MARCH 2021

NOTES OF A NATURALIST

A monthly newsletter bringing you the species, landscape, history, and happenings of the Taft-Nicholson Center

Arctic Grayling

With their large dorsal fins and striking iridescent color, arctic grayling are among the most eye-catching members of the Salmonidae family. Like many of their trout and salmon relatives, these fish thrive in cold freshwater ecosystems. They can be found throughout the northern Pacific, Arctic, and Hudson Bay drainages of North America and Asia. Two distinct populations, in what is now Montana and Michigan, were geographically isolated from those further north in Canada and Alaska during the last glaciation period. In the early 1900s, the grayling found in the Great Lakes region were extirpated. Now those in Montana's Big Hole River and Red Rock River basins are what remain of these glacial relict populations.

Arctic grayling can be fluvial (river-dwelling), lacustrine (lake-dwelling), or adfluvial, meaning they spawn in streams but spend the rest of their time in lakes. The Red Rock River basin population, located in Centennial Valley, is the last native adfluvial grayling population in the contiguous United States. While the global population of arctic grayling is doing well, they are listed as a species of concern in Montana. Once widespread and abundant throughout the upper Missouri River drainage, which includes the Red Rock and Big Hole rivers, the population dropped to about 4% of it's original distribution by the 1990s.

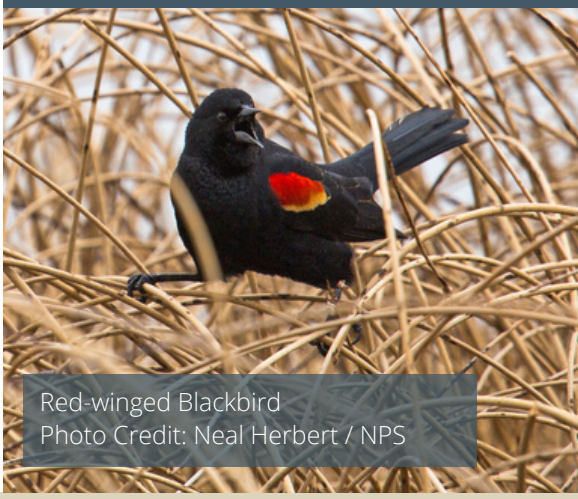
Biologists have identified three main factors that could be contributing to grayling population decline in Centennial Valley: competition from introduced trout species, availability of spawning habitat, and availability of winter habitat. Yellowstone cutthroat trout are native to the nearby region, as its name would suggest, though Centennial Valley is outside of its natural range. Introduced in the 1960s, Yellowstone cutthroat have since thrived in this area and may be out-competing with the native grayling population. Grayling spawning habitat in Centennial Valley includes Red Rock, Corral, Elk Springs, and Odell Creeks, though most spawning occurs in Red Rock Creek. The availability of spawning habitat has been impacted by stream alteration and sedimentation. Most grayling overwinter in Upper Red Rock Lake. Ice formation on this shallow lake produces low oxygen conditions and can severely limit suitable winter habitat.

(Continued)

Updates from Lakeview

"Spring is coming our way, slowly arriving in the Centennial Valley. We still have several feet of snow in our backyard, but it has started to melt as daytime temperatures are often above freezing. There are other signs of spring, too. Red-winged blackbirds first arrived in the valley March 5th. They are often one of the first migratory birds to reappear each spring. We've also been hearing Great Horned Owls near town, which are year-round residents. They begin nesting in February, laying 2-4 eggs that will be incubated 30-34 days. Red fox, another year-round resident, have been regularly sighted around town lately. They also breed in late winter and will be having their kits soon."

- Contributed by our friends at Lakeview Elementary



Red-winged Blackbird
Photo Credit: Neal Herbert / NPS

Arctic Grayling (cont.)

The Arctic Grayling Adaptive Management Plan is an inter-agency effort to conserve this species in Centennial Valley, with a goal of maintaining a spawning population of 1,000 adults. Biologists with the US Fish and Wildlife Service and Montana's Department of Fish, Wildlife and Parks are using population model predictions and management actions to learn more about what exactly is driving grayling populations.

During 2013-2017, efforts were focused on minimizing competition with the non-native Yellowstone cutthroat trout. Biologists placed weirs in streams to trap trout, and recruited local anglers to assist with reducing the cutthroat population. Beginning in 2017, actions have been taken to increase spawning habitat. Potential stream barriers, such as beaver dams, were notched to allow grayling to access upstream spawning habitat. The historic channel for Elk Springs Creek, which was diverted in 1908, was restored. Approaching the issue of winter habitat has been a bit more complicated. It is difficult to improve winter habitat in such a shallow lake, where the suitable winter habitat naturally fluctuates from year to year. The minimum suitable habitat for last winter, recorded in February 2020, was estimated at 3 hectares. As of January this year, suitable winter habitat was around 39 hectares. But by looking at these yearly fluctuations in winter habitat, its possible to estimate the impact it has on grayling populations.

The Red Rock Creek spawning population last year was approximately 138 adults. The predicted spawning population for the 2021 season is 293. Biologists have been comparing real world populations with their predictions to determine the roles each factor plays in grayling population dynamics - and what the most effective management strategies will be going forward.

Arctic Grayling
Photo Credit: Ryan Hagerty, USFWS

Signs of Spring

Although winter weather may persist for a while longer, signs of the changing seasons will slowly begin to appear in the Greater Yellowstone Ecosystem. Some of the first signs include the arrival of early migrating birds, such as the red-winged blackbirds already spotted in Centennial Valley this year. Mountain bluebirds are also among the earliest arrivals, their bright plumage an indicator of the blue-sky days up ahead. By arriving early, they get a head-start on finding nesting spots, though they may also have to contend with late-season snow storms.

By mid March, bears are usually beginning to come out of hibernation. Black bears generally leave their dens earlier than grizzlies. For both species, adult males are the first to emerge. New mothers will be the last, appearing in May with their new cubs in tow. In the first few weeks post-hibernation, bears mostly stick close to their dens, primarily scavenging on frozen carcasses until new plant growth appears.

After months of dormancy, some of the first signs of plant activity are the budding trees in the Salicaceae family, including willows, aspens and cottonwoods. Their flower buds often begin developing in late winter, a process that can be slow-going depending on weather conditions. Their flowers, called catkins, are some of the first to bloom in the spring. Perhaps not as showy as other early blooming flowers, these caterpillar-like catkins are an equally exciting sight to see, an indicator of spring's arrival. Though, because these trees bloom before their leaves develop, it can still be a while before green once again dominates the landscape.