Smith and Bybee Lakes Botulism Outbreak

by Lacy Campbell, WCC Operations Manager

On September 4, 2012, one of our regular Wildlife Care Center volunteers was kayaking on Smith Lake by herself. It was a beautiful, sunny summer day and the lake was full of wildlife. American White Pelicans were flocked together next to groups of American Coots and Green-winged Teals. Once she reached the opposite shore, she was met with a gruesome scene: dozens of dead and dying waterfowl. Scrambling in the calf-deep mud she tried to retrieve as many as she could but it was slow going. In the end she brought 3 Mallards into the Wildlife Care Center; 2 died during transport and the other died later that day. Our Wildlife Veterinarian thought these deaths suspicious and immediately called Metro, which manages Smith and Bybee Wetlands Natural Area, to report what was found. Then we sent the freshest carcass to OSU for testing to find out what was killing so many birds. The initial thought was Type C Avian Botulism, though we didn't rule out other potential diseases or toxins.

Two days later more birds started coming in, at first just 2 or 3 a day but quickly rising to 25 to 30 each day. As of this publication over 135 birds have come in and more are coming every day. It was confirmed by Oregon Department of Fish and Wildlife (ODFW) that the birds contracted Type C Avian Botulism. Type C Avian Botulism **does not affect humans** and occurs naturally in the wild, but only under a perfect storm of conditions does it become a problem. When you have many warm days and a large, stagnant, shallow body of water with a lot of decaying organic matter, the anaerobic bacteria *Clostridium botulinum* proliferates and produces the Botulism toxin. Maggots will concentrate the toxin because it doesn't harm them and then the maggots are ingested by birds. When a bird contracts Botulism the first thing that happens is their legs become paralyzed and they can't fly away, and then they can't hold their head up. At this stage, some birds die from drowning, or they die of suffocation when their lungs eventually become paralyzed. Those birds will then be food for the maggots, and the cycle continues. This is why Botulism is so hard to contain: you must remove all the animal carcasses before they have a chance to spread the toxin.

Over 90 birds have been returned to nature, thanks to the dedication of a diverse group of rescuers. © Lacy Campbell

The treatment for Botulism is supportive care. This includes administering fluids when the animal comes in and then starting them on a scheduled tube-feeding 3 times a day. At the height of this outbreak the Wildlife Care Center was feeding almost 90 birds 3 times a day. We called in extra staff and 3 extra volunteers a day to help with everything. We would start feedings around 8:00 in the morning and wouldn't finish until 4:00 p.m.

Rehabilitated ducks are banded before releasing them back into the wild. © Lacy Campbell

On September 25th I went out to Smith Lake to transport 30 birds with Botulism back to the Wildlife Care Center. I didn't know what to expect. I had seen all these animals come in and had dealt with small Botulism outbreaks before at another facility I worked at previously. Was I going to walk up to the lake and find dozens of dead birds piled up for burial? Would the scene be chaotic? My first thought when I got to the lake after crossing neon-yellow CAUTION tape was how pretty it was out there. I found that at the lake's edge Dr. Julia Burco, ODFW district wildlife veterinarian, and some of her students had constructed a mobile clinic: fluid bags hanging from branches and a modified tool box with syringes, catheters, alcohol swabs, and euthanasia solution. Next I noticed a small corral someone had made out of sticks for several birds of different species, all paralyzed and placed next to each other. They were in the process of administering fluids and giving exams. I immediately started helping where I could. I realized then that I had only seen part of this disaster and that I would really like to help them, to go out in the canoes and hip waders and pick up carcasses and try to find live animals.

On September 27th I used my day off to volunteer with Metro. Again, I didn't know what to expect. I knew that I would need to canoe to a spot, get out, and scan the shoreline. That I could do. The thing I wasn't expecting was how deep the mud was. It was tough work! I and another volunteer canoed over a mile across the lake to a spot that hadn't been scanned yet. Then we both got out into the calf-deep mud and, while dragging our canoe along behind us, began to pick up carcasses in various stages of decomposition. We retrieved 5 live birds in 6 hours. With 8 people working we brought 25 live birds to the Wildlife Care Center that day.

While Portlanders were enjoying an extended spell of dry weather, we were praying for rain. The only thing that would truly break the Botulism cycle was cold weather and rain to flush the lake. Metro, ODFW, and others worked valiantly at the lakes for more than 3 weeks collecting live birds and carcasses and removing beaver dams to allow the lake to drain — not an easy task, and the most intractable dam actually had to be removed using explosives. By the time the rains actually did arrive on October 12th, more than 130 live birds had been transferred to Audubon and more than 2,000 carcasses had been collected. Among the victims of this outbreak were Coots, Teal, Mallards, Shovelers, Pintails, Gadwalls, Great Blue Herons, Wood Ducks, Long-billed Dowitchers, Hooded Mergansers, and Lesser Yellowlegs.

To date, over 90 birds have been released back into the wild from this Botulism outbreak. It wouldn't have been possible without the hard work and dedication of everyone involved, from Portland Audubon's Wildlife Care Center staff and volunteers to the people at Metro and Oregon Department of Fish and Wildlife. I would like to say thank you to everyone for all they have done for these animals and others. Special thanks to former Audubon Wildlife Care Center Director and current Metro Monitoring Program Coordinator Katy Weil, who led the response efforts.

A Harbinger of Things to Come?

by Bob Sallinger

Botulism outbreaks are a natural occurrence, but the events at Smith and Bybee Lakes could be a harbinger of things to come. This event was precipitated by one of the longest dry spells on record in Portland. It demonstrates how changes in weather patterns can dramatically affect the ecology of our landscape. As the effects of climate change take root, one possibility is longer, drier, hotter summers that could result in more of these types of events. Smith and Bybee Lakes was particularly vulnerable because development has eliminated its surrounding floodplains and isolated it from the surrounding rivers, thus eliminating natural flushing mechanisms.

This event serves as a reminder that as we protect our urban wetlands and natural areas, we need to think carefully not only about how they function today but also how best to buffer them against the changes that are likely to occur in future decades. Strategies such as increasing protective buffers, protecting floodplains, and maintaining hydrologic connections are going to become more and more critical if we want our natural areas to continue to function.

continued from page 4

The extended construction period of the development scenario, coupled with fears about the effects of port development, may reduce property values on the island — particularly in areas that are near the proposed port and the Columbia River Crossing sites. Given the challenges of ownership of manufactured and floating homes discussed above, decreased property values could present a particular challenge to residents in these types of dwellings. These effects would be profound for groups of people who have difficulty relocating, such as families with children, people with low or fixed incomes, older adults, and people with disabilities. Declining property values could increase poverty on the island and/or spur displacement of current residents. (Health Analysis, page 47)

A Bad Deal for the economy, the community, and the environment

In the coming weeks we are likely to hear arguments from the Port and the City that after four years of public process it is simply time to move forward. That argument ignores the fact that most of those four years were spent avoiding rather than addressing legitimate public concerns regarding the impacts of this project on the community and the environment. Only now, four months after the community rejected an attempt by the Port and City to cut a backroom deal on annexation, are the facts really just beginning to emerge. Those facts indicate that approving the annexation of West Hayden Island for industrial development would be fundamentally at odds with the City's commitment to equity, the environment, and responsible, sustainable development. If the Council feels it necessary to reach a decision before January 1, 2013, then that decision should be to reject industrial development on West Hayden Island.

Nesting Bald Eagles will be among the animals displaced by development on West Hayden Island © Bob Sallinger

For up-to-date information on the WHI annexation process, "friend" our "Save West Hayden Island" Facebook page.

Citizen Science

At a time when we are changing the ecology of our planet at a rate previously unsurpassed, the observations of citizens play an invaluable role in helping us track, understand, and manage our local wildlife populations.

Here are a couple of ways to get involved as a Citizen Scientist. Go to **audubonportland.org/issues/get-involved/get-involved** for more information.

The **Great Backyard Bird Count** is a 4-day event in February that asks bird watchers nationwide to count birds. You can count for as little as 15 minutes on one day or for as long as you like on all 4 days. Go to **birdsource.org/gbbc** for more information including an online checklist.

Friends and Advocates of Urban Natural Areas (FAUNA) is an informal group of Portland-area individuals and grassroots organizations dedicated to protecting and restoring urban watersheds for fish, wildlife, and people, and more fully integrating our metro region's built and natural environments. You can sign up at **audubonportland.org/issues/get-involved/fauna_form**.