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Eye on the Environment:

Fish Hawks And Food For Thought

by Adam Lieberg

I feel very fortunate to have spent the last three summers based out of the old Boyd Ranch on the Clearwater/Blackfoot Game Range.

In the evenings I enjoyed walking along Cottonwood Creek looking for birds and other signs of wildlife. The Game Range is a unique landscape that provides a sanctuary for a whole host of species, ranging from endangered Grizzly Bears to common Ground Squirrels.

One of my favorite things to watch was an Osprey that happened to have a favorite fishing hole downstream from where I lived. On more than one occasion, I remember spotting this Osprey in midair, hovering like a helicopter over the water. If I waited patiently enough, eventually it would tuck in its wings, invert its body, and begin its descent towards the water.

While the beginning of this maneuver always appeared to be in slow motion, the large aerodynamic bird, which is sometimes referred to as the “Fish Hawk”, would constantly be picking up speed. By the time it reached the water’s surface, the Osprey would be dropping like a bomb, pulling up at the very last second

before entering the water feet first with a great “kah-thuunnk!” and a huge splash.

After such a dive, this particular Osprey would frequently wade on the surface like a duck, taking off moments later with a fish positioned perfectly straightforward in its talons; not because it wanted to let the fish see where it was headed, but because for the Osprey, this is the most aerodynamic position to hold the fish during flight.



Photo by John Armitage

While this type of Osprey encounter is actually not all that uncommon, it hasn’t always been that way. Ospreys, which are almost exclusively fish eaters, are good indicators of aquatic ecosystem health due to their susceptibility to pollutants that accumulate in aquatic food chains.

Like many birds of prey, Ospreys experienced major population declines in the 1960’s-1970’s related to the application of DDT and other harmful pesticides. Exposure to these types of pollutants affects the eggshell quality and egg viability. Since the banning of DDT in 1972, Osprey populations have gradually come

back, aided by other conservation measures such as construction of nest building platforms (the kind often seen next to power line poles).



Photo by Tyler Veto

Recently, local researchers have uncovered new causes for concern with regards to our native Fish Hawks. In the past two years these biologists have discovered alarming levels of mercury concentrations in Osprey chicks.

During this study, they sampled a total of 23 nests and more than 43 nestlings in western Montana, and found that many of the Osprey nestlings had mercury levels 100 times higher than what would be considered toxic to humans. Being the “canaries in the coal mine” that they are, these results should be of grave to concern to not only bird lovers, but the general public as well.

Where is this mercury coming from? Montana has a long history of mining, and with the recent removal of the Milltown Dam, we have been reminded of the impacts that those times still have on our environment. Researchers are using this opportunity to monitor Ospreys above and below the dam, in

addition to birds from other rivers in the area, to gain a better understanding of this potential link.

Yet there are other possible sources of mercury contamination that are far more distant and complex. Mercury is a volatile chemical, which means it is easily vaporized and dispersed throughout the Earth’s atmosphere. While there are various activities that emit mercury into the environment, the majority of mercury related pollution comes from coal burning power plants.

Unfortunately for western Montana, volatile pollutants condense out of the atmosphere in cooler climates and alpine ecosystems. As a result, mercury pollution from other parts of the country, potentially even sources as far away as China, are being atmospherically deposited into high mountain tributaries and glaciers in places like the Mission Mountains, Bob Marshall Wilderness, and Glacier National Park.

These circumstances are compounded by the recent warming of the Earth, which is melting glaciers at an unprecedented rate and releasing the accumulated pollutants into the aquatic ecosystem, where they can bio-accumulate in Ospreys and the rest of the related food chain.

Another local concern for Ospreys, one that is more obvious to the eye—yet dangerous nonetheless—has to do with this bird’s fatal attraction to baling twine. For reasons unknown, Ospreys seem to go out of their way to collect orange baling twine for nest construction.

Astoundingly, over 95% of the nests studied in the Missoula Valley contained baling

twine. This result has proven to be fatal when Osprey chicks or even adults get tangled in the very durable and strong cordage. Studies have shown some areas where 10% of the Osprey chicks were entangled in baling twine and died before they could fledge.

In one particular nest, researchers found more than a quarter of a mile of baling twine within the nest material. The good news is that with some outreach and education, the public—especially ranchers and livestock owners—can make a conscious effort to not leave loose baling twine out for Ospreys to collect.

For more information on both these local issues affecting Ospreys, check out the Raptor View Research Institute's website at <http://www.raptorview.org> or contact projectosprey@mso.umt.edu.

Moreover, if you see an Osprey caught in baling twine and/or injured (or any type of bird for that matter), you can call the Grounded Eagle Foundation, a local organization that specializes in raptor rehabilitation, at 406-754-2880 or check out their website at www.groundedeaglefoundation.org.

I think we are pretty lucky to share our rivers with such a cool bird. Ospreys have been honing their fishing technique for a long time. Fossil records for this bird date back 15 million years. They can be found on every continent except Antarctica.

In the New World (North and South America), Ospreys' breeding grounds range from the Caribbean to Alaska, while they migrate to Central and South America for the

winters. Ospreys mate for life and usually return to the same nest year after year. The male usually hunts and feeds the female and offspring, but not before eating the head and tail off the fish, leaving only the most nutritious parts for the rest of the family.

They are capable of catching and eating both freshwater and saltwater fish; and when healthy, these birds can live up to 25 year of age. Fish Hawks have special adaptations that contribute to their impressive success at catching fish, which is the equivalent of a fisherman landing a trout four out of every five casts.

Ospreys have keen eyesight, are able to dive feet first into the water, and have nasal valves that close while they are underwater. When diving for fish, Ospreys can reach speeds up to 80 miles per hour, but due to their high buoyancy rate, they only submerge up to 3 feet underwater. Their outer toe is reversible while the undersides of their feet are covered with especially rough short spines that provide a firm grip on slippery fish.

While winter seems to be having a tough time letting go, it is getting to be that time of the year, so be sure to pick up your baling twine and keep your eyes to the sky, Fish Hawks should be returning from their long migrations any day. If you do happen to spot one, be patient and you might just get to witness that ancient old fishing technique dropping out of the sky.