

## **2018 Lake Puckaway Endangered and Threatened Species Monitoring Project Final Report to the Lake Puckaway Protection and Rehabilitation District**

For the 9th consecutive year, endangered and threatened water-bird species were monitored from spring arrival dates to fledging dates for those nesting in the Lake Puckaway proper. Endangered species monitored included Black, Caspian, Common and Forster's Terns. Threatened species included Great Egrets. Because of on-going management programs for Common and Forster's Terns, the emphasis was directed to these two endangered species. Black Terns were also intensively monitored in 2017 and checked on in 2018. Nesting site protocols were changed in 2016 and continued in 2018 due to the increasing numbers of nesting pairs of Forster's and Common Terns, to minimize human disturbance at the two sites.

**May 7:** With a cold, snowy and rainy spring, water levels were very high. Returning Forster's Terns found their nesting site at Pancake Island totally under water. 38 Great Egrets began to nest-build on the few remaining trees on the Dredgebank with 6 nests completed but the willows were under water. 33 Egrets were clinging to a few trees on Pancake Island and Forster's terns were scattered everywhere.

**June 1:** Very high water levels continued and Forster's Terns began to disperse to other areas with about 20 adults loafing in the eastern marsh and 4 pairs attempting to nest on old muskrat huts. Common Terns had begun to nest with 55 adults, 29 nests and 63 eggs on the east raft. The west raft had 20 adults with 8 new nest scrapes. It appeared that their first nesting attempts were predated by Turnstones. They will likely re-nest now that the Turnstones have moved north. Only 9 Great Egrets remained from the 71 seen in early May but all were on nests on the Dredgebank. 25 Black Terns were beginning to nest at their traditional colony site in the east bay.

**June 19:** With water levels finally receding, I did a check of Pancake Island hoping that some lingering Forster's Terns would start nesting. To my surprise, an estimated 400 adults flushed from the emerging river bulrush and mud flats. I proceeded to do a nest count with the following results: 142 nests with 259 eggs. Most nests had one or two eggs, and 20 had none, so it's probable that at least 150 more eggs would be laid. Many nests were less than an inch above water. Any rain the next few days would certainly wash most of the eggs away. The West Common Tern Raft now had 7 nests with 12 eggs and more expected. The East Raft had 31 nests, several with 1 to 3 day-old chicks.

**June 28:** Heavy rains following the June 19 survey caused about half of the Forster's Tern nests to wash away. Fortunately, most of the birds are attempting a re-nest. Those that had nests on higher ground were busy feeding chicks. The East Common Tern Raft now had 54 chicks and 3 nests with 8 eggs. DNR Avian Ecologist Sumner Matteson and I banded 22 of the larger chicks. The West Raft had 7 nests with 17 eggs and no chicks.

**July 5:** We decided to do another banding before the East Raft Common Tern chicks flew the coop. 31 chicks were banded. Four nests with 10 eggs remained. Nine eggs hatched on the West Raft, but most of the chicks were too small to band. Four nests with 11 eggs remained. 19 Great Egret adults were observed on the Dredgebank 8 nests and 11 chicks. Forster's Terns were still egg-laying on Pancake Island with several adults now feeding fledglings. Caspian Terns were beginning to show up on the Dredgebank.

**July 17:** We banded 12 chicks on the West Raft. One nest with 3 eggs was still being incubated. The East Raft still had 18 chicks (all previously banded) and 3 nests with 8 eggs. Several fledged Common Tern chicks were loafing on the Dredgebank and being fed by adults, as were at least a dozen Forster's Tern chicks. The Pancake Island terns were still incubating eggs. A flush count of adults revealed close to 400 adults, indicated that most if not all of the pairs re-nested.

**August 6:** Our final banding day today with 2 chicks banded on the West Raft and 4 on the East Raft. One nest with 2 eggs on the East Raft was still being incubated so will be checked one more time in mid-August. Forster's Terns were still busy feeding chicks on Pancake Island. The Great Egret chicks had now fledged. Large numbers of American White Pelicans and Caspian Terns have arrived, signaling the end of the summer breeding season.

**August 15:** The nest with two eggs was abandoned. Each raft held one banded chick; one about 14 days old the other about 18. Both should fledge by the end of the month. Forster's Tern fledglings were everywhere. A count of the birds on the Dredgebank revealed 117 Forster's Tern chicks, 62 banded Common Tern chicks and 20 banded adult Common Terns. 8 Black Tern chicks were also observed along with 13 adult Caspian Terns. Adult Forster's Terns were still feeding chicks on Pancake Island.

### **Summary:**

There's an old saying that goes: "It isn't how your start that matters.....it's how you finish." That certainly sums up a breeding season that looked pretty bleak in May with the state's largest Forster's Tern colony site completely under water for the second season in a row. But unlike 2017, the birds held strong and pulled off what will most likely be the largest number of Forster's Terns fledged from Pancake Island since the project began in 1985. This is great news coming on the heels of a disastrous season in 2017. Pancake Island is far and away the largest Forster's Tern colony in the state. And Lake Puckaway also remains the second largest Common Tern colony in Wisconsin. But not all the news was good. The very low recruitment of Great Egrets fledging less than 20 chicks is a big blow to the central population of this magnificent and threatened bird. Two consecutive years of very high water has reeked havoc with Egret habitat on the Dredgebank Island and Pancake Island. Only time will tell what the future holds for nesting egrets in the Lake Puckaway proper. Two straight years of cold, wet springs has also caused Ruddy Turnstones to linger on Lake Puckaway. These stunningly beautiful shorebirds are great to see, but are key predators on tern eggs. They also have great memories and will most likely be an issue in the future during spring migration. Hopefully the terns on the West

Raft will learn how to fight them off as they have done on the East Raft. On the plus side, egg predation on the rafts only seems to be occurring early in the nesting season, allowing the terns to re-nest. However, re-nests aren't always as successful as the initial nesting would be.

### **Recommendations:**

Due to the great success of the Common Tern Raft project, continuation of the program is highly recommended. I would also suggest that the Lake District seriously consider adding a third raft. 273 Common Tern chicks have been fledged from the rafts over the past five years. It is likely that some of these birds will return to nest at Lake Puckaway and that a third raft will accommodate these first-time nesters. During banding, we have noticed that several adults are wearing bands. These could possibly be birds that hatched at the beginning of the project.

As water levels go, so goes Forster's Tern nesting success. Flooding is always a problem for these birds that nest very close to the water. Although they will often delay nesting until water levels recede, we saw in 2017 that at some point they simply will not nest. Supplementing habitat with artificial nesting platforms has proven very successful for Forster's Terns. Strategic placement of platforms would assure that at least some recruitment would take place annually in spite of water levels since the platforms would rise and fall with the water table. Platforms would be placed in emergent vegetation so would not be a hazard to navigation. I would be willing to oversee a Forster's Tern nesting platform project on Lake Puckaway in 2019 with permission, of course, from the Lake District. This would include recognizing viable sites, procuring and placing platforms and retrieving platforms at season's end. Cost for this project would be \$700 per year which would be added to my current waterbird monitoring contract of \$1,000. If the Lake District is agreeable to this proposal, I would appreciate a response as soon as possible so that I can order the platforms and line up two avian ecology students to assist with the project.

As always, I would like to thank the LPPRD for their partnership in these programs over these many years and hope that it will continue to do so into the future.

Respectfully submitted,

Daryl Christensen  
Water bird monitor, 2018

