



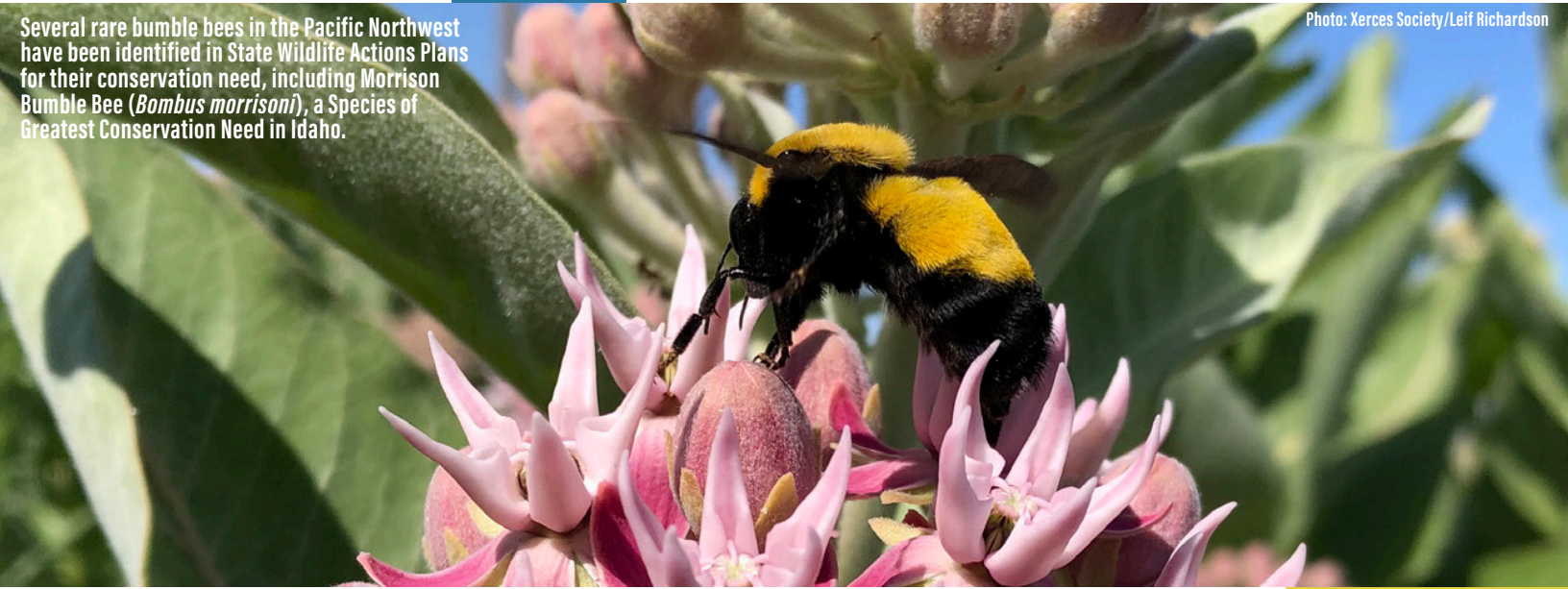
WINTER
2022

Windows to *Wildlife*

Your support at work in Idaho's landscapes

Photo: Xerces Society/Leif Richardson

Several rare bumble bees in the Pacific Northwest have been identified in State Wildlife Actions Plans for their conservation need, including Morrison Bumble Bee (*Bombus morrisoni*), a Species of Greatest Conservation Need in Idaho.



Pacific Northwest Bumble Bee Atlas *An Update!*

by Joel Sauder*, Regional Wildlife Biologist
Clearwater Region, Idaho Department of Fish and Game

Back in 2018, the Pacific Northwest Bumble Bee Atlas (Atlas) launched. The intent was to leverage the power of volunteer community scientists to improve our knowledge of distribution and foraging habits of bumble bees across the Pacific Northwest. At the time, it was impossible to know how volunteers would respond to the call for help. Between 2018 and 2020, 300+ volunteers conducted 1500+ surveys and submitted more than 20,000 observations of 24 species! Today, the Atlas has become one of the largest bumble bee monitoring efforts to be conducted, and now represents one of the most comprehensive regional datasets for bumble bees in the world!

Over the past year, biologists from The Xerces Society, Idaho Fish and Game, and Washington Fish and Wildlife have been working with the data collected by the volunteers, and some early results are now available. The **first product** is a series of summary accounts for each species in the Pacific Northwest. These show where the species was observed, a map of general habitat suitability, preferred habitat types, and selected foraging plants. The **second product** is a guide to habitat management for the benefit of bumble bees. While written principally for land managers, there is plenty of information that private individuals can use in their backyards too. It covers best management practices for creating year-round habitat for bumble bees and includes a list of top plant genera selected by bumble bee species of greatest conservation need (SGCN). In both these documents, plant genera are reported instead of specific plant species as a way to encourage practitioners to select native plant species that naturally occur in their area.

Overall, the Atlas has provided interesting insights to Idaho's bumble bee species. Both the Yellow Bumble Bee (*Bombus fervidus*) and Hunt Bumble Bee (*B. huntii*) are currently SGCN in Idaho. Yet the new occurrence data collected by the Atlas suggests that their populations are widespread and likely secure. In the future, these species may be removed from the SGCN list, primarily due to

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the improved understanding provided by the Atlas. For other species, such as Suckley Cuckoo Bumble Bee (*B. suckleyi*), Western Bumble Bee (*B. occidentalis*), and Morrison Bumble Bee (*B. morrisoni*), the Atlas confirms that the SGCN designation is appropriate due to population trend and/or limited distribution. Data on the flowers bumble bees select to forage on will be instrumental in habitat restoration efforts. Moving forward, Atlas data will be essential for conservation planning and management decision-making and are an invaluable resource for this group of species. Since the data are largely effort-based and repeatable, they will also serve as essential baseline data to which future conditions can be compared.

But the Atlas is not over! In 2021, the U.S. Fish and Wildlife Service provided additional funding to keep the project going. In 2022 and 2023 the Atlas will be targeting areas where data gaps still exist, as well as targeting areas where SGCN historically occurred. So it is not too late for community scientists to participate—please visit the Atlas [website](#) for more information on how to get involved and training opportunities.

The Importance of Wildlife Management Areas and Other Public Lands

The rare Western Bumble Bee (*Bombus occidentalis*) is one of several bumble bee species that utilize public lands as habitat.



Photo: Xerces Society/Rich Hatfield

Above: Sites chosen for habitat improvement projects were retired agricultural lands that offered little habitat value like the one featured above prior to restoration. **Below:** Preparing a restoration site for seeding/planting.



Photo: IDFG

Case Study: Large-Scale Restoration in Idaho

Habitat improvement projects for bees have traditionally been small, often significantly less than an acre (i.e., pollinator plots), where manual and hand treatments are a restoration option. However, to have population level impacts, larger plots, covering multiple acres, would likely be more effective. Between 2018 and 2020, as part of the Atlas project, IDFG undertook a large-scale habitat restoration effort that attempted to create over 50 acres of pollinator habitat spread across three wildlife management areas in southern Idaho in multiple parcels 2.5 to 7 acres in size. The sites selected for restoration were retired agricultural lands that had little wildlife value (e.g., Smooth Brome monocultures or Russian Olive stands). The intent was to replace these with early and late pollinator foraging habitat to boost their value to wildlife, particularly bumble bees. While the sites are in their initial restoration phase, early lessons will be drawn from these efforts.



Food, Water, Shelter, Space

Quality bumble bee habitat¹ provides 1) a diversity of native floral resources throughout the growing season; 2) suitable habitat for nesting (e.g., bunch grasses, rock piles); and 3) suitable habitat for overwintering (e.g., shaded/wooded areas, on slopes). PHOTOS: Xerces Society/Rich Hatfield^{1,2}, Kent McFarland /flickr³.

(page adapted from the Pacific Northwest Bumble Bee Atlas)

News from the Field

Put Some Mussel Into It

by Lyn Snoddy*, Wildlife Biologist
Magic Valley Region, Idaho Department of Fish and Game

When biologists attach tags to wildlife, most people think of radio-collars on deer or a leg band on birds. However, tagging individual western ridged mussels can provide a lot of useful information about a species we want to learn more about.

In September of 2021, Idaho Fish and Game biologists assisted U.S. Fish and Wildlife Service biologists with attaching passive integrated transponder (PIT) tags to 61 western ridged mussels and one unexpected western pearlshell mussel in the Bruneau River. The mussels were collected during cooler temperatures; some biologists wore wet suits and masks while snorkeling slowly up the river or within designated search areas called “quadrats.” Other biologists used stream viewers, which are buckets or large cones with clear plastic bottoms, to search the underwater habitat for mussels. Each quadrat was searched carefully by slowly lifting cobble and disturbing the river bottom. When found, the mussel was removed and the location was marked for later replacement. Buckets of water were labeled to hold the mussels while each one was examined; measurements like length and width were recorded. The shell was carefully sanded to prepare the surface and the PIT tag, which is about the size of a piece of rice, was superglued to the outside of the shell. Each PIT tag provides a reliable lifetime ‘barcode’ for each individual mussel.

PIT tag tracking is an excellent method for capturing long-term movement data. To determine how much mussels grow and move over time, biologists will return to the same capture location in subsequent years with a PIT tag reader. The PIT tag reader sends out a radio frequency and when a tag is within range, it will relay the identifying barcode back to the receiver. Similar to using a metal detector to find buried treasure, passing the tag reader along the river should reveal the location of individual mussels that were previously found, measured, and fitted with a PIT tag. Tag and release data provide important information for future monitoring.

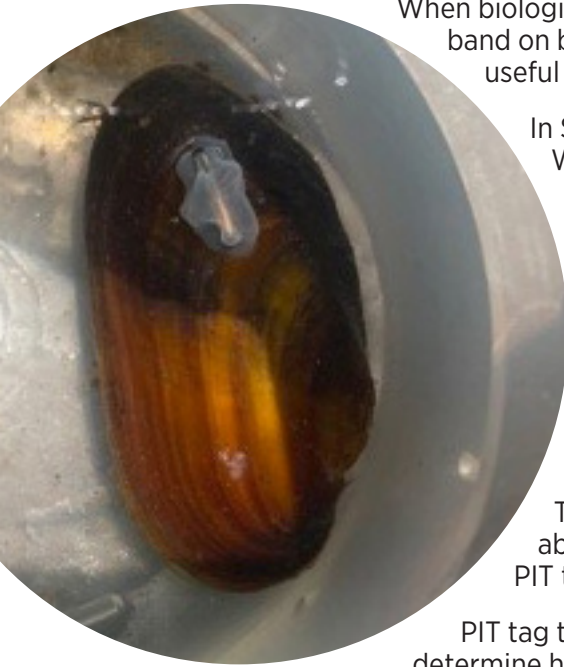


Photo: Mike Stephenson



Photo: Mike Stephenson



Photo: Dorene McCoy

Mussel Tagging 101

Freshwater mussels can be tagged to track their growth and survival over time - knowing how mussels grow and survive is one measure of river health. Tagging mussels is a simple procedure: 1) Biologists search and collect mussels (left); 2) A fast-acting super glue is used to glue a small PIT tag to the mussel's shell (middle); 3) The PIT tag is checked before the mussel is returned to the river.

Why Biologists Want to Learn More about Western Ridged Mussels:

The western ridged mussel was petitioned for listing under the Endangered Species Act in August 2020, primarily due to shrinking distribution and sudden die-offs.

Freshwater mussels, like the western ridged, are distinct from their marine counterparts because they require a host fish to complete their lifecycle and fertilization occurs internally.

Freshwater mussels are an important food source for other sensitive species, such as white sturgeon.

Mussels are sensitive to disturbance and handling. When possible, photograph the mussel(s) without handling, and document where you found them.

If you handle a mussel, be sure to put it back in the same location as you found it. Do not stick the mussel into the substrate; instead, lay it flat on the sediment surface.



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Market Lake Wildlife Management Area



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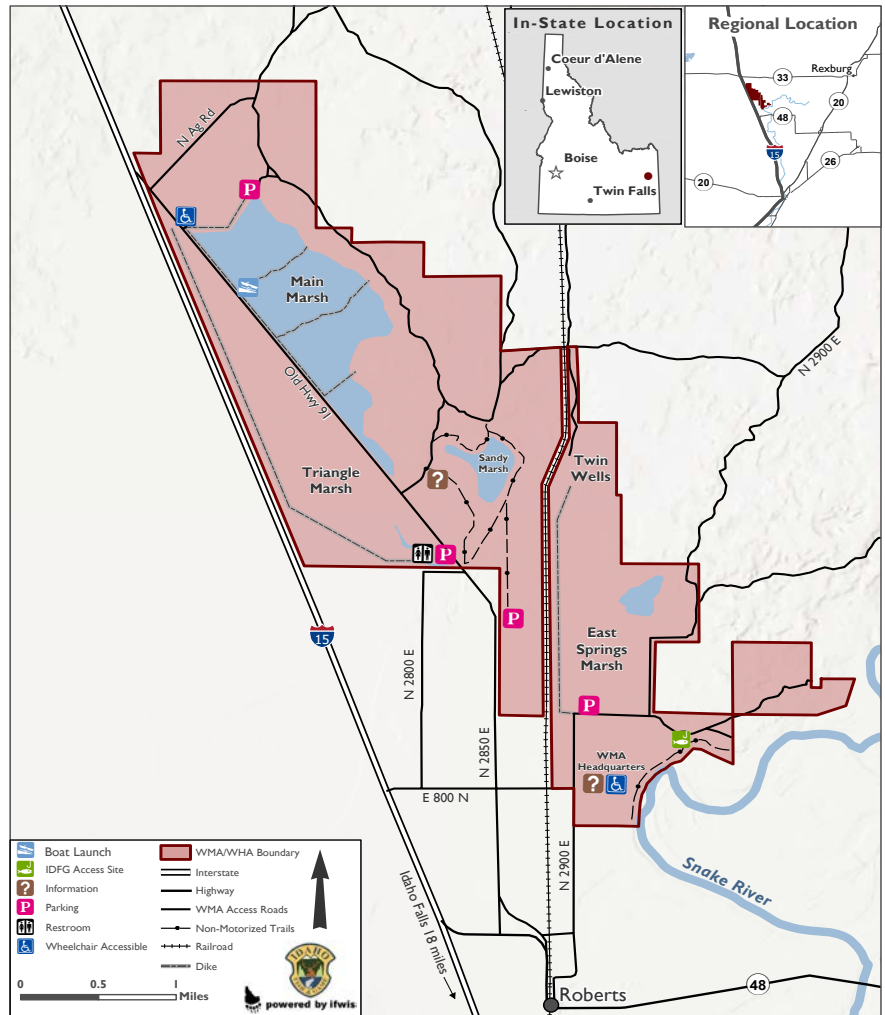
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eBird ebird.org/hotspot/L3406540
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LAT/LONG: 43.7808238,-112.146163
43.7736111,-112.1333333

DIRECTIONS: I-15 Exit #135 at Roberts; E on CR 627 to the junction with CR 2880 E; turn L (N) and drive through Roberts; 0.5 mi take R fork and continue N on N 2850 E; stop at Sandy Marsh parking lot for a bird list; continue N on N 2850 E (Old Hwy 91) and follow to Main Marsh and Triangle Marsh; at the N end of Main Marsh are two shelterbelts that are good for songbirds; for more birding, head N on 2900 E from HQ and in 0.4 mile pull into the lot on the L (W) and park; walk through gate in the NE corner of the parking lot, cross the canal, and follow main dike to W and N to view open water and mudflats.

This site is a hot-spot for waterbirds. It is a spring staging area for 50,000-150,000 ducks (particularly Northern Pintail), 400 Canada Geese, 40,000 Snow Geese, 1,000 Tundra Swans, and many shorebirds (Red-necked Phalarope, Black-bellied and American Golden Plovers). During the summer, colonial breeding species that can be found here include Eared, Western, and Clark's Grebe, Black-crowned Night-Heron, Snowy and Cattle Egret, White-faced Ibis, Franklin's and Ring-billed Gulls, and Forster's Tern. Also present are Sora, Virginia Rail, American Bittern, American Coot, Pied-billed Grebe, American Avocet, Black-necked Stilt, and Willet.



Wildlife Viewing
Top: Visitors enjoy a birds-eye view from the blind; Right (top): A ruddy duck struts his stuff at the pond; Right (bottom): Northern pintails take flight above the viewing blind.

Photo: Deniz Aygen, IDFG

Spotlight Species of Greatest Conservation Need

Great Gray Owl

Adapted from the *Idaho State Wildlife Action Plan* and *Owls of Idaho* nongame leaflet



Description

Great Gray Owls (*Strix nebulosa*) are one of 14 owl species of that occur in Idaho. Dense, fluffy plumage and long tail feathers make this owl appear much larger than it really is. Although it may be more than 30 inches long, the Great Gray weighs only two to three pounds. The plumage is mottled gray to grayish-brown. The chest appears to have vertical stripes, while the belly has horizontal bars. The head appears very large due to the big, almost circular facial disc, and the yellow eyes appear much smaller than those of other owls. Other distinguishing features are the concentric rings within the facial disc and white chin stripes.

Its territorial call is a sequence of six to eight descending mellow hoots. It also utters a variety of rasping, screeching, and whistling noises.

Range and Habitat

The Great Gray Owl is widespread in northern regions of North America, Europe, and Asia. In Idaho, they are known to breed in the northern Panhandle, along the Montana-Wyoming border of eastern Idaho, in west-central Idaho, and in the Frank Church-River of No Return Wilderness. Although they are year-round residents and have been recorded in almost all mountainous areas in the state, they are relatively uncommon.

Over 90% of sightings in Idaho are in the lodgepole pine/Douglas-fir/aspens zone. A rodent specialist (voles in particular), this owl favors areas near bogs, forest edges, montane meadows, and other openings.

Diet and Habits

Great Grays are a nocturnal and crepuscular (dawn and dusk) hunter. In some winters, when its prey are scarce, individuals will wander into areas beyond its typical range extent, often in considerable numbers, and always to the delight of birdwatchers.



Want to hear a Great Gray Owl?

Open your camera app on your phone, point it at the code and hold steady for a few seconds. Then tap the notification to listen. Make sure your volume is turned on!



Scan Me



Reproduction

The breeding density of Great Gray Owls seems limited by both prey and nest site availability. It prefers abandoned nests of other birds of prey, but will nest on the tops of broken trees or on artificial platforms as well. They produce one brood per year.

Great Gray Owl Fun Facts

Great Gray Owls can accurately detect rodent prey under snow by ear, plunging through the surface to grab the unsuspecting vole beneath. They have been reported breaking through snow crust thick enough to support the weight of a 175-pound person!

These owls are vole specialist hunters, but will also take a variety of other small mammals as prey, such as shrews, gophers, squirrels, chipmunks, weasels, lemmings, and mice.

Great Gray Owls are nomadic, wandering to locate the best food sources. This can also lead to irregular irruptions, when the birds may be spotted well outside their expected range, particularly in winter.

During the breeding season, the female owls will eat the feces and pellets of hatchlings. The adult female will then leave the nest and regurgitate pellets of this material far away to help protect the location of the nest.

These birds are one of the largest owls in the world by length, with measurements reaching up to 33 inches long, making it the largest owl in North America. By weight, however, it is smaller than the Great Horned Owl and the Snowy Owl.

Conservation and Importance

Although the primary threats to this species in Idaho have not been fully documented, the greatest potential impact on Great Gray Owl populations appears to be from some timber management practices (e.g., removal of large-diameter trees used for nesting, logging close to meadows) and fire suppression, which may change the landscape habitat mosaic (dense older forest for nesting with scattered meadows for hunting) needed. In addition, as a boreal species at the southern limits of its range in Idaho, Great Gray Owls are projected to be affected by a changing climate, particularly increased summer temperatures and changes in preferred habitat. However, some areas of the state may act as “climate refugia” for the species. Recreational disturbance, particularly from birders and photographers, is a concern in some locations.

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Red-breasted Merganser. Photo: Frank Lin



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Thousands of waterfowl rest on the ponds of the Hagerman Wildlife Management Area.
PHOTO BY: IDFG

Windows to Wildlife

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