The Suisun Marsh Waterfowl Research Project has been running a unique electronic tracking project on local breeding and overwintering waterfowl in the Suisun Marsh for the past 3 years. With many species suffering large decadal declines in numbers, it is essential to attempt to verify the causes of declines so we can develop effective and lasting solutions. Our goal is to understand how various species of ducks use the Marsh and surrounding regions so that we can determine how best to manage habitat and food resources to this end.

We deploy high accuracy GPS transmitters on both male and female Mallard, Gadwall, Pintail, Wigeon, Shoveler and Cinnamon teal which are remotely operable, solar charging and which send accurate location data to our website via the GSM cellular network. We have so far obtained around ¾ million positions on approximately 300 ducks in areas from Suisun to Louisiana and Alaska. We are currently analyzing the highest resolution data, which are locations every 30 minutes, across multiple days, weeks or months on non-breeding Mallard and Gadwall in the summer months and Pintail over the winter. The majority of our data have been collected in the Central Valley Joint Venture basin.

Although this project is still in its infancy we have some surprising results about the space these species use and how they move. Have you wondered if the ducks around your clubs are traveling great distances on a daily basis? Are they flying back and forth to the Delta or the Grasslands? How far apart are a ducks typical foraging and roosting areas?

Our preliminary results indicate that ducks move a lot less than we had expected. Most 30 minute movements were around 50-65 ft. In general, ducks used ap-
14th Annual SCF Shoot and Fundraiser

On July 28th, 74 shooters flocked to Birds Landing in support of the Suisun Conservation Fund’s (SCF) 14th Annual Fun Shoot and Social. After blowing some spider webs out of the shotgun barrels with a round of 50 sporting clays, attendees were treated to a delicious steak lunch, raffle, and auction. The shoot netted over $17,500 to support SRCD Marsh programs and activities.

Many thanks go to Jim Knoll (Wetland Construction) for sponsoring and preparing lunch, Bill Brush, Bud Tonnesen, Vince Morrow (North Bay Auto Auctions) and to all the volunteers who helped make the day go smoothly. Our sincere thanks go to the generous donors (listed below) and Suisun Marsh landowners who are the life blood of this tremendously successful event. We look forward to seeing you next year.

Donors:
For the 2017 Fall Flood Program the Solano County Mosquito Abatement District (SCMAD) will continue their 50% cost share for required mosquito abatement treatment to landowners meeting program requirements. The SRCD is very appreciative of SCMAD’s continued partnership and desire to reduce mosquito abatement costs to the landowner and ensure we can provide critical waterfowl habitat.

The SCMAD experienced a busy spring and early summer controlling mosquitoes due to the above average rainfall. The SCMAD anticipates an average fall flooding season for the Marsh and looks forward to partnering with duck club owners in minimizing mosquito production this season. SRCD encourages those landowners with adequate water control to consider flooding selected areas earlier than October 1, 2017. The goal of this action is to provide habitat for early migrating waterfowl and waterfowl displaced from wetland areas outside the Marsh.

Our desire to benefit waterfowl is in direct conflict with SCMAD policy encouraging landowners to delay flooding as long as possible so that shorter days with cooler temperatures can help minimize mosquito production and potential conflict with citizens in adjacent communities. If you wish to flood your property earlier than October 1, you will still be eligible for the cost share program provided that you get prior approval to flood from your SCMAD technician. If your property produces mosquitoes, must be chemically treated, and you have followed the procedures outlined below, the following assistance ratio will apply:

**SCMAD** – Will pay 50% of the Total Cost of Treatment
**Landowner** – Will pay 50% of the Total Cost of Treatment

The overall success of this program is dependent upon cooperation between landowners, SCMAD, and SRCD. It is important that you follow the steps listed below in order to qualify for cost share assistance:

1. Landowners must be current with SRCD Maintenance Permit and Program Support fees.
2. You must sign the 2017 waiver form and return it to SCMAD prior to initiation of flood-up.
3. SRCD and SCMAD must both be contacted at least 24 hours prior to opening any floodgates.
   If you do not notify both SRCD and SCMAD, you will be ineligible to participate in cost-share.

Landowners that do not take the steps above to help eliminate or reduce mosquito production **will be responsible for 100% of the cost of mosquito abatement on their property**. If you have followed the procedures above and still produce mosquitoes, you will receive an invoice from SRCD for 50% of the total cost of abatement which must be paid to SRCD within 25 days of abatement. If you do not pay the invoiced amount within 25 days, SCMAD will hold you responsible for 100% of the cost of abatement.

Here are the contact numbers of the SCMAD technicians and the SRCD Water Managers:

**SCMAD:**
- Main Office: (707) 437-1116
- Greg Williams (707) 695-8101
- Gary Dula (707) 695-8103
- Mike Gray (707) 695-8102

**SRCD:**
- Water Manager Office: (707) 426-2431
- Tim Edmunds (707) 639-6689
- Dean Podolsky (707) 631-0819
- Jeff Taylor (707) 639-6690
Nonlead Ammunition Requirements

Nonlead ammunition is now required for all hunting on CDFW wildlife areas and ecological reserves and when taking upland game birds with a shotgun, except for dove, quail, snipe and any game birds taken in licensed game bird clubs. In addition, non-lead shot is required when using a shotgun to take resident small game mammals, fur-bearing mammals, nongame mammals, nongame birds and any wildlife under the authority of a CDFW depredation permit. Although full implementation of the nonlead ammunition requirement for big game hunting does not go into effect until July 1, 2019, CDFW urges California hunters to start acquiring and practicing with non-lead ammo well before 2019.

A list of CDFW Ecological Reserves and Wildlife Areas of California can be found online at [https://www.wildlife.ca.gov/Lands/Places-to-Visit](https://www.wildlife.ca.gov/Lands/Places-to-Visit); a list of Certified Nonlead Ammunition Manufactures can be found online at [https://www.wildlife.ca.gov/Hunting/Nonlead-Ammunition/Certified](https://www.wildlife.ca.gov/Hunting/Nonlead-Ammunition/Certified).

Recent Robberies and How to Protect Yourself

SRCD Staff

In mid-July, at least three duck hunting clubs on Van Sickle Island were robbed. It is understood that a wide-range of items were stolen, including an assortment of household goods, food & wine, rifles, an ATV, an Argo and even an excavator belonging to a DWR contractor working along Roaring River. A male and a female suspect were arrested near DFW Headquarters after a large Penske moving truck was seen outside of one of the clubs. This uncharacteristic behavior was seen for what it was and the Solano County Sheriff was called. Multiple units were called out and the truck was pulled over at Headquarters where both the driver and passenger were taken out of the truck at gun point. Apparently several other arrests have been made in conjunction with this incident.

While the Solano County Sheriff deputies were quick to respond, the situation could have been different if the person who saw the truck did not question the presence of it. Granted it was with the knowledge that several break-ins had already occurred, but vigilance and awareness paid off in this case.

Our Marsh is not a high-priority patrol area for the Sheriff’s Department so it is important that we pay attention, know our neighbors and ‘if you see something, say something’. There are numerous wi-fi enabled camera monitoring systems on the market today, many of which send an image instantly to your smartphone; consider investing in one if you haven’t already.

A few weeks afterward, a trespasser was reported on private property south of Roaring River. The person, riding a bike and acting suspicious around a boathouse, was approached and asked to leave. After failing to comply and riding toward a neighboring club, the Solano County Sheriff was called and deputies responded immediately. The person was detained, removed from the island and released.

The deputies suggested that landowners may want to take the opportunity to place more signage around their properties. In regard to the number and placement of the signs, California Fish & Game Code 2016 states the following: “Place signs of any size and wording forbidding trespass or hunting or both displayed along all exterior boundaries of the land, at intervals not less than three to the mile, and at all roads and trails entering the land, including land temporarily inundated by water flowing outside the established banks of a river, stream, slough, or other waterway, which fairly advise a person about to enter the land that the use of the land is so restricted.”
proximately 4-5 separately identifiable areas covering a total space of 9.4-12.3 acres in 24 hours. Interestingly, one third of these areas were only used for 1-1.5 hours or less and the dispersal to these new areas for such short durations is likely indicative of the levels of disturbance these species experience.

Male and female Mallards do not differ greatly in the way they move around but Gadwall generally seem to avoid moving longer distances, traveling about 40% less than Mallards (e.g. 3.2 vs. 4.1 miles) in a day. This is mainly because the areas Gadwall use are about 1km apart where Mallards fly 1.5km when switching to a new area.

Pintail males tend to be more sedentary than females, remaining in areas of use for approximately 8 ½ hours - 2 hours longer than females. This is primarily because females get flushed more readily from their areas which means they use more areas per day (5.6 vs. 4.1). Those areas were one third the size of the males' areas (but were only 1.2 miles apart while the males traveled 2.5km when switching to a new area. Males and females also respond differently to hunting season activity. Interestingly, while males become more sedentary outside the hunting season, females do not and were more frequently disturbed from any foraging or roosting area during the non-hunting season.

The results from this study will inform managers aiming to optimize habitat such as where and when to flood-up, seed production to meet energetic requirements and the juxtaposition of sanctuary and hunted areas. By knowing where ducks go, and that they move significantly less than expected, we can identify and conserve critical resources, and promote a broad mosaic of habitat. This will enhance and progress waterfowl conservation and ultimately attract larger nesting and wintering waterfowl populations to the Suisun Marsh.
Since March of this year, DWR has been working endlessly on repairing the severe damage the Roaring River Distribution System (RRDS) endured during the flooding at the beginning of the year. We were able to bring in a contractor to begin fixing miles of erosion, and sections of the northern and southern embankments that were washed out and on the verge of breaching. Our crews worked long days for months on end hauling in rock and fill to slowly build back up what was washed away. We pushed our crews to have the entire 17 mile stretch of embankments fully repaired and passable by the end of July.

We are proud to say our contractor finished this work the second week of July, just in time to allow landowners along the system to prepare for the upcoming flood-up and waterfowl season. All roads are passable and all gates have been fixed.