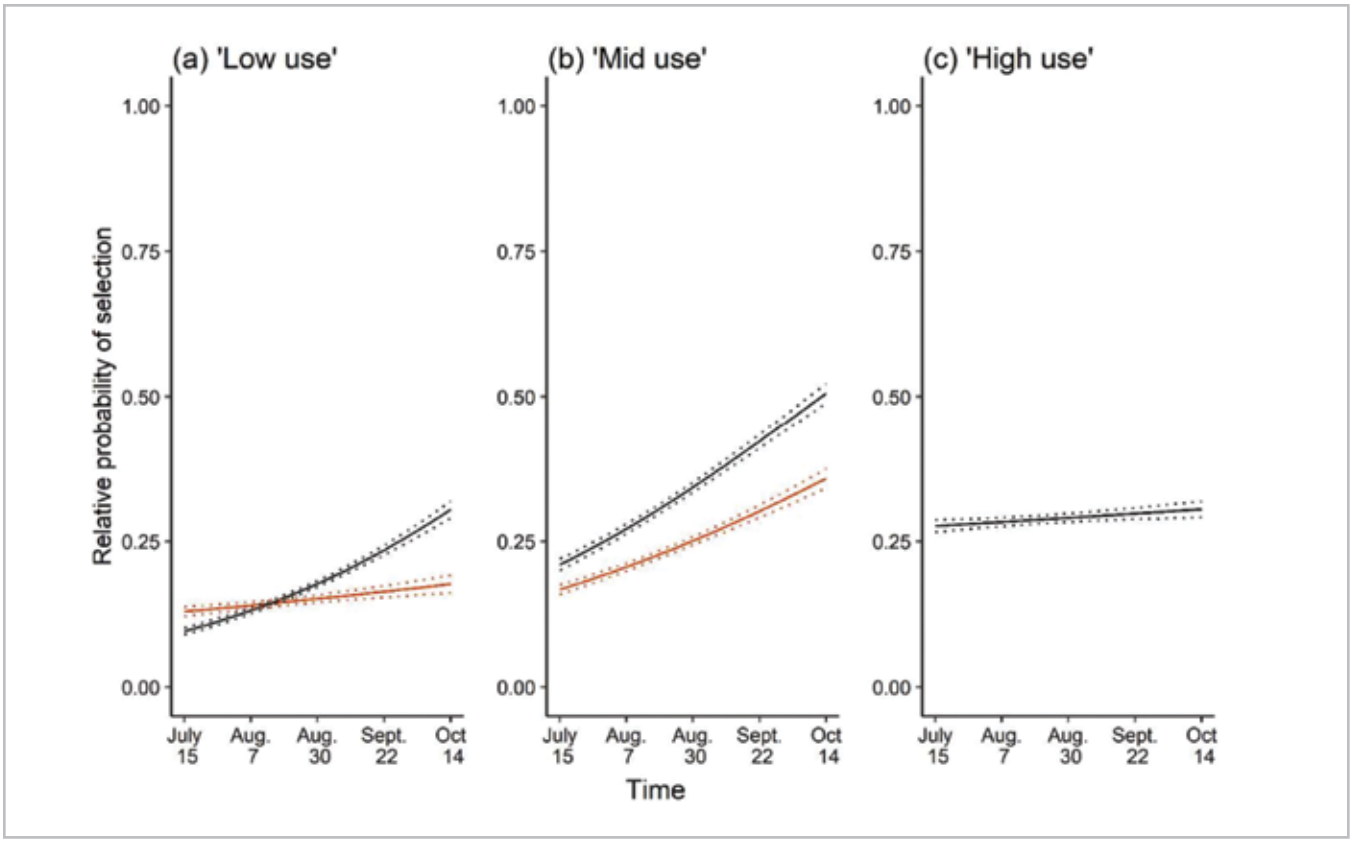

Figure 8. Predicted probabilities (± 95% CI) of agriculture selection during night hours for a) low-use, b) mid-use, and c) high-use elk. Use levels were based on the amount of agricultural lands within elk home ranges. Magic Valley elk are shown in black and Weiser elk are shown in red (Guthrie 2020).

Migration and Seasonal Habitats

In 2021, IDFG completed a research project predicting parturition (i.e., calving) habitat of elk. Researchers identified parturition sites based on movement behavior of 1,091 adult (≥2 years old during the previous breeding season) cow elk during May–July, 2007–2020. Because habitat characteristics vary substantially and elk in different parts of the state may behave differently, researchers developed separate models for 6 populations based on similar ecoregional characteristics within a population. (Figure 9). Habitat selection was evaluated by comparing characteristics of parturition locations with habitat available on the broader landscape.

Further, habitat selection was evaluated at 2 levels: a broad-scale analysis to determine characteristics of the general area elk chose as a parturition site; and a local-scale analysis to identify characteristics of specific parturition sites. Estimated resource selection functions were used to predict relative probability that an area would be chosen as a parturition site (Figure 10). Of 314 parturition events identified, most (64%) births occurred during the last week of May through the first week of June. Statewide, mean parturition date was 2 June with no substantial differences among populations. Although there was substantial variation in habitat characteristics important for each population, most showed a strong preference for shrub landcover at both broad and fine scales.

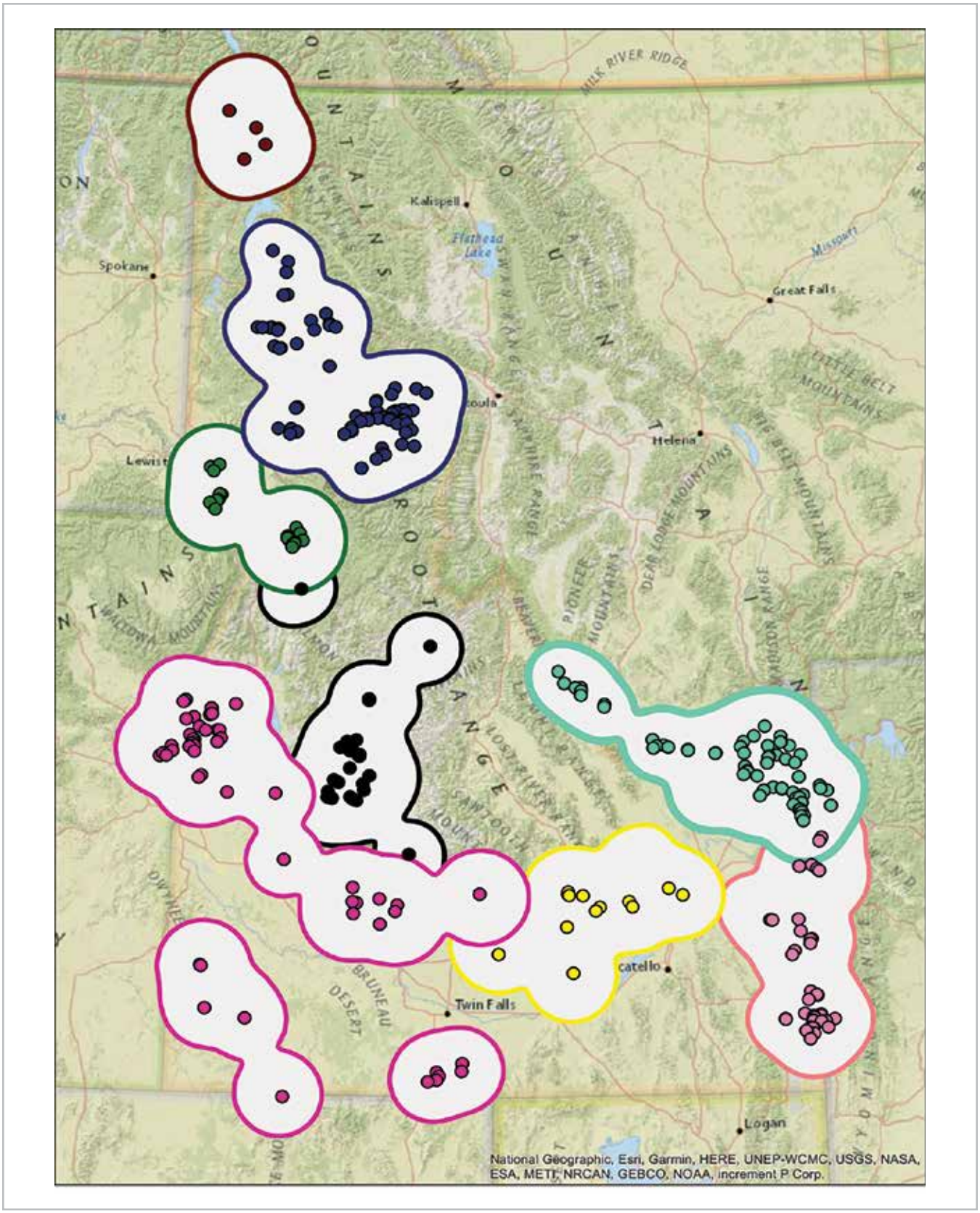

Figure 9. Parturition locations (dots) and boundaries of 8 populations used to model elk calving habitat, Idaho.

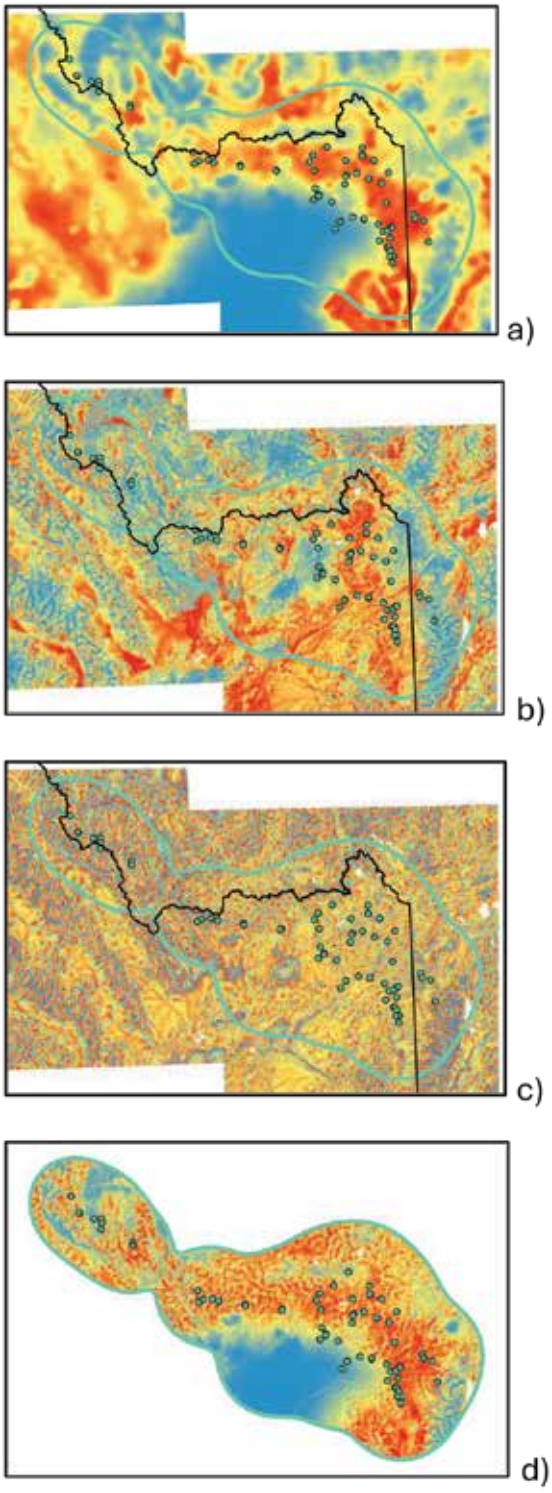

Figure 10. Predicted a) broad-scale selection, b) local-scale selection, c) relative local-scale selection conditional on having selected the general area at the population-scale, and d) relative selection considering both broad- and local-scale calving habitat selection for elk in the Southeast Dry Forest population, Idaho. Relative probability ranges from 0 (blue) to 1 (red), blue outline is the population boundary, and blue circles are documented parturition locations.

The Department is currently building statistical models to predict summer and winter ranges for elk in areas of Idaho with sufficient data to fit a reliable model. For summer, staff are evaluating movement patterns to determine whether elk behavior warrants a separate model for early summer versus late summer seasons. Both summer and winter models include pertinent vegetation classes and annually varying summer (time-integrated normalized difference vegetation index [NDVI]) and winter covariates (snow duration, median and maximum snow depth). Once built, researchers plan to use these models to identify important habitat for elk and better understand how elk habitat use changes annually based on weather and through time based on landscape change.

Elk Monitoring Techniques

The Department continues to develop and refine use of camera stations to estimate elk population composition and abundance. To date, the approach to estimating composition falls into 2 categories depending on whether a population demonstrates a strong seasonal migration. For migratory populations, cameras are placed along previously identified migration routes (see Mapping Migration Routes and Seasonal Ranges) for the duration of migration. Given elk are moving through these areas on migration, we can reasonably assume a simple count of bulls, cows, and calves in photographs provides an unbiased estimate of calf:cow and bull:cow ratios (i.e., most animals are not captured multiple times on the same camera). For nonmigratory populations, investigators deployed cameras as a spatially balanced random sample and on the nearest soil-surfaced road or trail near randomly selected locations. Researchers are still examining how these 2 types of deployments (random vs. roads or trails) influence composition estimates. Preliminary results from >750 camera deployments suggested we obtain more elk images in late summer and on roads and trails. Setting cameras on roads and trails, however, might bias estimates as a result of differences in habitat selection among age and sex classes. Potential bias might also be introduced by differences in movement rates among age and sex classes, because animals that move more will be more likely to cross in front of a camera than those that move less. Researchers are working to account for these potential biases and develop a standard protocol for deploying cameras to estimate elk age and sex structure.

The Department's research on development of camera-based methods to estimate elk density has focused on statistical model testing and viewshed estimation (i.e., the area each camera is sampling). Based on images from random camera deployments set to take an image every 10 minutes, we examined differences between space-to-event and instantaneous sampling models (Moeller et al. 2018). At each 10-minute timestep, space-to-event models randomly order cameras and then sequentially count through photograph viewsheds until an elk is observed. Total viewshed areas sampled before an elk is detected are used to estimate population density. Alternatively, instantaneous sampling models calculate average number of individuals observed/unit area sampled during each 10-minute timestep. Density is then estimated by determining the mean value of individuals/area sampled across all timesteps. For both space-to-event and instantaneous sampling models, density can be multiplied by the area of inference (e.g., GMU) to obtain an estimate of abundance. Researchers are still working on refining the most appropriate approach for accurately estimating viewshed areas as conditions change and calculating confidence intervals for estimates from both of these models.

Both predation and human harvest can limit elk population abundance, but yearly differences in weather (e.g., drought, snow, etc.) can also significantly influence elk populations (Wang et al. 2002, Lukacs et al. 2018). Elk calves are particularly vulnerable to severe winter weather conditions (Lukacs et al. 2018, Horne et al. 2019).

Department staff are building survival models for elk calves (6–12 months old) to identify the most informative weather covariates. These covariates include multiple indices of winter weather severity and vegetative growing conditions from the previous summer. Winter covariates tested to date include median and maximum snow depth, snow duration, and several winter severity metrics that incorporate snow depth and temperature (DelGuidice 1995, Baccante and Woods 2010). Summer covariates include several indices meant to capture variation in vegetation during the growing season, primarily by quantifying attributes of curves fitted to weekly values of the normalized difference vegetation index (Hurley et al. 2014). Initial modeling indicated no single winter weather metric effectively captures the influence of weather on elk calf survival. Researchers are now building more complex models with multiple interacting covariates to increase our ability to predict elk calf survival.

In collaboration with Speedgoat, a software development company (Nowak et al. 2018), IDFG is developing an integrated population model (IPM) for elk (Besbeas et al. 2002, White and Lubow 2002). An IPM links multiple data sources within a population model. Thus, there is a level of dependency among data sources. For example, vital rates, such as survival and recruitment, must be congruent with changes in abundance and population growth. Inevitably, some amount of observation error (i.e., difference between an estimate of a measurement based on a sample and the true measurement) occurs for every data source IDFG collects, but the IPM framework is able to identify and correct for some of that error. As researchers continue to develop structure of the IPM, IDFG staff have focused

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extensively on improving methods to estimate important population parameters needed to fit the model. These include improving estimates of composition (age and sex structure) and abundance in forested landscapes using cameras, building models to understand influences of annual changes in weather on calf and cow survival, and better understanding effects of hunting and other species on elk population dynamics.

Multi-predator, Multi-prey Dynamics

Investigators are continuing research on predator-prey dynamics in Panhandle and Clearwater regions as a part of a collaboration with the University of Idaho and University of Montana. Objectives of this research are to evaluate potential indirect effects among prey species, such as apparent competition, and direct effects among predator species, with potential cascading effects on prey populations. Preliminary results indicated mountain lions are the primary predator of white-tailed deer in northern Idaho and wolf predation on deer is relatively low. However, given the abundance of deer in northern Idaho, wolves might still rely on deer as their primary food source, thus allowing maintenance of wolf abundance at a level that leads to high predation rates on less numerous (in comparison to deer) elk. Department researchers are currently examining wolf and other predator (mountain lion, black bear, coyote, and bobcat) diets to evaluate contributions of deer, elk, and other prey species to predator diets. Researchers are also working to understand interactions among predator species and downstream effects of predator-predator interactions on prey, including elk. Ultimately, IDFG plans to combine these different sources of information in a community model to better understand multi-predator, multi-prey dynamics in northern Idaho.

Human Dimensions

The Department regularly conducts hunter opinion surveys to provide wildlife managers with improved knowledge on preferences and desires of Idaho sportsmen and women. Since development of Idaho's previous Elk Management Plan, IDFG and the University of Idaho have partnered to conduct a number of surveys, which provide new and meaningful insight into elk hunters' opinions, preferences, and satisfaction. Department researchers made significant contributions to these investigations, which will directly improve elk management and hunting opportunities.

Hunter Congestion

Since 2019, IDFG has partnered with the University of Idaho to conduct statewide surveys of resident elk hunters to better understand perceptions of crowding and congestion (Wallen and Redmond 2021; Wallen 2022a, b). In total, 10,886 resident hunters who purchased a general-season elk tag for were surveyed (4,841 in 2019, 3,634 in 2020, 2,411 in 2021). Average rating of crowding across all 3 years was 5.7 on a 9-point scale (1 = not at all to 9 = extremely), with no significant difference among years or between A and B tag hunters. Elk hunters rated crowding higher than white-tailed deer hunters (4.7), but lower than mule deer hunters (6.1). From another perspective, 18% of elk hunters felt crowding is not an issue. Of those who believed crowding was an issue, 60% attributed the problem to other hunters and 22% to access challenges.

Consistent across all survey years and hunter demographic categories was a belief there are now more hunters on the landscape than in the past. Similarly, across all survey years and demographic categories, hunters perceived more crowding on public lands than private lands. In relation to satisfaction, findings suggested a slight negative correlation between crowding and satisfaction. In other words, as crowding increases, satisfaction slightly decreases.

Moreover, satisfaction was higher among hunters who harvested game, but the relationship between crowding and satisfaction did not change based on hunter success.

Satisfaction

As part of IDFG's crowding and congestion surveys (2019–2022), researchers also asked hunters about their opinions, preferences, and satisfaction. Compared to statewide survey of elk hunters in 2012, current (2019–2022) resident elk hunters' satisfaction with their overall elk hunting experience was unchanged. From 2019 to 2022, satisfaction ranged 2.9–3.1 on a 5-point scale (1 = very dissatisfied, to 5 = very satisfied), whereas satisfaction averaged 3.1 on a 5-point scale in 2012.

In addition, an important component of satisfaction is alignment of expectations; in this case, hunters' opinions about important features of a hunting experience and to what extent they experienced those features of the hunting experience. For 2019–2021 general elk seasons, an analysis was conducted to understand relationships between experiences hunters rated as important (1 = not at all important, to 5 = extremely important) and the extent to which they actually experienced those features (1 = not at all, to 5 = very much). Findings suggested a majority of features hunters rated as important to their satisfaction were not often experienced when they hunted elk; these included seeing legal bulls in the field, seeing cow elk in the field, seeing trophy bulls in the field, shooting at a legal bull, shooting at an adult bull, and harvesting an animal. These findings were consistent across 2019, 2020, and 2021 general elk seasons, with little to no variation observed across season types. Results of this research provided a starting place for managers in their conversations with the public during the season setting process and aided in development of elk zone population objectives established in this plan.

Access

As part of IDFG's access research (2019–2023), multiple data collection efforts were conducted to understand hunters' perceptions of and experiences with access. Based on surveys of 2019–2021 general seasons, hunters perceived their access to huntable lands has declined slightly, rating access to public land at 2.5 and private land at 2.2 (1 = much less access, to 5 = much more access). These findings informed a policy brief published by the University of Idaho's Policy Analysis Group and initiated a large-scale qualitative study to understand hunters' experiences with access and connotations of access (Wilson and Wallen 2021). Robinson and Wallen (2023) found Idaho big game hunters viewed access in similar and contrasting ways, and they helped further define the diversity of Idaho's access landscape to better inform on-the-ground management and planning

PHOTO: CC-BY IDAHO FISH AND GAME

Economics of Elk Hunting

Elk provide significant value to the state's economy. Elk hunting directly benefits the state's economy, and elk management and habitat conservation benefit outdoor recreation and tourism industries. In 2020, Idaho hunters spent $666 million on hunting-related purchases (Sportsmen's Alliance Foundation 2021). This spending generated a multiplier effect on the state's economy of $981 million, provided $442 million to Idaho's GDP, generated 9,300 jobs, and provided $50 million in state and local tax revenue.

The Department's mission is to preserve, protect, perpetuate, and manage all of Idaho's fish and wildlife resources for the benefit of Idaho's citizens. The Department does not receive money from general fund taxes; therefore, license and tag revenue provides critical funding to carry out this conservation mission. Elk hunting is a primary revenue generator for IDFG, which in turn supports management of many other species. Elk are one of Idaho's most highly sought-after big game species, second only to deer, but generate more revenue than any other species. Each year, approximately 107,000 hunters spend $10 million on elk tags in Idaho, accounting for 49% of all tag revenue and 18% of combined license and tag sales.

Nonresident hunters play an important role in funding for IDFG. Although nonresident elk hunters represent only 13% of Idaho's elk hunters, they generate 83% of elk-tag revenue. Overall, sale of nonresident licenses and tags account for 55% of IDFG's total license and tag revenue (FY2022). In recent years, nonresident demand for elk tags exceeded available tags, whereas resident demand remained relatively stable with a slight upward trend. These trends in demand are expected to continue.

The Department's programs to conserve habitat and manage elk populations also benefit other wildlife species. Travel and tourism is Idaho's third largest industry and outdoor recreation is a primary draw for tourists. Wildlife and healthy wildlife habitat are critical to the outdoor recreation experience. Although difficult to quantify, Idaho's outdoor recreation and tourism industry benefit from IDFG's wildlife, habitat, conservation, and access programs. Every 5 years, the U.S. Fish and Wildlife Service and U.S. Census Bureau produce a summary report on economics associated with Wildlife Watching. In the latest report containing state-specific summaries (2011), an estimated 281,000 nonresident tourists and 439,000 Idahoans participated in wildlife watching activities across the state and spent >$432 million in trip expenditures (USDI 2011). The estimate does not account for inflation or growth experienced by Idaho's tourism industry since 2011. In part, these wildlife watching trips contributed to record-high revenue for Idaho tourism (FY2022), with a 39% increase year-over-year for the 2% lodging tax. These numbers are expected to continue growing and are critically important to Idaho's economy, particularly in rural communities.

Elk hunting also benefits rural Idaho communities, and supports Idaho's economy, through the outfitting industry. Idaho outfitters provide an important service to elk hunters, particularly nonresident hunters, and contribute a vital economic stimulus to the state. Annually, outfitted elk hunters spend >$1.3 million on hunting licenses and elk tags. The Idaho Outfitters and Guides Licensing Board is the agency responsible for regulating the outfitting and guiding industry. Currently 117 outfitters are licensed for elk hunting in 83 of the state's 99 GMUs.

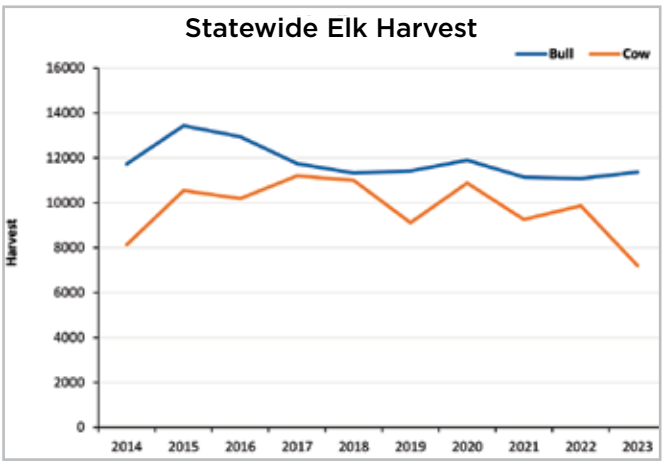
Statewide Management Direction

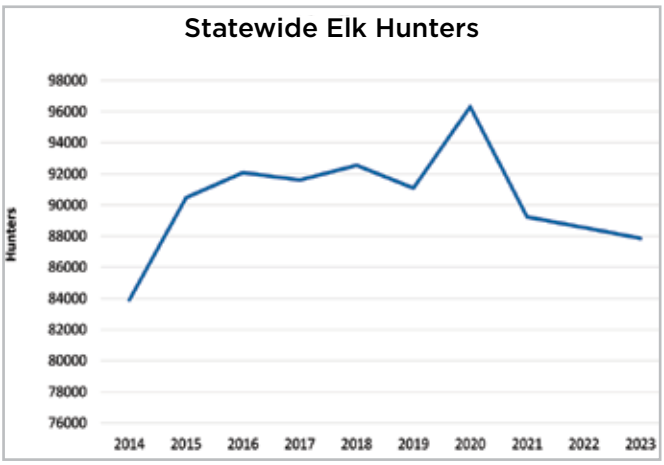
PHOTO: CC-BY SHUTTERSTOCK.COM

Proposed 6-year Statewide Management Direction:

- Continue to offer general-season elk hunting opportunities where sustainable by managing elk populations, predator populations, and improving elk habitat.
- Work with partner organizations and interested private landowners to facilitate movement of elk among seasonal ranges, improve forage resources, and manage disturbance.
- Implement measures to reduce elk-caused crop and property damage.
- Work with partner agencies, organizations, and private landowners to improve elk habitat across the state.
- Manage impacts of wildlife diseases on elk and livestock.
- Increase public knowledge and understanding of elk ecology and management by enhancing outreach and education efforts.
- Pursue methods to improve public participation and use of public survey data in elk management.

Statewide elk management direction (Table 6) is tiered down from the 2015 IDFG Strategic Plan and provides higher resolution for management objectives, accounting for stakeholder desires, agency resources, and resource opportunities and challenges. Current status of each elk zone population objective is pictured in Figure 11. Management direction tables in each of the following elk zone summaries detail important strategies to fulfill management directions most influential in each respective elk zone. These strategies will form the foundation for future annual work plans, performance evaluations, and budget requests.





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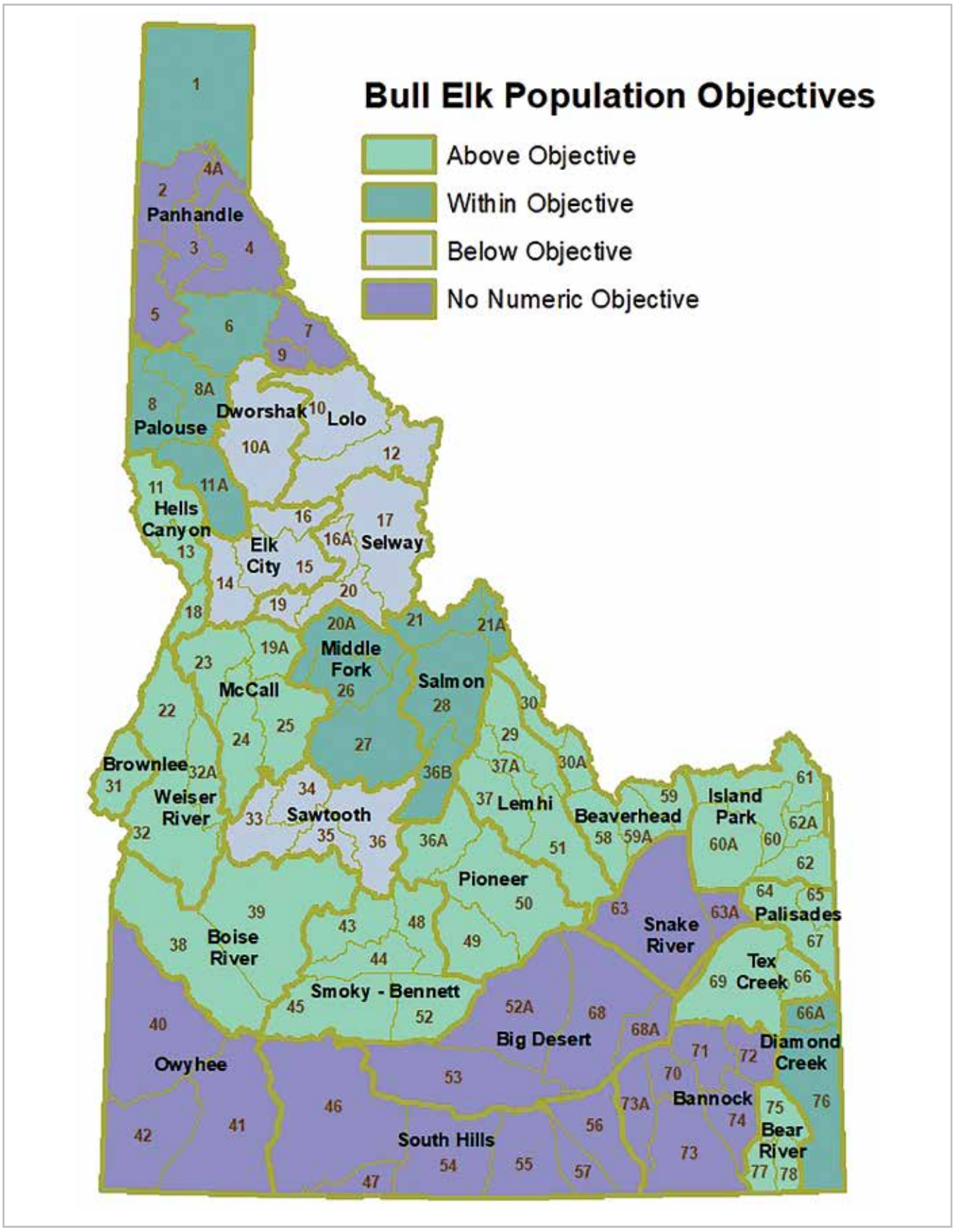


Figure 11. Bull elk population objective status by Idaho elk zone, 2023.

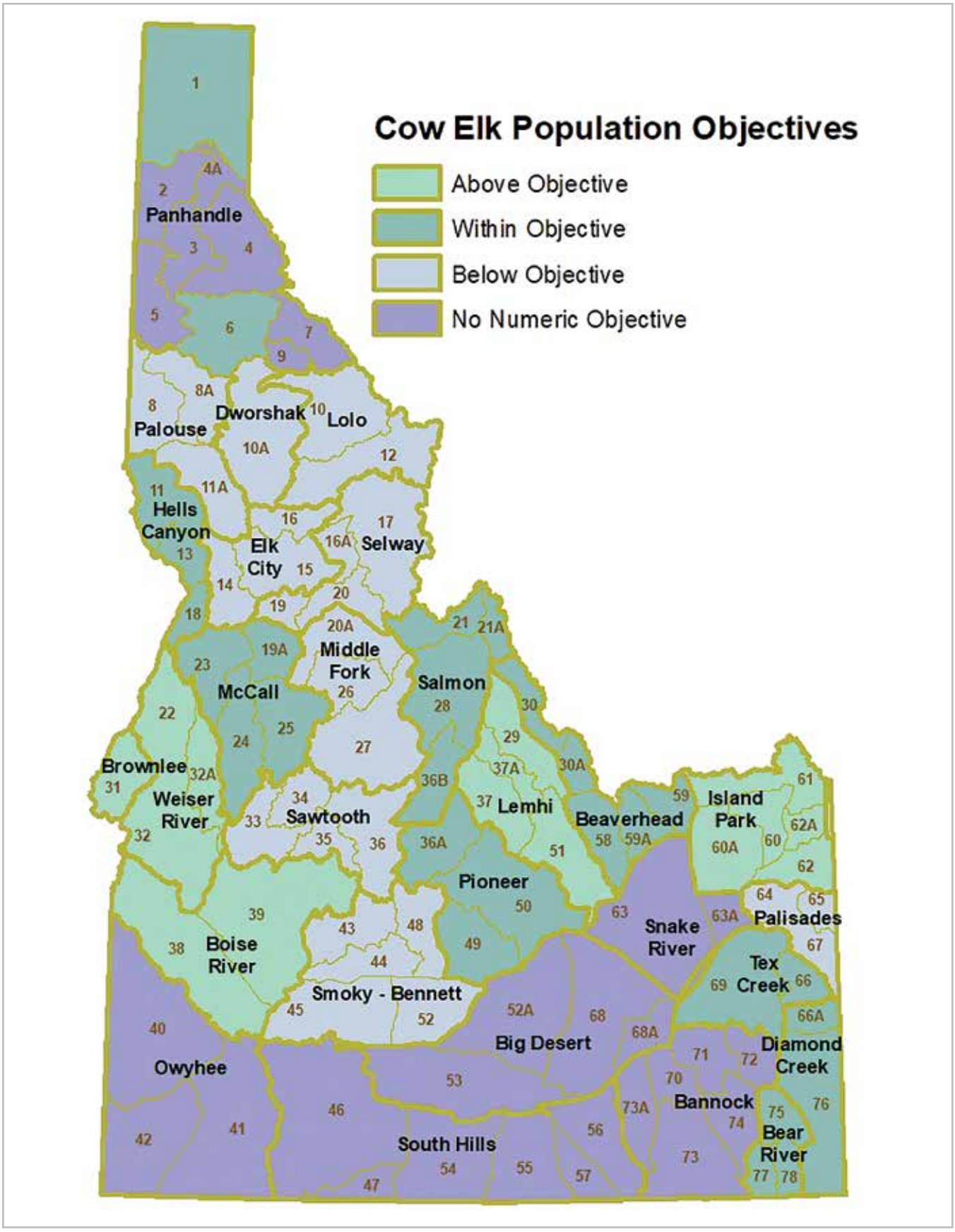


Figure 12. Cow elk population objective status by Idaho elk zone, 2023.

Table 6. IDFG Strategic Plan (2015) objectives and corresponding elk management directions.

Objective	Elk Management Direction
Maintain or improve elk populations to meet the demand for elk hunting.	When zones are meeting objectives, actively manage elk populations commensurate with habitat capabilities to maximize reproductive performance and overall herd health. When zones are exceeding objectives, provide additional harvest opportunity. When zones are below objectives, identify limiting factors, and when appropriate implement management actions or efforts to address identified limiting factors. Develop an elk monitoring program which includes modeling or monitoring zone population abundance during years between surveys. Develop biological studies to improve population, predator, and habitat management capabilities. Implement measures to minimize, eliminate, or compensate for elk depredations.
Provide a diversity of elk hunting opportunities.	Assess hunter desires for different types of elk hunting opportunities. Provide annual elk hunting opportunities. Provide a diversity of hunting opportunities, including socially desirable and biologically sustainable levels of antlerless and mature bull opportunity. Enhance and maintain access for elk hunting.
Improve citizen involvement in the decision-making process.	Pursue methods to increase and improve public participation in elk management. Improve implementation and use of human dimension and public survey data to inform elk management decisions. Provide timely feedback on decisions to the public.

Objective	Elk Management Direction
Increase capacity of habitat to support elk.	Collaborate with public land managers and private landowners to improve key summer, winter, and transitional elk habitat to meet statewide objectives. Improve awareness and inclusion of elk habitat effectiveness in land management activities on public and private lands. Find new ways to efficiently and effectively monitor habitat. Integrate habitat assessments in development of elk population goals. Continue IDFG involvement in long- and short-term land-use planning efforts by providing information, analyses, and recommendations to improve and preserve elk habitat. Collaborate with federal and state agencies, Native American tribes, counties, nonprofit organizations, private landowners, and others to incorporate important elk habitat and migration routes into management decisions.
Work towards minimizing impacts of wildlife diseases on elk populations, livestock, and humans.	Minimize influence of disease as a limiting factor in elk populations by instituting management actions to limit disease spread and prevalence. Collaborate with ISDA, state and federal agencies, and private producers to minimize interactions between elk and livestock. Minimize artificial concentrations of wintering elk in, and translocation of elk from, areas where CWD occurs.
Increase public knowledge and understanding of elk populations, hunting, and management.	Increase public understanding of elk ecology and management by improving or enhancing outreach and education efforts.

Elk Management Zones

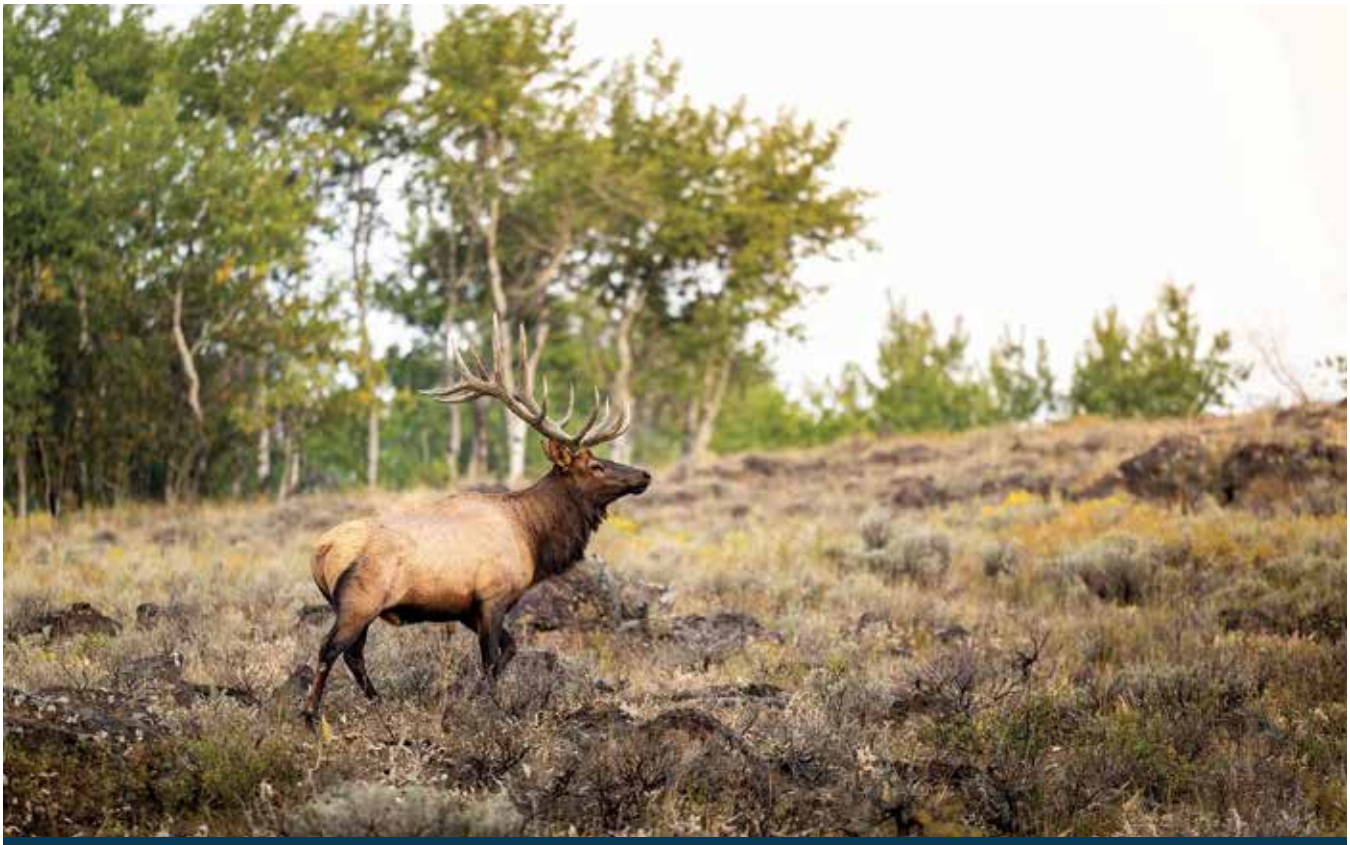


PHOTO: CC-BY WILL BALES AT IDAHO FISH AND GAME

Statewide direction and guidance for elk are shown in Table 6. However, elk management strategies and priorities may be different at the zone level due to variation in population dynamics, agricultural considerations, habitat condition, hunter characteristics, and social attitudes. This elk plan provides population management direction for each zone based on hunter preferences, elk conflict concerns, and status of elk populations. The Department drafted elk management zone objectives for the next 6 years based on hunter input, harvest trends, recent aerial survey results, current elk population status, damage and depredation issues, and biological potential for herd growth when considering primary limiting factors. As part of IDFG's evaluation, staff considered factors such as weather, predation, social carrying capacity, and habitat which might limit ability to maintain or increase elk numbers in each zone. The Department also evaluates harvest and hunter trends at both statewide and zone levels.

The following zone-specific management tables provide specific priorities, management directions, and strategies to be implemented or focused on at the zone level. Proposals to manage populations are based on elk movement and other biological data, similar habitats, and similar management priorities. The zone management system has been in place since 1998. Included in this revision of the elk plan are several modifications to zone boundaries which were made to address emerging issues and facilitate more effective management. Zones affected by these modifications include Big Desert, Snake River, Boise River, and Owyhee. These changes maintain a total of 28 elk management zones (Figure 12).

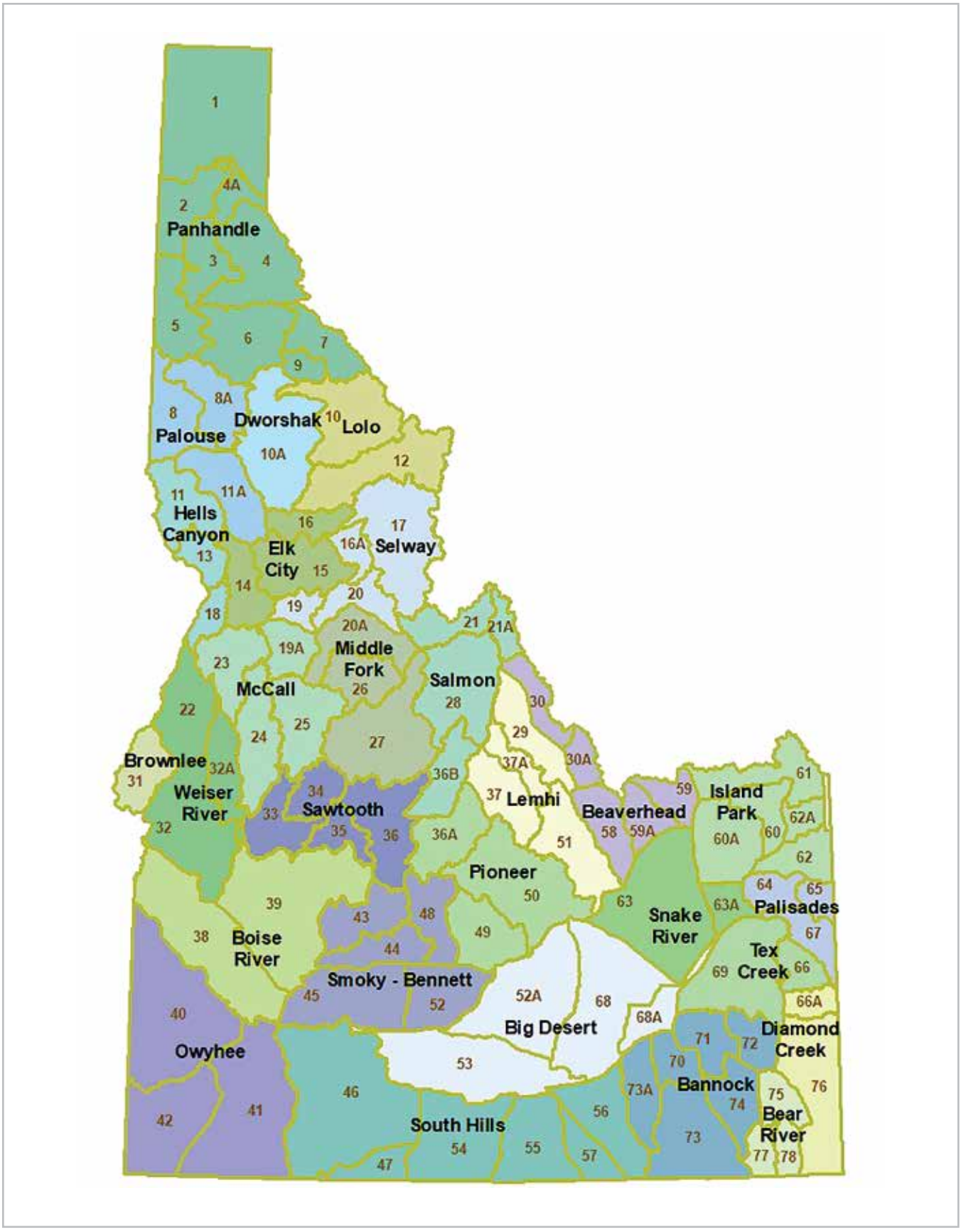
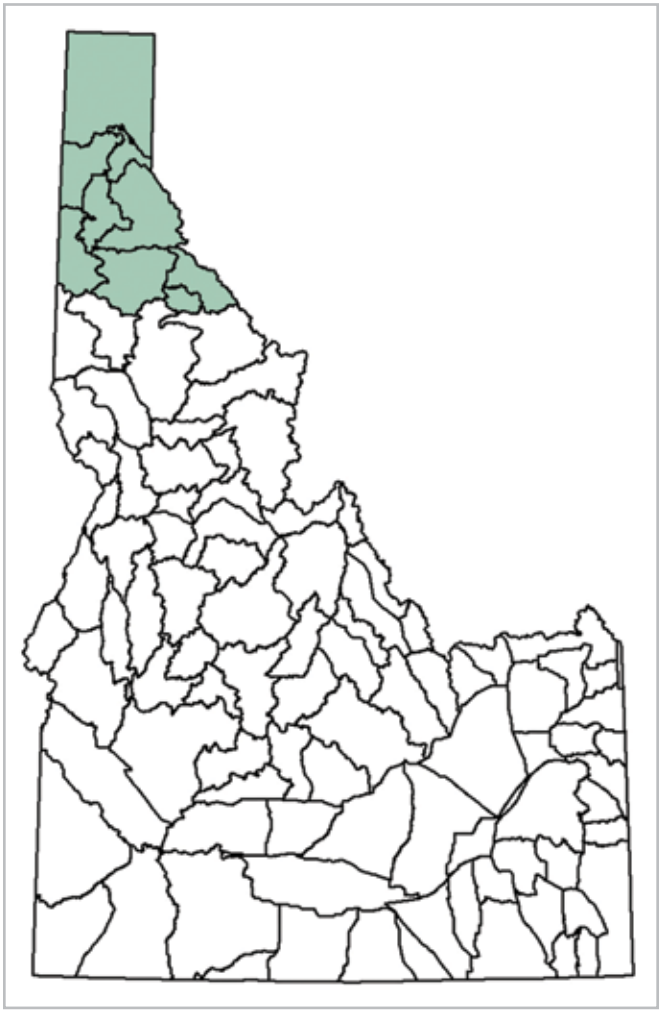


Figure 12. Elk management zones, Idaho, 2023.

Panhandle Zone

Game Management Units 1, 2, 3, 4, 4A, 5, 6, 7, and 9 Administered by IDFG's Panhandle Region



Proposed 6-Year Management Direction:

- Performance and management of Panhandle Zone is influenced by landscape-level habitat trends, predation, and depredation issues, although impacts of these limitations vary among GMUs.
- Current population management direction in Panhandle Zone is to stabilize and maintain elk populations on private lands, while continuing to address depredation issues as they arise. On public lands, management direction is to increase elk populations commensurate with available habitat.

Description

The Panhandle Zone is the largest elk zone in the state, encompassing 9 GMUs. Much of the zone is characterized by closed-canopy forest dominated by fir (Abies spp.), hemlock (Tsuga spp.), western red cedar (Thuja plicata), pine (Pinus spp.), western larch (Larix occidentalis), and spruce (Picea spp.). Although much of the habitat is under federal management, private timber companies and the State of Idaho also own a significant portion. Agricultural fields are common throughout lower elevations of the Kootenai Valley, Silver Valley, Minaloosa Valley, the Palouse, and the Rathdrum Prairie, whereas suburban developments continue to expand throughout the zone.

The following 6-year population goals for Panhandle Zone units were developed through review of harvest data, demographic trends, and population estimates from remote cameras where available. For more information on how estimates were calculated, see the Population Monitoring section.

GMU 1

This unit leads the zone in agricultural depredation issues and management is focused on addressing those issues through harvest, while encouraging growth of elk populations on public lands. Elk on federal lands within the GMU are likely impacted by declines in habitat quality in certain areas. Predation also impacts population performance in this unit. Elk harvest has fluctuated with changes to general and controlled hunt structure over the past decade. The 6-year goal is to retain a stable population on private lands and continue to address landowner conflicts as they arise, while encouraging an increase on public lands as habitat availability and quality allows.

GMUs 2 and 5

These units encompass substantial amounts of private land, which results in agricultural depredation issues, an in-turn limits potential for

significant elk population growth and expansion. Amount of private land also complicates hunter access in some areas. Elk harvest trends indicate a stable population. The 6-year goal is to maintain the elk population at near-current levels, while addressing landowner conflicts where they arise.

GMU 3

This unit is a mix of private and USFS lands which support high densities of hunters and harvest. Because the GMU supports large numbers of hunters, maintaining elk herd productivity while managing agricultural conflicts is a high priority. The 6-year goal is to maintain elk numbers on private lands while encouraging herd productivity on public lands.

GMUs 4 and 4A

A portion of GMU 4 was surveyed between 1998 and 2012 to monitor trends in population size. Although trend data is no longer collected on an annual basis, a survey of a portion of the trend area in 2023 resulted in an estimate of 31 calves:100 cows. Harvest data indicate elk populations in units 4 and 4A likely declined in recent years. Predation, particularly mortality attributed to mountain lions, significantly impacted elk calf survival in parts of units 4 and 4A. The 6-year goal is to increase population levels in these units. Effecting a population increase will also require addressing habitat quality, as decreasing forage production, due largely to the predominance of closed-canopy forest, likely contributed to elk population suppression and declines. These GMUs are largely comprised of public land, with the majority managed by the USFS.

GMU 6

This unit includes extensive private timber lands in the western portion and predominantly USFS lands on the eastern end. Large tracts of actively managed forests on private timber lands tend to be more productive for elk populations compared to older forest stands often occurring on USFS lands. High road density and prevalence of clear-cuts on private timber lands contribute to high elk vulnerability to harvest. The GMU supports relatively high hunter density and harvest. Percent 6+ point bulls in the harvest declined over the last 10 years, while overall harvest followed a slight increasing trend. The 6-year goal is to maintain elk numbers.

GMUs 7 and 9

These are the most remote and least roaded units in the zone. As timber harvest on USFS lands slowed in recent decades, habitat trended towards less productive mature stands, which likely contributed to declines in elk numbers. Additionally, predation by black bears, mountain lions, and wolves affect elk survival. The Department's goal is to significantly increase elk populations in units 7 and 9. However, change will be a slow process due to low calf:cow ratios observed in recent surveys and indications that reduced habitat quality is a primary factor in the decline of elk densities. The 6-year goal is to increase elk numbers in these units.

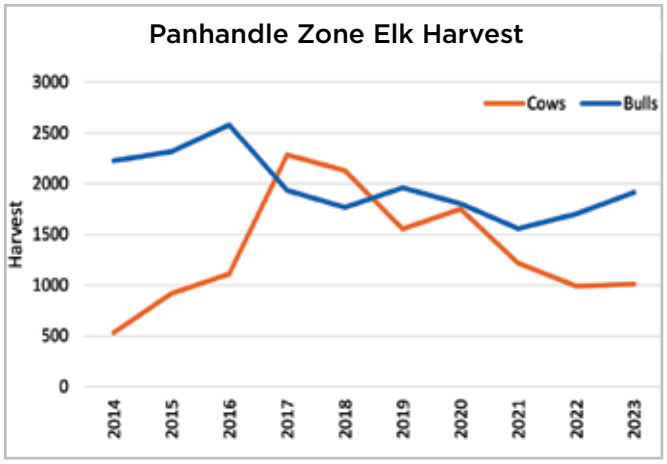
Inter-Zone and Intra-Zone Dynamics

Due in part to the large nature of the Panhandle Zone and relatively localized seasonal movements of elk herds, there are not significant interactions among Panhandle herds and herds in adjacent elk zones. However, if general hunting seasons are capped in adjacent elk zones, potential impact to hunter distribution within the region may need to be addressed. Additionally, although seasonal movements are limited in scale, exchange of animals across the Montana border raises potential disease concerns as CWD was detected in adjacent Lincoln County, Montana. Within the zone, management needs vary due largely to differences in land use and resulting challenges and opportunities each present as detailed above. Focusing antlerless opportunity on areas experiencing depredations has been a useful response tool for managers to address within-zone variation.

Future Needs

The Department developed preliminary camera-based elk abundance estimates in GMUs 1 and 6. In these GMUs, we used cameras to estimate summer (1 Aug) elk abundance (2021–2022, see Elk Monitoring Techniques). We estimated approximately 8,000 and 11,000 elk in GMU 1 and 6. These estimates are summer, pre-harvest abundances and, consequently, are not directly comparable with winter aerial survey abundance estimates because elk die from both harvest and natural causes between survey periods. This camera-based methodology for producing abundance estimates, however, is currently in the research and development phase. As the camera-based population estimation method is further refined, IDFG will continue to expand monitoring efforts to unsampled units. Efforts in support of land management practices beneficial to elk productivity will also continue. See the following Panhandle Elk Zone Population Management Objectives table for GMU-specific objectives. We developed these preliminary, pre-harvest objectives using harvest information, survival data, and available camera-based population estimates.

Panhandle Elk Zone Population Management Objectives	
GMU	**Total Population**
1	**6,500 – 9,700**
6	**9,300 – 11,000**



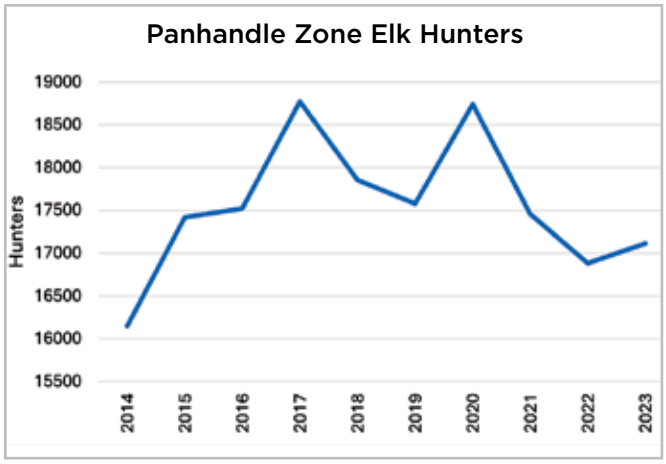


PHOTO: CC-BY IDAHO FISH AND GAME

Panhandle Elk Zone Management Table

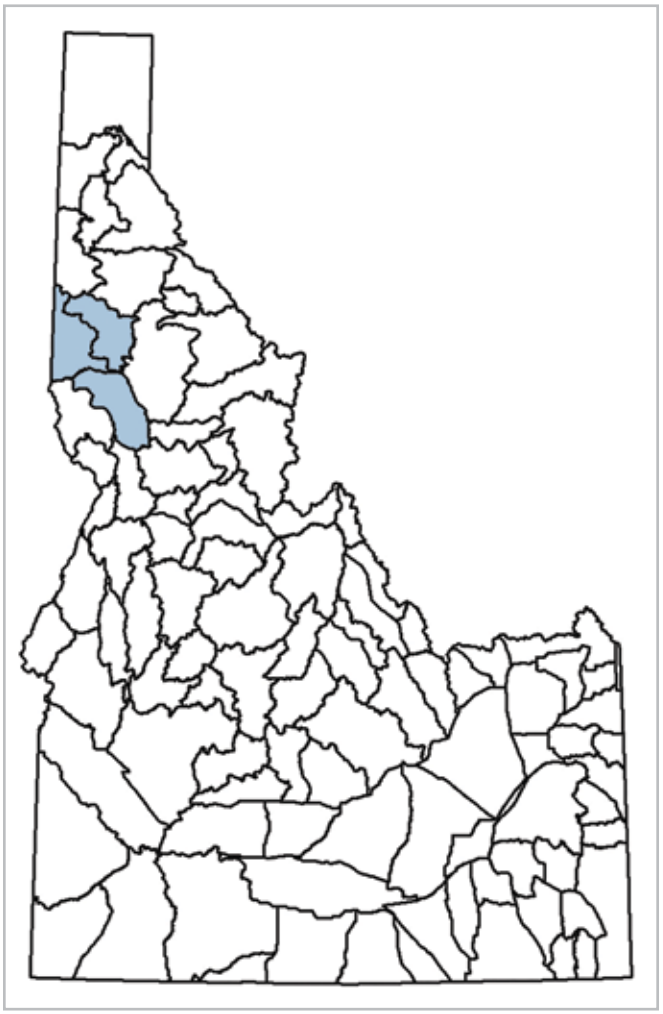
Management Direction	Strategy
When zones are below objectives, aggressively manage elk and predator populations, and improve habitat capabilities.	Where predation is a prominent limiting factor, manage lions, wolves, and black bears near the lower range of densities indicated within respective species management plans and the Panhandle Zone Predation Management Plan and encourage habitat management actions to benefit elk through improved forage resources and reduced vulnerability.
Develop an elk monitoring program which includes modeling or monitoring zone population abundance during years between surveys.	Use remote camera-based methods to develop abundance estimates and expand to unsampled units to establish a long-term monitoring rotation.
Develop biological studies to improve population, predator, and habitat management capabilities.	Continue development and expansion of camera-based methods to estimate ungulate abundance and composition, predator abundance, and influences of silvicultural practices on elk habitat quality. Utilize abundance estimates generated by camera-based methods to develop numeric population management objectives for the zone.
Provide a diversity of hunting opportunities, including socially desirable and biologically sustainable levels of antlerless and mature bull opportunity.	Provide general either-sex hunting opportunity where sustainable.
Collaborate with public land managers and private landowners to improve key summer, winter, and transitional elk habitat to meet statewide objectives.	Contribute funding or in-kind resources to implement treatments of elk summer or transitional range to increase early successional habitat, including 5,000 acres of vegetation treatments through natural or prescriptive burning in the greater Snow Peak area within and cooperatively with St. Joe Ranger District. Encourage, engage with, and provide technical support to USFS, BLM, and IDL, as well as larger landowners and private timber companies, regarding vegetation management projects to benefit elk habitat, such as prescribed fire, forest stand thinning, variable retention harvest, creation of early seral habitat, and noxious weed control. Engage with public land management agencies to encourage allowing wildland fires to burn, where elk habitat will be improved and when compatible with other land use priorities and management objectives.

Panhandle Elk Zone Management Table

Management Direction	Strategy
Increase IDFG involvement in long- and short-term land-use planning efforts by providing information, analyses, and recommendations to improve and preserve elk habitat.	Maintain a map of area priorities for elk habitat improvement projects on public ownerships. Incorporate new products, such as elk nutrition models and fine-scale vegetation mapping to refine the priority map. Continue IDFG involvement in all aspects of long-term, landscape-level projects that affect elk habitat on public lands within the Panhandle Zone. With an emphasis on summer and transitional range, promote timber harvest, prescribed burns, and wildland fire use on public and private corporate lands, and focus management efforts in areas that would most benefit elk habitat.
Work to enhance and maintain access for elk hunting.	Assist landowners enrolled in Large Tracts Access Program and corporate timber managers to maintain some motorized access while providing elk security. Continue to provide enforcement of the companies' motorized access management plan on Large Tracts and Forest Legacy parcels under Idaho Code 36-126.
Collaborate with federal and state agencies, Native American tribes, counties, nonprofit organizations, private landowners, and others to incorporate important elk habitat and migration routes into management decisions.	Continue to implement the Idaho Action Plan with a focus on Priority Areas within the zone. Provide technical assistance to partners regarding impacts of proposed projects on elk habitat and movement and migration routes. Collaborate with county, state, federal, tribal, and NGO partners, as well as private landowners to improve movement and migration habitat and mitigate barriers as opportunities arise.

Palouse Zone

Game Management Units 8, 8A, and 11A Administered by IDFG's Clearwater Region



Description

The majority of land ownership in the Palouse Zone is private and characterized by 2 major land uses: agriculture and timber production. Interspersed publicly held lands managed by the State of Idaho, BLM, and USFS provide moderate opportunities for public access and are most prevalent along the northeastern portion of the zone adjacent to Dworshak Reservoir. Road densities are high and contribute to moderate-to-high big game vulnerability to harvest throughout the zone, particularly on public lands. Habitat conditions are favorable for elk due to high-quality agricultural crops and timber harvest, at the expense of increased depredation issues and harvest vulnerability.

Historical Perspective

The productive nature of the Palouse Zone, and expanding agricultural resources contributed to elk population rebounds. Elk numbers reached a new peak in the late 2000s and since gradually decreased. Because of high levels of agricultural production in the Palouse Zone, elk are intensively managed to reduce depredation conflicts with private landowners. The Palouse Zone has and continues to provide general-season opportunities for hunters, in addition to an early-season, antlerless-only hunt focused on private agricultural lands to help alleviate depredation conflicts.

Management Challenges and Opportunities

Elk population objectives for this zone include maintaining cow and bull numbers while balancing social tolerance for elk associated with agricultural depredations. Since 2009, reducing Palouse elk populations to minimize conflicts stemming from agricultural depredations has been the objective. To manage agriculture depredations, we plan to maintain harvest opportunity and continue long elk hunting seasons to sustain dispersed pressure on elk in agricultural areas. We will continue to closely monitor overall harvest to ensure populations do not fall below objectives. Additionally, staff will work closely with area

Proposed 6-Year Management Direction:

- Performance and management of the Palouse Zone is currently limited or influenced by social tolerance and agricultural impacts.
- Current population management direction in the Palouse Zone is to maintain elk populations within management objectives.

landowners to develop and implement collaborative approaches to address elk depredation problems.

Inter-Zone and Intra-Zone Dynamics

Although this zone provides productive habitat for elk population growth, management efforts will continue to be directed at minimizing agricultural depredations. The most recent elk aerial survey (2016) suggested a significant decline from the previous survey in 2009 (3,089 to 1,963 total elk). However, that decline was not reflected in the fairly stable trend in bull elk harvest over the same timeframe and bull elk abundance from the 2016 aerial survey was not congruent with bull elk harvest the subsequent hunting season. Possible explanations for the discrepancy between the aerial survey results and harvest include 1) elk movements into or out of the zone created a mismatch among elk available for harvest in autumn and abundance estimation in winter, 2) winter conditions or elk distribution (e.g., more elk in dense timber or more widely distributed) led to an underestimate of elk during the aerial survey, or 3) some combination of these factors.

Future Needs

Over the next 6 years habitat improvements will be targeted to produce high-quality nutritional resources located farther from the agricultural interface and open motorized access. Treatments will be prioritized by methods designed to provide high nutritional response. A priority for this zone is to assess how silvicultural practices and land-use planning influence elk populations. Additionally, we will continue to work to improve our understanding of elk dynamics in this area and improve population estimates for this landscape.

Palouse Elk Zone Population Management Objectives

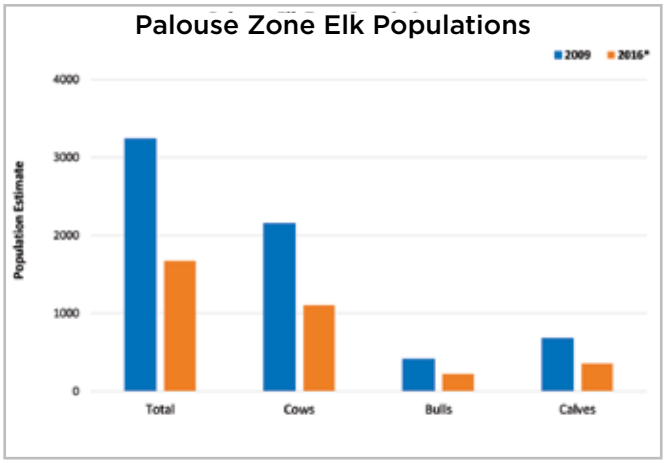
	Cows	Total Bulls	Branch Antlered Bulls
Management Objective Range	1,125 – 1,725	115 – 415	NA
Current Status (2016)	1,101	220	98

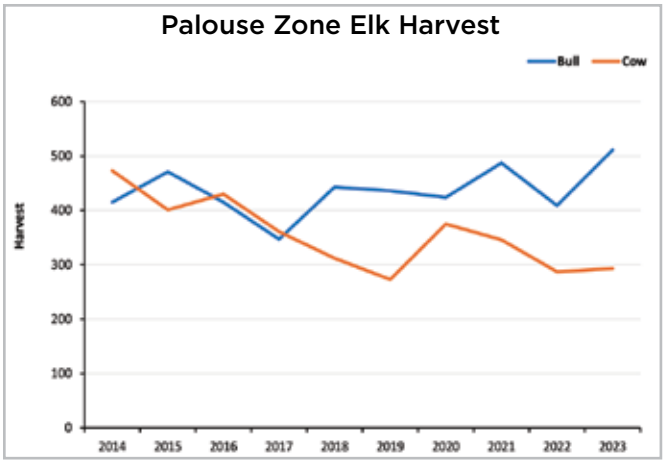
Color indicates where survey estimates are relative to management objectives:

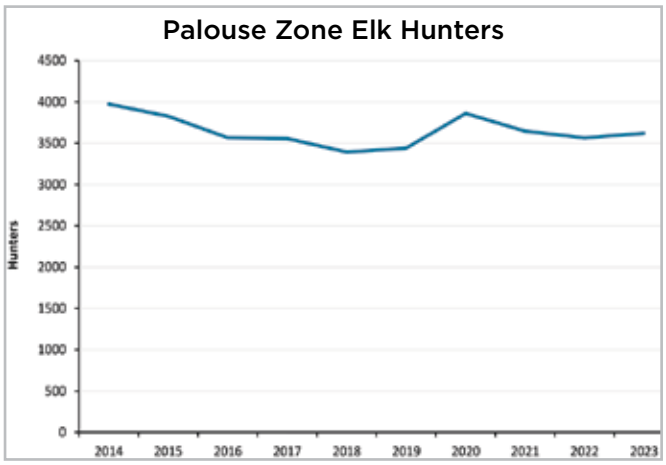
black = within; red = below; blue = above

Palouse Elk Zone Population Survey Estimates (Units 8 and 8A Only)

Year	Cows	Calves	Total Bulls	Spikes	Raghorn Bulls	Mature Bulls	Unclassified Elk	Total Population	Calves per 100 Cows	Bulls per 100 Cows
2016	1,101	353	220	122	85	13	289	1,963	32	20
2009	2,041	642	364	247	94	23	42	3,089	31	18







Palouse Elk Zone Management Table

Management Direction	Strategy
Implement measures to minimize, eliminate, or compensate for elk depredations.	Maintain harvest opportunity with long elk hunting seasons to sustain dispersed pressure on elk in agricultural settings. Work collaboratively with area landowners to prevent or minimize elk depredations on agricultural areas through the IDFG depredation program. Continue using standard procedures to monitor and estimate big game damage on agricultural products. Work with professionally licensed crop adjusters to ensure the accuracy of big game damage measurements.
Collaborate with public land managers and private landowners to improve key summer, winter, and transitional elk habitat to meet statewide objectives.	Develop a method to prioritize habitat management activities based on summer elk nutrition potential. Promote well-designed, early seral habitat improvement projects using information on elk use and seasonal movements. Work with land managers to improve post-harvest treatments to maintain early seral habitat communities in moderate to high nutritional capacity areas.

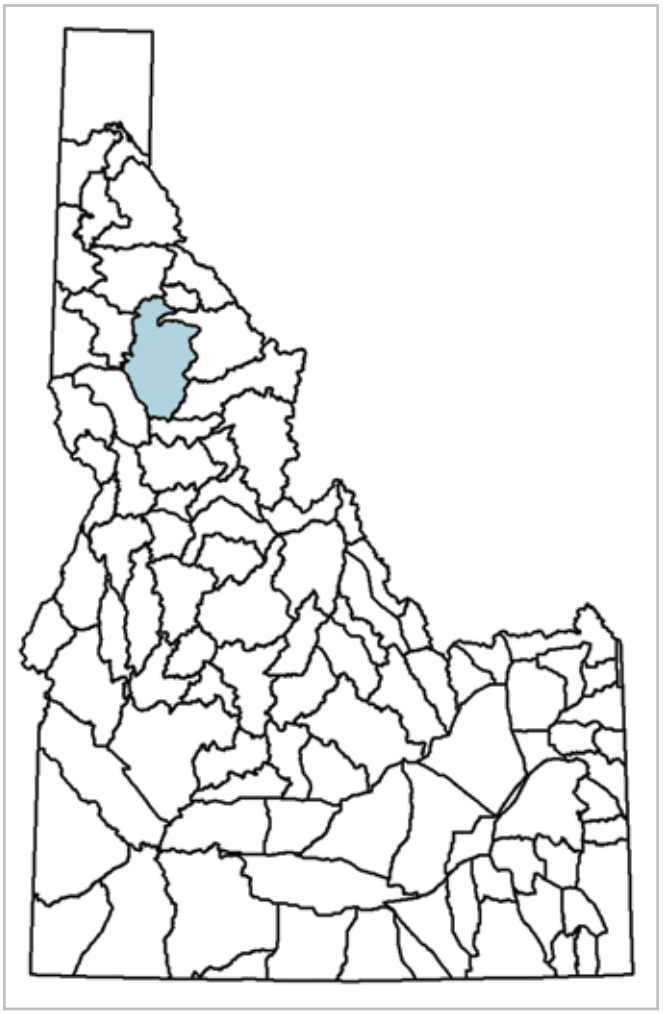
Palouse Elk Zone Management Table

Management Direction	Strategy
Improve awareness and inclusion of elk habitat effectiveness in land management activities on public and private lands.	Develop a method to prioritize habitat management activities based on elk habitat effectiveness. Work with the Nez Perce-Clearwater National Forests to create landscapes that produce high-nutrition resources for elk away from open motorized access routes and agricultural lands. Treatments should be accomplished with methods designed to provide high nutritional response.
Increase IDFG involvement in long- and short-term land-use planning efforts by providing information, analyses, and recommendations to improve and preserve elk habitat.	Seek opportunities to use Good Neighbor Authority and other shared stewardship programs to support restoration activities on federal forests and adjacent lands. Maintain participation on Nez Perce-Clearwater National Forests interdisciplinary teams to provide technical assistance and guide vegetation management projects to improve elk habitat. Assess how silvicultural practices and land-use planning influence elk forage resources and habitat use.

PALOUSE PHOTO: CC-BY K-RUPP AT FLICKR.COM

Dworshak Zone

Game Management Unit 10A Administered by IDFG's Clearwater Region



Proposed 6 Year Management Direction

- Performance and management of the Dworshak Zone is currently limited or influenced by predation, vulnerability to harvest, and habitat.
- Current population management direction in the Dworshak Zone is to increase elk populations to meet management objectives.

Description

The Dworshak Zone is characterized by mixed landownership, high road densities, and correspondingly high elk vulnerability to harvest. The Dworshak Zone is approximately 75% timberland and 25% open or agricultural lands and is dissected by canyons leading to the Clearwater River. High road densities and heavy ORV use provide unique and popular hunting opportunities.

Historical Perspective

Historically, elk were scattered, and numbers were low in this area. In the early 1800s, Lewis and Clark found few big game animals along the Clearwater River. Low elk density was at least in part due to the dense, unbroken forest canopy which covered most of the area, leading to low elk forage availability and quality. Wildfires burned over vast expanses near the beginning of the 20th century, creating vast shrub-fields which provided abundant forage for elk. Elk numbers increased following this habitat improvement, with elk abundance peaking approximately 1950. Elk abundance then declined into the 1970s, partially due to maturation of shrub-fields and declines in forage availability, logging and road-building activity which increased vulnerability of elk to harvest under liberal hunting seasons of the time, and loss of some significant winter range habitat due to creation of Dworshak Reservoir. In response to declines in elk numbers, either-sex hunting was replaced with an antlered-only general hunting season in 1976. The elk population rebounded and then remained relatively stable, despite addition of wolves to the predator suite in this zone and relatively high elk harvest. Elk abundance in the Dworshak Zone peaked again in 2011 with an estimated 5,787 elk. An early controlled antlerless hunt with 25 tags was added in 2010 to manage increasing agriculture depredations by elk. In 2019, these controlled hunts were combined and converted to a Landowner Permission Hunt (LPH) as an extra elk tag with a total of 75 tags. In 2021, those tags were reduced (75 to 40) and the extra elk designation was removed. Additionally, a similar controlled hunt was added with 40 tags. These changes were made to incentivize harvest where there were ongoing depredations and provide opportunity outside of the LPH framework.

Management Challenges and Opportunities

Corporate timber lands make up a significant portion of elk habitat in the Dworshak Zone. Regional staff

will continue to work with corporate timber managers to retain adequate motorized public access while enhancing elk security. Habitat improvements will be targeted to produce high quality nutritional resources located farther from open motorized access. Treatments will be prioritized by methods designed to provide high nutritional response. Additionally, regional staff will work with land managers to modify post-harvest treatments to maintain early seral habitats in moderate to high nutritional capacity areas.

Agricultural impacts are relatively minor on a zone-wide scale but increased over the last 10 years due to changes in landownership, which reduced access for hunting opportunities. Depredation issues are being addressed through existing depredation strategies.

Inter-Zone and Intra-Zone Dynamics

Between 2013 and 2017, autumn and spring female body condition and pregnancy data were collected within the Dworshak Zone. Female elk within the Dworshak Zone exhibited 8% body fat and a pregnancy rate of 78% entering winter. In general, females with <6% body fat have inadequate summer range and experience limitations in reproductive success and productivity (Cook et al. 2018). In contrast, females with ≥12% body fat and ≥90% pregnancy rates inhabit good to excellent summer range and display little to no limitations in reproductive success and productivity (Cook et al. 2018). Vegetation surveys were also completed to determine existing nutritional conditions of the Dworshak Zone in 2016 and 2017. These surveys found 49% of the zone met basic nutritional requirements to support a lactating cow elk (Monzingo et al. 2023). Surveys also found 82% of the zone has potential to produce continuous, abundant high-quality forage if maintained in early seral vegetation (Monzingo et al. 2023). These current habitat conditions depict the zone as providing adequate forage for the current population, but potential exists to support more forage, and thus a larger elk population, if vegetation management efforts are implemented in areas elk will use.

The most recent elk aerial survey (2022) suggested a significant decline in the Dworshak elk population since the previous aerial survey in 2011 (5,787 to 3,500 total elk). However, that decline is not reflected in the fairly stable trend in elk harvest over the same timeframe and bull elk abundance from the 2022 aerial survey was not consistent with bull elk harvest during the subsequent hunting season. We used trail cameras to estimate summer (August 1) elk abundance in the Dworshak Zone each year during 2020–2022 as part of a research project (see Elk Monitoring Techniques). Those summer, pre-harvest estimates were substantially higher (>7,000 elk). Summer camera and winter aerial survey abundance estimates are not directly comparable because elk die from both harvest and natural causes between survey periods. Therefore, abundance during summer (after calves are born and before hunting season) is expectedly higher than during winter (after hunting season and early calf mortality). However, an elk population closer to that estimated in summer via cameras is more biologically reasonable when compared to harvest levels and trend. Possible explanations for discrepancies between survey estimates and between the aerial survey and harvest include: elk moved out of the zone to winter such that they were present for summer camera estimates and hunting season, but not the winter aerial survey; the camera-based estimate overestimated the summer elk population; winter conditions or elk distribution (e.g., more elk in dense timber or more widely distributed) led to an underestimate of elk during the aerial survey; or some combination of multiple factors. We will continue to work on improved survey techniques for this and similar landscapes.

Future Needs

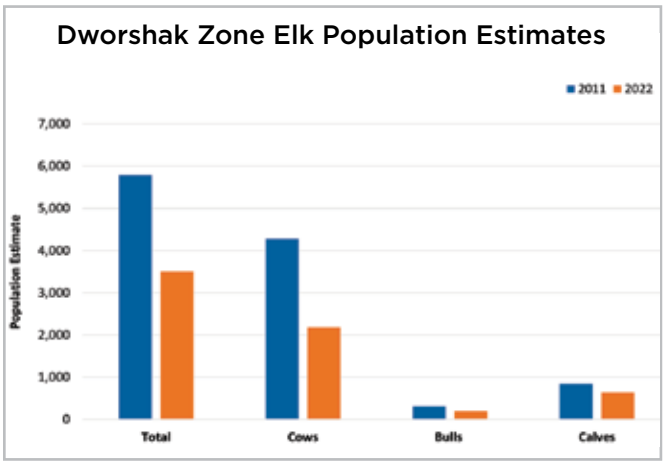
We will continue to manage this zone primarily for hunting opportunity. Current elk population objectives for the zone recognize high vulnerability of bull elk to harvest and a public desire to maintain general hunting opportunity. We will continue and improve our engagement with hunters and stakeholders to better understand opinions and desires for management of this elk zone. Future assessments of how silvicultural practices and land-use planning influence elk populations would be beneficial to management of this elk population. Continued development of improved abundance estimation methods is also a priority.

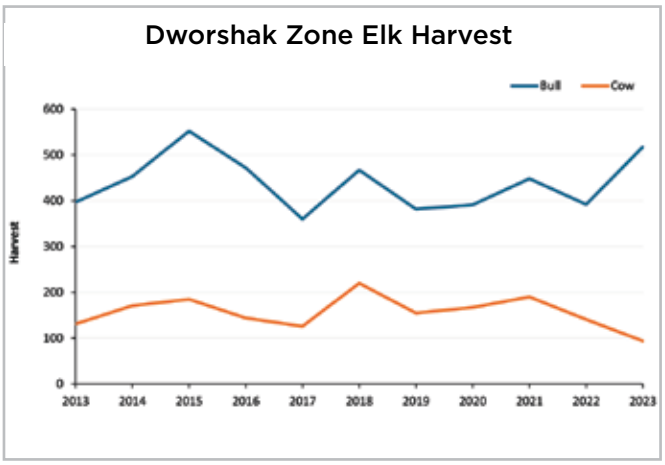
Dworshak Elk Zone Population Management Objectives			
	Cows	Total Bulls	Branch Antlered Bulls
Management Objective Range	2,900–4300	600 – 900	350 – 500
Current Status (2022)	2,176	204	82

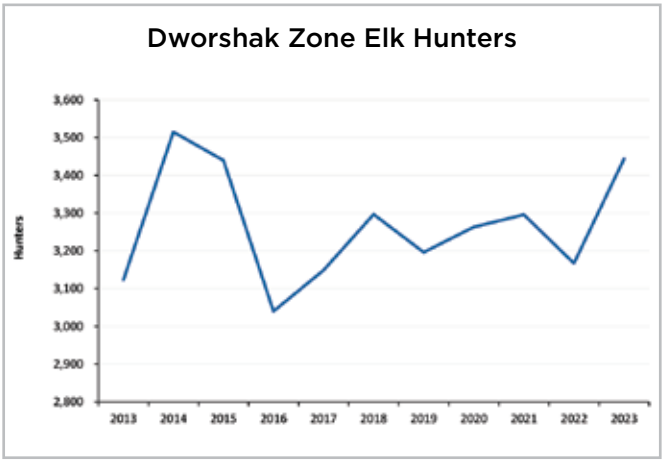
Color indicates where survey estimates are relative to management objectives:

black = within; red = below; blue = above

Dworshak Elk Zone Population Survey Estimates										
Year	Cows	Calves	Total Bulls	Spikes	Raghorn Bulls	Mature Bulls	Unclassified Elk	Total Population	Calves per 100 Cows	Bulls per 100 Cows
2022	2,176	640	204	122	57	25	480	3,500	29	9
2011	4,280	850	315	210	47	58	342	5,787	20	7







Dworshak Elk Zone Management Table

Management Direction	Strategy
When zones are below objectives, identify limiting factors, and when appropriate implement management actions or efforts to address identified limiting factors.	Evaluate current wolf and mountain lion harvest levels relative to elk population performance and adjust efforts and approach accordingly. Maintain liberal predator seasons and bag limits. Explore opportunities to increase wolf and mountain lion harvest.
Develop an elk monitoring program which includes modeling or monitoring zone population abundance during years between surveys.	Complete development of an elk IPM to better predict and assess population performance between aerial surveys.
Implement measures to minimize, eliminate, or compensate for elk depredations.	Work collaboratively with area landowners to prevent or minimize elk depredations on agricultural areas through the IDFG depredation program. Continue using standard procedures to monitor and estimate big game damage on agricultural products.
Provide a diversity of hunting opportunities, including socially desirable and biologically sustainable levels of antlerless and mature bull opportunity.	Provide hunting opportunities among established weapon types where biological conditions warrant.
Collaborate with public land managers and private landowners to improve key summer, winter, and transitional elk habitat to meet statewide objectives.	Develop a method to prioritize habitat management activities based on summer nutrition potential for elk. Promote well-designed, early seral habitat improvement projects incorporating information on elk use and seasonal movements. Work with land managers to improve post-harvest treatments to maintain early seral habitats in moderate to high nutritional capacity areas.

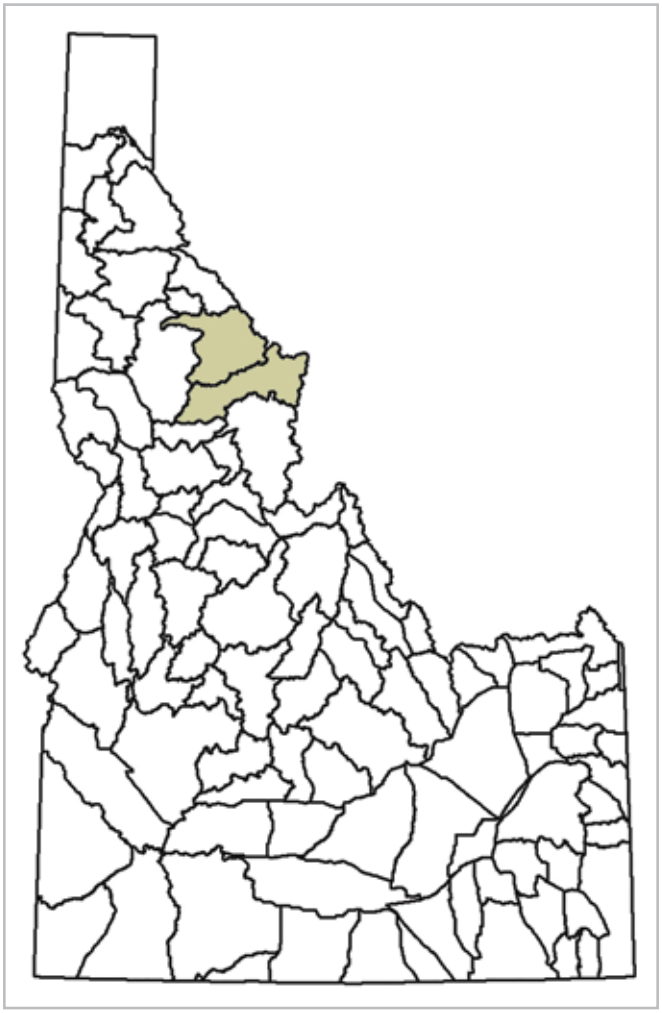
Dworshak Elk Zone Management Table

Management Direction	Strategy
Improve awareness and inclusion of elk habitat effectiveness in land management activities on public and private lands.	Develop a method to prioritize habitat management activities based on elk habitat effectiveness. Work with the Nez Perce-Clearwater National Forests to create a landscape where 10–15% of the front-country produces high nutritional resources for elk away from open motorized access. Early seral habitat will be targeted to produce high-quality nutritional resources located >½ mile from open motorized access. Treatments should be accomplished with methods designed to provide high nutritional response.
Increase IDFG involvement in long- and short-term land-use planning efforts by providing information, analyses, and recommendations to improve and preserve elk habitat.	Increase the pace and scale of restoration activities on federal forest, and adjacent lands, using Good Neighbor Authority and other shared stewardship programs. Maintain participation on Nez Perce-Clearwater National Forests interdisciplinary teams to provide technical assistance and suggestions for improving elk habitat within proposed vegetation management projects. Assess how silvicultural practices and land-use planning influence elk nutrition and habitat use.

PHOTO: CC-BY IDAHO FISH AND GAME

Lolo Zone

Game Management Units 10 and 12 Administered by IDFG's Clearwater Region



Proposed 6-Year Management Direction:

- Performance and management of the Lolo Zone is currently limited by predation and habitat.
- Current population management direction in the Lolo Zone is to increase elk populations to meet management objectives.

Description

The land base within this zone is almost entirely publicly owned and managed by the USFS. The majority of the zone is characterized by dense forests or commercially logged areas. The southern portion of the zone is within the Selway-Bitterroot Wilderness Area. Approximately 1/3 of the zone provides good access for motorized vehicles via medium road densities. The remainder is characterized by low road density, but good trail access, which contribute to medium-to-low big game vulnerability.

Historical Perspective

Historically, elk herds were scattered, and numbers were low in this area. Few big game animals were observed by Lewis and Clark in the early 1800s in the Lochsa River drainage, likely due in part to the dense, unbroken canopy of forest that covered the entire area. Wildfires burned over vast expanses near the beginning of the 20th century, creating vast shrub-fields which provided abundant forage areas for elk. Elk numbers quickly increased following creation of these shrub-fields, peaking in the 1950s and 1960s. Elk herds declined into the 1970s, due largely to declines in forage availability and lack of nutrition associated with maturation of shrub-fields, logging and road-building activity which increased vulnerability of elk to harvest under then more liberal hunting seasons, and loss of some major winter ranges. In response to declines in elk numbers, an either-sex bag limit was replaced with an antlered-only general hunting season in 1976. To address low recruitment levels, declining bull numbers, and high over-winter mortality in 1996–97, IDFG capped B-tag numbers at 1,600 and closed controlled hunts for cows beginning with the 1998 hunting season. This B-tag cap represented a 60–65% reduction in any-bull rifle hunting opportunity. In 2010 the B-tag cap was further reduced to 1,088 and an A-tag cap of 404 was imposed. However, with declining elk numbers, hunter participation has also declined. Low recruitment and low adult cow survival remain concerns in this zone.

Poor calf recruitment since the late 1980s, winter losses in 1996–97, and recent population declines have contributed to dramatically decreased elk herds within this zone. Predation by wolves affected elk numbers since their reintroduction to Idaho (1995–96) and re-establishment in Lolo Zone (early 2000s). Winter 1996–97 was marked by severe conditions, including extremely deep snow exceeding 200% of average snowpack in some areas. These conditions resulted

in above-normal over-winter mortality, leading to a dramatic decline in the GMU 10 population (-48%). In addition, a survey in GMU 12 during winter 1996–97 suggested a 30% decline at that time. These data, in combination with overwhelming anecdotal information, suggest catastrophic winter losses occurred in GMUs 10 and 12. Calf production or recruitment declined substantially since the late 1980s. Prior to that, winter calf:cow ratios often exceeded 30:100 and occasionally exceeded 40:100. From 1989 to 1999, ratios dwindled continuously down to levels <10:100. This level of recruitment is inadequate to replace natural mortality, even in the absence of hunting. Between 2002 and 2004, population surveys and composition surveys revealed 27–30 calves:100 cows in GMU 12, and 19–26 calves:100 cows in GMU 10. However, age composition surveys in 2005 showed declines from recent levels. Most notable was the decline in GMU 12, where the estimated ratio was 13.9 calves:100 cows. The 2010 aerial survey for the Lolo Zone showed a 57% decline from the 2006 survey, from 5,098 elk to 2,178. Calf:cow ratios in 2010 for GMUs 10 and 12 were estimated at 17.4 and 6.9 calves:100 cows respectively. Extreme declines in cow numbers resulted in a high bull:cow ratio (44 bulls:100 cows) in 2010. In 2017, the elk population declined to an estimated 1,893 elk; however, calf:cow ratios for GMUs 10 and 12 increased to 32 and 19 calves:100 cows. The adult bull population declined from 352 in 2010 to 71 in 2017; however, yearling and raghorn bulls increased from 243 in 2010 to 354 in 2017, resulting in 37 bulls:100 cows. Cow numbers declined slightly from 1,358 to 1,137.

Management Challenges and Opportunities

Historically, habitat productivity was high in this zone but decreased following decades of intensive fire suppression and reduced timber harvest. Many forested areas across the zone are over-stocked with late-seral species. Elk summer nutrition is lacking across much of the zone; however, existing forested habitats have potential to provide abundant high-quality forage if managed for early-seral vegetation. Additionally, predation on elk by mountain lions, black bears, and wolves continues to contribute to elk declines. Increasing elk populations within the Lolo Zone will require improvements in elk habitat at a landscape scale through collaborative partnerships with the USFS, as well as continued liberal predator harvest through hunting and trapping seasons and predator control actions.

Inter-Zone and Intra-Zone Dynamics

Between 2013 and 2017, autumn and spring female body condition and pregnancy data were collected within the Lolo Zone. Body fat of female elk ranged 8–11% and pregnancy rates were 74–89% entering winter. In general, females with <6% body fat occupy inadequate summer range and experience limitations on reproductive success and productivity (Cook et al. 2018). In contrast, females with ≥12% body fat and ≥90% pregnancy rates occupy good to excellent summer range and show little to no limitations on reproductive success and productivity (Cook et al. 2018). Additionally, vegetation surveys conducted in 2016 and 2017 to determine existing nutritional conditions in the Lolo Zone indicated 64% of the zone is essentially nonforaging area and does not meet basic nutritional requirements to support a lactating cow elk (Monzingo et al. 2023). Surveys also found 70% of the zone has potential to produce continuous, abundant, high-quality forage if maintained in early seral vegetation (Monzingo et al. 2023). These current habitat conditions depict the zone as producing adequate forage for the current population, but potential exists to support more forage, and thus a larger elk population, if vegetation management efforts are implemented in areas elk will utilize. After evaluating existing habitat conditions and habitat potential, regional staff have identified new objectives for the Lolo Zone. Potential nutritional carrying capacity was used to develop relative population estimates to support these objectives (see Appendix A for details). Achieving, maintaining, or improving nutritional capacity on the landscape will require a long-term strategy to implement several thousand acres of habitat improvements annually.

Future Needs

Focus for this zone will involve increasing elk population growth rates, followed by steps to stabilize

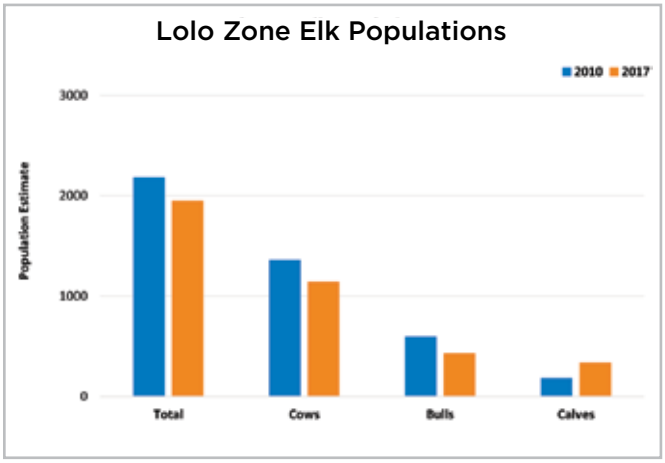
population productivity. Restructuring population objectives from those laid out in the previous management plan as long-term goals is an effort to manage elk in this zone on a sustainable level. Revising population objectives is necessary because major landscape changes occurred since peak elk populations occurred in the 1980s. Altering objectives represents adaptive management based on current and foreseeable habitat conditions and outside factors that influence elk population levels. Over the next 6 years regional staff will partner with the Nez Perce-Clearwater National Forests, IDL, and the Nez Perce Tribe to increase pace and scale of restoration activities on federal forest lands in the Lolo Zone. Vegetation management efforts will focus on well-designed, early seral-habitat improvement projects using existing and historical information on elk use and seasonal movements, and landscape nutritional capacity. Efforts will emphasize habitat improvements in backcountry, roadless areas to increase forage while maintaining elk security.

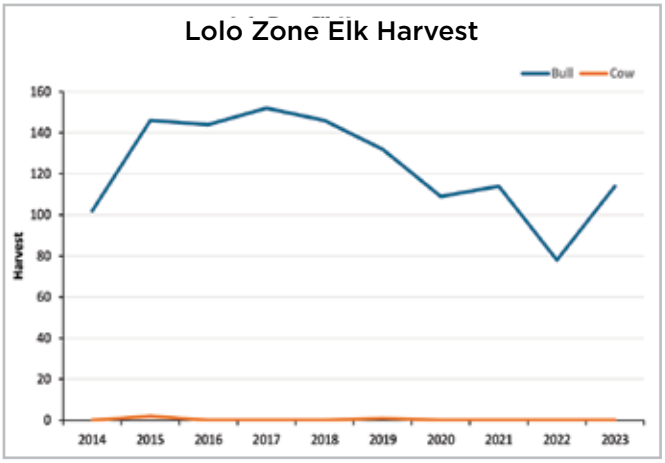
Lolo Elk Zone Population Management Objectives			
	Cows	Total Bulls	Branch Antlered Bulls
Management Objective Range	1,500 – 2,200	550 – 800	NA
Current Status (2017)	1,137	425	286

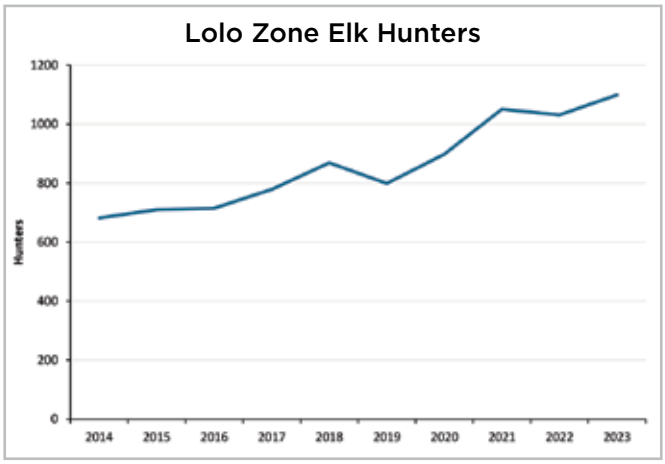
Color indicates where survey estimates are relative to management objectives:

black = within; red = below; blue = above

Lolo Elk Zone Population Survey Estimates										
Year	Cows	Calves	Total Bulls	Spikes	Raghorn Bulls	Mature Bulls	Unclassified Elk	Total Population	Calves per 100 Cows	Bulls per 100 Cows
2017	1,137	331	425	139	215	71	54	1,947	29	37
2010	1,358	182	594	23	229	352	46	2,180	13	44







Lolo Elk Zone Management Table

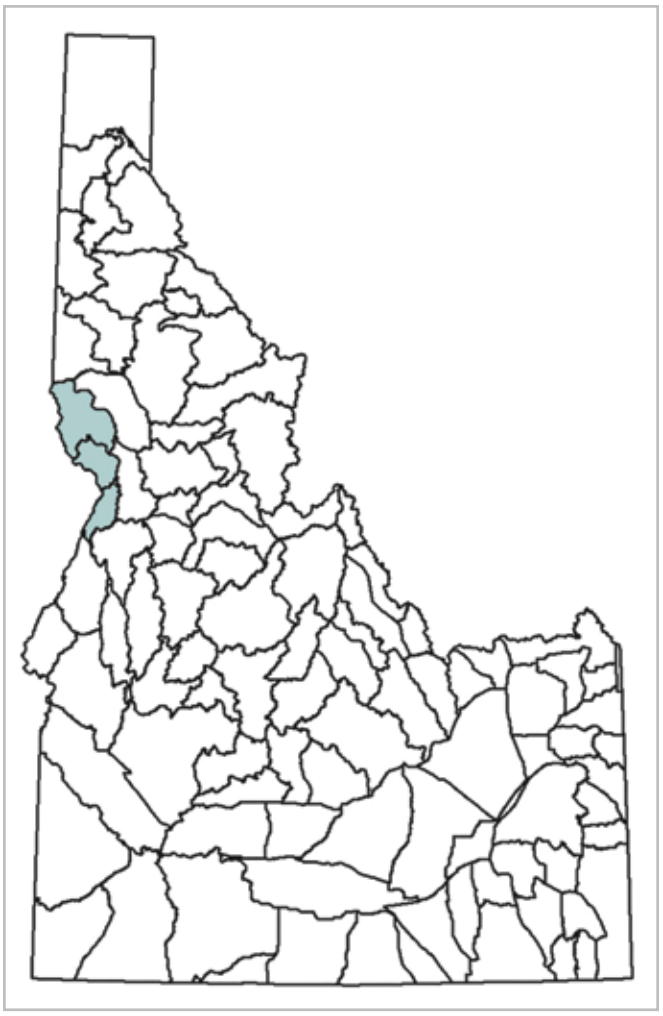
Management Direction	Strategy
When zones are below objectives, identify limiting factors, and when appropriate, implement management actions or efforts to address identified limiting factors.	Manage wolf populations at the level specified in the Wolf Management Plan for the Lolo Zone to address wolf predation on elk. Continue liberal wolf season structure (harvest level) and removal efforts to enhance elk population performance. Continue use of control actions (WS, IDFG personnel) as necessary to manage predators. Explore opportunities to increase effectiveness of wolf hunters, trappers, and outfitted clients. Continue to offer long seasons, second tags, and reduced-price nonresident tags for black bears and mountain lions.
Develop an elk monitoring program which includes modeling or monitoring zone population abundance during years between surveys.	Complete development of an elk IPM to better predict and assess population performance between aerial surveys.
Provide annual elk hunting opportunities.	Maintain elk tag levels at a sustainable level to provide continued annual hunting opportunities.
Provide a diversity of hunting opportunity, including socially desirable and biologically sustainable levels of antlerless and mature bull opportunity.	Continue to offer A and B tags for a variety of hunting experiences.

Lolo Elk Zone Management Table

Management Direction	Strategy
Collaborate with public land managers and private landowners to improve key summer, winter, and transitional elk habitat to meet statewide objectives.	Use Good Neighbor Authority and other shared stewardship programs to design and implement vegetation treatment projects to benefit elk. Develop a method to prioritize habitat management activities based on summer elk nutrition potential. Promote well-designed, early seral-habitat improvement projects using information on elk use and seasonal movements. Work with land managers to improve post-harvest treatments to maintain early seral habitats in moderate to high nutritional capacity areas.
Improve awareness and inclusion of elk habitat effectiveness in land management activities on public and private lands.	Develop a method to prioritize habitat management activities based on elk habitat effectiveness. Work with the Nez Perce-Clearwater National Forests to create a landscape where 10–15% of the front-country produces high nutritional resources for elk away from open motorized access. Early seral habitats will be targeted to produce high-quality nutritional resources located >½ mile from open motorized access. Treatments should be accomplished with methods designed to provide high nutritional response. Increase proactive efforts to emphasize and actively manage elk habitat in backcountry areas.
Increase IDFG involvement in long- and short-term land-use planning efforts by providing information, analyses, and recommendations to improve and preserve elk habitats.	Increase the pace and scale of restoration activities on federal forest, and adjacent lands, using Good Neighbor Authority and other shared stewardship programs. Maintain participation on Nez Perce-Clearwater National Forests interdisciplinary teams to provide technical assistance and suggestions for improving elk habitat within proposed vegetation management projects.
Minimize the influence of disease as a limiting factor in elk populations.	Continue to monitor for diseases in the Lolo Zone and manage as necessary. Specifically, continue to monitor for CWD by collecting opportunistic samples whenever possible.

Hells Canyon Zone

Game Management Units 11, 13, and 18 Administered by IDFG's Clearwater Region



Proposed 6-Year Management Direction

- Performance and management of the Hells Canyon Zone is currently limited or influenced by land use change, harvest vulnerability, and habitat.
- Current population management direction in the Hells Canyon Zone is to maintain elk populations within management objectives.

Description

The Hells Canyon Zone is characterized by steep canyon grasslands with mixed shrubs and coniferous forests interspersed across north-facing aspects and higher elevations. Landownership within this zone is variable by GMU. Craig Mountain WMA provides almost all public access in Unit 11. Unit 13 is almost exclusively private lands, with the exception of small blocks of land managed by the State of Idaho, BLM, and USFS. A large portion of Unit 18 is managed by the USFS as part of the Nez Perce National Forest or Hells Canyon Wilderness area.

Historical Perspective

Historically, elk herds were scattered, and numbers were low in this area. By the turn of the 20th century elk production in areas adjacent to this zone increased and elk repopulated this zone by the 1960s. Maturation of shrub-fields and declines in forage availability, road-building activity that increased vulnerability of elk to hunters under then more liberal hunting seasons, and loss of some major winter ranges caused declines in elk herds in the 1970s. In response to declines in elk numbers, the either-sex bag limit was replaced with an antlered-only general hunting season in 1976. Elk populations grew rapidly in response to changes in season structure. Estimated cow numbers increased from 865 in 1991 to 3,633 in 2013. Bull elk numbers also showed tremendous growth, increasing from 299 bulls in 1991 to 1,059 bulls in 2013. However, during the 2013 survey, estimated calf numbers declined (by 184, despite the increase in cow numbers) and the calf:cow ratio fell to 21:100. In order to address a potential density-dependence issue, an additional 150 cow tags were added (total 525) in 2013 and bull tags were reduced from 151 to 80. Elk populations in GMU 11 have declined since the mid-2010s, resulting in corresponding reductions in controlled hunt tags and removal of cow hunting opportunity. Aerial surveys in GMU 13 documented increases in elk populations over the last 10 years; however, this unit is comprised largely of private lands providing limited public access and hunting opportunity. The most recent survey in Unit 18 showed elk populations declined since their peak in the early 2010s. Because elk populations are functioning discretely amongst units, IDFG has implemented a controlled hunt structure in the Hells Canyon Zone to better address elk population needs and accessibility.

Management Challenges and Opportunities

Differences in landownership and use, public desires, and accessibility among GMUs comprising the Hells Canyon Zone resulted in variability among elk populations and distributions across the zone. Road density is moderate, and access is restricted in many areas. This composition results in medium to low vulnerability of big game to hunters; however, increased permit numbers likely increased vulnerability of cow elk. Additionally, habitat productivity varies widely throughout the zone, from steep, dry, canyon grasslands receiving little annual precipitation to higher elevation forests with good habitat productivity and greater precipitation. Many grassland cover types have been invaded by various weeds and non-native grasses, including cheatgrass (Bromus tectorum) and yellow star thistle (Centaurea solstitialis). Unit 11 experienced multiple, high-severity wildfires over the last decade, which exacerbated noxious weed issues and hindered recovery of important habitat components, including shrub composition and wooded riparian zones.

Inter-Zone and Intra-Zone Dynamics

Between 2013 and 2017, autumn and spring female body condition and pregnancy data were collected within the Hells Canyon Zone, primarily in GMU 11. Female elk within the zone displayed 6% body fat and a pregnancy rate of 89% entering winter. In general, females with <6% body fat occupy inadequate summer range and experience limitations on reproductive success and productivity (Cook et al. 2018). However, high pregnancy rates were observed in the Hells Canyon Zone. A possible explanation is extensive autumn green-up could mask low body fat conditions in these herds and lead to higher pregnancy rates than expected from body condition alone (Cook et al. 2013, 2018). Vegetation surveys were also completed to determine existing nutritional conditions of the Hells Canyon Zone in 2016 and 2017. Based on these surveys, 90% of the zone met basic nutritional requirements to support a lactating cow elk; however, 64% (of the 90%) barely met those requirements (Monzingo et al. 2023). These current habitat conditions are common in canyon grasslands and can affect populations by delaying breeding in adults, reducing calf growth, delaying sexual maturity, and reducing probability of calf survival. Unit 11 is also highly accessible and a popular recreation destination. A combination of these factors makes elk in GMU 11 more vulnerable to declines from stressors such as severe or prolonged winters, disease, predation, disturbance, and hunter harvest.

Future Needs

We will continue to focus on maintaining bull and cow populations within objectives while improving calf elk recruitment rates. Harvest opportunities will remain regulated through controlled hunt structures to achieve desired outcomes at unit and zone levels. A priority management goal for the zone is early detection and monitoring of disease presence, primarily CWD.

Habitat objectives will focus on restoring desirable grass-forb communities on elk winter range in canyon grassland habitat where yellow star thistle, annual grasses, and other noxious weeds are heavily dispersed. Methods may include biological, chemical, and cultural treatment, prescription burning, and revegetation. Improving elk nutrition and habitat effectiveness on summer and transitional range in the higher elevation forest, wet meadows, and riparian draws is also a priority. Techniques may include thinning, mastication, timber harvest, replanting, and prioritizing areas that will produce high quality nutritional resources located farther from open motorized access.

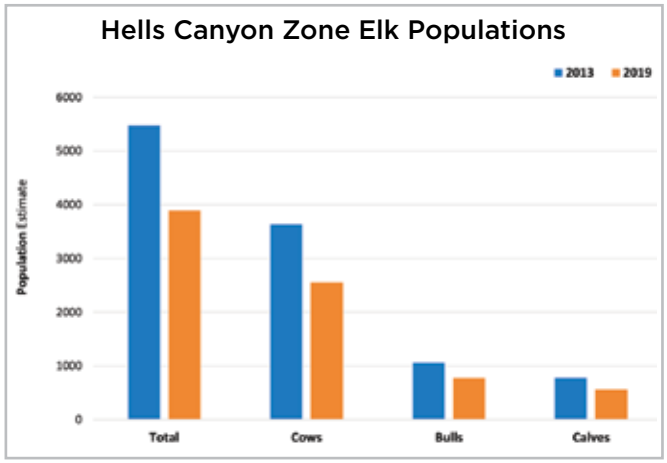
HELLS CANYON PHOTO: CC-BY ADUMBVOGET AT FLICKR.COM

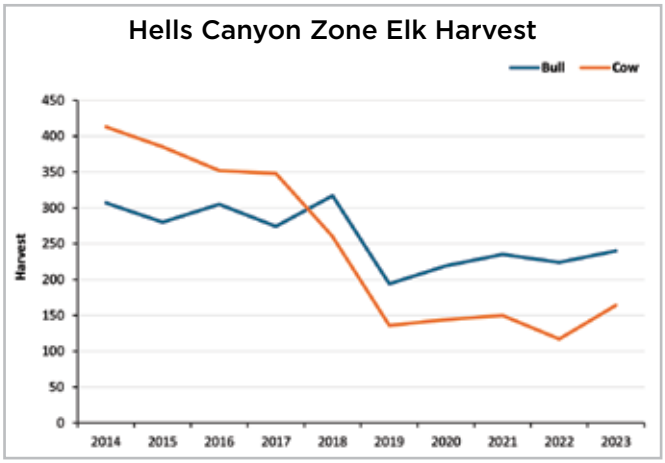
Hells Canyon Elk Zone Population Management Objectives			
	Cows	Total Bulls	Branch Antlered Bulls
Management Objective Range	2,000 – 2,900	420 – 610	240 – 348
Current Status (2019)	2,556	779	580

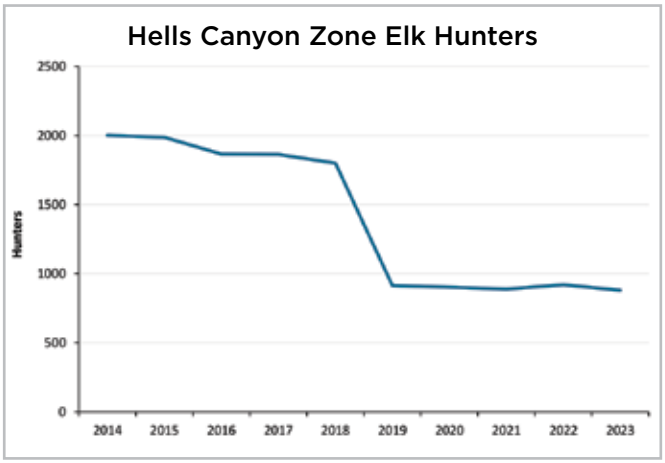
Color indicates where survey estimates are relative to management objectives:

black = within; red = below; blue = above

Hells Canyon Elk Zone Population Survey Estimates										
Year	Cows	Calves	Total Bulls	Spikes	Raghorn Bulls	Mature Bulls	Unclassified Elk	Total Population	Calves per 100 Cows	Bulls per 100 Cows
2019	2,556	557	779	199	282	298	22	3,914	22	31
2013	3,633	781	1,059	374	396	300	13	5,486	22	29







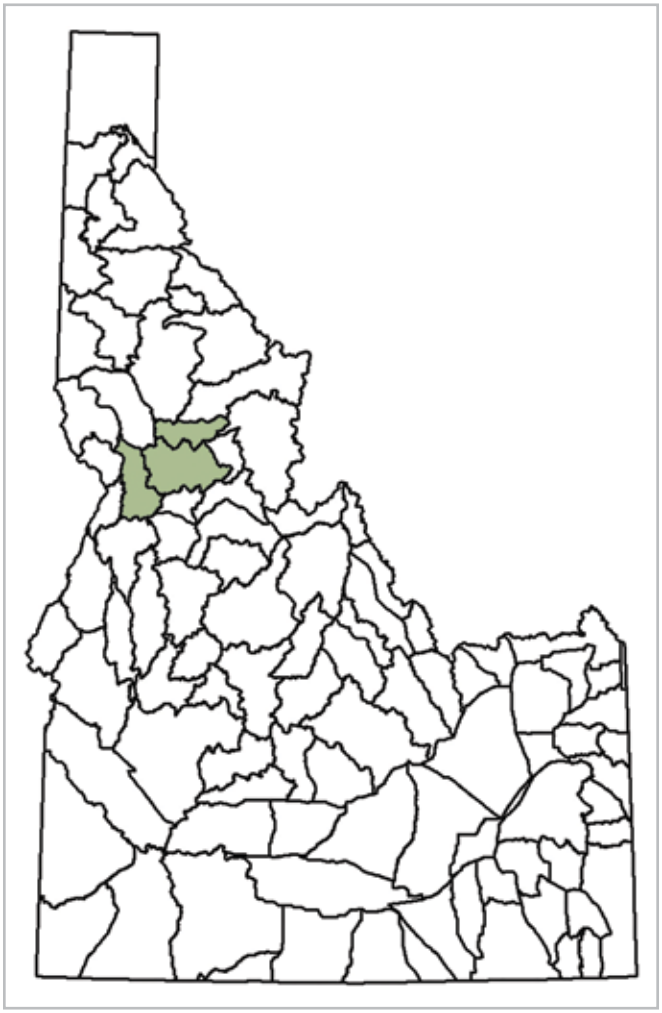
Hells Canyon Elk Zone Management Table

Management Direction	Strategy
Provide a diversity of hunting opportunities, including socially desirable and biologically sustainable levels of antlerless and mature bull opportunity.	Continue to permit harvest of antlerless and antlered elk under controlled hunt framework established within each GMU. Increase hunting opportunities proportionally among established weapon types where biological conditions warrant.
Collaborate with public land managers and private landowners to improve key summer, winter, and transitional elk habitat to meet statewide objectives.	Focus on restoring desirable grass-forb communities on elk winter range in canyon grassland habitat. Methods may include biological, chemical, and cultural treatments for noxious weeds, prescription burning, and revegetation. Improve elk nutrition and habitat effectiveness on summer and transitional range in higher elevation forests, wet meadows, and riparian draws. Develop a method to prioritize habitat management activities based on potential to improve summer nutrition.
Improve awareness and inclusion of elk habitat effectiveness in land management activities on public and private lands.	Prioritize habitat improvements in areas that will produce high-quality nutritional resources located >½ mile from open motorized access.
Minimize the influence of disease as a limiting factor in elk populations.	Continue to monitor across the zone for disease and manage as necessary. Specifically, continue to monitor for CWD and TAHD by collecting samples during CWD management actions and opportunistic samples whenever possible.

HELLS CANYON PHOTO: CC-BY BUREAU OF LAND MANAGEMENT AT FLICKR.COM

Elk City Zone

Game Management Units 14, 15, and 16 Administered by IDFG's Clearwater Region



Proposed 6-Year Management Direction:

- Performance and management of the Elk City Zone is currently limited by predation, habitat, and agricultural impacts.
- Current population management direction in the Elk City Zone is to maintain the elk population within proposed objectives and continue surveillance of CWD.

Description

Landownership in this zone is approximately 80% public, with the remaining 20% private. Approximately 8% of this zone is designated wilderness. A majority of forested areas in the zone are managed by the USFS. Privately-owned portions are located at lower elevations along the Clearwater and Salmon rivers. Both open and closed road densities are high within the zone, contributing to big game vulnerability during hunting seasons.

Historical Perspective

Historically, elk herds were scattered, and numbers were low in this area. Few big game animals were observed along Clearwater River by Lewis and Clark in the early 1800s, probably due in part to the dense, unbroken canopy of forest that covered the entire area. Wildfires burned over vast expanses of the landscape in the early 1900s. These fires created vast shrub-fields, which provided abundant forage areas for elk, leading to population expansion. Over time, these shrub-fields matured, and forage availability declined. These habitat changes, in combination with road-building activities which increased vulnerability of elk to hunters, and loss of some major winter ranges caused declines in elk herds in the 1970s. In response to those declines, either-sex bag limits were replaced with antlered-only general hunting season in 1976. The elk population rebounded and then remained relatively stable until the mid-2000s.

Historically, calf recruitment in GMUs 14 and 15 was high, averaging 38 calves:100 cows from 1987–1993. However, a survey in 2000 documented 25 calves:100 cows, indicating a decline in calf survival and recruitment. This trend in low calf ratios continued through 2022, when 21 calves:100 cows were estimated in GMU 15 during surveys in 2015 and 2022. A pattern of low calf:cow ratios is also a concern in GMU 16, which averaged 19 calves:100 cows from 1990 to 2000, then dropped to 17 calves:100 cows in both 2008 and 2015 and remained low at 18 calves:100 cows in 2022.

Beginning with the 2002 hunting season, B-tag sales were capped in Elk City Zone. This cap was initiated as a result of increased harvest and participation likely linked to capping tags in Lolo Zone in 2000. After the 2015 survey suggested declines, particularly in GMUs 15 and 16, a cap was initiated on A-tags in 2019 and use of second nonresident tags was eliminated to address population concerns in this zone. Each GMU within this zone performs differently and current observations indicate elk declined in GMUs 15 and 16 but increased in GMU 14. The

most recent aerial survey (2022) indicated the population had reached management objectives for both cows and bulls, albeit with continued declines in GMU 15 and to a lesser extent in GMU 16. These survey results prompted about season changes to allow additional cow harvest in GMU 14 and eliminate cow harvest in GMU 15.

In 2021 CWD was discovered in GMU 14. One elk tested positive in the White Bird area, indicating the need for increased surveillance of CWD in elk in the area. Season changes were adopted in 2022 to increase Landowner Permission Hunt tags in the area where deer and elk tested positive for CWD to obtain more samples for evaluating CWD prevalence.

Additionally, in 2018, TAHD was discovered in the Elk City Zone. The Department continues to monitor the disease by evaluating distribution, prevalence, impacts to elk survival and productivity, and potential for transmission within the state.

Management Challenges and Opportunities

Historically, habitat productivity was high in this zone but decreased following decades of intensive fire suppression and reduced timber harvest. Many forested areas across the zone reverted to closed canopy stands of lodgepole pine (P. contorta) and grand fir (A. grandis). Summer nutrition for elk is lacking across much of the zone; however, existing forested habitats have potential to produce abundant high-quality forage if managed for early seral vegetation. Increasing elk populations within the Elk City Zone will require improvements in elk habitat at a landscape scale through collaborative partnerships with the USFS.

With the discovery of both CWD and TAHD in the Elk City Zone, IDFG will continue to monitor prevalence and spread of these diseases. Monitoring of CWD will be accomplished primarily through testing of deer and elk harvested by hunters in GMUs 14 and 15; changes to management direction will be implemented where warranted by increased CWD prevalence. Currently, TAHD is monitored via hunter-harvest sampling and public reports. Effects of TAHD on elk vital rates are currently unknown, thereby complicating potential disease management strategies.

Elk abundance has varied among GMUs within the zone and hunters responded by shifting hunt areas. Hunter numbers in GMUs 15 and 16 declined in response to declining elk abundance. Conversely, elk populations performed well in GMU 14, and hunter numbers increased to the point where hunter crowding is a concern. The Department will continue to monitor hunter satisfaction and manage hunter numbers in this zone to ensure they are commensurate with elk populations. Additionally, depredations increased within the past 10 years in this zone due to increases in both deer and elk populations and changes in landownership, which reduced access for hunting opportunities. Livestock operators are concerned about elk use of pasture and rangeland forage during spring months prior to release of livestock on these lands. Some damage to grain crops occurs during summer. Several past fencing projects helped reduce concerns over elk damaging stored hay during winters with heavy snow accumulation.

Inter-Zone and Intra-Zone Dynamics

Between 2013 and 2017 autumn and spring female body condition and pregnancy data were collected within the Elk City Zone. Body fat of female elk ranged 6–8% and pregnancy rates ranged 70–92% when entering winter. In general, females with <6% body fat occupy inadequate summer range and experience limitations on reproductive success and productivity (Cook et al. 2018). Females in GMU 14 displayed a high pregnancy rate despite low body fat levels, similar to populations in Hells Canyon Zone; a possible explanation being extensive autumn green-up could mask low body fat conditions and lead to higher pregnancy rates than expected from body condition alone (Cook et al. 2013, 2018). Vegetation surveys were also completed to determine existing nutritional conditions of the Elk City Zone in 2016 and 2017. Based on these surveys, only 38% of the zone met basic nutritional requirements to support a lactating cow elk (Monzingo et al. 2023). However, 64% of the zone has potential to produce continuous, abundant, high-quality forage if maintained in early seral vegetation (Monzingo et al. 2023). These current habitat conditions depict the zone as providing semi-adequate forage for the current population, but potential exists to support more forage, and thus a larger elk population, if vegetation management efforts are implemented in areas utilized by elk.

Future Needs

Over the next 6 years regional staff will partner with the Nez Perce-Clearwater National Forests, IDL, and the Nez Perce Tribe to increase pace and scale of restoration activities on federal forests and adjacent lands in the Elk City Zone. Vegetation management efforts will focus on well-designed, early seral habitat improvement projects using existing and historical information on elk use and seasonal movements, and landscape nutritional capacity.

Continued monitoring of CWD and TAHD and effects on populations will be an IDFG priority in the Elk City Zone. Additionally, regional staff will need to address disproportionate hunter distribution and hunt structure by GMU.

Elk City Elk Zone Population Management Objectives

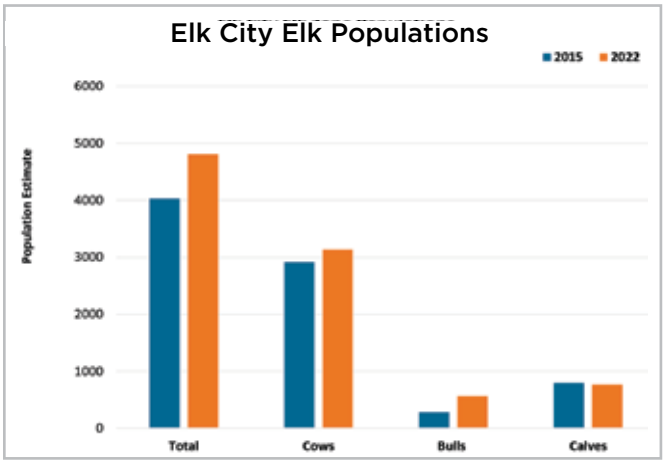
	Cows	Total Bulls	Branch Antlered Bulls
Management Objective Range	3,150 – 4,650	675 – 1,000	350 – 575
Current Status (2022)	3,135	565	348

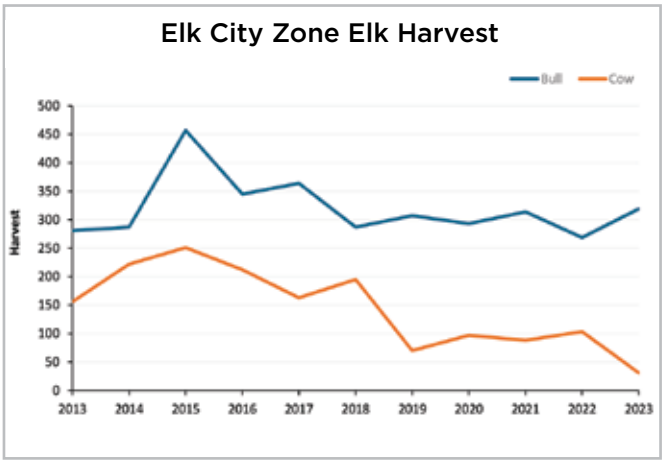
Color indicates where survey estimates are relative to management objectives:

black = within; red = below; blue = above

Elk City Elk Zone Population Survey Estimates

Year	Cows	Calves	Total Bulls	Spikes	Raghorn Bulls	Mature Bulls	Unclassified Elk	Total Population	Calves per 100 Cows	Bulls per 100 Cows
2022	3,135	769	565	217	201	147	339	4,808	25	18
2015	2,915	793	288	133	114	41	38	4,034	27	10





Elk City Elk Zone Management Table

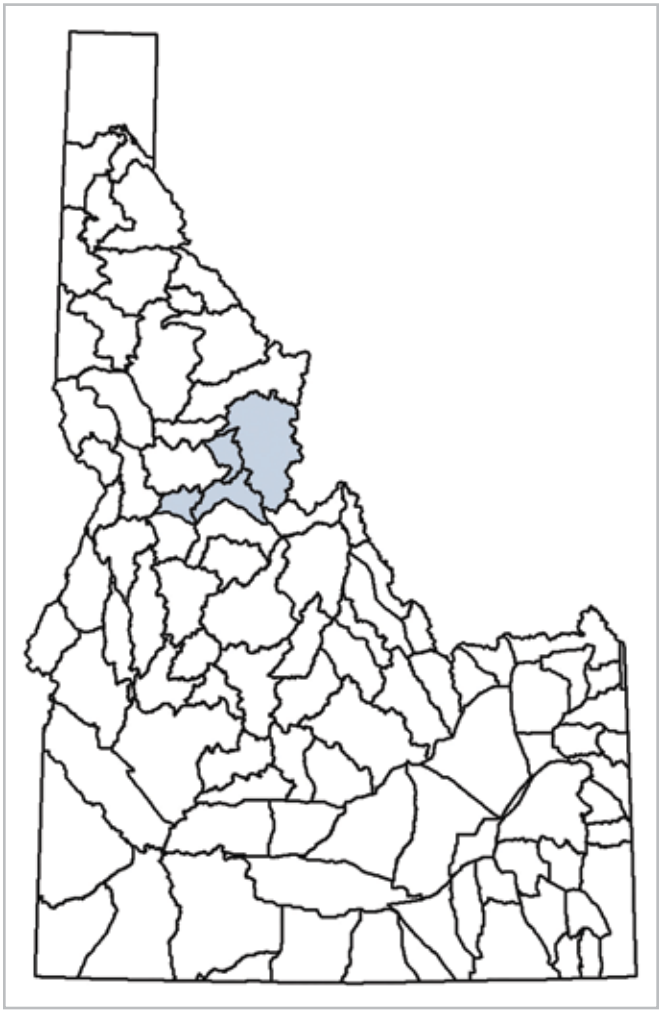
Management Direction	Strategy
When zones are below objectives, identify limiting factors and, when appropriate, implement management actions or efforts to address identified limiting factors.	Evaluate current wolf and mountain lion harvest levels relative to elk population performance and adjust efforts and approach accordingly. Maintain liberal predator seasons and bag limits. Explore opportunities to increase effectiveness of wolf and mountain lion hunters, trappers, and outfitter clients.
Develop an elk monitoring program which includes modeling or monitoring zone population abundance during years between surveys.	Complete development of an elk IPM to better forecast and assess population performance between aerial surveys.
Implement measures to minimize or compensate for elk depredations.	Work collaboratively with area landowners to prevent or minimize elk depredations on agricultural areas through the IDFG depredation program. Continue using standard procedures to monitor and estimate big game damage on agricultural products
Provide a diversity of hunting opportunity, including socially desirable and biologically sustainable levels of antlerless and mature bull opportunity.	Increase hunting opportunities proportionally among established weapon types where biological conditions warrant.
Collaborate with public land managers and private landowners to improve key summer, winter, and transitional elk habitat to meet statewide objectives.	Use Good Neighbor Authority and other shared stewardship programs to design and implement vegetation treatment projects to benefit elk. Develop a method to prioritize habitat management activities based on summer elk nutrition. Promote well-designed, early seral habitat improvement projects using information on elk use and seasonal movements. Work with land managers to improve post-harvest treatments to maintain early seral habitats in moderate to high nutritional capacity areas.

Elk City Elk Zone Management Table

Management Direction	Strategy
Improve awareness and inclusion of elk habitat effectiveness in land management activities on public and private lands.	Develop a method to prioritize habitat management activities based on elk habitat effectiveness. Work with the Nez Perce-Clearwater National Forests to create a landscape where 10–15% of the front-country produces high-nutritional resources for elk away from open motorized access. Early seral habitats will be targeted to produce high-quality nutritional resources located >½ mile from open motorized access. Treatments should be accomplished with methods designed to provide high nutritional response. Increase proactive efforts to emphasize and actively manage elk habitat in backcountry areas.
Increase IDFG involvement in long- and short-term land-use planning efforts by providing information, analyses, and recommendations to improve and preserve elk habitats.	Increase the pace and scale of restoration activities on federal forest and adjacent lands using Good Neighbor Authority and other shared stewardship programs. Maintain participation on Nez Perce-Clearwater National Forests interdisciplinary teams to provide technical assistance and suggestions for improving elk habitat within proposed vegetation management projects.
Minimize the influence of disease as a limiting factor in elk populations.	Continue to monitor prevalence and geographic extent of both CWD and TAHD through increased surveillance. Use hunter participation and existing hunt structures where and when feasible in the implementation of the CWD management strategy. Continue to implement carcass transport rules in CWD management zone and restrict carcass disposal to prion approved county landfills.

Selway Zone

Game Management Units 16A, 17, 19, and 20 Administered by IDFG's Clearwater Region



Proposed 6-Year Management Direction

- Performance and management of the Selway Zone is currently limited by predation and habitat.
- Current population management direction in the Selway Zone is to increase elk populations to meet management objectives.

Description

Habitat characteristics vary through the Selway Zone from high-precipitation, forested areas along the lower reaches of Selway River to dry, steep, south-facing ponderosa pine (P. ponderosa) and grassland habitat along Salmon River. Many areas along Salmon River have a good mix of successional stages due to frequent fires within wilderness areas found there. Road densities are low, which leads to large portions of the zone being remote, with limited access. Land in the Selway Zone is primarily (99.6%) under management of the USFS.

Historical Perspective

Historically, elk herds were scattered, and numbers were low in this area. Few big game animals were observed by Lewis and Clark in the early 1800s along what is now Lolo Pass between Montana and Idaho (in the Lolo Zone just north of the Selway Zone), likely due in part to the dense, unbroken canopy of forest that covered the area. Wildfires burned over vast expanses near the beginning of the 20th century, creating vast shrub-fields which provided abundant forage areas for elk. Elk numbers rapidly increased following creation of these shrub-fields, peaking in the 1950s and 1960s. Elk herds began declining into the 1970s, due in part to declines in forage availability and lack of nutrition from maturation of shrub-fields, logging and road-building activity which increased vulnerability of elk to harvest under then more liberal hunting seasons, and loss of some major winter ranges. In response to declines in elk numbers, an either-sex hunting regime was replaced in 1976 with an antlered-only general hunting season. Elk numbers increased and reached a second, short-lived peak in the mid-1990s. Shortly thereafter, however, seasons were restructured to compensate for low calf recruitment and an overall decreasing population. Existing information suggests the decline in elk populations resulted from interactions of habitat limitations and predation.

Management Challenges and Opportunities

Over the next 6 years regional staff will focus on partnerships with the Nez Perce-Clearwater National Forests and the Nez Perce Tribe to increase pace and scale of restoration activities on federal forest and grasslands in the Selway Zone. Additionally, staff will work with partners to increase proactive efforts to emphasize and actively manage elk habitat in backcountry roadless areas, specifically GMU 16A, to increase forage while maintaining security.

Inter-Zone and Intra-Zone Dynamics

Vegetation surveys were completed in 2016 and 2017 to determine current nutritional conditions of the Selway Zone. Surveys measuring existing vegetation found 55% of the Selway Zone met minimum basic nutritional requirements to support a lactating cow elk (Monzingo et al. 2023). However, of that 55%, 15% barely qualified (Monzingo et al. 2023). Analysis of habitat requirements within the Selway Zone also found 39% of the zone has potential to produce continuous, abundant, high-quality forage if maintained in early seral vegetation (Monzingo et al. 2023). These current habitat conditions depict the zone as holding potential to support more forage, and thus a larger elk population, if vegetation management efforts are implemented in areas utilized by elk.

Future Needs

A focus for this zone will involve stabilizing elk populations, followed by steps to realize positive growth rates. The Department is retaining population objectives laid out in the previous management plan as long-term goals (despite current reduced elk numbers) to show potential to ultimately restore this population to levels achieved in previous decades. To achieve this, IDFG will closely monitor overall harvest. Additionally, completing an elk abundance survey is a high priority during the lifespan of this plan.

Selway Elk Zone Population Management Objectives

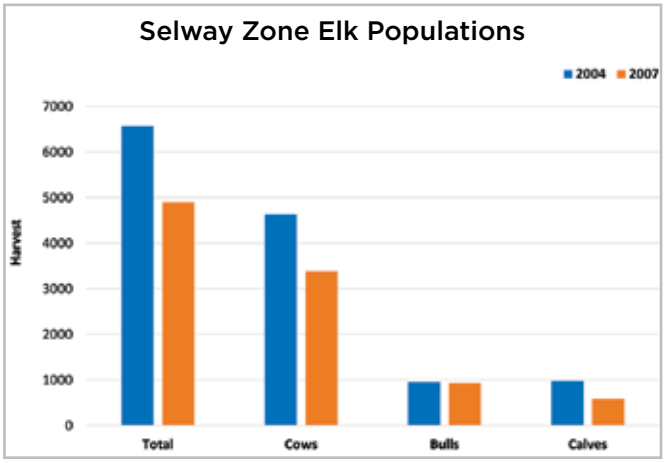
	Cows	Total Bulls	Branch Antlered Bulls
Management Objective Range	4,900 – 7,300	1,050 – 1,550	600 – 900
Current Status (2007)	3,381	934	340

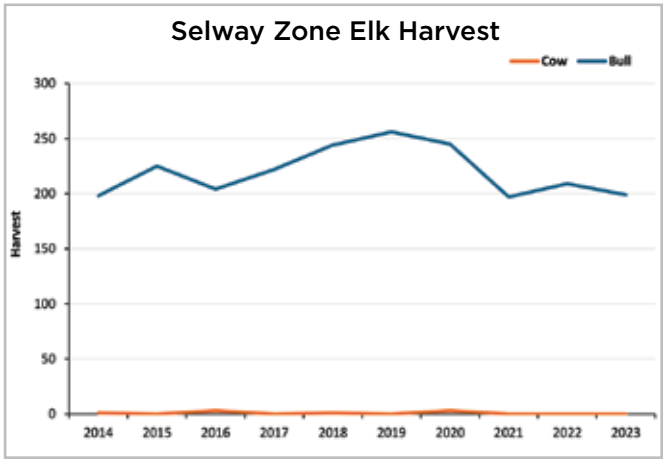
Color indicates where survey estimates are relative to management objectives:

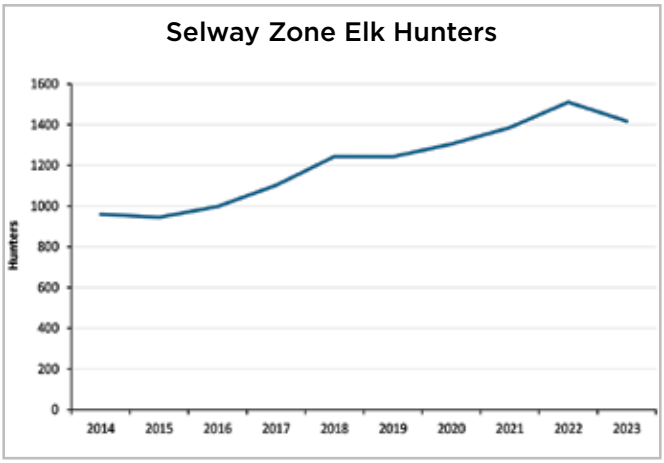
black = within; red = below; blue = above

Selway Elk Zone Population Survey Estimates

Year	Cows	Calves	Total Bulls	Spikes	Raghorn Bulls	Mature Bulls	Unclassified Elk	Total Population	Calves per 100 Cows	Bulls per 100 Cows
2007	3,381	589	934	206	386	340	0	4,902	17	28
2004	4,637	976	960	336	334	290	15	6,588	21	21







Selway Elk Zone Management Table

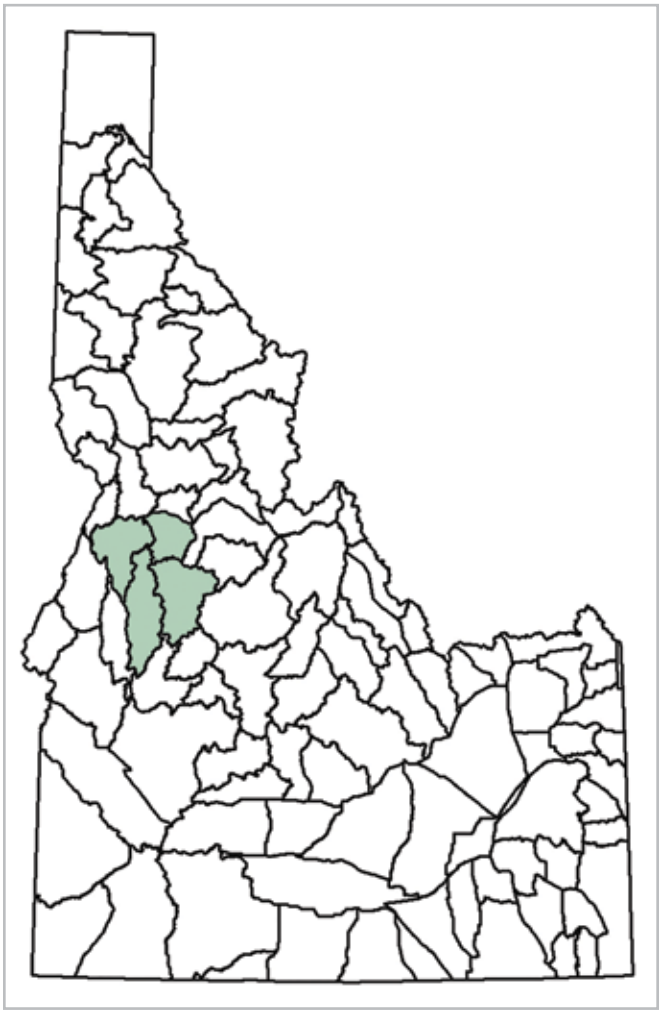
Management Direction	Strategy
When zones are below objectives, identify limiting factors and, when appropriate, implement management actions or efforts to address identified limiting factors.	Manage wolf populations at the level specified in the Wolf Management Plan for the Selway Zone to address wolf predation on elk. Continue liberal wolf season structure (harvest level) and assess removal effects relative to elk population performance. Continue use of control actions (WS, IDFG personnel) as necessary to manage predators. Explore opportunities to increase effectiveness of wolf hunters, trappers, and outfitter clients. Continue to offer long seasons, second tags, and reduced-price nonresident tags for black bears and mountain lions.
Develop an elk monitoring program which includes modeling or monitoring zone population abundance during years between surveys.	Complete development of an elk IPM to better forecast and assess population performance between aerial surveys.
Assess hunter desires for different types of elk hunting opportunities.	Continue to propose seasons and gather public input on hunting preferences and desires.
Provide annual elk hunting opportunities.	Maintain elk tag levels at a sustainable level to provide continued annual hunting opportunities.

Selway Elk Zone Management Table

Management Direction	Strategy
Provide a diversity of hunting opportunities, including socially desirable and biologically sustainable levels of antlerless and mature bull opportunity.	Continue to offer A and B tags for a variety of hunting experiences.
Collaborate with public land managers and private landowners to improve key summer, winter, and transitional elk habitat to meet statewide objectives.	Use Good Neighbor Authority and other shared stewardship programs to design and implement vegetation treatment projects to benefit elk. Develop a method to prioritize habitat management activities based on summer elk nutrition. Focus on noxious weed treatment and restoration of desirable grass-forb communities. Promote allowing wildland fires to burn where community and infrastructure are not threatened.
Improve awareness and inclusion of elk habitat effectiveness in land management activities on public and private lands.	Develop a method to prioritize habitat management activities based on elk habitat effectiveness. Increase proactive efforts to emphasize and actively manage elk habitat in backcountry areas.
Increase IDFG involvement in long- and short-term land-use planning efforts by providing information, analyses, and recommendations to improve and preserve elk habitat.	Increase the pace and scale of restoration activities on federal forest, and adjacent lands, using Good Neighbor Authority and other shared stewardship programs. Maintain participation on Nez Perce-Clearwater National Forests interdisciplinary teams to provide technical assistance and recommendations for improving elk habitat within proposed vegetation management projects.
Minimize the influence of disease as a limiting factor in elk populations.	Continue to monitor for diseases in the Selway Zone and manage as necessary. Specifically, continue to monitor for CWD by collecting opportunistic samples whenever possible.

McCall Zone

Game Management Units 19A, 23, 24, and 25 Administered by IDFG's Southwest Region



Proposed 6-Year Management Direction:

- Performance and management of the McCall Zone is currently limited by depredation issues occurring in the western portion of the zone and by changes in habitat along the South Fork Salmon River.
- Current population management direction in the McCall Zone is to maintain the elk population within current objectives and increase CWD surveillance efforts.

Description

More than 70% of the McCall Zone is in public ownership and management. The Little Salmon River and the North Fork Payette River valley bottoms comprise most of the private ownership. Private land in this zone is predominantly agricultural or rural subdivision in nature. Much of the zone is comprised of mixed-conifer forests transitioning into sage steppe-grassland rangelands at lower elevations.

Historical Perspective

Elk were abundant in the McCall Zone prior to European settlement in the late 1800s. Proliferation of mining due to the gold rush in the late 1800s and early 1900s led to widespread harvest to supply meat and hides for mining camps. As a result, elk became increasingly rare and, at one time, were thought to be eliminated from the area. However, remnant populations relegated to more remote, rugged portions of the zone survived. Translocation of elk from Yellowstone National Park to places in the McCall Zone such as New Meadows occurred in the late 1930s. Liberal either-sex hunting seasons kept populations suppressed well into the 1970s. Implementation of bull-only hunting in 1976 spurred an increase in elk populations in the McCall Zone. The population performed well from the mid-1980s through most of the 1990s, but calf production declined through the early 2000s. Calf:cow ratios improved beginning with the 2010 survey and remained >30:100 through 2022. Bull:cow ratios remained consistent at approximately 30:100 since 2014. In 2023 CWD was detected in a mule deer harvested on the border between GMUs 23 and 32A.

Management Challenges and Opportunities

The McCall Zone is managed under a general season framework, along with several controlled hunts aimed at addressing depredation concerns. Winter ranges occur primarily on public land. However, most elk-human conflicts in this zone occur during summer and autumn months when elk enter private agricultural fields in higher elevation valley bottoms to forage. Depredation issues were reduced substantially over the last several years, but reimbursements remain high due to the area's high-value commodity production. In addition, recent private land purchases adjacent to agricultural land in GMUs 23 and 24 have noticeably restricted hunting access in those areas.

Much of the central and eastern portions of the McCall Zone experienced large wildfires over the last 20 years, leaving vast areas of dead and downed timber which are difficult for some wildlife to move through. In addition, these fires exposed much of the winter range to noxious weed invasion.

The 2023 detection of CWD on the border of GMUs 23 and 32A may prove to be a management challenge during the life of this plan, but initial efforts will focus on increased sampling to better determine prevalence and geographic distribution of CWD in this zone.

Inter-Zone and Intra-Zone Dynamics

Elk from neighboring areas likely move into GMUs 24 and 25 to summer, but at present, little information exists regarding elk movements and distribution outside of winter.

Future Needs

Hunter numbers are limited (caps or controlled hunts) in many elk zones surrounding the McCall Elk Zone, creating some concern over potential increased hunter congestion as hunters unable to obtain tags in those zones switch to McCall. The Department will monitor hunter participation and may consider adjustments to season or tag structure if necessary. Currently, little information exists on elk migration and habitat use in the zone. Future research should be aimed at determining seasonal elk distribution and movements to better guide management efforts. Improved knowledge about CWD prevalence and geographic distribution within the zone may result in management changes to discourage disease spread and manage local prevalence.

McCall Elk Zone Population Management Objectives

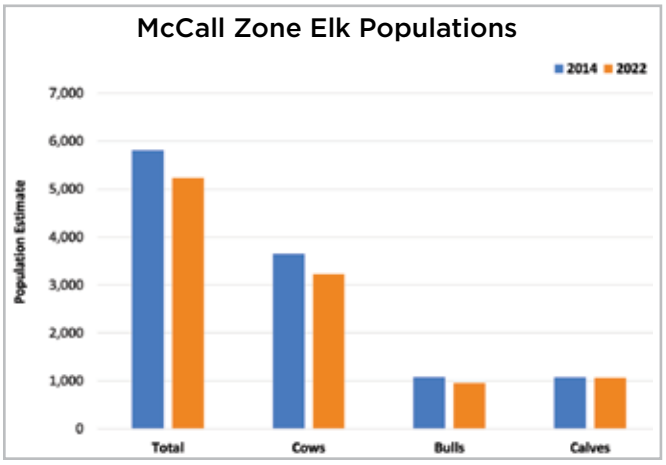
	Cows	Total Bulls	Branch Antlered Bulls
Management Objective Range	2,500 – 3,700	525 – 800	300 – 450
Current Status (2022)	3,222	953	624

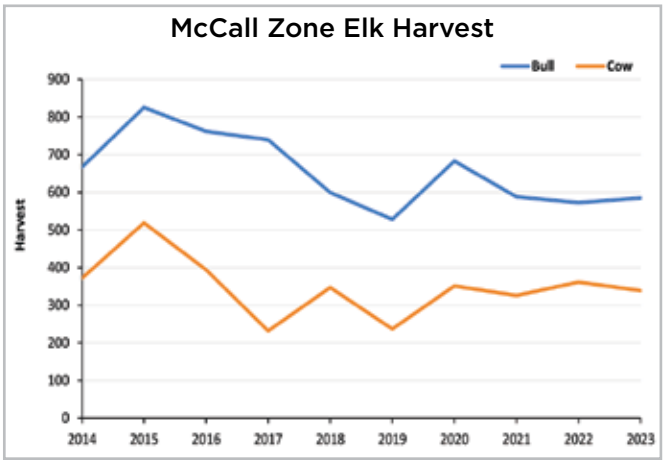
Color indicates where survey estimates are relative to management objectives:

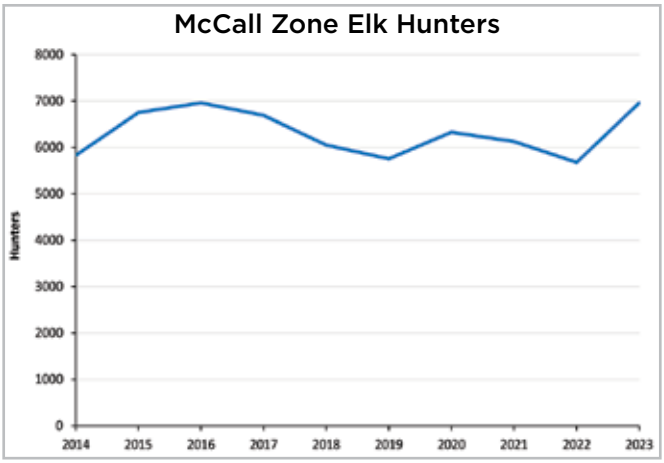
black = within; red = below; blue = above

McCall Elk Zone Population Survey Estimates

Year	Cows	Calves	Total Bulls	Spikes	Raghorn Bulls	Mature Bulls	Unclassified Elk	Total Population	Calves per 100 Cows	Bulls per 100 Cows
2022	3,222	1,062	953	329	332	292	0	5,237	33	30
2014	3,652	1,071	1,077	369	381	327	8	5,808	29	30







McCall Elk Zone Management Table

Management Direction	Strategy
Develop an elk monitoring program which includes modeling or monitoring zone population abundance during years between surveys.	Collect population data for current models and inform ongoing development of IPMs.
Develop biological studies to improve population, predator, and habitat management capabilities.	Pursue research activities designed to provide improved information on seasonal movements and survival.
Implement measures to minimize, eliminate, or compensate for elk depredations.	Maintain hunt structures that promote depredation prevention; actively pursue preventative and mitigation measures such as Continued Use Agreements (CUA), Depredation Release Agreements (DRA), and Proactive Landowner Assistance in Depredations (PLAID) agreements; continue to implement reactive measures to prevent elk depredations such as depredation hunts and depredation kill permits; and provide fair compensation when damages are unavoidable.
Collaborate with public land managers and private landowners to improve key summer, winter, and transitional elk habitat to meet statewide objectives.	Coordinate with USFS Burned Area Emergency Response (BAER) teams to implement post-fire rehabilitation. Ensure IDFG staff in each region are certified as Resource Advisors via USFS. Work with land management agencies and private landowners to expand and improve aspen stands and enhance or develop early to mid-successional habitat in climax conifer forest areas. Prioritize these projects in GMUs 19A and 25. Treat invasive weeds along the South Fork Salmon River in GMUs 19A and 25 in elk elk winter range using chemical and biocontrol methods.

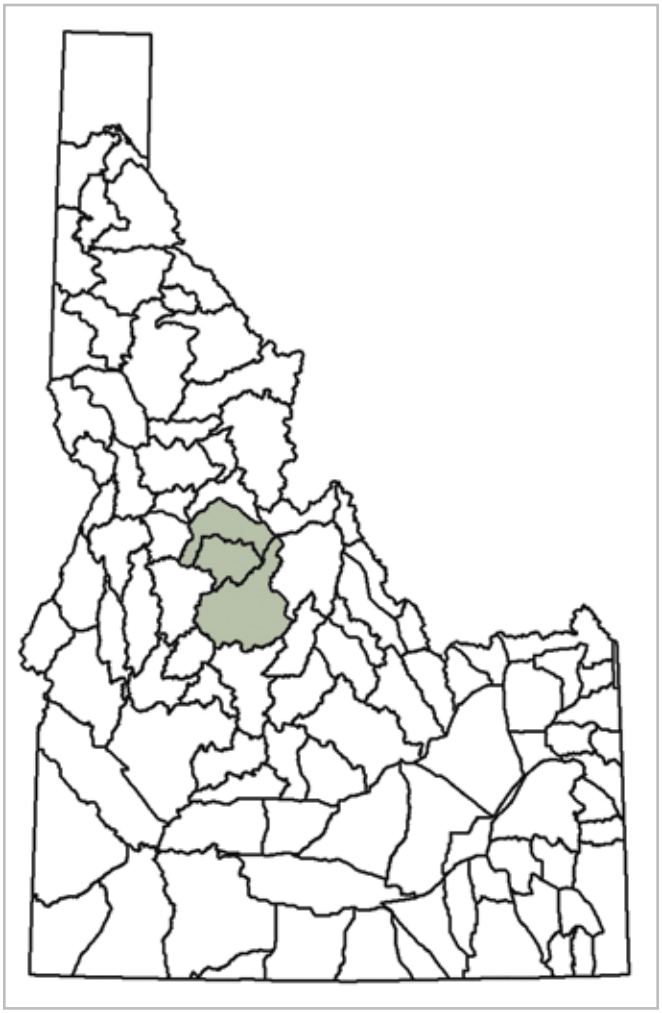
McCall Elk Zone Management Table

Management Direction	Strategy
Increase IDFG involvement in long- and short-term land-use planning efforts by providing information, analyses, and recommendations to improve and preserve elk habitat.	Continue to provide input on forest collaborative processes such as Payette Forest Coalition and South Fork Salmon River Restoration and Access Management Plan to ensure that wildlife habitat and security are incorporated in planning processes.
Minimize the influence of disease as a limiting factor in elk populations.	Assess CWD prevalence rate and geographic extent through increased surveillance. Use hunter participation and existing hunt structures where and when feasible in the implementation of the CWD management plan.

MCCALL PHOTO: CC-BY MIKE NEEDHAM AT FLICKR.COM

Middle Fork Zone

Game Management Units 20A, 26, and 27 Administered by IDFG's Southwest and Salmon Regions



Proposed 6-Year Management Direction:

- Performance and management of the Middle Fork Zone is currently influenced by habitat and predation.
- Current population management direction in the Middle Fork Zone is to increase cow populations towards objectives.

Description

The Middle Fork Zone exhibits steep and rugged terrain within the Frank Church River-of-No-Return Wilderness. Much of the zone is comprised of mixed-conifer forest transitioning to sage steppe-grassland rangelands in canyons at lower elevations.

Historical Perspective

Elk abundance was low in the Middle Fork Zone through the early part of the 20th century. Populations began to grow under regulated hunting seasons, and liberal either-sex opportunity was offered due to the remote wilderness character of this zone. In 1976 bag limits were changed to antlered only as managers suspected long, either-sex seasons led to population declines. By 1982 populations recovered sufficiently to allow antlerless opportunity via limited controlled hunts. Elk populations in this zone peaked in the mid-1990s and since declined. The Middle Fork Zone is currently managed as capped hunt with A and B tag any-weapon hunting opportunities for antlered elk. Antlerless harvest was eliminated after 2010. Access is very limited in this elk zone and >50% of hunters are nonresidents, which supports a large outfitting presence.

Management Challenges and Opportunities

More than one-half of the Middle Fork Elk Zone burned since the early 2000s, with several large tracts having burned twice. These recent, repeated fires caused a successional shift away from shrub-dominated landscapes, allowing noxious weeds and invasive annual grasses to expand, and thereby decreasing overall habitat quality. Weed control measures and habitat improvement project opportunities are limited because most of the landscape is federally designated wilderness.

Predation is likely exacerbating effects of lower quality habitat on the population decline. Several incentives were implemented to increase predator harvest in this elk zone. In 1999, reduced-price bear and mountain lion tags were made available to nonresidents who possessed a deer or elk tag. In years following, second bear and lion tags could be used in this elk zone. In addition, wolf hunting seasons were liberalized to allow year-round hunting with no tag limits, and trapping season was extended to 7 months. Limited access in this elk zone restricts harvest of predators, particularly in winter.

Inter-Zone and Intra-Zone Dynamics

Limited movement data indicate elk from adjacent zones, including the Sawtooth, Salmon, and McCall zones winter at lower elevations throughout the Middle Fork Zone.

Future Needs

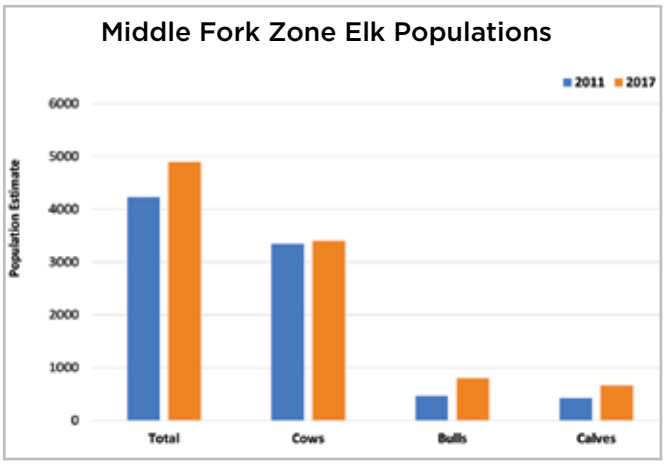
Short-term management goals involve stabilizing the elk population while providing antlered elk hunting opportunities. Long-term management goals involve working with federal partners to improve both winter and summer range for elk.

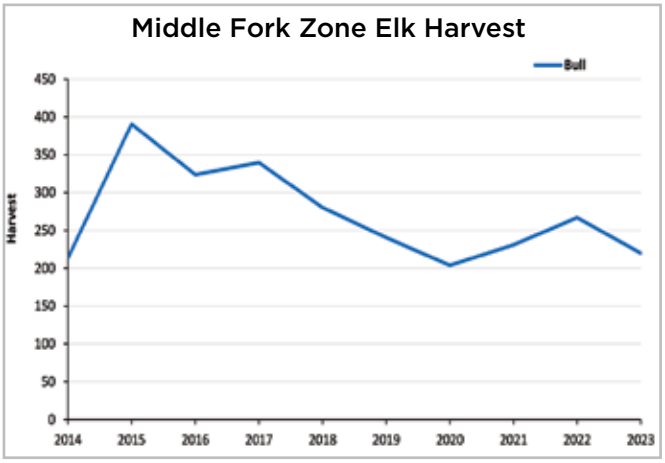
Middle Fork Elk Zone Population Management Objectives			
	Cows	Total Bulls	Branch Antlered Bulls
Management Objective Range	3,850 – 5,750	690 – 1,030	390 – 810
Current Status (2017)	3,395	805	530

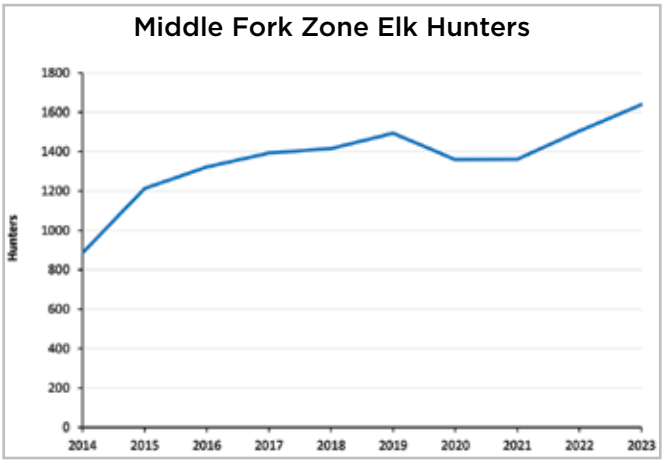
Color indicates where survey estimates are relative to management objectives:

black = within; red = below; blue = above

Middle Fork Elk Zone Population Survey Estimates										
Year	Cows	Calves	Total Bulls	Spikes	Raghorn Bulls	Mature Bulls	Unclassified Elk	Total Population	Calves per 100 Cows	Bulls per 100 Cows
2017	3,395	660	805	275	335	195	32	4,892	19	24
2011	3,341	420	462	186	159	117	6	4,229	13	14





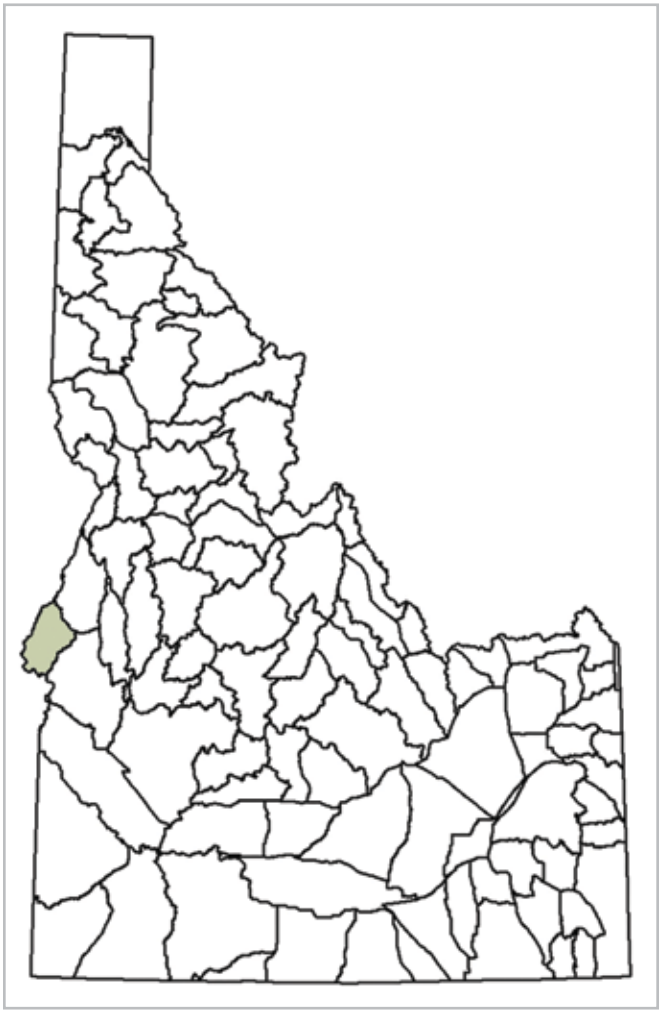


Middle Fork Elk Zone Management Table

Management Direction	Strategy
When zones are below objectives, identify limiting factors and, when appropriate, implement management actions or efforts to address identified limiting factors.	Continue to implement IDFG's Predation Management Plan for The Middle Fork Elk Zone and explore additional strategies to increase predator harvest. Implement actions identified in the 2023–2028 Gray Wolf Management Plan to reduce wolf predation on ungulate populations not meeting management objectives.
Develop biological studies to improve population, predator, and habitat management capabilities.	Reengage with USFS concerning implementation of research and monitoring activities in the wilderness, which will contribute to the elk IPM.
Work to enhance and maintain access for elk hunting.	Inform and support USFS efforts to maintain and improve existing trail systems and airstrips. Emphasis should be placed on maintaining trail systems that provide access from existing airstrips and road systems to facilitate hunter distribution and opportunity. Continue to work with USFS and Idaho Aeronautics to open and maintain the 4 Big Creek airstrips.
Collaborate with public land managers and private landowners to improve key summer, winter, and transitional elk habitat to meet statewide objectives.	Engage with USFS to identify and support wildfire mitigation and habitat enhancement efforts with an emphasis on noxious weed control.
Integrate habitat assessments in the development of elk population goals.	Pending development of a fine-scale vegetation map, reevaluate zone objectives under differing potential habitat scenarios to determine if objectives are appropriate.

Brownlee Zone

Game Management Unit 31 Administered by IDFG's Southwest Region



Proposed 6-Year Management Direction

- Performance and management of the Brownlee Zone is currently limited by depredation issues stemming from agricultural production and private land refugia.
- Current population management direction in the Brownlee Zone is to reduce elk numbers to within current objectives and manage for high-quality bull hunting opportunities.

Description

Landownership within the zone is split almost 50:50 between public and private holdings. Public land in the northern portion of the zone consists primarily of USFS and State of Idaho properties, which are largely one contiguous property with reasonable public access. This northern portion constitutes a majority of the summer range within the zone. Some transitional and winter range within the zone is managed by BLM, but most is privately owned, which limits public access. Habitat consists of approximately 80% sage steppe-grassland rangelands and 20% mixed-coniferous forests.

Historical Perspective

Elk were likely in the Brownlee Zone prior to European settlement in the mid-1800s. Native American tribes hunted elk for food in the Weiser River drainage. As in other areas of Idaho, proliferation of mining due to the gold rush in the late 1800s and early 1900s likely led to year-round harvest of these animals to supply meat and hides for mining camps. Subsequent heavy livestock grazing degraded habitat in the zone. Translocation of elk from Yellowstone National Park to places in the Weiser River and McCall Zones occurred in the late 1930s to bolster dwindling elk populations. Regulated livestock grazing occurred during the same era. Transient elk from adjacent zones probably repopulated the Brownlee Zone. Liberal either-sex hunting seasons kept elk populations suppressed well into the late 1960s. Unit 31 was closed to elk hunting in 1968 due to low elk numbers. Hunting resumed in 1976 with controlled any-weapon hunts and a portion of the GMU was opened to general archery opportunity in 1977. Elk populations in this zone performed well since the 1980s but reached their social tolerance level in the early 1990s. The population objective draws a balance between depredation concerns and providing high-quality elk hunting opportunities.

Management Challenges and Opportunities

Recent radio telemetry data indicate a portion of the population are nonmigratory elk, which do not leave private lands, associated with agriculture, in areas considered winter range. These nonmigratory elk are included in population estimates but are not typically available to the public and are responsible for a large proportion of depredation issues within the zone. Additionally, many elk leave public land with the onset of hunting season, which complicates management.

Inter-Zone and Intra-Zone Dynamics

Radiolocation data show some interchange with elk in the Weiser River Zone, primarily in the southern end of each zone.

Future Needs

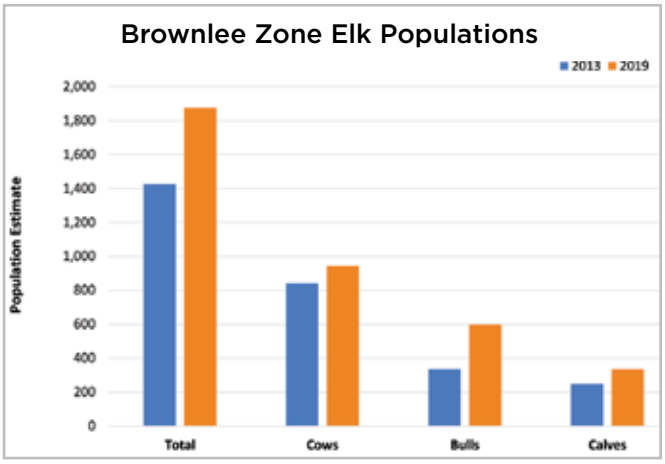
Maintaining or improving wintering habitat has been and should continue to be a priority to sustain or bolster tolerance and capacity for high density elk populations. Another priority is developing methodology to estimate the proportion and distribution of nonmigratory elk, which will help guide future management efforts.

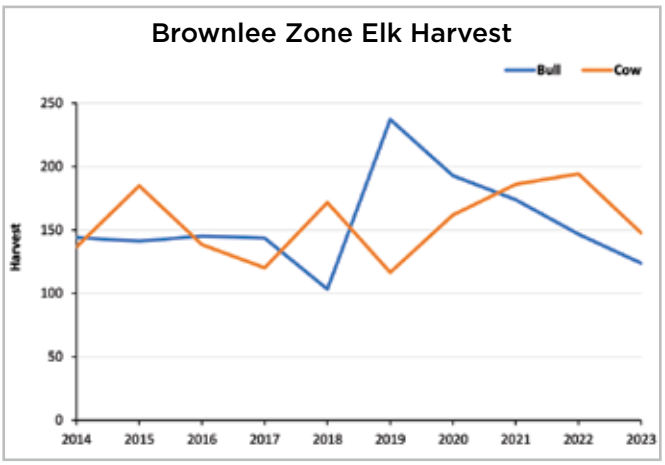
Brownlee Elk Zone Population Management Objectives			
	Cows	Total Bulls	Branch Antlered Bulls
Management Objective Range	550 – 850	150 – 200	75 – 125
Current Status (2019)	942	600	466

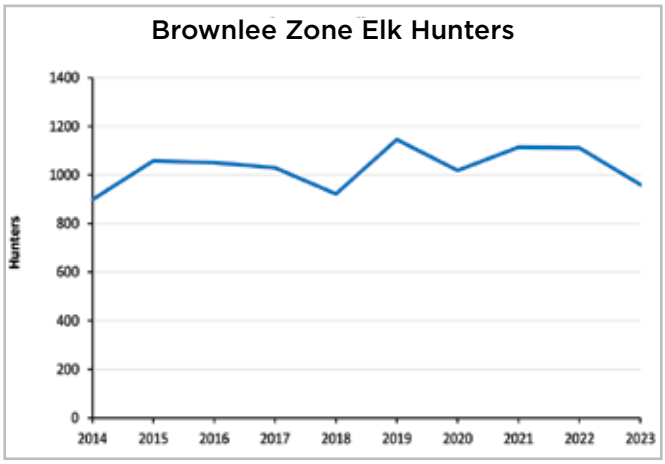
Color indicates where survey estimates are relative to management objectives:

black = within; red = below; blue = above

Brownlee Elk Zone Population Survey Estimates										
Year	Cows	Calves	Total Bulls	Spikes	Raghorn Bulls	Mature Bulls	Unclassified Elk	Total Population	Calves per 100 Cows	Bulls per 100 Cows
2019	942	334	600	134	202	264	0	1,876	35	64
2013	841	249	334	135	99	100	0	1,424	30	40





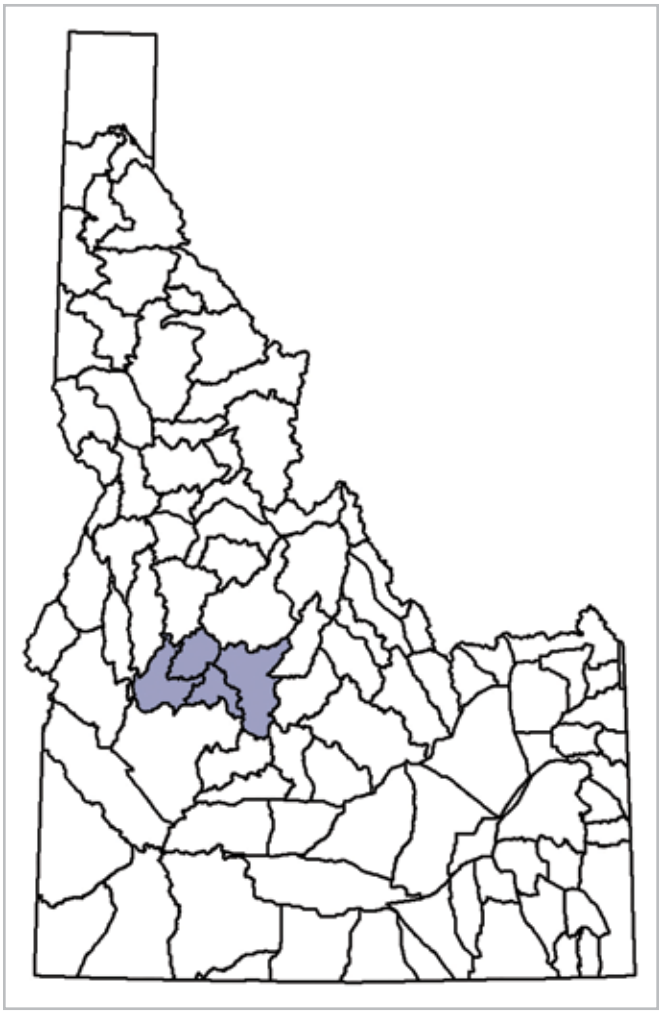


Brownlee Elk Zone Management Table

Management Direction	Strategy
Develop an elk monitoring program which includes modeling or monitoring zone population abundance during years between surveys.	Continue to collect annual population data for current models and inform ongoing development of IPMs. Develop methodology to estimate proportion of Brownlee Zone elk that are nonmigratory, depredating elk.
Implement measures to minimize, eliminate, or compensate for elk depredations.	Maintain hunt structures that promote depredation prevention; actively pursue preventative and mitigation measures such as CUAs, DRAs, and PLAID agreements; continue to implement reactive measures to prevent elk depredations such as depredation hunts and depredation kill permits; and provide fair compensation when damages are unavoidable. Pursue novel ideas and approaches for incentivizing hunter access on private lands.
Collaborate with public land managers and private landowners to improve key summer, winter, and transitional elk habitat to meet statewide objectives.	Work cooperatively with land management agencies, private landowners, and the Lower Weiser River Cooperative Weed Management Area to treat noxious weeds and invasive annual grasses using biocontrol, chemical, and cultural methods. Immediately following wildfires on BLM or IDL lands where elk habitat is impacted, ensure IDFG staff are included on the Emergency Stabilization and Burned Area Rehabilitation (ESR) team in accordance with the 2020 MOU (BLM MOU ID-SO-2020-03) to assist in providing recommendations to effectively rehabilitate elk habitat. Similarly, IDFG staff will coordinate with USFS BAER teams to accomplish the same. The Department will ensure staff in each region are certified as Resource Advisors via USFS.

Sawtooth Zone

Game Management Units 33, 34, 35, and 36 Administered by IDFG's Southwest and Salmon Regions



Description

The Sawtooth Zone is comprised of some of Idaho's most rugged and remote country. Four wilderness areas fall within this zone: the Sawtooth, Cecil D. Andrus-White Clouds, Hemingway-Boulders, and Jim McClure-Jerry Peak. The zone is comprised of >95% public land, with large, contiguous portions under USFS management, which provides excellent public access. Habitat is comprised of approximately 90% mixed-conifer forest and 10% sage steppe-grass rangelands.

Historical Perspective

Elk were likely present in the Sawtooth Zone prior to European settlement in the mid-1800s. As in other areas of Idaho, proliferation of mining due to the gold rush in the late 1800s and early 1900s likely led to year-round harvest of these animals to supply meat and hides for mining camps. Subsequent heavy livestock grazing degraded habitat in the zone. Lack of big game in the area resulted in the Idaho Legislature establishing the South Fork Game Preserve (now GMU 35) in 1909. This was the first game preserve in Idaho and remained in place until 1977. No hunting was allowed in the preserve until 1945. The elk herd increased to >1,000 by 1940 and approximately 2,000 by the early 1950s. The population increased rapidly in the late 1970s, peaking in approximately 1989 with approximately 8,300 elk. The population steadily decreased from 1990 until 2009, to approximately 3,500 elk, when the Commission responded by implementing a cap on general-season tags. The cap was phased in over a 3-year period, reaching a 74% reduction of A-tag hunters and a 54% reduction of B-tag hunters upon full implementation in 2011. A slight increase to general-season tag allocation was adopted in 2019, along with additional changes to methods for selling Sawtooth tags, to satisfy overwhelming public demand. These efforts stabilized the population decline, but the Sawtooth Zone remains below population objectives for bulls and cows, and public demand for hunting opportunity remains high.

Proposed 6-Year Management Direction

- Performance and management of the Sawtooth Zone is currently limited or influenced by habitat limitations and predation issues.
- Current population management direction in the Sawtooth Zone is to increase the population to current objectives.

Management Challenges and Opportunities

The Sawtooth Predation Management Plan was implemented in 2012. Since 2012 predation on calves declined but may continue to limit population growth potential. Calf mortality risk due to predation was roughly 43% from 2008 through 2011. Since 2013, predation risk remained stable at a decreased, but likely impactful, level (18–19%). Mortality risk of cows due to predation remained largely unchanged since cause-specific mortality monitoring efforts began (3–7%). Proliferation of invasive annual vegetation on limited winter range, increased habitat fragmentation, and changes in land use likely limit herd growth potential. Maintaining or improving habitat for elk has been, and should continue to be, a priority to increase elk numbers to within zone population objectives.

Inter-Zone and Intra-Zone Dynamics

The Sawtooth Zone presents unique challenges for elk management due to varied movement and migration patterns, which complicate population monitoring and harvest management. Unit 36 contains few overwintering elk, yet the majority of harvest in the zone comes from GMUs 36 and 33. Radio telemetry data indicate a large proportion of elk occupying summer range in GMU 36 migrate to winter ranges in ≥11 surrounding GMUs in 5 elk zones. This disparity in elk distribution between hunting season and winter aerial surveys limits IDFG's ability to obtain winter population estimates representative of the hunted population. As described in the following management directions and strategies, developing an improved understanding of elk movement ecology in and around this zone and evaluating additional methods to estimate populations prior to hunting season (e.g., cameras on summer range) could facilitate redistribution of hunters to match elk availability at the GMU level within this zone.

Future Needs

The Department will continue to manage the entire zone to increase elk populations and provide a variety of quality hunting opportunities near a large human population center (Boise) while maintaining the elk population within carrying capacity of limited winter range and minimizing agricultural crop and property damage complaints on private land. The Department will focus on working with partners to increase capacity of habitat to support elk and elk calf survival across the zone. Additionally, IDFG will continue to iteratively adjust management to address challenges of understanding elk populations in a zone dominated by summer range, with limited winter range, and consequent significant movements across zone boundaries.

Sawtooth Elk Zone Population Management Objectives

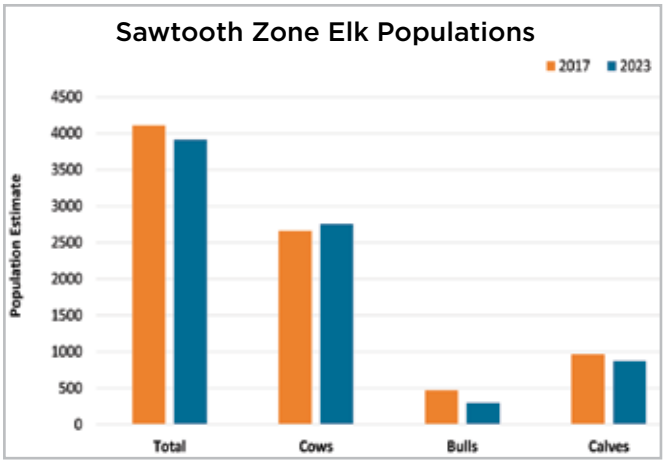
	Cows	Total Bulls	Branch Antlered Bulls
Management Objective Range	3,000 – 4,500	630 – 945	360 – 540
Current Status (2023)	2,754	292	165

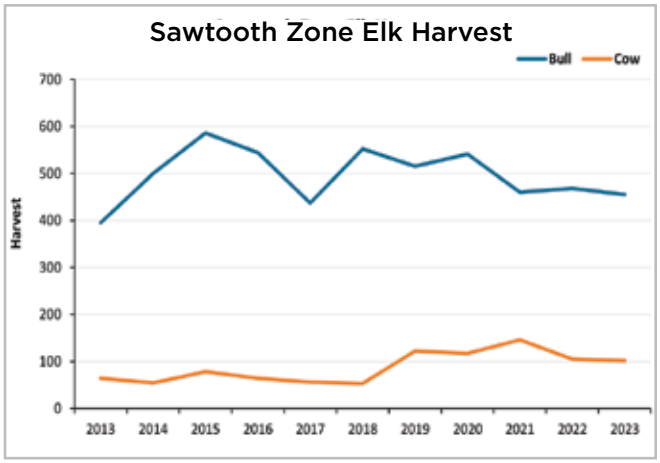
Color indicates where survey estimates are relative to management objectives:

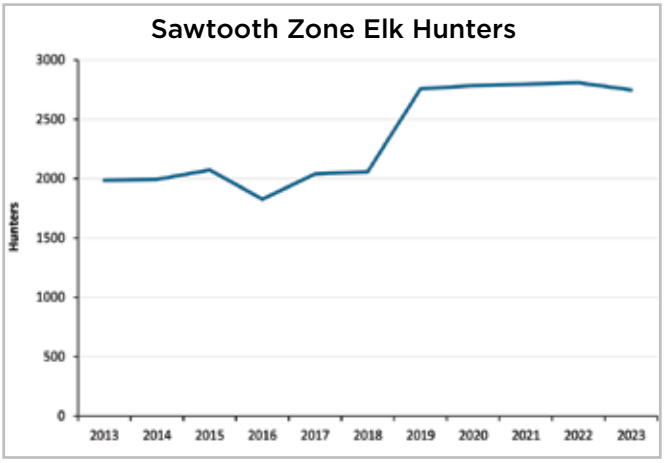
black = within; red = below; blue = above

Sawtooth Elk Zone Population Survey Estimates

Year	Cows	Calves	Total Bulls	Spikes	Raghorn Bulls	Mature Bulls	Unclassified Elk	Total Population	Calves per 100 Cows	Bulls per 100 Cows
2023	2,754	870	292	127	83	82	0	3,916	32	11
2017	2,659	967	472	200	171	101	8	4,106	36	18







Sawtooth Elk Zone Management Table

Management Direction	Strategy
When zones are below objectives, identify limiting factors and, when appropriate, implement management actions or efforts to address identified limiting factors.	Implement the current predator management plan and adjust hunt structures as appropriate
Develop biological studies to improve population, predator, and habitat management capabilities.	Assess methods for estimating carrying capacity accounting for noxious weeds and exotic annuals. Develop a working model of elk movement ecology in the zone to facilitate appropriate tag allocation. Examine the efficacy of camera-based population modeling and implement if warranted.
Implement measures to minimize or compensate for elk depredations.	Maintain hunt structures that promote depredation prevention; actively pursue preventative and mitigation measures such as CUAs, DRAs, and PLAID agreements; continue to implement reactive measures to prevent elk depredations such as depredation hunts and depredation kill permits; and provide fair compensation when damages are unavoidable.

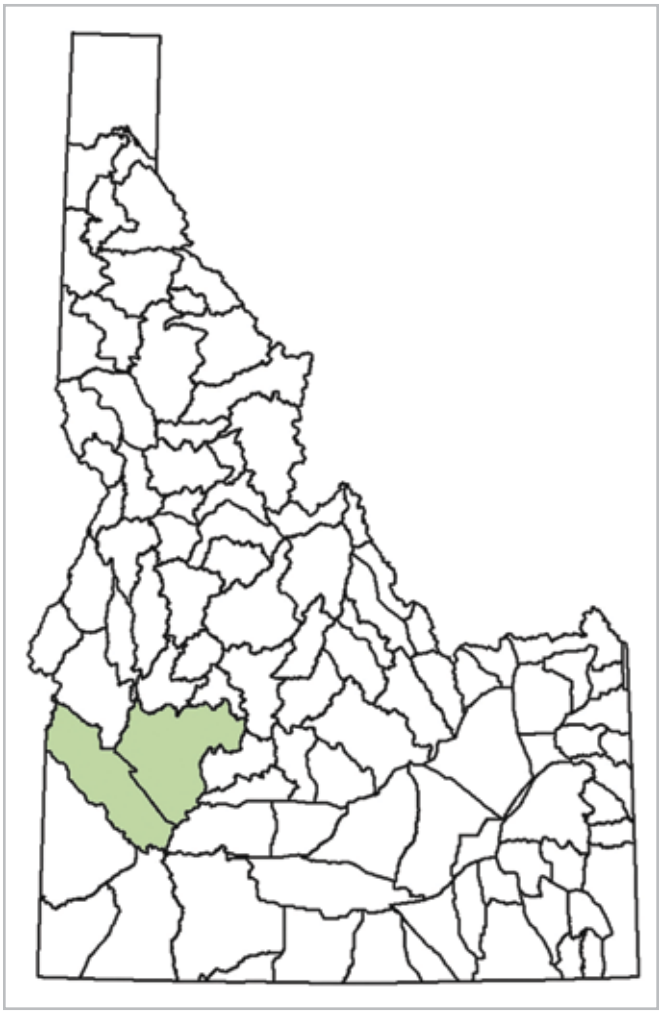
Sawtooth Elk Zone Management Table

Management Direction	Strategy
Collaborate with public land managers and private landowners to improve key summer, winter, and transitional elk habitat to meet statewide objectives.	Assist private landowners and land management agencies with treatment of invasive weeds, with a focus on invasive annual grasses and re-establishment of native perennial plants on winter ranges. Work with land management agencies and private landowners to expand and improve aspen stands and enhance or develop early to mid-successional habitat in climax conifer-forest areas. Collaborate with USFS on Southwest Idaho Landscape projects to refine management actions to maximize benefits to elk populations. Immediately following wildfires on BLM or IDL lands where elk habitat has been impacted, ensure IDFG staff are included on the ESR team in accordance with the 2020 MOU (BLM MOU ID-SO-2020-03) to assist in providing recommendations to effectively rehabilitate elk habitats. Similarly, IDFG staff will coordinate with USFS BAER teams to accomplish the same. The Department will ensure staff in each region are certified as Resource Advisors via USFS.
Maintain IDFG involvement in long- and short-term land-use planning efforts by providing information, analyses, and recommendations to improve and preserve elk habitats.	Participate in Forest Collaboratives and interactions with local federal biologists and planning efforts.

SAWTOOTH PHOTO: CC-BY MIKE NEEDHAM AT FLICKR.COM

Boise River Zone

Game Management Units 38 and 39 Administered by IDFG's Southwest Region



Proposed 6-Year Management Direction

- Performance and management of the Boise River Zone is currently limited or influenced by depredation issues, habitat fragmentation, and habitat loss on winter range.
- Current population management direction in the Boise River Zone is to continue providing general-season hunting opportunities while reducing the population to meet objectives and reducing nonmigratory populations causing agricultural conflict.

Description

Unit 39 contains >70% public land, with large, contiguous portions of USFS and BLM property which provide excellent public access. Habitat is split roughly 60:40 between mixed-conifer forests and sage-steppe-grassland rangelands. On summer and winter ranges, conversion to exotic annual grasses and forbs caused declines in habitat value for elk. Unit 38 takes in most of the Treasure Valley and is comprised of a 60:40 private:public landownership split. Public land is primarily managed by BLM and has largely degraded into monotypic stands of exotic species, which provide limited elk habitat. Private lands primarily consist of irrigated agriculture and residential development. Currently, GMU 38 contains no suitable elk habitat not directly tied to agricultural crop production.

Historical Perspective

Elk were likely present in the Boise River Zone prior to European settlement in the mid-1800s. As in other areas of Idaho, proliferation of mining due to the gold rush in the late 1800s and early 1900s likely led to year-round harvest of elk to supply meat and hides for mining camps. Subsequently, heavy livestock grazing degraded habitat in the zone. Sparse elk herds were later bolstered with translocated elk from the Yellowstone area in the late 1930s. Relatively liberal either-sex seasons were maintained in this zone until the early 1970s, suppressing the elk population well below habitat potential. In 1976, antlered-only hunting was implemented. In 1988 a small number of controlled antlerless hunts were added back into the zone and antlerless opportunity slowly increased since then. Elk populations increased since the early 2000s. Most transitional and summer ranges used by migratory elk within the zone are on public lands.

Management Challenges and Opportunities

Overall habitat degradation remains a concern, but habitat quality and availability on winter range is the primary limiting factor for this population. Currently, there is no suitable elk habitat not directly tied to agriculture in GMU 38. Therefore, grouping this unit with the Boise River Zone will allow for general-season

hunting opportunities on a growing number of nonmigratory elk and allow managers to continue addressing depredations on private property during winter months.

Inter-Zone and Intra-Zone Dynamics

During summer, elk are distributed throughout GMU 39. Transitioning to winter months, most elk move within the zone to lower elevations and are joined by some elk from the Sawtooth and Smoky-Bennett zones. Elk migrating into the Boise River Zone for winter would likely be available to hunters only during late-season hunts. A small number of elk reside exclusively on private property and cause agricultural depredations, but most elk within the zone are available to the public during general hunting seasons.

Future Needs

Continuing to address conflicts as they arise across the zone and working to ensure winter habitat remains functional and available will continue to be a priority. Involvement in fire rehabilitation efforts, particularly in low-elevation areas with lower resistance to invasive annual plant expansion should be prioritized to ensure habitat outcomes described above.

Boise River Elk Zone Population Management Objectives

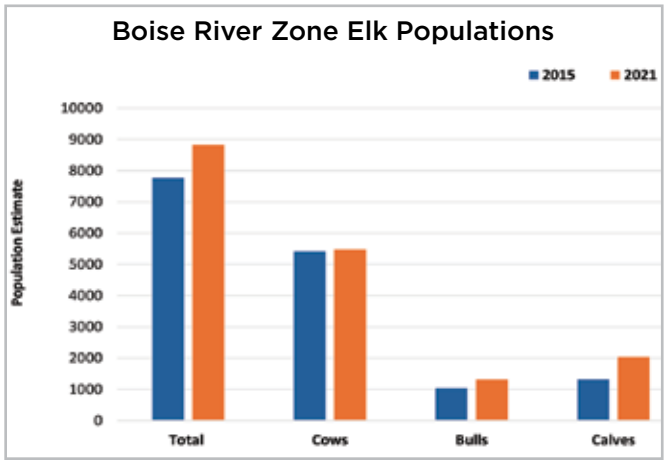
	Cows	Total Bulls	Branch Antlered Bulls
Management Objective Range	3,200 – 4,800	650 – 950	375 – 575
Current Status (2021)	5,480	1,313	865

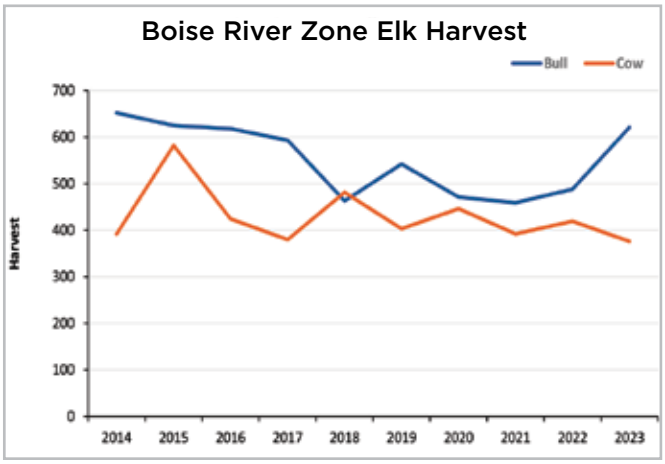
Color indicates where survey estimates are relative to management objectives:

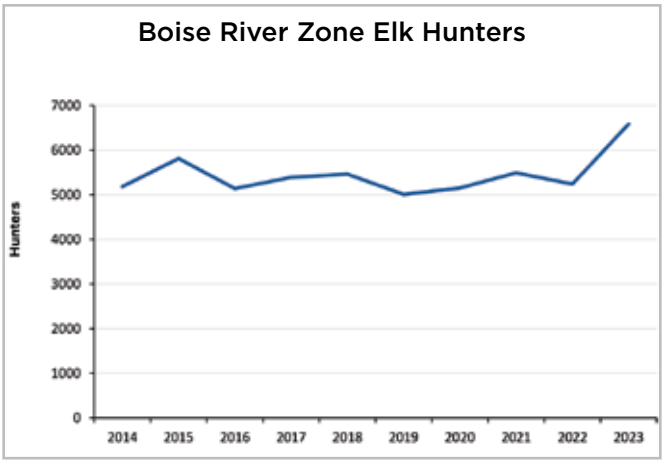
black = within; red = below; blue = above

Boise River Elk Zone Population Survey Estimates

Year	Cows	Calves	Total Bulls	Spikes	Raghorn Bulls	Mature Bulls	Unclassified Elk	Total Population	Calves per 100 Cows	Bulls per 100 Cows
2021	5,480	2,037	1,313	448	362	503	2	8,832	37	24
2015	5,417	1,317	1,035	448	240	347	0	7,769	24	19







Boise River Elk Zone Management Table

Management Direction	Strategy
Develop an elk monitoring program which includes modeling or monitoring zone population abundance during years between surveys.	Continue to collect annual population data for current models and inform ongoing development of IPMs.
Implement measures to minimize or compensate for elk depredations.	Continue to maintain hunt structures that allow for depredation prevention; actively pursue preventative and mitigation measures such as CUAs, DRAs, and PLAID agreements; continue to implement reactive measures to prevent elk depredations such as depredation hunts and depredation kill permits; and provide fair compensation when damages are unavoidable.

BOISE RIVER PHOTO: CC-BY JAMES EDMONDSON AT FLICKR.COM

Collaborate with public land managers and private landowners to improve key summer, winter, and transitional elk habitat to meet statewide objectives.	Immediately following wildfires on BLM or IDL lands where elk habitat has been impacted, ensure IDFG staff are included on the ESR team in accordance with the 2020 MOU (BLM MOU ID-SO-2020-03) to assist in providing recommendations to effectively rehabilitate elk habitats. Similarly, IDFG staff will coordinate with USFS BAER) teams to accomplish the same. The Department will ensure staff in each region are certified as Resource Advisors via USFS. Assist private landowners, BLM, and IDL to maintain existing fuel breaks associated with BLM's Paradigm Project. Regularly evaluate the need for additional fuel breaks and implement projects as funding and resources permit. Assist private landowners and land management agencies with treatment of invasive weeds with a focus on invasive annual grasses and re-establishment of native perennial plants. Where human disturbance associated with winter recreational use of roads, trails, or lands negatively impact wintering elk, work with land management agencies to develop mitigating measures (e.g., seasonal closures, trail re-routing, user-type restrictions, etc.). As funding and resources permit, and within areas identified as movement routes, cost share with private landowners to replace fences posing an impediment or otherwise injurious to migrating elk with wildlife-friendly fencing or crossing structures. Work with land management agencies and private landowners to expand and improve aspen stands and enhance or develop early to mid-successional habitat in climax conifer-forest areas.
Maintain IDFG involvement in long- and short-term land-use planning efforts by providing information, analyses, and recommendations to improve and preserve elk habitats.	Participate in Forest Collaboratives and interactions with local federal biologists and planning efforts.
Minimize the influence of disease as a limiting factor in elk populations.	Continue annual disease monitoring efforts for current and emerging diseases.
Collaborate with federal and state agencies, American Indian tribes, counties, nonprofit organizations, private landowners, and others to incorporate important elk movement and migration habitat and routes into management decisions.	Continue to implement the Idaho Action Plan with a focus on Priority Areas within the zone. Provide technical assistance to partners regarding impacts of proposed projects on elk habitat, and movement and migration routes. Collaborate with county, state, federal, tribal, and NGO partners, as well as private landowners, to improve migration habitat as opportunities arise.

Weiser River Zone

Game Management Units 22, 32, and 32A Administered by IDFG's Southwest Region

Proposed 6-Year Management Direction

- Performance and management of the Weiser River Zone is currently limited by depredation issues stemming from agricultural production and private land refugia.
- Current population management direction in the Weiser River Zone is to reduce the elk population to current objectives and increase surveillance for CWD.

Description

Landownership within the zone is split approximately 50:50 between public and private. Public ownership within GMUs 22 and 32A are largely contiguous parcels of USFS and BLM land which provide reasonable public access. Public ownership within GMU 32 is largely BLM, much of which is disconnected or difficult to access due to private land holdings. Habitat is a split roughly 60:40 between sage steppe-grassland rangelands and mixed-conifer forests.

Historical Perspective

Elk were likely present in the Weiser River Zone prior to European settlement in the mid-1800s. As in other areas of Idaho, proliferation of mining due to the gold rush in the late 1800s and early 1900s likely led to year-round harvest of these animals to supply meat and hides for mining camps. Subsequent heavy livestock grazing degraded habitat in the zone. Translocation of elk from Yellowstone National Park to sites in the McCall Zone on the periphery of the Weiser River Zone occurred in the late 1930s to bolster sagging elk populations. Regulated livestock grazing began during the same era. Transient elk from adjacent zones likely repopulated the Weiser River Zone. Liberal either-sex hunting seasons suppressed elk populations well into the 1970s. Unit 22 was converted to controlled either-sex seasons in 1971, followed by general bull-only hunting in 1977, spurring an increase in elk populations.

The elk population in the agricultural area of the west half of Unit 32 consisted of transient elk prior to 1980. Following several hard winters, elk herds started moving into this area more consistently. Most elk were winter residents, with a few groups becoming year-round residents. The population of elk in the Weiser River Zone dramatically increased from the 1990s through the early 2010s, jumping from an estimated 3,800 animals in 1993 to 10,500 in 2013. Over the next 10 years IDFG implemented aggressive antlerless harvest within the zone, resulting in a current population likely hovering near the upper end of objective range. The Weiser River elk population estimates are derived from elk counted during winter on lower elevations in portions of GMUs 22, 32 and

32A. In 2023 CWD was detected in a mule deer harvested on the border of GMUs 23 and 32A.

Management Challenges and Opportunities

Maintaining a population within objective range, but also available to the general public is a high priority. Summer habitat for the Weiser River elk is primarily located on federal lands, but occupied winter habitat largely occurs on private land in GMU 32 and a mix of private and public lands in GMU 22.

Recent radio telemetry data and fixed-wing aircraft surveys indicate a sizeable portion of the population are non-migratory elk, which do not leave private lands associated with agriculture and live year-round in areas considered winter range in GMUs 22 and 32. These non-migratory elk are included in population estimates, but are not typically available to the public and are responsible for a large proportion of depredation damages within the zone.

Inter-Zone and Intra-Zone Dynamics

Movements of radio-collared elk show some interchange with elk in the Brownlee Zone, primarily in the southern end of each zone. Additionally, Weiser River Zone elk share summer range with McCall Zone elk along the border of GMUs 24 and 32A.

Future Needs

Maintaining or improving wintering habitat for these elk has been, and should continue to be, a priority to sustain or bolster tolerance and capacity for high density elk populations. Increased collaboration with land management agencies is needed to improve access management and decrease disturbance on winter range with the goal of facilitating elk security and use of public lands. Involvement in fire rehabilitation efforts, particularly in low-elevation areas with lower resistance to invasive annual plant expansion should be prioritized to ensure habitat can support this high-density elk population. Another priority is to develop methodology to estimate the proportion and distribution of nonmigratory elk, which will guide future management efforts in the zone.

Improved knowledge about CWD prevalence and geographic distribution within the zone may result in management changes to discourage disease spread and manage local prevalence.

Weiser River Elk Zone Population Management Objectives

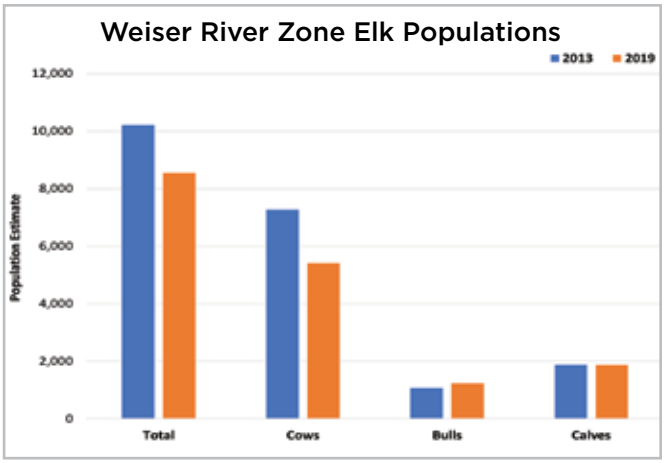
	Cows	Total Bulls	Branch Antlered Bulls
Management Objective Range	3,300 – 5,000	670 – 1,000	325 – 500
Current Status (2019)	5,410	1,234	598

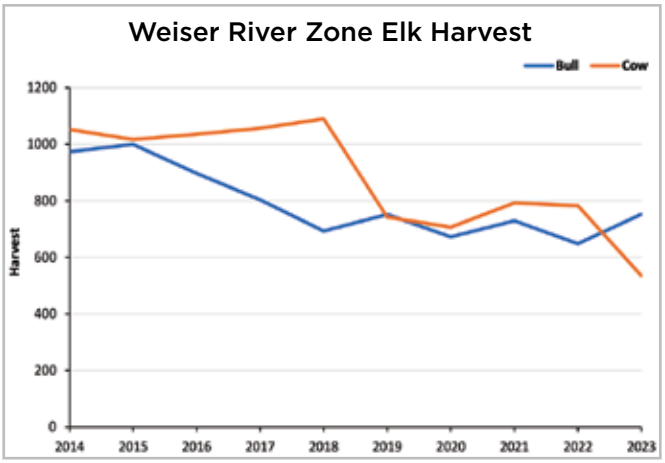
Color indicates where survey estimates are relative to management objectives:

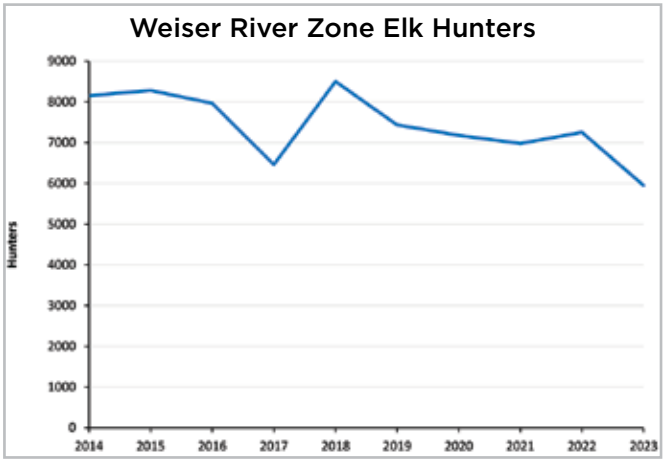
black = within; red = below; blue = above

Weiser River Elk Zone Population Survey Estimates

Year	Cows	Calves	Total Bulls	Spikes	Raghorn Bulls	Mature Bulls	Unclassified Elk	Total Population	Calves per 100 Cows	Bulls per 100 Cows
2019	5,410	1,863	1,234	636	348	250	0	8,507	34	23
2013	7,273	1,867	1,074	537	319	218	0	10,214	26	15







Weiser River Elk Zone Management Table

Management Direction	Strategy
Develop an elk monitoring program which includes modeling or monitoring zone population abundance during years between surveys.	Continue to collect annual population data for current models and inform ongoing development of IPMs. Develop methodology to estimate the proportion and distribution of Weiser Zone nonmigratory, depredating elk.
Implement measures to minimize, eliminate, or compensate for elk depredations.	Maintain hunt structures to promote depredation prevention; actively pursue preventative and mitigation measures such as CUAs, DRAs, and PLAID agreements; continue to implement reactive measures to prevent elk depredations such as depredation hunts and depredation kill permits; and provide fair compensation when damages are unavoidable. Pursue novel ideas and approaches for incentivizing hunter access on private lands.

Weiser River Elk Zone Management Table

Management Direction	Strategy
Collaborate with public land managers and private landowners to improve key summer, winter, and transitional elk habitat to meet statewide objectives.	Immediately following wildfires on BLM or IDL lands where elk habitat has been impacted, ensure IDFG staff are included on the ESR team in accordance with the 2020 MOU (BLM MOU ID-SO-2020-03) to assist in providing recommendations to effectively rehabilitate elk habitat. Similarly, IDFG staff will coordinate with USFS BAER teams to accomplish the same. The Department will ensure staff in each region are certified as Resource Advisors via USFS. Work cooperatively with land management agencies, private landowners, and the Lower Weiser River Cooperative Weed Management Area to treat noxious weeds and invasive annual grasses using biocontrol, chemical, and cultural methods. Work with land management agencies and private landowners to improve range conditions in areas with chronic elk depredations.
Maintain IDFG involvement in long- and short-term land-use planning efforts by providing information, analyses, and recommendations to improve and preserve elk habitat.	Participate in Forest Collaboratives and interactions with local federal biologists and planning efforts.
Minimize the influence of disease as a limiting factor in elk populations.	Assess CWD prevalence rate and geographic extent through increased surveillance. Use hunter participation and existing hunt structures where and when feasible in the implementation of the CWD management plan.

Owyhee Zone

Game Management Units 40, 41, and 42 Administered by IDFG's Southwest Region

Description

Landownership within the Owyhee Zone is approximately 85% public land and 15% private. Six federally designated wilderness areas constitute approximately 13% of total land area. Habitats in the Owyhee Uplands and Canyonlands are primarily composed of a mix of sage-steppe and grassland rangelands, with encroaching juniper (Juniperus spp.) woodlands. Despite the large proportion of public land within the zone, rugged canyonlands, wilderness areas, and geographical distribution of private property present some access challenges.

Historical Perspective

Little is known about elk in the Owyhee Zone before European settlement, but current elk presence in the zone was established by a translocation effort in 1944. From 1990 to 1996 the Nevada Department of Wildlife and the Rocky Mountain Elk Foundation conducted a reintroduction program, releasing approximately 200 elk in the Bruneau and Jarbidge River drainages in Nevada south of the Idaho border. This reintroduction was very successful. Currently, a large number of migratory elk winter in GMU 41 east of Highway 51 and move south to summer ranges in Nevada, with a portion of the population residing in Idaho year-round.

Historically, elk densities were low in the Owyhee Zone and aerial surveys were not conducted due to the expansive land area, dispersed groups of elk, poorly understood winter range, difficult winter access, and interstate migratory patterns. The population was monitored using harvest data, occasional fixed-wing surveys, and other observations.

Hunting seasons in the 1950s through 1965 were offered through limited controlled hunts. From 1966 through 1972 a 2-day general season was held. No elk hunting was authorized in the zone from 1973 through 1991. In 1992 a 5-tag controlled hunt was authorized in GMU 40 and in 1994 GMU 42 was added to the hunt area. Hunting opportunity has steadily increased to current levels. The first GMU 41 antlered elk tags were authorized in 2010, and tag allocations have since increased to include antlerless opportunity.

Proposed 6-Year Management Direction

- Performance and management of the Owyhee Zone is currently limited by depredation issues and habitat.
- Current population management direction in the Owyhee Zone is to maintain the population in some areas, and to reduce elk numbers overall.

Management Challenges and Opportunities

Increases in elk numbers were inevitable because of natural reproduction, limited predation, hunter access limitations, and continued ingress of interstate elk. Conflicts between elk and landowners significantly influenced elk management in portions of Owyhee County. The BLM manages most elk habitat in Owyhee County. However, parcels of private property include habitat which receives substantial elk use, due in part to disproportionate availability of higher quality habitat. Landowners' major depredation concerns are damage to fences, loss of private rangeland forage, and increased elk use of irrigated hay meadows.

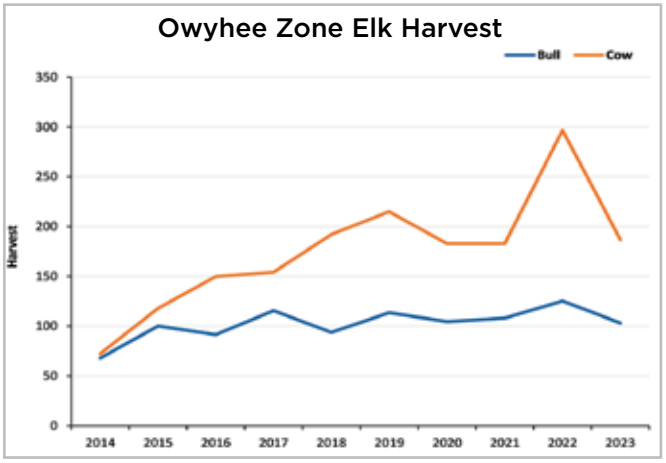
Habitat degradation due to juniper encroachment, wildfire, and invasive annual grasses, particularly on public land, may also affect elk land use, depredations, and population limitations. On portions of private and public land in GMUs 40 and 42, efforts are underway to remove encroaching juniper from sagebrush, aspen, and riparian habitats using mechanical treatments and prescribed fire. The purpose of these projects is to return large swaths of the area to an early successional state by reducing juniper cover, improving aspen stand health, and increasing amounts of grasses, forbs, and shrubs available for wildlife.

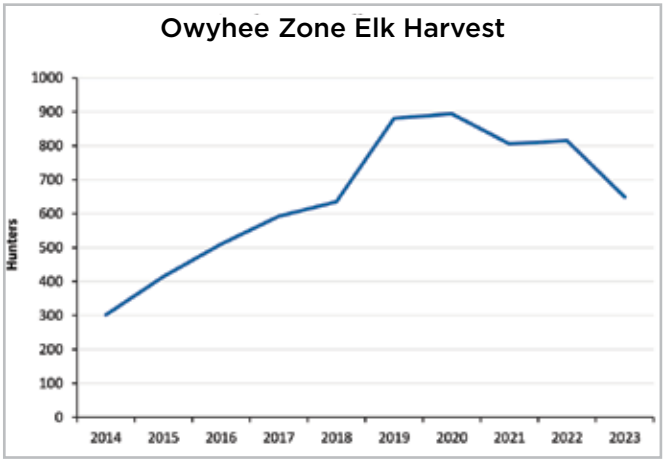
Inter-Zone and Intra-Zone Dynamics

Most elk movement to and from the Owyhee Zone is among neighboring states, while movement across zone boundaries is limited due to topography. This tri-state population includes elk that summer in Idaho and winter in Oregon, others that summer in Nevada and winter in Idaho, and year-round Idaho residents. Resident elk within the zone make shorter migrations between summer and winter range than many of their interstate counterparts, but can also be displaced among hunt areas with uneven pressure.

Future Needs

New projects are being developed to attempt to address invasive annual grasses and juniper encroachment, and to rehabilitate wildfire areas.





REXBURG PHOTO: CC-BY KELLY LO AT FLICKR.COM

Owyhee River Elk Zone Management Table

Management Direction	Strategy
Develop an elk monitoring program which includes modeling or monitoring zone population abundance during years between surveys.	Develop a sightability survey proposal based on radio-collared elk locations and observation data with the intent to begin surveying populations.
Implement measures to minimize or compensate for elk depredations.	Collaborate with the BLM during grazing permit renewal processes to assure range conditions provide adequate forage for elk in areas prone to depredation. Provide technical or financial assistance to land management agencies toward invasive annual grass treatments and removal of encroaching juniper meant to create more forage for wildlife adjacent to private lands experiencing elk depredation. Develop a project proposal to evaluate effectiveness of fence marking methods to reduce fence damage by elk. If effective, provide fence markers to landowners. Provide technical or financial assistance to landowners for converting existing fences to a wildlife-friendly design.

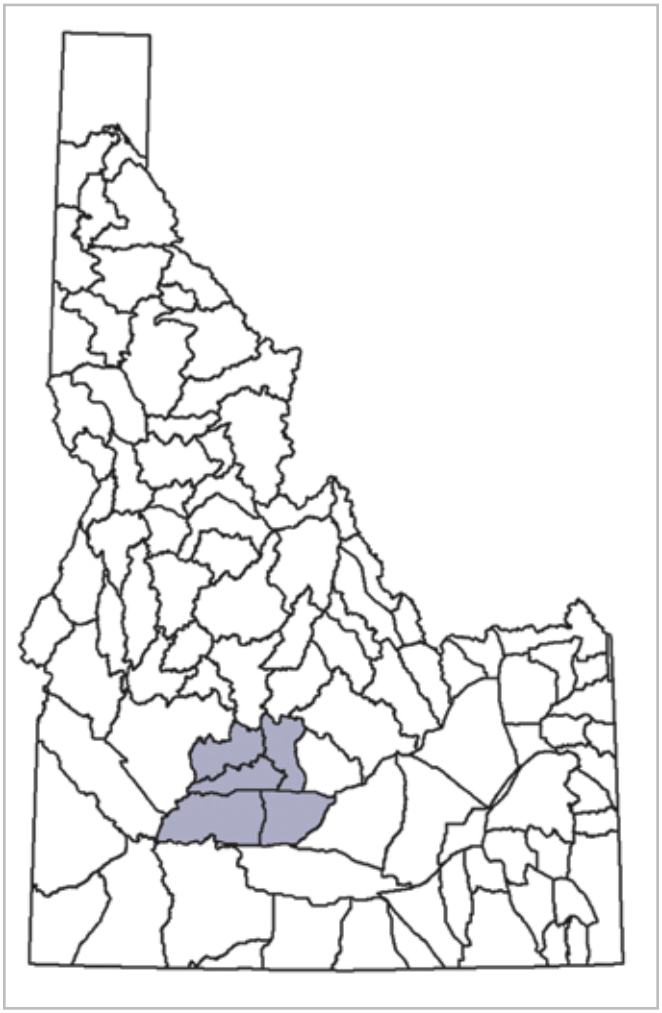
OWYHEE PHOTO: CC-BY ERIC BACKMAN AT FLICKR.COM

Owyhee River Elk Zone Management Table

Management Direction	Strategy
Collaborate with public land managers and private landowners to improve key summer, winter, and transitional elk habitat to meet statewide objectives.	Work with the interagency Bruneau Owyhee Sage-Grouse Habitat project planning team regarding juniper removal in elk habitat. Participate in BLM travel management planning within the Bruneau and Owyhee Field Offices. Immediately following wildfires on BLM or IDL lands where elk habitat was impacted, ensure IDFG staff are included on the ESR team in accordance with the 2020 MOU (BLM MOU ID-SO-2020-03) to assist in providing recommendations to effectively rehabilitate elk habitats. Work with BLM ESR and IDL to identify areas impacted by past wildfires where recovery is inadequate, and initiate follow-up restoration projects. Work with IDL foresters to maximize elk habitat benefits associated with future commercial timber sales on South Mountain. Use radio-collared elk movement data to identify and develop or recommend potential habitat treatment projects to benefit elk, such as prescribed fire, juniper removal, aspen stand improvement, and riparian and wet meadow restoration. Use seasonal elk movement data to guide timing of prescribed fire treatments on South Mountain. Use seasonal elk movement data to recommend future prescribed fire locations. Provide locally sourced shrub seed for restoration efforts when possible. Incorporate early successional shrubs and drought-tolerant grass and forb species, which are more likely to persist in hotter and drier conditions, into seed mixes. Identify and develop habitat projects that allow sportsmen and nonprofit groups to partner on habitat projects such as post-fire reseeding, winter range shrub planting, juniper removal, riparian and wet meadow restoration, and aspen stand improvements.

Smoky-Bennett Zone

Game Management Units 43, 44, 45, 48, and 52 Administered by IDFG's Magic Valley Region



Proposed 6-Year Management Direction

- Performance and management of the Smoky-Bennett Zone is limited by depredations.
- Current population management direction for the Smoky-Bennett Zone is to maintain cow elk populations at current levels while reducing bull numbers to levels consistent with population objectives.

Description

The Smoky-Bennett Elk Zone encompasses a diverse landscape. The southern portion of the zone is dominated by the Snake River Plain, which is characterized by sagebrush-steppe rangeland, much of which has been converted to agriculture. Vast tracts of native rangeland were degraded by wildfire and proliferation of invasive annual grasses. At higher elevations in the northern part of the zone, dry conifer forests and alpine habitats are common, particularly in upper reaches of the South Fork Boise River and Big Wood River watersheds.

Historical Perspective

The Smoky-Bennett elk population changed significantly over the last 100 years. Accounts from the 1870s indicate moderate numbers of elk occurred in the zone, but they were not as numerous as deer. Poor grazing practices, combined with unregulated hunting, led to a significant decline in elk numbers by the late 1800s. Subsequently, elk from Yellowstone National Park were translocated between present day Arrowrock Dam and the Big Wood River drainage between 1915 and 1936. Elk numbers steadily increased throughout the zone, and the first controlled hunt opportunity was offered in the 1950s. Depredation concerns began in the late 1970s, prompting IDFG to implement additional harvest opportunities. Elk numbers reached a peak of approximately 4,871 total animals by 2016, and agricultural depredations became a major concern. Increasing elk herds and a shift in behavior, with more animals occupying agricultural land during summer and autumn, resulted in escalating conflicts on private land. The first B-tag opportunity was offered in 2018, with 2,500 tags available. This hunt structure replaced several controlled hunts and was successful in reducing elk numbers.

Management Challenges and Opportunities

One of the primary management challenges in this zone is reducing depredations on agricultural lands. These issues are somewhat dependent on environmental conditions, with drought years increasing extent of these conflicts. The Department will actively work to address these conflicts, and will

continue to utilize depredation hunts, landowner permission hunts, Access Yes, and other methods to reduce depredations while providing hunting opportunities.

Summer habitat is generally of high quality across much of the zone; however, winter range is limiting, particularly along the Bennett Mountain front between Mountain Home and Shoshone. More than 120,000 acres of elk winter range burned in the past decade, converting native sagebrush-steppe to annual grasslands. Degraded native rangeland and nearly year-round recreation (both motorized and nonmotorized) likely contribute to displacement of elk on to private agricultural lands. Hunter crowding and conflict with private land becomes a concern in December and January when elk are congregated in large groups, thus most hunting opportunity is offered in late summer and early autumn. Late-season hunting is regulated by controlled hunts with a reduced number of hunters accessing areas where there are wintering elk, which is used to address depredation issues.

Inter-Zone and Intra-Zone Dynamics

There appear to be migratory, partially migratory, and resident elk herds in this population, each of which are accompanied by their own set of management needs and challenges. Advancements in GPS-collar technology, and a statewide emphasis on mapping elk seasonal ranges and migration routes led to a restructuring of the zone in 2014. This restructuring provided a better representation of the area used by this population of elk throughout the year. Although most elk in this zone migrate to winter range on the south side of Bennett Mountain and lower elevation habitat in the Big Wood River watershed, a subset of the Smoky-Bennett elk population migrates west to spend winter months on the foothills of the Danskin Mountains and benches above the South Fork Boise River in the Boise River Zone. Increased monitoring, via radio-collared elk, will aid in determining the number of elk emigrating from this zone to the Boise River Zone during winter.

Future Needs

To maintain elk within objectives, IDFG will continue to provide bull and cow harvest opportunities, while adjusting as needed in response to agricultural impacts. Additionally, IDFG will continue to survey this population regularly to evaluate impacts of harvest regulations. Working with land management agencies to improve native habitat and reduce recreational pressure on elk seasonally will continue to be important. Finally, working with private landowners and communicating with hunters to ensure both stakeholder groups are involved in management decisions will help ensure tools such as Access Yes and depredation hunts persist into the future.

Smoky-Bennett Elk Zone Population Management Objectives

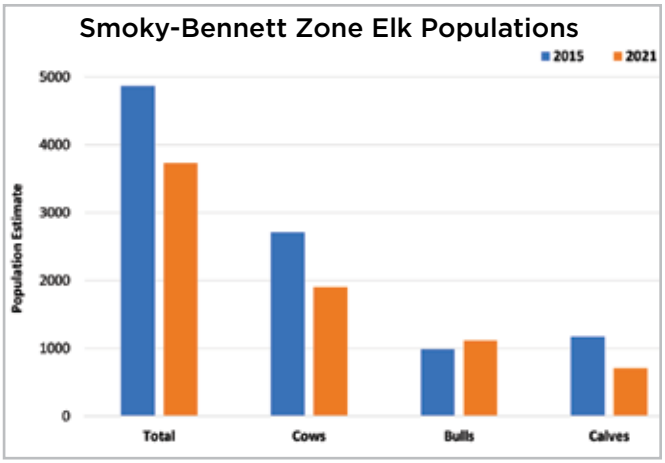
	Cows	Total Bulls	Branch Antlered Bulls
Management Objective Range	2,000 – 3,000	62 – 930	400 – 595
Current Status (2021)	1,905	1117	832

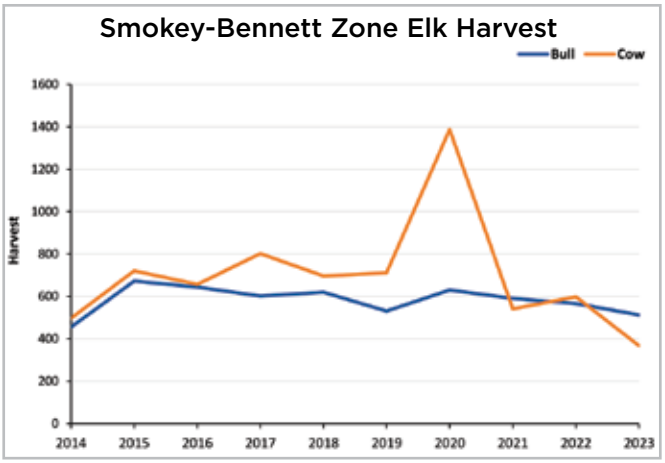
Color indicates where survey estimates are relative to management objectives:

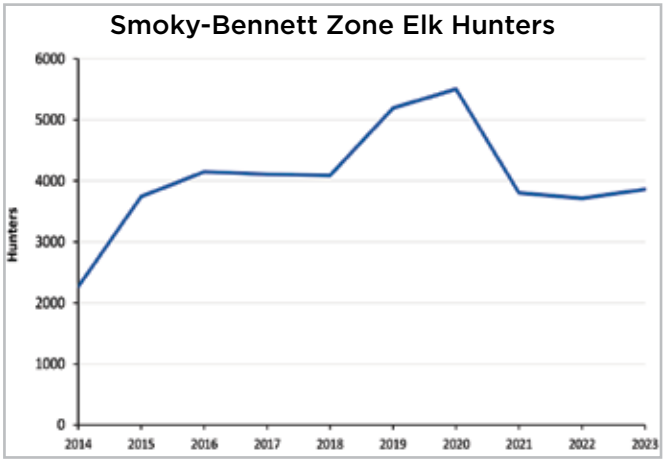
black = within; red = below; blue = above

Smoky-Bennett Elk Zone Population Survey Estimates

Year	Cows	Calves	Total Bulls	Spikes	Raghorn Bulls	Mature Bulls	Unclassified Elk	Total Population	Calves per 100 Cows	Bulls per 100 Cows
2021	1,905	700	1,117	285	296	536	160	3,804	37	58
2015	2,712	1,173	986	337	349	300	1	4,872	43	36







Smokey Bennett Elk Zone Management Table

Management Direction	Strategy
Implement measures to minimize, eliminate, or compensate for elk depredations.	Maintain over-the-counter, any-weapon antlerless opportunity in southern portions of zone when populations are meeting objectives. If increasing elk populations and depredations warrant, utilize over-the-counter, any-weapon antlerless hunting, targeted hunting seasons, managed hunting on private lands, and targeted lethal removal of elk to maintain the population at levels consistent with plan objectives and management direction.
Develop biological studies to improve population, predator, and habitat management capabilities.	Increase efforts to radio-collar elk wintering in the southeast portion of GMU 39, near the Smoky-Bennett Zone boundary.

Smokey Bennett Elk Zone Management Table

Management Direction	Strategy
Collaborate with public land managers and private landowners to improve key summer, winter, and transitional elk habitat to meet statewide objectives.	Work with the Sawtooth and Boise National Forests to maximize the benefits of fuels treatments to elk habitat via improved forage quantity and quality (referencing the Forest Fuels Management Plan). Work with the Sawtooth National Forest to implement the Forest Invasive Species Project by identifying areas where noxious and invasive plant species are degrading elk habitat. Immediately following wildfires on BLM or IDL lands where elk habitat was impacted, ensure IDFG staff are included on the ESR team in accordance with the 2020 MOU (BLM MOU ID-SO-2020-03) to assist in providing recommendations to effectively rehabilitate elk habitats. Explore funding mechanisms to continue large-scale rehabilitation and habitat improvement in burned areas after ESR and BAER funding is no longer available. Work with the USFS and BLM on recreation and travel management planning, particularly in sensitive elk habitat (calving grounds, stopover areas, and winter ranges). Work with USFS, BLM, and IDL on grazing management during permit renewals, and explore ways to help land management agencies encourage producers to engage in projects to benefit elk (e.g., virtual fencing, fuels treatments, noxious weed control, riparian restoration). Work with the Big Game Habitat and Migration program to implement durable habitat improvement projects on public and private land to benefit multiple species, including elk.
Collaborate with federal and state agencies, American Indian tribes, counties, nonprofit organizations, private landowners, and others to incorporate important elk movement and migration habitat and routes into management decisions.	Continue to implement the Idaho Action Plan with a focus on Priority Areas within the zone. Provide technical assistance to partners regarding impacts of proposed projects on elk habitat, and movement and migration routes. Collaborate with county, state, federal, tribal, and NGO partners, as well as private landowners, to improve migration habitat and mitigate barriers as opportunities arise. Within identified migration habitat, annually increase number of miles of wildlife-friendly fence. Look for opportunities to conserve elk migration habitat through use of conservation easements. Look for opportunities to work with ITD to mitigate elk mortality on roadways.

South Hills Zone

Game Management Units 46, 47, 54, 55, 56, and 57 Administered by IDFG's Magic Valley Region

Proposed 6-Year Management Direction

- Current population management direction in the South Hills Zone is to maintain elk population numbers.
- Continue to proactively reduce and mitigate elk depredations.

Description

The South Hills Zone encompasses 6 GMUs and is one of the most diverse elk zones in the state. Along the western edge of the zone, the Jarbidge and Bruneau canyons cut through the northern Great Basin sagebrush steppe, while the Snake River Plain defines the northern border. The South Hills and Albion, Black Pine, and Sublett mountain ranges are interspersed with aspen stands and dry conifer forests, with higher elevations supporting subalpine fir (A. lasiocarpa) communities. Along the Utah border, particularly around City of Rocks National Monument, pinyon (P. edulis)-juniper mixed with sagebrush is the dominant habitat. Landownership varies across the zone; however, private land constitutes a large percentage (40–50 %) of GMUs 54, 55, and 56, whereas GMUs 46, 47, and 57 are predominantly public land managed by the BLM and USFS. This zone also borders Utah and Nevada, which provide winter range for a portion of elk occupying the South Hills Zone.

Historical Perspective

During the 1800s elk populations in the South Hills Zone were very small. Reintroduction of elk in Unit 54 began in 1916, with translocation of 19 elk (17 cows and 2 bulls). By 1950, there were approximately 60 wintering elk in Unit 54 and IDFG authorized hunting seasons from 1963 to 1966. Low success rates led to a discontinuation of hunting in Unit 54. In the 1980s the Nevada Division of Wildlife (NDOW) began translocating elk with the intent of establishing elk in the northern portion of the state. Multiple translocations occurred (523 total elk), which resulted in elk expanding into ranges in both Nevada and Idaho. Although reliable population estimates in the South Hills Zone are unavailable, anecdotal evidence suggested 250–350 elk occupied units 46, 47, 54, 55, and 57 in 2002, which exceeded population objectives at the time. As a result, IDFG expanded hunting opportunities for antlered and antlerless elk. Prior to the 2014 Elk Plan, this zone included GMUs 38, 40, 41, and 42 (now a part of the Owyhee Elk Zone), but not GMU 56 (previously in the Bannock Elk Zone). Due to geographical barriers, differing objectives, and habitat variability, the South Hills Zone was restructured in 2014 to the current extent.

Despite increasing opportunities for harvest, elk populations in the South Hills Zone continued to grow and expand, leading to increased depredation conflicts on private land agriculture and rangeland. In 2014, a B-tag greenfield hunt (on or within 1 mile of agricultural lands) was opened zone-wide for 5 months.

The hunt produced high elk harvest but resulted in widespread private property conflict. As a result, the season was shortened the following year to 1 month and discontinued in 2019. During winter 2016–17, NDOW counted nearly 5,000 elk in the Diamond A and Inside Desert portions of Unit 46. In 2019, IDFG implemented 2 new hunts to provide opportunity for hunters and continue addressing depredations. In Unit 54, 500 antlerless elk B-tags outside of the Sawtooth National Forest boundary were offered, and in Unit 46 an either-sex A-tag within 1 mile of irrigated private property was offered. During this same period, hunt structures in Nevada were liberalized tremendously to reduce elk numbers along the GMU 46-47 border. The A-tag hunt in Unit 46 and B-tag hunt in Unit 54 were discontinued in 2021. Although elk numbers in units bordering Nevada were reduced, herds in other portions of the zone continue to grow. The Department anticipates antlerless harvest will need to be adjusted accordingly to continue to address private land and agricultural conflict.

Management Challenges and Opportunities

A primary management challenge in this zone is balancing diverse hunting opportunities while addressing depredations on rangeland and agricultural lands. As depredations caused by resident herds that regularly inhabit agricultural land continue to rise, IDFG will work with landowners to mitigate damages using multiple tools such as landowner permission hunts, depredation hunts, Access Yes!, and permanent solutions, such as stackyards.

The South Hills Zone shares elk with neighboring states (Utah and Nevada), which poses a management challenge. Elk numbers and behavior can be influenced by bordering states' harvest management. For example, in the late 2010s Nevada implemented aggressive antlerless elk harvest in response to an abundance of elk in the Jarbidge Wilderness and subsequent depredation issues. Conflict was concentrated primarily on winter range, which also included portions of Idaho. The reduction in winter elk populations in Unit 46 can be attributed to harvest in Nevada and IDFG's increase in harvest on resident elk herds in response to a spike in depredations.

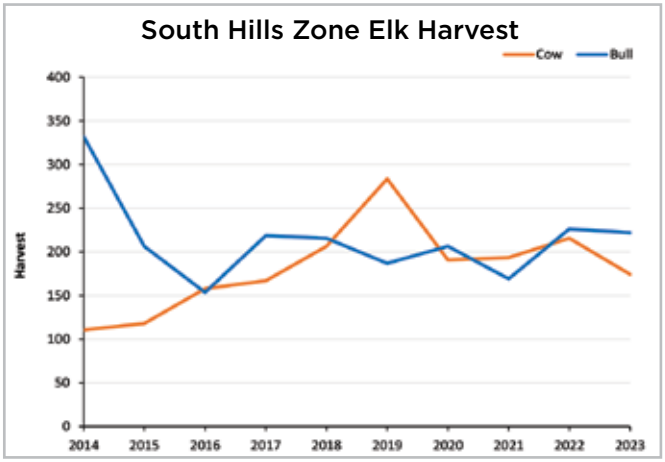
Inter-Zone and Intra-Zone Dynamics

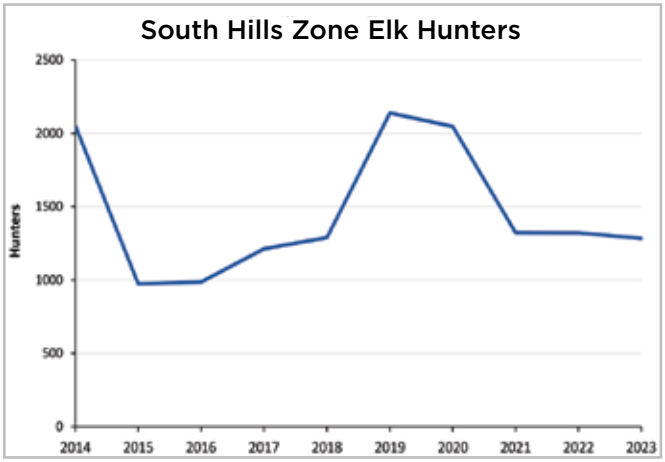
The South Hills is one of the few zones where IDFG does not conduct aerial surveys because of logistical and financial difficulty of accurately surveying a fairly small, highly nomadic, and widely dispersed population of elk across a large area. Additionally, interstate movement of wintering and summering elk among Idaho, Utah, and Nevada adds another layer of complexity when assessing feasibility of surveying the South Hills Zone. Instead, IDFG relies on hunter harvest information (i.e., success rates, age distribution of harvested animals, hunter days, etc.) to monitor productivity of this population.

Although little information about this elk population exists, limited movement data (from elk radio-collared in Nevada) suggests the presence of resident, partially migratory, and migratory herds. Although NDOW conducts aerial surveys in Units 46-47 every winter, the majority of those elk winter in Idaho, but spend the rest of the year in Nevada. On the east side of the zone, some movement also occurs between the South Hills Zone (primarily Unit 56) and the Bannock Zone (primarily Unit 73A). Additional movement between Unit 56 and Utah is also likely, as elk are observed near Snowville in winter, but appear to spend summers in Idaho.

Future Needs

The South Hills elk population is monitored using harvest data and managed to minimize elk depredations on agricultural lands, while maintaining hunter opportunity. The Department will continue to manage elk populations within this zone at current levels, with adjustments to tag numbers or hunt structures made according to depredation issues. Additional information on dynamics of this population would assist managers in addressing depredations, setting seasons, and providing technical assistance for proposed development projects within the zone. The Department will consider opportunities as they arise to collaborate with neighboring states or deploy collars to expand our understanding of habitat use and movements of elk in this zone.



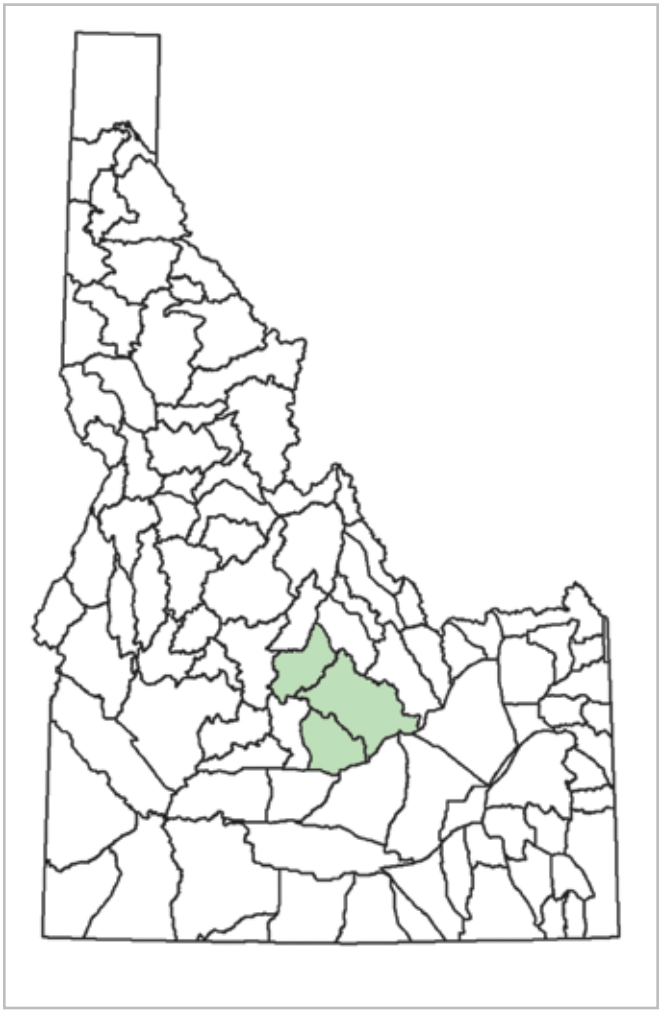


South Hills Elk Zone Management Table

Management Direction	Strategy
Implement measures to minimize, eliminate, or compensate for elk depredations.	Utilize available tools to address depredation complaints quickly and efficiently. Work with landowners to improve hunter access to reduce crop damage. If warranted by increasing elk population and subsequent depredations, utilize any-weapon antlerless hunting, targeted hunting seasons, managed hunting on private lands, and targeted lethal removal of elk to maintain the population at levels consistent with plan objectives and management direction.
Collaborate with public land managers and private landowners to improve key summer, winter, and transitional elk habitat to meet statewide objectives.	Work with the Sawtooth National Forest to maximize the benefits of fuels treatments to elk habitat via improved forage quantity and quality (referencing Forest Fuels Management Plan). Work with the Sawtooth National Forest to implement the Forest Invasive Species Project by identifying areas where noxious and invasive plant species are degrading elk habitat. Immediately following wildfires on BLM or IDL lands where elk habitat was impacted, ensure IDFG staff are included on the ESR team in accordance with the 2020 MOU (BLM MOU ID-SO-2020-03) to assist in providing recommendations to effectively rehabilitate elk habitats. Explore funding mechanisms to continue large-scale rehabilitation and habitat improvement in burned areas after ESR and BAER funding is no longer available. Work with the USFS and BLM on recreation and travel management planning, particularly in sensitive elk habitat (calving grounds, stopover areas, and winter ranges). Work with USFS, BLM, and IDL on grazing management during permit renewals, and explore ways to help land management agencies encourage producers to engage in projects to benefit elk (e.g., virtual fencing, fuels treatments, noxious weed control, riparian restoration). Work with the Big Game Habitat and Migration program to implement durable habitat improvement projects on public and private land to benefit multiple species, including elk.

Pioneer Elk Zone

Game Management Units 36A, 49, and 50 Administered by IDFG's Salmon, Upper Snake, and Magic Valley Regions



Description

The Pioneer Zone is characterized by alpine and subalpine habitats at higher elevations and sagebrush-steppe foothills at lower elevations. Aspen can be found throughout the zone but is commonly restricted to locally wetter and more southerly aspects. Elevation ranges from 4,800 feet to >11,000 feet. Landownership is predominantly public (82%), including 3 designated wilderness areas. Private land primarily occurs at lower elevations along major river drainages, including the East Fork Salmon, Big Wood, Little Wood, and Big Lost rivers. Recreation and ranching are the major land uses throughout the zone. Summer habitat is generally of high quality across much of the zone. Winter range quality is generally sufficient in GMU 36A, but somewhat limiting in GMUs 49 and 50, particularly during harsh winters.

Historical Perspective

The Pioneer Elk Zone historically maintained low numbers of elk through most of the 1900s and was managed under conservative controlled hunt harvest strategies. Under this management scenario, elk herds in the zone expanded dramatically since the 1970s. The Pioneer Zone now supports the second largest elk population in the state, and thus provides ample and varied hunting opportunities. The population is productive and usually meets or exceeds objectives for both cows and bulls. In the decade leading up to 2022, the population was above objective, and seasons were structured to reduce numbers. The survey conducted in 2022 indicated a reduction in cow numbers, which brought the population within objective. The A-tag offers archery and muzzleloader opportunity, whereas the B-tag offers some any-weapon antlerless opportunity. Controlled hunts offer antlered, antlerless, and muzzleloader opportunity. Prior to reduction in nonresident A-tag opportunity, archery hunter numbers were very high, but have since stabilized at approximately 500 fewer archery hunters.

Proposed 6-Year Management Direction

- Performance and management of the Pioneer Zone is currently limited by elk depredations on agricultural lands and influenced by winter recreation impacts in GMU 49.
- Current population management direction in the Pioneer Zone is to maintain the elk population within current objectives.

Management Challenges and Opportunities

One of the primary management challenges in this zone is minimizing depredations on agricultural lands and mitigating elk-cattle interaction on winter feedlines. These issues are largely dependent on environmental conditions, with drought years and harsh winters increasing extent and severity of these conflicts. In addition, elk occupy some private lands that provide abundant forage and protection from hunting pressure. These elk refugia can negatively impact neighboring agricultural properties and limit IDFG's ability to address elk damage. The Department will actively work to address impacts of refugia on surrounding landowners and strive to develop new tools to address depredation complaints.

Unit 49 experiences elevated levels of winter recreation compared to the other 2 units, reducing habitat quality for elk on much of the available winter range and potentially exacerbating issues with the growing residential elk herd in Ketchum and Hailey. Working with federal land management agencies and counties on recreation management and planning will be a priority for maintaining healthy elk populations and reducing conflict in urban areas.

Inter-Zone and Intra-Zone Dynamics

Although IDFG strives to manage at the zone level, elk behavior, distribution, and hunter harvest differ across the 3 GMUs within this zone, leading to varying levels of success in addressing depredations while maintaining a diversity of hunting opportunities. In 2023, managers initiated a GPS-collar project to assist in developing harvest strategies to better align with elk distribution during hunting season. In addition to this inter-zone dynamic, previous movement data indicated a significant migratory relationship between GMU 36A and GMU 36 in the Sawtooth Zone.

Future Needs

To maintain elk within objective, IDFG will continue to offer bull and cow hunting opportunity and adjust as necessary to balance harvest opportunity with agricultural impacts. Additionally, IDFG will communicate regularly with citizen groups and producers to provide information and receive input. Collection of movement data (via GPS collars) will continue to further define migration patterns and behavior between and among GMUs.

Pioneer Elk Zone Population Management Objectives

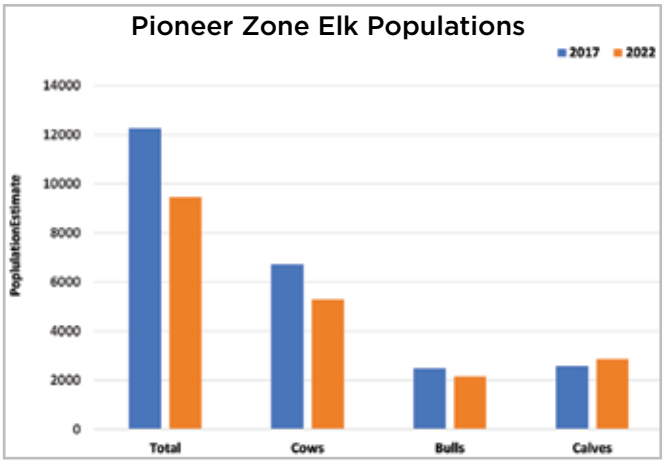
	Cows	Total Bulls	Branch Antlered Bulls
Management Objective Range	**3,150 – 5,600**	**1,025 – 1,820**	**630 –1120**
Current Status (2022)	**5,288**	**2,156**	**1,446**

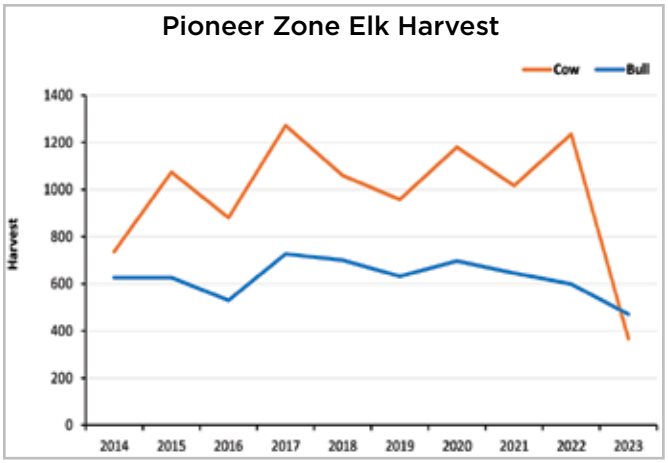
Color indicates where survey estimates are relative to management objectives:

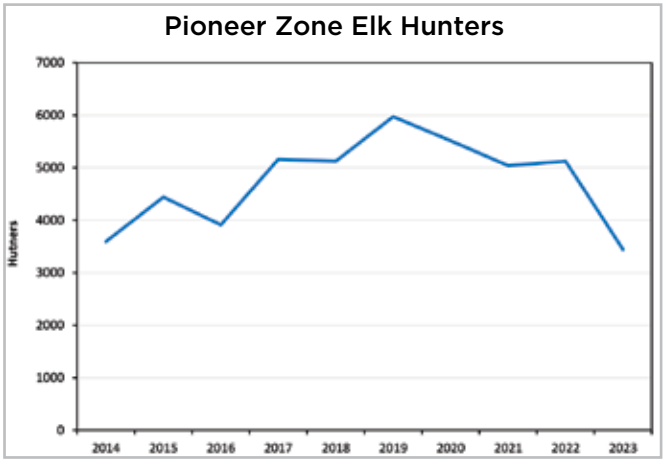
black = within; red = below; blue = above

Pioneer Elk Zone Population Survey Estimates

Year	Cows	Calves	Total Bulls	Spikes	Raghorn Bulls	Mature Bulls	Unclassified Elk	Total Population	Calves per 100 Cows	Bulls per 100 Cows
2022	5,288	1,866	2,156	710	743	703	149	9,607	35	39
2017	6,722	2,565	2,481	960	805	716	480	12,726	38	37







Pioneer Elk Zone Management Table

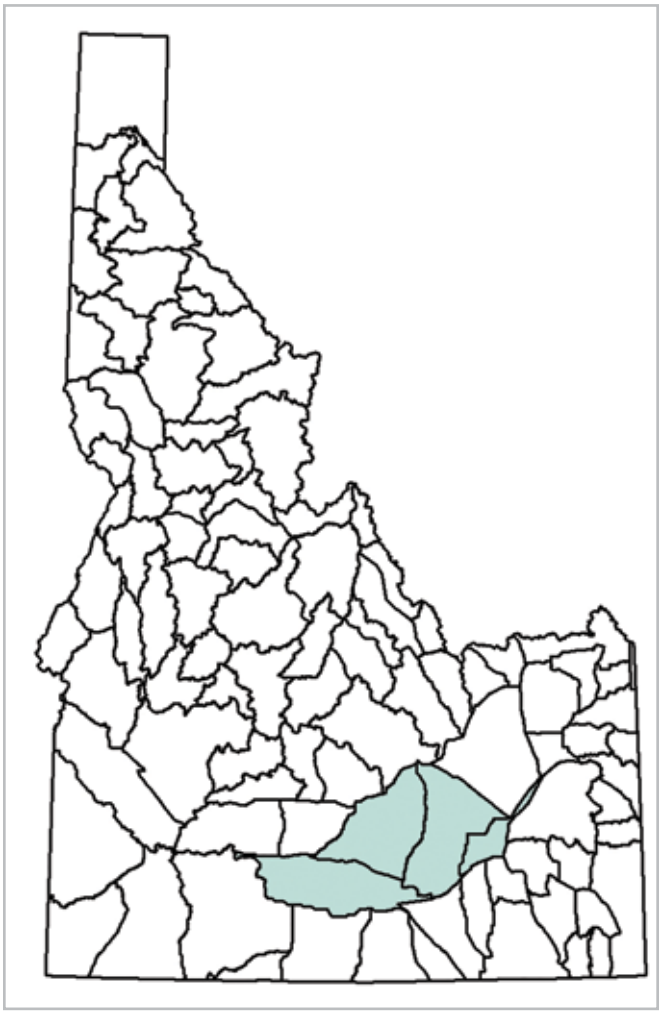
Management Direction	Strategy
Implement measures to minimize, eliminate, or compensate for elk depredations.	Utilize available tools to quickly and efficiently address depredation complaints. Actively address impacts of elk refugia on surrounding landowners. Use hunting as a primary tool to manage depredations concerns. Work with landowners to improve hunter access to reduce crop damage.
Provide annual elk hunting opportunities.	Continue to offer general season hunting opportunities to provide annual hunting. Maximize antlerless opportunity annually and adjust as population performance dictates.

Pioneer Elk Zone Management Table

Management Direction	Strategy
Collaborate with public land managers and private landowners to improve key summer, winter, and transitional elk habitat to meet statewide objectives.	Encourage the Challis BLM Field Office to manage feral horses at the Appropriate Management Level (AML) as identified in the Challis Herd Management Area Plan. Collaborate with the BLM, USFS, and IDL to address invasive annual grass and noxious weed invasions on winter range. Collaborate with the BLM, USFS, and IDL to provide technical assistance on grazing permit renewals as they pertain to elk summer and winter range needs and impacts. Collaborate with the BLM and USFS to provide technical assistance on mineral extraction and development as they pertain to elk transitional, summer, and winter range. Coordinate with the USFS to the extent practicable to actively manage summer range within the wilderness. Priority should be placed on invasive and noxious weed management.
Collaborate with federal and state agencies, American Indian tribes, counties, nonprofit organizations, private landowners, and others to incorporate important elk movement and migration habitat and routes into management decisions.	Continue to implement the Idaho Action Plan with a focus on Priority Areas within the zone. Provide technical assistance to partners regarding impacts of proposed projects on elk habitat, and movement and migration routes. Collaborate with county, state, federal, tribal, and NGO partners, as well as private landowners, to improve migration habitat through actions such as invasive weed control and mitigation of barriers as opportunities arise. Determine elk movement, migration, and landscape use within and adjacent to the zone to inform land-use planning efforts.

Big Desert Zone

Game Management Units 52A, 53, 68, and 68A Administered by IDFG's Magic Valley and Southeast Regions



Proposed 6-Year Management Direction

- Performance and management of the Big Desert Zone is currently limited by depredation issues.
- Current population management direction in the Big Desert Zone is to reduce elk populations while still maintaining a variety of hunting opportunities.

Description

The Big Desert Zone is comprised of some of the least productive habitat found in south-central and eastern Idaho, with some areas receiving as little as 9 inches of precipitation per year. Dry, desert shrub-steppe is the dominant habitat, which provides limited summer range for elk. Historically, the Snake River plain provided high quality winter range for big game; however, wildfire and subsequent establishment of annual grasses and invasive noxious weeds (particularly rush skeletonweed [Chondrilla juncea]) diminished capacity to support wildlife. Additionally, much of the southern portion of the zone supports irrigated agriculture. The BLM manages the majority of land in the zone, with lesser amounts under private ownership. Craters of the Moon National Monument is located in Unit 52A and retains some of the largest tracts of intact sagebrush habitat in the zone.

Historical Perspective

Numbers of elk and distribution in this zone prior to early colonization are unclear, but accounts from early trappers suggested numbers were low. Unregulated harvest during the 1800s and early 1900s most likely further reduced elk numbers. The elk population in the Big Desert Zone increased substantially since the early 1900s.

Regulated elk hunting in the Big Desert Zone, which initially was comprised of 6 Units (52A, 53, 63, 63A, 68, and 68A) started in 1983 with 30 either-sex permits available for Unit 63. Elk tags increased steadily as population numbers rose. In 2001, the Big Desert Zone was reduced to 2 units (52A and 68) and then restructured in 2023 to 4 units (52A, 53, 68, and 68A). The majority of units were managed by controlled hunts from 2001 to 2007. Beginning in 2008, an archery-only general elk hunt was authorized in the zone. Increases in elk numbers began to result in depredation issues across the zone, prompting IDFG to offer antlerless harvest opportunity. A B-tag season was introduced in GMU 52A for antlerless harvest in 2019, and GMU 68 was added in 2021. General season, short-range-weapon-only, uncapped hunting occurs in GMU 53, and there is a general archery season for any elk in Unit 68A. The Big Desert elk population is one

of the few zones where IDFG does not conduct aerial surveys because of logistical and financial difficulty of accurately surveying a fairly small, highly nomadic, and widely dispersed population of elk across a large area. Although aerial surveys are not conducted in this zone, harvest metrics and instances of conflict suggest the population is stable. Increasing depredations in summer could be linked to changing environmental conditions such as drought.

Management Challenges and Opportunities

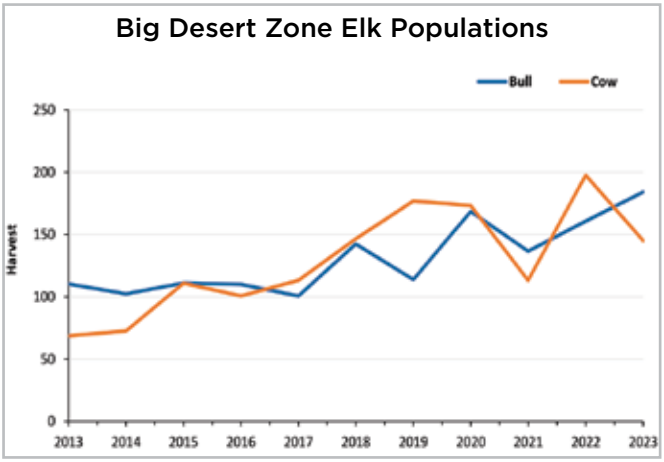
Elk continue to expand and thrive in many areas across the Big Desert Zone, which results in increased conflicts and concern regarding competition with other species such as pronghorn and mule deer. Addressing big game depredations while providing diverse hunting opportunities will continue to be a management challenge in the Big Desert Zone. Finally, wildfires continue to play a major role and have removed sagebrush from large tracts of the landscape. Subsequently, much of the public land has been reseeded to crested wheatgrass (Agropyron cristatum) or invaded by cheatgrass. Restoration of this landscape is extremely difficult given low levels of precipitation. Focusing on areas with the most potential to provide high quality winter habitat and greatest resilience to disturbance will be important when considering habitat improvement projects. We currently possess limited population or movement data for this zone, so managers rely on harvest data and level of depredation complaints.

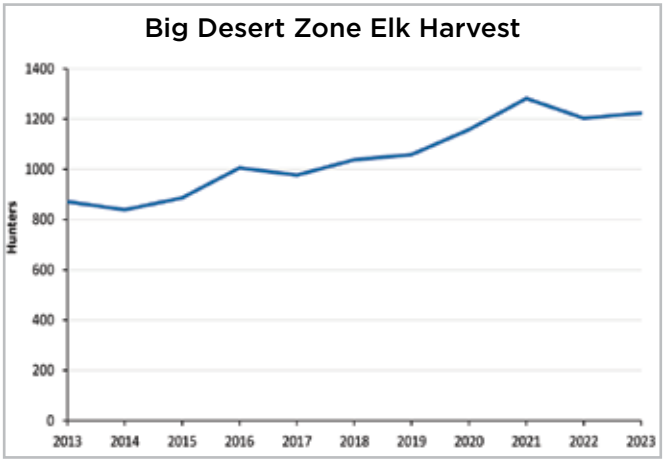
Inter-Zone and Intra-Zone Dynamics

Elk within the Big Desert Zone appear to be highly nomadic and are heavily dependent on agricultural lands in summer. Guzzlers development in this zone was designed to primarily benefit nongame species, upland birds, and pronghorn; elk use of guzzlers and impacts on elk movement and distribution are unknown. Livestock, mule deer, and pronghorn are the primary ungulates sharing the Big Desert Zone with elk. Impacts of increasing elk populations on those species are unknown.

Future Needs

Because elk populations within this zone are currently being managed by harvest statistics and the necessity to decrease elk depredation on agricultural lands, future needs will be focused on harvest management strategies to decrease elk in areas with chronic depredations. Management direction in this zone is to decrease elk populations using a variety of antlerless harvest strategies, seasons, and weapon types. The Department will consider opportunities as they arise to collaborate with the BLM and other stakeholders on habitat restoration after fire and influences of water development on elk movement and distribution.





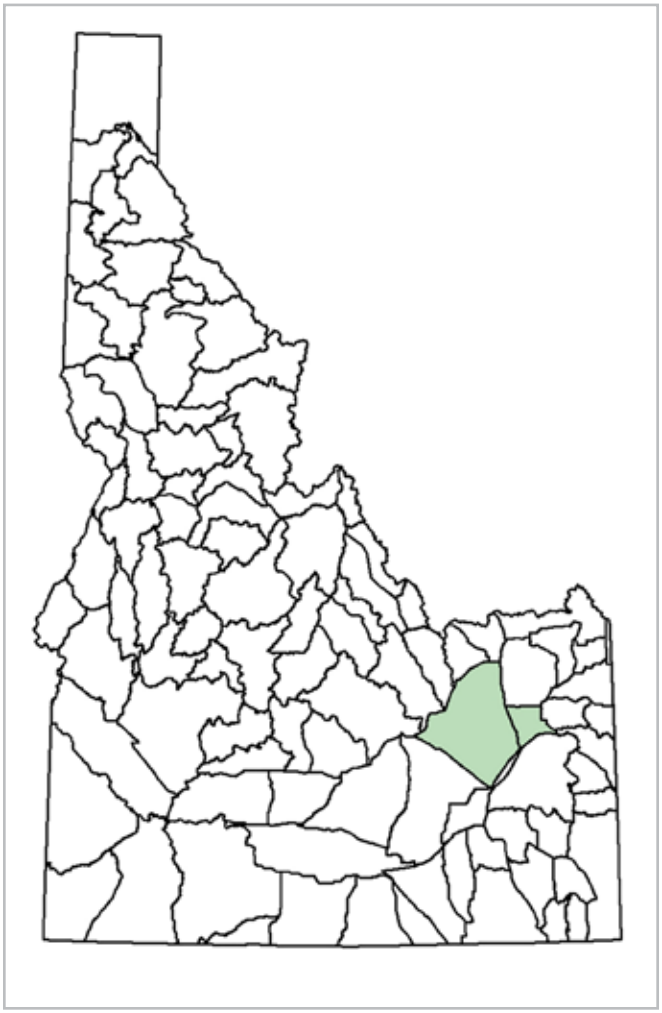
Big Desert Elk Zone Management Table

Management Direction	Strategy
Implement measures to minimize, eliminate, or compensate for elk depredations.	Implement harvest strategies consistent with management direction to decrease elk damage and depredations on private lands and agricultural crops. Develop strategies to monitor and assess effectiveness of water developments for deterring elk from agricultural fields during hot, dry months.
Provide a diversity of hunting opportunities, including socially desirable and biologically sustainable levels of antlerless and mature bull opportunity.	Implement extra tags, landowner permission hunts, or special weapon hunts as appropriate and consistent with management direction.
Collaborate with public land managers and private landowners to improve key summer, winter, and transitional elk habitat to meet statewide objectives.	Map and determine status of water developments. Evaluate water developments and how they influence elk behavior and distribution. Explore funding mechanisms to continue large-scale rehabilitation and habitat improvement in burned areas after ESR and BAER funding is no longer available.

PHOTO: CC-BY IDAHO FISH AND GAME

Snake River Zone

Game Management Units 63 and 63A Administered by IDFG's Upper Snake Region



Proposed 6-Year Management Direction

- Performance and management of the Snake River Zone is limited by elk conflict with private property and challenges associated with meeting harvest targets.
- Current population management direction in the Snake River Zone is to reduce elk populations within the zone to address depredations impacting agricultural lands and cattle operations.

Description

The Snake River Zone is characterized by sagebrush-steppe habitat intermixed with agricultural lands. Landownership is a mix among Department of Defense, BLM, IDL, and private holdings. Annual precipitation for the area ranges 9–12 inches, which results in very limited forage resources on non-irrigated habitat during summer months. Historically this area provided quality winter range for big game; however, wildfire and subsequent establishment of annual grasses and noxious weeds diminished capacity to support wintering wildlife.

Historical Perspective

The elk population in the Snake River Zone increased substantially from levels reported in early historical records. Although accounts of trappers in the area in the mid-1800s suggest elk were common, bison and pronghorn were far more numerous. Unregulated harvest of the late 1800s and early 1900s likely drove significant population declines, to the point elk only persisted in scattered bands at low densities.

The Snake River Zone was contained within the Big Desert Zone during original implementation of the zone system (1998) but was converted to a separate zone in 2000 due to different seasonal distribution patterns and management challenges. As part of the current elk plan revision, GMUs 53 and 68A were removed from Snake River Zone and placed in the Big Desert Zone due to similar geographical areas, shared elk herds, and conflict issues.

Elk hunting in the Snake River Zone began in 1983 with 30 either-sex tags for Unit 63. Since that time, elk numbers, conflicts revolving around agricultural damage, and harvest increased significantly. Hunting seasons in the zone currently run from August through mid-February and are designed to maintain this elk population at low levels.

Formal population surveys are not conducted for the zone. Population densities and management recommendations are based on harvest information, opportunistic observations of elk throughout the year, and patterns of agricultural damage.

Management Challenges and Opportunities

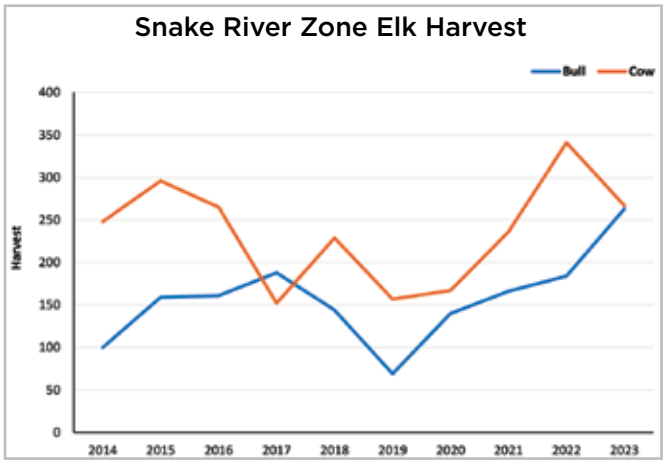
Agricultural and livestock conflicts are primary drivers for elk management direction within the zone. Elk began expanding into this area in the 1980s and elk numbers and conflicts continued to increase over time. The Idaho National Laboratory (INL) is located within the zone and creates a sanctuary from hunting for large numbers of elk in GMU 63. Elk travel from the INL during the night for water and forage found in agricultural fields and return to the INL for security in the morning, often before sunrise. Liberal hunting seasons in the zone aim to reduce the elk population, but obtaining appropriate levels of harvest is difficult the number and distribution of refugia. Working with the INL and other landowners to increase hunting access and opportunities is paramount for elk management in this zone. Evaluation of management efforts is focused on the number of conflict responses and payments made for crop damage.

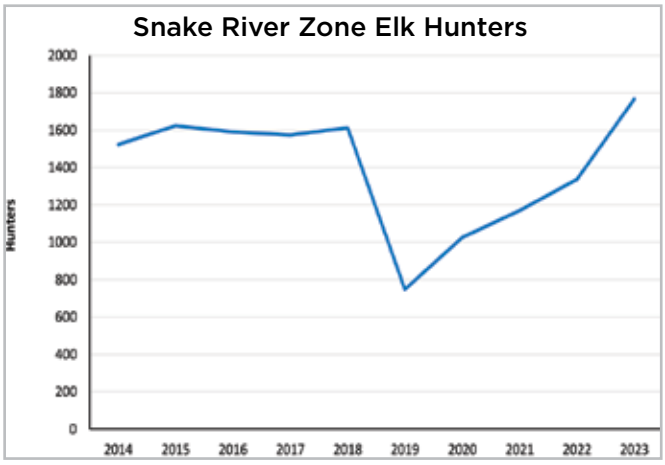
Inter-Zone and Intra-Zone Dynamics

Limited elk research conducted in the Snake River Zone in 2010 indicated some level of immigration and emigration involving GMUs 51, 58, 59, 59A, 60A, and 68. Current monitoring efforts, which began summer 2023, will provide an increased understanding of elk seasonal distributions and habitat use patterns. This updated information will better equip managers to address conflicts in the area, craft appropriate hunting opportunities to meet management objectives, and identify possible source-sink dynamics for this population.

Future Needs

Conflict resolution is currently the key factor driving elk management in this area and will continue to be the guiding priority over the next 6 years.





SNAKE RIVER PHOTO: CC-BY EROIC BECKMAN AT FLICKR.COM

Snake River Elk Zone Management Table

Management Direction	Strategy
Develop biological studies to improve population, predator, and habitat management capabilities.	Work to identify habitat use and movement patterns for this elk population to inform management decisions.
Implement measures to minimize, eliminate, or compensate for elk depredations.	Continue prioritization and implementation of strategies for excluding elk from stored crops and cattle feed sites. Continue to investigate and implement tools for reducing elk damage on actively growing agricultural fields. Continue to work with the Department of Defense (INL) and Camas National Wildlife Refuge on elk refugia concerns. Use hunting as a primary tool to manage depredation levels. Work with landowners through IDFG access programs to improve hunter access to reduce crop damage.
Collaborate with federal and state agencies, American Indian tribes, counties, nonprofit organizations, private landowners, and others to incorporate important elk movement and migration habitat and routes into management decisions.	Work with vehicle collision database and ITD to identify important elk movement routes. Provide technical assistance for wildlife fencing and passage to reduce wildlife-vehicle collisions. Continue to implement the Idaho Action Plan with a focus on Priority Areas within the zone.

PHOTO: CC-BY TERRY THOMPSON AT IDAHO FISH AND GAME

Bannock Elk Zone

Game Management Units 70, 71, 72, 73, 73A, and 74 Administered by IDFG's Southeast Region

Description

The Bannock Zone is characterized by several small north-south mountain ranges with foothills and valley floors predominantly in private ownership under agricultural production. Livestock ranching, farming, and recreation are primary land uses.

Historical Perspective

Determining how many elk occurred in this zone prior to early colonization is difficult, but by the early 1900s, both elk and deer were considered rare. In 1916–1917, 35 elk were transported by train from Gardiner, Montana, and released west of Pocatello. Counts in the 1930s and 1940s found 500–600 elk. By 1950, elk were reportedly spreading into the Elkhorn Mountain and John Evans Canyon areas (GMU 73), Blackrock (GMU 71), and Crystal and Midnight creeks (GMU 70). Elk hunts were first offered in the zone in 1933. Elk numbers declined in the 1950s, likely due to overharvest, and seasons were closed. Permit hunts were offered in some GMUs between 1962 and 1968. Populations remained at very low levels into the late 1980s. Elk since expanded throughout the Bannock Zone but are generally found in small groups with a sporadic distribution.

Management Challenges and Opportunities

Elk continue to expand and thrive in many areas within the Bannock Zone, which results in increased conflicts and concern regarding competition with other species such as mule deer. Elk in this zone utilize some private lands that provide abundant forage and protection from hunting pressure. These private-property refugia can negatively impact neighboring agricultural properties and limit IDFG's ability to address elk damage and effectively manage elk populations. The Department will work to address impacts of elk refugia on surrounding landowners and develop new tools to address depredation complaints. Aerial population surveys are not conducted in this zone due to a large geographic area with nomadic, dispersed groups of elk. Harvest metrics and conflict levels will inform management decisions in this zone.

Proposed 6-Year Management Direction

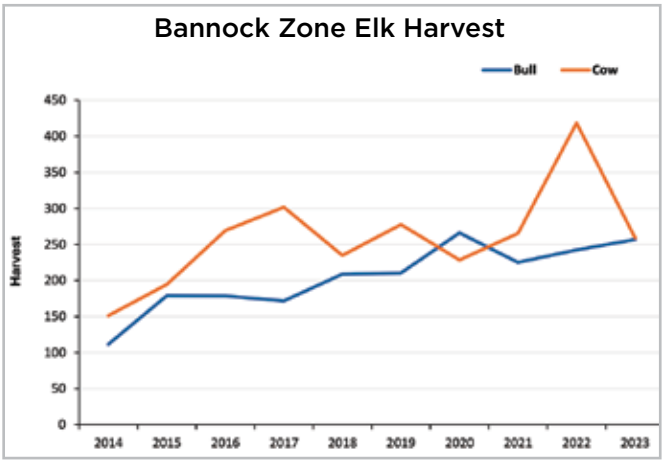
- Performance and management of the Bannock Zone is currently limited by a lack of population demographic information and agricultural conflicts.
- Current population management direction in the Bannock Zone is to provide a diversity of liberal hunting opportunities and reduce agricultural crop and property damage.

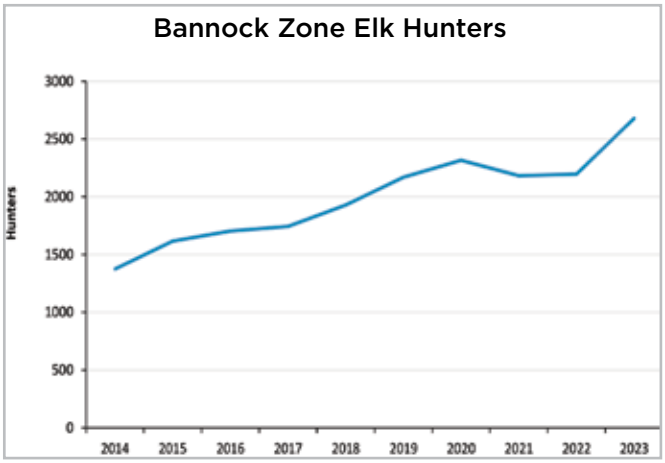
Inter-Zone and Intra-Zone Dynamics

Although data from aerial surveys and GPS collars is limited for elk in this zone, seasonal movements from adjacent zones and Utah do occur. Understanding elk populations, movements, and potential impacts in this zone will better inform future elk management.

Future Needs

Improving our understanding of seasonal elk movements within and around this zone would enhance management. Coordination with the Shoshone-Bannock Tribe, federal partners, and private landowners will be important in evaluating this elk herd.





Bannock Elk Zone Management Table

Management Direction	Strategy
Implement measures to minimize, eliminate, or compensate for elk depredations.	Use hunting as the primary tool to manage depredation levels. Continue to use a variety of hunting season frameworks to reduce depredation. Work with landowners enrolled in IDFG access programs to improve hunter access to reduce crop damage. Explore costs and applicability of innovative long-term techniques such as crop exchanges, land purchases, land exchanges, easements, CUAs, use of lure crops, improved range conditions, and permanent fencing around fields. Coordinate with federal land managers to ensure range conditions provide adequate forage for elk in areas prone to depredations. Evaluate travel management with federal partners to inform management strategies to achieve desired elk objectives (e.g., increasing seasonal access in areas of chronic conflict).

Bannock Elk Zone Management Table

Management Direction	Strategy
Develop an elk monitoring program which includes modeling or monitoring zone population abundance during years between surveys.	Analyze Bannock camera data to evaluate elk abundance, distribution, and herd composition.
Develop biological studies to improve population, predator, and habitat management capabilities.	Deploy GPS collars to better understand seasonal elk movements. Work with Shoshone-Bannock Tribe to better understand how significant wintering concentrations of elk on Tribal lands contribute to the Bannock Zone population. Annually coordinate with Utah Division of Natural Resources to evaluate elk data and management across state lines.
Increase IDFG involvement in long- and short-term land-use planning efforts by providing information, analyses, and recommendations to improve and preserve elk habitat.	Provide technical assistance to federal partners and others to maintain and improve elk habitat. Work with federal land managers to evaluate and provide technical assistance on travel management relative to elk behavior and distribution. Engage federal land management agencies regarding drought conditions and emergency drought procedures to inform habitat improvement actions. Work with federal land managers and private landowners to support spring, riparian, and aspen habitat improvement efforts to benefit elk.
Collaborate with federal and state agencies, American Indian tribes, counties, nonprofit organizations, private landowners, and others to incorporate important elk movement and migration habitat and routes into management decisions.	Work with vehicle collision database and ITD to identify important elk movement routes. Provide technical assistance for wildlife fencing and passage to reduce wildlife-vehicle collisions.

Bear River Elk Zone

Game Management Units 75, 77, and 78 Administered by IDFG's Southeast Region

Proposed 6-Year Management Direction

- Performance and management of the Bear River Zone is currently limited or influenced by availability of suitable winter range and depredation concerns.
- Current population management direction in the Bear River Zone is to maintain elk populations within population objectives and provide a diversity of hunting opportunity.

Description

This elk zone encompasses the northern extent of the Bear River Range mountains which extend into Utah to the south. This zone contains high-quality habitat across 3 primary vegetation types: shrub-grasslands, aspen, and conifer forest. The USFS administers the majority of the upper elevations, whereas foothills and lower elevations are primarily private lands. Predominant land uses of public land include livestock grazing, timber management, and recreation. The Bear River elk population estimates are derived from elk counted during winter in GMUs 75, 77, and 78.

Historical Perspective

The elk population in the Bear River Zone increased substantially from that recorded in historical records. Accounts of trappers in this area in the mid-1800s suggested elk were common, but bison and bighorn sheep (Ovis canadensis) were far more numerous. Unregulated harvest of the late 1800s and early 1900s likely reduced populations to relatively low levels. Regulated elk hunting in this zone began in the 1940s with controlled either-sex hunts, was then closed for several years, and reopened again in 1956 with general hunts for either-sex. Unit 75 was closed on and off through the 1960s. From 1968 through 1975, all GMUs were open to general either-sex hunting. Since 1976 all GMUs have been open for general antlered-only opportunity.

Management Challenges and Opportunities

Primary concerns in this zone are agricultural crop and property damage, and winter-range limitations, which must be balanced with elk population goals and hunter opportunity. Efforts will continue to address agricultural impacts and increase landowner tolerance for elk. Maintaining populations and providing a diversity of hunting opportunities will continue to be the direction for this zone.

Inter-Zone and Intra-Zone Dynamics

Prior to the late 1970s, most elk summering in this zone wintered in Utah. Numbers of elk wintering in this zone increased dramatically since then. However, an unknown

but substantial number of elk likely still migrate and winter in Utah. A better understanding of these numbers would benefit management recommendations.

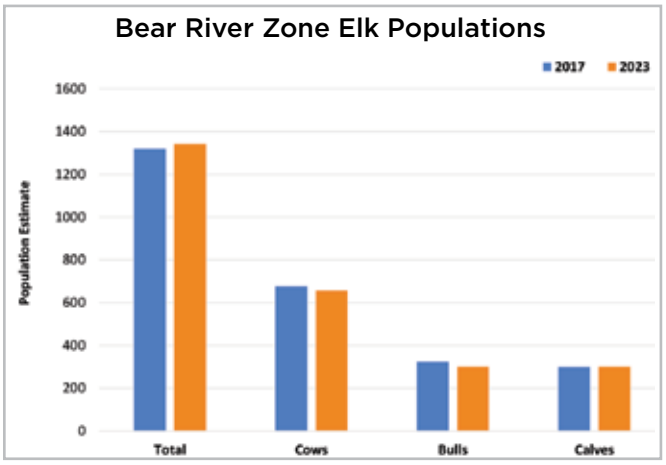
Future Needs

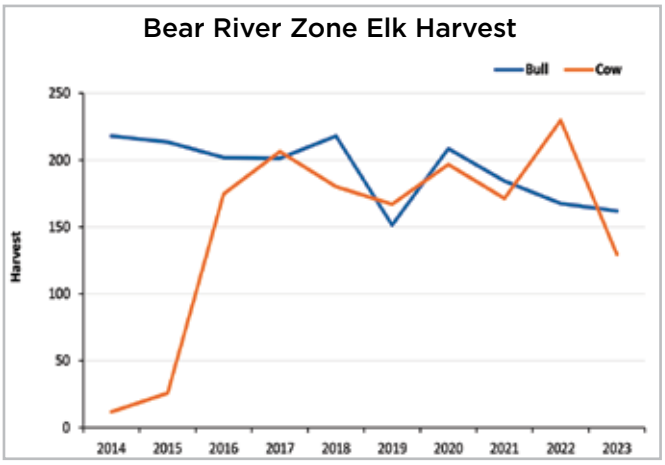
Given the significant winter-range limitations in this zone and associated conflicts with wintering elk, winter range protection and enhancement remain a priority. Additionally, improving knowledge of elk seasonal movements and densities to address current inconsistencies among winter, summer, and autumn elk abundance would enhance management decisions.

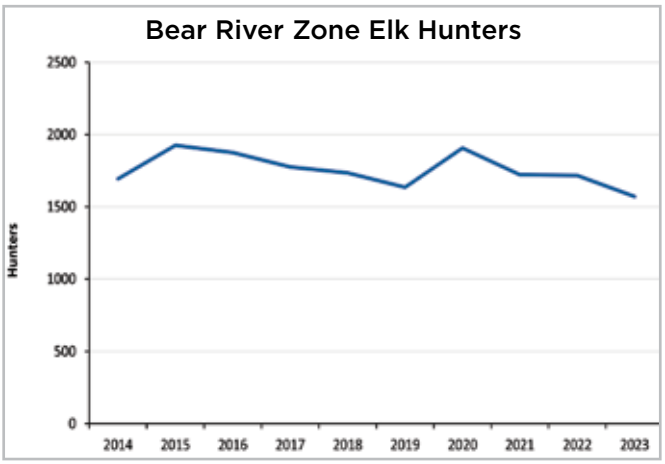
Bear River Elk Zone Population Management Objectives			
	Cows	Total Bulls	Branch Antlered Bulls
Management Objective Range	400 – 700	130 – 228	84 – 147
Current Status (2023)	656	300	200

Color indicates where survey estimates are relative to management objectives:
black = within objective; red = below objective; blue = above objective

Bear River Elk Zone Population Survey Estimates										
Year	Cows	Calves	Total Bulls	Spikes	Raghorn Bulls	Mature Bulls	Unclassified Elk	Total Population	Calves per 100 Cows	Bulls per 100 Cows
2023	656	300	300	100	151	49	86	1,342	46	46
2017	677	300	323	138	109	77	20	1,320	44	48







Bear River Elk Zone Management Table

Management Direction	Strategy
Increase IDFG involvement in long- and short-term land-use planning efforts by providing information, analyses, and recommendations to improve and preserve elk habitat.	Cooperate with federal, state, and private land managers and owners to provide suitable winter range, including management of disturbance (e.g., travel management) which could displace elk. Provide technical assistance to federal partners and others to maintain and improve elk habitat. Work with conservation organizations, elected officials, and land managers to provide long-term conservation measures.
Implement measures to minimize, eliminate, or compensate for elk depredations.	Use hunting as the primary tool to manage depredation levels. Continue to use a variety of hunting season frameworks to reduce depredations. Work with landowners through IDFG access programs to improve hunter access to reduce crop damage. Explore costs and applicability of innovative long-term techniques such as crop exchanges, land purchases, land exchanges, easements, CUAs, use of lure crops, improved range conditions, and permanent fencing around fields. Cooperate with federal land managers to assure range conditions provide adequate forage for elk in areas prone to depredations. Expand lure crop acres on Georgetown Summit WMA and manage for maximum elk forage value.
Develop an elk monitoring program which includes modeling or monitoring zone population abundance during years between surveys.	Analyze camera data to evaluate elk abundance, distribution, and herd composition.
Increase IDFG involvement in long- and short-term land-use planning efforts by providing information, analysis, and recommendations to improve and preserve elk habitat.	Provide technical assistance to federal partners and others to maintain and improve elk habitat. Work with conservation organizations, elected officials, and land managers to provide long-term conservation measures.
Develop biological studies to improve population, predator, and habitat management capabilities.	Deploy GPS collars to better understand seasonal elk movements. Work with Utah DWR to better understand how wintering concentrations of elk in Utah contribute to the Bear River Zone population.

Diamond Creek Elk Zone

Game Management Units 66A and 76 Administered by IDFG's Southeast Region

Proposed 6-Year Management Direction

- Performance and management of the Diamond Creek Zone is currently limited by winter-range carrying capacity.
- Current population management direction in the Diamond Creek Zone is to provide quality hunts, maintain elk within population objectives, and diversify proactive measures to address agricultural and private property damage.

Description

The Diamond Creek Zone represents some of the most productive habitat found in southeastern Idaho. Approximately 47% of land in Diamond Creek Zone is managed by the USFS. Other notable public land managers include the BLM (6%) and the State of Idaho (4%). Approximately 36% of the Diamond Creek Zone is privately owned. Private land is generally used for rangeland pasture, and small grain and hay production. Depredation complaints increased over the last decade. Predominant uses of public land include livestock grazing, timber management, recreation, and phosphate mining. Approximately 35% of known U.S. reserves of phosphate ore are located in the Diamond Creek Zone.

The Diamond Creek elk population estimates are derived from elk counted during winter in GMUs 66A and 76. Movement data indicates significant numbers of elk that winter in adjacent areas (e.g., Wyoming, Tex Creek Zone, Bannock Zone, and the Shoshone-Bannock Tribe Reservation) migrate into GMUs 66A and 76 during summer and autumn. As a result, coordinated management across zones and jurisdictions is critical.

Historical Perspective

The elk population in the Diamond Creek Zone increased dramatically from that described in historical records. Accounts of trappers in this area in the mid-1800s suggest elk were common, but bison and bighorn sheep were far more numerous. Unregulated harvest of the late 1800s and early 1900s likely reduced populations to relatively low levels. By 1952 however, elk rebounded enough to warrant the first hunting season with 250 tags for either-sex elk in GMUs 66, 66A, and 69. An aerial survey of GMU 76 during February 1952 located 193 elk, resulting in total population estimate of 230. The first hunt in GMU 76 occurred in 1964 with 75 either-sex tags. Hunting opportunity gradually increased over time. In 2009, a cap was implemented on archery-only A-tags to address concerns with hunter congestion. The capped A-tag is currently extremely popular, with demand exceeding availability and tags selling out rapidly.

Management Challenges and Opportunities

The Diamond Creek Zone contains rich veins of elemental phosphate. Phosphate mining has been and continues to be a habitat concern given the number of forested tracts converted to grasslands, and number of mines either currently in operation or planned for development over the next 30 years. Additionally, elk feeding on these sites are exposed to high selenium concentrations in forage, impacts of which are not entirely understood.

Additional concerns in this zone are agricultural crop and property damage, and winter-range limitations, which must be balanced with elk population goals and hunter opportunity. Efforts will continue to address agricultural impacts and increase landowner tolerance for elk. Maintaining populations and providing a diversity of hunting opportunities will continue to be the direction for this zone.

Inter-Zone and Intra-Zone Dynamics

Elk summering in the Diamond Creek Zone spend winters in several adjacent areas, including the Bannock Zone, Tex Creek Zone, Shoshone-Bannock Reservation, and Wyoming. Population and GPS-collar data for this zone are robust and greatly improved our understanding of this large, inter-mixing population of elk. Continued refinement of information about how this elk population uses the landscape will further enhance IDFG's ability to provide opportunities and address conflicts commensurate with management objectives.

Future Needs

The goal for the Diamond Creek Zone is to maintain quality elk hunting opportunities and elk populations within management objectives. Although landowners in this zone experience agricultural crop and property damage, increasing and diversifying proactive measures to address these concerns should allow for persistence of healthy elk populations and quality hunting opportunities. Working with partners to maintain and improve winter range, mitigate for habitat loss, and coordinate management across jurisdictions will remain a priority for this zone.

Diamond Creek Elk Zone Population Management Objectives

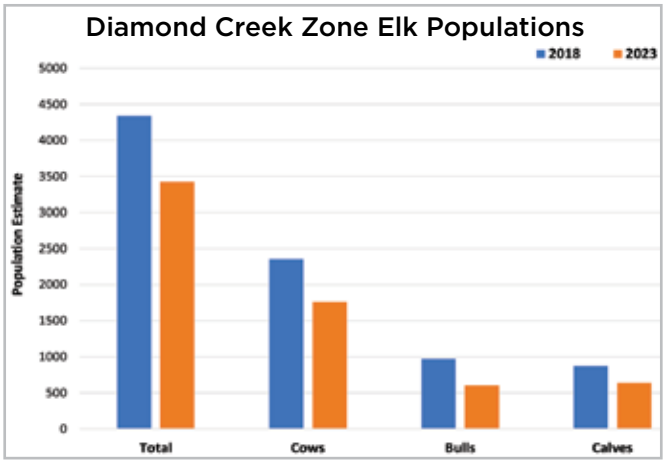
	Cows	Total Bulls	Branch Antlered Bulls
Management Objective Range	1,500 – 2,200	488 – 715	315 – 462
Current Status (2023)	1,764	602	413

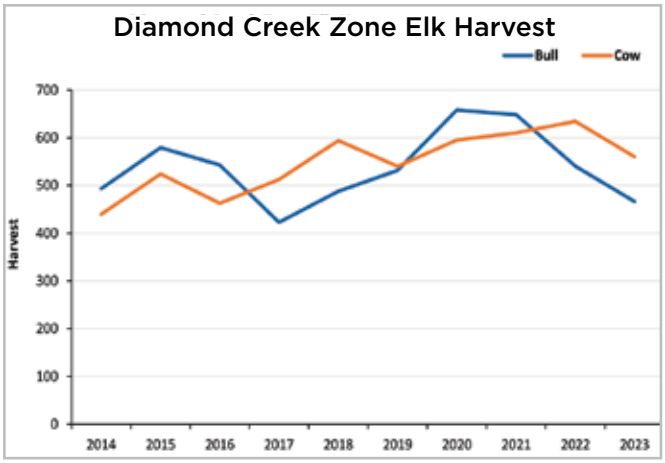
Color indicates where survey estimates are relative to management objectives:

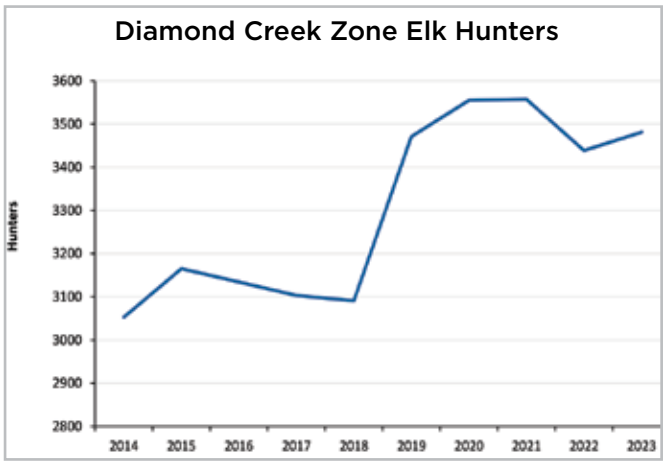
black = within objective; red = below objective; blue = above objective

Diamond Creek Elk Zone Population Survey Estimates

Year	Cows	Calves	Total Bulls	Spikes	Raghorn Bulls	Mature Bulls	Unclassified Elk	Total Population	Calves per 100 Cows	Bulls per 100 Cows
2023	1,764	640	602	189	287	126	420	3,426	36	34
2018	2,357	874	973	292	405	275	134	4,338	37	41







Diamond Creek Elk Zone Management Table

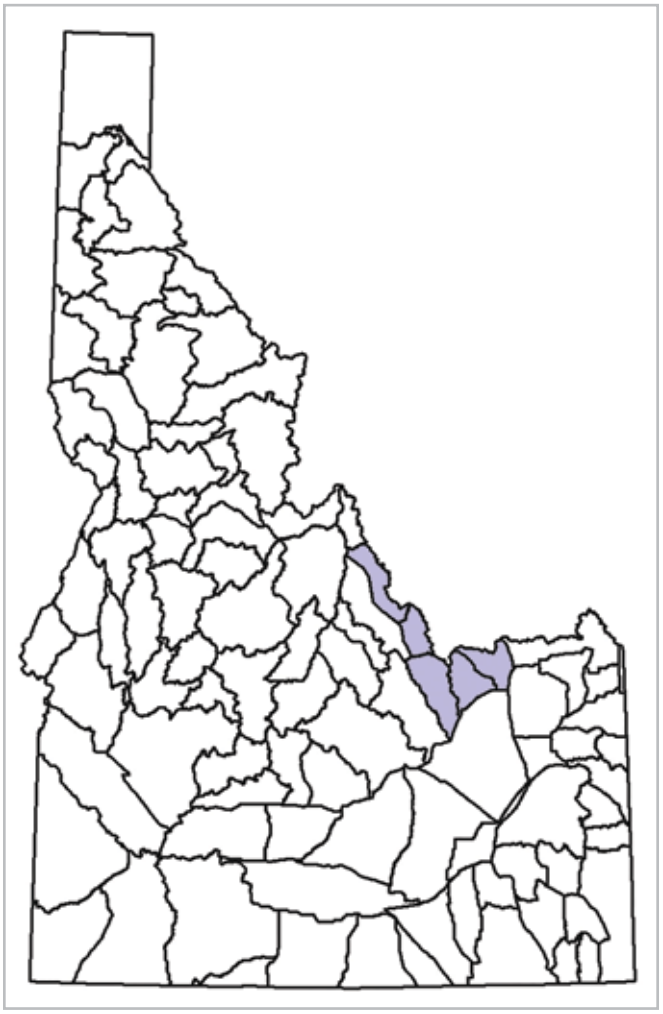
Management Direction	Strategy
Implement measures to minimize, eliminate, or compensate for elk depredations.	Use hunting as the primary tool to manage depredation levels. Continue to use a variety of hunting season frameworks to reduce depredation. Work with landowners through IDFG access programs to improve hunter access to reduce crop damage. Explore costs and applicability of innovative long-term techniques such as crop exchanges, land purchases, land exchanges, easements, CUAs, use of lure crops, improved range conditions, and permanent fencing around fields. Coordinate with federal land managers to assure range conditions provide adequate forage for elk in areas prone to depredations. Evaluate impacts of phosphate mining on depredation trends. Work with mining industry to explore measures to offset depredations caused by displaced elk.

Diamond Creek Elk Zone Management Table

Management Direction	Strategy
Increase IDFG involvement in long- and short-term land-use planning efforts by providing information, analyses, and recommendations to improve and preserve elk habitat.	Cooperate with federal, state, and private land managers and owners to provide suitable winter range, including management of disturbance which could displace elk. Engage federal land management agencies regarding drought conditions and emergency drought procedures. Provide technical assistance to federal partners and others to maintain and improve elk habitat. Work with private landowners, mining companies, power companies, and public land managers to restore or mitigate disturbed and degraded areas to improve elk habitat. Work with conservation organizations, elected officials, and land managers to provide long-term conservation measures. Continue aspen habitat treatments and improve grazing infrastructure to support grazing across the entire Blackfoot River WMA to improve forage availability and quality for elk.
Develop biological studies to improve population, predator, and habitat management capabilities.	Deploy GPS collars to better understand seasonal elk movements. Work with Shoshone-Bannock Tribe to better understand how significant wintering concentrations of elk on Tribal lands contribute to the Diamond Creek Zone population.
Collaborate with federal and state agencies, American Indian tribes, counties, nonprofit organizations, private landowners, and others to incorporate important elk movement and migration habitat and routes into management decisions.	Continue to implement the Idaho Action Plan with a focus on Priority Areas within the zone. Provide technical assistance to partners regarding impacts of proposed projects on elk habitat, and movement and migration routes. Collaborate with county, state, federal, tribal, and NGO partners, as well as private landowners, to improve migration habitat and mitigate barriers as opportunities arise. Work with vehicle collision database and ITD to identify important elk movement routes. Provide technical assistance for wildlife fencing and passage to reduce wildlife-vehicle collisions. Pursue research to further refine knowledge of movement and migration routes in need of conservation.

Beaverhead Zone

Game Management Units 30, 30A, 58, 59, and 59A Administered by IDFG's Upper Snake and Salmon Regions



Proposed 6-Year Management Direction

- Performance and management of the Beaverhead Zone is currently influenced by agriculture damage in Idaho and Montana and seasonal habitat carrying capacities.
- Current population management direction in the Beaverhead Zone is to maintain current elk populations. Although the 2016 population estimate indicated elk exceeded management objectives, harvest metrics, hunter reports, and decreased depredations suggest populations are near or within management objectives.

Description

The Beaverhead Zone consists mostly of public land with some private agricultural land at lower elevations. Terrain is variable and mountainous, with sagebrush-steppe at lower elevations and coniferous forests on north slopes at higher elevations. Cattle ranching and recreation are predominant land uses.

Historical Perspective

Elk abundance was low in the Beaverhead Zone through much of the 20th century. Elk numbers were apparently low enough to warrant translocation of elk from Horse Prairie and Yellowstone National Park to GMUs 30 and 30A in approximately 1918. Units 30 and 30A were closed to hunting through the 1940s, managed as general hunts during the 1950s, and changed to general hunts with harvest quotas in the 1960s. Units 30 and 30A were managed with very conservative controlled hunts from the 1970s into the 1990s, when expanding elk populations allowed for more liberal harvest. Controlled antlerless hunts were initiated in GMUs 59 and 59A in 1979, and in GMU 58 in 1988. In 1991, GMUs 58, 59, and 59A converted from general any-bull seasons to general seasons for spike bulls combined with controlled any-bull hunts. With implementation of the dual-tag system in 1998, the Beaverhead Zone generally offered archery and muzzleloader opportunity with an A-tag; however, controlled hunts took the place of any B-tag opportunity.

Traditionally, elk wintering in GMUs 30 and 30A migrated to summer ranges in Montana, whereas elk summering in GMUs 58, 59, and 59A moved to Montana to winter. In the 1980s more elk began wintering on the Idaho side in GMUs 58, 59, and 59A. Over time these changes in seasonal distributions continued to expand and become less consistent, resulting in significant numbers of elk wintering and summering in both states, with some elk readily changing seasonal use patterns from year to year.

Management Challenges and Opportunities

The Beaverhead Zone is moderately limited by agricultural depredations. Elk occupy some private lands that provide abundant forage and protection from hunting pressure. These private-property refugia can negatively impact neighboring agricultural properties and limit IDFG's ability to address elk damage and effectively manage elk populations. The Department will work to address impacts of refugia on surrounding landowners and develop new tools to address depredation complaints.

The Department will collaborate with state and federal partners, NGOs, and private landowners to implement habitat improvement projects and to address impacts on elk such as noxious weeds, proposed mineral extraction, motorized travel, and grazing management.

Elk near livestock production activities in winter and spring present disease transmission concerns, particularly brucellosis. Although the Beaverhead Zone is not within a designated surveillance area (DSA) for brucellosis, there is a DSA in southeast Idaho and southwest Montana. The Department will continue to test elk for brucellosis and actively use available tools to separate elk and cattle during high-risk periods.

Inter-Zone and Intra-Zone Dynamics

A large portion of the Beaverhead elk population migrates between Idaho and Montana with a significant, but unknown, proportion of elk summering in Montana and wintering in Idaho. The proportion likely varies annually in response to factors such as hunting pressure and winter severity.

Future Needs

Communication with wildlife managers in Montana and incorporation of their harvest data into management decisions would be beneficial in managing this elk herd. Completing coordinated joint surveys with Montana would provide the most accurate estimate of population size and trend. Generating an updated and reliable population estimate for the Beaverhead Zone is priority for managers.

Beaverhead Elk Zone Population Management Objectives

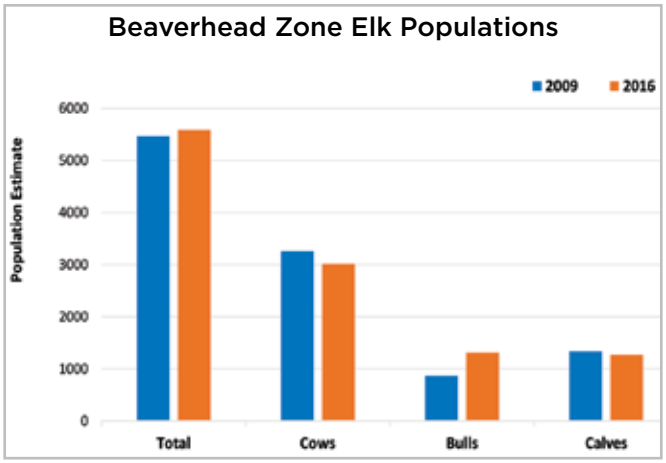
	Cows	Total Bulls	Branch Antlered Bulls
Management Objective Range	**2,050 – 3,075**	**555 – 830**	**330 – 485**
Current Status (2016)	**3,015**	**1,306**	**902**

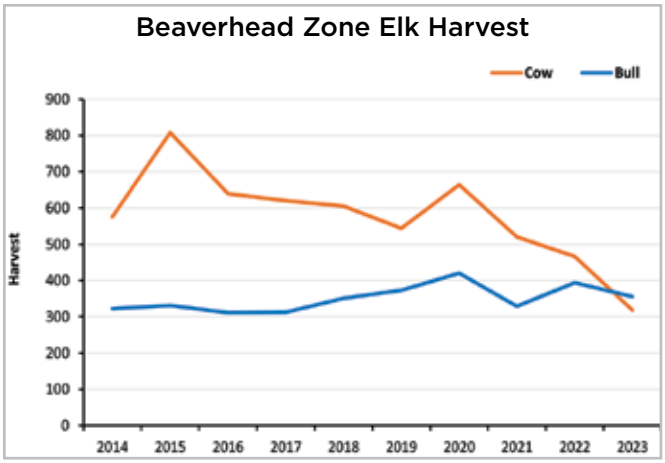
Color indicates where survey estimates are relative to management objectives:

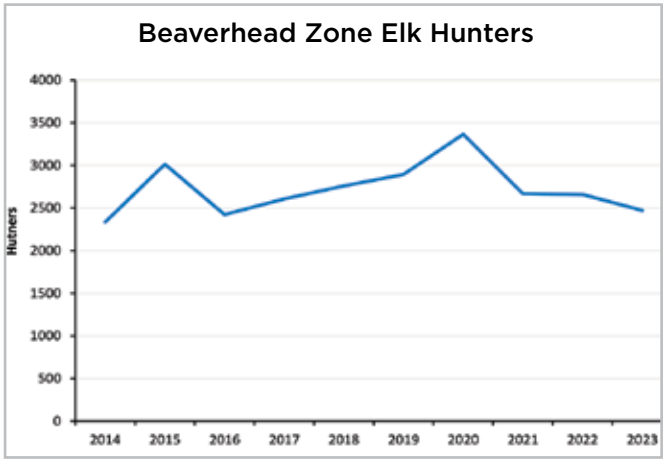
black = within objective; red = below objective; blue = above objective

Beaverhead Elk Zone Population Survey Estimates

Year	Cows	Calves	Total Bulls	Spikes	Raghorn Bulls	Mature Bulls	Unclassified Elk	Total Population	Calves per 100 Cows	Bulls per 100 Cows
2016	3,015	1,268	1,306	404	561	341	84	5,757	42	43
2009	3,283	1,341	839	370	328	141	0	5,463	41	26







Beaverhead Elk Zone Management Table

Management Direction	Strategy
Implement measures to minimize, eliminate, or compensate for elk depredations.	Utilize available tools to quickly and efficiently address depredation complaints. Continue prioritization and establishment of exclusionary tools for stored crops and cattle feed sites. Actively address impacts of elk refugia on surrounding landowners. Use hunting as a primary tool to manage depredation levels. Work with landowners through IDFG access programs to improve hunter access to reduce crop damage.

Beaverhead Elk Zone Management Table

Management Direction	Strategy
Collaborate with public land managers and private landowners to improve key summer, winter, and transitional elk habitat to meet statewide objectives.	Collaborate with private, state, and federal partners to address invasive annual grasses and noxious weeds on important elk range. Collaborate with state and federal partners to provide technical assistance on grazing permit management as related to important elk summer and winter range needs and impacts. Collaborate with federal partners to provide technical assistance on mineral extraction and development as they pertain to elk summer and winter range needs and impacts.
Collaborate with federal and state agencies, American Indian tribes, counties, nonprofit organizations, private landowners, and others to incorporate important elk movement and migration habitat and routes into management decisions.	Continue to implement the Idaho Action Plan with a focus on statewide priority areas within the zone. Determine elk movement, migration, and landscape use within and adjacent to the zone to inform land-use planning efforts. Collaborate with county, state, federal, tribal, and NGO partners, as well as private landowners, to improve migration habitat and mitigate barriers as opportunities arise.
Minimize the influence of disease as a limiting factor in elk populations.	Implement the Brucellosis Management Plan with emphasis on maintaining separation between elk and cattle during high-risk periods.

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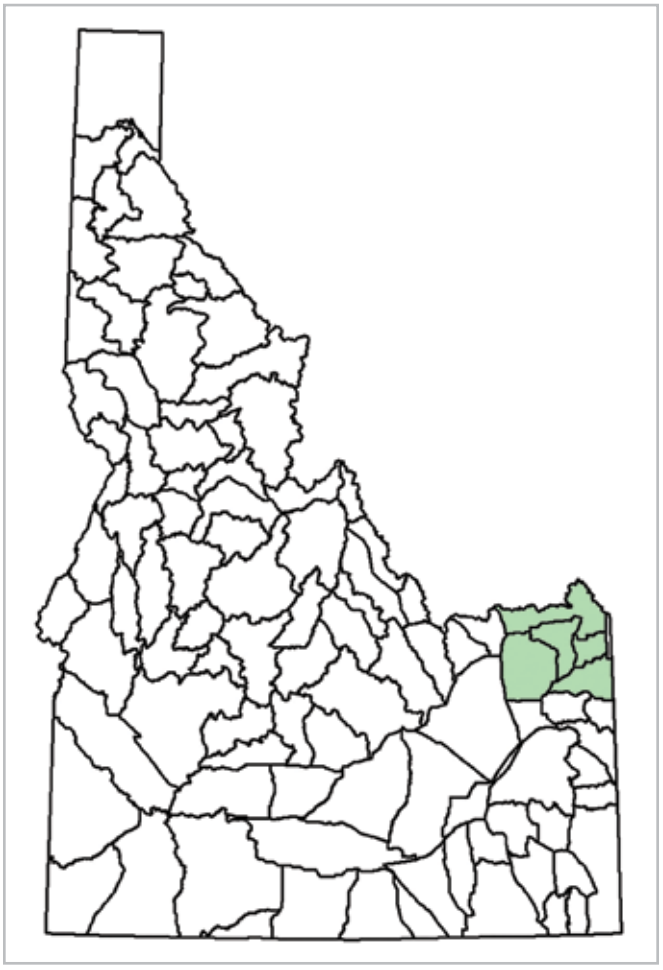
Island Park Elk Zone

Game Management Units 60, 60A, 61, 62, and 62A Administered by IDFG's Upper Snake Region



Proposed 6-Year Management Direction

- Performance and management of the Island Park Zone is currently limited by winter-range carrying capacity, depredation issues, and livestock interaction concerns.
- Current population management direction for the Sand Creek segment of the population is to continue increased antlerless harvest until the population reaches management objectives. The Teton Canyon herd will be managed to increase bull numbers, while maintaining current cow numbers. The Department will manage both the Sand Creek and Teton herds with a focus on decreasing depredation and livestock interaction issues.

Description

The Island Park Zone elk population is made up of 2 distinct herds: the Sand Creek herd, which accounts for approximately 90% of the Island Park population, and the Teton Canyon herd. Productivity, movements, and management of the herds share some common themes, but each has unique challenges and opportunities.

Upper elevations of the Island Park Zone are mostly forested habitat with plentiful water sources. Lower elevations are dominated by a mix of agriculture, rangeland, riparian corridors, and sagebrush-steppe habitat, with significant portions of the Teton Canyon area falling under private ownership. Agriculture, ranching, and recreation are major land uses throughout the zone. Upper elevations are high-quality summer habitat. Winter range became more limited in recent years due to wildfire, development, recreation, and agricultural expansion.

Historical Perspective

Sand Creek

Elk were present in varying numbers in portions of the Island Park Zone throughout recorded history. During the early 1900s, hunts in this zone were largely focused on elk that spent summers in Yellowstone National Park and migrated to the Sand Creek Desert for winter. More recent elk monitoring efforts indicated seasonal distributions and habitat use patterns changed over time, with fewer elk going to Yellowstone and more elk spending summer months within Idaho and Montana, while still wintering on Sand Creek. This wintering herd benefits from a closure to human entry covering most of the winter range. This closure significantly reduces disturbance and provides meaningful security value for these animals.

In the late 1940s, elk were first observed wintering on the high desert habitat of Unit 60A, with 582 wintering elk recorded in 1952. These wintering populations varied from approximately 700 to 1,200 elk until the mid-1970s, at which time elimination of general either-sex elk hunting resulted in a rapidly increasing winter population. Expanding agricultural activities, livestock operations, and elk populations led to increased

conflicts between private landowners and elk in some winters.

General antlered-only seasons were converted to spike-only seasons in 1991 in response to an accelerated timber harvest program on the Targhee National Forest, which resulted in poor bull escapement and low bull:cow ratios. Antlerless elk hunting opportunity was primarily managed through controlled hunts and, beginning in 1993, any-bull hunting opportunities were also managed through controlled hunts. This hunting season structure remained in place until implementation of the zone system (1998), which allowed for increased archery and muzzleloader opportunity.

Teton Canyon

Reports of elk in the 1800s and early 1900s are inconclusive for this area, but elk were likely present. General either-sex hunting was allowed until the mid-1970s, but overharvest became a concern and hunt structure was changed to allow just 5 days of antlered-only opportunity during general season. Antlerless opportunity was restricted to controlled hunts. The elk population was relatively stable through the 1980s, with 30–40 animals wintering along the Teton River in Teton Basin, 40–50 animals being fed at a ranch on Conant Creek, and approximately 100 elk wintering adjacent to the Teton River and tributaries north of State Highway 33. Current elk densities for the zone have expanded slightly, but not to the extent witnessed in other areas.

Winter range for this herd is limited by elevation, associated deep snows, and by agricultural and livestock production. The area has a history of supplementally feeding elk to address conflicts with local producers and to sustain elk numbers. In the 1990s, 3 feeding sites were maintained across the area. After regular discouragement from IDFG and a positive brucellosis test in livestock, traditional feeding operations at the ranch along Conant Creek ceased. The other 2 sites were previously shut down. There were no sanctioned winter-feeding efforts from the mid-2000s to 2020.

Winter of 2019–2020 saw a major shift in Teton Canyon elk distribution. Most elk in the Teton herd made major movements to the west, where many of them converged around the town of Sugar City before finally crossing highway 20 and ending up far to the west near the Henry's Fork of the Snake River and the desert near Plano. The elk followed the same movement pattern the following winter. This new wintering distribution brought numerous challenges for elk, motorists, managers, and livestock producers. The reason for this change in behavior is not well understood but was likely a mix of reduced winter habitat availability and an increase in winter recreation activities across GMU 62.

In response to the new winter distribution of the Teton herd, IDFG worked with private landowners, the Winter-Feeding Advisory Committee, and other partners to establish a supplemental feeding program for approximately 300 elk. This feeding effort, in addition to working with private landowners to better manage winter recreation, minimized winter conflicts for this segment of the herd. Winter feeding for Teton Canyon herd will likely continue until some combination of habitat enhancements and herd size reductions lead to significantly reduced winter conflicts.

Management Challenges and Opportunities

Sand Creek portion of the population - The primary management challenges for the Sand Creek segment are conflict and depredation issues. These challenges range from damage to growing and stored crops to problematic livestock interactions. During milder winters, these issues are manageable, but as winter severity increases so do conflicts. A growing concern is the increase in year-round resident elk in GMU 60A, which are associated with depredation issues in all seasons.

Another challenge is elk crossing or spending time on Interstate 15 (I-15), which lies on the western edge of the herd's winter range. Elk from GMU 60A cross I-15 to mingle with elk in GMU 63 throughout the year, but elk-vehicle collisions peak in September and winter months. Approximately 100 elk were struck by vehicles on I-15 in the Hamer area in 2022.

Changes in habitat also impacted wintering elk in the Sand Creek area. Maintaining productive sagebrush and antelope bitterbrush (Purshia tridentata) communities across the Sand Creek winter range is very important for this elk herd and should be a focus for IDFG and partners. Fire was always an important part of this landscape, but largescale wildfires became more common over time. Finding a balance between shrub management, prevention of catastrophic wildfire, and maintaining high-quality winter habitat for wintering big game will remain a key management goal for this zone.

Teton Canyon portion of the population - Agricultural conflicts are a primary driver for this herd. These conflicts include depredation on stored crops, mixing with livestock on feedlines during winter months, and damage to actively growing crops during summer and early autumn.

Winter issues in the Teton Canyon area are primarily due to loss of functional winter range for this segment of the population. This loss of wintering habitat was largely driven by development, conversion of native habitats to agriculture, and winter recreation. Winter range habitat enhancements and conservation should be a priority across this landscape. The Department continues to work with multiple private landowners and partners across the area to conserve and improve elk habitat.

Inter-Zone and Intra-Zone Dynamics

Movement and distribution patterns of elk in the Island Park Zone are complex. Elk summering in the western portion of the Centennial Range (west of Icehouse Creek) largely migrate to Montana for winter. Elk across the rest of GMUs 61 and 60 move to the Sand Creek Desert, where they mingle with elk from GMU 62A and Yellowstone National Park over winter. The bulk of elk in GMU 62 winter along Teton Canyon and then distribute themselves eastward during summer, with some of these elk spending summer and early autumn months in Wyoming. The Sand Creek herd interacts with Teton Canyon elk to the southeast and with GMU 63 elk to the west, particularly in winter months. Mingling among Teton Canyon elk and elk in GMUs 64 and 65 was also documented.

Future Needs

Finding solutions to year-round depredations and winter elk-cattle interactions should be a primary focus for work in this zone. Additionally, working to maintain highly functional shrub communities will be important for wintering elk in the zone. Discussion and efforts to reduce elk-vehicle collisions on I-15 should remain a priority.

Island Park Elk Zone Population Management Objectives

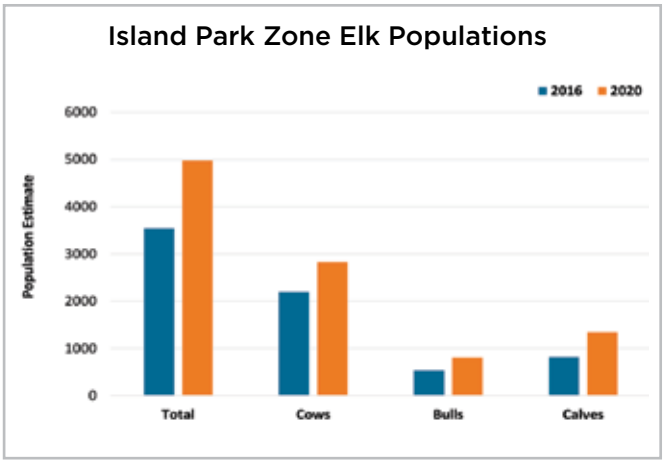
	Cows	Total Bulls	Branch Antlered Bulls
Management Objective Range	1,500 – 2,500	350 – 625	220 – 375
Current Status (2020)	2,831	805	458

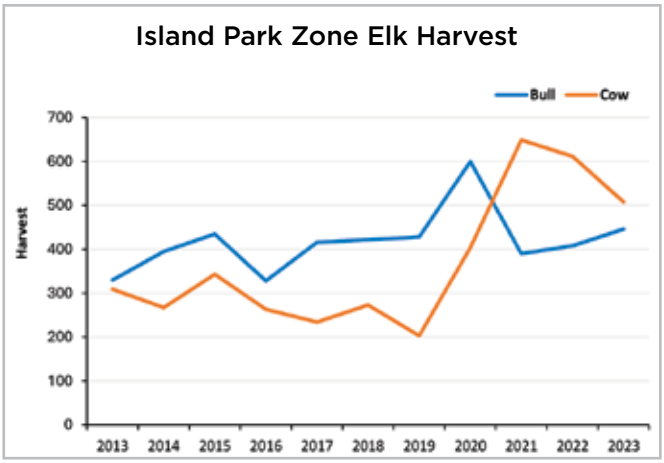
Color indicates where survey estimates are relative to management objectives:

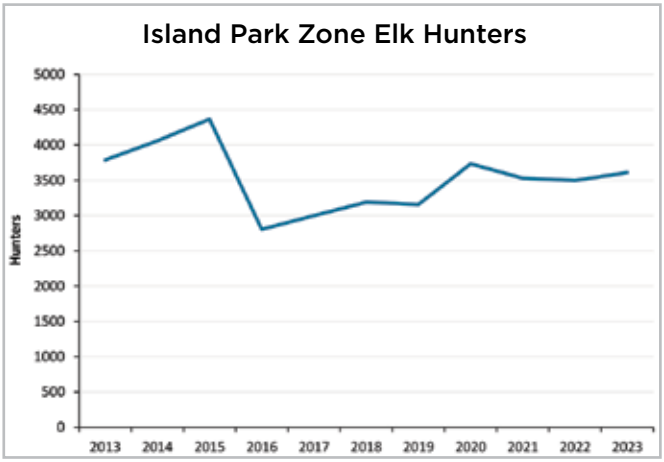
black = within objective; red = below objective; blue = above objective

Island Park Elk Zone Population Survey Estimates

Year	Cows	Calves	Total Bulls	Spikes	Raghorn Bulls	Mature Bulls	Unclassified Elk	Total Population	Calves per 100 Cows	Bulls per 100 Cows
2020	2,831	1,344	805	347	324	134	1	4,981	47	28
2016	2,191	817	533	181	238	114	2	3,543	37	24







Island Park Elk Zone Management Table

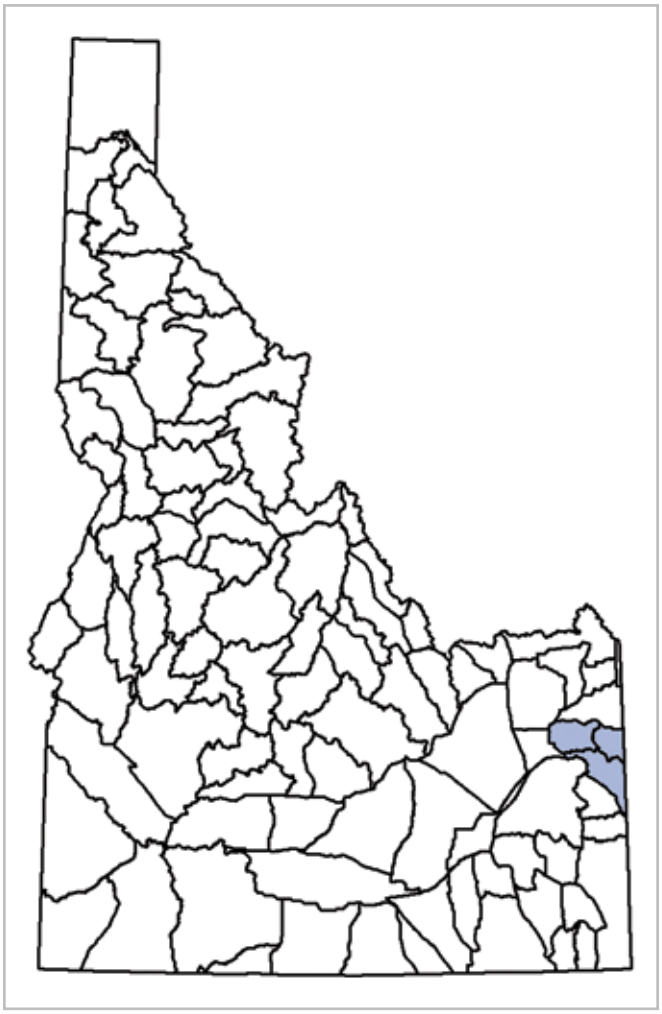
Management Direction	Strategy
Implement measures to minimize, eliminate, or compensate for elk depredations.	Continue prioritization and establishment of exclusionary tools for stored crops and cattle feed sites. Use hunting as a primary tool to manage depredation levels. Work with landowners through IDFG access programs to improve hunter access to reduce crop damage. Where appropriate, implement long-term CUAs with willing landowners. Work with private landowners and land management agencies to minimize disturbance to wintering elk herds. Cooperate with federal land managers to assure range conditions provide adequate forage for elk in areas prone to depredations. Establish an emergency winter feeding plan on Sand Creek WMA or adjacent areas for those instances when supplemental feeding is warranted.

Island Park Elk Zone Management Table

Management Direction	Strategy
Collaborate with public land managers and private landowners to improve key summer, winter, and transitional elk habitat to meet statewide objectives.	Work with appropriate partners to conserve and enhance habitat quality in key elk wintering areas within the zone.
Increase IDFG involvement in long- and short-term land-use planning efforts by providing information, analyses, and recommendations to improve and preserve elk habitat.	Cooperate with federal, state, and private land managers and owners to provide suitable winter range, including management of disturbance which could displace elk. Provide technical assistance to federal partners and others to maintain and improve elk habitat. Maintain collaborative relationship with Teton County Planning staff to advise on important fish and wildlife resource issues as they relate to County Land Use Planning. Explore costs and applicability of innovative long-term techniques such as crop exchanges, land purchases, land exchanges, use of lure crops, improved adjacent range conditions, and conservation easements.
Collaborate with federal and state agencies, American Indian tribes, counties, nonprofit organizations, private landowners, and others to incorporate important elk movement and migration habitat and routes into management decisions.	Work with the vehicle collision database and ITD to identify important elk movement routes. Provide technical assistance for wildlife fencing and passage to reduce vehicle collisions where elk cross highways. Pursue research to further refine knowledge of movement and migration routes in need of conservation. Continue to implement the Idaho Action Plan with a focus on Priority Areas within the zone. Provide technical assistance to partners regarding impacts of proposed projects on elk movement and migration routes.
Minimize the influence of disease as a limiting factor in elk populations.	Implement the Brucellosis Management Plan with emphasis on maintaining separation between elk and cattle during high-risk periods.

Palisades Zone

Game Management Units 64, 65, and 67 Administered by IDFG's Upper Snake Region



Proposed 6-Year Management Direction

- Performance and management of the Palisades Zone is currently limited by impacts to agricultural interests (farming and livestock) and limited winter range habitat.
- Current population management direction is to increase the cow segment of the population to objective levels while maintaining bull densities.

Description

Summer habitat in the Palisades Zone is a mix of Douglas-fir (Pseudotsuga menziesii), aspen, and mountain shrub communities with a transition to mountain mahogany (Cercocarpus montanus), sagebrush, and riparian habitats on remaining undisturbed winter ranges. Abundant high-quality summer range is available to elk, but winter range is increasingly limited and continues to be developed at a rapid pace.

Historical Perspective

Reports of elk in the 1800s and early 1900s are not well documented, but elk were likely present. General-season either-sex elk hunting was allowed until the mid-1970s, but overharvest became a concern and harvest opportunity was reduced to 5 days of general bull-only hunting. Hunting for antlerless elk was restricted to controlled hunts. Elk damage to haystacks in Swan Valley dates back to the mid-1950s, corresponding to loss of winter range from inundation by Palisades Reservoir. In the mid-1970s IDFG began feeding elk in Rainey Creek to lure them away from livestock feeding operations. This winter-feeding operation accommodated approximately 150 elk and was maintained until 2005.

Elk densities were never considered high in this zone, typically fluctuating between 500 and 800 elk over time. Currently, elk in the Palisades Zone are comprised of small, scattered herds which are limited by available suitable winter range, associated winter depredations, and disease (brucellosis) conflicts with livestock. Population estimates for the Palisades Zone are derived from elk counts conducted during winter in GMUs 64, 65, and 67.

Management Challenges and Opportunities

Maintaining productive habitat across this zone is a continuing challenge, particularly on winter range. Rural residential development, agricultural expansion, and other forms of development on private lands, in combination with increasing outdoor recreation pressures on public lands, continue to challenge elk management efforts. Therefore, securing winter habitat and providing security cover during the rest of the year is a priority in maintaining or enhancing this population.

Although limited winter range and conflict management will likely drive elk population levels for the zone, the wide array of hunting experiences available in the zone is an important consideration. The rugged and remote portions of GMU 67 are treasured by many hunters and maintenance of these more remote hunting opportunities should remain a priority for IDFG.

The Palisades Elk Zone is within the DSA for brucellosis and this elk population displays some of the highest brucellosis prevalence rates in the state. Continued monitoring of prevalence rates and prevention of mixing between elk and cattle is a priority for IDFG and producers.

Inter-Zone and Intra-Zone Dynamics

Elk summering in GMUs 64, 65, and 67 consistently overlap, but some interchange exists between GMUs 62 and 69 as well. Movements and distribution of the Palisades elk population is not well documented or understood.

Future Needs

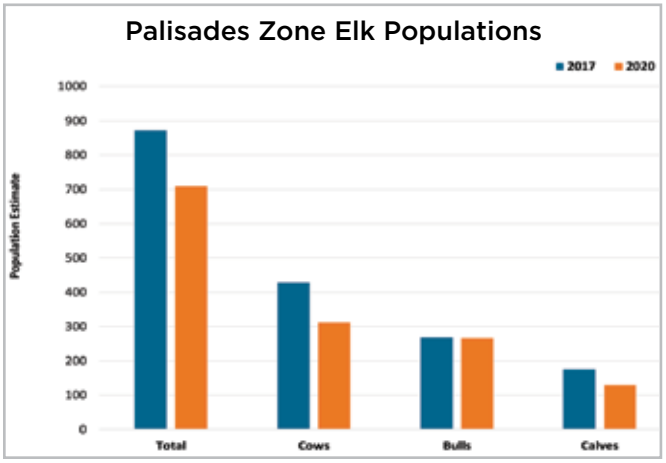
The Department will work to minimize and address conflicts between elk and agricultural operations (both crop and livestock production) and conserve and enhance winter habitat. Updated habitat use and seasonal distribution patterns would help guide management decisions.

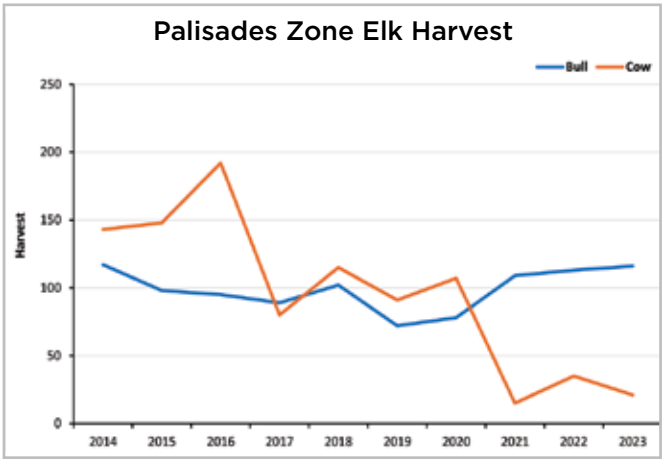
Palisades Elk Zone Population Management Objectives			
	Cows	Total Bulls	Branch Antlered Bulls
Management Objective Range	400 – 600	125 – 200	75 – 125
Current Status (2020)	312	267	155

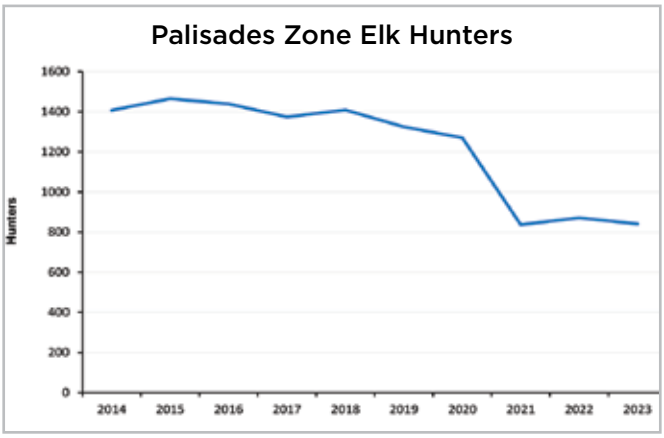
Color indicates where survey estimates are relative to management objectives:

black = within objective; red = below objective; blue = above objective

Palisades Park Elk Zone Population Survey Estimates										
Year	Cows	Calves	Total Bulls	Spikes	Raghorn Bulls	Mature Bulls	Unclassified Elk	Total Population	Calves per 100 Cows	Bulls per 100 Cows
2020	312	130	267	31	82	73	0	709	42	86
2017	428	175	269	57	132	79	8	880	41	63







Palisades Elk Zone Management Table

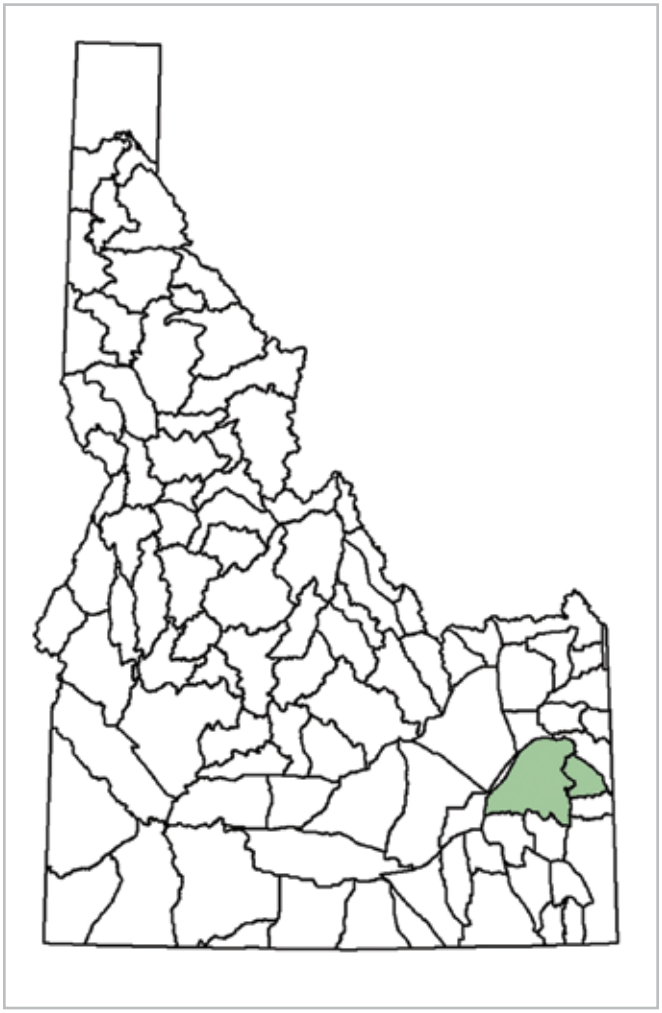
Management Direction	Strategy
Implement measures to minimize, eliminate, or compensate for elk depredations.	Continue prioritization and implementation of strategies to exclude elk from stored crops and cattle feed sites. Use hunting as a primary tool to manage depredation levels. Work with landowners through IDFG access programs to improve hunter access to reduce crop damage. Where appropriate, implement long-term CUAs with willing landowners. Cooperate with federal land managers to assure range conditions provide adequate forage for elk in areas prone to depredations.
Develop biological studies to improve population, predator, and habitat management capabilities.	Work to identify habitat use, movement patterns, and survival for this elk population to inform management decisions.
Collaborate with public land managers and private landowners to improve key summer, winter, and transitional elk habitat to meet statewide objectives.	Work opportunistically with the Caribou-Targhee National Forest and the BLM to increase security habitat in key areas of GMU 65, including the Big Hole Range and the Victor Front. Work with appropriate partners and land management agencies to conserve and enhance habitat quality in key elk wintering areas within the zone.
Collaborate with federal and state agencies, Native American tribes, counties, nonprofit organizations, private landowners, and others to incorporate important elk habitat and migration routes into management decisions.	Continue to implement the Idaho Action Plan with a focus on Priority Areas within the zone. Provide technical assistance to partners regarding impacts of proposed projects on elk habitat, and movement and migration routes. Collaborate with county, state, federal, tribal, and NGO partners, as well as private landowners, to improve migration habitat and mitigate barriers as opportunities arise. Pursue research to further refine knowledge of movement and migration routes in need of conservation.

Palisades Elk Zone Management Table

Management Direction	Strategy
Minimize the influence of disease as a limiting factor in elk populations by instituting management actions to limit disease spread and prevalence.	Implement the Brucellosis Management Plan with emphasis on maintaining separation between elk and cattle during high-risk periods.
Increase IDFG involvement in long- and short-term land-use planning efforts by providing information, analyses, and recommendations to improve and preserve elk habitat.	Maintain collaborative relationship with Teton County Planning staff to advise on important fish and wildlife resource issues as they relate to county land use planning. Explore costs and applicability of innovative long-term techniques such as crop exchanges, land purchases, land exchanges, use of lure crops, improved adjacent range conditions, and conservation easements.
Implement measures to minimize, eliminate, or compensate for elk depredations.	Continue prioritization and implementation of strategies for keeping elk excluded from stored crops and cattle feed sites. Use hunting as a primary tool to manage depredation levels. Work with landowners with IDFG access programs to improve hunter access to reduce crop damage. Where appropriate, implement long-term continued use agreements with willing landowners. Coordinate with Federal land managers to assure range conditions provide adequate forage for elk in areas prone to depredations
Develop biological studies to improve population, predator, and habitat management capabilities.	Work to identify habitat use, movement patterns and survival for this elk population to inform management decisions.
Collaborate with federal and state agencies, American Indian tribes, counties, nonprofit organizations, private landowners, and others to incorporate important elk movement and migration habitat and routes into management decisions.	Continue to implement the Idaho Action Plan with a focus on Priority Areas within the zone. Provide technical assistance to partners regarding impacts of proposed projects on elk habitat and movement and migration routes. Collaborate with county, state, federal, tribal, and NGO partners, as well as private landowners to improve migration habitat and mitigate barriers as opportunities arise. Pursue research to further refine movement and migration routes in need of conservation.
Minimize the influence of disease as a limiting factor in elk populations.	Implement the Brucellosis Management Plan with emphasis on maintaining separation between elk and cattle during high-risk periods.

Tex Creek Elk Zone

Game Management Units 66 and 69 Administered by IDFG's Upper Snake Region



Description

The Tex Creek Zone is a mix of public and private lands. The bulk of GMU 66 is public lands and contains quality spring, summer, and fall habitats, primarily consisting of mountain shrub, aspen, and Douglas-fir communities. Unit 69 contains significant portions of private land, much of which is actively farmed, under Conservation Reserve Program contract, or managed for livestock grazing. The area is extremely popular for motorized vehicle recreation.

Historical Perspective

Elk were present in the Tex Creek area during the late 1840s (Russel 1848). During the early 20th century, elk were rarely seen according to residents of the area (IDFG 2022). The elk population increased during the 1940s and by the mid-1950s depredation complaints on winter wheat were common. The first modern hunt was implemented in 1952 and consisted of 50 tags. Beginning in 1955, general hunting was allowed and continued in some form to present.

The elk population continued to grow through the following decades to the current estimate of 5,415 (2023). Controlling growth of the zone's population and providing sought after hunting opportunities drove harvest strategies over time. Concerns about overharvest of bulls and underharvest of cows guided many of the changes to hunt structures implemented over the years.

In August 2016, the Henry Creek fire burned approximately 52,000 acres across much of the prime winter range for elk in Tex Creek, including almost 66% of Tex Creek WMA. Grasses and forbs across the area showed a positive response to the burn, but shrub communities within the fire scar were negatively impacted. Department personnel conducted habitat rehabilitation and monitoring efforts associated with the fire. Although elk use of the WMA appears relatively unchanged because of the fire, managers will continue to monitor elk habitat use and vegetation recovery.

Proposed 6-Year Management Direction

- Performance and management of the Tex Creek Zone is currently limited by winter range carrying capacity and high elk population densities, which need to be managed within population objectives.
- Current population management direction in the Tex Creek Zone is to reduce elk populations to within population management objectives.

Management Challenges and Opportunities

Summer habitat in Tex Creek Zone is primarily located on federal lands, but winter habitat is a mix of private and public lands. Securing wintering habitat for these elk will continue to be a priority to ensure continued tolerance and capacity for large elk populations.

Department staff partnered with the Natural Resources Conservation Service (NRCS) to evaluate forage availability on winter range within the Tex Creek WMA. According to the analysis prepared by the NRCS, adequate forage exists for the current number of wintering elk. However, palatability of forage within the analysis area is variable. Therefore, habitat management on the WMA will focus on improving forage quality in areas available to wintering elk. Specific treatments may include conversion of smooth brome (B. inermis) or intermediate wheatgrass (Thinopyrum intermedium) monocultures to a native grass-shrub-forb mix, vegetation management such as haying or grazing, and sharecropping agreements to provide winter wheat.

Continued monitoring and enhancement of habitat across the Tex Creek Zone will be important due to potential conflict between elk and agricultural interests. Finding ways effectively address these conflicts will be a major factor in determining the number of elk that can be sustained on this landscape.

Inter-Zone and Intra-Zone Dynamics

A recent development (2021 and 2022) was the appearance of significant numbers of elk, which spend most of spring, summer, and early fall scattered across GMUs 66, 69, 66A, and 76, on or near the Shoshone-Bannock Tribe Reservation near Fort Hall in winter. Approximately 6,000 elk were observed on Shoshone-Bannock lands during a 2022–2023 winter survey. This number likely fluctuates annually depending on winter severity. Forty-four radio-collars were deployed on wintering elk near Fort Hall to gather basic movement and habitat use information. Movement and annual distribution data from these elk will be important for future management of both the Tex Creek and Diamond Creek elk populations.

Future Needs

Continued work on methods to mitigate and manage conflicts with agricultural producers (both crop and livestock operations) is a priority in this zone. Information on use and response of this elk herd to habitat changes resulting from the Henry Creek fire will also provide valuable information to managers.

Tex Creek Elk Zone Population Management Objectives

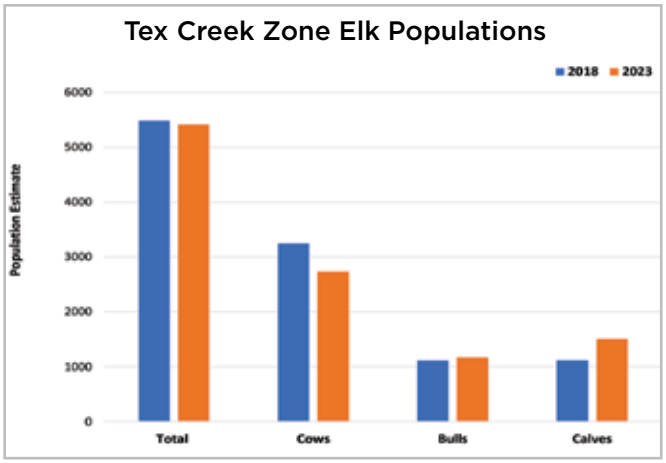
	Cows	Total Bulls	Branch Antlered Bulls
Management Objective Range	2,000 – 3,000	425 – 625	250 – 350
Current Status (2023)	2,737	1,170	681

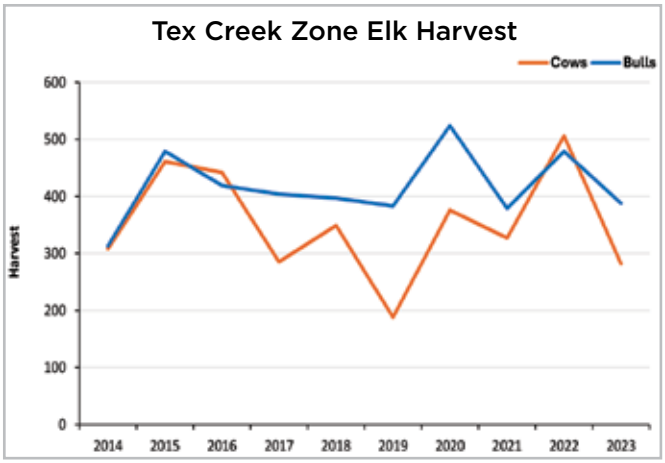
Color indicates where survey estimates are relative to management objectives:

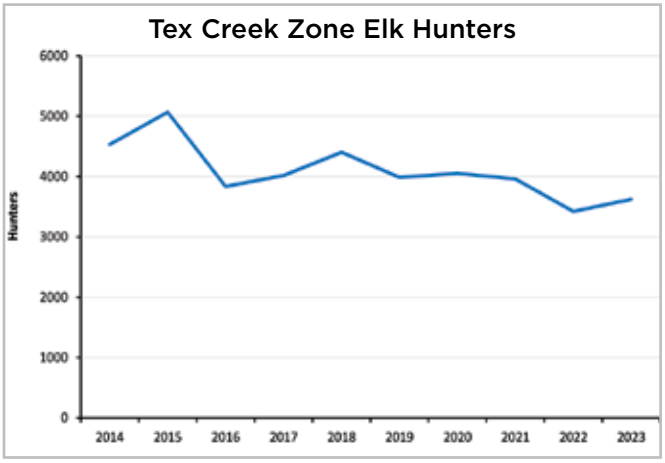
black = within objective; red = below objective; blue = above objective

Tex Creek Park Elk Zone Population Survey Estimates

Year	Cows	Calves	Total Bulls	Spikes	Raghorn Bulls	Mature Bulls	Unclassified Elk	Total Population	Calves per 100 Cows	Bulls per 100 Cows
2023	2,737	1,507	1,170	489	536	145	0	5,415	55	43
2018	3,240	1,112	1,088	310	581	198	0	5,452	34	34







Tex Creek Elk Zone Management Table

Management Direction	Strategy
Develop biological studies to improve population, predator, and habitat management capabilities.	Continue working with the Shoshone-Bannock Tribes to better understand movement patterns surrounding Fort Hall Reservation and how those movement patterns impact elk in the Tex Creek Zone.
Implement measures to minimize, eliminate, or compensate for elk depredations.	Continue efforts to enhance forage quality in suitable winter range on Tex Creek WMA. Work with IDFG Enforcement, Bonneville County, and other entities to maintain travel and entry closures and security habitat during winter. Pursue key fee-title acquisitions and conservation easements in unprotected elk winter range on the periphery of Tex Creek WMA and within the South Fork Canyon. Establish an emergency winter feeding plan on Tex Creek WMA for those instances when supplemental feeding is warranted. Use hunting as a primary tool to manage agricultural impacts. Explore costs and applicability of innovative long-term techniques such as crop exchanges, land purchases, land exchanges, use of lure crops, improved adjacent range conditions, and conservation easements.

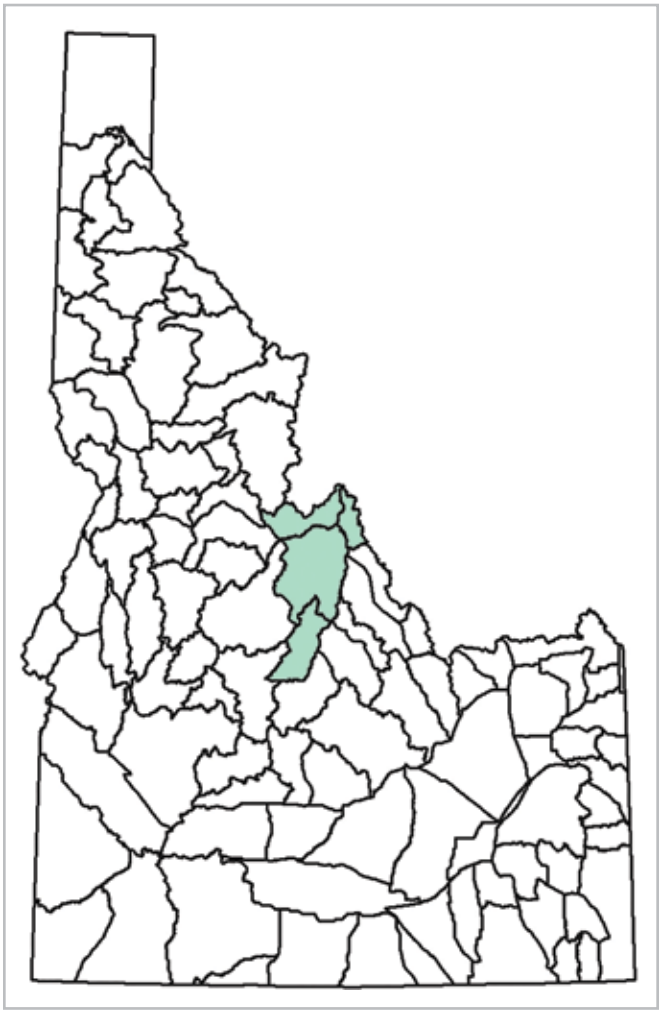
Tex Creek Elk Zone Management Table

Management Direction	Strategy
Collaborate with public land managers and private landowners to improve key summer, winter, and transitional elk habitat to meet statewide objectives.	Pursue strategic fee-title acquisitions or conservation easements to reduce development threats in key elk habitat throughout the zone, particularly around Tex Creek WMA, and other opportunities that arise in relation to maintaining connectivity between federal public lands and crucial winter ranges. Enhance forage palatability using field conversions and shrub plantings in key wintering areas, such as Tex Creek WMA. Work collaboratively with the Palisades and Soda Springs Ranger Districts on projects to enhance forage quality and quantity on spring transitional and calving habitat and enhance security.
Increase IDFG involvement in long- and short-term land-use planning efforts by providing information, analyses, and recommendations to improve and preserve elk habitat.	Provide technical assistance to Bonneville and Bingham Counties for all commercial or residential development proposals within key elk habitat throughout the zone.
Minimize the influence of disease as a limiting factor in elk populations.	Implement the Brucellosis Management Plan with emphasis on maintaining separation between elk and cattle during high-risk periods.

SWAN VALLEY PHOTO: CC-BY SUDWEEKS1 AT FLICKR.COM

Salmon Elk Zone

Game Management Units 21, 21A, 28, and 36B Administered by IDFG's Salmon Region



Proposed 6-Year Management Direction

- Performance and management of the Salmon Zone is influenced by habitat quality and, to a lesser extent, elk agricultural depredations. Additionally, a significant portion of this population summers in Montana and is affected by their management.
- Current population management direction in the Salmon Zone is to maintain the elk population within proposed objectives.

Description

The Salmon Zone is large and mountainous, with access ranging from abundant to very limited. Southern exposures are predominantly open, grass-shrub habitat, transitioning to coniferous forests at higher elevations and more northerly aspects.

Historical Perspective

Elk numbers were low for much of the 20th century and portions of GMUs 28 and 36B were designated as game preserves from 1917 to the 1940s. A total of 62 elk from Yellowstone National Park were released in GMU 28 in 1937. Elk numbers increased due to regulation changes in the mid-1970s. Liberal cow harvest in the 1990s stabilized the population at approximately 10,000 elk. Calf recruitment in the zone, particularly GMUs 28 and 36B, can reach low levels at times, and thus current harvest opportunity is predominantly for bulls. The Salmon Zone has long been managed to provide general hunting opportunities, including archery opportunity with an A-tag and any-weapon opportunity with a B-tag. Declines observed in a 2010 survey prompted implementation of a B-tag cap of 2,507 tags, which remains in place. The Salmon Zone was last surveyed in 2023 and was within objectives for cows and bulls.

Management Challenges and Opportunities

Although bull harvest appears to be relatively stable and sustainable on a zone-wide basis, hunter satisfaction may benefit from redistribution of hunters away from GMUs with high hunter densities. Additionally, IDFG will communicate regularly with local citizen groups to provide information and receive input.

Because the majority (~95%) of the zone is federal land, the Salmon Elk Zone is only slightly limited by agricultural impacts, although some winter range overlaps private agricultural land. The majority of elk summer and winter range occurs on USFS and BLM lands, which are managed under a multiple-use mandate, providing for mineral extraction, livestock grazing, and outdoor recreation. These uses, particularly recreation, have increased in recent years and these changes have the potential to alter

elk distribution and habitat use. Additionally, habitat within this zone has been, and will likely continue to be, significantly altered by landscape-level forest fires.

Inter-Zone and Intra-Zone Dynamics

A significant but unknown proportion of elk in the northern portions of the zone (units 21 and 21A) summer in Montana and winter in Idaho. These migratory elk utilize the higher quality summer habitat in the Bitteroot and Big Hole valleys of Montana and the more mild climate of the Salmon River in Idaho during winter. These seasonal shifts in landscape use typically results in higher productivity in units 21 and 21A than in units 28 and 36B.

Future Needs

To guide future land management decisions impacting elk and elk habitat, IDFG will collaborate with state and federal partners, NGOs, and private landowners to implement habitat improvement projects, such as aspen restoration and wildfire mitigation, and address impacts on elk such as noxious weeds, proposed mineral extraction, and grazing management. To maintain elk within objective, IDFG will continue general-season bull opportunity with some limited cow harvest when warranted and adjust as necessary.

Salmon Elk Zone Population Management Objectives

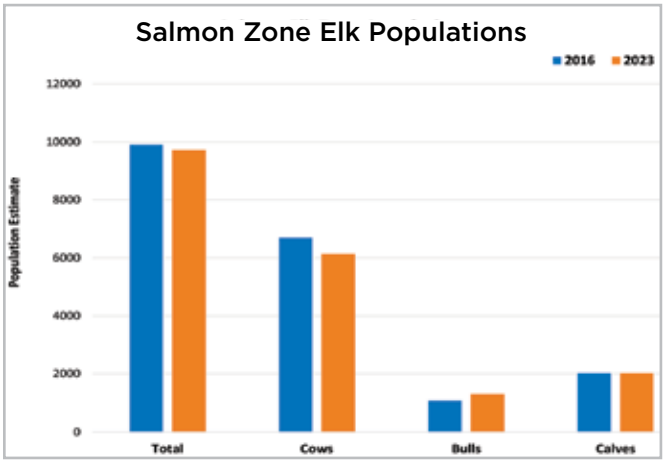
	Cows	Total Bulls	Branch Antlered Bulls
Management Objective Range	4,850 – 7,400	1,020 – 1,560	585 – 885
Current Status (2023)	6,133	1,310	683

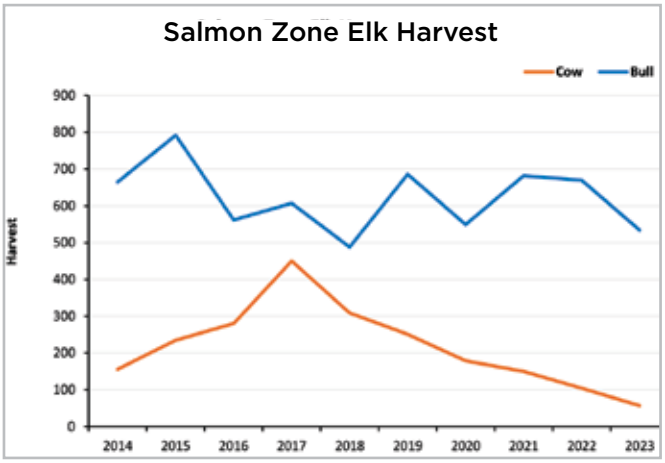
Color indicates where survey estimates are relative to management objectives:

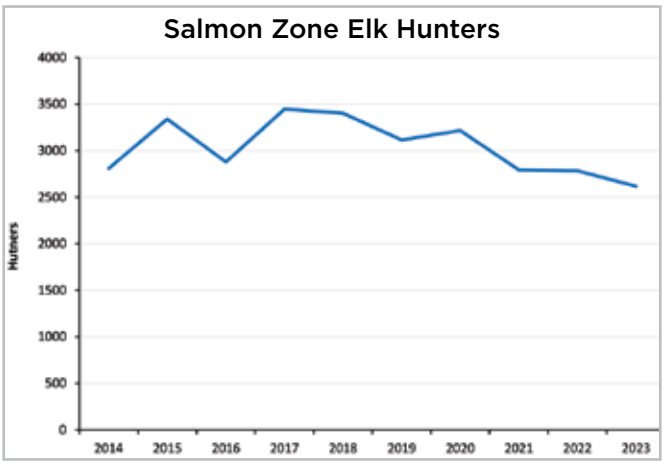
black = within objective; red = below objective; blue = above objective

Salmon Elk Zone Population Survey Estimates

Year	Cows	Calves	Total Bulls	Spikes	Raghorn Bulls	Mature Bulls	Unclassified Elk	Total Population	Calves per 100 Cows	Bulls per 100 Cows
2023	6,133	2,024	1,310	627	383	300	254	9,721	33	21
2016	6,729	2,030	1,092	520	340	221	104	9,955	30	16







Salmon Elk Zone Management Table

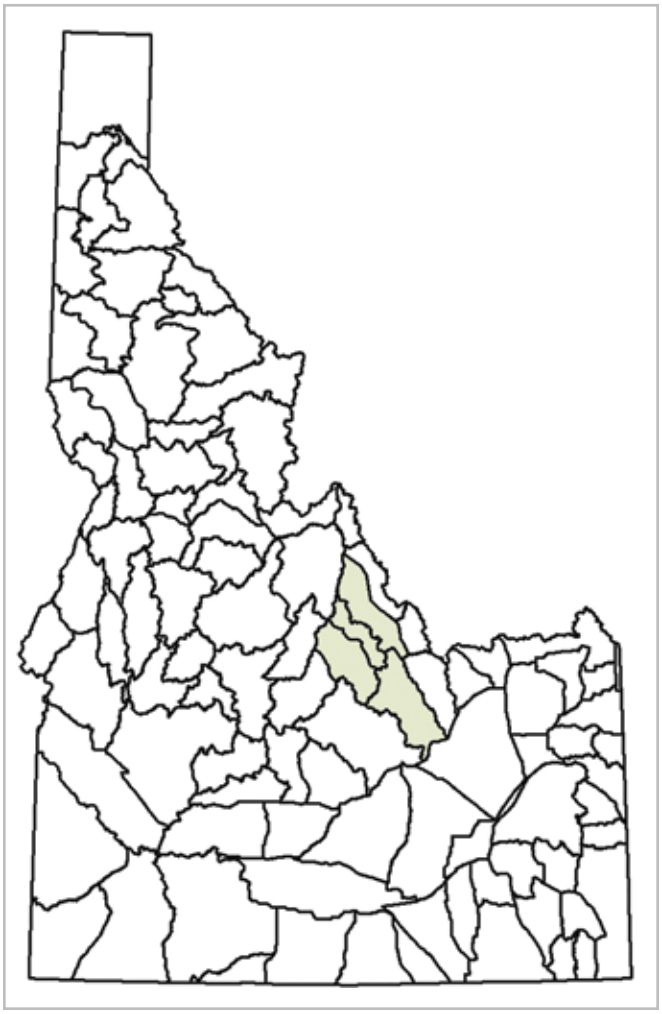
Management Direction	Strategy
Collaborate with public land managers and private landowners to improve key summer, winter, and transitional elk habitat to meet statewide objectives.	Collaborate with private, state, and federal partners to address invasive annual grasses and noxious weeds on important elk ranges. Collaborate with BLM, USFS, and IDL to provide technical assistance on grazing permit management and as related to important elk summer and winter range needs and impacts. Collaborate with BLM and USFS to provide technical assistance on mineral extraction and development as they pertain to elk transitional, summer, and winter range. Collaborate with federal partners to expand and improve aspen stands throughout the zone. Participate in and support (technical assistance and funding) the Central Idaho Native Plant working group and Salmon-Challis National Forest to implement riparian and aspen protection and enhancement projects.

Collaborate with federal and state agencies, American Indian tribes, counties, nonprofit organizations, private landowners, and others to incorporate important elk movement and migration habitat and routes into management decisions.	Continue to implement the Idaho Action Plan with a focus on Priority Areas within the zone. Determine elk movement, migration, and landscape use within and adjacent to the zone to inform land-use planning efforts. Provide technical assistance to partners regarding impacts of proposed projects on elk habitat, and movement and migration routes. Collaborate with county, state, federal, tribal, and NGO partners, as well as private landowners, to improve migration habitat and mitigate barriers as opportunities arise.
Develop biological studies to improve population, predator, and habitat management capabilities.	Collaborate with neighboring states and other partners as needed to improve population monitoring strategies.
Implement measures to minimize, eliminate, or compensate for elk depredations.	Utilize available tools to quickly and efficiently address depredation complaints.

CHALLIS PHOTO: CC-BY BLMIDAHO AT FLICKR.COM

Lemhi Elk Zone

Game Management Units 29, 37, 37A, and 51 Administered by IDFG's Upper Snake and Salmon Regions



Description

The Lemhi Zone is primarily public land, with some private agricultural land at lower elevations. Terrain is variable and mountainous, with sagebrush-steppe at lower elevations and coniferous forests at higher elevations. Cattle ranching and recreation are predominant land uses.

Historical Perspective

Elk were scarce throughout the Lemhi Zone in the early to mid-1900s. Elk numbers increased and expanded substantially since the mid-1970s, to approximately 5,050 elk in 2024. Although this population is fairly productive and is typically at or above objectives, calf recruitment has been low at times, potentially indicating habitat limitations. Additionally, high elk abundance can cause significant agricultural depredations, which are exacerbated by drought and severe winters. Lemhi Zone offers general archery opportunity with an A-tag; but any-weapon bull opportunity is managed with controlled hunts to maintain a high-quality experience.

Management Challenges and Opportunities

The Lemhi Zone is moderately limited by agricultural impacts. Primary challenges include damage to stored crops during winter and standing crops during summer-autumn growing seasons. In addition, elk occupy some private lands that provide abundant forage and protection from hunting pressure. These elk refugia can negatively impact neighboring agricultural properties and limit IDFG's ability to address damage. The Department will actively work to address impacts of elk refugia on surrounding landowners and strive to develop new tools to address depredation complaints.

Summer forage quality and winter forage quantity within the Lemhi Zone are limited to some extent by annual precipitation and other climate variables. In addition, most elk summer and winter range across this zone is located on BLM and USFS lands with multiple-use management goals, which include mineral extraction, livestock grazing, and outdoor recreation. These uses, particularly recreation, have increased in

Proposed 6-Year Management Direction

- Performance and management of the Lemhi Zone is currently limited by elk agricultural depredations and weather-related impacts on summer and winter range.
- Current population management in the Lemhi Zone is to maintain the elk population within objectives.

recent years and these changes have the potential to alter elk distribution and habitat use. The Department will collaborate with state and federal partners, NGOs, and private landowners to address impacts on elk.

Inter-Zone and Intra-Zone Dynamics

Population dynamics are generally contained within the Lemhi Zone, with limited elk movement among zones. As such, management is similar across the zone.

Future Needs

To maintain elk within objectives, IDFG will continue to provide bull and cow opportunity, and adjust as necessary to balance harvest opportunity with agricultural impacts. Additionally, IDFG will communicate regularly with citizen groups and producers to provide information and receive input.

Lemhi Elk Zone Population Management Objectives

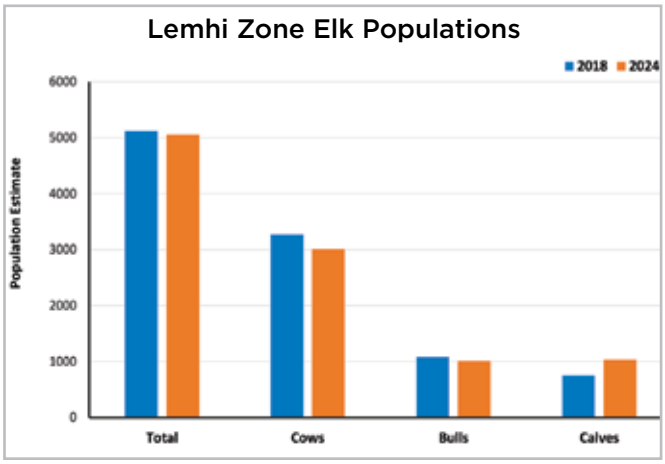
	Cows	Total Bulls	Branch Antlered Bulls
Management Objective Range	1,850 – 2,950	600 – 960	370 – 590
Current Status (2024)	3,007	1,015	697

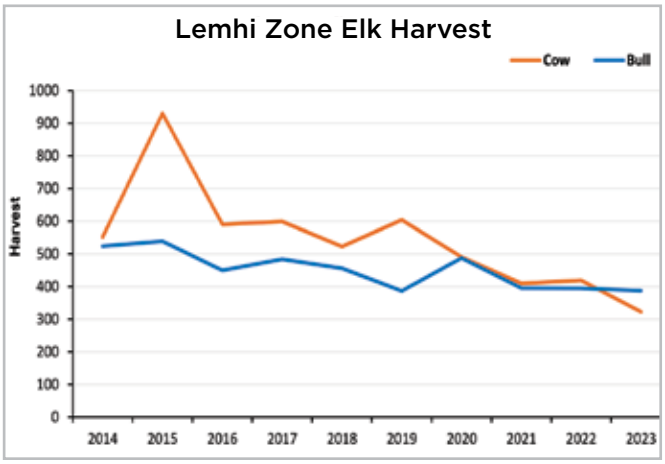
Color indicates where survey estimates are relative to management objectives:

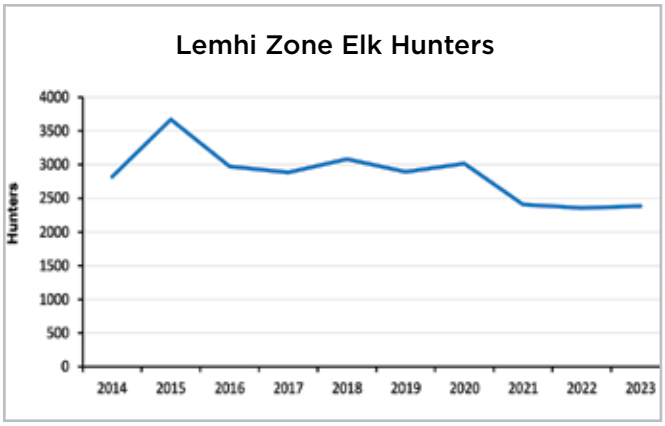
black = within objective; red = below objective; blue = above objective

Lemhi Elk Zone Population Survey Estimates

Year	Cows	Calves	Total Bulls	Spikes	Raghorn Bulls	Mature Bulls	Unclassified Elk	Total Population	Calves per 100 Cows	Bulls per 100 Cows
2024	3,007	1,032	1,015	318	452	245	1	5,055	34	34
2018	3,270	750	1,081	276	475	330	16	5,118	23	33







Lemhi Elk Zone Management Table

Management Direction	Strategy
Implement measures to minimize, eliminate, or compensate for elk depredations.	Utilize available tools to quickly and efficiently address depredation complaints. Actively address impacts of elk refugia on surrounding landowners Use hunting as a primary tool to manage depredation levels. Work with landowners through IDFG access programs to improve hunter access to reduce crop damage
Collaborate with public land managers and private landowners to improve key summer, winter, and transitional elk habitat to meet statewide objectives.	Collaborate with private, state, and federal partners to address invasive annual grass and noxious weeds on important elk ranges. Collaborate with state and federal partners to provide technical assistance on land management activities as they pertain to important elk summer and winter range needs and impacts.
Collaborate with federal and state agencies, American Indian tribes, counties, nonprofit organizations, private landowners, and others to incorporate important elk movement and migration habitat and routes into management decisions.	Continue to implement the Idaho Action Plan with a focus on Priority Areas within the zone. Determine elk movement, migration, and landscape use within and adjacent to the zone to inform land-use planning efforts. Provide technical assistance to partners regarding impacts of proposed projects on elk habitat, and movement and migration routes. Collaborate with county, state, federal, tribal, and NGO partners, as well as private landowners, to improve migration habitat and mitigate barriers as opportunities arise.
Minimize the influence of disease as a limiting factor in elk populations.	Implement the Brucellosis Management Plan with emphasis on maintaining separation between elk and cattle during high-risk periods.

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Appendix A

Lolo Elk Zone Population Estimates Based on Current Nutritional Carrying Capacity

Background

Predictive models were developed to estimate available forage on the Clearwater Basin landscape for lactating female elk by individual forest habitat (Cook et al. 2018; Monzingo 2020; Monzingo et al. 2022, 2023). The forage metric that accounted for both forage quality and forage quantity across the landscape was suitable biomass (kg/ha). This biomass estimate was derived from the FRESH-deer model, a linear program which accounts for forage quality and quantity based on nutritional requirements of the animal, to calculate amount of forage available to a lactating female elk with calf that satisfies their nutritional needs (Hanley et al. 2012). Suitable biomass can be used to estimate sustainable elk numbers by dividing suitable biomass by amount of forage required by elk (Hobbs and Swift 1985, Hanley et al. 2012). This nutritional carrying capacity was created using forage quality, quantity, and an elk forage selection index based on summer nutrition data. Winter nutrition was not accounted for and is not represented in these estimates. The objective of this project was to apply our understanding of current nutritional conditions in Lolo Elk Zone to estimate nutritional carrying capacity, with the intent to provide a more science-based elk population objective.

Methodology

Model Limitations:

1.

These models provide calculations of elk numbers without taking into account other herbivory on the landscape. Failing to account for use by other herbivores results in an overestimation of carrying capacity for elk.

Mitigation

We accounted for other herbivores on the landscape by using a low utilization rate (i.e., capping the amount of forage elk, in theory, could consume). This approach accounts for other herbivores on the landscape, but should be considered a crude approximation because we did not estimate actual forage use by other herbivores.

2.

The model calculates carrying capacity based on daily forage requirements (kg/day of forage on a dry matter basis) of lactating female elk. This model, as currently written, does not take into account presence of a mix of bulls and nonlactating females in the population, which have different daily forage needs than lactating cows.

Mitigation

We assumed all females were lactating, which means our estimate was an underestimate of true female populations because lactating female elk require more nutritious forage than nonlactating animals. We accounted for bulls and calves within the estimate of utilization rate using composition percentages from elk surveys. Once lactating females were calculated, we estimated bull and calf numbers based composition percentages from aerial surveys and extrapolated from the lactating female estimate (e.g., Table 1).

Table A-1. Example of extrapolating elk population estimates from nutritional carrying capacity (NCC) of lactating female elk.

Prior Information			
Population composition	Cows	Bulls	Calves
	60%	10%	30%
Utilization rate (UR) for entire population	20%		
UR of lactating cows	12% (60% of 20%)		
NCC Model Population Estimate			
Lactating females based on 12% UR		50 cows	
Population Extrapolation			
Bulls		5 (10% of 50 females)	
Calves		15 (30% of 50 females)	
Population Totals			
Cows	Bulls	Calves	
50	5	15	

Table A-2. Example of extrapolating elk population estimates from nutritional carrying capacity (NCC) of lactating female elk.

Prior Information	Cows	Bulls	Calves	Total
Population composition (%)	60	10	30	100
Utilization rate (UR) for entire population (%)				20
UR of lactating cows (%)	12 (60% of 20%)			
NCC model population estimate				
Lactating cows based on 12% UR	50			
Population extrapolation	50	5 (10% of 50 F)	15 (30% of 50 F)	70

3.

This estimate of carrying capacity is based on summer nutrition. Estimates of elk numbers will be based on a representative day during the summer months.

Mitigation

Over this season, forage quality and quantity changes considerably, as do estimates of carrying capacity. In late spring and early summer where forage quality is quite high, broadly above requirements, carrying capacity is also relatively high, and in autumn, when forage quality or quantity is much lower, carrying capacity is lower. By estimating nutritional carrying capacity within the late summer to early autumn time frame, we provided a conservative estimate rather than an inflated one if done in spring. However, autumn breeding season is a concern because females nutritional requirements fluctuate. The date selected for estimation needed to be outside the breeding period to remove that factor from influencing estimates. By avoiding extremes represented by early summer and autumn, estimates reflect an approximate average for each of the ranges.

4.

Nutritional requirements selected for the model directly affect carrying capacity estimates. Determining which requirements are included in the model is a prerequisite to understanding how well we estimate female elk are going to reproduce and succeed in rearing young.

Mitigation

We used nutritional requirements that provide optimal nutrition for female elk. This threshold means there are no limitations for lactating female elk to reproduce, support a calf, and breed at the optimal time for success the following year (Cook et al. 2004, Monzingo et al. 2023).

5.

The model predicts available forage for a 1-day snapshot, meaning the model will create an estimate of the total amount of elk that can survive on the amount of forage in that area for 1 day. This approach provides an overestimate because elk use and need forage in these landscapes all summer, so we need to account for that use in order to provide a relative population estimate.

Mitigation

We account for forage eaten over time by calculating the amount of forage a lactating female needed across the summer months to provide an estimate of the number of elk that can be supported for the entire summer on available forage.

6.

Modeling was based on overstory canopy cover estimates from 2016. Thus, estimates of carrying capacity are relative to habitat conditions at that time.

Mitigation

Population surveys were conducted in 2010 and 2017. Instead of averaging results of those surveys, we used only 2017 data.

7.

These models are measures of current available forage on the landscape. They do not take into account road, predator, human, or accessibility issues, which might limit usability of available forage to elk across landscapes.

Mitigation

We cannot account for this limitation.

Estimate Assumptions

We tried to account for limitations of these models. However, we were constrained by primary assumptions, which cannot be addressed until further research provides more accurate estimates.

The primary assumption of the model was the forage utilization rate of elk, which was based on expert opinion. The model calculates total amount of forage that satisfies nutritional requirements of elk in summer. All of this forage, if not adjusted, are assumed to be available for use by elk. This assumption deviates greatly from reality, because these animals do not eat all available forage (i.e., down to the soil), and if they tried to do so, foraging efficiency would fall to low levels as animals try to find and consume the last few kilograms of forage left in plant communities. Many users of the nutritional carrying capacity model assume only a certain percentage (typically 50%) of this forage actually contributes to carrying capacity. Our approach was a bit different. Based on a variety of research, elk clearly cannot eat fast enough to satisfy their forage needs each day when accepted forage biomass falls below approximately 150 kg/ha (Cook et al. 2004, 2016). The upshot is, the more forage removed by foraging, the less efficient foraging will be, and at some point, the animal will no longer be able to satisfy daily nutrient requirements. But without more research, model users must estimate what amount should be left to provide enough sustainable forage for elk.

Another assumption is the need for digestible protein as a nutritional limitation within the carrying capacity estimate. Currently our models use both digestible energy and digestible protein requirements to calculate available forage and nutritional carrying capacity. Estimates of digestible energy requirements are more reliable, based on published research for elk, than estimates of digestible protein requirements. Some researchers speculate the protein requirement used in model application is perhaps greater than necessary, but additional research is needed to clarify and confirm protein requirements for modeling purposes.

In addition, we are trying to account for use in an area through time based on 1-day estimates. This does not account for animals moving across the landscape or how weather influences the amount of summer days available to the animal.

Based on the nature of the data, model limitations, and assumptions, estimates do not represent the true number of elk on the landscape and should only be used as a relative, rather than an absolute, index of carrying capacity. Thus, we recommend using these estimates with caution to provide general guidance for management objectives.

Model Covariate Inputs

Based on limitations noted above, following are input data we used to estimate lactating female elk populations and extrapolate elk population estimates.

Utilization Rate

- Entire elk population UR = 20% of suitable biomass (selected plant species) on the landscape (i.e., 80% is left for sustainability and other herbivores)
- Population composition (taken from 2017 aerial surveys):
- Cows = 0.585, Calves = 0.170, Bulls = 0.219Date of model estimation:

- Date used to estimate elk number = 30 August (before breeding and hunting seasons, but during the late summer bottleneck of nutrition)

Nutritional requirements

- Suitable biomass models (DE ≥11.72 kJ/g and DP ≥6.7 g protein/100 g forage; Monzingo 2020)
- Lactating females require 7.5 kg of dry matter forage/day.

Accounting for consumption

- To account for forage being eaten throughout the year, 1 lactating female needs 1,350 kg for a 6-month (1 May – 31 Oct) summer period (i.e., 7.5 kg/day x 180 days)

Minimum Threshold Requirement

To provide a complete picture of elk estimates, we estimated cow elk numbers by taking into account pixels that do not provide enough forage to realistically support an elk. For example, if a pixel provides 50 kg/ha of accepted biomass the model will measure the number of elk that can use the pixel. However, we know 50 kg/ha of accepted biomass does not provide enough forage to meet the minimum threshold to sustain an elk within that pixel because the animals would use more energy finding forage than gained from consumption. Prior to calculating suitable biomass with the above nutritional requirements, we removed pixels providing <10.8 kJ/g of estimated digestible energy and those providing <150 kg/ha of estimated accepted biomass (Cook et al. 2004, 2016; Monzingo et al. 2023). We then calculated suitable biomass using the above nutritional requirements for remaining pixels.

Results

Taking into account model limitations and assumptions, we used model covariate inputs to estimate sustainable numbers of elk in the Lolo Elk Zone based on accepted biomass. Because a few elk typically cannot be accurately classified during aerial surveys, 2017 survey estimates accounted for 97% of the total population as classified animals (cows, calves, and bulls; i.e., 3% of total estimated elk were unclassified as to sex and age). Because of this variation, our estimates, when added together, make up 97% of the total estimated and do not equal the total amount in the last column of Table 23.

Table A-3. Elk population estimates in Lolo Elk Zone.

Estimate type	Cows	Calves	Bulls	Total
2017 aerial survey estimate	**1,137**	**331**	**425**	**1,945**
2016 NCC-based estimates	**1,827**	**532**	**683**	**3,125**
Management objective range*	**1,500-2,200**		**550-800**	

***To provide a range for Elk Plan objectives, we added a ~20% threshold on either side of the estimate.**

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Appendix B

Description of Methods Used to Estimate Population Growth Given Survival

This simulation assumes an elk population can be described using 3 life stages. The first stage represents calves, animals approximately 6.5 months old on the model anniversary of 15 December. The second stage represents juveniles, which begin the year at 6.5 months of age and finish as 18-month-old animals when their abundance is reported. The last stage accounts for adults >18 months of age. We used 3 stages to account for the fact elk typically do not give birth for the first time until their second birthday. We assume a model anniversary of 15 December to more closely align with timing of aerial surveys for elk.

We assumed a starting population of 100 calves, 60 juveniles, and 200 adults. These numbers are arbitrary and should not have an effect on model output as long as our focus is on λ (lambda, population growth rate).

The population changed size according to some simple rules. We first considered juveniles. The number of juveniles at time step t equals number of calves at t-1 multiplied by survival of juveniles. Survival is separated into annual rates of natural and harvest survival. To simplify outputs and inputs, we ran all simulations assuming adult and juvenile animals experienced the same survival rates. Adult population in year t is a function of juveniles surviving the previous year plus adults at t-1 multiplied by survival. Again, survival is represented by natural and harvest-related survival rates. Lastly, we added calves to the population. As noted above, data collection typically occurs in winter, subsequent to harvest. Harvest of juvenile and adult females will increase observed calf:cow ratios, whereas harvest of calves decreases that ratio. With respect to females, ratio or structured abundance estimates cannot or do not discriminate between juveniles and adults. Therefore, because juvenile females are included, reported calf:cow ratios are lower than true rates (calf:adult female). This scenario further supports the approach of using 3 stages in model structure. Similarly, harvest surveys do not differentiate between juvenile and adult females. We did not use observed harvest data in this simulation, but wanted to create a simulation reflective of some key data issues and assumptions biologists would face in practice. Considering all of these details, we chose to model reproduction as equivalent to the observed post-harvest calf:cow ratio. Thus, we assumed number of calves was equal to number of juveniles plus number of adults multiplied by the observed calf:cow ratio. We assumed a 50:50 sex ratio at birth, so total calves was multiplied by 0.5 to retain only female calves in the model.

Appendix C

Summary of Public Comments on Draft Elk Management Plan 2024–2030

Solicitation of Public Comment

The draft Idaho Elk Management Plan 2024–2030 was posted for public scoping on IDFG's website for a 33-day comment period from 3 April through 5 May 2024. The Department received 442 comments from 248 unique individuals and 3 organizations (Rocky Mountain Elk Foundation, Teddy Roosevelt Conservation Partnership, and Idaho Wildlife Federation), which submitted comments on behalf of their constituents. Of these 248 unique respondents, 91% were Idaho residents and 9% were nonresidents. Comments were gathered through the online webform, emails, phone calls, and office visits, with 90% of comments submitted via online webform submissions. Staff reviewed and summarized all comments (399 unique online submissions and 43 comments provided through emails, letters, phone calls and in-person visits) received during the public comment period for this plan.

Support of the Draft Plan

The public was asked specifically whether they supported the draft plan with 3 different response options: "I Support the plan," "I Support the Plan with Concerns," or "I Do Not Support the Plan." A total of 231 individuals provided responses indicating a level of support for the plan (Table C-1); 70 (30%) in support, 132 (57%) who supported the plan with concerns, and 29 (13%) who did not support the plan. Of those providing input on their level of support for the draft plan, 91% were Idaho residents. In total, 87% of the public showed some level of support for the draft plan.

Table C-1. Portion of 231 online comments (with % by residency type) for each level of support for the draft Elk Management Plan 2024–2030.

Residency	Support	Support with concerns	Do not support
Total	70 (30%)	132 (57%)	29 (13%)
Resident	61 (29%)	120 (57%)	29 (14%)
Nonresident	9 (43%)	12 (57%)	0 (0%)

Comments on the Draft Plan and Elk Management in Idaho

The public was also asked for specific comments related to the draft elk plan and elk management topics; 442 unique comments were submitted (residents provided 92% of comments). Staff grouped comments into 7 overarching themes: predator management, elk population management, elk habitat and security, hunting experience and hunting seasons, tag sales and tag allocation, elk and private lands, and other (Table C-2). Nonresident comments primarily focused on maintaining their elk hunting opportunities, a desire for implementation of a method to reward nonresident hunters who consistently hunt in Idaho, and concerns related to overall elk densities within the state. Resident comments covered a much wider range of topics, including: increased predator management, improving hunter crowding or hunting experience, reducing number of nonresidents, requiring private land owners who have conflicts to allow more public access, improving the tag sales and tag allocation processes in areas with capped or limited tags for both residents and nonresidents, more focus or effective management of motorized vehicles, increasing or maintaining areas to hunt, managing for more mature bulls, and improving or conserving habitat.

Table C-2. Primary themes of 372 Idaho resident comments on draft Elk Management Plan 2024–2030.

Comment theme	Comments (n)	Comments (%)
Predation management	35	9
Elk and private lands	46	12
Elk population management	23	6
Elk habitat and security	16	4
Elk tag sales and tag allocation	66	18
Elk hunting experience and hunting season	128	34
Other	58	16

Of 372 resident comments, 58 did not fall into any of the themes and did not provide direct input to the plan or elk management. Examples of these comments include “thank you for the opportunity to comment”, “the plan looks good”, and “this plan is too long”. Additionally, 38 comments were on specific details of hunts, units, or drainages, which were too specific for overall management direction goals of a management plan and would be more applicable for consideration during biennial elk hunting season setting processes. Of 276 resident comments of appropriate scale and detail to be informative to the goals of this management plan, several topics were common across commenters (Table C-3).

Table C-3. Most common topics of 276 total Idaho resident comments that were not too broad or too specific for informing the Elk Management Plan 2024–2030.

Topic	Resident comments (n)	Resident comments (%)
Increased predator management	30	11
Reduce nonresident participation in elk hunting opportunities	24	9
Private landowners who experience or report conflicts need to allow more public access	23	8
Manage hunter congestion and quality of experience	23	8
Improve or conserve habitat	16	6
Develop a better process for tag sales and allocation in areas with capped or limited tag availability for both nonresidents and residents	14	5
Maintain or increase access and areas for people to hunt	12	4
More effective management of motorized access (ATVS, UTVS, etc.), including number of, use of, and overall impacts of motorized vehicles and a need for more enforcement related to use of motorized vehicles	12	4
Manage more areas for older age and more mature bulls or increased bull numbers	10	4

Discussion of common public comment topics

There were numerous elk management topics and focus points identified by the public through the public input process, but the following 4 topics capture the majority of comments and provide the most direct direction for elk management.

Increased predator management: Predator management was the most common comment. The Department has implemented a number of measures to manage predators across the state, particularly in areas where elk populations are below management objectives. Predator management efforts include development of specific predation management plans in elk zones not meeting management objectives (p 22), providing lengthy wolf trapping and hunting seasons, offering multiple bear and mountain lion tags for hunters in units where management goals necessitate reductions in predator density, and coordinating focused predator control efforts in specific areas with USDA Wildlife Services. The Department will continue to evaluate and work to minimize impacts of predators on elk populations.

Manage hunter congestion and quality of experience: Nonresident participation, hunter congestion, and providing quality hunting experiences were also frequently mentioned. The Commission made changes to address nonresident participation and distribution by setting limits on number of nonresidents hunters in each elk zone beginning in 2021 (see Hunting Opportunities and Experiences). Improving quality of hunts and addressing congestion is challenging due to the subjective nature of each person's definition of a quality hunting experience (e.g., hunt quality and crowding depend on each hunter's perspective). Basic human nature tends to ascribe less than desirable conditions (e.g., hunter crowding) to other participants in an activity, but fails to recognize reciprocal perceptions of those same other participants (i.e., other hunters view you as part of the hunter congestion problem). Addressing these egocentric crowding and hunt experience expectations will require continued input and discussion with hunters regarding support for reduced hunting opportunity in order to improve their perception of congestion and hunt quality. The Department is in the process of conducting multiple years of public surveys on hunter perceptions of congestion. These surveys will evaluate hunter perceptions of crowding and what measures they would support (if any) to change levels of perceived crowding (e.g., changes in season length, amount of opportunity associated with a single tag, ability to hunt every year, choose-your-weapon scenarios, and other aspects related to elk hunting opportunities).

Tag sales and allocation in areas with capped or limited tag availability: The process for distributing limited or restricted tags has been an ongoing challenge for the Commission, hunters, and IDFG. This topic once again surfaced in public comments on this draft plan. Hunter opinions vary on how best to allocate tags. The Commission has, and will continue to, considered public input on potential changes to tag allocations. This subject will be an ongoing conversation with hunters moving forward.

Private land and elk: Numerous comments focused on how IDFG addresses elk conflicts on private lands and the overall depredation program. Although elk are the primary species involved in agriculture depredations (based on number and value of claims), Idaho statutes, administrative rules, and IDFG policies on depredation cover numerous species. Significant changes to the IDFG depredation program, and associated statutes, rules, and policies, would require public input processes of their own and are better addressed outside of this elk management plan revision process.

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Idaho

Elk Management Plan

2024 – 2030