

D R O U G H T

Triage for Valley Refuges

Millions of southbound waterfowl, shrinking water resources: that's the dilemma confronting managers of California's National Wildlife Refuges and State Wildlife Areas faced with monumental drought. So far, San Francisco Bay's wetlands have been minimally affected, although long-term impacts are possible. The crunch is coming in the Sacramento and San Joaquin Valleys, the heart of the Pacific Flyway, where wintering grounds for ducks and geese depend on fresh water deliveries from the Central Valley Project that are subject to across-the-board cutbacks. Biologists anticipate record high numbers this season, and crowded wetlands raise the risk of disease. In the Sacramento Valley, the water needs of rice growers complicate the picture. Some California Department of Fish and Wildlife areas are opening the floodgates now, while water is still available. Elsewhere, US Fish and Wildlife Service planners are developing triage strategies that may limit public access. Beyond hoping El Niño delivers rain, long-term options are unclear.

The Bay's federal wetland refuges — San Pablo Bay in the north, Don Edwards in the south — are lucky. "We have the ocean," says San Pablo Bay refuge manager Don Brubaker. Eric Mruz at Don Edwards also sees little immediate effect. "It's hard to judge how the drought is affecting tidal marsh species, because our monitoring is at such a coarse level," Brubaker adds. Changes in salinity with reduced freshwater flushes may be a problem, and lower sediment loads from upstream may delay the buildup of the marsh plain in restoration sites—"but we're talking about something 70 years out."

It's different in the Valley. San Luis and Merced National Wildlife Refuges rely on CVP water. "We have 65 percent of our normal water allocation," explains Fish and Wildlife outdoor recreation planner Jack Sparks. "In practice, it's actually more like 50 percent." Sparks says his agency has some discretion over where the water goes: "With the reduced supply, we're looking at parts of the refuges that tend to hold water well because of soil conditions and will give us the biggest bang for the buck

for wildlife." The whole grasslands complex, including federal refuges, state wildlife areas, and private hunting preserves, attracts a million ducks and geese in a typical winter. San Joaquin River National Wildlife Refuge alone hosts most of the global population of Aleutian cackling geese, listed as endangered until 2001; restored habitat on the refuge aided their recovery.



Greater white-fronted geese.
Photo by Verne Nelson

In the Sacramento National Wildlife Refuge Complex (Sacramento, Delevan, Colusa and Sutter refuges), triage is also on the table. "Based on a 75 percent allocation for Sacramento, Delevan, and Colusa, we expect not to be able to flood some wetlands this fall," says assistant manager Chris Barr. "Those that will be flooded historically have had the highest quality habitat and best use by wintering waterfowl." Because of its lack of water delivery infrastructure, Sutter may remain dry except for a few units on the outside that can be flooded with purchased water from an irrigation district. That refuge is expected to be closed to hunters, and wildlife viewing opportunities will be limited. At least the complex has a reliable, if curtailed, water supply under existing contracts.

Keeping three million geese and a million ducks fed through a potentially dry winter will be a challenge. "The effect of the drought will be felt later in the season when the birds are getting ready to return to their breeding grounds," Barr continues. "With less food throughout the winter months, they may return in a weaker state"—and produce fewer goslings and ducklings. Refuge managers are also worried about crowding. In a normal year, waterfowl spread out

of the federal and state lands into winter-flooded rice fields. This year, though, fewer acres will be flooded after the rice harvest, concentrating the birds on remaining habitats. FWS plans to monitor the refuges closely for signs of avian botulism and cholera, diseases associated with crowded conditions.

Federal and state agencies are coordinating their response, but there are some differences in their approach. "Our strategy is to flood up early because we have the water allocation available now — use it while we have it," says California Department of Fish and Wildlife spokesperson Jason Holley. State Wildlife Areas in the Sacramento Valley like Gray Lodge and Upper Butte Basin are getting water now, about a month and a half ahead of schedule. Allocations for Gray Lodge will be cut by 25 percent. "We will be employing the most efficient water saving strategies we can that provide the highest benefit to wildlife," CDFW deputy director Dan Yparraguirre stated in a press release.

In a category of its own, the Cosumnes River Preserve is managed by a partnership between federal and state agencies with Ducks Unlimited and The Nature Conservancy. Its 2000 acres of managed wetlands draw 100,000 waterfowl in a typical year. "We'll attempt to flood up all our acreage," says wetlands manager Mariah Brumbaugh, who works for the Bureau of Land Management. In this front-loaded strategy, they've already started flooding but are not taking water from the usual source. The river is already dry; this year's water comes from sloughs feeding the Mokelumne. If the drought continues into next year, some wetland habitat may be converted to upland.

Everyone agrees this is the worst dry spell since the 1970s, with more demand for non-wildlife water uses. "We've been here before," Barr notes. "Our concern is over the long haul — how to plan for increased frequencies of severe drought as a result of climate change and how to be efficient with water management so it will be there for agriculture, fish, wildlife, and other beneficial uses." **JE**

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