# WATER AND BIRDS IN THE ARID WEST: Q&A

## Why publish this report now?

Audubon's 2016-2020 Strategic Plan identified Water as a core priority and focused on landscapes where water scarcity and water quality are primary limiting factors for the survival of threatened and iconic birds in the Western Hemisphere. Audubon's Water Strategy engages Audubon's conservation, policy, and science teams and the Audubon network to influence water management decisions in order to balance the needs of birds and people living on or near habitats dependent on freshwater across the nation. Although Audubon has been a bird conservation leader in the West for decades, a more comprehensive scientific look into Western Water has been needed — in one place, and with an eye toward birds — to help guide our strategy moving forward.

## What geographic region does it cover?

Audubon's Western Water Initiative deliberately focused on landscapes in the West where water scarcity and water quality are the limiting factors for the survival of threatened and iconic bird species and focused on the two priority geographies of the Colorado River Basin and saline lakes.

## What bird habitats does the report cover?

The report looks at birds and Colorado River Basin riparian forests, the patches of deciduous forest that form along streams and rivers historically dominated by cottonwoods, willow, and mesquite. It also examines the relationships between birds, habitat, and the health of saline lakes, the landlocked waterbodies that have no outlets.

### Why are these habitats important?

Although riparian habitats account for less than 5% of the southwestern landscape, they support over 40% of all bird species found in the region and over 50% of breeding bird species. These include at least 400 unique species along the lower Colorado River. Collectively, saline lakes in the West support global populations of birds, including more than 99% of the North American population of Eared Grebes, up to 90% of Wilson's Phalaropes, and more than 50% of American Avocets.

## What research did the report draw on?

Audubon science staff collaborated with outside experts in hydrology, water chemistry, plant ecology, biochemistry, and ecotoxicology as well as ornithology in an extensive review of the scientific literature on birds, water, and climate change in the region. In addition, we synthesized regional bird data to assess impacts on birds in the region, and convened avian experts to deepen our shared understanding of the migratory movement of shorebirds and waterbirds among western saline lakes.

## What's the big takeaway for bird lovers?

Global and regional populations of birds that rely on rivers, wetlands, and saline lakes in the American West are in danger due to steep declines in habitat availability and quality. The report reinforces the importance of Audubon's work and investment in protecting these critical habitats. By clarifying regional threats as well as highlighting specific species of concern, it helps focus conservation work and investment in the future.

## How did you arrive on the species of focus?

All the species were chosen because they are riparian or saline lake specialists in the arid West. We wanted to represent the community by drilling down on a range of habitat/strata preferences as well as some generalists. They also reflect species of concern for Audubon's state programs as well as external partners (e.g., North American Bird Conservation Initiative, Western Hemisphere Shorebird Reserve Network, Joint Ventures, and BirdLife International's Important Bird Areas) whose science informed this report.

## Why do regional declines matter if global populations are stable?

Due to their sensitivity to ecological changes, birds are early indicators of ecosystem health. When a regional population of a species of bird is in decline, it bodes poorly for other wildlife and communities. Additionally, because shorebirds and waterbirds congregate in such large numbers at saline lakes, many of which are drying, they are particularly vulnerable to habitat decline. The future threats of additional water diversions and climate change are likely to worsen these problems.

## Could species not mentioned in the report also be in danger?

Certainly. Although the report cites more than 250 peer-reviewed articles, it is not exhaustive. Across the West, millions of birds from hundreds of species depend on riparian forests, wetlands, and saline lakes maintained by freshwater. In this report, Audubon has selected a subset of representative priority species.

## Why is it important that we start to consider and approach saline lakes as a network?

This is important because it guides our approach to conserving these habitats. Although we are and will continue restoring or maintaining saline lakes individually, it's imperative that we start to prioritize health across the network, because birds move among these sites throughout their life cycle. We need to think more holistically in terms of prioritizing the health of the network. We also need more science to better understand how changes at one lake or many lakes affect birds. That's something the Audubon science team will be working on in the coming years.

## This report has a lot of bad news – are there any examples of success?

Yes! And Audubon is leading the charge. We were and remain vocal champions of the U.S. Bureau of Reclamation's landmark System Conservation Pilot Program, for example. Launched in 2014 by major water users in western cities reliant on Colorado River water, the collaborative and voluntary program has achieved more than 60,000 acre feet in water savings that goes back to rivers through incentives to farmers for innovative agriculture irrigation systems and other projects. Another example is the landmark work in Colorado, where public and private entities partnered with the Governor of Colorado and other state leaders to create the first statewide Colorado Water Plan and Audubon is now working to ensure its implementation. It balances the needs for habitat and stream management with water security. That's the gold star – when we can marry the habitat needs with the human needs. We are looking for opportunities to replicate those processes and plans, and to develop a set of best practices to share.

For more specifics about the way proactive management is paying off in the Colorado River Basin, check out this additional Q&A with Jennifer Pitt.

## Water policy is incredibly complex. What can an individual bird lover do to support these habitats?

Everyone, regardless of where they live, can advocate for funding for water conservation programs in the arid West. As of summer 2017, for instance, we want the network to push for a fiscal year federal budget for 2018 that includes sufficient funds for drought relief, Colorado River system conservation, and WaterSMART grants. For the USDA's Natural Resources Conservation Service, we would like to see inclusions for watershed and flood prevention operations.

Many opportunities to advocate for sound management also arise at the state level. We want to encourage

members to sign up for advocacy alerts from our state offices so they can champion balanced solutions in their statehouses as well.

We need to work together to help birds and these habitats, because decision makers and people who manage water cannot help us protect birds if they cannot also protect the communities they serve. With Audubon's vast network, we can help point the way to solutions that work for birds and for people.

## The report notes how difficult it is to assess populations because we have limited data. What can be done to address that problem? Are there citizen science opportunities?

Getting complete and sufficient data was a central challenge to compiling this report. The science team will be working with leaders in science and technology to improve our understanding of both bird and habitat dynamics moving forward. One opportunity includes new technology – getting to the point where we can monitor birds and these habitats through remote sensing and other satellite technology. This is particularly important for saline lakes, where technologies could help us understand migratory connectivity and allow us to document and describe this network more fully and accurately.

Additionally, at places like the Salton Sea, Great Salt Lake, and other globally-significant Important Bird Areas (IBAs), volunteer bird surveys and monitoring can help to document the presence of species at specific sites as well as help scientists to understand the movement of birds. Audubon's state and field offices encourage these citizen science opportunities, often working in partnership with local Audubon chapters.

## How do the findings inform Audubon's Western Water strategy moving forward?

Auduboners have been working on these issues for years, even decades. Often, these efforts have been operating in limited geographic regions or were disconnected from one state to the next. Now, Audubon's Western Water team is working across the region for greater impact and to address the magnitude of what's happening with birds across a larger landscape.

By clarifying the trends across the region and identifying specific threats related to water usage and habitat, this report provides the foundation for conservation, restoration, and policy work moving forward.

## How does this report relate to Audubon's 2014 Climate & Birds Report?

Climate change poses a threat to birds: rising temperatures will shift or shrink the specific climatic ranges each species needs to thrive. That's what the 2014 Audubon Climate & Birds Report documented – and such changes could threaten species not highlighted here. But climate change also works to amplify existing threats. The hotter, drier climate of a warming world, for instance, exacerbates water shortages, intensifies drought, and alters habitat make-up – all of which threaten birds.