

Windows to *Wildlife*

Wildlife Conservation in Action

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In This Issue

Page 5

Idaho's quest to monitor its most mysterious duck

Page 6

Buzzing across the Pacific Northwest

Page 7

Hope floats for Western Grebes at Lake Cascade

Page 8

Exploring riparian restoration: a frog's eye view

Page 9

On the trail of the Western Ridged Mussel

Page 10

Flight of the Monarchs: Enhancing habitats and tracking migration

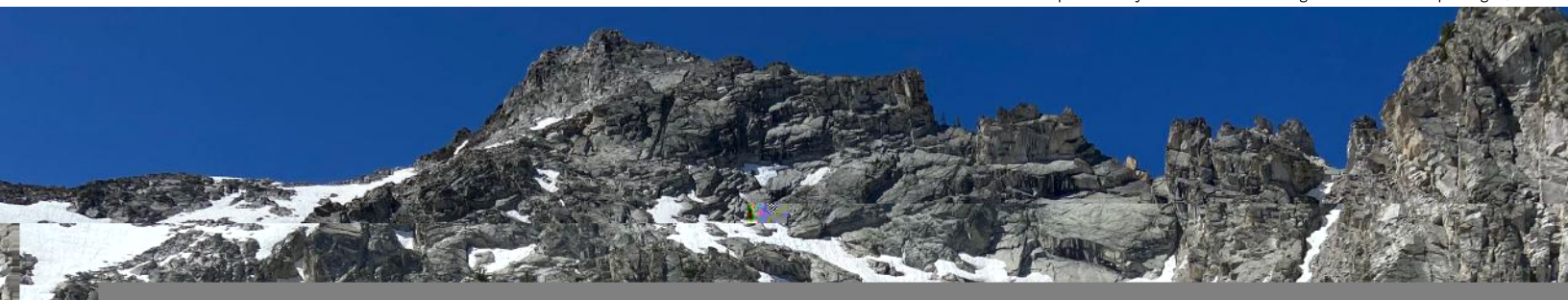
Page 11

Teton Basin Trumpeter Swan restoration

Page 12

Teaming up to protect milkweed patches

A view from an alpine survey from the Salmon Region. PHOTO: Tempe Regan/IDFG






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IDAHO'S QUEST TO MONITOR ITS MOST MYSTERIOUS DUCK

In the remote and rugged streamscapes of Idaho's northern wilderness, a small but vibrant splash of color paddles against the current. The Harlequin Duck, a species as enigmatic as it is colorful, faces the scrutiny of biologists eager to unravel its mysteries. Known for their striking plumage and secretive nature, these ducks are the center of an important investigation aimed at determining whether their population in Idaho is holding steady or facing a decline.

Each year, as the chill of winter fades and the lush landscapes of Idaho's Panhandle and Clearwater regions burst into the greens of spring, pairs of Harlequin Ducks arrive from the Pacific Coast to their breeding streams. This marks the beginning of a vital period of observation carried out by the Idaho Department of Fish and Game and their partners at the U.S. Forest Service. In the spring and summer of 2023, these teams embarked on a series of 15 meticulous surveys across nine different stream sections, navigating the terrain by raft, foot, and road to monitor these elusive birds.

The surveys are timed strategically: first in May to count the adult ducks and identify potential breeding pairs, and again in the summer months to check for signs of new life as ducklings hatch and begin their journey into the wild. Despite the challenges posed by the rugged terrain and the duck's elusive nature, the teams were able to confirm the presence of at least seven adult Harlequin Ducks throughout the season.

Observations included a dedicated pair, solitary males and females, and a particularly heartening sight—a single brood of three ducklings shepherded by a vigilant female.

However, the job of tracking Harlequin Ducks is challenging. The terrain is tough, the ducks are few, and the data hard to come by, making reliable population estimates a complex puzzle. This has spurred on new scientific endeavors to improve how these surveys are conducted. Enter Holli Holmes, a graduate student from the University of Montana, who is at the forefront of developing innovative techniques that could revolutionize our understanding of these ducks. Holmes is experimenting with remote cameras and the collection of environmental DNA—an advanced method that could detect the presence of Harlequin Ducks without the need for direct observation.

Holmes's pioneering work has caught the attention of the media, with Montana Public Radio featuring her research. This collaboration between state, federal, and university researchers showcases a growing commitment to safeguarding the future of the Harlequin Duck. As the efforts to refine these survey methods continue, the hope is that more accurate data will lead to better conservation strategies, ensuring that Harlequin Ducks remain part of Idaho's natural heritage.



BUZZING ACROSS THE PACIFIC NORTHWEST

As the summer of 2023 drew to a close, so too did an era of discovery for the Pacific Northwest Bumble Bee Atlas (Atlas). In its sixth and final season of data collection, this ambitious project led by the Idaho Department of Fish and Game (IDFG) reached new heights of collaboration and conservation.

The season kicked off with IDFG staff, in partnership with the Washington and Oregon Departments of Fish and Wildlife, and The Xerces Society for Invertebrate Conservation, hosting a virtual training event. Seventy-two eager citizen science participants, including 18 from Idaho, joined forces to learn the art of bumble bee monitoring. Throughout the season, IDFG staff provided guidance and support to Atlas volunteers, conducting six surveys themselves and organizing two in-person training sessions.

The focus of the 2023 season was twofold: sampling at higher elevations to target species associated with alpine habitats, and revisiting sites surveyed in the early years of the Atlas. Armed with maps of alpine terrain, participants ventured into the high country in search of bumble bee hotspots and revisited previously surveyed sites to expand options for future data analysis.

The results were nothing short of astounding. Idaho participants completed a staggering 193 formal surveys, documenting the presence of 2,594 individual bumble bees, including sightings of the Morrison Bumble Bee and the Western Bumble Bee. Notably absent, however, was the elusive Suckley Cuckoo Bumble Bee, continuing the trend of zero detections observed over the past five years.

The Atlas is preparing for a new chapter in its journey. The summer of 2024 will mark a transition year, as the project shifts from widespread inventory efforts to long-term monitoring at strategic sites with high species diversity. Details of this evolution are still in the works, but interested parties can stay updated by visiting www.bumblebeeatlas.org.

As we reflect on the achievements of the Atlas, we are reminded of the power of collaboration and the importance of citizen science in conservation efforts. With each survey conducted and each bumble bee counted, we inch closer to a future where these vital pollinators thrive in our landscapes.



HOPE FLOATS FOR WESTERN GREBES AT LAKE CASCADE

In the shimmering waters of Lake Cascade, Idaho, a dramatic avian drama unfolds each year. The Western Grebe, a bird as elegant as it is vulnerable, plays the lead role in a story of survival and resilience. Known for their striking black-and-white plumage and captivating mating dances, Western Grebes are a species of great conservation concern. Amid fluctuating water levels and challenging breeding conditions, these birds have faced inconsistent nesting success, prompting intensified monitoring efforts by the Idaho Department of Fish and Game (IDFG) as outlined in Idaho's State Wildlife Action Plan.

Since 2005, IDFG has been keeping a vigilant eye on this regionally significant population, conducting annual surveys to assess the number of nesting grebes. Unlike other regions in the West, where populations have seen marked declines, Lake Cascade remains a stronghold for these birds, boasting the largest number of nesting Western Grebes in the state. Despite this, the grebes have not been immune to challenges.

Traditionally, counting these elusive birds involved boat surveys conducted just before the grebes began building their nests—a method fraught with timing challenges, as nesting birds often evade detection. In a bold move to improve accuracy, IDFG expanded their approach in 2023, employing aerial imagery to capture a clearer picture of the breeding grounds

from above. This innovative method revealed a promising estimate of 3,584 breeding adults in June. However, the imagery also captured a poignant snapshot of vulnerability: nests left dry and abandoned due to receding water levels, with unhatched eggs marking the spot of nesting failures.

Despite these adversities, the tale of Western Grebes at Lake Cascade has taken an unexpectedly hopeful turn. The number of chicks observed has been a growing concern, with fewer than 100 chicks counted each season since 2018, and no chicks spotted in the last two years. Yet, against all odds, the 2023 season saw a surprising resurgence, with 334 chicks counted. This uptick in numbers suggests that some nests were fortunately positioned to retain access to water long enough for the eggs to hatch, despite the absence of ideal water conditions.

Understanding that stable water levels are crucial for successful nesting, IDFG is now pioneering the use of artificial floating nest platforms—a strategy that has seen success in other habitats. These platforms are designed to provide a stable and safe nesting environment that can withstand the ebbs and flows of lake water levels, offering a ray of hope for the future of Western Grebes on Lake Cascade.

EXPLORING RIPARIAN RESTORATION: A FROG'S EYE VIEW

During the 2023 field season, biologists from the Idaho Department of Fish and Game (IDFG) launched an intriguing project to study the presence of Columbia Spotted Frogs in riparian restoration areas along Hurry Back, Rose, and Long Tom creeks. This ambitious project was designed to evaluate how effective these habitat restoration efforts are in supporting populations of amphibians.

Columbia Spotted Frogs are a species of greatest conservation need in Idaho due to several threats. Habitat loss from agriculture and urban development, water pollution from pesticides, and climate change are major concerns. Additionally, invasive species like bullfrogs, diseases such as chytridiomycosis, and habitat fragmentation further endanger their populations. These factors disrupt their breeding and foraging areas, making conservation efforts crucial to their survival.

Led by a team comprising IDFG Regional Wildlife Diversity Program staff, wildlife technicians, and citizen scientist volunteers, three occupancy surveys were conducted at each riparian restoration site. With kick nets and dip nets in hand, they combed through the streams, meticulously documenting the presence of Columbia Spotted Frogs and other amphibian species.

By conducting these surveys annually, IDFG aims to garner invaluable insights into the long-term effects of riparian restoration endeavors on the distribution and persistence of Columbia Spotted Frogs populations.

Despite encountering challenges such as restricted access to private land on Josephine Creek, their findings shed light on the intricate relationship between riparian restoration efforts and frog populations. While Rose Creek exhibited consistent occupancy rates, Hurry Back and Long Tom creeks experienced a slight decline, possibly influenced by local stream conditions.

As the the 2024 field season approaches, plans for repeat surveys are underway - with the hope of uncovering further insights into the conservation of Columbia Spotted Frogs in these vital ecosystems. Through continued research and monitoring, this promises to contribute to the understanding of amphibian ecology and inform IDFG's future conservation efforts.



ON THE TRAIL OF THE WESTERN RIDGED MUSSEL



In a sweeping series of expeditions across Idaho's waterways, biologists from the Idaho Department of Fish and Game (IDFG) embarked on 15 detailed instream surveys in 2023. The mission? To monitor the state's freshwater mussel populations, with a special focus on the Western Ridged Mussel (*Gonidea angulata*).

The Western Ridged Mussel is under review for potential listing under the Endangered Species Act, spurred by shrinking habitats and suspected die-offs in certain areas. The stakes are high, and the findings from these surveys could play a crucial role in deciding the future of this vulnerable species.

Each survey was conducted in various IDFG regions, each with its unique ecological backdrop. For instance, the Clearwater Region's lower Salmon River was the site of an intense one-day snorkel survey in late July. This effort aimed to confirm sightings of a Western Ridged Mussel colony, a task that requires both precision and patience.

Further south, the Weiser River in the McCall Subregion, served as another key site. Here, IDFG staff conducted three surveys to keep tabs on mussel beds previously identified in 2022, ensuring ongoing monitoring of their health and population status.

Perhaps the most significant discovery came from the Magic Valley Region, where a simple bucket survey on the Little Wood River uncovered the largest bed of Western Ridged Mussels in southern Idaho. This exciting discovery came after clues from environmental DNA (eDNA) analyses, which suggested a vibrant mussel community thriving beneath the surface of the river. The success of these eDNA techniques highlights a revolutionary way to survey aquatic life, offering a glimpse into the unseen world of riverbeds without ever lifting a stone.

As IDFG continues its monitoring, the data gathered will not only inform the U.S. Fish and Wildlife Service's decision on whether to list the Western Ridged Mussel under the Endangered Species Act, but also shape future conservation strategies for freshwater mussels across the region.



FLIGHT OF THE MONARCHS: ENHANCING HABITATS AND TRACKING MIGRATION

In an innovative stride towards conservation, the Idaho Department of Fish and Game (IDFG) is pushing the boundaries of wildlife monitoring and habitat restoration to protect the migratory patterns of the Monarch Butterfly (*Danaus plexippus*), a candidate species for listing under the Endangered Species Act. With monarch populations facing numerous threats, IDFG's approach integrates cutting-edge technology with traditional conservation practices, fostering an environment where these butterflies can thrive.

The heart of this project is the strategic planting of nectar-rich forbs and milkweed—the vital breeding ground for monarchs—across various plots within the Sterling Wildlife Management Area (SWMA). In May 2023, over 4,600 young plants were introduced, enriching the landscape with early and late-season nectar sources essential for the monarchs' energy-intensive fall migrations. Species like Showy Milkweed and Swamp Milkweed serve as crucial lifelines for breeding monarchs and their larvae.

In conjunction with habitat restoration, IDFG adopted the Motus Wildlife Tracking System (Motus), a network of mobile monitoring towers or stations, designed to trace the pathways of migratory species through tiny Lotek NanoPins tags attached to the butterflies. During

the early fall of 2023, 25 monarchs were tagged at both the SWMA and the Curlew National Grassland in eastern Idaho.

Despite the meticulous setup, including a newly erected mobile Motus station, the tracking effort faced challenges. The station, although a significant addition to the Motus network, didn't record detections beyond its immediate vicinity. Reasons might include the limitations of the tags' battery life, inadequate coverage of Motus stations along the migratory route, or the possibility that monarchs were unable to make their full migration with the tag attached.

Recognizing these challenges, IDFG is now spearheading an effort to enhance the Motus infrastructure by aiming to double the number of Motus towers in Idaho. This expansion would not only benefit the monarchs, but also other migratory species like bats. Additionally, future plans include putting on even lighter, solar-powered transmitters for tracking, which could revolutionize how Monarchs are studied and more accurately identify the migration routes of Idaho's state insect.

TETON BASIN TRUMPETER SWAN RESTORATION

Once teetering on the edge of extinction, the Trumpeter Swan, North America's largest waterfowl, is staging a dramatic comeback. Historically hunted for their prized feathers, these magnificent birds faced severe threats that dwindled their numbers drastically. Yet, through concerted conservation efforts, including the establishment of wildlife refuges and legal protections, the Trumpeter Swan is reclaiming its place in the wild, particularly in the scenic expanses of Idaho.

In eastern Idaho, these swans are part of the Rocky Mountain Population (RMP), which boasts around 12,000 individuals. While many of these birds breed in the far reaches of Alberta, Canada, a crucial yet fragile segment makes their home in North America—primarily across Idaho, Montana, and Wyoming. These birds are not just a natural treasure but are also designated as a species of greatest conservation need in Idaho's State Wildlife Action Plan, highlighting their importance and the ongoing commitment to their conservation.

Despite the overall success in boosting their numbers, Trumpeters in North America face ongoing challenges. Concerns such as low nest production and potential local

extirpations, especially in areas like Yellowstone National Park, underscore the precarious nature of their recovery.

Starting in 2013, the Idaho Department of Fish and Game, alongside partner organizations, began an ambitious project to reintroduce Trumpeter Swans to the area. This project involved the release of approved, captive-reared birds with the goal of establishing at least two nesting pairs in the basin. As of 2023, the project saw its largest release yet with eight cygnets at Lazy K Marsh. Notably, four female cygnets were equipped with satellite tracking collars, marking a pioneering effort in the Greater Yellowstone Ecosystem to monitor their movements and improve habitat use strategies.

While these swans have yet to breed in the Teton Basin, often not breeding until their fourth or fifth year, means that patience is key. Biologists remain hopeful that with continued efforts and strategic releases, the day will soon come when Idahoans can witness these majestic birds nesting and thriving once again in their natural habitat, contributing to the stability of the species across the region.





TEAMING UP TO PROTECT MILKWEED PATCHES

In a collaborative effort to safeguard the habitats of Idaho's state insect, the Monarch Butterfly (*Danaus plexippus*), biologists and volunteers from the Idaho Department of Fish and Game (IDFG) embarked on a series of surveys in 2023. Their goal: to evaluate the health, persistence, and potential threats facing milkweed patches, vital habitats for monarchs across the state.

Milkweed plants hold a special significance for the Monarch Butterfly as they are the sole host plants for their larvae, providing vital food and shelter for their development. However, these crucial habitats are facing increasing threats from factors such as habitat loss, pesticide use, and climate change.



To address these challenges, the team targeted known milkweed patches identified from previous studies, aiming to evaluate their condition and monitor any monarch activity. Each survey visit was a meticulous process, involving the examination of at least 25 milkweed stems for larvae or eggs. Every observation was carefully recorded, with special attention given to newly discovered patches. Even patches with fewer than 25 stems received thorough scrutiny, ensuring no potential habitat was overlooked. And whenever adult monarchs were spotted, biologists conducted visual assessments, noting their sex while being careful not to cause disturbance.

In total, 185 surveys were conducted across 73 milkweed patch sites in the IDFG Salmon Region. The discovery of 18 newly identified patches underscored the importance of ongoing monitoring efforts. Monarchs were detected at some life stage in 20% of all surveyed sites, reflecting the critical role of these habitats in supporting butterfly populations. In total, a staggering 4,452 individual milkweed plants were checked for monarchs, highlighting the scale of the team's dedication.

This effort was made possible by the commitment of 16 dedicated volunteers, supported by assistance from IDFG biologists. Looking ahead, the journey will continue in 2024, expanding to cover both the Idaho Fish and Game Salmon and Panhandle regions. Plans are underway for statewide surveys starting in 2025, with the project relying increasingly on the participation of community scientists and volunteers. Together, they are driving efforts to protect the Monarch Butterfly and its habitats. Stay tuned for updates on this remarkable journey!

Want to get involved this summer?

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Windows to Wildlife

WILDLIFE DIVERSITY PROGRAM

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