

**IDAHO NATIONAL GUARD TRAINING AREA INVENTORY:
TURKEY ISLAND TRAINING AREA**

By

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SUMMARY

The Turkey Island Training Area is 12 miles northeast of Lewiston on Highway 12, on the north side of the Clearwater River. Turkey Island is a flat terrace/island complex, a short distance downstream from the mouth of the Potlatch River. All of the area has been altered and about one half is still actively used for stockpiling gravel, fill, and debris. The old channels have been filled (so there is no longer an island), although two ponds still remain. There is an old homestead on the downstream end. Most of the site is either bare gravel or exotic herbaceous vegetation. One rare animal, ringneck snake, and one rare plant, salmon-flower desert-parsley, were the target of searches during 1997 and 1998. No ringneck snakes were discovered, although they are known from the vicinity and there appears to be potential habitat. Salmon-flower desert-parsley was discovered on the site. Approximately 500 plants occur on gravel used to fill an old river channel. This is part of a much larger population that occurs in native habitat on adjacent canyon slopes.

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INTRODUCTION

During April 1997, the Military Division of the State of Idaho entered into a Memorandum of Agreement (MOA) with the Idaho Department of Fish and Games's Conservation Data Center for the purpose of providing threatened and endangered, and sensitive species surveys on lands utilized for military training activities in the state. The Idaho National Guard utilizes 28 training areas throughout Idaho. Eight training areas were chosen for surveys during 1997, including the Turkey Island Training Area.

The Idaho Military Division (Idaho National Guard) is responsible for ensuring proper stewardship of natural resources under its jurisdiction through various federal laws and Army regulations. For the scope of work under the MOA, threatened, endangered and sensitive species include any species listed as threatened or endangered under federal or state jurisdiction, species proposed as candidates for listing, and other species deemed rare at local, state, regional or national levels.

The Conservation Data Center (CDC) is the central repository in Idaho for information related to rare plant and animal populations, as well as data on significant ecological sites in the state. These data are organized on maps, manual files, and a series of interrelated computerized data bases encompassed by our Biological and Conservation Data System. These data bases include species and community occurrences, extensive bibliographic material, site specific ecological and management data, ecological monitoring, and others.

The Idaho CDC is a node in an international network of Natural Heritage Programs and Conservation Data Centers that occur in all the United States and in many other areas of the western hemisphere. All Natural Heritage Programs manage data in a standardized format so that data can be aggregated upward in the network for regional-, national-, and continental-scale perspectives of biodiversity protection. The Idaho CDC cooperates with numerous state, federal, county, and municipal institutions, as well as private corporations, organizations, and individuals to accomplish its mission.

METHODS

We used a three-phase approach to field inventories of Guard training areas for rare species and habitats: (1) information gathering; (2) field inventory; and (3) documentation. Each of these phases is described below for this training area.

Information Gathering

As explained in the Introduction, the CDC is the central repository for rare species information in Idaho. CDC biologists collect rare species information and have considerable expertise about habitats in the state. We also have developed relationships with many cooperating institutions over the years who provide us distribution information. In other words, our data bases are being continually updated with the best information available. The first step in the process involved reviewing our map and computer data bases with help from Fish and Game's nongame biologists. From this review, we developed a target list of rare plants and animals that may occur at each of the training areas. The next step was then to review the literature or expertise of appropriate biologists to develop an inventory protocol for each species.

For the Turkey Island Training Area the following target species were identified and inventory protocols developed:

GROUP	SPECIES	STATUS¹	INVENTORY COMMENTS
Plants	salmon-flower desert-parsley (<i>Lomatium salmoniflorum</i>)	CDC: G3 S2 INPS: G3 BLM: S	Known from vicinity of Turkey Island in the Clearwater canyon. Similar-appearing to many other <i>Lomatiums</i> in the area. Flowers very early and surveys must be done late February - March.
Animals	ringneck snake (<i>Diadophis punctatus</i>)	CDC: G5 S1? IFG: SC USFWS: W BLM: S	Specimens have been collected along lower Potlatch River near confluence with Clearwater, ca. 1.5 miles upstream from Turkey Island. Surveys can be conducted anytime during the summer. Best method involves funnel traps.

¹**Conservation Status:** CDC=Conservation Data Center/Heritage Network: G - Global/Rangewide Conservation Rank (1-5); S - State Conservation Rank (1-5). INPS = Idaho Native Plant Society: G3 - Global Priority 3. IFG = Idaho Fish and Game: SC - Species of Special Concern. USFWS = U.S. Fish and Wildlife Service: W - Watch Species. BLM = Bureau of Land Management: S - Sensitive Species. Up-to-date status information and definitions of these categories can be found on the CDC home page: www.state.id.us/fishgame/cdchome.htm

The Guard should also be aware that bald eagles are known to winter along the Clearwater River from Lewiston upstream for at least 75 river miles to Kooskia. No nests or important roost sites are known from the vicinity of Turkey Island. This species is not addressed in this report

Field Inventory

Field inventories were conducted during the appropriate time of the year, depending on the phenology or natural history of the target species. The training areas are small enough that a complete inventory can be made of the sites. The following types of information were collected during the inventories:

Habitat: If native habitats existed on the training area, the plant association(s) were identified using the *Natural Plant Communities of Idaho* catalog compiled by the CDC. An *Idaho Plant Community Observation Form* was filled out for each occurrence of the plant association at the site. Information collected on this form includes location, size, site quality, land use, community description, successional and structural conditions, and species composition.

Rare Plant or Animal: If a rare species was encountered, an *Idaho Rare Animal Observation Form* or *Idaho Rare Plant Observation Form* was filled out for each occurrence at the site. Information collected on these forms include location, population size and quality, land use, and habitat description. The location was mapped on a USGS 7.5' quadrangle.

Vascular Plant Species: A complete list of vascular plants was made during the inventory. No voucher specimens were collected, but most species were identified using technical floras.

In the case of the Turkey Island Training Area, we made several visits to the area in 1997 and 1998. During the initial visits in late April and early May, 1997, we determined that salmon-flower desert-parsley probably occurred on the site, but more surveys were needed during prime flowering in March 1998 to know for sure. Surveys in mid-June cataloged plant communities and determined that habitat for ringneck snake may be present on the area. Snake trap sets were established on August 5, and trapping ran through August 12. We returned to the Clearwater River canyon during late February through late March, 1998, to conduct surveys for salmon-flower desert-parsley.

Documentation

The first step in documenting the field surveys is to process the field data into various modules of the Biological and Conservation Data System (BCD) of the CDC. Here they contribute to the centralized information base about rare species, habitats, and managed areas in the state. The pertinent modules are described below.

Training Area: General training area information is entered into the *Managed Area* module of BCD. Information on location, ownership and management responsibility,

site description, land use, references, and management description are included in this computerized record. The boundaries of the area are mapped on the CDC's base set of USGS quads for the state. They are also digitized and added to the Managed Area layer in the Department's GIS.

Habitats: Similar to rare species populations, occurrences of plant associations are entered into the *Element Occurrence* module (both species and communities are "elements" of biodiversity, hence the generic name element occurrence). Using field data from the Plant Community Observation Form, information for each plant association occurrence is kept on map, computer, and manual files. The computer file contains numerous fields under such headings as Location, Status (quality, dates of observation, etc.), Description, Protection, Ownership, and Documentation (sources of information about an occurrence).

Rare Species: As described above, populations of rare species are also cataloged in the *Element Occurrence* module of BCD, with similar information to natural communities. Field data from the Rare Animal or Rare Plant observation forms are used to populate the data base records.

Characterization Abstracts are used to produce status reports for each rare species encountered. Status information for vertebrate animals is abstracted in the *Vertebrate Characterization Abstract (VCA)*, while the plant abstract module is referred to as the *Plant Characterization Abstract (PCA)*. Each characterization abstract record contains both global (rangewide) as well as state-specific information. The exception is if the species is endemic to Idaho, in which case only global information is used.

The next step is to use these data bases, supplemented with other information and personal knowledge, to generate this summary report of the inventory.

RESULTS

Training Area

The following description was adapted from the Managed Area record for the Turkey Island Training Area (BCD record M.231; Appendix 1):

The training area is about 12 miles northeast of Lewiston on Highway 12, on the north side of the Clearwater River. Turkey Island is a flat terrace/island complex, located a short distance downstream from the mouth of the Potlatch River. All of the area has been altered and about one half is still actively used for stockpiling gravel, fill, and debris by the Idaho Transportation Department. The old channels have been filled (so there is no longer an island), although two ponds still remain; their water level is tied to

the river through the water table. There is an old homestead on the downstream end. Most of site is either bare gravel or exotic herbaceous vegetation. There are some patches of mixed native and exotic species.

Habitats

As mentioned above, all of the training area is disturbed and altered by human activity. Some native species have recolonized these disturbed habitats. Past and ongoing disturbances to the site, described in the managed area record (Appendix 1), are widespread. No high quality native habitats remain.

Rare Species

Salmon-flower Desert-parsley This rare plant was discovered on the downstream end of the training area. About 500 plants occur on coarse gravel that was used to fill an old river channel. These plants are part of a much larger population that occurs on adjacent canyon slopes to the north, which is the probable source of propagules for plants that colonized the fill. The Turkey Island portion of the population occurs on flat to moderately steep fill slopes adjacent to the pond. The population has higher density on the slope than on the flat, where *Lomatium grayi* is more common. *Lomatium cous* also occurs here, but is rare. The habitat is open, with most aerial cover being gravel and rock. The few associates occur in low cover and include *Chrysopsis villosa*, *Dipsacus sylvatica*, *Penstemon venustus*, *Bromus tectorum*, *Prunus virginiana*, *Amelanchier alnifolia*, and *Rhus glabra*.

Currently, this small portion of Turkey Island is not disturbed by Idaho Transportation Department or National Guard activities and it appears to have been that way for a while. Some native species have recolonized the fill and sparse, but vigorous stands of the bunchgrasses, *Agropyron spicatum* and *Sporobolus cryptandrus*, occur in the vicinity. A little-used road traverses this area, but no other ongoing disturbances were observed. See Appendix 2 for the occurrence record and map of the Turkey Island population. A Plant Characterization Abstract for salmon-flower desert-parsley appears in Appendix 3.

Salmon-flower desert-parsley is locally endemic to the Clearwater River and Snake River canyons and is an important component of the biological heritage of the area. Plants occurring within the training area boundaries, however, occur in an artificial habitat on the periphery of a much larger population, containing many thousands of plants, in native habitat. Disturbance to this area should be avoided if at all possible because some natural plant restoration is occurring. This increases the area's habitat value, in general, including for salmon-flower desert-parsley.

Rare Plant	CDC Occurrence Number	Approx. Size (acres)
<i>Lomatium salmoniflorum</i> (salmon-flower desert-parsley)	018	2 (on training area)

Ringneck Snake As explained in Methods, ringneck snakes have been collected along the Potlatch River, about 1.5 miles upstream from Turkey Island. Potential habitat for this species includes woodlands, shrubby areas (including riparian zones), and rocky canyons. We determined there is potential habitat on the training area and that a series of trap arrays should be established near appropriate habitat.

Two traps were constructed in either side of a large shrub and cottonwood stand near the pond at the southern end of the training area (see map in Appendix 2). Each trap consisted of a 25-foot-long by 2-foot-high drift fence of aluminum flashing buried at least six inches in the ground. At each end of the fence, two funnel traps (one on either side of the fence) were placed on the ground with a dirt ramp constructed at the entrance. Each funnel trap was covered with a shade to protect captured animals from direct sunlight. The trap works by having the fence intersect the direction of travel of a snake, which then travels along the fence to get around it, eventually crawling into the funnel trap. Trapped snakes were marked with dots of nail polish behind the head for identification purposes and then released. The traps were constructed on August 5, 1997, and left in place for seven days. They were checked once a day. During the trapping period, three different racers (*Coluber constrictor*) and one gopher snake (*Pituophis catenifer*) were captured.

Although our sampling did not capture any ringneck snakes, they are known from the vicinity of Turkey Island and potential habitat seems to exist on the site. Because of their potential presence on Turkey Island, the occurrence record for the Potlatch River collections is included in Appendix 2 and a Vertebrate Characterization Abstract is included in Appendix 3.

Vascular Plant Species

We observed 119 vascular plant species at the training area during 1997 and 1998, including trees, shrubs, forbs (mostly), and grasses and sedges. As one indication of the level of disturbance to the area, 54 (45%) of the species are non-native weeds. The list appears in Appendix 4.

Appendix 1

Managed Area Basic Record

Turkey Island Training Area (M.231)

Managed Area Basic Record
TURKEY ISLAND TRAINING AREA
#231

Location

County: Nez Perce

Quadrangle: Lapwai

Township, Range, Section:

036N 004W 13 W2NE4, E2SE4NW4, NE4NE4SW4, NW4NW4SE4

Description

The training area is about 12 miles ENE of Lewiston on Highway 12, on the N side of the Clearwater River. Turkey Island is a flat terrace/island complex, a short distance downstream from the mouth of the Potlatch River. All of the area has been altered and about one half is still actively used for gravel stockpiles, fill, and debris. The old channels have been filled (so there is no longer an island), although two ponds still remain; their water level is tied through the water table to the river. There is an old homestead on the downstream end. Most of site is either bare gravel or exotic herbaceous vegetation. There are some patches of mixed native and exotic shrubs and trees.

Acres: 50.00

Stewardship

Manager:

District Engineer
Idaho Transportation Department
2600 N & S Highway
Lewiston, ID 83501
(208) 799-5090

Cooperating Institution:

Idaho Army National Guard
SGT Jay Baker
2707 16th Avenue
Lewiston, ID 83501
(208) 746-0414

Comment:

The National Guard has a contract (with automatic renewal) with the Idaho Transportation Department for use of this land. There is also an easement with the Camas Prairie Railroad, to allow crossing the tracks for access to the training area.

Management:

The site is used six times per year by the Idaho National Guard for training, including platoon bivouac, hand grenade range, operator licensing, and earthwork. The University of Idaho, College of Agriculture Research and Extension has a yellow-star thistle research plot on the downstream end of the area. The plot had been burned during late spring or early summer 1997. Moseley and Lichthardt made a species list of vascular plants and inventoried for potential habitat for rare plants and animals during several visits in 1997 and 1998. A trapping array was set up for a week in August 1997 to sample snakes.

Elements

Plant Communities:

None

Rare Species:

Lomatium salmoniflorum

References

Moseley, B. 1997. Field notes for the Turkey Island Training Area (M.USIDHP*231). 2 pp.

Moseley, R.K., J. Lichthardt, S. Walker, and K. Gray. 1998. Salmon-flower desert-parsley (*Lomatium salmoniflorum*) in Idaho: 1998 inventory results. Unpublished report on file at the Conservation Data Center, Idaho Department of Fish and Game, Boise, ID. 9 p., plus appendices.

Record Maintenance

Edition: 97-10-23

Edition Author: L. Williams

File Note: A managed area file is maintained at the Idaho Conservation Data Center, Department of Fish and Game, Boise.

Appendix 2

Communities and Rare Species Occurrence Records

Plant Communities:

None

Rare Species:

Lomatium salmoniflorum 018 (with map)

Diadophis punctatus 006 (with map of trap locations)

LOMATIUM SALMONIFLORUM
SALMON-FLOWER DESERT-PARSLEY
Occurrence Number: 018

Survey Site Name: TURKEY ISLAND
County: Nez Perce
USGS quadrangle: LAPWAI

Latitude: 46 27 52 N Longitude: 116 47 00 W
TOWNRANGE: SECTION: TRSNOTE:
036N 004W 13 SE4NW4, E2NW4SW4, NW4NE4SW4

Location: Turkey Island; ca 1 mile SW of the Potlatch River and Clearwater River confluence; ca 2 miles NE of Spalding.

Survey Date: 1998-03-27 Last Observed: 1998-03-27 First Observed: 1997-05-15

EORANK: C
EORANK Comments:

Population Data:
1997: 200-300 estimated genets observed; 70% immature; 20% vegetative, 20% in fruit (dispersing), 60% dormant. Population vigor assessed as moderate. Thorough survey by Loring Jones, and Juanita Lichthardt, Idaho CDC. 1998: Thousands of estimated genets observed; 10% flowering, 80% in fruit. Thorough survey of Turkey Island, cursory survey of upper slopes, by Juanita Lichthardt and Bob Moseley, Idaho CDC.

Habitat Description:
Steep, S-facing basalt cliffs and adjacent cutslopes. Well drained skeletal soils or cracks in the bedrock. Open rock outcrop community surrounded by grasslands and some shrublands. Plants have also invaded course pond-fill material on river bar (Turkey Island). Associated species include *Chrysopsis villosa*, *Penstemon venetus*, *P. triphylla*, *Agropyron spicatum*, *Prunus virginiana*, *Pinus ponderosa*, *Amelanchier alnifolia*, *Rhus glabra*, and *Bromus tectorum*.

Elevation: 800 feet
Size: 15 AC

Ownership Comments:
Nez Perce Indian Reservation (tribal land); and possibly private land within Nez Perce Indian Reservation boundary, and state land (ITD).

Protection Comments:
U.S. Highway 12 and a railroad bisect the population and have destroyed considerable areas of habitat during construction. The Army National Guard uses Turkey Island as a training area. Within the Turkey Island Training Area.

Specimens: J. Lichthardt 57 (UI); French 2395 (WS) - "1.6 mi NE of bridge over Clearwater River near Spalding, N side of river".

DIADOPHIS PUNCTATUS
RINGNECK SNAKE
Occurrence Number: 006

Survey Site Name: ARROW

County: Nez Perce

USGS quadrangle: LAPWAI

Latitude: 46 28 45 N Longitude: 116 46 00 W

TOWNRANGE: SECTION:
036N003W 07 or an adjacent section near the confluence of Potlatch and Clearwater
rivers

Location:
Arrow, at the confluence of the Potlatch River with the Clearwater River.

Last Observed: 1980'S
First Observed: 1967-05-04

Population Data:
1990's: one road-kill snake and another captured by a domestic cat, but released alive; both instances reported by John Fisher, Juliaetta. 1967: R. Nussbaum, University of Michigan, collected 4 snakes in the vicinity of Arrow ("4.6 mi. NE of Spaulding").

Habitat Description:
Moist riparian zone in a steppe environment, according to John Fisher.

Elevation: 920 feet

Ownership Comments:
Private land (Nez Perce Indian Reservation and other private land within the reservation boundaries)

Specimens:
R. Nussbaum (UMMZ #133148).

Appendix 3

Characterization Abstracts

Plant Characterization Abstract:

Lomatium salmoniflorum

Vertebrate Characterization Abstract:

Diadophis punctatus

PLANT CHARACTERIZATION ABSTRACT

LOMATIUM SALMONIFLORUM
SALMON-FLOWER DESERT-PARSLEY

TAXONOMY

ORIGINAL PUBLICATION: Mathias and Constance. 1942. *Bulletin of the Torrey Botanical Club* 69:246.

TYPE LOCALITY: U.S.A., IDAHO: "NEAR UPPER FERRY, CLEARWATER RIVER ABOVE LEWISTON

GENERAL DESCRIPTION:

Perennial, parsley-like plant, 20-60 cm tall. Leaves glabrous, ternate to pinnately dissected, arranged more or less in one plane. Flowers are sort of salmon-yellow in color, which is most noticeable when compared side-by-side with the bright yellow flowers of sympatric *Lomatium* species. Prominent, naked root-crown surmounting a simple taproot (Brooks et al. 1991).

TECHNICAL DESCRIPTION:

Taproot strongly thickened and more or less elongate, with a simple and sometimes deep-seated crown that usually is not conspicuously clothed by old leaf bases; stems or scapes solitary or several, often branched near the base, usually ascending rather than erect, often short at anthesis, mostly 2-6 dm tall at maturity, usually with one or more reduced leaves below the middle; herbage glabrous and apparently glaucous; leaves chiefly basal or nearly so, ternate-pinnately dissected into very numerous small and narrow ultimate segments mostly 1.5-5 mm long; petiolar sheaths very prominent; flowers salmon-yellow; rays of the umbel mostly 5-13, elongating unequally, the longer ones mostly 3-6 cm long at maturity; involucre of a few inconspicuous narrow bractlets, tending to be dimidate; fruit elliptic-oblong to broadly elliptic, 8-14 mm long, the lateral wings corky-thickened, 0.5-1 mm wide; dorsal ribs evident and slightly raised, narrower than the intervals; oil tubes mostly solitary in the intervals, 2 on the commissure (Hitchcock et al. 1961).

DIAGNOSTIC CHARACTERISTICS:

This species is often confused with the superficially similar *L. grayi*, from which it differs in its simple rootcrown, consistently glabrous leaves, more or less salmon-yellow flowers, and narrowly corky-winged fruit (Cronquist et al. 1961). Also, *L. salmoniflorum* has leaves in one plane; while *L. grayi* has leaves that are dissected into 100's to 1000's of ultimate segments which occupy several planes (Brooks et al. 1991). The flower color is not nearly the bright yellow color found in sympatric species, such as *L. triternatum*, *L. grayi*, *L. dissectum*, and *L. cous*. This has been

described as salmon-yellow and is most obvious when the flowers are compared side-by-side, which is easy to do with L. grayi because they often grow in close proximity. Simmons (1985) observed that differences in flower color, as well as odor of crushed leaves, can be easily detected in fresh material, but fade when dried.

INFRASPECIFIC TAXA:

SIMILAR-APPEARING TAXA:

Similar to the rangewide look-alikes explained in Diagnostic Characteristics, Lomatium grayi is the most similar.

IDENTIFICATION OF THIS TAXON IN IDAHO:

There are at least 8 Lomatium taxa that occur in the Clearwater canyon, but Lomatium salmoniflorum flowers before all others, beginning as early as early February and continuing through March. Flowering in L. grayi and others generally begins in mid-March. So, the best time to look for L. salmoniflorum is late-February and early March. It is somewhat harder to inventory for in late March when all the species are in flower, but the distinctive color of the flowers and foliage of L. salmoniflorum are still recognizable. The fruit characteristics can be used to distinguish it from L. grayi in April, with difficulty, and it becomes nearly impossible later in the season.

COMMENTS (GLOBAL):

The extreme vegetative similarity between L. salmoniflorum and L. grayi was cited as one reason for combining the genus Leptotaenia and Lomatium (Simmons 1985). Populations of L. grayi occur sympatrically with L. salmoniflorum, but (Simmons 1985) has never observed evidence of hybridization between them.

COMMENTS (IDAHO):

STATUS

GRANK: G3 **SRANK:** S2

AGENCY STATUS:

It is a BLM Sensitive species. In 1998, it was also found on the Clearwater NF; it should be added to the Region 1 Forest Service Sensitive list.

GLOBAL:

Lomatium salmoniflorum is ranked G3 by the Natural Heritage/Conservation Data Center network. In Washington, L. salmoniflorum is on the Watch list, which includes rare species less threatened in Washington than previously thought (Washington Natural Heritage Program 1997). The Oregon population is considered

extirpated (Oregon Natural Heritage Program 1995). The species is ranked S2 in Idaho.

IDAHO:

It is a Global Priority 3 on the Idaho Native Plant Society list of rare flora in the state (Idaho Native Plant Society 1998).

DISTRIBUTION

GLOBAL:

It is a regional endemic, occurring along about a 100 mile stretch of the Snake River and Clearwater River canyons in west-central Idaho and southeastern Washington. It is seldom collected very far from the canyon bottoms. An historical collection site exists in Wasco County, Oregon ("The Dalles"), way disjunct from the Snake-Clearwater portion of its range.

ECOREGION:

Palouse (331A)

IDAHO COUNTIES:

Nez Perce

Latah

Idaho

IDAHO:

Populations are known from two disjunct areas of the Clearwater River drainage. One cluster of populations occurs in the lower canyon between Lewiston and Cherrylane, along the Clearwater River, and a contiguous segment of the Potlatch River canyon upstream to about Juliaetta, Nez Perce and Latah counties. The other cluster of populations is in the vicinity of Kooskia, Idaho County, along the Middle and South forks of the Clearwater River and in the Clear Creek drainage, a major tributary of the Middle Fork just upstream from Kooskia. This cluster has the densest number of populations per occurrence and the densest number of plants in the populations (Moseley et al. 1998).

HABITAT

ELEVATION (GLOBAL):

ca. 300

2400

ELEVATION (IDAHO):

800

2300

TERRESTRIAL HABITATS:

*FOREST - CONIFER
WOODLAND - CONIFER
SHRUBLAND/CHAPARRAL
GRASSLAND/HERBACEOUS*

GLOBAL:

Appears restricted to basalt substrates rangewide. Specific habitats are open communities on cliff faces, ledges and in coarse, stabilized talus. Surrounding vegetation is mostly canyon grasslands and shrublands, but it's rocky habitats can be surrounded by ponderosa pine woodlands and mixed coniferous forests.

IDAHO:

Most succinctly characterized as steep, basalt cliff faces, ledges, and stabilized talus. It occurs on all aspects, but the community is always open with low cover of vascular plants, although northerly-facing populations usually have a high cover of mosses. Zonal vegetation of the surrounding canyonsides ranges from grassland, shrubland, and occasionally ponderosa pine woodlands in the lower canyon to grasslands, woodlands, and even coniferous forest dominated by western redcedar in the upper canyon (Moseley et al. 1998).

HABIT

*GROWTH HABIT: FORB/HERB
RAUNKIER LIFEFORM: CHAMAEPHYTE
HEIGHT: 10cm-1m
DURATION: LONG-LIVED*

TROPHIC TYPE

TROPHIC TYPE: AUTOTROPH

ECOLOGY

KNOWN PESTS: SMICRONYX SP. (CINEREUS GROUP) (COLEOPTERA: CURCULIONIDAE)

GLOBAL:

L. salmoniflorum seeds are attacked by weevils that lay their eggs within developing seeds and feed as larvae on the endosperm. The larval parasites leave the seeds just before the seeds mature by cutting an exit hole through the seed coat. Smicronyx larvae and adults were the only herbivores on the population studied in Washington by Thompson and Pellmyr (1989).

IDAHO:

Same as the rangewide comments.

REPRODUCTION & DISPERSAL

REPRODUCTIVE SYSTEM: MIXED SELFING & OUTCROSSING

POLLEN VECTOR: COLEOPTERA

DIPTERA

HYMENOPTERA

DISPERSAL VECTOR: WIND

POLLINATOR:

GLOBAL:

It is among the earliest species to begin flowering each year, the first flowers opening in early to mid-February. Flowering individuals produce 1-9 umbels, each umbel with 10 to 300 flowers. Flowers are either staminate or hermaphroditic, and umbels have either exclusively staminate flowers or a combination of staminate and hermaphroditic flowers. The flowers are visited by a wide variety of solitary bees, flies, ants, and beetles. Each flower is capable of producing one schizocarp that eventually splits into two seeds (mericarps). The wind-dispersed seeds mature in April as the above-ground plant parts senesce (Thompson and Pellmyr 1989).

IDAHO:

Same as rangewide comments.

PHENOLOGY

PHENOLOGY (IDAHO):

Begins flowering in early February and continues through early April. Fruiting begins on some plants in late March and continues through early May. Most fruits are dispersed by at least mid-May.

MANAGEMENT

GLOBAL:

IDAHO:

*Most habitat in Idaho occurs on private land and the populations need to be better delineated here. Many populations are traversed by state and county road rights-of-way, and activities in these areas can significantly impact the populations, although *L. salmoniflorum* does establish itself on roadcuts, sometimes plentifully. State endowment and Nez Perce Tribal lands also contain populations. A small portion of one occurrence is on land administered by the Idaho Transportation Department and used for maintenance and operations activities, as well as an Idaho National Guard Training area*

(Moseley and Lichthardt 1998). Only three populations occur on federally-managed public lands. Two are managed by the BLM and one by the Clearwater NF. These are vigorous populations and should be given special recognition (Moseley et al. 1998).

INVENTORY

OWNERSHIP SUMMARY (IDAHO): Mostly private.

GENERAL COMMENTS (IDAHO):

*See Moseley et al. (1998) for detailed summary of inventories conducted for *L. salmoniflorum* in Idaho. A rapid survey was conducted in February and March, 1998, from roads. This thorough survey delineated the general range and abundance of the species in Idaho. More detailed surveys of individual occurrences are needed.*

INVENTORY NEEDS (IDAHO):

Two main areas remain to be surveyed in Idaho: the Lapwai Creek drainage and the Snake River Canyon, downstream from the mouth of the Salmon River, generally known as the Craig Mountain area (Moseley et al. 1998).

REFERENCES

Brooks, P. J., K. Urban, E. Yates, and C. G. Johnson, Jr. 1991. Sensitive plants of the Malheur, Ochoco, Umatilla, and the Wallowa-Whitman National Forests. U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. Not paged.

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RECORD MAINTENANCE

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VERTEBRATE CHARACTERIZATION ABSTRACT

DIADOPHIS PUNCTATUS RINGNECK SNAKE

TAXONOMY

AUTHOR: (Linnaeus, 1766)
CLASS: REPTILIA
ORDER: SQUAMATA
FAMILY: COLUBRIDAE

COMMENTS ON TAXONOMY:

Subspecies *ACRICUS* was proposed as a distinct species by Collins (1991), who expressed the opinion that any allopatric subspecies that is in some way morphologically distinct should be treated as a distinct species. Collins (1991) further proposed that the species *PUNCTATUS* be split into two species, *D. PUNCTATUS* (including the subspecies *ARNYI*, *EDWARDSII*, *REGALIS*, *PUNCTATUS*, and *STICTOGENYS*) and *D. AMABILIS* (including the subspecies *MODESTUS*, *OCCIDENTALIS*, *PULCHELLUS*, *SIMILIS*, and *VANDENBURGII*). Dowling (1993) and others cited by Dowling rejected Collins's taxonomic proposals and emphasized that taxonomic decisions should be based on adequate data deriving from a careful examination of specimens, not on a simple examination of generalized (and often inaccurate) range maps and old subspecies descriptions. Pinou et al. (1995) examined geographic variation in serum albumin and concluded that *DIADOPHIS* may comprise at least two genetically distinct species. Populations assigned to subspecies *ARNYI*, *AMABILIS*, and *OCCIDENTALIS* were distinct immunologically from eastern *D. P. EDWARDSII*. They pointed out the need for additional study of the taxonomic status and relationships among the nominal taxa within *DIADOPHIS*, especially subspecies *REGALIS* and *DUGESII* (morphological data of Gehlbach [1974, *Herpetologica* 30:140-148] indicate that *ARNYI* and *REGALIS* intergrade over a broad section of central Texas).

COMMENTS ON SUBSPECIES:

D. p. occidentalis and *D. p. regalis* Idaho ssp.

COMMENTS ON IDENTIFICATION:

STATUS

GLOBAL RANK (CDC-HERITAGE NETWORK): G5
(SCALE: G1 = RARE AND IMPERILED --> G5 = ABUNDANT AND SECURE)

FEDERAL STATUS (USFWS): W (BLANK = NO FEDERAL STATUS)
FEDERAL STATUS DATE:

CITES:

(The CITES number represents the most protective appendix of the Convention on International Trade in Endangered Species. If the field is blank, the species is not found in any CITES appendix.)

IUCN:

IUCN CATEGORIES

EX = extinct	I = indeterminate
E = endangered	K = insufficiently known
V = vulnerable	O = out of danger
R = rare	NT = not in danger but on an endemic species list

ENDEMISM: M (S=STATE, N=ONE NATION, M=MULTINATIONAL)

COMMENTS ON STATUS (RANGEWIDE):

STATE RANK (CDC-HERITAGE NETWORK): S1?

(SCALE: S1 = RARE AND IMPERILED --> S5 = ABUNDANT AND SECURE)

STATE RANK (IDAHO DEPT OF FISH AND GAME): SC

(G=GAME, SC=SPECIES OF SPECIAL CONCERN, E=ENDANGERED, P=PROTECTED)

(FOR THE FOLLOWING 6 CATEGORIES, Y = YES and BLANK = NO)

IDAHO GAME SPECIES:

IDAHO COMMERCIAL SPECIES:

IDAHO SPORT FISH:

IDAHO PROTECTED NONGAME:

IDAHO FURBEARER:

IDAHO PEST SPECIES:

COMMENTS ON STATUS (IDAHO):

unprotected nongame

COMMENTS ON THREATS (IDAHO):

DISTRIBUTION

COUNTY NAME (IDAHO)

Latah

Nez Perce

Boise

Lewis

Idaho

Bannock

Franklin

WATERSHED CODE (IDAHO)

160102
170603
170601
170501
170402

IDAHO MINIMUM ELEVATION (METERS): 250

IDAHO MAXIMUM ELEVATION (METERS):

COMMENTS ON RANGE (GLOBAL):

COMMENTS ON RANGE (IDAHO):

Sparsely scattered records from Idaho.

MIGRATION (Y=YES, BLANK=NO)

NONMIGRANT: Y

LOCAL MIGRANT: Y

DISTANT MIGRANT:

BREEDS IN IDAHO: Y

WINTERS IN IDAHO: Y

MIGRATES WITHIN IDAHO:

IRREGULARLY APPEARS IN IDAHO:

TRANSIENT MIGRANT/NONBREEDING SUMMER RESIDENT IN IDAHO:

COMMENTS ON MIGRATION (RANGEWIDE):

Distance between hibernaculum and summer range estimated to average 121 m in Kansas study (Fitch 1975).

COMMENTS ON MIGRATION (IDAHO):

HABITAT

(BLANK=UNKNOWN OR SPECIES DOES NOT OCCUR IN THIS HABITAT)

RIVERINE (RANGEWIDE):

RIVERINE (STATE):

LACUSTRINE (RANGEWIDE):

LACUSTRINE (IDAHO):

PALUSTRINE (RANGEWIDE): RIPARIAN

PALUSTRINE (STATE):

TERRESTRIAL (RANGEWIDE): SHRUBLAND/CHAPARRAL
SAVANNAH

GRASSLAND/HERBACEOUS
DESERT
CROPLAND/HEDGEROW
FOREST - HARDWOOD
FOREST - CONIFER
FOREST - MIXED
WOODLAND - HARDWOOD
WOODLAND - CONIFER
WOODLAND - MIXED

TERRESTRIAL (IDAHO):

SUBTERRANEAN (RANGEWIDE):

SUBTERRANEAN (IDAHO):

COMMENTS ON HABITAT (RANGEWIDE):

Moist habitats: forest, woodland, grassland, chaparral, near streams in arid regions. Often near abandoned buildings and in junk piles in wooded areas. Secretive; hides underground, in or under logs, or under rocks or other surface cover during day. Eggs are laid underground or under logs or rocks. Often nests communally.

COMMENTS ON HABITAT RELATIVE TO REPRODUCTION:

COMMENTS ON HABITAT (IDAHO):

Occupies open, rocky canyons. (B83NUS01IDUS)

FOOD HABITS

FOOD HABITS: CARNIVORE
INVERTIVORE

COMMENTS ON FOOD HABITS (RANGEWIDE):

Eats earthworms; slugs; small salamanders, frogs, lizards, and snakes; and various other small invertebrates.

COMMENTS ON FOOD HABITS (IDAHO):

state food habits same as above

ECOLOGY

COMMENTS ON ECOLOGY (RANGEWIDE):

Population density was estimated to be 719-1849/ha in Kansas study. Distances between recaptures averaged 80 m (range 0-1700 m) in same study; home range had maximum dimension of about 140 m (Fitch 1975).

COMMENTS ON ECOLOGY (IDAHO):

Thought to be venomous but not harmful to man. (B83NUS01IDUS)

PHENOLOGY/SEASONALITY

PHENOLOGY
HIBERNATES/AESTIVATES
NOCTURNAL

PHENOLOGY/SEASONALITY (IDAHO)

JANA: P	APRA: A	JULA: R	OCTA: A
JANB: P	APRB: A	JULB: R	OCTB: A
FEBA: P	MAYA: R	AUGA: R	NOVA: P
FEBB: P	MAYB: R	AUGB: R	NOVB: P
MARA: A	JUNA: R	SEPA: A	DECA: P
MARB: A	JUNB: R	SEPB: A	DECB: P

(E.G., JANA = FIRST HALF OF JANUARY; JANB = SECOND HALF OF JANUARY)
P = PRESENT (RESIDENTS OR REGULAR MIGRANTS)
A = PRESENT AND ACTIVE (E.G., NOT HIBERNATING)
R = PRESENT, ACTIVE, AND REPRODUCING
BLANK = ABSENT OR UNKNOWN

COMMENTS ON PHENOLOGY (RANGEWIDE):

Inactive in winter in most areas.

COMMENTS ON PHENOLOGY (IDAHO):

Probably depart dens in May and return in September and October.
(B83NUS01IDUS)

REPRODUCTION

COLONIAL BREEDER (Y=YES, BLANK=NO):

COMMENTS ON REPRODUCTION (RANGEWIDE):

Lays clutch of 1-18 eggs, usually in June or July. Eggs hatch in up to about 8 weeks. Sexually mature in 2-3 years. May possibly lay two clutches in south. Eggs are laid from late May through August in Florida. Communal nesting common.

COMMENTS ON REPRODUCTION (IDAHO):

Females deposit about 3 eggs annually in July in stabilized talus or a rotting log. (B83NUS01IDUS)

MANAGEMENT

COMMENTS ON MANAGEMENT (RANGEWIDE):

COMMENTS ON MANAGEMENT (IDAHO):

Considered a species of special concern.

MISCELLANEOUS ATTRIBUTES

ECONOMIC COMMENTS:

LENGTH (OF A LARGE ADULT IN CENTIMETERS): 76
WEIGHT (OF A LARGE ADULT IN GRAMS): 0

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Appendix 4

Vascular Plant Species List

Turkey Island Training Area

Vascular plant species observed by Bob Moseley and Juanita Lichthardt, 1997-1998.

* = non-native species

TREES

* <i>Acer macrophyllum</i>	bigleaf maple
* <i>Ailanthus altissima</i>	tree-of-heaven
<i>Celtis reticulata</i>	hackberry
* <i>Malus pumilus</i>	apple
<i>Pinus ponderosa</i>	ponderosa pine
<i>Populus trichocarpa</i>	black cottonwood
* <i>Ulmus pumilus</i>	Siberian elm

SHRUBS

<i>Amelanchier alnifolia</i>	serviceberry
<i>Chrysothamnus nauseosus</i>	gray rabbitbrush
<i>Clematis ligisticifolia</i>	western clematis
<i>Crataegus douglasii</i>	hawthorn
<i>Holodiscus discolor</i>	oceanspray
<i>Phildelphus lewisii</i>	syringa
<i>Prunus virginiana</i>	chokecherry
<i>Rhus glabra</i>	smooth sumac
<i>Rhus radicans</i>	poison-ivy
<i>Ribes aureum</i>	golden currant
<i>Rosa woodsii</i>	Wood's rose
* <i>Rubus discolor</i>	Himalayan blackberry
<i>Salix exigua</i>	sandbar willow
<i>Salix lasiandra</i>	Pacific willow
<i>Sambucus cerulea</i>	elderberry
* <i>Vitis vinifera</i>	grape

FORBS

<i>Achillea millefolium</i>	yarrow
* <i>Agrostemma gilthago</i>	common corncockle
<i>Amsinkia retrorsa</i>	fiddleneck
<i>Apocynum cannabinum</i>	hemp dogbane
* <i>Arenaria serpyllifolia</i>	sandwort
<i>Artemisia ludoviciana</i>	Louisiana wormwood
<i>Asclepias speciosa</i>	milkweed
<i>Astragalus inflexus</i>	milkvetch
<i>Brodiaea douglasii</i>	brodiaea
<i>Caucalis microcarpa</i>	hedge-parsley
* <i>Centaurea diffusa</i>	diffuse knapweed
* <i>Centaurea maculosa</i>	spotted knapweed
* <i>Centaurea solstitialis</i>	yellow-star thistle
* <i>Chrysanthemum leucanthemum</i>	ox-eye daisy
<i>Chrysopsis villosa</i>	golden-aster
* <i>Cichorium intybus</i>	chicory

FORBS (continued)

* <i>Conium maculatum</i>	poison hemlock
* <i>Convolvulus arvensis</i>	bindweed
<i>Conyza canadensis</i>	conyza
* <i>Cynoglossum officinale</i>	houndstounge
* <i>Dipsacus sylvatica</i>	teasel
<i>Draba verna</i>	whitlow-grass
<i>Eriogonum nivalis</i>	snow buckwheat
<i>Eriogonum umbellatum</i>	sulfur buckwheat
<i>Eriophyllum lanatum</i>	eriophyllum
* <i>Erodium cicutarium</i>	filaree
<i>Euphorbia serpyllifolia</i>	spurge
<i>Gaillardia aristata</i>	gaillardia
<i>Geranium bicknellii</i>	geranium
<i>Helianthus annuus</i>	sunflower
* <i>Hypericum perforatum</i>	St. Johns wort
* <i>Iris</i> sp. (cultivated/escaped)	iris
* <i>Lactuca seriola</i>	prickly lettuce
* <i>Lamium amplexicaule</i>	henbit
* <i>Lepidium campestre</i>	field peppergrass
* <i>Linaria dalmatica</i>	dalmatian toad-flax
<i>Lithophragma bulbifera</i>	rocketstar
<i>Lomatium dissectum</i>	biscuitroot
<i>Lomatium grayi</i>	Gray's biscuitroot
<i>Lomatium salmoniflorum</i>	salmon-flower desert-parsley
<i>Lomatium triternatum</i> var. <i>anomolum</i>	nine-leaf lomatium
<i>Lomatium triternatum</i> var. <i>triternatum</i>	nine-leaf lomatium
<i>Lotus purshiana</i>	Spanish-clover
<i>Lupinus leucophyllus</i>	white-stem lupine
<i>Lupinus wyethii</i>	Wyeth's lupine
* <i>Lychnis alba</i>	white campion
* <i>Matricaria matricarioides</i>	pineapple weed
* <i>Melilotus alba</i>	white sweet-clover
* <i>Melilotus officinalis</i>	yellow sweet-clover
<i>Mentzelia laevicaulis</i>	blazing-star
* <i>Onopordum acanthium</i>	scotch thistle
<i>Phacelia heterophylla</i>	varileaf phacelia
<i>Penstemon triphyllus</i>	whorled penstemon
<i>Penstemon venustus</i>	Blue Mountain penstemon
<i>Plantago patigonica</i>	plantain
* <i>Polygonum aviculare</i>	doorweed
<i>Polygonum majus</i>	knotweed
* <i>Potentilla renacta</i>	sulfur cinquefoil
* <i>Rumex acetosella</i>	sheep sorrel
* <i>Rumex crispus</i>	curly dock
<i>Scutellaria angustifolia</i>	skull-cap
* <i>Scleranthus annuus</i>	annual knawel
<i>Selaginella densa</i>	selaginella
* <i>Sisymbrium altissimum</i>	tumbling mustard

FORBS (continued)

<i>Smilacina stellata</i>	false Solomon-seal
* <i>Solanum dulcamara</i>	purple nightshade
<i>Solanum nigrum</i>	black nightshade
<i>Solidago missouriensis</i>	goldenrod
* <i>Taraxacum officinale</i>	dandelion
* <i>Tragopogon dubius</i>	salsify
* <i>Tribulus terrestris</i>	puncture-vine
* <i>Trifolium dubium</i>	yellow clover
<i>Urtica dioica</i>	stinging nettle
* <i>Verbascum blattaria</i>	moth mullein
* <i>Verbascum thapsus</i>	woolly mullein
<i>Verbena bracteata</i>	verbena
<i>Veronica anagallis-aquatica</i>	water speedwell
<i>Veronica peregrina</i>	purslane speedwell
* <i>Vicia tetrasperma</i>	smooth tare
* <i>Vicia villosa</i>	vetch

GRAMINOIDS

<i>Agropyron spicatum</i>	bluebunch wheatgrass
<i>Aristida longiseta</i>	three-awn
* <i>Bromus brizaeformis</i>	rattlesnake brome
* <i>Bromus japonicus</i>	downy brome
* <i>Bromus rigidus</i>	rip-gut brome
* <i>Bromus tectorum</i>	cheatgrass
<i>Eragrostis pectinacea</i>	purple eragrostis
<i>Hordeum jubatum</i>	foxtail
<i>Phalaris arundinacea</i>	reed canarygrass
* <i>Poa bulbosa</i>	bulbous bluegrass
* <i>Poa compressa</i>	Canada bluegrass
* <i>Poa pratensis</i>	Kentucky bluegrass
* <i>Polypogon monospermiensis</i>	rabbitfoot grass
<i>Sporobolus cryptandrus</i>	sand dropseed
* <i>Taeniatherum caput-medusae</i>	Medusaehead
* <i>Ventenata dubia</i>	ventenata