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Idaho's Species of Greatest Conservation
Need and Their Habitats



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Cover photo: Biologists conduct a remote camera check for wolverine monitoring in Idaho's Seven Devils Mountains, with assistance from a pack llama for gear transport in the rugged terrain. PHOTO: Joel Sauder/IDFG

Biologists conduct freshwater mussel surveys in Idaho's Salmon River, carefully searching the riverbed for these vital indicators of aquatic ecosystem health. PHOTO: Joel Sauder/IDFG





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PANHANDLE REGION



TRACKING HARLEQUIN DUCKS IDAHO'S ELUSIVE RIVER JEWEL

As Idaho's snowmelt fills forested creeks and mountain rivers each spring, a rare and colorful duck quietly returns. With slate-blue feathers, crisp white stripes, and a rust-orange streak down its sides, the Harlequin Duck is one of Idaho's most striking, and elusive, breeding birds.

These small sea ducks spend winters along the rugged Pacific Coast, then migrate inland to nest along cold, fast-moving streams in the Northern Rockies. Their remote and specific breeding habitat makes them difficult to find, but biologists with the Idaho Department of Fish and Game (IDFG), in partnership with the U.S. Forest Service, have been surveying key streams in the Panhandle and Clearwater regions to monitor this rare population.

Surveys take place twice each year: once in May to look for returning breeding pairs, and again in summer to search for ducklings paddling behind their mothers. But spotting Harlequins is no easy task. Survey crews often raft, wade, or bushwhack into rugged terrain to reach the right habitat. The ducks themselves stay quiet, tucked into shady plunge pools and brush along the stream.

In 2023, IDFG conducted 15 surveys across nine stream segments, spotting 7 to 8 adults and one confirmed brood of three juveniles. In 2024, they

returned to four of those streams and added two new ones. This time, just five adults were seen in spring—two pairs and one lone female—and no broods were observed during summer follow-ups.

These findings follow a familiar pattern: numbers remain consistently low with slight year-to-year variation, but whether this indicates stability or a slow decline is unclear. The challenge lies in detecting these elusive birds in rugged, brushy streams.

"These surveys can be challenging," says IDFG biologist Casey McCormack, "but thankfully we have folks across the agency who are happy to help." Surveys are a team effort, often aided by conservation officers and habitat technicians. Incidental sightings from other staff, like fisheries biologists on streams, also offer valuable data from less-surveyed spots.

To get a clearer picture, IDFG has teamed up with University of Montana graduate student Holli Holmes, who is exploring tools like remote cameras and environmental DNA. These methods may offer a more reliable way to monitor this iconic species of Idaho's wild rivers.

For now, the Harlequin Duck remains a symbol of Idaho's wild rivers—dependent on clean water and healthy forests. Each spring, the search continues.

CLEARWATER REGION



FOREST PHANTOM AI HELPS TRACK THE ELUSIVE FISHER

Tucked away in the dense forests of the Northern Rockies, a shy and stealthy predator is finally getting its close-up. Meet the Fisher—a rarely seen, cat-sized member of the weasel family with a reputation for avoiding the spotlight. But thanks to a high-tech photo shoot and a cross-state collaboration, wildlife biologists are learning more than ever about this elusive forest dweller.

During the fall of 2023 and the spring and summer of 2024, IDFG Populations and Wildlife Diversity program staff teamed up with staff from Montana Fish, Wildlife & Parks to repeat a major wildlife survey first conducted in 2018. The goal? To understand whether the Northern Rocky Mountain population of Fishers is holding steady, shrinking, or expanding its range.

To do this, biologists returned to the same forested locations as in the original survey, redeploying about 100 motion-triggered cameras, 75 of them in Idaho. Each site was equipped with a remote camera, a scent pump (a device that slowly releases an animal-attracting odor), and a skunk/beaver based scent lure to entice curious Fishers into the frame.

This time around, the team made one key tweak: fewer cameras. By trimming the Idaho count from 90 to 75, they managed to cut costs and boost efficiency without compromising on data quality. Smart science for a smarter future.

But the fieldwork was just the beginning. Now comes the real challenge: digging into a mountain of more than 100,000 images, looking for those rare, telltale glimpses of a Fisher in the frame. Luckily, AI-powered tools are lending a digital hand, helping biologists sift through the photo trove.

Final results are expected in spring 2025, offering a much-needed update on how Fishers are faring in this rugged part of the West. With any luck, the findings will not only deepen our understanding of this secretive carnivore, but also help guide efforts to ensure its survival for generations to come.

CLEARWATER REGION



UNDERWATER SENTINELS SEARCHING FOR WESTERN RIDGED MUSSELS

Freshwater mussels don't often grab headlines, but they play a vital role in healthy river ecosystems. They have been described as "being the lungs of our rivers". They filter water, cycle nutrients, and create habitat for other aquatic species. In 2024, IDFG biologists set out to survey one of Idaho's native mussel species, the Western Ridged Mussel, in the Salmon River.

Following a newly established survey protocol from The Xerces Society, IDFG biologists, in partnership with biologists from Idaho Department of Environmental Quality and the Army Corp of Engineers, surveyed a portion of the Salmon River. A 57-mile stretch of river, between the Carey Creek and Hammer Creek boat ramps, was surveyed with aquascopes (underwater viewers) during low water periods when visibility was optimal. The teams conducted over 30 incidental surveys, and at 10 sites did in depth 50-meter transect assessments.

"This kind of work takes a team," says Joel Sauder, a biologist with IDFG. "By combining efforts within IDFG and the Department of Environmental Quality and the Army Corps of Engineers, we were able to cover a huge stretch of the Salmon River. It's a great example of how partnerships help us see, and understand, more beneath the surface."

The results paint a complex picture of mussel distribution. Some colonies were relatively small with fewer than 200 individuals, while others revealed thriving communities exceeding 4,500 mussels. At four sites, empty shells outnumbered living mussels—a pattern that became more pronounced downstream, possibly indicating habitat changes or recent die-offs. Though budget constraints prevented using more detailed techniques, like quadrat sampling, which could estimate true population size, the visual surveys provide valuable baseline data for future monitoring.

Work like this, which is occurring in other places across Idaho and will continue on the Salmon River in 2025, is an important step in understanding and protecting these remarkable creatures. With lifespans measured in decades, freshwater mussels respond slowly to environmental changes, making long-term monitoring essential for their conservation, and for the health of our rivers.

MCCALL SUBREGION



GREBE WATCH NESTING SUCCESS AT LAKE CASCADE

Known for their elaborate courtship dances and floating nests, Western and Clark's Grebes gather to breed, nest, and raise their fluffy, floating chicks each summer at Lake Cascade in Valley County. IDFG biologists are there, working to monitor their populations and track how they're faring from year to year.

In 2024, the team refined their monitoring methods to get a more accurate picture of the grebe breeding population. Traditionally, boat-based surveys were used to count nesting pairs, but these surveys can be tricky. Weather conditions, waves, boating activity, and dense shoreline vegetation often make it difficult to get reliable data. This year, biologists decided to take a new approach. They relied on land-based observations combined with drone technology to locate nesting colonies and estimate their size.

In early June, the team surveyed the shoreline of Lake Cascade on foot, looking for signs of nesting activity. Their efforts paid off when they discovered two active nesting colonies. Over the next few weeks, from June 12 to July 9, biologists used drones to fly over the colonies, capturing aerial images that provided a detailed view of the nests. This new technique allowed them to count the active nests more accurately and track how many succeeded or failed. These counts also helped estimate the number

of breeding adults at each site, giving the team a clearer picture of the grebes' breeding success.

Once the breeding season concluded and the chicks were old enough to paddle around on their own, the biologists returned to conduct boat-based postnesting surveys to count the chicks and assess productivity. Their first attempt on July 24 was hampered by high winds and surprisingly low numbers of chicks, which could indicate a failed colony. However, a second survey on August 5 proved more successful, with biologists counting 113 chicks. This time, the team used updated counting methods that classified the chicks by age rather than brood size.

Western and Clark's Grebes are sensitive to changes in habitat, water levels, and human disturbance. By tracking their breeding success year after year, biologists can gain valuable insights into the health of Lake Cascade and the surrounding environment. These surveys help identify shifts in the lake's ecosystem, informing conservation strategies that protect both wildlife and people. The 2024 results emphasize the value of adaptive monitoring techniques, like drones, in understanding waterbird challenges. With refined methods and more data, biologists can make better-informed decisions to protect these birds and their habitats.

SOUTHWEST REGION



WETLAND REVIVAL FROGS, BEAVERS, AND RESTORATION

In remote corners of Idaho, where creeks curve through meadows and beavers build their dams, native frog populations are showing signs of recovery. In spring and summer 2024, IDFG biologists and volunteers surveyed three streams—Hurry Back, Long Tom, and Josephine creeks—to track the Columbia Spotted Frog, a native amphibian that has declined across much of the West.

Columbia Spotted Frogs are more than just a native species, they're indicators of stream health. Because they depend on clean water and stable wetlands, tracking their presence helps biologists gauge the success of restoration efforts. Survey teams focused on prime frog habitat like shallow ponds, beaver wetlands, and slow-moving streams, using consistent methods each year to count and record frogs and tadpoles by life stage.

At each site, IDFG biologists installed beaver dam analogs, or BDAs—human-made structures designed to mimic natural beaver dams. By slowing and spreading water flow, BDAs reduce erosion, boost riparian vegetation, and improve stream function. They also create excellent amphibian habitat as Columbia Spotted Frogs are often found in the calm backwaters and ponds these structures form. In the Owyhee Mountains, BDAs are proving to be a win-win for habitat restoration and wildlife recovery.

Survey results in 2024 showed both progress and challenges. At Hurry Back Creek, frog occupancy dipped slightly from 2023, but over 600 tadpoles were counted, twice the previous year's total, likely due to earlier survey timing. Long Tom Creek, where no frogs were found in 2023, showed a hopeful turnaround with 17 adults recorded. Josephine Creek, added this year, proved especially productive with 33 adults and 150 tadpoles. It will now serve as a reference site for future monitoring. Rose Creek was dropped from the survey after two years without detections and limited habitat potential.

By returning to these streams each year and documenting frog life stages, biologists are gaining insight into how amphibians respond to management tools like BDAs. These findings will help guide future conservation efforts across the West. Surveys will continue in 2025, with hopes for more frogs, and healthier streams, ahead.

MAGIC VALLEY REGION



TINY ENGINEERS, BIG IMPACT CRAYFISH AND RIVER HEALTH

In September 2024, IDFG biologists grabbed their waders and headed to the water—this time, with crayfish on their minds. These freshwater crustaceans might not get as much attention as trout or salmon, but they play a huge role in keeping aquatic ecosystems healthy.

To get a pulse on crayfish populations, the team surveyed three sites in southern-central Idaho's Magic Valley Region—two spots along the iconic Snake River and another tucked into Sand Springs Creek. Their goal? To monitor the health of these hard-working invertebrates and the freshwater systems they call home. By studying crayfish, biologists can get a better sense of how Idaho's rivers and streams are doing overall. Think of crayfish as tiny ecosystem engineers—they help break down organic material, serve as an important food source for fish and birds, and even help shape the structure of streambeds. If they're doing well, chances are the ecosystem is too.

And the results? At all three sites, biologists found native crayfish species, including the Snake River Pilose Crayfish and the Pilose Crayfish—both classified as species of greatest conservation need. But it wasn't all good news. At one Snake River site, they also spotted the invasive Virile Crayfish, an aggressive newcomer known to disrupt native species and aquatic balance.

Still, there's a silver lining: these surveys confirmed that native crayfish are still hanging on at the same sites first studied back in 2017. In fact, the native Snake River Pilose Crayfish and the invasive Virile Crayfish have been coexisting at one location for at least seven years—an important clue for shaping future conservation strategies.

This recent round of surveys is just the beginning. The work laid the foundation for an expanded crayfish project set to launch in the coming years. With help from IDFG fisheries biologists and seasonal technicians, future efforts will span a much broader slice of the state. The new data will give IDFG a clearer picture of how our native crayfish are faring—and where non-native species are making inroads.

They may be small, but crayfish carry big weight when it comes to Idaho's waterways. By keeping tabs on these hardworking ecosystem engineers, biologists are helping ensure that the state's freshwater habitats stay healthy and resilient for generations to come.

UPPER SNAKE REGION



FLIGHT PATH TO RECOVERY TRUMPETER SWANS IN THE TETON BASIN

Once nearly absent from the lower 48 states, the Trumpeter Swan is making a remarkable comeback—and Idaho's Teton Basin is playing a key role in that recovery.

In September 2024, eight young Trumpeter Swans soared for the first time over a wetland in Teton Valley. Raised in captivity by the Wyoming Wetlands Society, these swans were released through a collaborative effort involving IDFG, the Teton Regional Land Trust, and the U.S. Fish and Wildlife Service. The release is part of a long-term strategy to rebuild nesting populations.

Each swan was outfitted with a lightweight GPS collar and a federal leg band. The GPS collars transmit real-time location data via satellite, giving biologists valuable insight into the birds' movements and survival after release.

This release marks one piece of a broader restoration effort that includes ongoing monitoring of swans released in previous years. Biologists and partners track migration, nesting success, and social behaviors—data that helps guide future conservation strategies led by the Greater Yellowstone Trumpeter Swan Working Group.

"The Trumpeter Swan is an iconic species that has long been associated with the Yellowstone Ecosystem," said IDFG biologist Matt Proett. "Maintaining a nesting population in the region will provide enjoyment for residents and visitors well into the future."

As data from the 2023 and 2024 releases continues to come in, conservationists are hopeful that these young swans will settle in the region, build nests, and raise future generations in the Teton Valley. The return of the Trumpeter Swan is more than a conservation milestone—it's a powerful reminder of what's possible when partners work together to restore wildlife and habitat.

STATEWIDE



ABOVE THE TREELINE SEARCHING FOR LIFE IN THE ALPINE

As dawn broke over the jagged peaks of central Idaho last August, a team of biologists from IDFG embarked on an ambitious expedition. Their destination: the remote high-alpine backcountry of Idaho's Salmon Region, where elevations exceed 9,000 feet and only the most resilient species can survive.

This 2024 mission wasn't a standalone effort but the capstone to five years of systematic research spanning every region in the state. Throughout this multi-year initiative, IDFG wildlife biologists received crucial assistance from enforcement officers, who helped transport equipment to the most inaccessible locations using pack animals like horses and llamas.

From the sharp peep of a pika to the raspy call of the Black Rosy-finch, biologists documented a wide range of high-country wildlife. They used distance sampling to estimate populations of more than a dozen sensitive species, including American Pika, Black Rosy-Finch, Bighorn Sheep, Rocky Mountain Goats, and amphibians like the Columbia Spotted Frog and Western Toad. These species are a focus of Idaho's State Wildlife Action Plan (SWAP) and offer important clues about how alpine ecosystems are responding to environmental change.

While some species remained elusive—no Hoary Marmots, Beartooth Copper Butterflies, or Alpine Tiger Beetles were detected—others were more cooperative. The team documented 35 pikas, 18 Black Rosy-Finches, 9

American Pipits, 32 Bighorn Sheep, and 4 Mountain Goats. Analysis of the Rosy-Finch data revealed these birds are most visible between 8:00 AM and noon, especially early in the season, with preferences for specific snowpack and terrain—knowledge crucial for future conservation efforts. .

While biologists were wrapping up in the Salmon Region, another team headed north to the Idaho Panhandle to check in on the threatened Whitebark Pine. This keystone species is critical to high-mountain ecosystems, shaping forest structure and providing food for wildlife like Clark's Nutcrackers and Grizzly Bears. Over 30 quick-assessment transects revealed that only 18 of the 50 five-needle pine trees examined were actual Whitebark Pines; the rest were Western White Pines. Crews also checked for signs of blister rust, a devastating fungal disease. These efforts—carried out in partnership with the National Park Service and Bureau of Land Management—will help guide replanting and recovery efforts across the region.

As warming temperatures push higher into Idaho's mountains, these sentinel sites help biologists track how alpine species are adapting. Each survey adds valuable information about these remote ecosystems and the unique plants and animals surviving in these harsh environments.



STATEWIDE

HABITAT WITHOUT BUTTERFLIES IDAHO'S MONARCH MYSTERY DEEPENS

From July to August 2024, IDFG biologists partnered with community scientists to monitor the health of milkweed patches across Idaho—critical habitat for the iconic Monarch Butterfly. With help from IDFG's technical team, who provided tools to streamline data collection, the effort aimed to better understand how these patches are doing and whether they're supporting monarch reproduction.

Using a method adapted from earlier surveys, the team visited known milkweed sites in the Salmon and Panhandle regions, recording observations, without collecting plants or insects, through a mobile app. They tracked weather, patch size, and Monarch activity, such as eggs, larvae, and adults. Along the way, they also discovered new milkweed patches, expanding Idaho's known habitat network.

In the Salmon Region, 258 surveys were completed at 100 sites, some visited multiple times. Monarchs were observed at just 11% of sites, with 39 eggs and six larvae recorded—an unexpectedly low number. No adults were spotted during structured surveys, though volunteers did see some outside survey periods. Many patches showed signs of disturbance from invasive species, equipment use, or drought. Still, some milkweed along US-93 appeared to be expanding, with patches merging into larger stands.

In contrast, 191 surveys in the Panhandle Region revealed mostly undisturbed patches—about 84%. Yet, despite better habitat conditions, no Monarchs were seen during surveys. Volunteers did report a few adult sightings earlier in the summer. Much of the effort in this region focused on revisiting historical sites and training new surveyors.

While Monarch sightings were low across both regions, milkweed habitat appears to be holding steady or even expanding. This raises an important question: if habitat isn't the limiting factor, what else is driving Monarch declines? To dig deeper, IDFG plans to increase survey efforts statewide in 2025 in an effort to gain a complete picture of the health of milkweed patches and Monarch use in Idaho.

The 2024 effort reflects a growing commitment to tracking and conserving this species, and every data point helps build a clearer picture of how to support Monarch populations in Idaho.



GET INVOLVED!

IDFG needs volunteers for the 2025 milkweed and monarch surveys. To join this important community science effort, email milkweedcommunityscience@idfg.idaho.gov

for training info and survey opportunities.

STATEWIDE



TINY SURVIVORS TRACKING IDAHO'S PYGMY RABBITS

In the vast sagebrush landscapes of southern Idaho, a tiny mystery is unfolding. Biologists are tracking one of America's most elusive mammals—and it might be hopping right under your nose.

From December 2023 through March 2024, IDFG teamed up with University of Idaho researchers to track the Pygmy Rabbit, a creature so small it fits in the palm of your hand. Weighing less than a pound, these miniature mammals are potentially vulnerable as their sagebrush homes face mounting challenges.

Unlike other adaptable rabbits, these specialized creatures depend entirely on sagebrush for food and shelter. They're North America's only rabbits that dig their own burrows, creating networks beneath the sagebrush they call home.

How do you find such an elusive animal? You look for clues—specifically, their droppings. The team divided search areas into one-kilometer grids across southern Idaho, with biologists examining the ground for telltale rabbit pellets. Collected samples underwent DNA analysis to confirm they came from pygmy rabbits.

Winter provided the ideal backdrop as pellets stand out against snow. Using ArcGIS technology, biologists coordinated efforts across Idaho's southern landscapes, with field biologists recording findings via smartphone apps to create a live map of rabbit activity.

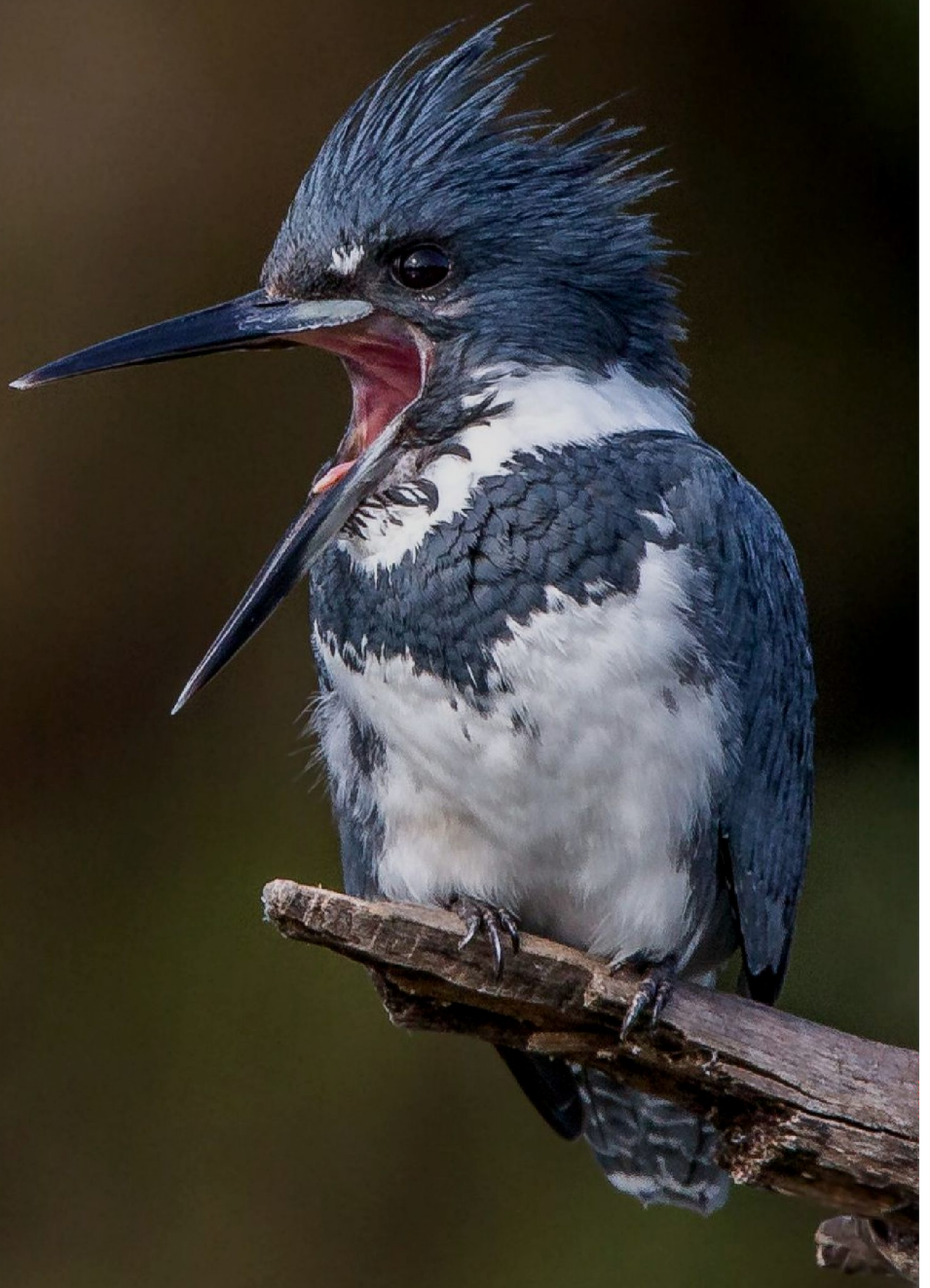
From over 750 potential sites, researchers included 162 locations where Pygmy Rabbits were documented in a previous survey, conducted between 2009-2012. These "legacy sites" help track population changes over time.

The urgency reflects growing concerns about Pygmy Rabbit survival. Their habitat faces a triple threat: wildfires that destroy thousands of acres of habitat, invasive plants that transform landscapes, and development that fragments their home ranges.

"This kind of field work—spanning such a large, remote landscape—wouldn't be possible without the power of partnerships," said Michelle Kemner, IDFG biologist. "Our collaboration with the U.S. Fish and Wildlife Service, the Bureau of Land Management, and the Idaho National Laboratory was essential, but just as critical was the teamwork among biologists within IDFG. Sharing expertise, coordinating across regions, and supporting each other in the field made this project both possible and successful. It's a real testament to what we can accomplish together."

The surveys, continuing through 2025, represent a comprehensive effort to map Pygmy Rabbit distribution. By combining field observations with technology, researchers aim to show where these tiny survivors occur in Idaho—information that will guide land managers in protecting one of the West's most specialized, often overlooked species.

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Windows to Wildlife

WILDLIFE DIVERSITY PROGRAM

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