

2017 Lake Puckaway Endangered and Threatened Species Monitoring Project Final Report to the Lake Puckaway Protection and Rehabilitation District

For the 8th 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.

Nesting site protocols were changed for 2016 and continued in 2017 due to the increasing numbers of nesting pairs of Forster's and Common Terns, to minimize human disturbance at the two sites.

April 29: With a cold and rainy spring water levels were very high. Returning Forster's Terns found their nesting site at Pancake Island totally under water. Great Egrets began to nest-build on the few remaining trees on the Dredgebank, but the willows were under water.

May 16: Very high water levels continued and Forster's Terns began to disperse to other areas of the state, with about 100 adults loafing in the eastern marsh and a few attempting to nest on old muskrat huts. Common Terns began to arrive but no evidence of nesting was found.

May 30: A check of Pancake Island found only 3 Forster's Tern nests which were only a few inches of water from flooding out. 3 more nests were found on muskrat huts in the eastern marsh. These most likely will not survive predation as the site is connected to high ground. 10 Great Egret nests were counted on Pancake Island, with all birds incubating so were not disturbed. In addition, 13 Egret nests were occupied on the Dredgebank. Common Tern Raft #1 had one nest with 1 egg. The raft was covered with a large flock of Dunlins and Ruddy Turnstones were pecking open the tern eggs. The very late spring allowed these birds to linger longer than normal. Raft # 2 had 6 nests, but Turnstones were also present on this raft. However, the terns seemed to be defending their nests very well. I also surveyed nearby Hope Marsh and found 92 Forster's Terns nesting. This site has always been an alternate nesting site for Puckaway terns when Pancake Island is under water in late May.

June 1: I surveyed two Black Tern Colony sites on the west end of the lake with very discouraging results. Only one pair was found at a site that had 12 nests in 2014. The second site had no nests. This site had 6 nests in 2014. I then surveyed 3 other sites on the west end with much better results with 12 nests total which was similar to 2014. I then checked two colony sites on the east end and found 14 adults with 7 nests, down from a count of 34 adults and 17 nests in 2014. However, I found a new colony nearby that had 8 adults and 4 nests. These could have been birds that split from the other two colonies surveyed in 2014. But even with these birds included, the east count was still down significantly.

June 2: Only four days after surveying the tern rafts, I decided to check on the Common Tern situation. Warmer weather and south winds caused the Dunlins and Turnstones to head north and the Common Terns began to nest in earnest. Raft #1 had 31 adults with 10 nests and 20 eggs, while Raft #2 had 28 adults with 6 nests and 14 eggs. Water levels at Pancake Island were still very high but receding.

June 12: Common Tern Raft #1 now had 17 nests with 36 eggs and 3 additional nest scrapes. Raft #2 had 13 nests with 31 eggs and 3 scrapes. A total count of adult Common Terns was 55. Forster's Terns were nesting on Pancake Island in larger numbers. Because of the Great Egrets feeding chicks, I decided not to disturb the terns, but saw 8 adults bringing in minnows to feed their young. At one point, the terns flushed and I had a quick count of 70 Forster's Terns. Pancake had 15 Egret nests with 6 visible chicks. There was also a pod of Pelicans on the north end of the island. I flushed these birds and walked in to where they were loafing and no nests, eggs or chicks were found. The Dredgebank had 19 Egret nests with all adults incubating.

July 7: Raft #1 now has 24 chicks and 3 nests with 6 eggs. Raft #2 has 22 chicks and 3 nests with 7 eggs. These were estimates as chicks were running everywhere. So as not to disturb the chicks which varied in age from one-day-old to 10 days old, I did not enter the rafts for a more complete count. I checked Pancake Island and found only 9 Forster's Terns. 36 adult Egrets with 7 fledglings were present as well as 62 Pelicans. The Dredgebank had a very early juvenile Caspian Tern along with 27 adult Egrets and 14 fledglings.

July 12: I returned with avian ecologist Sumner Matteson to band the Common Tern chicks. We banded 26 chicks on Raft #1 and counted 11 eggs. We then banded 31 chicks on Raft #2 and counted 15 eggs, for a total of 57 chicks banded and 26 eggs remaining to hatch. Since 13 of these eggs had been laid in only the past 5 days, we suspected nest failures had caused these birds to do a re-nest. Although encouraged by 26 eggs, we expected a low hatch rate at such a late date.

July 28: Only 7 of the 11 eggs on Raft #1 had hatched with 7 un-banded chicks observed. There was also 3 nests with 2 eggs each, but only one of them was being incubated. All of the previously abandoned chicks had fledged with many of them loafing and being fed by adults on the Dredgebank. Raft #2 had one banded chick, but no hatchlings were observed and no eggs were present. I suspected egg loss had occurred due to gale force winds rolling the eggs to the far end of the raft. I then found 18 fledged Forster's Terns on Pancake Island as well as 27 adult Egrets with 8 chicks.

Aug. 1: Matteson and I returned to band the 7 chicks on Raft #1, but only 6 chicks were found. To our surprise however, we found two very small chicks on Raft #2. Evidently there was a nest with two eggs that was hidden in the vegetation that hatched since July 28. There was also a nest with two warm eggs on Raft #2. We suspected a failure would occur for this nest but I would check in a couple of weeks to make sure.

Aug. 25: I checked Raft #2 and found two large chicks that were being fed by their parents and guarded by other adults. Matteson drove up and we banded the two chicks. We also counted 16 Caspian Terns on the Dredgebank.

Summary: In spite of a late start, gale-force winds and predation by Turnstones, nesting success on the two Common Tern rafts proved very successful with the banding of 67 chicks making Lake Puckaway still the 2nd largest colony in the state. A drop in Black Tern numbers reflects a downward trend at other local sites with the exception of increased numbers at Grand River SWA. Statewide, nationwide and globally the Black Tern has been steadily declining over the past 40 years. In 2016, Lake Puckaway had the largest Forster's Colony in the state. Abnormally high water levels on the lake in 2017 resulted only a few chicks being fledged. Fortunately, these birds are long-lived and site-faithful and high recruitment will continue to occur if water levels stay normal during their nesting season. Great Egrets did well in spite of some habitat loss, crowding onto the few trees remaining on the Dredgebank.

Recommendations: The Common Tern raft project should continue. Based on an almost even split in nest numbers on both rafts, it appears that Common Tern pairs have pretty much maxed out the rafts. The only way to increase production would be to add an additional raft which can be added to the existing site area.

Forster's Terns will return to their historic site at Pancake Island in 2018. Hopefully, water levels will remain at normal pool for them. High water at other state sites this year also resulted in poor or no recruitment. As an endangered species, this bird can ill afford another poor nesting season.

Although Black Tern nest numbers dropped from 2014, there is plenty of nesting habitat available for these birds. Predation is more of an issue with Black Terns than with Forster's or Common Terns since they nest in areas vulnerable to mink and raccoons. That said, they more easily adjust to fluctuating water levels than Forster's Terns using several varieties of habitat. Management projects for Black Terns have shown mixed results. But decreasing numbers over the past four years at Lake Puckaway is a concern. This bird should be monitored several years in a row to see if nesting success is variable or if it continues to decline.

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,

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Water bird monitor, 2017

