

SOLAR DUCKS

CUTTING-EDGE RESEARCH PUTS SOLAR-POWERED TELEMETRY PACKS ON DUCKS

by **CLIFF FELDHEIM**, DEPARTMENT OF WATER RESOURCES

As the largest estuary on the Pacific Coast of North America, the San Francisco Bay Estuary is a critically important waterfowl wintering area with a long history of waterfowl hunting.

More than 50 percent of all the scaup and canvasback counted within the Pacific Flyway during the U.S. Fish and Wildlife Service Midwinter Survey occur in this estuary, which includes San Francisco, San Pablo and Suisun bays. And more than 57 percent of scaup in the estuary are found in the three Suisun sub-bays: Suisun, Grizzly and Honker.

Although the species composition in the estuary has changed dramatically since the early days of hunting, the hunting there is still good enough that within the last five years, Wildfowl Magazine and Delta Waterfowl cited the area as one of the best sea duck hunting destinations in North America. Finding an experienced and

knowledgeable hunting guide can lead to a hunt you will never forget.

However, several North American diving duck species – most notably scaup, canvasback and surf scoters – have shown declining trends over the past three to four decades. These declines, coupled with regulatory requirements to evaluate waterfowl food habitats within the Suisun Marsh, are driving cutting-edge research by a coalition of government and non-government agencies: the Suisun Marsh Waterfowl and Managed Wetland Research Program.

Little is known about the food quality, quantity and availability for waterfowl using the estuary and Suisun Marsh. Given the ongoing drought, diminishing freshwater flows and plans to restore tidal marshes, we need information so we know how projected habitat changes may

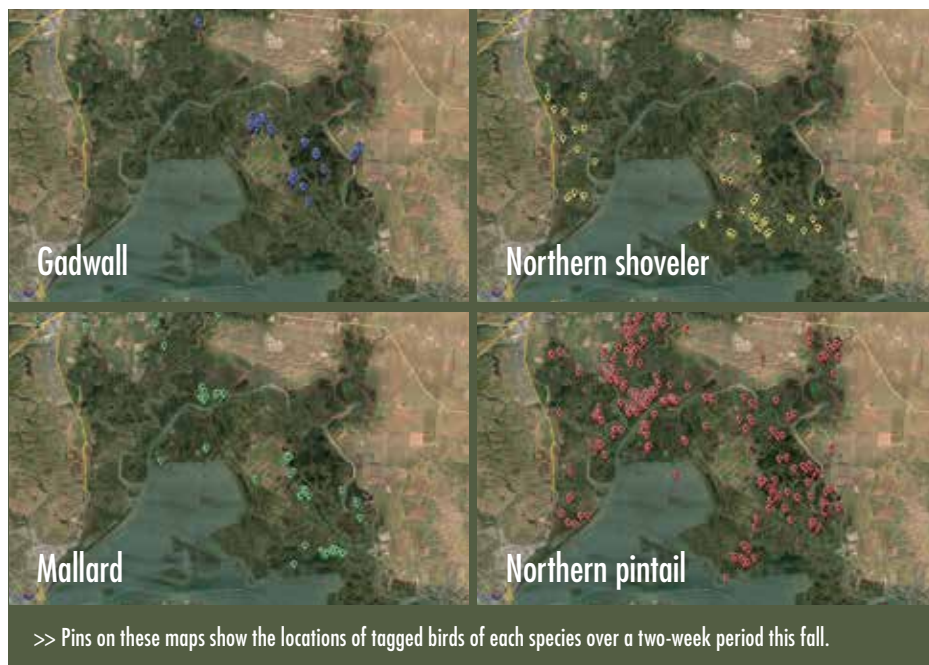


influence waterfowl, and how to better manage waterfowl food resources in the estuary and the managed wetlands in the Suisun Marsh.

The U.S. Geological Survey, California Department of Water Resources, California Waterfowl, Central Valley Joint Venture and San Francisco Bay Joint Venture are carrying out a multi-year telemetry study that began 2014. The first year of the planned 10-year study focused on evaluating cell phone tower and satellite telemetry methods for tracking dabbling ducks, as well as mallard and gadwall nesting ecology studies. This year, solar-powered telemetry packs have been attached to ducks' backs to track their movements and transmit location data to researchers via cellular networks or satellite.

In 2015-16, we are expanding the work to include diving duck use of the Suisun Marsh and the San Francisco Bay Estuary. Similar to the ongoing dabbling duck work, the primary goal of this work is to evaluate diving duck habitat use and movements using telemetry, while assessing the value of food types and different habitats for diving ducks using the Marsh and estuary.

This is more challenging with diving ducks than it is with dabblers because




diving deep under water tends to knock buoyant packs off the ducks' backs, so researchers are testing transmitters on scaup in dive tanks at the U.S. Geological Survey's Patuxent National Wildlife Research Center in Maryland. If this method is successful, it would revolutionize data collection for this hard-to-study guild of waterfowl by reducing holding time and stress to birds, lowering costs and greatly improving the quality and frequency of data collection. These transmitters can provide location data as frequently as every 30 minutes.

In the coming years, we will have transmitters on up to 13 species of waterfowl: northern pintail, wigeon, mallard, gadwall, northern shoveler, green-winged teal, cinnamon teal, canvasback, greater and lesser scaup, bufflehead, ruddy duck and surf scoter. Partners in the study have already tagged and released 79 ducks in Suisun Marsh, and are tracking their movements all over the state and beyond. Because these transmitters are powered by an attached solar panel, they may be active for a long time.

Nine birds with transmitters were shot by hunters during the first two weeks of the season, and we expected this. If you shoot one of these birds, please let us know. We'd like to know where you got the duck and whether it was flying alone or with other birds when you shot it. Please return the transmitter to us. In exchange for the recovered transmitter, which we will refurbish and put on another duck, we can provide you with a laminated map of the bird's previous travels and a non-functioning transmitter that you could use in a duck mount.

So keep your eyes open over the coming years. Although birds are being tagged in the Suisun Marsh and estuary, shortly after opening day this year, we had transmitter-tagged birds move from the Marsh to the Delevan National Wildlife Refuge, the Yolo Bypass Wildlife Area and the San Luis National Wildlife Refuge.

Whether you are lucky enough to shoot one or not, you can find program updates and movement maps online at www.werc.usgs.gov/suisunwaterfowl and www.water.ca.gov/suisun/.

Cliff Feldheim is the Suisun Marsh Program branch chief at the California Department of Water Resources, and he manages the Suisun Marsh Waterfowl and Managed Wetland Research Program. He can be reached at Cliff.Feldheim@water.ca.gov. 



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The exclusive **Ryer Island Duck and Fishing Club**, with 175 acres in a Conversation Easement of which, 120 acres are Prime Waterfowl Habitat and 55 acres are excellent Upland Game Bird Habitat. The club has 6 duck blinds and could work well as a corporate / family retreat or personal residence. Three bedrooms, 1 bath, kitchen and living room area with year around access. The property has excellent duck hunting, pheasants and striper fishing.

The **Westwind Duck and Fishing Club** is 350 Acres of Prime Wetlands on Grizzly Island in Suisun Marsh. This exclusive duck hunting lodge located on Montezuma Slough has 3 structures (main lodge has 7Bdrm/2.5BA, kitchen and comm. room w/ bar), a boat slip w/ access to 12 duck blinds.

The renowned **Teal Duck Club** with convenient access to the Bay Area consists of 509 acres on the West side of the Suisun Marsh. The historic 15-bedroom clubhouse has charmed many a hunter for more than a century. The club has 13 double blinds. Other structures include, relatively new caretaker's cottage, a sizeable garage/shop area and several small out buildings. The property has great hunting history.

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