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Back cover photo: Although this species gets little respect and tends to be overlooked (even in species accounts and tallies), breeding Coots in Indiana are always an entertaining find.
American Coot juvenile, 27 June Grant St. Marsh, *Lake* Photo by Michael Topp

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Survey and Management of Interior Least Terns in Indiana - 2014

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Executive Summary

This summer the Midwest received more than adequate rainfall with the rivers being in a state of high water until early July. There was little Least Tern nesting habitat present on the sand bars and islands of both the Wabash and the Ohio Rivers. The weather was also unseasonably cool.

Prior to the Least Tern nesting season in 2014, the U.S. Fish and Wildlife Service made their usual preparations to attract Least Terns to the Cane Ridge Tern Pond (CR) located in Gibson County, Indiana. Providing adequate water to the Cane Ridge site continued to be a challenge. The main pump went down late in the season and no auxiliary pump was used. There was never enough water at Tern Bar Slough (TBS) managed by the Indiana Division of Fish and Wildlife to adequately protect the islands due to a blockage in the supply line. In early May, Least Tern decoys were deployed on the north island but no Least Tern nesting occurred.

On Duke Energy property, attraction methods were used only at the end of the Splitter Dike (SD) in the Gibson Cooling Pond (GCP). Human access was restricted to all of the former nest sites and the areas were checked at least twice a week for Least Tern use. Efforts were made to discourage Least Tern nesting on Phase 1 of the East Ash Pond Complex. Phase 1 was being capped and sealed with soil. There was a lot of human and machine presence. The only nesting occurred on Phase 2 well out of the boundary of the work area. Least Terns used the Splitter Dike with four distinct nesting colonies.

No nesting was detected at Ben's Spot, which is on private land near the Wabash River in Gibson County. The Wabash River was not checked for nesting because of high water until after the normal nesting season.

During 2014, Least Terns were first seen 7 May at Cane Ridge and were last detected on 2 September at AEP. There were an estimated 135 nests located in the CR-GCP complex with 87 first nesting attempts and 48 later attempts. There was a peak of 210 adults noted on 25 June. The total estimate of fledglings produced was 150. About 80 chicks were fledged on the Splitter Dike, where as many as 115 adults and 75 nests were found. At Phase 2, 30 adults and 20 nests were recorded. There were 20 possible fledglings. The 65 adults at Cane Ridge produced an estimated 50 fledglings from 40 nests.

Terns nested successfully on the dikes at the ash ponds south of the AEP Power Plant near Rockport, Indiana, for the twelfth year. Twenty-five nests were noted with a maximum of 30 adults present. Seventeen chicks were estimated to have fledged. There was no breeding activity on the sandbar island in the Ohio River.

Least Terns nested for the second year at Goose Pond near Linton, Indiana. A max of 4 adults produced 1 nest (it was a first nesting attempt) and three chicks. No fledglings were seen. Nesting occurred on private property north of Francisco on the shoreline of a final cut pond in the Wheeling Bottoms for the first time. A maximum of 30 adults produced at least 15 fledglings. There were approximately 14 nests at this site.

The total estimates for all sites known in Indiana during 2014 was a peak of 274 adults, approximately 175 nests (105 first nest attempts and 70 second nest attempts), and about 182 fledglings. The number of nests and fledglings represents a very conservative count.

Objectives

Survey, monitor, protect, and manage Least Tern nesting colonies in southwestern Indiana.

Introduction

The Interior Least Tern breeds on exposed sand, shell, and gravel islands of the Mississippi River and its major tributaries. (Bent 1921, Hardy 1957, Ducey 1981). Breeding Least Terns occupy ephemeral breeding sites that are dependent on regular scouring by high water to eliminate encroaching vegetation. Human use and modification of the same sites have resulted in extensive loss of breeding habitat for the Interior Least Tern. (Downing 1980, Ducey 1981). Some examples of this are recreational use, dam building, and channelization.

Breeding Least Terns are currently restricted to remnant locations within what was a much larger historic range. Fewer than 5000 adults were surveyed in 1988 by Sidle et al. (1988). Based on a compilation of data from both published and unpublished surveys, Kirsch and Sidle (1999) estimated that the numbers of Interior Least Tern adults increased to 7000. Most of this increase was limited to the colonies on the lower Mississippi River. Interior Least Terns no longer nest on most tributaries of the lower Mississippi. Over half of all the breeding by Interior Least Terns occurs on the Mississippi River between Cape Girardeau, Missouri, and Vicksburg, Mississippi. A very comprehensive survey of Interior Least Tern population and nesting was conducted in 2005. The report on this survey (Lott 2006) indicates that 17,591 adults were found using 489 colonies. A more recent report that has been accepted for publication (Lott 2013) has updated the latest information on the Interior Least Tern. This report contains detailed information on the status of the Interior Least Tern. There were 523 sites noted with an estimated breeding population of 18,000.

The 2014 Indiana population consisted of four known nesting areas, one at or near the Gibson Cooling Pond in western Gibson County, one at or near the AEP Power Plant in Spencer County near Rockport, one in the Wheeling Bottoms north of Francisco, and one on the Tern Island at Goose Pond Fish and Wildlife area south of Linton, Indiana.

Least Terns at the Cane Ridge-Gibson Cooling Pond complex were found using six nesting sites that were separated from each other by both open water as well as some ground. There were four sites on the Splitter Dike on Duke Energy property, one on Phase 2 of the East Ash Pond Complex on Duke Property, and one on the two islands in the Tern Pond at Cane Ridge on Federal property. Nesting sites in western Gibson County were located in the immediate vicinity of the Gibson Cooling Pond, a large industrial surface cooling impoundment. The 3000 acre cooling pond is associated with a large coal-fired electrical generating plant owned by Duke Energy. The cooling pond is only a few hundred meters east of the Wabash River and about 16 km west of Princeton, Indiana.

The Cane Ridge-Gibson Cooling Pond colonies are an excellent example of the opportunistic use of an artificial colony site by Least Terns. A single pair of Least Terns first nested on the 3.4 km-long splitter dike in 1986. This one nest of two eggs fledged at least one bird (Mills 1987). Another nesting occurred the next year, with one nest of three eggs fledging two chicks (Johnson 1987). A pair was present but no nests were found in 1988.

Since 1989 terns have nested on the dike and since 1993, with one exception, on nearby ash storage areas. Habitat enhancement efforts began in 1989. An attempt was made to attract terns to a simulated nesting colony on the dike. Twenty-two Least Tern decoys were used to attract terns to the site. In 1990 two groups of 22 decoys and a sound system that broadcasted nonaggressive Least Tern colony vocalizations were used as social attractants (Johnson 1989, 1990). Three nesting pairs used the site and raised a total of five birds both years. In 1991, five pairs of terns successfully

hatched 3-egg clutches. Unfortunately, heavy predation resulted in the loss of all chicks by early July. Two re-nesting attempts located near the center of the dike 1.5 km from the original colony site at the dike end yielded a single fledged chick from the five eggs hatched. (Johnson 1992).

Fencing, trapping, and a strobe light system were used in 1992 in an attempt to protect the site from predators. Three pairs of terns produced 9 eggs of which 8 hatched and at least 6 young birds were fledged (Johnson 1992).

Fencing, rat poisoning, and the strobe system were used again in 1993. Least Terns utilized three sites. Two were on the dike and one was on an ash flat about 3 km away. Eighteen nests were found with a total of 44 eggs. At least 17 of the eggs hatched and approximately 15 chicks were fledged. Some of the expansion of colony use in 1993 was probably due to the almost complete destruction of the rest of the Interior Least Tern nesting by a major flood in the Mississippi-Missouri River Valley.

The fencing and rat poisoning were continued in 1994. Because of the dispersed nature of the nesting in 1994, the strobe system was not used after a few days. Three sites were again in use. Two produced both chicks and fledglings. The sixteen known nests (there was at least one undiscovered nest) produced 42 eggs and at least 17 fledglings.

Fencing, rat control, and mink trapping were employed in 1995. Three sites were used, including a new location. At least 18 nests produced 43 eggs and about 23 fledglings. The program continued in 1996. After initial success with 34 nests and 62 of 82 eggs hatching, a major loss of chicks to both predators and storms occurred. Only 16 young were fledged.

Predator control was again used in 1997. There were 39 nests with 90 eggs; at least 63 hatched. There were at least 35 fledglings and a maximum of 65 adults.

Predator control continued in 1998 and a large increase in Least Tern activity occurred. Sixty-three nests produced around 72 fledglings. One hundred fifty eggs produced 120 chicks. A maximum of 85 adults was seen.

The program continued in 1999, 2000, and 2001 with very little change in methods utilized. There was a large decrease in tern activity in 1999 with no more than 50 adults present at any time and only 31 nests were found. The nests contained 81 eggs and about 52 eggs hatched and 19 chicks were believed to have fledged. There was a slight increase in tern activity in 2000. Most of this occurred later in the season after a period of heavy rain in the middle of June caused a large rise in the Wabash River. Seventy adults were responsible for 39 nests and 90 eggs. Twenty-four nests hatched producing 52 chicks. Of these, about 26 were fledged. Even though Least Tern activity continued at the same level in 2001, predation of both nests and chicks was very heavy. Eighty adults with 57 nests produced only about 3 to 6 fledglings. Activity was observed to increase in 2002 with 110 adults producing 58 nests and 27 fledglings. The Gibson Station colony saw a drop in activity in 2003 with 45 adults producing 39 nests and only 8 fledglings. A newly found colony at the AEP Power Plant at Rockport in Spencer County had a maximum of 30 adults. The AEP site had 10 nests that produced 8 fledglings.

Tern numbers were up in 2004. Up to 90 adults were present with a total of 84 nests, but only 13 fledglings were produced. Even though Least Terns were present in the Rockport-Grandview area no nesting was confirmed. Other sites in Indiana along both the Wabash and the Ohio Rivers were checked, but no tern activity was noted.

In 2005, terns used the newly created Tern Island at the Cane Ridge Wildlife Management Area managed by the U.S. Fish and Wildlife Service. Terns also nested on the splitter dike. The maximum number of adults was 88. There was evidence of 40 nests and 57 fledglings. The Ohio River site near Rockport was used by at least 20 terns. Five nests were seen here but there was no

evidence of success. Proof of nesting on the lower Wabash River in Indiana near Grayville, Illinois, was obtained. Fourteen adults with at least 3 chicks were seen. The 2006 season had a maximum of 95 adults at Gibson with about 35 first nests attempts and about 20 second nesting attempts. There was evidence of 52 fledglings. The AEP Power Plant near Rockport added 16 adults with 13 total nesting attempts and 10 fledglings.

In 2007 there was a maximum of 95 adults, about 38 first nests, and 22 second nests. There were an estimated 70 fledglings. The Rockport area had about 26 adults, 8 nests at the AEP Power Plant, possible nesting on an Ohio River dredge island, and at least 8 fledglings. A total of 150 adults produced 120 nests and raised 55 fledglings in western Gibson County during the 2008 season. Discovery of high concentrations of selenium in the waters of Gibson Cooling Pond resulted in the USFWS shutting off the siphon water flow from the pond into the Tern Pool at Cane Ridge. The USFWS flagged the two nesting islands and drained the nesting pool. This prevented any nesting attempts at this site in 2008. The first nesting attempt, which was unsuccessful, occurred at TBS. The Rockport location had up to 30 adults with 14 nests and 7 fledglings. Major flooding of large rivers in the Midwest in 2008 caused a failure of most nesting attempts located there and a movement of Least Terns to alternate nesting sites such as Gibson Station.

There was a significant increase in Least Tern activity in Indiana in 2009. Pumping water to the Tern Pond from the Wabash River mostly solved the selenium problem. Some Wabash River water was also sent to TBS. A peak of 220 adults with about 90 first nests and 80 second nests were observed. An estimated 115 fledglings were produced. At Rockport 40 adults made 25 nesting attempts with about 10 fledglings seen.

There was a decrease in Least Tern activity in 2010 but a record was set for successful nesting. A maximum of 150 adults at Gibson produced about 165 fledglings. At Rockport about 70 adults successfully fledged 15 chicks.

Least Tern activity increased in 2011 at Gibson. There was a maximum of 280 adults with 197 nests located. At least 133 fledglings were produced. Rockport had a maximum of 50 adults with 29 nests and only 5 fledglings found.

There was a decrease of Least Tern activity in 2012 at Gibson. There was a maximum of 135 adults, 97 nests were recorded and 112 fledglings were produced. Rockport had a maximum of 40 adults, 25 nests, but only 2 fledglings. There were over 50 adults using Wabash River sites with at least 15 nests. There was insufficient data that could be used to determine the success of the river colonies.

There was an increase of Least Tern activity at Gibson in 2013. There was a maximum of 220 adults with 135 nests, and 110 fledglings found. The Wabash River was high most of the season and no nesting was believed to have occurred there. Rockport had about 30 adults, 19 nests, and 28 fledglings. This is in response to a more active management plan using electric fencing at Rockport. Least Terns were found utilizing the Tern Island at Goose Pond for breeding for the first time. A maximum of 5 adults were seen. There were 3 probable nests, one confirmed nest, and one fledgling. All of the nests were second nesting attempts.

There was a maximum of 220 adults at Gibson Station-Cane Ridge in 2014 producing about 150 fledglings from an estimated 135 nests. A new site in Gibson County in the Wheeling Bottoms north of Francisco had a maximum of 30 adults producing at least 15 fledglings from approximately 14 nests. No successful breeding was believed to have occurred on the Wabash River. Thirty adults at Rockport produced an estimated 17 fledglings. Four adults were seen at Goose Pond. There was one nest but no fledglings were seen.

The survival and subsequent commitment of the tern chicks to the Gibson Cooling Pond sites are essential components of continued nesting colony growth. The purpose of the 2014 field season was to encourage and to monitor Least Tern use of the Gibson Cooling Pond site, The Cane Ridge Tern Pond, the Tern Island at Goose Pond, and the AEP location. Attempts were made at all locations to minimize predation of the nests and the chicks.

Methods

In 2014, aggressive efforts were made to discourage Least Tern utilization of Phase 1 and the north part of Phase 2 of the East Ash Pond Complex. The ponds were being prepared to be capped and removed from service. This involves sealing with soil. There was a lot of both human and machine disturbance. Propane cannons and coyote decoys were used. Least Terns did nest on the south part of Phase 2 where their presence did not cause any problems. Prior to the start of field work, Duke gave the splitter dike an annual herbicide treatment and locked the gate to the dike at the end of April to deny entry to all except authorized personal. Three areas each about 100 yards long were not treated in order to provide protection for the chicks. Seven decoys and 3 plywood chick shelters were placed near the end on 11 May. These were the original double life-size wooden ones. The idea was that if there were nesting it would be best if it were located near the end where the disturbance would be low. The ash disposal location was also secured except for authorized workers. All of the workers were trained by John Pike to recognize both Least Terns and the nesting areas. No rat poison stations were used, and no attempt was made to trap potential predators. No attempt was made to capture or band adult terns or chicks. Efforts were made by Duke Energy employees to minimize the negative effects of Canada Goose nesting on the dike. In an attempt to control mammal predation a three-strand electric fence was placed a few inches in front of the entrance gate to the dike. The wire is powered by solar cells.

U.S. Fish and Wildlife Service staff did all of the site preparation and decision making for the Cane Ridge Tern Pond nesting colonies in 2014. The following is from a communication from manager Bill McCoy describing the management efforts and the problems encountered.

Chronology of Events Concerning the Management of the Interior Least Tern Nesting Islands at Cane Ridge WMA in 2014

11/23/13- Cane Ridge pump turned on. New pump to be delivered 12/28/13.

11/27/13- Pump shut down due to a low river below 5-feet at sump intake.

12/11/13- Pump turned on.

01/09/14- Tern Pool full at 3.50.

01/13/14- Opened Pool B & C with water from Tern Pool. Pool D opened at later date.

02/22/14- Pump was off for a while but turned back on. Mt. Carmel gage at 18-feet.

03/7/14- Pump shut off for two weeks to clean intake sump due to high water debris.

04/09/14- Contractor dragged Tern Islands to level and mix clean rock.

04/15/14- Pump to be back on.

*05/07/14- Heath spotted **ILT** at Cane Ridge.*

*05/12/14- 62,000 fathead minnows delivered complements Duke Energy from **Andry** Fish Farm in Birdseye.*

05/14/14- Attempted to transfer water to Tern Bar Slough. No flow due to fish in 6-inch pipe.

05/16/14- Heath checked fencing, placed solar powered Gallagher-Snell Fence Shocking Units, decoys, clay pipes and drift wood shelters.

05/20/14- Contractor spraying islands with pre-emergent Valor, Rodeo and 2,4D.

05/21/14- Heath found and collected one (1) dead adult tern on Tern Island with ten flying in the area.

05/29/14- Chuck reported 30 terns & 5 nests on Tern Island.

06/02/14- Pump off.

06/03/14- Pump back on with Gage at 2.5.

06/05/14- Gage 2.5.

06/10/14- Pump off with Gage at 2.0.

06/17/14- Gage at 2.1.

06/22/14- Heavy tern feeding from Pool D with 65 to 70 terns present.

06/26/14- Gage at 1.9.

07/10/14- Gage at 1.6.

07/14/14- YCC's erected a fence barrier across Tern Island Access Road extending out into shallow water since island roads were high and dry.

07/15/14- John Pike reported pump shaft was scoured due to bearing problems and there would be no more pumping.

07/24/14- Chuck reported 27 **ILT** fledglings on Tern Island Access Road.

08/11/14- Chuck and J. Castrale walked islands and found some tern feather piles and owl feathers on Ray's Island indicating there may have been some predation once again on this western-most island nearest to the N-S wood line.

This was by far the worst year for water supply to the Tern Pool. The backup pump that was to be installed in the winter was never installed. When the first pump developed the same problem with the scoured shaft that occurred last year, no mobile diesel pump was brought in to pump from Blair Ditch. Water supply problems from the malfunctioning pump were evident by June 2 and water levels dropped continuously after that date. Water levels in the Wabash River dropped below 5-feet in early July so the sump pump wouldn't have made any difference. No water was available to maintain Pool D for foraging and it soon dried up.

No human access was made on either island after the terns began to nest. Chuck Mills performed all surveys without walking inside the fence surrounding the islands.

A raised bed of washed river gravel approximately 6-inches high will be spread in three loads on Ray's Island after the nesting season in 2014. The terns favor the raised gravel bed on Tern Island.

From Chuck's reports, nesting success was an improvement over 2013 with a higher rate of fledglings produced.

The two islands created by the Indiana Division of Fish and Wildlife at Tern Bar Slough were readied for Least Tern nesting again this year. The islands are each about 3 acres in size and are surrounded by a water-filled moat covering approximately 4 acres. The islands are raised about 6 feet from the bottom of the moat. The substrate on the top of the islands is river gravel, designed to mimic the natural substrate found on normal Least Tern nesting sites. The islands are each surrounded by a three foot fence with 6 inches buried in the soil. Two strands of electric wire run on the outside of the fence. One is a few inches above the ground and the second is near the top of the fence. Ideally, this system would prevent access by mammals to the nesting areas on the two tern

islands. In 2008 serious erosion problems created washouts under the fence and predators gained access to the colony. In 2009 the fence was shored up by using plastic fencing and rocks and to a large extent this action was successful. The moat can be filled by water fed from a borrow pit located 1 km away, as well as water pumped from the Wabash River. Because of pump problems, water from the Wabash or Blair ditch could not be reliably provided. The moat never had more than 2 feet of water and that was due to several periods of heavy rain. The state worked in 2010 to add more riprap to the fence area to reduce erosion problems. An old drainage pipe was discovered in the moat. This problem was fixed. This proved to have been the main reason that there have been so many problems keeping enough water in the moat. On 12 May 2014, both islands received herbicide treatment to kill green vegetation and deter seed germination. On 13 May tern decoys (6 small and 4 large) and chick shelters (3) were deployed on the north island (Katie's Island). No decoys or shelters were placed on the south island (Mills' Island). There were no nests at TBS and little tern usage.

The Goose Pond Fish and Wildlife Area staff sprayed the Tern Island at Goose Pond for weeds. The result was an almost perfect situation for Least Terns. There was almost no vegetation early in the season for nesting with some growth later that provided cover for the chicks. Amy Kearns armed the electric fence and placed the Least Tern decoys in early May. The area was closed to the public.

Early preparation work was done at the AEP power plant in Spencer County 24 April when an electric fence was placed around the perimeter of one of the roads used in the past for breeding and on 6 May when decoys (7) were deployed. The area was closed except for tern researchers. No preparation work was done on the nearby dredge island in the Ohio River used by Least Terns in the past.

Results

The first sighting of Least Terns this year was of one individual seen by Heath Hamilton at Cane Ridge on 7 May. Amy Kearns and Heath saw up to four Least Terns in the Wheeling Bottoms on 15 May. This area was mostly under water due to spring floods. A Least Tern was seen foraging near Terre Haute. There were 4 adults with one first year bird at Cane Ridge on 22 May. There were 12 Least Terns at Cane Ridge on 25 May. By early June all of the locations traditionally used by the terns had breeding colonies in place.

Splitter Dike: Because of the HCP guidelines all trips were made when the temperatures were below 90 degrees. The time spent in each nesting area was limited to less than 15 minutes. The dike was walked several times in order to measure Least Tern breeding activity. The idea was to walk it at least once a week but due to weather problems and the illness of the researcher there were times when two weeks would pass without the occurrence of a pedestrian trip. By using the old boat ramp area and also driving to within 400 feet of Colony A, the entire dike could still be checked for Least Tern activity. This was done on days when the dike was not walked. All nests found on the dike were marked with a rock located 10 feet before the nest. All nests were checked on each pedestrian trip. There were four areas of concentrated nesting: Colony A (A) which was located about 100m past the first green area for a distance of 300m, Turn Around (TA) which was located from 50 m before the turn around at the middle of the dike to about 300m past it, Last Turn (LT) located 150m past the second green area for a distance of 100 meters, and the End where all but 2 nests were located within the cul-de-sac at the end of the dike. All four areas had nests by 5 June with the LT and the End having the most activity. On 5 May there were 2 adults with one nest at A, 6 adults with 3 nests at TA, 20 adults with 8 nests at LT, and the End had 24 adults with 10 nests. There were a total of about 52 adults with 22 nests. There were about 110 adults with 30 active nests on 25 June.

Twenty-two chicks were seen that date with about 15 to 20 nests believed to have hatched. Some of the active nests were second nesting attempts. The population continued to increase with a peak on 9 July of 115. The first fledglings were seen on 9 July during a pedestrian survey of the dike. A total of 13 were found and they were present in all but Colony A. The population dropped off rapidly after this date as the adults moved their fledglings from the area of the colony. I rarely saw juveniles that had been flying for more than 2 week. There were some very late nests toward the end because there were chicks at the End on 16 August. This was the only active site still remaining on the dike at that time. The last observation on the dike was of a single adult carrying a fish on 18 August. The totals for the dike were a maximum of adults or 115 with a total of 75 nests. Fifty of the nests were first nests and only 25 were second nests. The breakdown by colony is as follows: the Colony A had 6 first nest and 4 second nests, the Turn Around Colony had 16 first nests and 8 second nests, the Last Turn Colony had 12 first nests and 7 second nests, and the End Colony had 16 first nests and 6 second nests. These numbers represent nests actually found and marked. There were at least 80 fledglings produced on the Splitter Dike.

Predation does not seem to be the problem that it was last year. I rarely saw any evidence of it this year. I did not see or hear of any reports of Peregrine Falcons.

Tern Bar Slough: Because of the near lack of water in the moat there was very little Least Tern activity. USFWS personnel attempted to divert water to TBS in May by opening the TBS pipe (at this point the Cane Ridge pipe was also open), and then locking the TBS water control structure afterwards. Immediately the staff went to close the pipe to Cane Ridge and encountered problems when the key broke off in the lock. At this point the staff could not get into either the CR or the TBS water control structures since they both use the same key and both were locked. They were unable to stop the flow of water. Within an hour and a half the staff was able to remove the locks on both structures and to close the water flow to TBS. While both pipes were open it was noted that just a moderate flow of water and sometimes a burst of flow was coming through the pipe to TBS. This allowed the flow velocity to drop to Cane Ridge. The theory is that while both pipes were open the flow to CR decreased enough to allow fish to swim up the larger Cane Ride inlet pipe and then make their way into the smaller pipe to TBS creating a blockage. This was the case last year when the water was sent to both sites. That had been an experiment to observe how the water levels would be affected when water was being sent to both locations. When the lock problem was fixed and the valve could be turned for full flow to TBS the blockage was discovered. After several attempts to clear the blockage, it was decided to keep all of the flow to Cane Ridge to try to avoid having a pump failure due to the blockage in the TBS line. Several heavy rains in June did put and keep some water in the moat until late in the month. Least Terns were seen foraging here at times but not after the middle of June. There was no Least Tern nesting.

Ben's Spot: No Least Terns were ever observed here and the area was planted by the end of May.

Cane Ridge: All of the observations made were either from the observation deck or from a close approach by wading to the edge of the island. Neither island was entered this year. The herbicide treatment was applied at a later date in 2014 and allowed a more open environment on the islands until later than normal. It wasn't until the first of July that the vegetation became so rank as to limit observation of the islands. The water level in the Tern Pond was never as high as was desired. It was never more than a foot over the access roads. This is far below the ideal height of at least 2 feet. This is the minimum height that is necessary to keep most land predators away from the islands. Most of the time the access roads to the islands were either level with the water or even out of the water. The walk to the edge of the island did cause many of the adults to rise up to harass me

allowing me to get a reasonable estimate of the adult activity. It seemed that later in the season most of the activity was concentrated on the gravel ridge near the center of Tern Island but maybe that is because it was the only area where the birds could be seen through the vegetation. Almost all of the activity was associated with Tern Island.

On 29 May there were 30 adults with 5 possible nests on Tern Island. There were up to 50 adults seen with 20 nests on 5 June. All the activity was on Tern Island. There was heavy foraging in the pond just to the south of the Tern Pond. There was a peak of 65 adults on 20 June with 32 nests. Two of the nests were on Ray's Island. Chicks were first seen 27 June. There were 14 from at least 6 families. The first fledglings were seen on 11 July. There were 24 fledglings with 23 adults on the access road to Tern Island on 24 July. Pump problems caused the water level to drop so that in early August there were large areas of mud in the Tern Pond. The last report of a Least Tern at Cane Ridge was of 2 adults with one fledgling on 24 August.

Phase 2: Most of the East Ash Pond Complex closing work was being done on Phase 1 but that entailed heavy truck traffic on the roads surrounding Phase 2. There was some work that was being done on Phase 2 but it was at the far north end and did not cause any disturbance to the terns nesting area. Phase 2 was the only ash pond location that had any observed Least Tern activity. All of the activity was at the south side of the ash shelf and on the island between it and the south perimeter road.

I was only able to safely view the colony from the road on the west side or by the southwest corner. Even there I often had very large trucks pass close by. I was not able to view the entire potential colony area. In past years even a rainfall of a quarter inch would do major damage to the nests. That did not seem to be the case this year. Even after rains in excess of an inch nests that had previously been seen were still present.

The first observation of Least Terns was of 14 on the south shore of the ash shelf and 4 on the island on 31 May. On 2 June there were 20 adults with 8 possible nests on the shelf and 4 nests on the island. Through June there were 25 to 30 adults present. There were 12 first nests and 8 second nests. All of these nests would have to be considered probable nests because none of them were examined closely. The nature of the ash makes walking on it very dangerous. The first chicks were seen on 25 June. The maximum number of chicks was of 18 from 9 families on 5 July. Two fledglings were observed on 9 July. There was a time in early July when no nests were seen. Nesting resumed on 15 July when 3 possible ones were observed. All of the July nesting failed because no terns were seen after the end of July. There were a total of about 20 nests with 12 being first nest attempts and 8 being second attempts. About 20 fledglings were produced at the Ash Pond area.

The work to close phase 2 will continue into 2015. There will still be a potential to have Least Tern nesting on this phase until it is fully capped with soil.

Wabash River Surveys: The Wabash River was high until the middle of July. It was felt that little or no breeding occurred there. The river was first checked on 30 June. John Pike, Andrew Gabanic, and I used the Duke Energy airboat to check parts of the Wabash River for Least Tern activity. Weather conditions were a little iffy so we did not check all of the sites. From Harmony State Park we went down river to the railroad bridge. We found the river to be high enough that all of the possible nest sites were either under water or had been under water in the past few days. We then went upriver. The water was high enough that we were able to go over the New Harmony Dam. We did see two Least Terns resting on a small sand beach just north of the town of New Harmony. 38.137983,-87.932274. We then put the boat in at Crawleyville and went down river to the large island. We found 4 Least Terns resting on what little bit of sand that was above the water. 38.2878,-

87.888 While returning north we spotted 3 Least Terns at 38.27913,-87.8627. The water was high enough for us to go over the rapids at Coffee Island. We went up river to the old railroad bridge near the power plant. We ran 55 miles on the river. We saw 9 adult Least Terns, but saw no evidence of nesting.

The second river check was on 15 August. We were searching for Least Tern adults and fledglings. A Duke Energy airboat piloted by John Pike provided the method of transportation. The river was checked from Harmony State Park to the confluence with the Ohio River; 39.5 miles of the river was checked. There had been major changes to the size and locations of the main sand bar areas in the lower river. This was especially true at the confluence. This seems to occur every year. All of Least Terns that we saw were below the Highway 62 Bridge. We had a total of 70 Least Terns. There were 49 adults and 21 fledglings. Here is a list of the GPS readings and the observations made.

37.940,-88036	21 adults and 9 fledglings
37.908,-88.094	15 adults and 5 fledglings
37.893,-88.0195	1 adult
37.853,-88.0649	2 adults with 1 fledgling
37.8099,-88.036	10 adults with 6 fledglings.

This is the largest number of Least Terns that have ever been discovered on the river and represented about 20% of the Indiana adult population. One thing that bothers me is that the fledgling-adult pair ratio is only .84 while the same ratio at the Gibson-Cane Ridge site for the season is currently 1.42. We either had a large undercount of fledglings, had something happen that reduced the fledgling population, or some of these birds are from some other unknown location. For the past several weeks my counts at Gibson-Cane Ridge were very close to the same number for both fledglings and adults, which would produce a larger ratio than we saw.

AEP Rockport: In 2002 Least Terns were seen on an island in the Ohio River near Grandview in Spencer County. In 2003 they successfully nested and raised chicks at the AEP power plant in Rockport. In 2004 Least Terns were seen most of the season but no nesting sites were located. Least Terns have nested successfully every year since 2005. This year Least Terns again nested at AEP. David Ayer did most of the site monitoring. The following represents his summary of the tern activity at AEP:

Least Terns were first observed on June 3rd when 25 birds were seen around the ash ponds. The birds were courting heavily and 4 birds were observed on nests. Numbers increased to 30 by June 24th and then began to tail off by July 22nd. Nesting was confirmed on June 10th when 10 nests were located. 8 of the nests were on the north road and 2 of the nests were on the south (fenced) road. By June 17th nests on the north road disappeared and all activity shifted to the south road. Chicks were first observed on June 24th when 3 were seen. The high count of chicks occurred on July 16th when 12 were observed. The first 3 fledglings were also seen on July 16th. The high count of fledglings came July August 5th when 11 were observed. The last time that terns were observed at AEP was an older fledgling on 2 September.

Over the course of the season 25 nests were observed. 11 of the nests were first nesting attempts and 14 were second nesting attempts. The nests contained a total of 58 eggs. The estimate is that at least 20 chicks hatched. This is probably an undercount as vegetation and rocks made detection of chicks very difficult. The estimated number of fledglings is 17. There were 15 nests recorded on the road with the fence. All but 5 of those nests hatched and probably produced fledglings. 9 nests were recorded on the north road. None of those nests were successful. A single nest was recorded on the east/west road. It hatched but did not produce any

fledglings.

There was no nesting on the Dredge Island in the Ohio River this year because of fluctuating water levels.

Goose Pond: Least terns have been seen several times in the past foraging at Goose Pond and last year nesting was proven for the first time. Least Terns again nested there this year. Amy Kearns and Lee Sterrenburg collected most of the data for Goose Pond. The following is a communication from Amy Kearns.

One of my duties for IDNR includes monitoring the Least Terns nesting at Goose Pond Fish & Wildlife Area, Greene County. This year we have one pair of terns nesting on the island.

6/9/14 Watching from the 1200W bridge south of the island, witnessed copulation and female sitting on probable nest. If she was egg laying/completing the clutch, that gave an estimated hatch date around June 30

6/16/14 From the bridge, one adult sitting on probable nest, fed by second adult

6/25/14 Island visit to confirm 3 eggs

7/1/14 Island visit to confirm 2 nestlings about 1 day old and a piping egg

The following is from a communication from Lee Sterrenburg concerning Least Tern activities after 1 July.

A high of four adults and no fledglings or juvs flying--- on very scant coverage.

Other Indiana Locations: A new nesting location was discovered in late June. The terns were using the south bank of a final cut pond on the south side of the Wheeling bottoms north of Francisco, Indiana. There were a maximum of 30 adults with about 14 nests producing 15 fledglings. About 6 of the nests were first nesting attempts and there were 8 second attempts. The population was only about 12 to 15 when first studied and went to 25 to thirty by the first of July.

John Pike visited both the Wabash River Station in Terre Haute and Cayuga Station near Cayuga to check for any possible Least Tern presence, but none was noted. The amount of suitable habitat at these sites was found to be very limited.

Other than an observation made early in the season on 21 May at Wabashiki FWA near Terre Haute by Peter Scott there were no other reports of Least Terns in the state. There were no reports of Least Tern presence on the White River.

Discussion

For many years, I had been pointing out that the best situation for Least Tern nesting success would be the creation of island-like structures in ponds large enough for there to provide some safety from land based predation. The dream was realized through the cooperation of Duke and both state and federal wildlife agencies. Tern Island and Ray's islands were built and they greatly resembled Ash Island. Tern Island was first readied for nesting in 2005 and Ray's Island was ready in 2006. These islands provided some measure of safety because of the presence of fences and electric wiring that greatly reduced the possibility of mammalian predation. Least Terns quickly adopted the two

islands and a major nesting colony has been present seven of the past nine years. For some unknown reason the terns seem to prefer Tern Island, the one to the east. A problem with selenium resulted in the islands being off limits to the terns in 2008. This was resolved somewhat in 2009 when Wabash River water was pumped to the Tern Pond. Pump problems have plagued the project. There have been many problems with keeping the pump on line. An auxiliary mobile diesel pump drawing water from Blair Ditch has been used most summers to try to alleviate some of the pump problems. The main pump was mostly on-line through early July of the 2014 nesting season. The pump experienced a bearing failure on 10 July and had to be removed for repairs. After the pump was repaired, the river had dropped to the point where the pump could not pick up any water. An auxiliary pump was not used in either July or August because the water levels in Blair Ditch were observed to mostly be too low for an auxiliary pump to supply any water. Even with adequate water levels in the Wabash River the water level in the Tern Pond never reached the ideal height even with the main pump mostly working. There was never enough water to supply the other Cane Ridge units to the south of Cane Ridge. Filling the other Cane Ridge units with some water is important because the Least Terns use them for foraging. Because of the supply line blockage, water could not be supplied to TBS. The water supply situation continues to be a major challenge for Least Tern managers.

Duke Energy recognizing that there is a continuing problem of inadequate water supply to both Cane Ridge and TBS acquired a second sump pump with a larger capacity. Duke Energy plans to install the new pump at a lower level to avoid some of the problems of low river levels. It will go on line as the primary pump after it is installed before the start of the 2015 tern season. The original pump will become the backup.

The two tern islands at Cane Ridge also provide an excellent way for people to safely view Least Terns during the breeding season. There is probably no place in the interior of the United States that gives such ready access to Least Terns by the general population. Even with the reduced usage of Cane Ridge Least Terns could still be reliably seen there until the middle of July. In 2008 two more islands were opened for Least Tern nesting. These were on state property (TBS) and were used that year for nesting but not since.

It is very obvious that with the terns nesting in such close proximity to major human activity that management of the nest sites is important to the continued success at both Gibson and the Rockport area. Suitable sites need to be maintained. Terns need to be attracted to these areas and protected from both animal predation and human disturbance. If the terns nest away from these locations, they need to be located and protected.

A complete analysis of the first 13 years of the Least Tern activity in southwestern Indiana can be found in Castrale et al. (1999). This study indicates that the productivity was 0.97 fledgling/nest during 1993-1998 and that this is greater than that reported from most other locations.

Kirsch and Sidle (1999) indicate that a 0.51 fledgling/pair figure was believed to be necessary for population maintenance. This figure at Gibson for 2014 was about 1.44 fledgling/pair. A pair was determined by dividing the average number of adults by two. The Splitter Dike produced 1.40 fledgling/pair based on 57 pair and 80 fledglings and Cane Ridge was 1.56 fledgling/pair based on 32 pair and 50 fledglings. Phase 2 produced 1.33 fledgling/pair based upon 15 pair and 20 fledglings. The average in the 29 years that the Gibson colony has been under study is 1.15 fledgling/pair. This is based on a total of 1147 pairs and 1317 fledglings. Since 1993, when a larger colony became established, the number has had a low of 0.15 fledglings/pair in 2001 and a high of 2.20 fledgling/pair in 2010. In spite of this high success ratio, most of the adults that have been seen well enough for bands to be detected were birds that were not banded. No banded adults were seen

this year. Earlier observations noted that most of the recruited adults at Gibson came from the Mississippi River nest sites.

Rockport produced 1.13 fledgling/pair based on 17 pair and 15 fledglings. There is no evidence that the Least Terns produced any fledglings this year at Goose Pond. The Wheeling Bottoms produced 1.15 fledglings/pair based on 13 pair and 15 fledglings. The overall result from Indiana was 182 fledglings/132 pair = 1.38. This is above the long-term average.

Management Recommendations for Tern Bar Slough

1. Human access should be restricted during the tern season of 1 May until 1 September.
2. The electric fence needs to be maintained so that it is effective during the tern season.
3. Herbicide treatment needs to occur in early May before the terns are expected to arrive. The gravel roads should also be treated.
4. The trees that are growing along the side of and in the moat need to continue to be removed.

Management Recommendations for Gibson Station

1. Human access to the center dike and other possible tern usage sites should continue to be restricted during the period when terns are present, 1 May to 1 September. The program to promote awareness of the Least Tern presence and the need for security should continue to be developed with the Duke Energy Corporation.

2. Continue to monitor reproductive activity, production, and tern numbers at Gibson Cooling Pond.

3. Every effort should be made to minimize the harassment of the adults at the nest sites by either humans or predators.

4. Possibly use decoys at sites deemed safer for the adults, the nests, and the young birds. This would best be done on the dike only at the very end.

5. Vegetation control on the center dike should be done over the entire dike with about three small patches left to help to provide chick sheltering. The center of the road even in these patches should be treated. Maintenance activities should continue to avoid the periods of tern activity 1 May to 1 September.

6. The Canada Goose control program should continue.

7. Search for other Least Tern nesting sites in the Wabash River Valley both north and south of Mt Carmel. This could be done by boat and would be dependent upon the level of the river.

8. The sign posts and other tall structures should not be located on the dike to make it more difficult for predatory birds to hunt the colonies on the dike.

9. A meeting should be held each fall to assess the results of the previous season and to make plans for the next year.

Management Recommendations for Tern Island and Rays Island (Cane Ridge)

1. The two tern islands should be sprayed with herbicide in late April or early May. A complete coverage is not recommended. About 20% should be allowed to grow weeds after the first nests have hatched.

2. The decoys should be deployed by the first of May. About 30 should be placed on each island. Once the terns are present some if not all the decoys could be removed.
3. Chick shelters should be placed before the terns arrive.
4. The water level in the tern pond should be at the highest at the start of the season. It should be allowed to slowly drop during the season. By early August some mud flats should be visible to provide shorebird habitat.
5. Human access should continue to be greatly restricted both in number of people and number of trips.
6. Small fish should again be placed in the Tern Pond. This is very important because there was evidence that terns nesting on the Splitter Dike used the Ten Pond for foraging thus reducing their selenium exposure.
7. The sand-gravel ridge produced in the middle of the islands should again be formed.

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Field Notes - Summer 2014 (June -July)

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Weather this summer was relatively mild and wet. This led to better successful breeding, as most species, esp. wetland birds found greater abundance of food and suitable habitat.

Perhaps the most notable sightings were at Grant Street Marsh in *Lake*. This relatively new site was created as a excess water storage impoundment in wake of chronic flooding issues (particularly, the 2008 flood) on the Little Calumet River. Since construction, waders, waterfowl and other cattail nesting species have nested. This year, birders have watched nesting King Rails, Least Bitterns, Bald Eagles and Yellow-headed Blackbirds amongst other species at this site.

Meanwhile, Mississippi Kites, Bell's Vireos, Lark Sparrows, Bald Eagles, Ospreys possibly Merlins and others are being seen to nest or thought to be nesting more extensively, while several low-density breeding species such as Upland Sandpipers, Barn Owls, Least Terns and Loggerhead Shrikes continue to be hang on.

Abbreviations:

CBC = Christmas Bird Count

FWA = Fish & Wildlife Area

NWR = National Wildlife Refuge

SP = State Park

SF = State Forest

SRA = State Recreation Area

Snow Goose Single individual observed at Cane Ridge, *Gibson*, on 12 July (Chuck Mills).

Redhead Single male observed at Cane Ridge, *Gibson*, on 8 July (Jeremy Ross).

Ring-necked Duck 2 observed at Goose Pond, *Greene*, on 14 June (Lee Sterrenburg).

Lesser Scaup Single male observed by many at Grant St. Marsh, *Lake*, throughout the period. Single individual observed at Cane Ridge, *Gibson*, on 12 July (Chuck Mills).

Ruddy Duck 4 birds observed at Grant St. Marsh, *Lake*, on 5 June (Matt Kalwasinski). 2 observed at Grant St, Marsh on 7 June (Ken Brock). Single male observed at Woodburn sewage pond, *Allen*, on 6 July (Jim Haw). Single male observed at Cane Ridge, *Gibson*, on 8 July (Jeremy Ross). 9 observed at Grant St, *Lake*, on 15 July (Michael Topp).

Red-breasted Merganser Single female reported from the same seawall for the second consecutive year in June from Big Chapman Lake (Kosciusko) on 6 June (John Kendall).

Common Loon Single individual at Gibson Lake, *Gibson*, first observed on 7 June on 7 June (Chuck Mills) remained at least through 26 June when it was joined by a second individual.

American White Pelican 4 individuals observed at Geist Reservoir, *Marion*, on 5 June (Nick Kiehl). 11 observed at Gibson Lake, *Gibson*, on 6 and 7 June (Chuck Mills). 25 observed at Wolf

Lake, *Lake*, on 10 June (Carolyn Marsh). 2 observed at Streibel Pond, *Lake*, on 14 June (Lynda Hinchman). 6 observed at Eagle Marsh, *Allen*, on 17 June (Roger Rang) and 18 June (Roger Rang) and 19 June (John Winebrenner). 40 individuals reported from Lake Gibson, *Gibson*, on 26 June (Chuck Mills). 2 observed at Hitchcock Road, *LaPorte*, on 28 June (Ken Brock). 30 observed at Goose Pond, *Greene*, on 3 July (Jim Brown). 26 observed at Goose Pond, *Greene*, on 4 July (Peter Scott). 2 observed at Striebel Pond, *Lake*, on 5 and 26 July (Ken Brock). 4 observed at Goose Pond, *Greene*, on 26 July (Jerry Downs). 32 observed at Cane Ridge, *Gibson*, on 28 July (Tim Griffith).

American Bittern American Bitterns were reported from Goose Pond, *Greene*, throughout the period. The high count came on 16 July when 4 were recorded (Lee Sterrenburg).

Least Bittern Least Bitterns nested at Grant Street marsh in *Lake*. The high count came on 29 July when 3 were observed. (Landon Neumann). A single bird was reported by many observers from Goose Pond, *Greene*. Throughout the period. Single bird reported from Dallas Lake, *LaGrange*, on 25 June (Sam Plew). 1 reported from Limberlost Swamp, *Adams*, on 26 June (Jim Haw). 1 reported from Limberlost Swamp, *Jay*, on 26 June (Jim Haw). Single bird observed at Cane Ridge, *Gibson*, on 5 July (Bob Meier)



One of several Least Bitterns at Grant Street Marsh, *Lake* 31 July

photo by John Kendall

Snowy Egret 2 individuals at Wolf Lake, *Lake*, were present throughout the period and reported by many observers (Matt Kalwasinski). 1 observed at Goose Pond, *Greene*, on 8 June (Michael Brown). Single bird observed at Monty's Station, *Gibson*, on 9 June (Jeremy Ross) and still present on 10 June (Ed Hopkins). 2 observed at 129th St., *Lake*, on 27 June (Michael Topp).

Little Blue Heron 2 birds observed at Monty Station, *Gibson*, on 5 June and 9 June (Jeremy Ross) and still present on 10 June (Ed Hopkins)

Yellow-crowned Night-heron Single adult observed at Goose Pond, *Greene*, on 16 July (Lee Sterrenburg).

Black Vulture Single bird reported from Dallas Lake, *LaGrange*, on 25 June (Sam Plew).

Osprey Nesting reports continue to increase in south and southwest areas. In addition, isolated pockets continue to expand near original release sites in *St. Joe (and Elkhart)*, and *Kosciusko*.

At the latter, Ospreys are almost exclusively using 200' tall cellular towers (John Kendall).

Mississippi Kite The only reports away from known nesting locations were in Marion and Hendricks counties near Eagle Creek Park. Birds were present throughout the period and the high count came on 20 July when 4 were reported (Don Gorney).

Merlin Single bird photographed at Grant Street, *Lake*, on 31 July (Matt Kalwasinski). The pair from 2013's successful nesting at Pokagon SP returned to the nest tree, but disappeared after a few weeks (Fred Wooley).

Sora Single individual heard at Cane Ridge, *Gibson*, on 12 July (Vern Wilkins).

Virginia Rail Single individual reported from marsh near Lebanon on 22 June (Roger Hedge).

King Rail King Rails bred for the first time in over a decade in *Lake* at Grant Street Marsh. The high count came on 12 July when 3 individuals including a chick were observed (Michael Topp).



King Rail chick, and 12 July, Grant Street Wetlands, *Lake* photo by Michael Topp

Common Gallinule Gallinules were present at Grant Street Marsh throughout the period. The high count came on 26 July when 12 including 6 young were observed (Michael Topp). Common Gallinules were also present at Goose Pond, *Greene*, throughout the period. The high count was on 17 July when 7 were observed (Vern Wilkins). Single bird observed at Snakey Point, *Gibson*, on 5 June (Jeremy Ross). Single bird reported from Pigeon River, *LaGrange*, on 1 July (Jim Haw). Single bird observed at Snakey Point, *Gibson*, on 7 July (Jeremy Ross).



Mississippi Kite at nest, *Gibson* 25 July photo by Vern Wilkins

Sandhill Crane 2 observed near Goose Pond, *Greene*, on 14 June and 20 June and 27 July (Brad Feaster).

Semipalmated Plover Single bird observed at Goose Pond, *Greene*, on 7 June (Landon Neumann). Single bird observed at Miller Beach, *Lake*, on 27 June (Michael Topp).

American Avocet Single individual reported from Cane Ridge, *Gibson*, on 7/25 (John Pohl) and 7/27 (Peter Scott).

Greater Yellowlegs Single individual observed at Goose Pond, *Greene*, on 6 July (Bob Carper).

Willet Single bird observed at Michigan City Harbor, *LaPorte*, 28 June (Ken Brock).

Ruddy Turnstone Single bird reported from Cane Ridge, *Gibson*, on 26 July (Evan Speck).

Semipalmated Sandpiper Single bird reported from Eagle Marsh, *Allen*, on 9 July (Ed Powers).

Baird's Sandpiper Single bird reported from Carlson Oxbow, *Lake*, on 31 July (Matt Kalwasinski).

Upland Sandpiper Single bird observed along highway 31, *Miami*, on 1 June (Cameron Farrell). Upland Sandpipers nested and were present at Grissom Air Field, *Miami*, throughout the period.

(Landon Neumann). The high count came on 10 and 20 June when 6 individuals were observed (Jim Haw). Single bird observed in Jasper County on 7 June (Ed Powers). 2 observed at Fort Wayne airport, *Allen*, on 22 June (Roger Rang). 1 seen at MLK Jr. Wetland, *Lake*, on 17 July (Matt Kalwasinski). 2 observed near Logansport airport, *Cass*, on 31 July (Landon Neumann).

Whimbrel Numbers were low this year along Indiana's lakefront. Single individual observed at Miller Beach, *Lake*, on 19 July (Ken Brock.) Single individual observed at Miller Beach, *Lake*, on 23 July (John Kendall).

Marbled Godwit Single bird observed at Michigan City, *LaPorte*, on 19 July (Ken Brock).

Wilson's Snipe 3 observed at Columbia Mine, *Pike*, on 1 June (Kathy McClain). 1 reported from Goose Pond, *Greene*, on 19 July (Don Whitehead).

Wilson's Phalarope Single individual reported from Cane Ridge, *Gibson*, on 24 July (John Meredig) and 27 July (Peter Scott) and 28 July (Tim Griffith).

Parasitic Jaeger Likely Parasitic Jaeger videotaped at Michigan City, *LaPorte*, on 24 July (Brendan Grube).

Bonaparte's Gull Single bird reported from Doc-O-Lake, *Wayne*, on 24 July (Bill Buskirk).

Laughing Gull Single adult observed at Miller Beach, *Lake*, on 14 July (Michael Topp).

Caspian Tern Single bird observed near Gibson Lake, *Gibson*, on 5 June (Vern Wilkins). 2 birds observed at Eagle Marsh, *Allen*, on 3 July (Roger Rang). 1 observed at Eagle Marsh, *Allen*, on 15 July (Roger Rang). 2 observed at Salamonie Reservoir, *Allen*, on 19 July (Jim Haw).

Common Tern 1 observed at Gibson Lake, *Gibson*, on 6 June (Chuck Mills). 1 observed at Miller Beach, *Lake*, on 5 July (Ken Brock). 2 observed at Miller Beach, *Lake*, on 29 July (Landon Neumann). 2 observed at Eagle Marsh, *Allen*, on 30 July (Ed Powers).

Forster's Tern 2 birds observed near Gibson Lake, *Gibson*, on 5 June (Vern Wilkins). 4 observed at Gibson Lake, *Gibson*, on 6 June (Chuck Mills). 3 observed at Goose Pond, *Greene*, on 8 June (Jim Hengeveld). 1 observed at Eagle Marsh, *Allen*, on 21 June (Roger Rang). 2 birds observed at Eagle Marsh, *Allen*, on 4 July (Jim Haw).

Black Tern 4 observed at Cane Ridge, *Gibson*, on 5 June (Vern Wilkins). 2 observed at Cane Ridge, *Gibson*, on 8 June (Jeff Timmons). 7 observed at Goose Pond, *Greene*, on 8 June (Michael Brown). 2 observed at Goose Pond, *Greene*, on 8 June (Jim Hengeveld). 1 observed at Eagle Marsh, *Allen*, on 21 June (John Winebrenner).

Long-eared Owl 2 heard calling near Leota, *Scott*, on 16 July (Brian Lowry).

Olive-sided Flycatcher 2 observed at the green tower, *Porter*, on 1 June (Brendan Grube). Single individual observed at Atterbury FWA, *Johnson*, on 1 June (Bob Carper).

Western Kingbird Western Kingbirds once again nested near the Evansville Regional Airport, *Vanderburgh*. The high count came on 9 July when 6 including 2 young were observed (Landon Neumann).

Loggerhead Shrike 4 adults observed in Orange County on 2 June (Amy Kearns). Single individual observed near Monty's Station, *Gibson*, on 3 June (Amy Kearns). 5 including 3 juveniles observed in Daviess County on 7 June (Landon Neumann). 9 including 5 juveniles observed in Daviess County on 9 June (Amy Kearns). 3 including 2 fledglings observed near Montgomery, *Daviess*, on 15 June (Peter Scott). 4 adults observed in rural Orange County on 17 June (Amy Kearns). 1 adult on nest observed in LaGrange County on 16 June (Sam Plew). 4 including 3 fledglings observed in Daviess County on 26 June (Lee Sterrenburg). Single bird observed at Monty's Station, *Gibson*, on 9 July (Landon Neumann) and 16 July (Tom Becker). A *Daviess* survey 26 June by Amy Kearns and Lee Sterrenburg counted 4 (incl. 3 fledglings at 2 sites) and 54 Northern Mockingbirds.

Blue-headed Vireo Single bird observed at Pigeon River, *LaGrange*, on 8 July and 24 July (Jim Haw).

Bell's Vireo This bird is and was found more commonly south of SR 24 and the western area (Willow Slough/Lafayette) corridor. Noteworthy was a 2nd County record for *Cass* 21 July (Landon Neumann). In the northeast, there was a single bird reported from Eagle Marsh, *Allen*, on 20 July (Jim Haw). 2 birds reported from Eagle Marsh, *Allen*, on 28 July (Roger Rang).

Chestnut-sided Warbler 1 observed at the green tower, *Porter*, on 1 June. (Brendan Grube). 8 observed at Kankakee FWA, *Starke*, on 7 June (Ken Brock).

Blackpoll Warbler Single individual observed at Eagle Marsh, *Allen*, on 12 and 13 June (Roger Rang).

Connecticut Warbler 1 observed at Kankakee FWA, *Starke*, on 7 June (Ken Brock).

Canada Warbler 1 observed at the green tower, *Porter*, on 1 June. (Brendan Grube) Single bird observed near Zionsville, *Boone*, on 9 June (Roger Hedge).

Blackburnian Warbler Single bird observed at Gene Stratton-Porter SHS, *Noble*, on 5 June (Tiffany Conrad).

Wilson's warbler 1 observed at the green tower, *Porter*, on 1 June. (Brendan Grube)

Lark Sparrow Single individual observed near Troxel Lake, *LaGrange*, on 12 June (Jim Haw) and 16 June (Karen Brown). One reported from Pigeon River, *Steuben*, on 15 June (Karen Brown). An increase in birds being seen along the lakefront the past two years (including a juvenile at USX *Lake*, 26 July by Ken Brock and John Cassady) suggests that this species may be recovering some of its former breeding range that is relatively adjacent to Lake Michigan.

Swamp Sparrow Single individual reported from Harmonie SP, *Posey*, on 12 June (John Meredig).

Blue Grosbeak Pair observed at Eagle Crest, *Monroe*, on 1 June (Amy Hodson). Single bird reported near Salamonie Lake, *Wabash*, on 14 June (Jim Haw). 1 reported from Limberlost Swamp, *Jay*, on 26 June (Jim Haw). Single individual observed near Geneva, *Adams*, on 12 July (Jim Haw). Pair reported on territory at Yohne Rd, *Allen*, throughout period (Jim Haw).

Western Meadowlark A presumed hybrid paired with an Eastern Meadowlark nest near Young America, *Cass*, and was observed by many people throughout the period (Landon Neumann). Single bird heard along SR 120, *LaGrange*, on 3 June (Jim Haw). Single bird observed in Boone County on 5 and 15 June (Roger Hedge).



Presumed hybrid Western x Eastern Meadowlark, *Cass*

photo by Landon Neumann

Yellow-headed Blackbird Yellow-headed Blackbirds nested again at Grant Street Marsh, *Lake*. The high count came on 5 July when 5 including 2 young were observed (Ken Brock).

Brewer's Blackbird Single bird observed along 500 W., *LaGrange*, on 3 June (Jim Haw). 4 observed at Old Shamrock Sod Farm, *LaPorte*, on 7 June (Ken Brock).

