

JOURNAL OF AVIAN MEDICINE AND SURGERY

A Capture to Remember: Monitoring the Health of Avian Scavengers on the Pacific Coast

Daniel E. Varland, PhD



OFFICIAL PUBLICATION OF THE
ASSOCIATION OF AVIAN VETERINARIANS

Notes From the Field

A Capture to Remember: Monitoring the Health of Avian Scavengers on the Pacific Coast

Daniel E. Varland, PhD

Abstract: Because of concern over risks to the health of avian communities on the Washington and Oregon coasts, the nonprofit Coastal Raptors and other partners initiated a study where, to date, Coastal Raptors has live-captured and sampled 27 bald eagles (*Haliaeetus leucocephalus*), 27 turkey vultures (*Cathartes aura*), and 6 common ravens (*Corvus corax*) for contaminants and disease study. In this article, the author highlights the events of one of the nearly 100 days on which trapping has occurred. An adult bald eagle was captured north of Ocean Shores, WA, USA, and the trapping team was visited by Quinault Indian Nation members.

Notes From the Field

Avian scavengers occupy key positions at the apex of food chains. As such, they are vulnerable to disease and contaminant exposure and may serve as bellwethers of the health of avian communities and the environment. The nonprofit organization Coastal Raptors (Hoquiam, WA) and other partners have been engaged in a multiyear study to examine the health of 3 avian scavengers—the bald eagle (*Haliaeetus leucocephalus*), turkey vulture (*Cathartes aura*), and common raven (*Corvus corax*)—on coastal beaches in Washington and Oregon, USA. Our aim is to assess these birds for the presence of infectious diseases, parasites, and contaminants (Table 1). Despite progress in removing certain pollutants from the environment, contaminant threats still persist and new ones continue to emerge.

June 11, 2012, was a cool, clear morning on the Washington coast north of Ocean Shores. Scott Ford, David Ness, and I arrived before sunrise to set a net launcher to capture bald eagles. Fired remotely and powered by 3, .22-caliber blanks, a net launcher will send a 6- × 6-m net flying over the bait and, hopefully, over one or more target birds 4–5 m away. The launcher is camouflaged with locally gathered debris. The remote control has a range that allows us to sit and observe the site from several hundred meters away.

We were taking advantage of the harbor seal (*Phoca vitulina*) pupping season and the pup mortality inherent therein. Along Washington's outer coast, harbor seals give birth May through June. It's not uncommon to see dead pups wash ashore, their carcasses deposited along the wrack line. (Wrack is marine vegetation cast ashore; a line of wrack and other debris forms around the high tide line as the water recedes.)

During seal pupping season, we often find 1 or 2 pup carcasses lying in the wrack line on the Ocean Shores peninsula. Avian scavengers of all types—gulls, eagles vultures, ravens, crows, and more—search the wrack line for feeding opportunities. National Oceanic and Atmospheric Association Fisheries, the federal agency charged with protecting marine mammals under the Marine Mammal Protection Act, gives Coastal Raptors permission for use of harbor seal and California sea lion (*Zalophus californianus*) carcasses as lures for avian scavenger trapping. On this day, we had a 10-kg seal pup carcass as bait (Fig 1); we set our net launcher on the beach at the north end of the Ocean Shores Peninsula (Fig 2).

On coastal beaches in southwest Washington, state law allows public access for recreation, including driving. Beginning about 25 km north of Ocean Shores, the beaches are tribal land or part of Olympic National Park, where access is limited. Our location was about 1 km north of the nearest beach access road, allowing easy access for our crew.

From Coastal Raptors, 90 Westview Dr, Hoquiam, WA 98550, USA.

Table 1. Contaminants and disease testing on bald eagles, turkey vultures, and common ravens live-captured on the Washington and Oregon coasts, 2012–2014.

Contaminants
Organochlorines
Lead
Mercury
Disease testing
Hematology
Serum biochemistry
Fecal and tracheal cultures
General bacterial screen
<i>Coxiella burnetti</i>
Paramyxovirus-1
Avian influenza-A
<i>Sarcocystis</i>
<i>Mycobacterium</i>
<i>Chlamydophila psittaci</i>
<i>Salmonella</i>
<i>Brachyspira</i>
<i>Mycoplasma</i>
Adenovirus

We got an early start, timing our trapping for when avian scavengers are searching for food and when few people are out and about. Scott, David, and I were ready by 5:15 AM. David watched in a vehicle about 200 m north of the set, while Scott and I were in another vehicle about the same distance to the south. We maintained contact by 2-way radio. A fourth member of our team, Glenn Johnson, arrived later to help process captured birds (Fig 3). The action started as soon as we moved away from the trap. The following are Scott's field notes:

- 5:15 AM. Adult eagle flew over trap from north; juvenile on beach far to north.
- 5:30 AM. 4-year-old eagle landed ~500 m north on sand.

(Note: David Ness herded the 4-year-old sub-adult south and toward the set, driving slowly toward it and flushing it from its perch.)

- 5:37 AM. 4-year-old eagle flew in low over trap, landed ~50 m west of trap.
- 6:02 AM. 3 northwest crows feeding on the carcass.



Figure 1. The set at dawn for capturing bald eagles for banding: net launcher 4 m away from harbor seal pup carcass. Photo: Dan Varland.



Figure 2. The Washington coast, showing the capture location of bald eagle K/O. This eagle was captured as part of a program to monitor the health of select wild bird populations. Map: Josh Benton.

- 6:05 AM. 4-year-old eagle flew over, landed ~15m from trap.
- 6:25 AM. 4-year-old eagle began feeding on carcass.

With a study goal priority of capturing adults, we waited to fire. Our patience paid off. Ten minutes later, at 6:35 AM, an adult eagle landed next to the younger eagle. At the same time, I noticed a vehicle to our south carrying 2 people. They were headed our direction, driving slowly along the wrack line—early morning beachcomb-

ers. It wouldn't be long, I thought, before they passed our position and moved close enough to scare off the 2 eagles. I left Scott in the vehicle to monitor activity at the set and jogged to the other vehicle. I explained briefly who we were and what we were up to and asked that they swing wide as they continued north. They introduced themselves: Joe DeLaCruz, Jr, and Annabelle Grover, partners in life and proud members of the Quinault Indian Nation. I recognized the DeLaCruz name immediately. Joe's late father and namesake, Joe DeLaCruz, was respected by tribes throughout



Figure 3. The field team (left to right) that was involved in the capture and monitoring of select wild birds: Glenn Johnson (Hamer Environmental), Dan Varland (Coastal Raptors), David Ness (Hamer Environmental), and Scott Ford (Avian Specialty Veterinary Services). Photo: Joe DeLaCruz, Jr.

North America for his service to native peoples. He served 22 years as Quinault tribal president and 4 years as president of the National Congress of American Indians.

This particular morning, Joe and Annabelle were up early looking for eagle feathers caught in the wrack line for use by Annabelle in artwork she gives to family and friends. Our trapping area was an integral and historic part of Quinault lands. Quinault Indians use these lands for traditional activities, including feather collection. These land use rights were recognized by the Treaty of Olympia in 1856. Joe and Annabelle were happy to comply with my request, promising to keep well away from the set as they headed north.

As I started back to Scott's vehicle, I heard the net launcher fire. I could see the adult eagle struggling under the net; the younger eagle had been displaced by this more dominant adult, and so it was missed as the net dropped. Scott, who had triggered the launcher, started his vehicle and drove toward the scene. I jogged behind. Joe and

Annabelle heard the net launcher's boom and they circled back, joining us at the trap site.

As I approached the net, I could see that this eagle looked small. As with most raptors, male bald eagles are smaller than females. Two measurements, hallux claw and bill depth (Fig 4), would later confirm that my assumption was correct—we had captured a male. While our eagle was still under the net, we fit him with a hood to keep him calm. Cloth boots were pulled over his feet and secured with Velcro to protect us from his powerful grasp and sharp talons. The process of removing him from the net, obtaining tissue samples, measuring, weighing, and banding lasted about an hour. With his vision blocked by the hood, our eagle remained calm through the process.

We applied a US Geological Survey (USGS) band on one leg and a green visual identification with the letters K/O on the other (Fig 5). Banding allows individual identification. Measuring 2 cm tall, the code on this eagle-sized visual identification band can be read with a spotting scope 50–100



Figure 4. We used 2 measurements, bill depth (left) and hallux claw (right), to sex bald eagles captured for our research (see Bortolotti 1984: *J Wildl Manag* 48:72–81). Photos: Phil Seu.



Figure 5. The bands placed on the eagle K/O before release. The bird was captured as part of a program to monitor the health of bald eagle populations. Photo: Dan Varland.



Figure 6. Quinault Indian Nation members Joe DeLaCruz, Jr, and Annabelle Grover with our captured eagle, K/O, just before release. Photos: Dan Varland.

m away, allowing for recognition without recapture or recovery of the bird dead. The silver USGS band was uniquely numbered, 629-51965, and included the USGS Bird Banding Lab phone number, 1-800-327-BAND, and address, Bird Band, Laurel, MD 20808, USA.

Joe and Annabelle patiently watched the process. When it was time to release the bird, I asked if they might want to take a moment to hold K/O. Both jumped at the chance (Fig 6). It was an unforgettable experience for them. Joe placed a hand on the eagle's chest and said, "I can feel his heart beating." More than 2 years later I spoke with Annabelle. She said, "Holding that eagle has been one of the best experiences of my life." The eagle is a sacred, integral part of their culture. After K/O was released, Joe pulled from his vehicle a canoe paddle he had carved, the top of which sported an eagle design (Fig 7).

For our avian scavenger study, Coastal Raptors has spent more than 100 days afield, capturing 27

bald eagles, 30 turkey vultures, and 7 common ravens. We have had many unforgettable experiences. Over the years, many individuals have volunteered to help with Coastal Raptors' research projects. Each takes away their own special memories. Often folks like Joe and Annabelle happen upon us, allowing us to share our passion for raptors with others. Some rewards to scientific research cannot be measured by science.

Acknowledgments: I thank Coastal Raptors' project partners in the research effort described herein: Hamer Environmental, Mount Vernon, WA; the USGS Forest and Rangeland Ecosystem Science Center, Corvallis, OR; and Avian Veterinary Specialty Services, Milwaukee, WI. I thank Susan Varland, Virginia Molenaar, and Scott Ford for providing helpful comments and edits on this report, and Joshua Benton for creating the study area map. For conducting laboratory tests for avian pathogens at little cost to Coastal Raptors, I am extremely grateful to Dr Bob Dahlhausen,



Figure 7. After bald eagle K/O was released, Joe DeLaCruz, Jr, shared with us a canoe paddle he carved showing an eagle. Photos: Dan Varland.

Veterinary Molecular Diagnostics, Inc, Milford, OH, and to Dr Kristy Pabilonia, College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins, CO.

Editor's (Scott Ford's) Comment

It is experiences like this, where citizens have direct contact with wildlife and biologists or other trustees conducting their work, that help guarantee the future of research, conservation, and a healthy environment. Coastal Raptors reaches out to people through public presentations and through engaging volunteers in hands-on participation with

fieldwork. Public interface makes environmental issues more "real" to those (the taxpayers) that, in essence, provide funding for research grants and the political pressure to make environmental policy change. There are many grassroots research and conservation organizations across America. For more information on the nonprofit Coastal Raptors, visit their website at www.coastalraptors.org. If you are interested in supporting Coastal Raptors, please consider a donation. To explore other ways to participate or contribute, contact Dr Varland.