## POPULATION SURVEY OF THE INTERIOR LEAST TERN ON THE MISSISSIPPI RIVER FROM CAPE GIRARDEAU, MISSOURI TO BATON ROUGE, LOUISIANA

2009

By

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Under Contract with Choctaw Transportation Company, Inc. P.O. Box 585 Dyersburg, Tennessee 38025-0585

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On and between July 11 and July 17, 2009, a survey crew, assembled by Kenneth H. Jones, Associate Professor of Biology at Dyersburg State Community College, under contract with Choctaw Transportation Company, conducted a survey of interior Least Tern (Sternula antillarum athalassos) nesting colonies along the Mississippi River. This annual survey is performed for the Memphis District Army Corps of Engineers and assists the U.S. Fish and Wildlife Service with its census in determining population size and distribution of the Interior Least Tern. This survey was the 25th consecutive annual count since the surveys were initiated in 1985 by the Army Corps of Engineers. The survey area extended 777 miles from Cape Girardeau, Missouri (Upper River Mile 53) to Baton Rouge, Louisiana (River Mile 230) (Figure 1). In prior years three types of surveys were performed: towboat, aerial and small boat (Table 4, Figure 2). The towboat surveys were discontinued in 1995 as were the aerial surveys in 1997 when it became obvious that of the three, the small boat survey yielded the highest and most accurate counts. Past years' surveys terminated about 7 miles downstream of Vicksburg, Mississippi because early aerial surveys in 1986 indicated a scarcity of sandbars and relatively few terns downstream of Vicksburg. Beginning in 2004 the survey was extended to Baton Rouge, Louisiana in order to more thoroughly access the entire range of the Least Tern population on the Lower Mississippi River.

From 1985 through 1996, Least Tern surveys were conducted by John Rumancik, fishery and wildlife biologist from the Memphis District Army Corps of Engineers. Since 1997 the surveys have all been conducted by Kenneth Jones, Associate Professor of Biology, Dyersburg State Community College. Observers and crew members of this year's survey included Mike Thron, biologist with the Memphis District Army Corps of Engineers and John Rumancik, retired biologist with the Memphis District Corps of Engineers. Experienced counters from past surveys helping on this year's count included Jimmy and Leila Boyd, Mark Campen, Dennis Davin, Zack Fowlkes, Jack Grubaugh, Professor of Biology, University of Memphis.

This year's survey yielded a total count of 9,516 Least Terns and 78 nesting colonies, more colonies than last year's survey, which was 62, but less in total numbers. Forty-six colonies were identified based on the presence of eggs and/or chicks (Tables 1 and 2). Thirty-two colonies were identified based on the presence of a large number of nest scrapes, adult behavior and other indicators of likely reproductive effort such as wetting breast feathers, sitting inland, carrying fish or intense mobbing of intruders. The largest colony was located at Corregidor Dikes (RM 503.0) with 800 adult terns counted. Other large colonies included Island

#84 Dikes (RM 533.4) with 650 birds, Prairie Point Dikes (RM 665.6) with 423, and Seypell Dikes Upper (RM 706.5) with 400 Least Terns. The smallest colonies were at Above Loosahatchie Dikes (RM 743.2), and Togo Island Dikes Lower (RM 414.3), with just 9 and 12 birds.

Numbers of adult and juvenile Least Terns were recorded on data sheets developed by the Corps and based on the Cornell University Bird Registry Form. One data sheet was used for each observation with the following noted: date, time, river mile, latitude/longitude (decimal degrees determined from GPS), number of adult terns, presence of juveniles, chicks and eggs, number of nests observed and eggs or chicks in each, locations of sandbars, substrate, distance from vegetation and type, weather conditions, nearest river gage readings, and other notes on bird behavior, signs of predation or other disturbance. Nest counts were determined both by direct observation of scrapes containing eggs (empty scrapes were not counted) or observations of terns sitting inland during waterline drift counts. Foraged fingerling fish dropped within the colony were identified and/or collected. Colony locations were marked on 2007 Flood Control and Navigation Maps of the Mississippi River, 62nd edition, USACE, from Cairo, Illinois south and 1998 Flood Control and Navigation Maps of the Mississippi River, 61st edition, USACE, above Cairo, Illinois. Data sheets and colony locations are found in Appendix A.

The average number of adult terns per colony was 122, with colony sizes ranging from as little as 9 adults to as many as 800. The numbers of eggs per nest ranged from 1 to 3 and many nests were associated with debris wrack lines or in close proximity to small, random pieces of drift. Many adults were observed utilizing other habitats often miles away from the nearest colony locations. These habitats included both still and running water of all depths in the channel, behind dikes, in back chutes, tributary mouths, and fast current against revetted banks on the outside of river bends.

The boat survey was initiated July 11, 2009, with the river stage at Memphis, Tennessee at 10.2 and falling (Table 3). For the entire duration of the survey, the river was on a steady fall, averaging around 1 foot per day. The survey proceeded downstream during daylight hours from Cape Girardeau, Mo., to Baton Rouge, La., at an average pace of 111 miles per day.

Upon spotting a likely colony site, the boat would head for the greatest concentration of terns, then approach the bar as close as shallow water levels would allow, cut power, and motor slowly with the current along the perimeter of the bar. Two or more observers would count birds using 7x35 or 8x40 binoculars. One observer counted terns resting along the waterline, while another observer counted birds in the air or sitting inland, presumably on nests. Usually after this preliminary count, and depending upon the sand bar configuration, the boat would go back and beach near the greatest concentration of terns and one or more observers would then walk toward the perceived center of the colony to find evidence of nesting activity, while others would fan out in different directions to traverse more of the colony area. This technique, counting as the boat proceeds downstream (hereafter referred to as a "perimeter count"), usually produced higher counts than just walking on the sand bar to the colony's center to induce mobbing (hereafter referred to as a "flush count"). It was particularly effective at colonies where terns were dispersed for several miles along the waterline and the sand bar was low enough that the observers could see across it. However, at many sites, especially those with back chutes with

shores not visible from the boat on the channel side, it should be construed that many terns were not seen and the counts were conservative. All individual counts were recorded privately so as not to influence other crew members' observations, then compared and counts discussed. All individual observer counts were recorded on data sheets. The highest number was discarded and the 2<sup>nd</sup> highest number was recorded as the total count, unless two or more observers had identical high counts. In most cases all observers were within 10% or less of the recorded count.

The presence of eggs or chicks was considered confirmation of nesting activity. Intense mobbing, wetting of breast feathers, and the presence of fresh scrapes were also considered to indicate an active nest colony at the 32 sites where no eggs or chicks were observed. Once a colony was located, several counts were made, both by observers stationed at the boat and those penetrating the colony. No colonies were found to contain fledged juveniles. Not all colonies were walked by members of the survey party, especially if the colony was widely dispersed and easily observed from the boat. In those instances, even though no eggs were observed, terns seen sitting higher up on the sand bar, away from the waterline, were counted as indicative of number of nests. This assumption produced the larger nest count totals up to 200, as shown in Table 1.

As with previous surveys, observations within the colony were performed as quickly as possible (< 15 minutes) to minimize the disturbance time and limit the exposure of any chicks and eggs to the intense summer heat. Though mobbing behavior was often intense upon the observers first entering the colony, it ceased almost immediately as soon as the observers retreated. The highest counts usually occurred during the initial waterline count or upon the first few minutes of mobbing when most, if not all, of the adults in the colony would join in to dissuade the intrusion. Nesting adults, nest scrapes, and numbers of nests with eggs and chicks were recorded as well as other features of the habitat. Nine Thousand five hundred sixteen (9,516) Least Terns were recorded at 110 locations (Table 1, Figure 1). Of these, 78 sites were identified as nesting colonies with 8,875 adults, 15 sites as resting bars only with 407 adults, and 17 observations were of 234 birds that could not be associated with colonies, either flying over feeding areas or in transit along the river.

As with previous years, the typical tern nest colony was located on an unattached (surrounded by water) sand and/or gravel bar usually associated with a dike field. Those colonies that were attached were located on very large, remote point bars, ½ to 1 mile in width, and often 2 to 4 miles in length. Isolation and remoteness appeared to be the main selection criteria. The larger colonies were hundreds of acres in size, while some of the smallest were just a few acres or less.

The locations of the colonies as indicated on the 1998 and 2007 Navigation Maps (Appendix A-I) should be viewed as only approximations based on river mile markers visible from or nearby the sites. Since many sand and gravel bars do move or change shape often, such features on the maps do not necessarily correspond to the actual conditions at the time of the survey (hence the occasional colony indicated in open water). For exact colony locations the GPS latitude/longitude coordinates (decimal degrees) are the most accurate and should be referenced as occurring at the water's edge on the channel side of the colony (except when specified otherwise on the data sheets). Most colonies were located on the high centers or

distributed evenly across the bars showing no preference for river vs. chute sides, though there were some exceptions.

The colonies' proximities to the nearest water (least distance from any nest with eggs to the waterline) varied from 20 to 1300 feet and averaged ~240 feet. Though some colonies were densely populated, with scrapes occurring within a few feet of each other, many more colonies were extremely dispersed with nests occurring hundreds of feet apart and the colony extending as far as a mile or more across the larger sandbars. Major vegetation was absent or far removed (>300 feet) from 72 colony sites, but 6 did have sparse stands of sapling Cottonwoods (*Populus deltoids*) and/or Black Willows (*Salix nigra*) within 300 feet of active nests. The other colonies with vegetation had only very sparse, recently emerged grasses, sedges and forbs in small patches within the colony. Most open water within 2 miles of active colonies appeared to be utilized by foraging terns. These sites included swift current on revetted outside bends, slack water between dikes, chutes, mouths of tributaries and even mid-channel currents.

Recent evidence of predation on tern eggs was noted at 1 colony site, by coyotes or dogs. The presence of coyote, and/or dog tracks was noted at 6 sites and still suggests that coyotes and/or feral/pet dogs are one of the more common predation threats to nesting Least Terns along the Lower Mississippi River. Of 78 colonies, 13 had track evidence of recent intrusion by humans on foot, by boats and ATVs. In 1 colony there were day campers present at the time of the survey date, but with most limiting their activities to the water line.

Besides Coyotes (*Canis latrans*) and dogs, other potential predators, or their sign, seen near colonies during this year's survey included American Crow (*Corvus brachyrhynchos*), Armadillo (*Dasypus novemcinctus*), Bald Eagle (*Haliaeetus leucocephalus*), Egrets (*Casmerodius*, *Egretta*, *Bubulcus*), Fox (*Urocyon or Vulpes*), Great Blue Heron (*Ardea herodius*), Mississippi Kite (*Ictinia mississippiensis*), Raccoon (*Procyon lotor*), Red-tailed Hawk (*Buteo jamaicensis*), and Turkey Vulture (*Cathartes aura*).

Other noteworthy bird species observed on the sand bars or in close proximity to Least Tern colonies included American avocet (Recurvirostra americana), Anhinga (Anhinga anhinga), Bank Swallow (Riparia riparia), Barn Swallow (Hirundo rustica) Belted Kingfisher (Megaceryle alcyon), Black-necked Stilts (Himantopus mexicanus), Black Tern (Chlidonias niger), Black Vulture (Coragyps atratus), Canada Goose (Branta canadensis), Caspian Tern (Sterna caspia), Cattle Egret (Bubulcus ibis), Common Grackle (Quiscalus quiscula), Double-Crested Cormorant (Phalocrorax auritus), Forster's Tern (Sterna forsteri), Great Blue Heron (Ardea herodias), Great Egret (Casmerodius albus), Hudsonian Godwit (Limosa haemastica), Indigo Buntings( Passerina cyanea), Killdeer (Charadrius vociferous), Little Blue Heron (Egretta caerulea), Mallard Duck (Anas platyrhynchos), Pied-billed Grebe (Podilymbus podiceps), Purple Martin (Progne subis), Red-winged Blackbird (Agelaius phoeniceus), Ring-billed Gull (Larus delawarensis), Rough-winged Swallow (Stelgidopteryx serripennis), Sandpipers (Calidris sp.) Snowy egret (Egretta thula), Cliff Swallow (Petrochelidon pyrrhonota), White Ibis (Eudocius albus), White Pelican (Pelecanus erythrorhyncos) and Wood Stork (Mycteria americana).

Fingerling-size shad (*Dorosoma*), and Silver Carp (*Hypophthalmichthys molitrix*), were found in colonies and are presumed to have been dropped by foraging adults. This year's survey yielded a total count (9,516) that was down from the 2008 count (12,183) by roughly 22%.

Table 1: Least Tern Survey - July 11 - July 17, 2009 - Mississippi River Cape Girardeau, Missouri, to Baton Rouge, Louisiana

River			•		Least		
Mile	Mississippi River Location	State	Lat. N	Long. W	Terns		Nests
RIVER MILE:	SITE NAME:	State	Latitude:	Longitude:	Adults:		Nests:
UR 30.8	Bumgard Island	IL	37.04192	89.37755	76	c*	4
946.0	Island #1 Dikes	KY	36.88810	89.11768	133	c*	6
940.0	Below Campbell Dikes	KY	NA	NA	4		0
931.2	Wolf Island Bar	KY	36.70052	89.14998	180	c*	10+
929.7	Williams Landing	KY	36.68500	89.14788	80	c*	7
924.8	Beckwith Bend	KY	NA	NA	5		0
920.5	Hickman Bend	МО	35.56013	89.24342	209	c*	2
909.0	Mable Landing	KY	36.54803	89.39751	243	c*	7
884.0	Kentucky Point Dikes	KY	36.51769	89.55204	312	c*	10+
876.0	Marr Towhead	TN	36.42100	89.53786	38	*	3
871.5	Stewart Towhead D kes Upper	МО	36.36334	89.51280	72	*	50
870.0	Stewart Towhead Dikes Lower	МО	36.35266	89.51883	62	*	0
863.5	Below Cherokee Dikes	TN	36.32014	89.61528	31		0
857.0	Chute of Island 14	МО	36.24564	89.57816	250	c*	10+
846.3	Opp. Caruthersville D kes	TN	NA	NA	7		0
837.0	Island #18 Towhead Dikes	TN	36.09847	89.66160	92	*	2
830.0	Island #20 Dikes	TN	NA	NA	6		
826.6	Head of Island #21 Dikes	TN	35.97324	89.71639	53	*	5
825.3	Island #21	TN	35.96161	89.70854	45	c*	3
819.4	Wrights Point Dikes	AR	35.90662	89.64791	66	c*	1
812.0	Below Tamm Bend Dikes	TN	35.89874	89.75754	40	*	2
807.4	Nebraska Point Dikes	TN	35.85873	89.75853	353	c*	10+
803.0	Bend of Island 25	AR	NA	NA	6		0
794.2	Ashport Gold Dust Dikes	AR	35.74818	89.82543	40	*	10
787.0	Keyes Point Dikes	TN	NA	NA	9		0
781.2	Below Plum Point D kes	TN	35.65164	89.89279	160	c*	1
775.3	Sunrise Towhead Chute	TN	35.57951	89.90346	23	*	5
771.0	Randolph Dikes	TN	NA	NA	9		0
766.2	Below Richardson Landing Dikes	TN	35.52419	89.98331	81	c*	6
760.0	Cedar Point	TN	35.43558	89.99867	46	*	4
754.5	Densford Bar	TN	35.39468	90.06695	82	c*	1

**SUBTOTAL 2,813** 23

Table 1 continued: Least Tern Survey - July 11 - July 17, 2009 - Mississippi River Cape Girardeau, MO, to Baton Rouge, LA

River					Least		
Mile	Mississippi River Location	State	Lat. N	Long. W	Terns		Nests
RIVER MILE:	SITE NAME:	State	Latitude:	Longitude:	Adults:		Nests:
743.2	Above Loosahatchie Dikes	TN	35.24930	90.09153	9	c*	3
740.5	Sycamore Chute Dikes	AR	35.20764	90.07227	70	*	0
733.0	Engineers Bar Dikes	AR	35.12364	90.10428	23	*	0
729.5	Vice Presidents Island #46	TN	35.12428	90.15978	66	c*	5
725.0	Dismal Point Dikes	AR	35.06910	90.18380	4		0
716.3	Cow Island Bend	MS	35.01221	90.28744	229	c*	7
710.5	Cat Island Dikes	MS	NA	NA	2		0
706.5	Seyppel D kes Upper	AR	34.89416	90.26083	400	c*	55+
705.2	Seyppel Dikes Lower	AR	34.88873	90.28032	110	c*	10+
702.8	Pickett Dikes	AR	34.87374	90.31387	48	c*	15
699.0	Basket Bar Dikes	AR	NA	NA	15		0
692.3	Rabbit Island	MS	34.81047	90.46430	50	*	5
686.5	Mhoon Bend	AR	34.73556	90.45821	32	*	0
680.3	Bordeaux Point D kes	MS	34.73318	90.56069	5		0
676.0	Below Walnut Bend Dikes	AR	34.67530	90.57420	40		0
672.1	St. Francis Bend	MS	34.62107	90.58377	150	c*	4
668.8	Prairie Point Dikes	AR	34.56587	90.55711	423	c*	1
656.0	Montezuma Towhead Dikes	AR	NA	NA	33		0
652.8	Friars Point Dikes	MS	34.37618	90.65429	31		0
647.9	Kangaroo Point Dikes Upper	AR	34.36700	90.70734	47	c*	10+
646.5	Kangaroo Point Dikes Lower	AR	34.36770	90.71630	33	*	3
643.4	Old Town Bend	MS	34.35226	90.76402	18	c*	2
640.3	Island #62 D kes Upper	AR	34.30482	90.73929	92	c*	10+
637.3	Island #62 Dikes Lower	AR	34.27662	90.76811	15		0
629.5	Island #64 Dikes	AR	34.21799	90.84954	70	c*	10+
625.3	Sunflower Cut-Off Upper	AR	34.17692	90.89412	47	c*	9
624.7	Sunflower Cut-Off Lower	AR	34.16903	90.90265	83	c*	9
623.0	Below Ludlow Dikes	AR	34.16035	90.92811	50	*	5
620.3	Island #67 D kes Upper	MS	34.12610	90.54300	125	c*	15
612.4	Below Knowlton Dikes Upper	AR	34.03316	90.89326	53	c*	1

**SUBTOTAL** 2,373 22

Table 1 continued: Least Tern Survey - July 11 - July 17, 2009 - Mississippi River Cape Girardeau, MO, to Baton Rouge, LA

River	cupe characau, 1,10, t				Least		
Mile	Mississippi River Location	State	Lat. N	Long. W	Terns		Nests
RIVER MILE:	SITE NAME:	State	Latitude:	Longitude:	Adults:		Nests:
612.2	Below Knowlton Dikes Lower	AR	34.02794	90.90060	60	c*	4
608.0	Island #70 Dikes	MS	34.02286	90.96428	51	*	3
602.7	Henrico Dikes	MS	33.99450	91.04180	50	*	3
599.6	Smith Point Dikes	MS	33.95934	91.07776	105	*	25
595.1	Victoria Bend D kes	AR	33.92955	91.01824	64	*	10
589.5	Terrene Dikes	MS	33.85945	91.06670	136	c*	45
583.7	Malone Field Dikes	AR	33.78616	91.05230	62	c*	0
581.0	Cat Island	AR	NA	NA	28		0
579.0	Below Prentiss Dikes	MS	33.75251	91.13266	94	*	5
574.2	Cau k Neck Cut-Off	AR	33.70733	91.17040	50	*	9
569.8	Catfish Point D kes	MS	33.67964	91.22231	98	c*	0
563.3	Chicot Landing Dikes	AR	33.62811	91.14978	61	*	5
559.0	Choctaw Bar Island	AR	33.58360	91.16700	8		0
553.6	Huntington Point	MS	33.54860	91.22844	18	*	1
550.3	Offutt Landing	MS	NA	NA	19		0
533.4	Island 84 Dikes	MS	33.31903	91.17683	650	c*	10+
528.6	Refuge Dikes	MS	33.26586	91.12115	68	c*	12
526.5	Aconia Chute D kes	AR	NA	NA	3		0
523.0	Seven Oaks d kes	AR	NA	NA	7		0
519.1	Island #86 D kes Upper	AR	33.13810	91.09719	24	c*	5
517.5	Island #86 Dikes Lower	MS	33.12731	91.09986	68	*	3
514.0	Leota dikes	MS	33.09130	91.16341	25	*	2
508.5	Cracraft Lower Dikes	AR	33.02516	91.15446	3		0
503.0	Corregidor D kes	MS	32.95889	91.38900	800	c*	200
499.5	Wilson Point Dikes	LA	NA	NA	4		0
491.3	Baleshed Landing Dikes	MS	32.84701	91.12215	100	*	18
482.3	Ajax Bar Dikes Upper	MS	32.74483	91.14117	91	c*	2
480.0	Ajax Bar D kes Lower	MS	32.73710	91.11741	375	c*	15
477.0	Point Lookout Dike	LA	NA	NA	2		0
470.0	Arcadia Point D kes	MS	NA	NA	4		0
461.0	Willow Cutoff D kes	LA	32.54429	91.10239	75		0
447.3	Marshall Cutoff D kes	LA	32.40044	901.99691	40	*	2

**SUBTOTAL** 3,243 22

Table 1 continued: Least Tern Survey - July 11 - July 17, 2009 - Mississippi River Cape Girardeau, MO, to Baton Rouge, LA

River					Least		
Mile	<b>Mississippi River Location</b>	State	Lat. N	Long. W	Terns		Nests
RIVER MILE:	SITE NAME:	State	Latitude:	Longitude:	Adults:		Nests:
441.5	Yazoo Cut-Off	MS	NA	NA	2		0
428.7	Below Racetrack Dikes	MS	32.24336	90.97723	79	*	22
419.0	Newton Bend D kes	LA	32.12355	91.03762	35	*	6
415.2	Togo Island Dikes Upper	LA	32.11706	91.10526	45	*	12
414.3	Togo Island Dikes Lower	LA	32.10746	91.10071	15	*	5
409.7	Yucatan D kes	MS	32.07082	91.07567	67	c*	6
393.0	Bondurant Towhead Dikes	LA	31.89713	91.21048	150	c*	6
390.0	Browns Field D kes	LA	NA	NA	2		0
383.2	Spithead Towhead Dikes	MS	31.82997	91.34646	50	c*	1
378.0	Waterproof Dikes	LA	NA	NA	7		0
357.4	Carthage Point Dikes	MS	31.51478	91.49639	43		0
349.6	Opposite Warnicott Landing Dikes	MS	31.41997	91.49334	105	c*	50
337.0	Fritz Island Dikes	LA	NA	NA	2		0
329.3	Jackson Point	MS	31.24505	91.64962	130	c*	3
322.0	Homochito Cuttoff	LA	31.1742	91.5947	3		0
304.5	Shreves Bar	LA	30.99254	91.64989	185	c*	1
300.5	Hog Point D kes	LA	30.94092	91.65082	167	*	5

SUBTOTAL	<b>1,087</b> 11
TOTAL INDIVIDUALS	9,516
TOTAL SITES	110
TOTAL COLONIES	78

c Confirmed chicks or eggs

<sup>\*</sup> Nest colony determined by bird behavior (sitting inland, breasting, carrying fish, etc.)

Table 2: Summary of 2009 Least Tern Survey on the Lower Mississippi River

River Reach	Number of Terns (July 11-17, 2009)
Cape Girardeau, MO, to Cairo, IL URM 50 – RM 954	76
Cairo, IL, to Osceola, AR RM 954 – RM 790	2,327
Osceola, AR, to Helena, AR RM 790 – RM 670	1,663
Helena, AR, to Greenville, MS RM 670 – RM 530	2,674
Greenville, MS, to Vicksburg, MS RM 530 – RM 430	1,691
Vicksburg, MS, to Baton Rouge, LA RM 430 - RM 230	1,085
ГОТАL	9,516
River Reach	Number of Colonies
Cape Girardeau, MO, to Cairo, IL URM 50 – RM 954	1
Cairo, IL, to Osceola, AR RM 954 – RM 790	17
Osceola AR to Helena AR	

Table 3: Gage Readings – Lower Mississippi River

Least Tern Surveys – July,2009

Shaded numbers indicate local stages at time of survey.

27.0 25.4 24.2 22.9	17.8 16.3	20.2	7000		11.7			
25.4 24.2		20.2						
24.2	16.3		15.4	24.0	23.1	35.1	32.2	41.1
		18.9	13.9	22.6	22.2	34.2	31.4	MSG
22.9	14.9	17.7	12.5	21.0	21.2	33.2	30.5	MSG
	13.6	16.7	11.1	19.5	19.8	31.8	29.3	MSG
23.5	13.2	15.9	10.0	18.0	18.8	30.6	28.0	MSG
25.0	14.2	16.3	9.0	16.7	17.3	29.3	26.8	MSG
25.7	15.4	17.4	9.0	15.9	16.3	28.0	25.2	MSG
25.2	15.5	17.8	9.9	16.1	15.6	27.1	23.7	33.6
24.0	14.7	17.3	10.5	16.8	15.4	26.8	22.4	32.0
22.0	13.5	16.3	10.2	17.1	15.7	26.8	21.9	30.8
21.7	12.0	15.1	9.2	16.7	15.8	27.0	21.6	30.0
21.6	11.7	14.2	7.9	15.6	15.5	26.7	21.6	29.5
21.8	11.4	14.3	7.2	14.7	15.1	26.4	21.3	29.2
22.2	11.6	14.5	6.7	13.9	14.4	25.8	21.0	28.9
22.2	MSG	14.8	6.8	13.5	13.5	25.0	20.3	28.4
22.9	12.1	15.0	7.7	14.2	13.4	24.6	19.8	27.8
23.9	MSG	15.5	7.4	14.5	13.5	24.6	19.4	27.2
23.4	MSG	16.2	7.8	14.5	13.2	24.3	19.1	26.8
22.2	12.7	15.8	8.4	14.9	13.6	24.5	18.9	26.5
21.7	12.1	15.0	8.3	15.3	13.4	24.5	18.8	26.3
19.4	11.0	14.4	8.2	15.2	14.3	25.1	19.0	26.2
19.4	9.8	12.4	7.5	15.1	14.7	25.7	19.7	26.6
19.7	9.4	11.8	6.3	14.3	14.7	25.8	20.0	27.1
19.2	9.3	11.7	6.0	13.1	13.7	25.1	20.1	27.4
18.5	8.5	12.1	5.2	12.3	12.9	24.1	19.5	27.2
19.0	8.3	11.5	4.6	12.3	12.7	23.8	18.9	26.8
19.1	8.5	11.6	3.9	11.7	12.8	23.8	18.5	26.4
19.2	8.6	11.7	3.6	11.2	12.6	23.8	18.6	26.1
20.1	9.0	11.8	3.7	11.1	12.4	23.4	19.0	26.3
22.8	10.4	12.5	5.1	11.8	12.3	23.3	19.3	26.7
	21.7 21.6 21.8 22.2 22.2 22.9 23.9 23.4 22.2 21.7 19.4 19.7 19.2 18.5 19.0 19.1 19.2 20.1	21.7         12.0           21.6         11.7           21.8         11.4           22.2         11.6           22.2         MSG           22.9         12.1           23.9         MSG           23.4         MSG           22.2         12.7           21.7         12.1           19.4         11.0           19.4         9.8           19.7         9.4           19.2         9.3           18.5         8.5           19.0         8.3           19.1         8.5           19.2         8.6           20.1         9.0	21.7         12.0         15.1           21.6         11.7         14.2           21.8         11.4         14.3           22.2         11.6         14.5           22.2         MSG         14.8           22.9         12.1         15.0           23.9         MSG         15.5           23.4         MSG         16.2           22.2         12.7         15.8           21.7         12.1         15.0           19.4         11.0         14.4           19.4         9.8         12.4           19.7         9.4         11.8           19.2         9.3         11.7           18.5         8.5         12.1           19.0         8.3         11.5           19.1         8.5         11.6           19.2         8.6         11.7           20.1         9.0         11.8	21.7         12.0         15.1         9.2           21.6         11.7         14.2         7.9           21.8         11.4         14.3         7.2           22.2         11.6         14.5         6.7           22.2         MSG         14.8         6.8           22.9         12.1         15.0         7.7           23.9         MSG         15.5         7.4           23.9         MSG         15.5         7.4           23.9         MSG         16.2         7.8           22.9         12.1         15.0         8.3           15.5         7.4         7.4         7.8           23.4         MSG         16.2         7.8           22.2         12.7         15.8         8.4           21.7         12.1         15.0         8.3           19.4         11.0         14.4         8.2           19.7         9.4         11.8         6.3           19.2         9.3         11.7         6.0           18.5         8.5         12.1         5.2           19.0         8.3         11.5         4.6           19.1 <t< td=""><td>21.7         12.0         15.1         9.2         16.7           21.6         11.7         14.2         7.9         15.6           21.8         11.4         14.3         7.2         14.7           22.2         11.6         14.5         6.7         13.9           22.2         MSG         14.8         6.8         13.5           22.9         12.1         15.0         7.7         14.2           23.9         MSG         15.5         7.4         14.5           23.4         MSG         16.2         7.8         14.5           23.4         MSG         16.2         7.8         14.5           22.2         12.7         15.8         8.4         14.9           21.7         12.1         15.0         8.3         15.3           19.4         11.0         14.4         8.2         15.2           19.4         9.8         12.4         7.5         15.1           19.7         9.4         11.8         6.3         14.3           19.2         9.3         11.7         6.0         13.1           18.5         8.5         12.1         5.2         12.3</td><td>21.7         12.0         15.1         9.2         16.7         15.8           21.6         11.7         14.2         7.9         15.6         15.5           21.8         11.4         14.3         7.2         14.7         15.1           22.2         11.6         14.5         6.7         13.9         14.4           22.2         MSG         14.8         6.8         13.5         13.5           22.9         12.1         15.0         7.7         14.2         13.4           23.9         MSG         15.5         7.4         14.5         13.5           23.4         MSG         16.2         7.8         14.5         13.5           23.4         MSG         16.2         7.8         14.5         13.2           22.2         12.7         15.8         8.4         14.9         13.6           21.7         12.1         15.0         8.3         15.3         13.4           19.4         11.0         14.4         8.2         15.2         14.3           19.4         9.8         12.4         7.5         15.1         14.7           19.7         9.4         11.8         6.3</td><td>21.7         12.0         15.1         9.2         16.7         15.8         27.0           21.6         11.7         14.2         7.9         15.6         15.5         26.7           21.8         11.4         14.3         7.2         14.7         15.1         26.4           22.2         11.6         14.5         6.7         13.9         14.4         25.8           22.2         MSG         14.8         6.8         13.5         13.5         25.0           22.9         12.1         15.0         7.7         14.2         13.4         24.6           23.9         MSG         15.5         7.4         14.5         13.5         24.6           23.9         MSG         16.2         7.8         14.5         13.5         24.6           23.9         MSG         16.2         7.8         14.5         13.2         24.6           23.4         MSG         16.2         7.8         14.5         13.2         24.3           22.2         12.7         15.8         8.4         14.9         13.6         24.5           21.7         12.1         15.0         8.3         15.3         13.4         24.5&lt;</td><td>21.7         12.0         15.1         9.2         16.7         15.8         27.0         21.6           21.6         11.7         14.2         7.9         15.6         15.5         26.7         21.6           21.8         11.4         14.3         7.2         14.7         15.1         26.4         21.3           22.2         11.6         14.5         6.7         13.9         14.4         25.8         21.0           22.2         MSG         14.8         6.8         13.5         13.5         25.0         20.3           22.9         12.1         15.0         7.7         14.2         13.4         24.6         19.8           23.9         MSG         15.5         7.4         14.5         13.5         25.0         20.3           22.9         12.1         15.0         7.7         14.2         13.4         24.6         19.8           23.4         MSG         16.2         7.8         14.5         13.5         24.6         19.4           22.2         12.7         15.8         8.4         14.9         13.6         24.5         18.9           21.7         15.8         8.4         14.9         <td< td=""></td<></td></t<>	21.7         12.0         15.1         9.2         16.7           21.6         11.7         14.2         7.9         15.6           21.8         11.4         14.3         7.2         14.7           22.2         11.6         14.5         6.7         13.9           22.2         MSG         14.8         6.8         13.5           22.9         12.1         15.0         7.7         14.2           23.9         MSG         15.5         7.4         14.5           23.4         MSG         16.2         7.8         14.5           23.4         MSG         16.2         7.8         14.5           22.2         12.7         15.8         8.4         14.9           21.7         12.1         15.0         8.3         15.3           19.4         11.0         14.4         8.2         15.2           19.4         9.8         12.4         7.5         15.1           19.7         9.4         11.8         6.3         14.3           19.2         9.3         11.7         6.0         13.1           18.5         8.5         12.1         5.2         12.3	21.7         12.0         15.1         9.2         16.7         15.8           21.6         11.7         14.2         7.9         15.6         15.5           21.8         11.4         14.3         7.2         14.7         15.1           22.2         11.6         14.5         6.7         13.9         14.4           22.2         MSG         14.8         6.8         13.5         13.5           22.9         12.1         15.0         7.7         14.2         13.4           23.9         MSG         15.5         7.4         14.5         13.5           23.4         MSG         16.2         7.8         14.5         13.5           23.4         MSG         16.2         7.8         14.5         13.2           22.2         12.7         15.8         8.4         14.9         13.6           21.7         12.1         15.0         8.3         15.3         13.4           19.4         11.0         14.4         8.2         15.2         14.3           19.4         9.8         12.4         7.5         15.1         14.7           19.7         9.4         11.8         6.3	21.7         12.0         15.1         9.2         16.7         15.8         27.0           21.6         11.7         14.2         7.9         15.6         15.5         26.7           21.8         11.4         14.3         7.2         14.7         15.1         26.4           22.2         11.6         14.5         6.7         13.9         14.4         25.8           22.2         MSG         14.8         6.8         13.5         13.5         25.0           22.9         12.1         15.0         7.7         14.2         13.4         24.6           23.9         MSG         15.5         7.4         14.5         13.5         24.6           23.9         MSG         16.2         7.8         14.5         13.5         24.6           23.9         MSG         16.2         7.8         14.5         13.2         24.6           23.4         MSG         16.2         7.8         14.5         13.2         24.3           22.2         12.7         15.8         8.4         14.9         13.6         24.5           21.7         12.1         15.0         8.3         15.3         13.4         24.5<	21.7         12.0         15.1         9.2         16.7         15.8         27.0         21.6           21.6         11.7         14.2         7.9         15.6         15.5         26.7         21.6           21.8         11.4         14.3         7.2         14.7         15.1         26.4         21.3           22.2         11.6         14.5         6.7         13.9         14.4         25.8         21.0           22.2         MSG         14.8         6.8         13.5         13.5         25.0         20.3           22.9         12.1         15.0         7.7         14.2         13.4         24.6         19.8           23.9         MSG         15.5         7.4         14.5         13.5         25.0         20.3           22.9         12.1         15.0         7.7         14.2         13.4         24.6         19.8           23.4         MSG         16.2         7.8         14.5         13.5         24.6         19.4           22.2         12.7         15.8         8.4         14.9         13.6         24.5         18.9           21.7         15.8         8.4         14.9 <td< td=""></td<>

Table 4: Summary of Least Tern Surveys 1985 2009 Lower Mississippi River

Year Aerial	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Individuals	187	1,332	1,125	1.018	2,503	4,182	3,358	2,311	4,589	3,303	3,759
Sites	12	37	49	56	58	56	67	80	66	66	63
Colonies	3	16	24	31	46	36	56	61	46	40	51
Towboat											
Individuals	577	595	575	1,235	508	357	1,154	1,216	2,031	965	489
Sites	35	39	45	71	25	31	39	47	48	39	25
Colonies	15	16	21	33	9	3	29	34	21	30	1
Small Boat											
Individuals	0	2,188	2,206	2,356	2,005	5,038	4,297	3,653	0	6,776	6,971
Sites	0	41	50	72	64	38	66	81	0	78	70
Colonies	0	28	46	60	42	32	57	74	0	69	62

Year Aerial	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Individuals	3,677	2,129	0	0	0	0	0	0	0	0	0
Sites	81	81	0	0	0	0	0	0	0	0	0
Colonies	20	23	0	0	0	0	0	0	0	0	0

Individuals	3,067	3,428	5,538	6,159	5,920	6,361	5,802	8,082	11,239	10,960	8,171
Sites	47	79	91	134	124	141	100	115	114	118	144
Colonies	31	57	39	38	64	54	68	68	69	88	107

Year Small Boat	2007	2008	2009
Individuals	9,814	12,183	9,516
Sites	121	116	110
Colonies	96	62	78

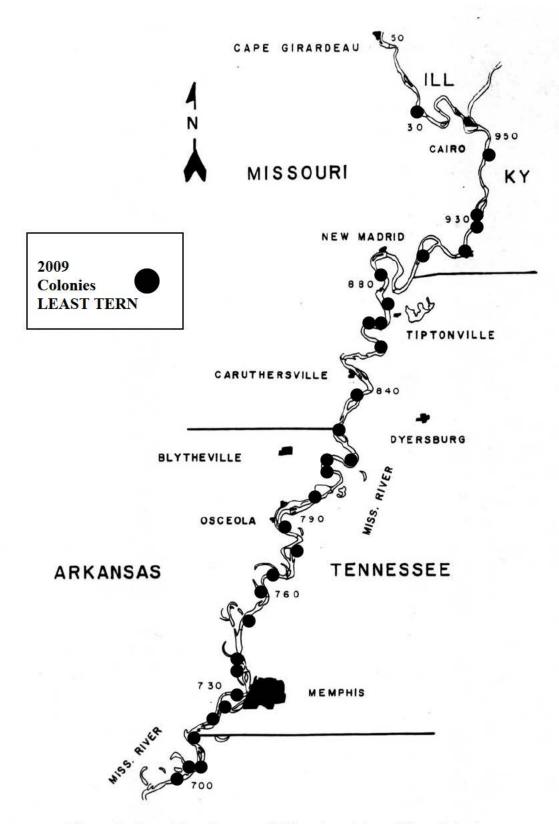


Figure 1: Least Tern Survey – 2009 – Area Map of Nest Colonies on Mississippi River – Cape Girardeau, MO to Baton Rouge, LA

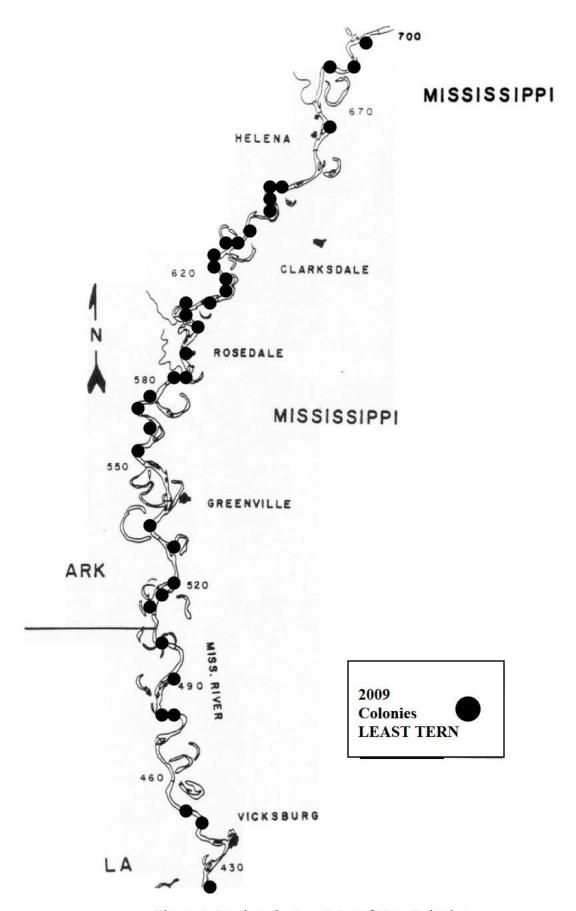


Figure 1 Continued: Area Map of Nest Colonies

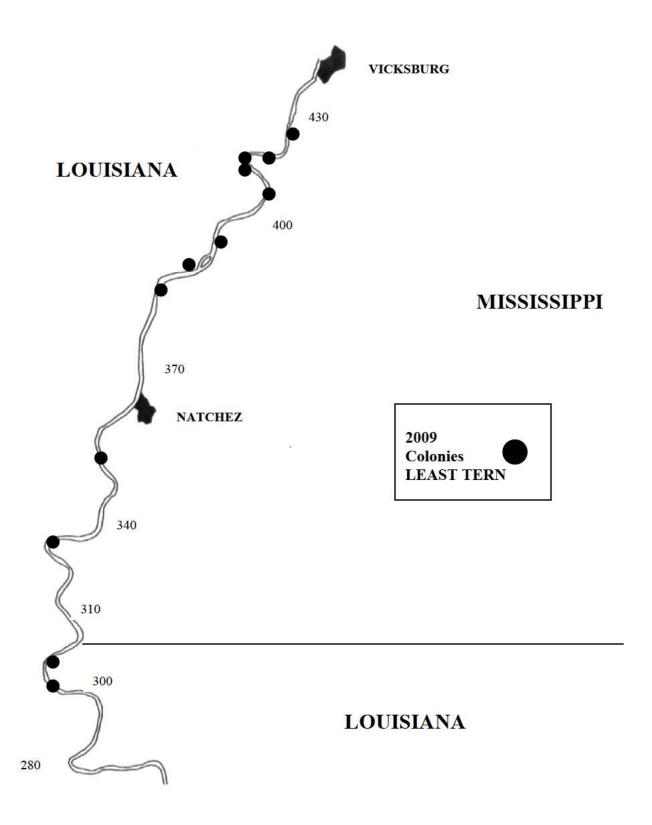
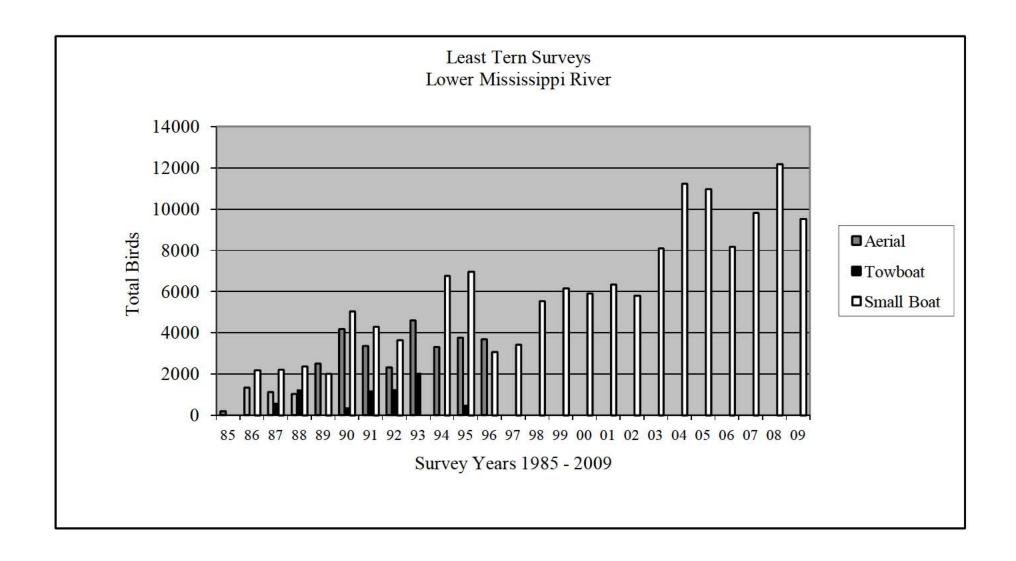


Figure 1 Continued: Area Map of Nest Colonies



## Population Survey of the Interior Least Tern On the Mississippi River from Cape Girardeau, Missouri to Baton Rouge, Louisiana

2009

APPENDIX A

## APPENDIX A – I

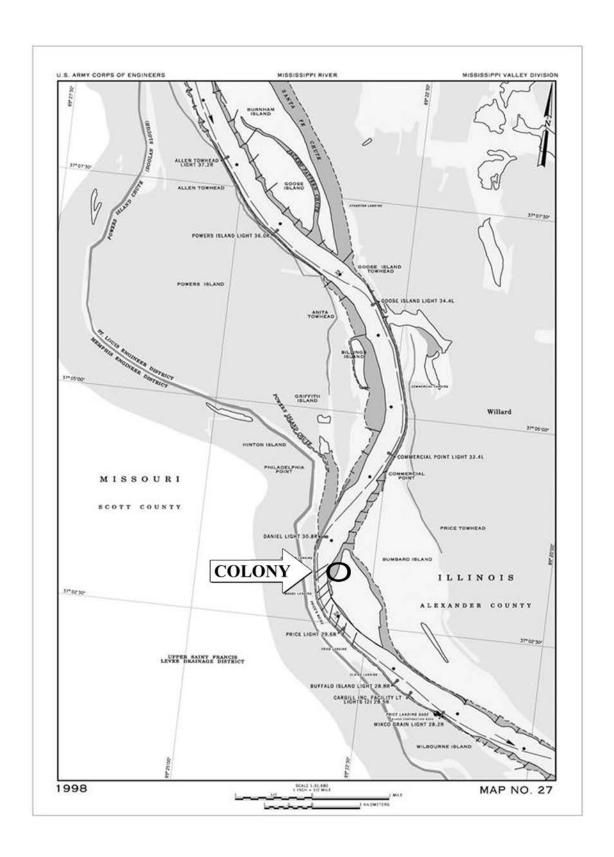
## **LEAST TERN SURVEY - 2009**

Mississippi River Cape Girardeau, MO to Baton Rouge, LA

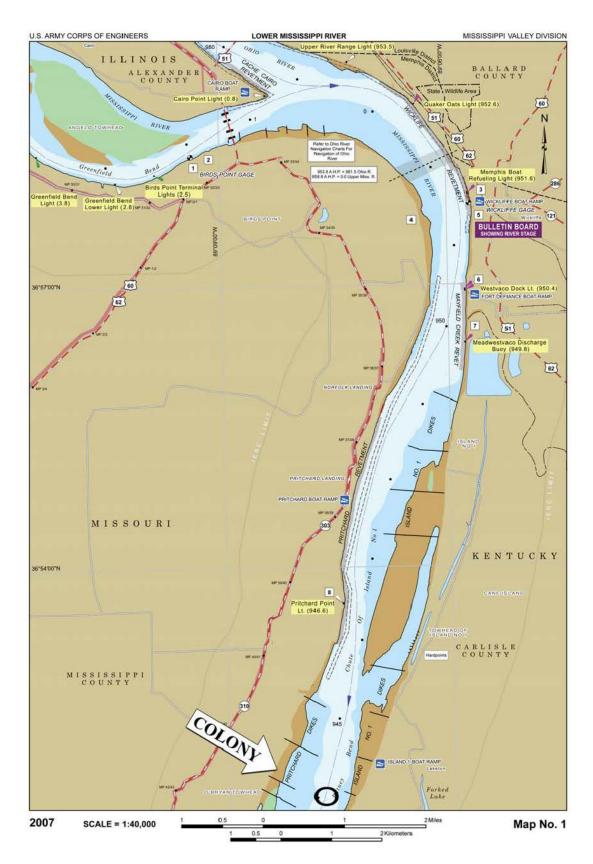
**NEST COLONY LOCATIONS** 

**Memphis District, Corps of Engineers** 

Maps



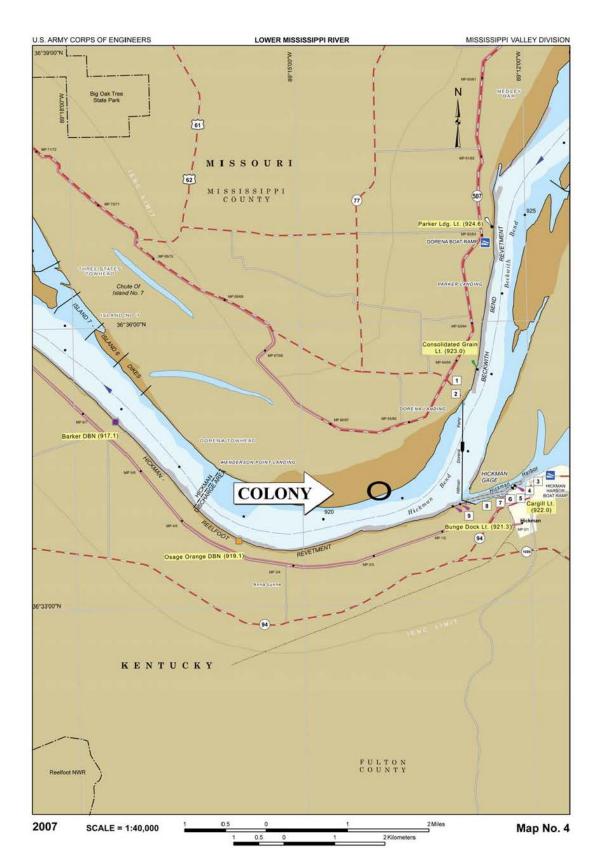
Least Tern Survey – 2009 Mississippi River Cape Girardeau, MO to Baton Rouge, LA Nest Colony Locations Memphis District Corps of Engineers A-I-1



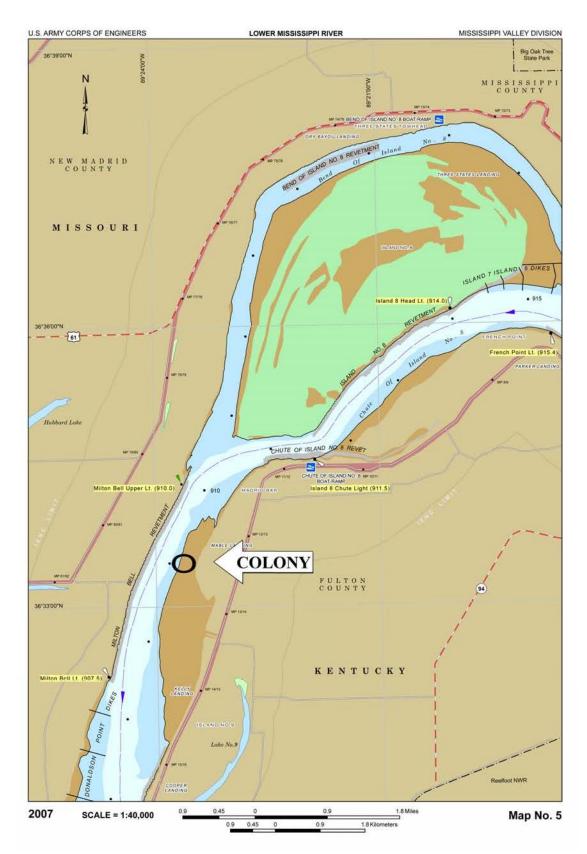
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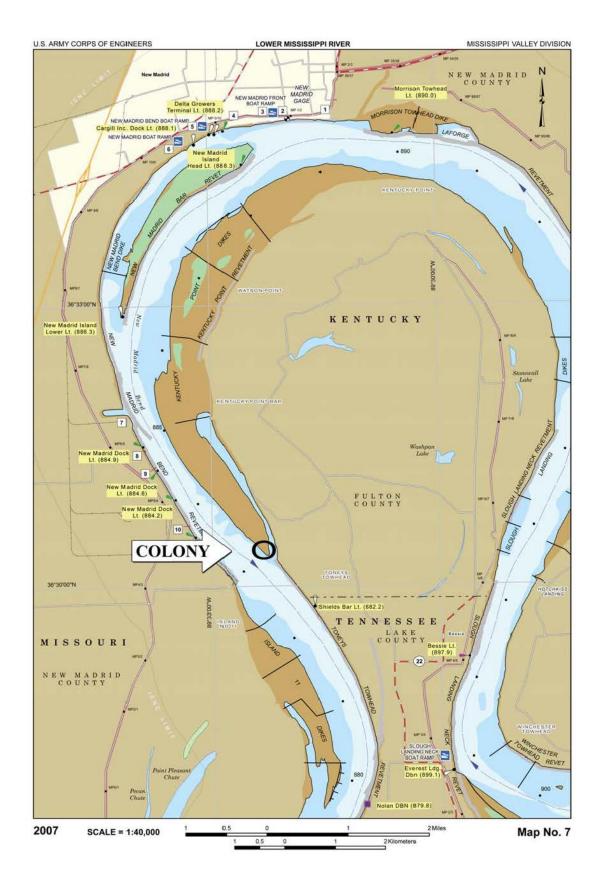
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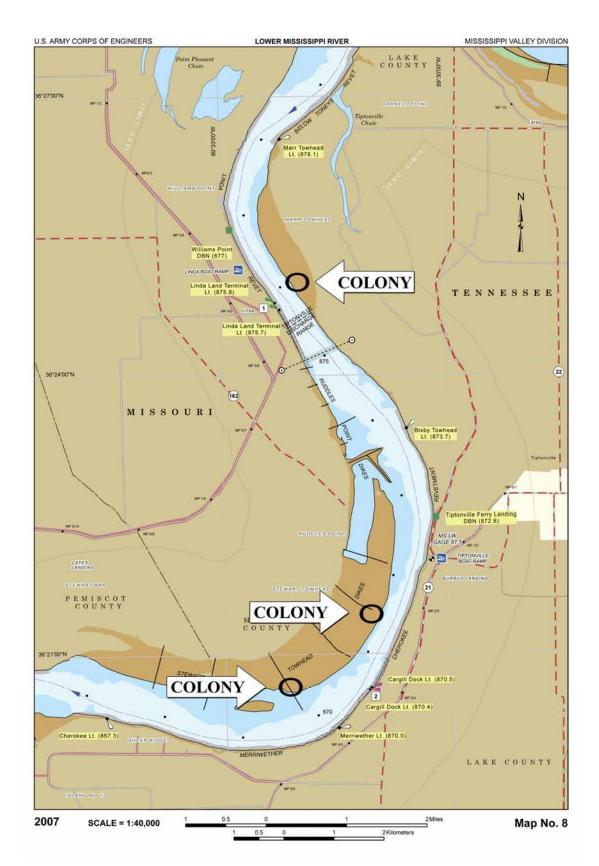
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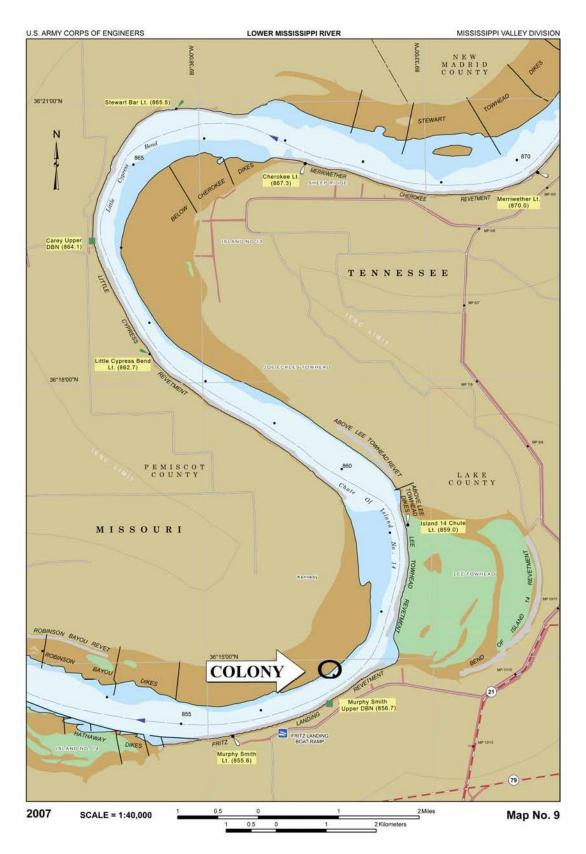
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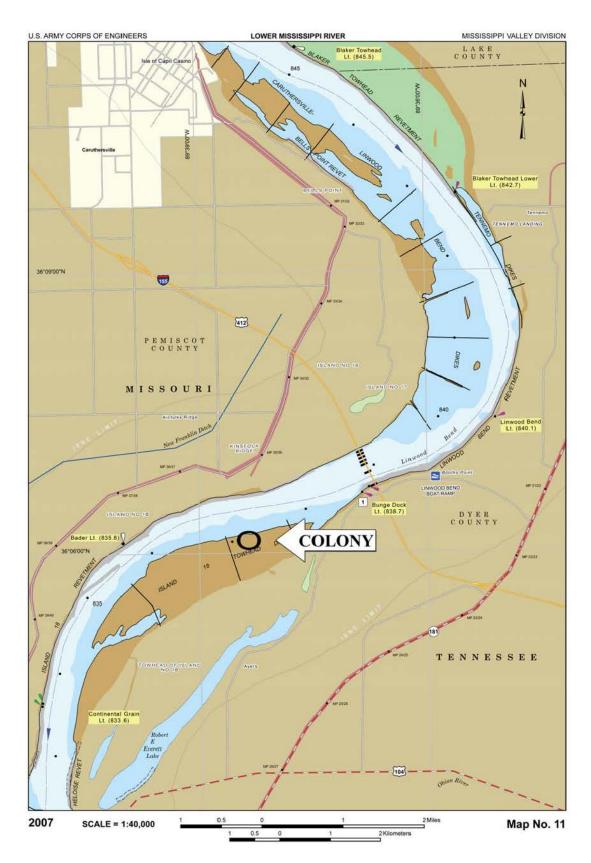
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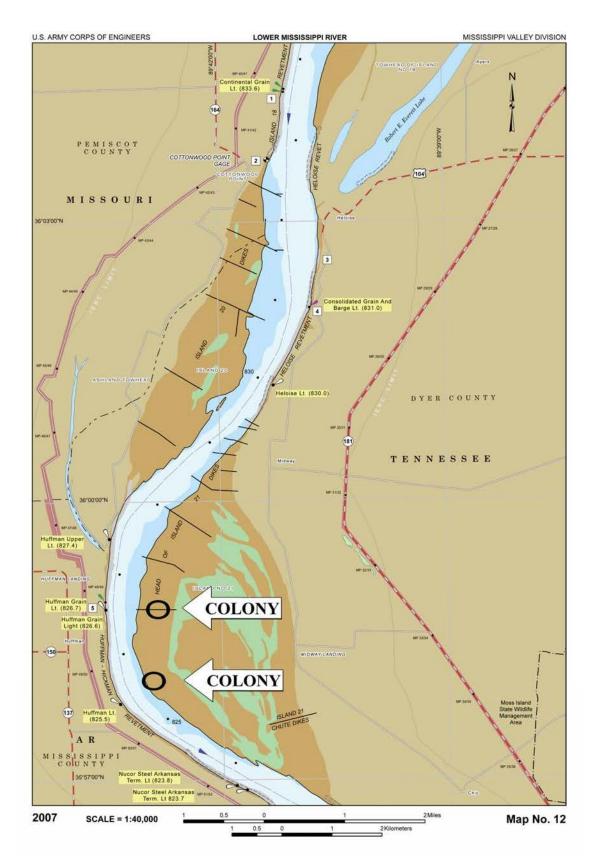
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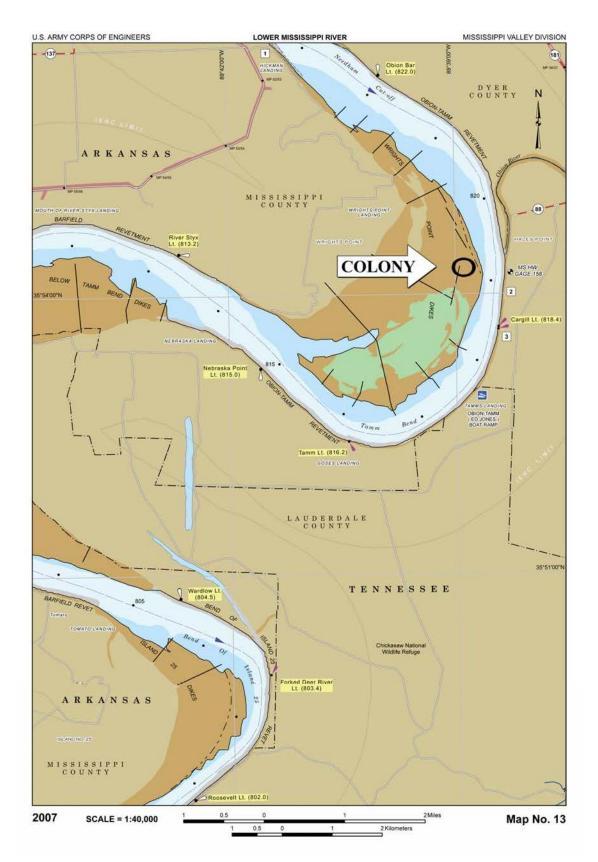
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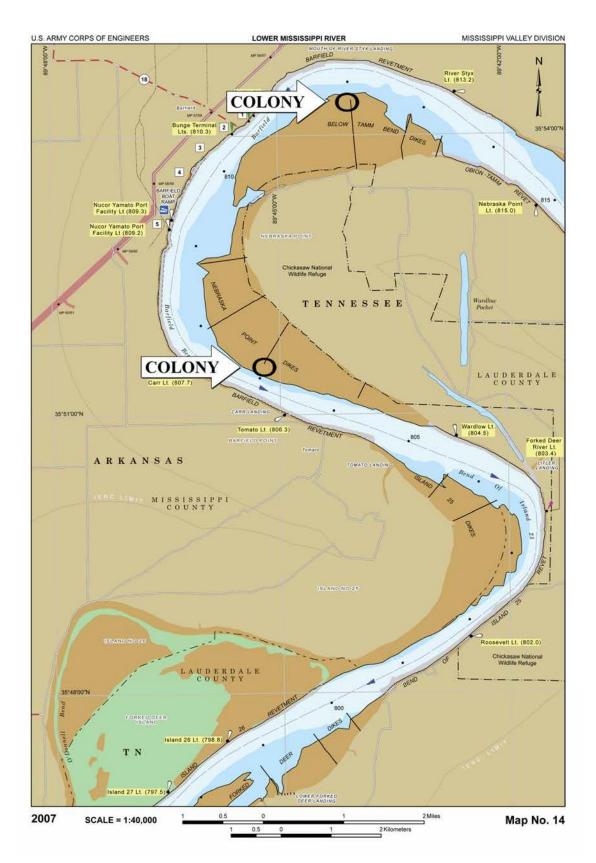
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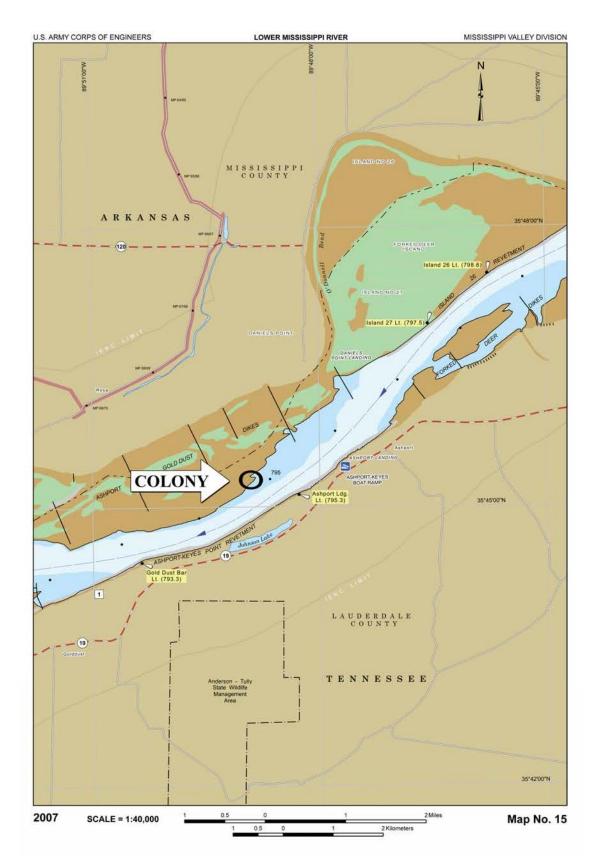
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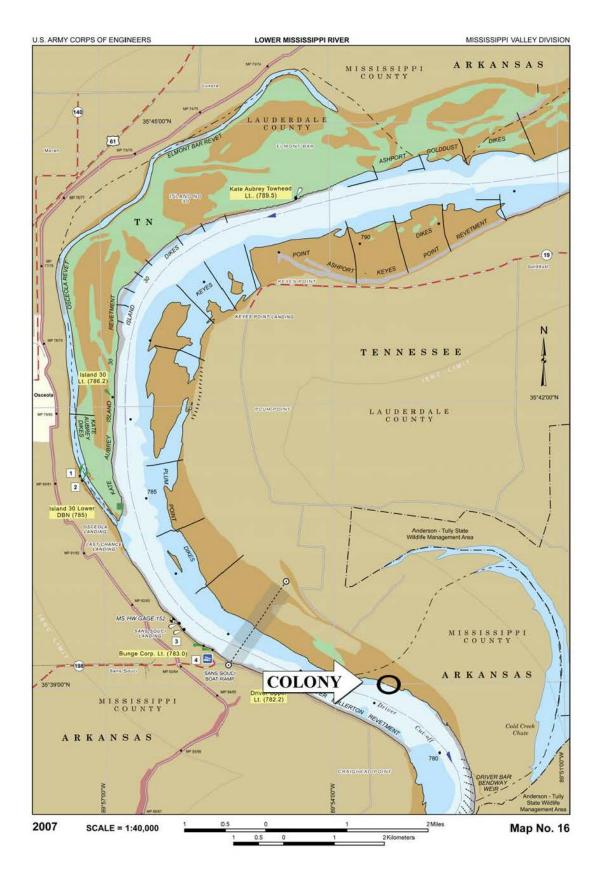
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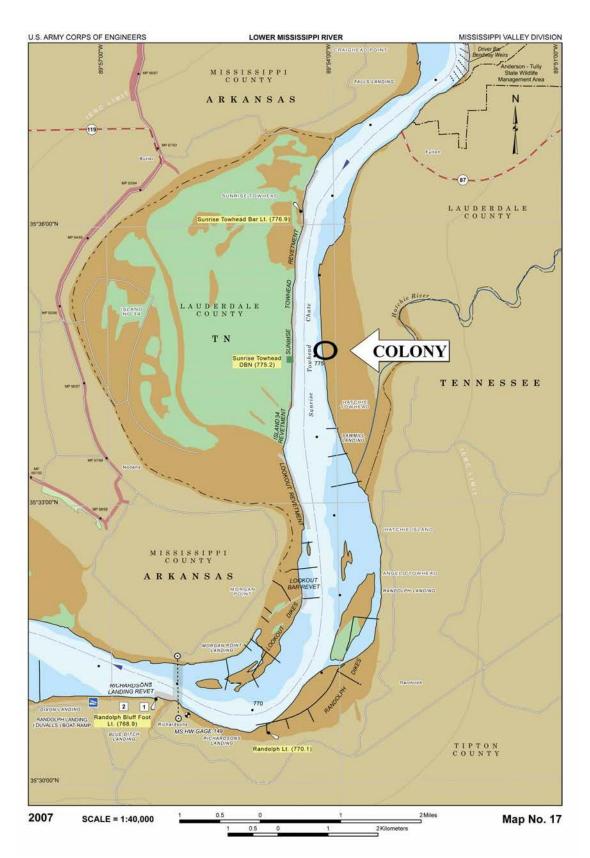
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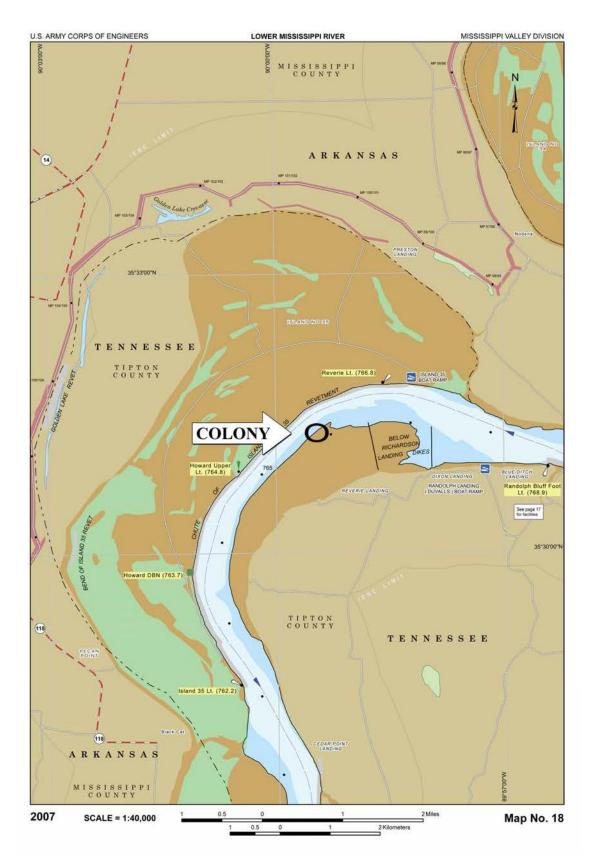
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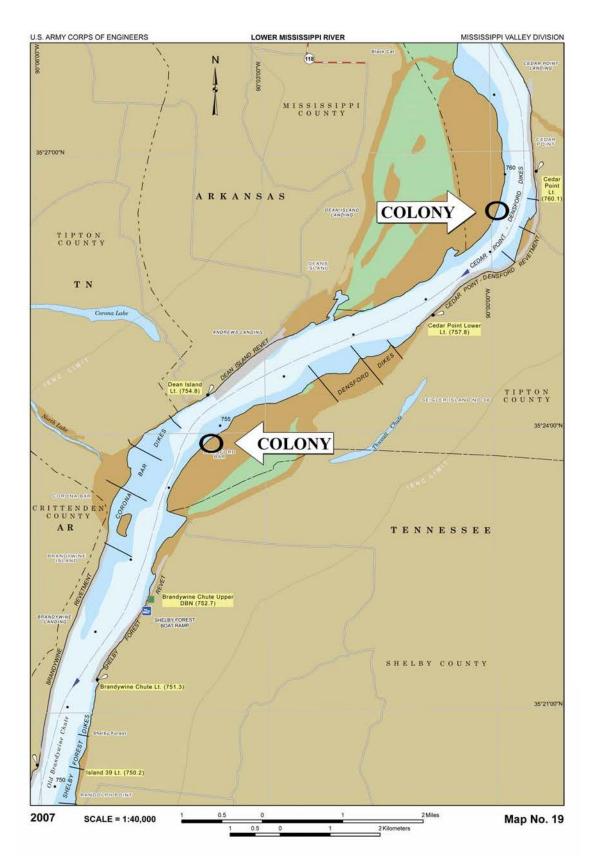
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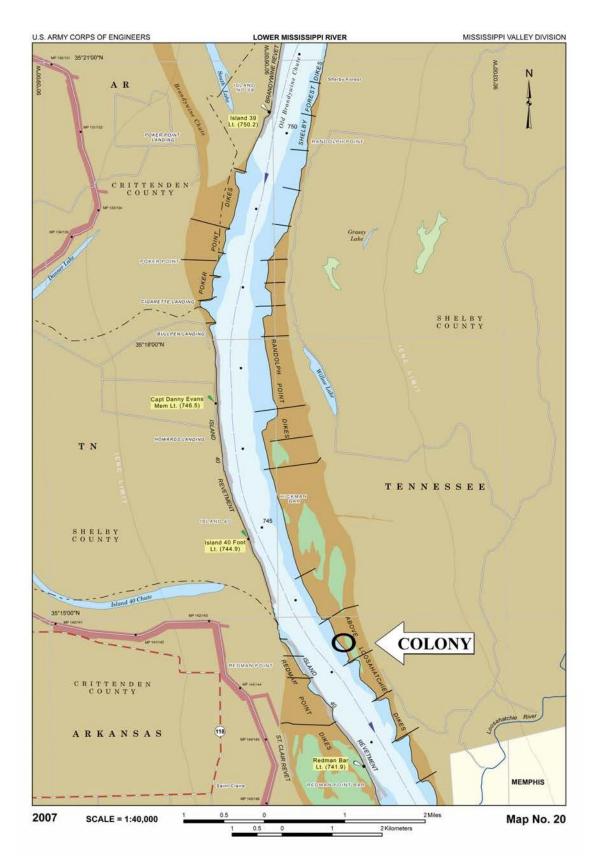
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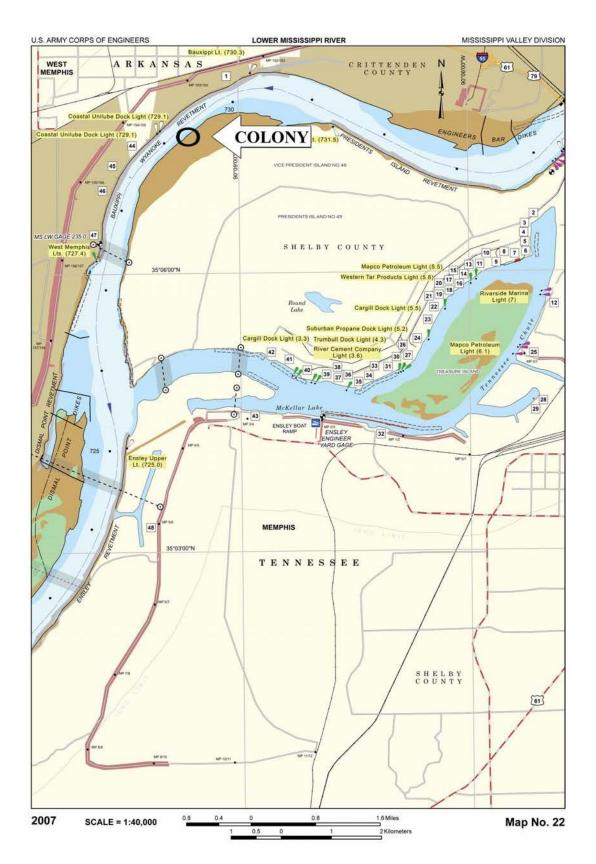
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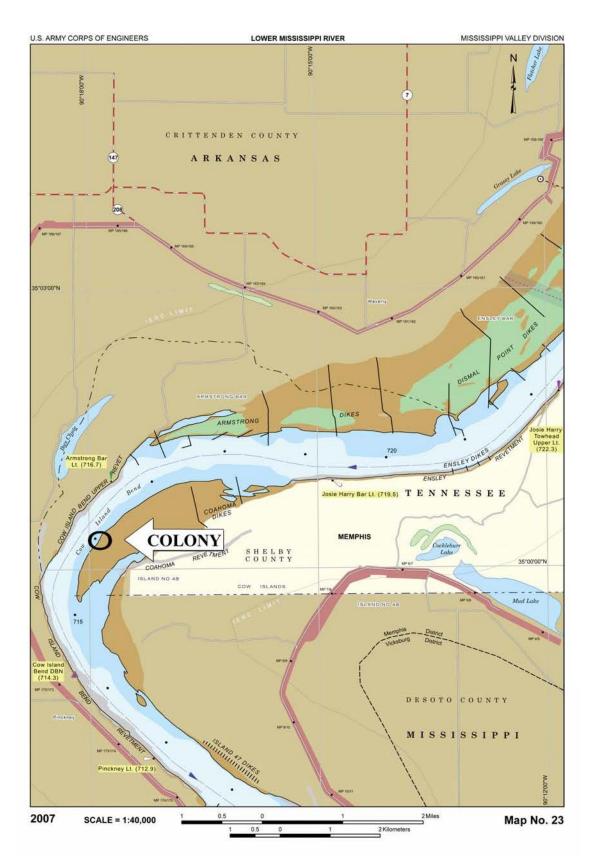
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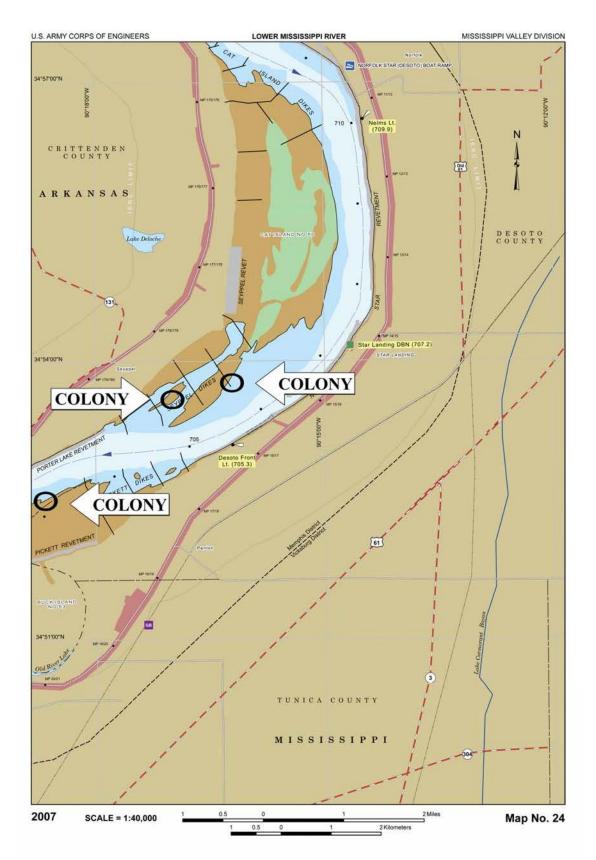
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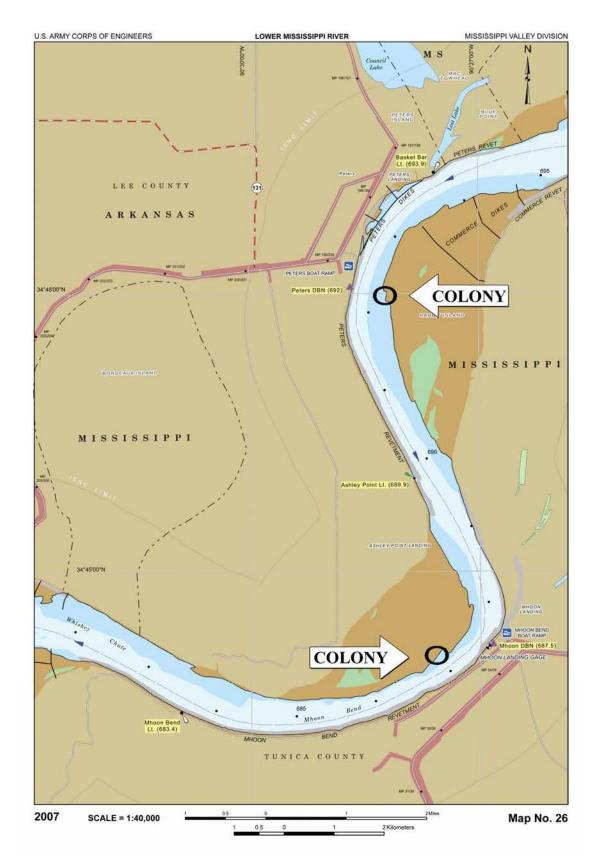
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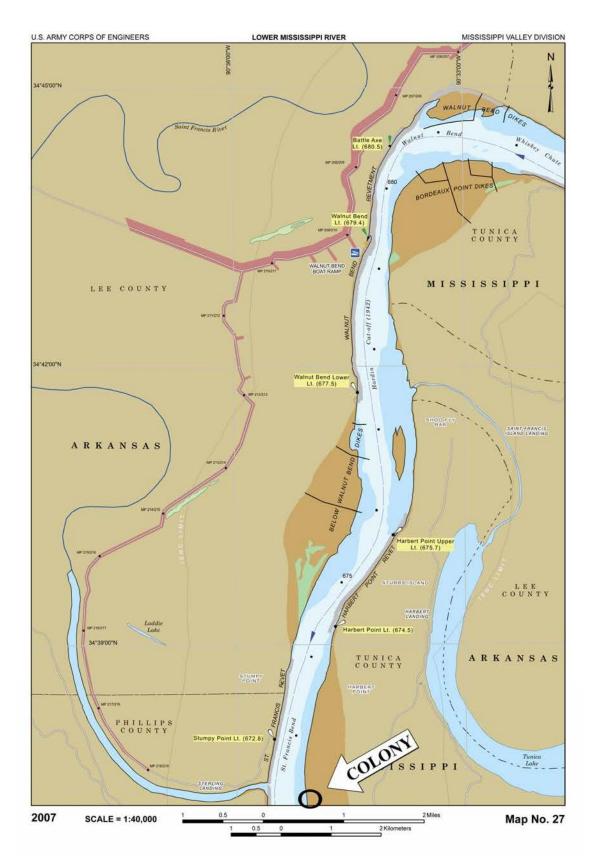
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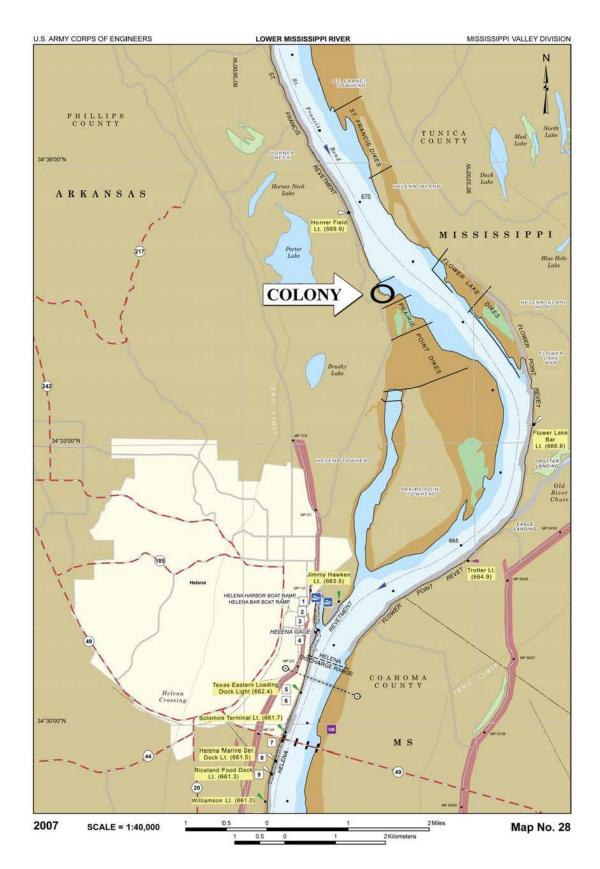
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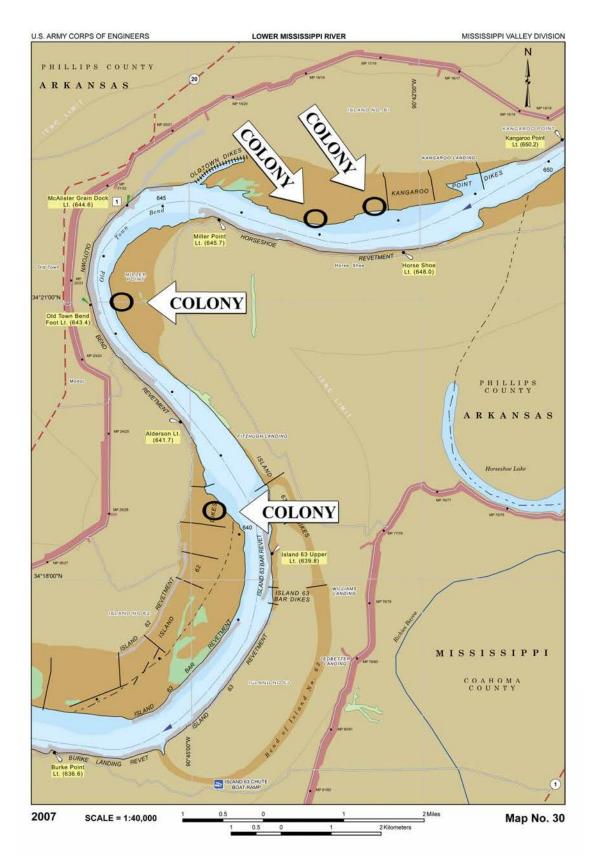
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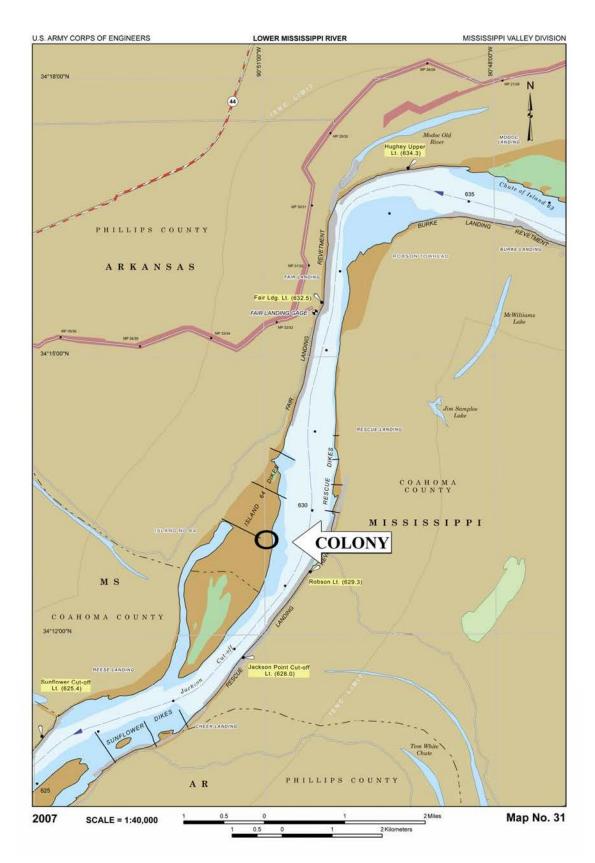
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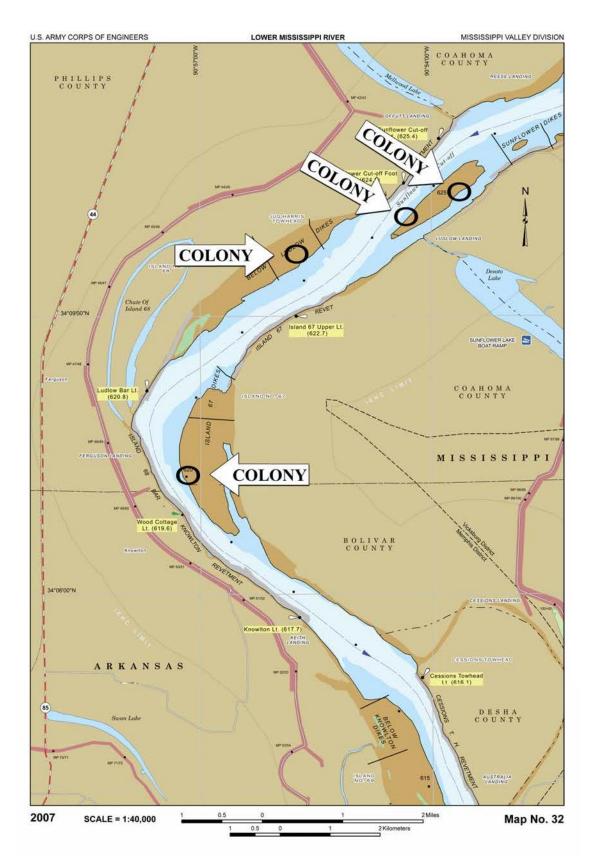
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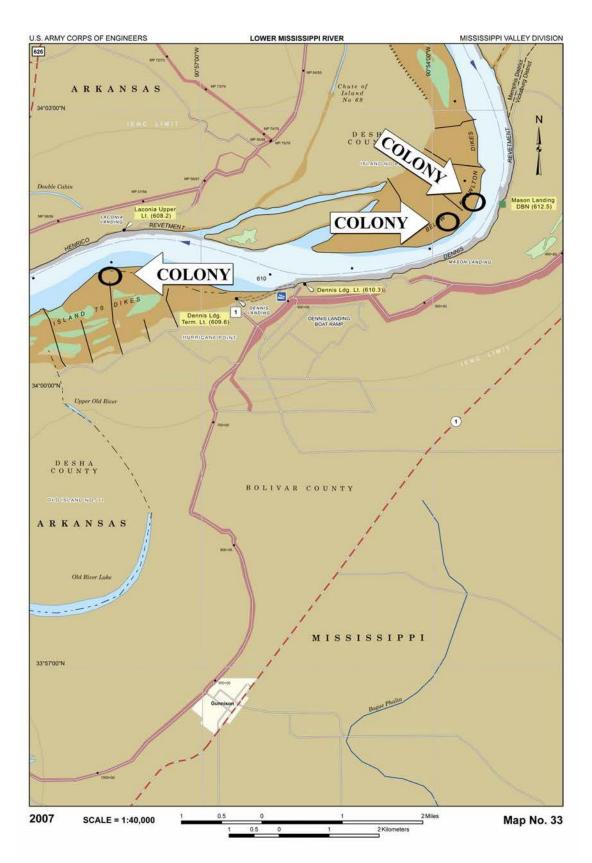
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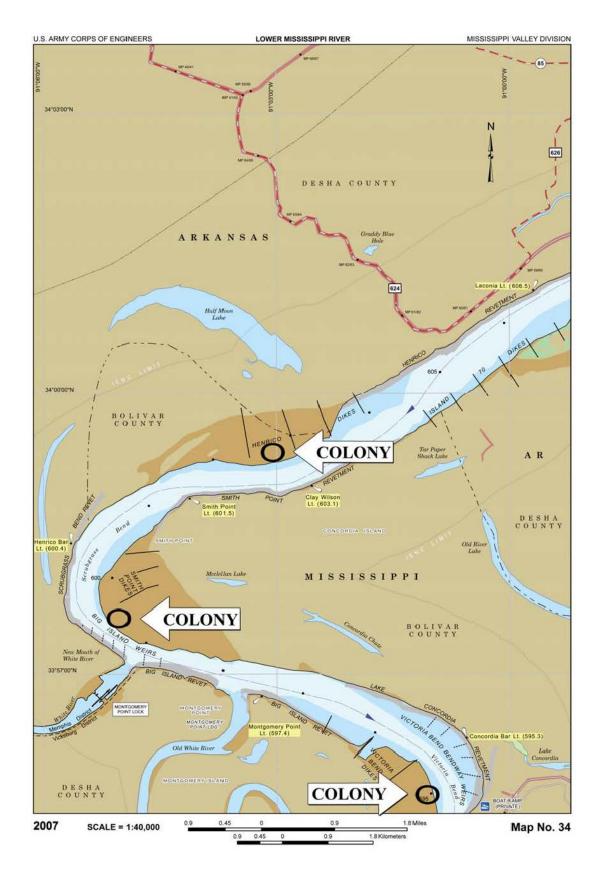
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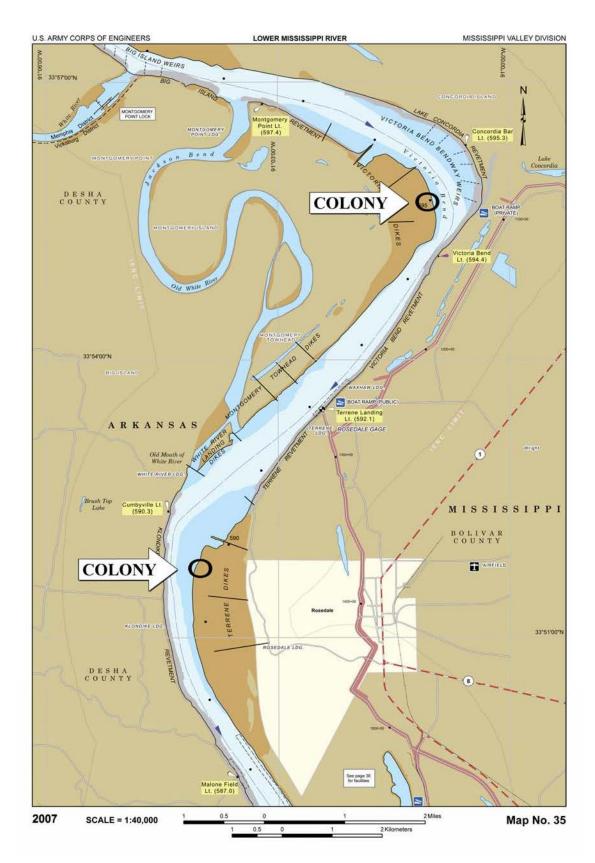
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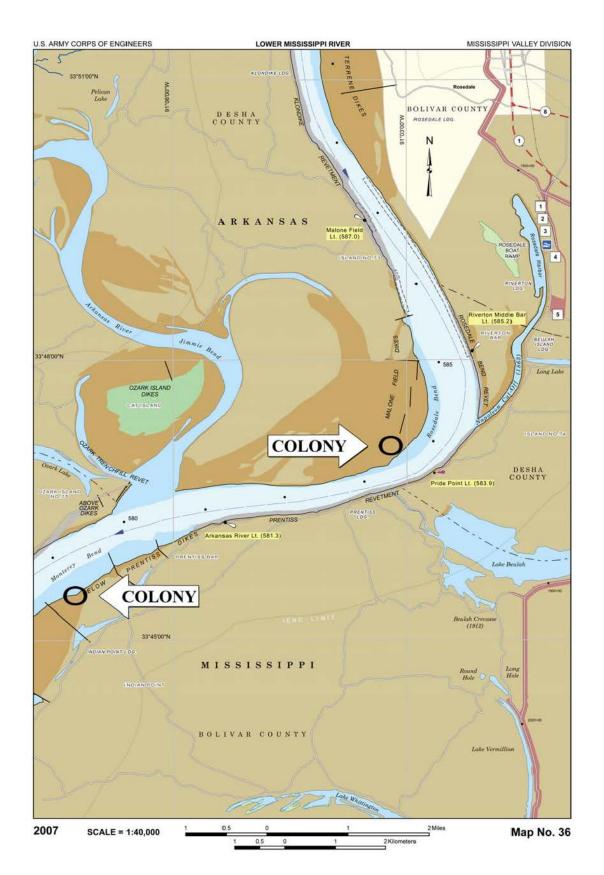
Least Tern Survey – 2009 Mississippi River Cape Girardeau, MO to Baton Rouge, LA Nest Colony Locations Memphis District Corps of Engineers A-I-29



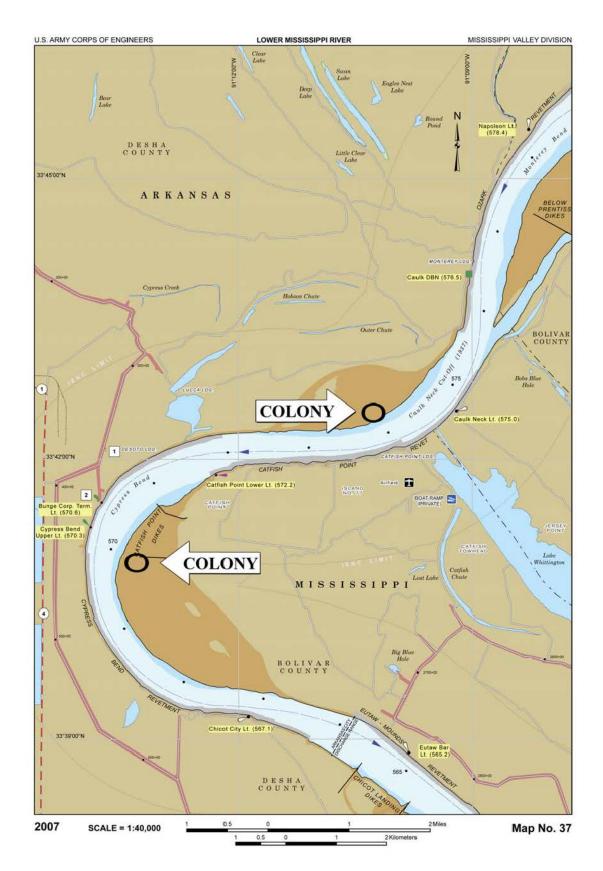
Least Tern Survey – 2009 Mississippi River Cape Girardeau, MO to Baton Rouge, LA Nest Colony Locations Memphis District Corps of Engineers A-I-30



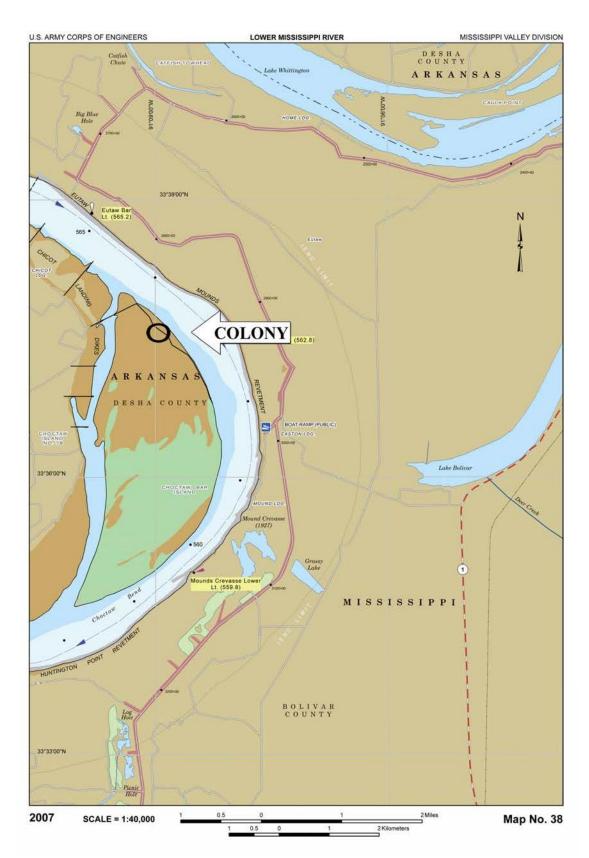
Least Tern Survey – 2009 Mississippi River Cape Girardeau, MO to Baton Rouge, LA Nest Colony Locations Memphis District Corps of Engineers A-I-31



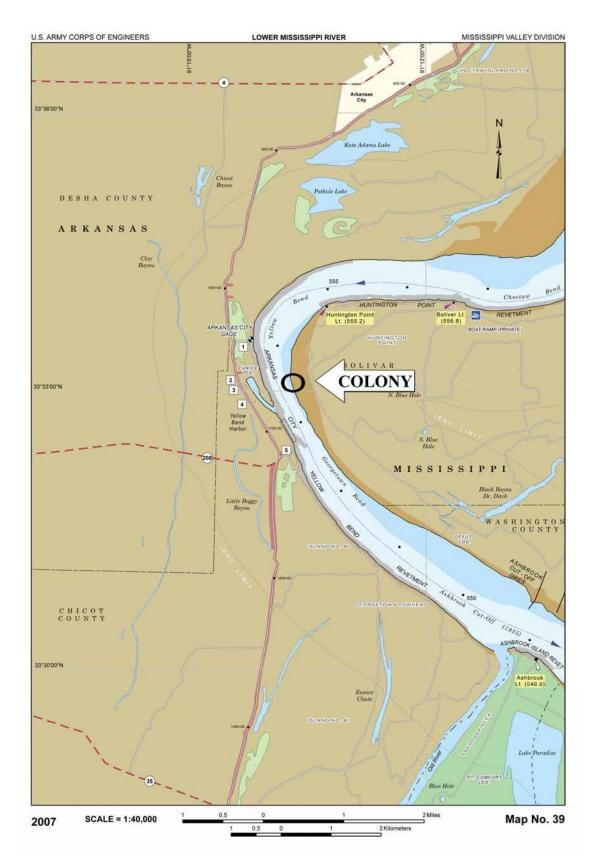
Least Tern Survey – 2009 Mississippi River Cape Girardeau, MO to Baton Rouge, LA Nest Colony Locations Memphis District Corps of Engineers A-I-32



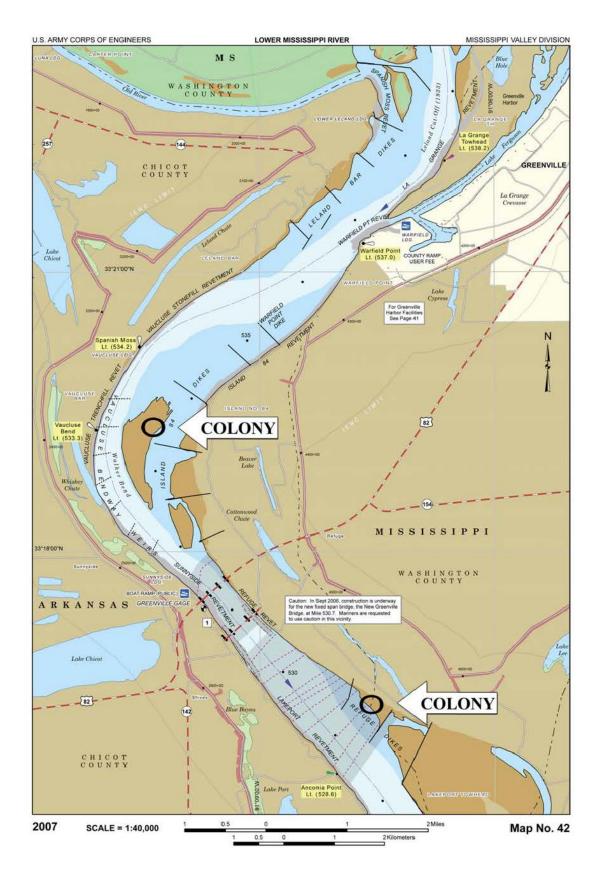
Least Tern Survey – 2009 Mississippi River Cape Girardeau, MO to Baton Rouge, LA Nest Colony Locations Memphis District Corps of Engineers A-I-33



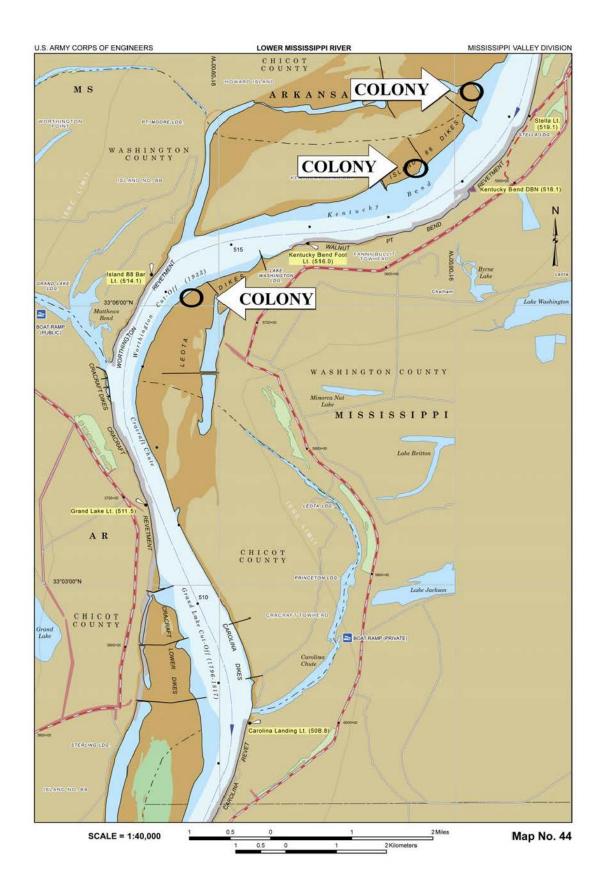
Least Tern Survey – 2009 Mississippi River Cape Girardeau, MO to Baton Rouge, LA Nest Colony Locations Memphis District Corps of Engineers A-I-34



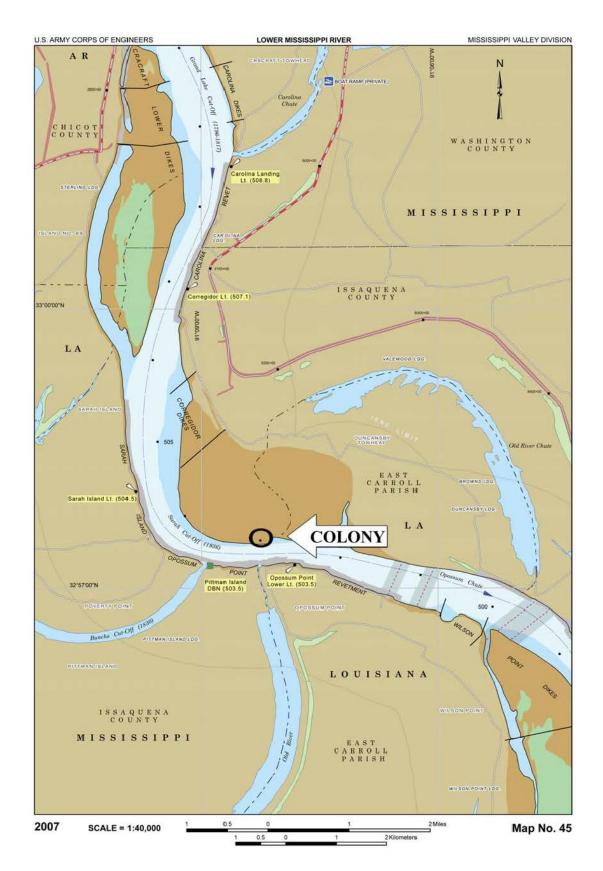
Least Tern Survey – 2009 Mississippi River Cape Girardeau, MO to Baton Rouge, LA Nest Colony Locations Memphis District Corps of Engineers A-I-35



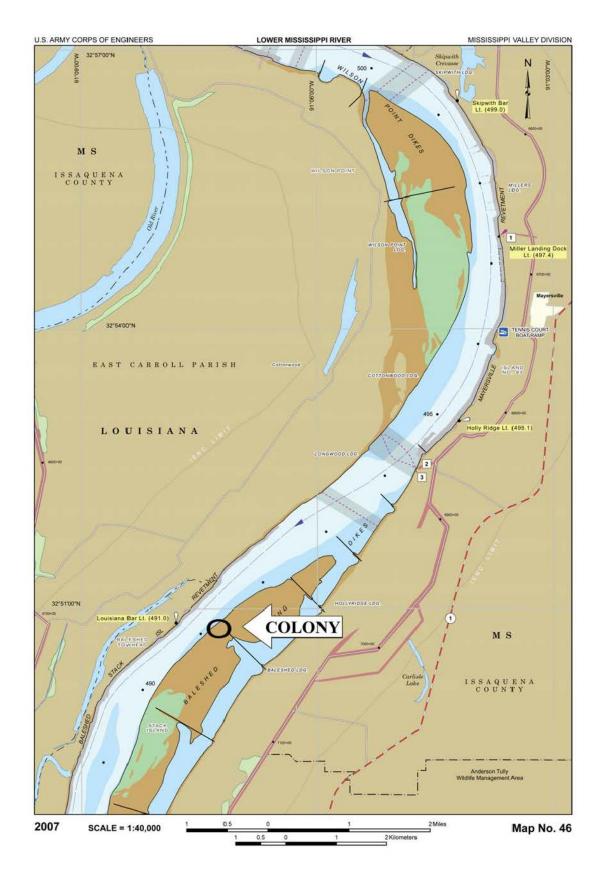
Least Tern Survey – 2009 Mississippi River Cape Girardeau, MO to Baton Rouge, LA Nest Colony Locations Memphis District Corps of Engineers A-I-36



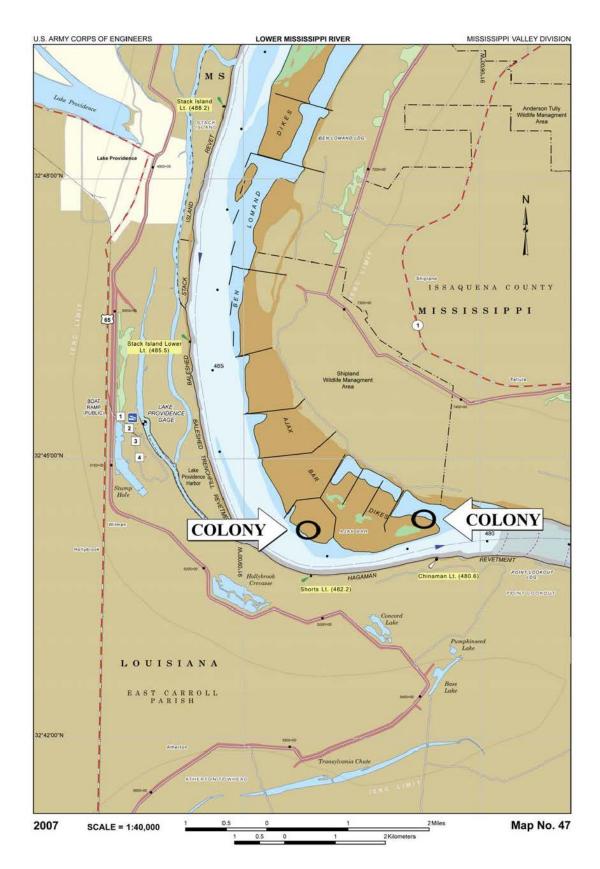
Least Tern Survey – 2009 Mississippi River Cape Girardeau, MO to Baton Rouge, LA Nest Colony Locations Memphis District Corps of Engineers A-I-37



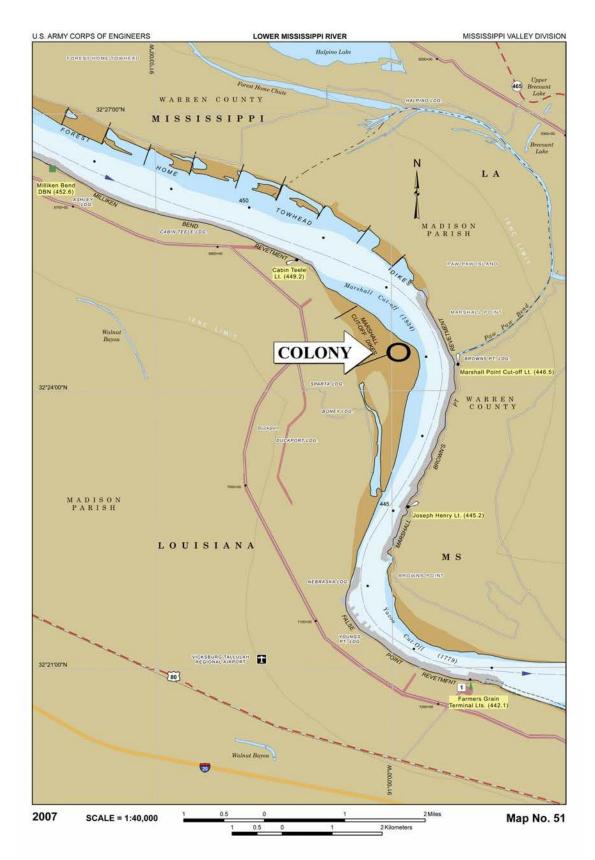
Least Tern Survey – 2009 Mississippi River Cape Girardeau, MO to Baton Rouge, LA Nest Colony Locations Memphis District Corps of Engineers A-I-38



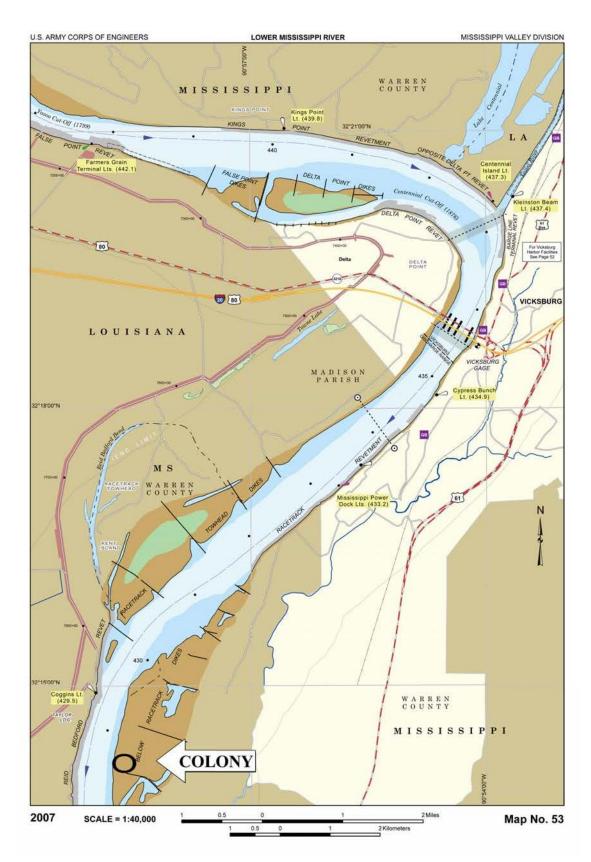
Least Tern Survey – 2009 Mississippi River Cape Girardeau, MO to Baton Rouge, LA Nest Colony Locations Memphis District Corps of Engineers A-I-39



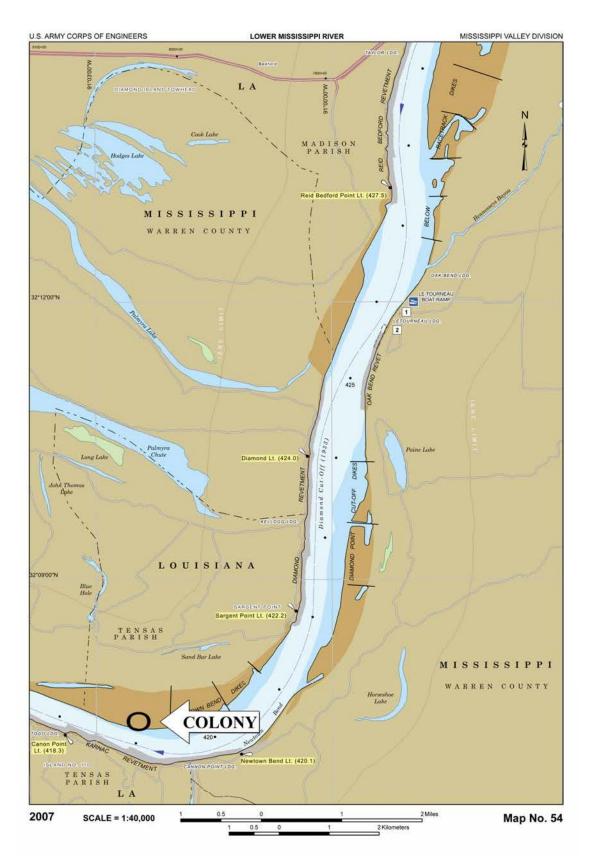
Least Tern Survey – 2009 Mississippi River Cape Girardeau, MO to Baton Rouge, LA Nest Colony Locations Memphis District Corps of Engineers A-I-40



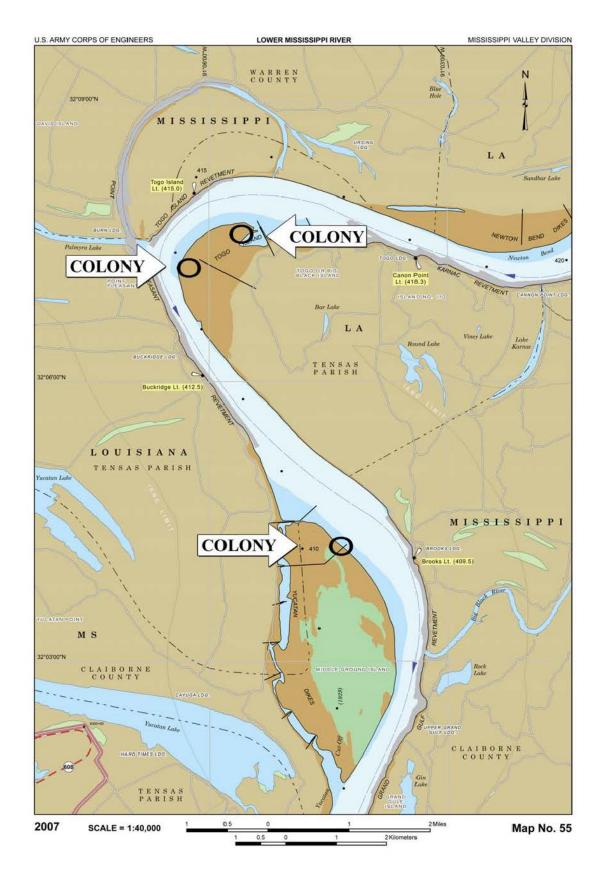
Least Tern Survey – 2009 Mississippi River Cape Girardeau, MO to Baton Rouge, LA Nest Colony Locations Memphis District Corps of Engineers A-I-41



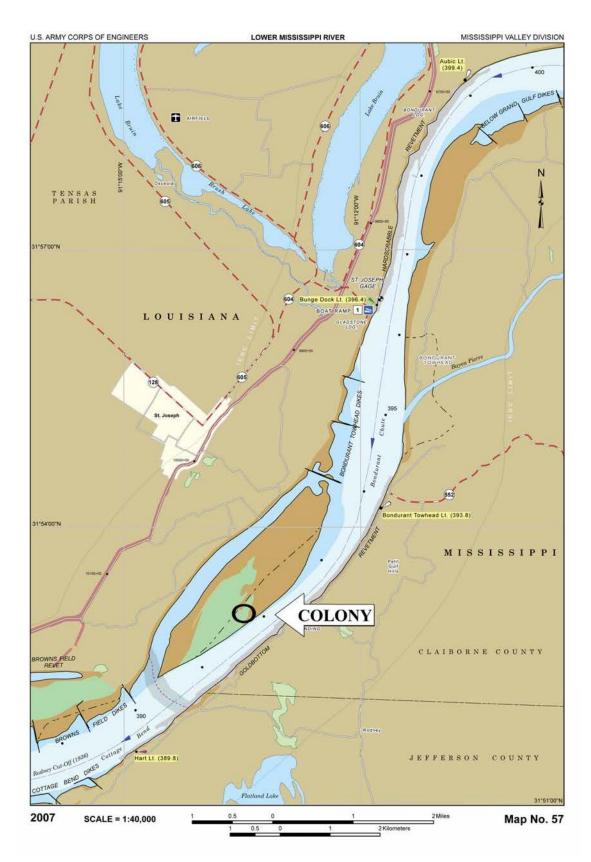
Least Tern Survey – 2009 Mississippi River Cape Girardeau, MO to Baton Rouge, LA Nest Colony Locations Memphis District Corps of Engineers A-I-42



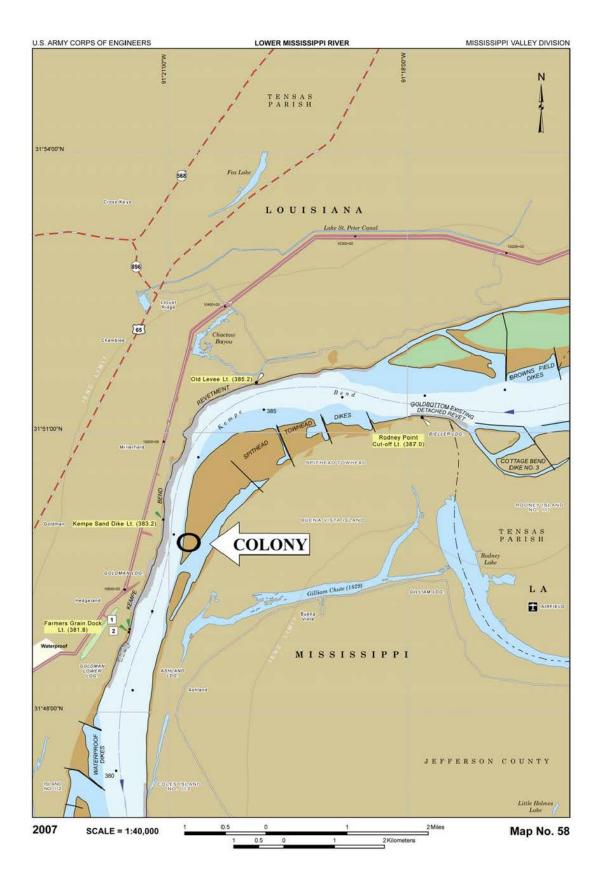
Least Tern Survey – 2009 Mississippi River Cape Girardeau, MO to Baton Rouge, LA Nest Colony Locations Memphis District Corps of Engineers A-I-43



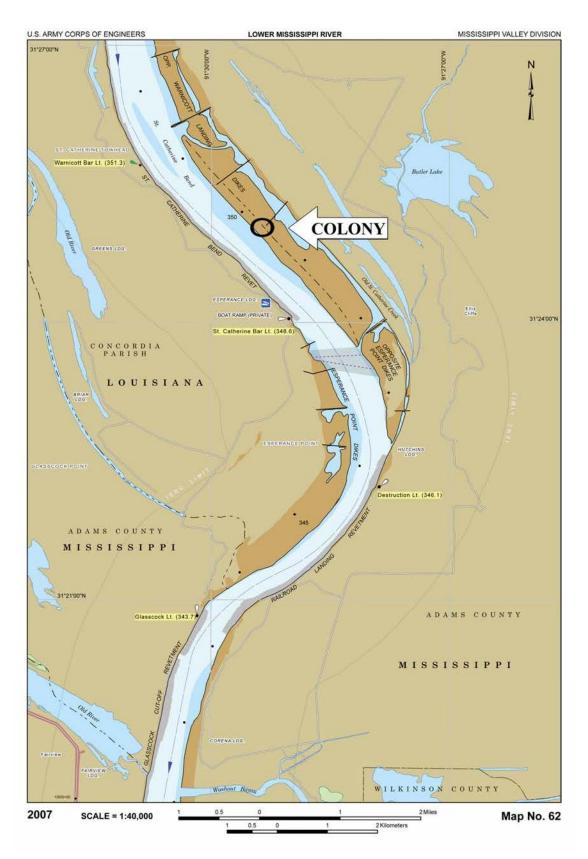
Least Tern Survey – 2009 Mississippi River Cape Girardeau, MO to Baton Rouge, LA Nest Colony Locations Memphis District Corps of Engineers A-I-44



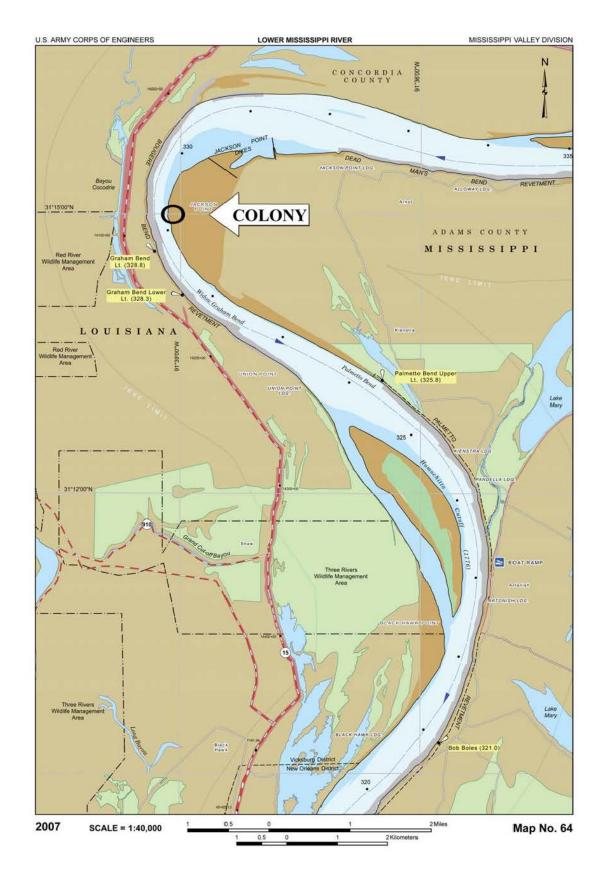
Least Tern Survey – 2009 Mississippi River Cape Girardeau, MO to Baton Rouge, LA Nest Colony Locations Memphis District Corps of Engineers A-I-45



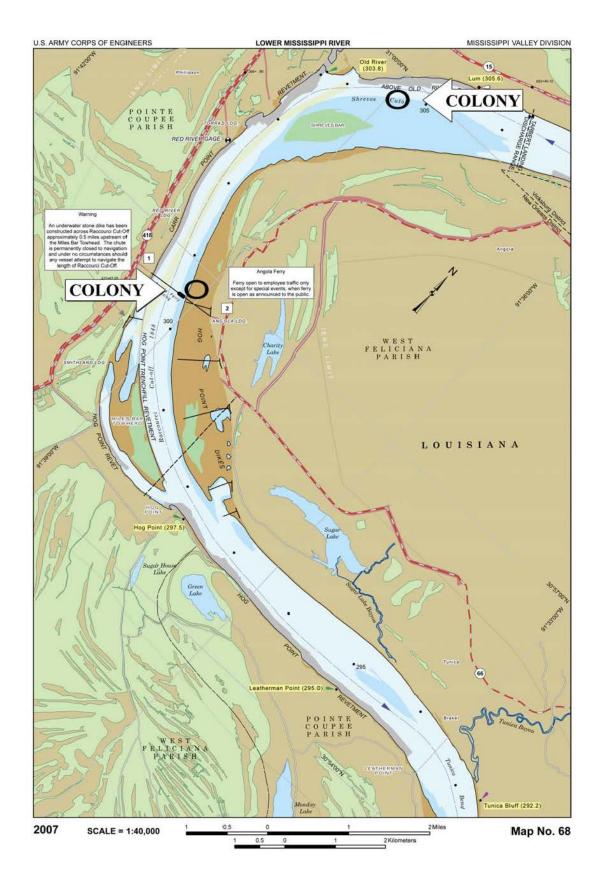
Least Tern Survey – 2009 Mississippi River Cape Girardeau, MO to Baton Rouge, LA Nest Colony Locations Memphis District Corps of Engineers A-I-46



Least Tern Survey – 2009 Mississippi River Cape Girardeau, MO to Baton Rouge, LA Nest Colony Locations Memphis District Corps of Engineers A-I-47



Least Tern Survey – 2009 Mississippi River Cape Girardeau, MO to Baton Rouge, LA Nest Colony Locations Memphis District Corps of Engineers A-I-48



Least Tern Survey – 2009 Mississippi River Cape Girardeau, MO to Baton Rouge, LA Nest Colony Locations Memphis District Corps of Engineers A-I-49

# $Appendix \ A-II$

#### **LEAST TERN SURVEY - 2009**

Mississippi River Cape Girardeau, MO to Baton Rouge, LA

SMALL BOAT SURVEY July 11 – 17, 2009

**Memphis District, Corps of Engineers** 

**Data Sheets** 

## FIELD SIGHTING DATA SHEET

		FLY ☐ BOAT 🗹	
SPECIES: Interior Least Tern (S	terna antillarum athalassos)		
DATE: <u>7/11/2009</u> TIM	E OF DAY: 8:30	RIVER MILE UR 30.5	
	IL SITE NAME:	Bumgard Island	
County/Parish	State	NUMBERS SIGHTED:	
WHERE SITED: Latitude:	27.04102	Adults: 76	
Appropriate and the state of th	89.37755	Juveniles:	
_	19 19 19 19 19 19 19 19 19 19 19 19 19 1	Eggs: 2,3	
Approximate Distance to Water:	800	Chicks: No	
MID-CHANNEL SANDBAR	ON GROUND On Nest Area  On Resting Area  MID-CHANNEL  Irrents  River Side  ANDBAR Center  Land Side  Calm Water  Calm Water	SUBSTRATE:  Sand:  Gravel:  Debris:   VEGETATION:  Type: Willows/Cottonwoods  Distance: 200 Feet  FIELD CONDITION:  Temperature: 80 F  Rain: Yes  Wind: 20 mph  % Cloud: 100	
OTHER NOTES:			
Left Bank. Flush count on unatta	nched, medium-size sand and gravel Ink. Canine tracks and fingerling Ca	bar, flat and gently undulating with no p present. Four nests observed.	
5		IL side	
OBSERVERS:	Boyd, Fowlkes, Grubaugh, Ru	mancik, Thron	
RIVER GAGE READING:	Cape Girardeau	<u>=</u> 23.3 F	
	(Gage Location)	(Elevation)	

## FIELD SIGHTING DATA SHEET

			FLY [	BOAT <b>✓</b>
SPECIES: Interior Least Tern (	Sterna antillarum	athalassos)		
DATE:7/11/2009 TI	ME OF DAY:	10:27	RIVER MILE	946
LOCALITY: Carlisle		_ SITE NAME:	Island #1 Dikes	
County/Parish	State		NUMBERS SIGHT	ED:
WHERE SITED: Latitude:	36.88810		Adults:	
Longitude	89.11768			122
Approximate Distance to Water	: 200	Feet	Eggs:	1,2,3 No
MID-CHANNEL SANDBAR	MID-CHANNEL  Currents  River Side  SANDBAR Center  Land Side  Calm Water		SUBSTRATE:  Sand:  Gravel:  Debris:  VEGETATION:  Type:  Distance:  FIELD CONDITION  Temperature:  Rain:  No  Wind:  20 m  % Cloud:  21	Feet N: 77 °F
Terns mobbing Crow and 1 Grewith turtle nests.	eat blue Heron. Six	nests with small Ca	arp and Gizzard Sha	id in colony along
00050/500	Fa	Crubaugh Dun	aik Thron	KY side
OBSERVERS:	111	, Grubaugh, Ruman airo	CIK, THIOH	22 F
RIVER GAGE READING:	0.40-0-0.1111111111111111111111111111111	ocation)	= (E	Elevation)

#### FIELD SIGHTING DATA SHEET

			FLY [	BOAT	
SPECIES: Interior Least Tern	(Sterna antillarum a	athalassos)			
DATE:7/11/2009 T	IME OF DAY:	11:15	RIVER MILE	940	
LOCALITY: Carlisle		SITE NAME:	Below Campbell Dikes		
County/Paris	h State		NUMBERS SIGHT	ED:	
WHERE SITED: Latitude:	NA		Adults:		
Longitude	:NA				
Approximate Distance to Wate	r:	Feet		N <sub>2</sub>	
	200		CHICKS.	No	
IN FLIGHT Over Sandbar		Nest Area	SUBSTRATE:		
Over Water , 🗸	/	sting Area ✓	Sand: ✓		
Calm Water		/</td <td>Gravel:</td> <td></td>	Gravel:		
Land Side 🗆		$\sim$	Debris:		
Center . Channel Side	MID-CHANNEL		VEGETATION:		
		`	Type:		
MID-CHANNEL SANDBAR Rapid	Currents  River Side		Distance:	Feet	
SIDE CHANNE	LSANDBAR Center L		FIELD CONDITION	N:	
River Side 🔲	Calm Water		Temperature:	80 °F	
77777			Rain: No		
	1174	7-7-7	Wind: <u>20 m</u>	ph	
			% Cloud: 90		
OTHER NOTES:					
Left Bank. Perimeter count ald Hudsonian Godwits.	ong small, low, flat sa	and bar (400 x 100	ft.), resting only alo	ng with 2	
				KY side	
OBSERVERS:	Fowlkes,	Grubaugh, Ruman	cik, Thron		
RIVER GAGE READING:	Ca	airo		22 F	
	(Gage L	(Gage Location)		(Elevation)	

			FLY	BOAT	~
SPECIES: Interior Least Tern (S	terna antillarum at	halassos)			
DATE:7/11/2009 TIM	E OF DAY:	11:37	RIVER MILE _	931.2	
LOCALITY: Hickman	KY	SITE NAME:	Wolf	Island Bar	
County/Parish	State		NUMBERS SIG	HTED:	
WHERE SITED: Latitude: _	36.70052			180	
	89.14998			2,3	
Approximate Distance to Water:	500 F	-eet	Chicks:	No	
MID-CHANNEL SANDBAR	On Rest	*	Gravel: Debris: VEGETATION: Type: Distance:	Feet TION: are: 80 ° F	
OTHER NOTES:  Left Bank. Flush count on large,	mid-channel, undul	ating, high, sand l	par attached to h	ardpoints at	
upstream end. Kentcky Departm perimeter with many nests tagge also present.	ent of Fish and Wile	dlife Resources po	sted "keep out" :	signs along bars , and fingerling C	
OBSERVERS:	Boyd, Fowlke	s, Grubaugh, Run	nancik, Thron	KY side	
RIVER GAGE READING:	Cai	Barrier over		22 F	
	(Gage Lo	cation)		(Elevation)	

			FLY	□ BOAT ✓
SPECIES: Interior Least Tern (St	terna antillarum atl	nalassos)		
DATE: <u>7/11/2009</u> TIME	E OF DAY:	13:20	RIVER MILE	929.7
LOCALITY: Hickman		SITE NAME:	William	s Landing
County/Parish	State		NUMBERS SIGH	ITED:
WHERE SITED: Latitude: _	36.68500		Adults: _	80
Longitude:	89.14788			108 700
Approximate Distance to Water:	100 F	eet		1,2,3 No
Over Water - Calm Water -	ON GROUND On Ne On Restir	st Area ☑ ng Area □	SUBSTRATE:  Sand:   Gravel:   Debris:	
Land Side	MID-CHANNEL [	,	VEGETATION:	
		<b>→</b>	Type:	
MID-CHANNEL SANDBAR	rrents		Distance: _	Feet
SIDE CHANNEL SA	ANDBAR Center ↓↓ ↓ Land Side ↓□_		FIELD CONDITIO	ON:
River Side 🔲	Calm Water		Temperature	e: <u>91                                   </u>
77777		<u> </u>	Rain: No	
1		7	Wind: <u>15 r</u>	mph
			% Cloud: <u>7</u>	5
OTHER NOTES:  Left Bank. Flush count on low, fladownstream points. Fish trap with				n upstream and
				KY side
OBSERVERS:	Boyd, Fowlkes	s, <mark>Grubaugh, Run</mark>	nancik, Thron	
RIVER GAGE READING:	Cairo	The second second	<b>=</b> )*	22 F
	(Gage Loc	cation)		(Elevation)

			FLY ☐ BOAT		
SPECIES: Interior Least Tern (	Sterna antillarum	athalassos)			
DATE: <u>7/11/2009</u> TII	ME OF DAY:	13:40	RIVER MILE	924.8	
LOCALITY: Hckman	KY	SITE NAME:	Beckwi	th Bend	
County/Parish WHERE SITED: Latitude: Longitude:				5	
Approximate Distance to Water	51	Feet		No	
MID-CHANNEL SANDBAR	On R		SUBSTRATE:  Sand:  Gravel:  Debris:  VEGETATION:  Type:  Distance:  FIELD CONDITIO  Temperature:  Rain:  No  Wind:  20 m  % Cloud:  90	Feet N: 87 ° F	
OTHER NOTES:  Left Bank. Terns in transit over	water.				
				KY side	
OBSERVERS:	Boyd, Fow	lkes, Grubaugh, Run	nancik, Thron		
RIVER GAGE READING:	PARAMETER ST.	Cairo Location)	=	22 F Elevation)	

		FLY	BOAT 🗸
SPECIES: Interior Least Tern (Ste	rna antillarum athalassos)		
DATE:7/11/2009 TIME	OF DAY:14:00	RIVER MILE	920.5
LOCALITY: Mississippi	MO SITE NAME:	Hickman E	Bend
County/Parish	State	NUMBERS SIGHTED	<b>)</b> :
WHERE SITED: Latitude:	35.56813	Adults:	
Longitude:	89.24342	Juveniles: Eggs:	
Approximate Distance to Water:		Chicks:	20
Over Water Over Sandbar Over Water Over Wate	River Side	SUBSTRATE:  Sand:  Gravel:  Debris:  VEGETATION:  Type:  Distance:  FIELD CONDITION:  Temperature:  Rain:  No  Wind:  20 mph  % Cloud:  90	Feet 89 °F
OTHER NOTES:			
Right Bank. Flush count on low, un Two nests with 2 and 3 eggs count	nattached, medium elevation bar (1 ed. Many terns carrying fish also la		
		100 May 100 Ma	MO side
OBSERVERS:	Boyd, Fowlkes, Grubaugh, Rur	nancik, Thron	
RIVER GAGE READING:	Cairo (Gago Logation)		2 F
	(Gage Location)	(Elev	vation)

			FLY [	□ BOAT ✓
SPECIES: Interior Least Tern (St	erna antillarum a	athalassos)		
DATE: <u>7/11/2009</u> TIME	E OF DAY:	14:49	RIVER MILE	909
LOCALITY: Fulton		SITE NAME:	Mable	Landing
County/Parish	State		NUMBERS SIGH	TED:
WHERE SITED: Latitude:	36 54803		Adults:	243
	89.39751		Juveniles: _	
-	Grand Control September 2017 (C)	Fact	Eggs:	1,2
Approximate Distance to Water:	250	reet	Chicks:	No
Over Water   Calm Water   Land Side   Center   Channel Side   Rapid Cu		<b>*</b>	Distance:	ws/Cottonwoods  500 Feet  ON: 89 F
OTHER NOTES:				
Left Bank. Flush count on attache carrying fish, and resting at water				ns courting,
				KY side
OBSERVERS:	Boyd, Fowlk	es, Grubaugh, Run	nancik, Thron	
RIVER GAGE READING:	Ca	airo	<b>=</b>	22 F
	(Gage L	ocation)	(	(Elevation)

			FLY [	BOAT	~
SPECIES: Interior Least Tern (	Sterna antillarum a	athalassos)			
DATE: <u>7/11/2009</u> TIM	ME OF DAY:	16:30	RIVER MILE	884	
LOCALITY: Fulton	KY	SITE NAME:	Kentucky	Point Dikes	
County/Parish	State		NUMBERS SIGHT	TED:	
WHERE SITED: Latitude:	36.51769		Adults:	312	
Longitude:	89.55204		Juveniles:		
~	B		Eggs:	2,3	
Approximate Distance to Water:	200	Feet	Chicks:	No	
MID-CHANNEL SANDBAR	On Re		SUBSTRATE: Sand:   Gravel:  Debris:   VEGETATION: Type: Willow Distance:  FIELD CONDITIO Temperature Rain: No Wind: 10 m % Cloud: 65	vs 100 Feet 0N: : 86 F	
OTHER NOTES:					
Left Bank. Unattached sand ba "Keep Out" signs posted along p waterline. Flush count yields 31	berimeter. Many bir	rds and 10+ nests,			
5				KY side	
OBSERVERS:	Boyd, Fowlk	es, Grubaugh, Run	nancik, Thron		
RIVER GAGE READING:	**************************************	Madrid		13.5 F	
	(Gage L	ocation)	(	Elevation)	

			FLY [	BOAT ✓
SPECIES: Interior Least Tern (S	terna antillarum a	thalassos)		
DATE:7/11/2009 TIM	E OF DAY:	17:07	RIVER MILE	876.0
LOCALITY: Lake	TN	SITE NAME:	Marr To	whead
County/Parish	State		NUMBERS SIGHT	ED:
WHERE SITED: Latitude: _	36.42100		Adults:	
Longitude: _	89.53786		Juveniles: Eggs:	
Approximate Distance to Water:	100	<u>Feet</u>	Chicks:	No
IN FLIGHT Over Sandbar ✓	ON GROUND On I	Nest Area ✓	CLIDCEDATE	
Over Water → 🗸	W. The state of th	sting Area	SUBSTRATE:	
Calm Water □	<del></del>	/ /	Sand: ☑ Gravel: ☐	
	· · · · · · · · · · · · · · · · · · ·	$\sim$ / $\parallel$	Gravel:	
Land Side		$\sim$	Deblis.	
Channel Side ✓	MID-CHANNEL		VEGETATION:	
		_ →	Type:	
MID-CHANNEL SANDBAR	River Side		Distance:	Feet
SIDE CHANNEL S	ANDBAR Center L		FIELD CONDITION	۷:
River Side	Calm Water		Temperature:	88 °F
77777	7		Rain: No	
	1174	7-7-7	Wind: <u>10 m</u>	ph
			% Cloud: 60	
OTHER NOTES:				
Left Bank. Low, unattached, clear Terns fishing opposite bank and l		eter count yields 3	8 adults with 3 sitting	g on nests.
				TN side
OBSERVERS:	Boyd, Fowlk	es, Grubaugh, Rum	nancik, Thron	
RIVER GAGE READING:	New N	/ladrid		13.5 F
	(Gage L	ocation)	(E	Elevation)

			FLY [	BOAT 🗹
SPECIES: Interior Least Tern (S	terna antillarum a	athalassos)		
DATE:7/11/2009 TIM	E OF DAY:	17:24	RIVER MILE	871.5
LOCALITY: New Madrid County/Parish		SITE NAME:		
WHERE SITED: Latitude: _ Longitude: _ Approximate Distance to Water:	89.51280	Feet	/2	72
MID-CHANNEL SANDBAR			SUBSTRATE: Sand:   Gravel:  Debris:   VEGETATION: Type:  Distance:  FIELD CONDITION Temperature: Rain: No Wind: 10 mg	Feet N: 88 °F
OTHER NOTES:  Right Bank. Perimeter count alon Fifty observed sitting inland on ne		gh, unattached, und	<b>lulating, clean bar</b> wi	ith turtle tracks.
OBSERVERS:	Bovd. Fowlk	es, Grubaugh, Run	nancik, Thron	MO side
	241	110 111 1110 111	* 1. a. 11.	
RIVER GAGE READING:	0.40-20-0.00	ersville .ocation)		16.3 F levation)

			FLY [	BOAT 🗹
SPECIES: Interior Least Tern (S	terna antillarum a	thalassos)		
DATE:7/11/2009 TIM	IE OF DAY:	17:30	RIVER MILE	870.0
LOCALITY: New Madrid		SITE NAME:	Stewart Towhea	d Dikes Lower
County/Parish	State		NUMBERS SIGHTE	ED:
WHERE SITED: Latitude:	36.35266		Adults:	62
	89.51883			
Approximate Distance to Water:		Feet	Eggs:	No
IN FLIGHT Over Sandbar ✓	ON GROUND On N	lest Area ✓	SUBSTRATE:	
Ver Water → ✓	On Res	ting Area ☐	Sand: 🗹	
Calm Water		$\langle / \rangle $	Gravel: ✓	
Land Side 🗆			Debris:	
Channel Side	MID-CHANNEL		VEGETATION:	
		¯ →	Туре:	
MID-CHANNEL SANDBAR	urrents 🔽 River Side		Distance:	Feet
	SANDBAR Center 🛂		FIELD CONDITION	C21
River Side 📗	Calm Water		Temperature:	88 °F
17777			Rain: No	
	///	<del>7-,-,</del>	Wind: <u>10 mp</u>	oh
			% Cloud: 65	
OTHER NOTES:				
Right Bank. Low, hard-packed, s	sand and gravel bar	One Great Blue	Heron at the waterling	ne.
				MO side
OBSERVERS:	Boyd, Fowlke	es, Grubaugh, Run	nancik, Thron	
RIVER GAGE READING:	Caruthe	ersville		16.3 F
	(Gage Lo	ocation)	(E	levation)

FLY ☐ BOAT ☑

SPECIES: Interior Least Tern (St	erna antillarum atl	nalassos)		
DATE: <u>7/11/2009</u> TIME	E OF DAY:	18:00	RIVER MILE	863.5
LOCALITY: Lake  County/Parish  WHERE SITED: Latitude:	State	SITE NAME:	NUMBERS SIGHT	TED:
Longitude: Approximate Distance to Water:	89.61528 F	eet	Eggs:	No
Over Water   Calm Water   Land Side  Center  Channel Side   MID-CHANNEL SANDBAR  Rapid Cur	On Restir		SUBSTRATE:  Sand:  Gravel:  Debris:  VEGETATION:  Type:  Distance:  FIELD CONDITIO  Temperature:  Rain:  No  Wind:  10 m  % Cloud: 65	Feet N: 88 °F
OTHER NOTES:  Left Bank. Attached, very large, keep several miles. Many ATV tracks a				tending for
OBSERVERS:	Boyd. Fowlke	s, Grubaugh, Rur	nancik. Thron	TN side
RIVER GAGE READING:	Caruther			16.3 F
	(Gage Loc	A COLUMN TO THE	= (E	Elevation)

			FLY	BOAT	~
SPECIES: Interior Least Tern (St	erna antillarum a	athalassos)			
DATE: <u>7/11/2009</u> TIME	OF DAY:	18:25	RIVER MILE _	857.0	
LOCALITY: Pemiscott		SITE NAME:	Chute	of Island 14	
County/Parish	State		NUMBERS SIG	HTED:	
WHERE SITED: Latitude:	36.24564		Adults:	250	
Company of the Compan	89.57816				
Approximate Distance to Water:	50	Feet		3 No	
Over Water .   Calm Water   Land Side  Center .  Channel Side   MID-CHANNEL SANDBAR  Rapid Cur	On Res	*	Gravel:  Debris:  VEGETATION:  Type:  Distance:  FIELD CONDITION	Feet ION: re: 87 ° F	
OTHER NOTES:					
Right Bank. Unattached, high, me Many nests with eggs and scrapes human intrusion (lens cap found).	s in patches of sar				e of
s				MO side	e
OBSERVERS:	Fov	vlkes, Thron Gruba	augh		
RIVER GAGE READING:	Caruth	ersville		16.3 F	
	(Gage L	ocation)		(Elevation)	

			FLY [	BOAT	~
SPECIES: Interior Least Tern (S	terna antillarum a	athalassos)			
DATE:7/11/2009 TIM	E OF DAY:	18:50	RIVER MILE	846.3	
LOCALITY: Lake		SITE NAME:	Opp. Caruth	ersville Dikes	
County/Parish	State		NUMBERS SIGH	TED:	
WHERE SITED: Latitude:	NA		Adults:	7	
	NA		Juveniles:		
Approximate Distance to Water:		Feet			
Approximate Biotanies to Tratei.	<u> </u>		Chicks:	No	
MID-CHANNEL SANDBAR	MID-CHANNEL  Irrents  River Side  ANDBAR Center	44	SUBSTRATE:  Sand:  Gravel:  Debris:  VEGETATION:  Type:  Distance:  FIELD CONDITION	Feet	
River Side 🖳	Land Side C		Temperature	e: 87 °F	
77777	<del>-</del>		Rain: No		
	// /-	7-7-	Wind: <u>10 n</u>	nph	
			% Cloud: 65	5	
OTHER NOTES:		District Trades	d bearing and the second		
Left Bank. Small, undulating, sa present. Seven terns observed f			a between dikes. L	Jay campers	
				TN side	
OBSERVERS:	Boyd, Fowl	kes, Grubaugh, Rur	nancik, Thron		
RIVER GAGE READING:	Caruth	ersville		16.3 F	
	(Gage L	ocation)	(	(Elevation)	

			FLY [	BOAT ✓
SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)		
DATE:7/12/2009 T	IME OF DAY:	9:00	RIVER MILE	837
LOCALITY: Dyer		_ SITE NAME:	Island #18 T	owhead Dikes
County/Paris	h State		NUMBERS SIGH	TED:
WHERE SITED: Latitude:	36.09847		Adults:	92
Longitude	89.66160		Juveniles:	
Approximate Distance to Wate	r: 300	Feet	Eggs:	Section
Approximate distance to water	300	<u>1 cet</u>	Chicks:	No
MID-CHANNEL SANDBAR	On R		SUBSTRATE: Sand: Gravel: Debris:  VEGETATION: Type: Willow Distance: _1  FIELD CONDITION Temperature Rain: _No Wind: _5 mi	vs 000 Feet 0N: : 84 °F
			% Cloud: <u>1</u>	00
OTHER NOTES:				
Left Bank. Perimeter count ale end. Many Great Blue Herons		dium size, low, solid	sand bar with colo	ny on upstream
57				TN side
OBSERVERS:	Boyds, Campen	Fowlkes, Grubaugh	n, Rumancik, Thror	
RIVER GAGE READING:	Carut	nersville		15.1 F
	(Gage	Location)	- (	Elevation)

			FLY [	BOAT <b>✓</b>
SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)		
DATE: <u>7/12/2009</u>	TIME OF DAY:	9:30	RIVER MILE	830
LOCALITY: Pemisco	tt MO	SITE NAME:	Island #2	20 Dikes
County/Par	rish State		NUMBERS SIGHT	FD:
WILEDE OITED			Adults:	
WHERE SITED: Latitude			28	
Longitu	de: <u>NA</u>			
Approximate Distance to Wa	ter:	Feet		No
MID-CHANNEL SANDBAR  SIDE CHANI  River Side □	ON GROOND OF		SUBSTRATE: Sand:   Gravel:  Debris:   VEGETATION: Type:  Distance:  FIELD CONDITION Temperature: Rain: No Wind: 5 mp % Cloud: 10	Feet N: 83 ° F
OTHER NOTES:				
Right Bank. Terns in transit.				
	2		. 2	MO side
OBSERVERS:	Boyds, Campen	, Fowlkes, Grubaugh	n, Rumancik, Thron	
RIVER GAGE READING:	0.47-0.00 (0.00)	hersville		15.1 F
	(Gage	Location)	(F	levation)

			FLY	BOAT 🗸
SPECIES: Interior Least Tern	(Sterna antillarum a	athalassos)		
DATE:7/12/2009 T	IME OF DAY:	9:53	RIVER MILE	826.6
LOCALITY: Dyer		SITE NAME:	Head of Island	d #21 Dikes
County/Paris	h State		NUMBERS SIGHTE	ED:
WHERE SITED: Latitude:	35.97324		Adults:	
Longitude	89.71639			
Approximate Distance to Water	r:	Feet	Eggs: Chicks:	No
MID-CHANNEL SANDBAR Rapid		*	SUBSTRATE:  Sand:  Gravel:  Debris:  VEGETATION:  Type:  Distance:  FIELD CONDITION  Temperature:  Rain:  No  Wind: 5 mph	Feet I: 83 °F
OTHER NOTES:			% Cloud: <u>100</u>	1
Left Bank. Flush count on una	uttached, high, mid-si	ze, flat-topped sand	d bar.	
				TN side
OBSERVERS:	Boyds, Campen,	Fowlkes, Grubaugh	, Rumancik, Thron	
RIVER GAGE READING:	Caruth	ersville		15.1 F
	(Gage L	ocation)	(E	levation)

			FLY	□ BOAT
SPECIES: Interior Least Tern	(Sterna antillarum a	athalassos)		
DATE:7/12/2009 TI	IME OF DAY:	9:55	RIVER MILE	825.3
LOCALITY: Dyer		SITE NAME:	Isla	nd #21
County/Parisi	h State		NUMBERS SIGH	HTED:
WHERE SITED: Latitude:			Adults: _ Juveniles:	45
Approximate Distance to Wate	: <u>89.70854</u> r: 60	Feet	Eggs: _	2,3 No
IN FLIGHT Over Sandbar ✓		Nest Area ✓	SUBSTRATE:	
Over Water -	// On Re	sting Area	Sand:	<b>2</b>
Calm Water		/ .∥ .	Gravel:	
Land Side			Debris:	
Channel Side	MID-CHANNEL		VEGETATION:	
	Currents	→	Type: Smal	II Willows
MID-CHANNEL SANDBAR	River Side		Distance: _	500 Feet
SIDE CHANNE	LSANDBAR Center Land Side		FIELD CONDITION	ON:
River Side	Calm Water		Temperatur	e: <u>83                                   </u>
77777	7		Rain: No	
	/ · / /~	<u> </u>	Wind: 5 m	nph
			% Cloud: 1	100
OTHER NOTES:				
Left Bank. Flush count with ma	any active scrapes, ι	ınattached, low, ge	ntly undulating ba	r 1/2 mile in lengt
S				TN side
OBSERVERS:	Boyds, Campen,	Fowlkes, Grubaugh	, Rumancik, Thro	n
RIVER GAGE READING:	Caruth	ersville		15.1 F
	(Gage L	ocation)		(Elevation)

			FLY	□ BOAT ✓
SPECIES: Interior Least Tern (St	erna antillarum a	athalassos)		
DATE: <u>7/12/2009</u> TIME	OF DAY:	10:15	RIVER MILE _	819.4
LOCALITY: Mississippi		SITE NAME:	Wrights	Point Dikes
County/Parish	State		NUMBERS SIG	HTED:
WHERE SITED: Latitude:	35 90662		Adults:	66
AND THE PROPERTY OF THE PROPER	89.64791		Juveniles:	
	31707/COCHRESIAN 18	F	Eggs:	2
Approximate Distance to Water:	500	reet	Chicks:	No
Over Water   Calm Water   Calm Water   Calm Water   Rapid Cur	On Re		Gravel: Debris: VEGETATION: Type: Willi Distance: FIELD CONDIT	re: 86 °F
OTHER NOTES:				
Right Bank. Flush count. Large, with some water in back chute. C				ed to large island
				AR side
OBSERVERS:	Boyds, Campen,	Fowlkes, Grubaugh	, Rumancik, Thro	on
RIVER GAGE READING:	Caruth	ersville		15.1
	(Gage L	.ocation)		(Elevation)

			FLY	BOAT	~
SPECIES: Interior Least Tern (S	terna antillarum a	athalassos)			
DATE:7/12/2009 TIM	IE OF DAY:	10:51	RIVER MILE _	812	
LOCALITY: Lauderdale		SITE NAME:	Below Tan	nm Bend Dikes	
County/Parish	State		NUMBERS SIG	HTED:	
WHERE SITED: Latitude:	35 89874		Adults:	40	
	89.75754		Juveniles:		
~~~	0.0000000000000000000000000000000000000	Foot	Eggs:		
Approximate Distance to Water:	500	reet	Chicks:	No	
MID-CHANNEL SANDBAR			Gravel: Debris: VEGETATION: Type: Wille Distance:	100 Feet  ION: re: 88 ° F	
OTHER NOTES:					
Left Bank. Perimeter count. Low scrapes. Coyote tracks within co					ž.
-				TN side	•
OBSERVERS:	Boyds, Campen,	Fowlkes, Grubaugh	, Rumancik, Thro	on	
RIVER GAGE READING:	Caruth	ersville	<u>=</u>	15.1 F	
	(Gage L	ocation)		(Elevation)	

			FLY	BOAT	~
SPECIES: Interior Least Tern (S	terna antillarum athala	ssos)			
DATE:7/12/2009 TIM	E OF DAY:11:0	)4	RIVER MILE	807.4	
LOCALITY: Lauderdale		SITE NAME:	Nebraska	Point Dikes	
County/Parish	State		NUMBERS SIGH	ITED:	
WHERE SITED: Latitude:	35.85873		Adults: _	353	
	89.75853				
Approximate Distance to Water:	600 Feet			2,3	
IN FLIGHT Over Sandbar ✓	ON GROUND On Nest Ar	34 34 3E	SUBSTRATE:	No	
/ Over Water → ✓	On Resting Ar	ea 🔠	Sand: <b>∠</b>	2	
Calm Water		′ ,	Gravel:	_	
Land Side	`	$\triangleleft$	Debris:		
Channel Side	MID-CHANNEL ✓		VEGETATION:		
Rapid Cu	urrents	7	Type:		
MID-CHANNEL SANDBAR	River Side		Distance: _	Feet	
	ANDBAR Center ✓ Land Side ✓	,	FIELD CONDITIO	ON:	
River Side	Calm Water 🗆	\id	Temperature	e: 89 °F	
177777	7 - V		Rain: No		
	1177	<del>-  </del>	Wind: 5 m	ıph	
			% Cloud: 9	0	
OTHER NOTES:					
Left Bank. Two combined flush of sand over 3 miles in length. Term camper residue with human, Gre	s carrying fish, breasting	and nests lo	cated along wrack	lines. Day	oth
8				TN side	8
OBSERVERS:	Boyds, Campen, Fowlk	es, Grubaugh	, Rumancik, Thror	1	
RIVER GAGE READING:	Caruthersvil	e		15.1 F	
	(Gage Location	on)		(Elevation)	

			FLY	BOAT	~
SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)			
DATE: <u>7/12/2009</u>	TIME OF DAY:	11:25	RIVER MILE	803.0	
LOCALITY:Lauderdal	e TN	SITE NAME:	Bend of	f Island 25	
County/Par	ish State		NUMBERS SIGH		
WHERE SITED: Latitude	: <u>NA</u>		Adults: _		
Longitud	le: <u>NA</u>				
Approximate Distance to Wa	ter:	Feet	(G)(G)	No	
MID-CHANNEL SANDBAR Rap	ON OROUND OF		FIELD CONDITION	Feet ON: e: 90 °F	
OTHER NOTES:			**************************************		
Right Bank. Six terns in tran	sit mid-channel.				
5				TN side	
OBSERVERS:	Boyds, Campen,	Fowlkes, Grubaugh	, Rumancik, Thro	n	
RIVER GAGE READING:	Carut	hersville		15.1 F	
	(Gage	Location)		(Elevation)	

			FLY [	BOAT	~
SPECIES: Interior Least Tern (	Sterna antillarum	athalassos)			
DATE: <u>7/12/2009</u> TII	ME OF DAY:	11:46	RIVER MILE	794.2	
LOCALITY: Lauderdale		_ SITE NAME:	Ashport Gold	d Dust Dikes	
County/Parish	State		NUMBERS SIGHT	ΓED:	
WHERE SITED: Latitude:	35.74818		Adults:		
Longitude:	89.82543		Juveniles: Eggs:		
Approximate Distance to Water	200	Feet	CONT.	No	
<u>IN FLIGHT</u> Over Sandbar ✓ Over Water -		Nest Area ☑ esting Area ☐	SUBSTRATE: Sand: ✓		
Calm Water		$\langle \langle \rangle  $	Gravel:  Debris:		
Land Side			Debits.		
Channel Side	MID-CHANNEL	. 🗆 🛶 📗	VEGETATION: Type:		
MID-CHANNEL SANDBAR	Currents River Side		Distance:	and an	
	SANDBAR Center L		FIELD CONDITIO	02	
River Side 📗	Calm Water		Temperature:	90 F	
	777		Rain: No		
		محر	Wind: <u>5 mp</u>	oh .	
			% Cloud: <u>80</u>	)	
OTHER NOTES:					
Right Bank. Drift count along lo Ten terns sitting on scrapes.	ow, flat sand bar wit	th little debris, unatt	ached with human a	and turtle tracks	5.
				TN side	
OBSERVERS:	Boyds, Campen,	Fowlkes, Grubaugh	, Rumancik, Thron		
RIVER GAGE READING:	WAR-PARTIES IN THE REAL PROPERTY OF THE PARTIES IN	nersville	= =	15.1 F	
	(Gage I	Location)	(E	Elevation)	

			FLY [	BOAT 🗸
SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)		
DATE:7/12/2009 T	TIME OF DAY:	12:10	RIVER MILE	787
LOCALITY:Lauderdale		SITE NAME:	Keyes Poi	nt Dikes
County/Paris	sh State		NUMBERS SIGHTE	
WHERE SITED: Latitude:			Adults:	9
	e: NA		- second	
Approximate Distance to Water	er:	Feet	Chicks:	No
IN FLIGHT Over Sandbar □ Over Water . ✓ Calm Water □		Nest Area  esting Area	SUBSTRATE:  Sand:  Gravel:  Debris:	
Land Side			VEGETATION:	
	MID-CHANNE	- →	Type:	
MID-CHANNEL SANDBAR	Currents River Side		Distance:	Feet
	L SANDBAR Center L		FIELD CONDITION	S <u>a</u>
River Side 🔠	Calm Water		Temperature:	92 F
/ / / <del>7</del> /'.			Rain: No	
	, , , ,	<u> </u>	Wind: 5 mph	i .
			% Cloud: <u>90</u>	
OTHER NOTES:				
Nine terns in flight exhibiting of	courting behavior.			
				TN side
OBSERVERS:	Boyds, Campen,	Fowlkes, Grubaugh	, Rumancik, Thron	
RIVER GAGE READING:	0.47-0.47-0.11	nersville		15.1 F
	(Gage I	Location)	(El	evation)

			FLY	BOAT	<b>~</b>
SPECIES: Interior Least Tern (S	terna antillarum a	athalassos)			
DATE:7/12/2009 TIM	E OF DAY:	13:50	RIVER MILE	781.2	;
LOCALITY: Lauderdale		SITE NAME:	Below Plui	m Point Dikes	
County/Parish	State		NUMBERS SIGH	HTED:	
WHERE SITED: Latitude: _	35.65164		200	160	
Longitude: _	89.89279			1	
Approximate Distance to Water:	60	Feet		No	
MID-CHANNEL SANDBAR	On Re		Gravel:  Debris:  VEGETATION:  Type:  Distance:  FIELD CONDITION	Feet ON: e: 92 °F	
OTHER NOTES:			d do o d b oo do d	-t	
Left Bank. High (15 ft.), flat, una nest with one egg observed.	ittached sand bar v	with turtle tracks and	d dead banded wa	ater snake. One	e
			-22	TN side	•
OBSERVERS:		Fowlkes, Grubaugh	, Rumancik, Thro		6
RIVER GAGE READING:	24222	nphis .ocation)	=	9.2 F (Elevation)	

			FLY [	BOAT •
SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)		
DATE:7/12/2009 TI	ME OF DAY:	14:19	RIVER MILE	775.3
LOCALITY: Lauderdale		SITE NAME:	Sunrise Tow	head Chute
County/Parisl	n State		NUMBERS SIGHT	ED:
WHERE SITED: Latitude:	35.57951		Adults:	
Longitude	89.90346			
Approximate Distance to Water	r: <u>200</u>	Feet	Eggs: Chicks:	No
MID-CHANNEL SANDBAR	On Re		SUBSTRATE: Sand: Gravel: Debris:  VEGETATION: Type: Distance: FIELD CONDITION Temperature: Rain: No Wind: 5 mp	Feet N: 93 °F
			% Cloud: <u>90</u>	
OTHER NOTES:				
Left Bank. Perimeter count alogravel. Five terns observed sit		slightly undulating,	sand par with patch	nes of fine
				TN side
OBSERVERS:	Boyds, Campen,	Fowlkes, Grubaugh	, Rumancik, Thron	
RIVER GAGE READING:	24222	nphis	<u> </u>	9.2 F
	(Gage I	ocation)	(E	levation)

			FLY [	BOAT 🗹
SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)		
DATE: <u>7/12/2009</u> T	TIME OF DAY:	14:30	RIVER MILE	771.0
LOCALITY: Tipton		_ SITE NAME:	Randolph	Dikes
County/Paris	sh State		NUMBERS SIGHTE	ED:
WHERE SITED: Latitude:	NA		Adults:	
Longitude	e: NA			
Approximate Distance to Water	er:	Feet		No
<u>IN FLIGHT</u> Over Sandbar ☐ Over Water →		Nest Area ☐	SUBSTRATE: Sand:	
Calm Water □	·	4/ ,   -	Gravel:	
Land Side			Debris:	
Channel Side	MID-CHANNEL	. 🗷 🔍 📗	VEGETATION:	
MID-CHANNEL SANDBAR Rapid	d Currents	→	Туре:	
1	River Side		Distance:	Feet
SIDE CHANNE	L SANDBAR Center L		FIELD CONDITION	1 S <u>≥</u> 1
River Side	Calm Water	النحر ا	Temperature: _	95 F
	777		Rain: No	
		للكر	Wind: 5 mph	
			% Cloud: <u>95</u>	
OTHER NOTES: Mid-channel. Birds in transit b	noth sides of river and	d chute behind Ran	dolph Dikes	
Mid-Criainiei. Diras in transit i	our sides of fiver and	d Chate Berning Ivani	иогри шкез.	
				TN side
OBSERVERS:	Boyds, Campen,	Fowlkes, Grubaugh	, Rumancik, Thron	-
RIVER GAGE READING:	nanan ing kananan ing kana	nphis	<b></b>	9.2 F
	(Gage I	_ocation)	(EI	evation)

			FLY	□ BOAT ✓
SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)		
DATE: <u>7/12/2009</u> T	TIME OF DAY:	14:50	RIVER MILE	766.2
LOCALITY: Tipton	TN State	_ SITE NAME:	Below Richards	on Landing Dikes
County/Fans	Siale State		NUMBERS SIGH	ITED:
WHERE SITED: Latitude:	35.52419		Adults:	81
	e: 89.98331		Juveniles:	
~	Will care of control and a water and the	Foot	Eggs: _	2
Approximate Distance to Water	er. <u>350</u>	<u>reel</u>	Chicks:	No
MID-CHANNEL SANDBAR Rapid			FIELD CONDITION Temperature Rain: No	Feet  ON: e: 95
OTHER NOTES:				
Left Bank. Flush count on low	, very undulating sa	ndbar, unattached w	ith some gravel or	n land side of bar.
5T				TN side
OBSERVERS:	Boyds, Campen,	Fowlkes, Grubaugh	, Rumancik, Thror	1
RIVER GAGE READING:	Me	mphis		9.2 F
	(Gage	Location)	- <del></del>	(Elevation)

			FLY [	BOAT ✓
SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)		
DATE: <u>7/12/2009</u>	TIME OF DAY:	15:20	RIVER MILE	760.0
LOCALITY: Mississipp	i TN	SITE NAME:	Cedar	Point
County/Paris	sh State		NUMBERS SIGHT	ΓED:
WHERE SITED: Latitude:	35.45578		Adults:	
Longitud	e: <u>89.99867</u>			
Approximate Distance to Water	er: <u>300</u>	Feet	Eggs: Chicks:	No
			describing and developed of the	
IN FLIGHT Over Sandbar ✓		Nest Area	SUBSTRATE:	
Over Water -	On R	esting Area	Sand: <b>✓</b>	
Calm Water	- 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 -	$\langle \langle \rangle /   \rangle$	Gravel: ✓	
Land Side	•	$\sim$	Debris:	
Channel Side	MID-CHANNE	L	VEGETATION:	
		- →	Type: Willow	/S
MID-CHANNEL SANDBAR	d Currents		Distance: 10	000 Feet
	EL SANDBAR Center Land Side	<u>*</u>	FIELD CONDITIO	N:
River Side □	Calm Water		Temperature:	99 °F
77747	7+7+		Rain: No	
	1174		Wind: 5 mp	oh
			% Cloud: 65	5
OTHER NOTES:				
Right Bank. Both perimter co sitting on scrapes along with c		rield similar numbers	s on mid-height san	d bar Four terns
				AR side
OBSERVERS:	Boyds, Campen,	Fowlkes, Grubaugh	, Rumancik, Thron	
RIVER GAGE READING:	Me	mphis		9.2 F
	(Gage	Location)	(1	Elevation)

			FLY	□ BOAT ✓
SPECIES: Interior Least Tern	(Sterna antillarum a	athalassos)		
DATE:7/12/2009 T	IME OF DAY:	16:00	RIVER MILE	754.5
LOCALITY: Shelby		SITE NAME:	Densi	ford Bar
County/Paris	h State		NUMBERS SIGH	ITED:
WHERE SITED: Latitude:	35.39468		Adults: _	82
Longitude	90.06695			
Approximate Distance to Wate	r: 400	Feet		1 No
SIDE CHANNE	On Re	1	Distance:	ws/Cottonwoods  1000 Feet  ON: e: 94 F
OTHER NOTES:				
Left Bank. Flush count of low evidence of recent human acti		, tiat, unattached sa	and bar. Mobbing	ot observers,
				TN side
OBSERVERS:	Boyds, Campen,	Fowlkes, Grubaugh	, Rumancik, Thror	1
RIVER GAGE READING:	0.45-0.45	phis	<b>=</b>	9.2 F
	(Gage L	ocation)	(3)	(Elevation)

			FLY	BOAT 🗸
SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)		
DATE:7/12/2009 TI	ME OF DAY:	16:34	RIVER MILE	743.2
LOCALITY: Shelby		SITE NAME:	Above Loosaha	atchie Dikes
County/Parisi	n State		NUMBERS SIGHTE	:D:
WHERE SITED: Latitude:	35.24930		Adults:	
Longitude	90.09153		Juveniles: Eggs:	
Approximate Distance to Water	r: <u>75</u>	Feet	Chicks:	No
IN FLIGHT Over Sandbar ✓	ON GROUND On	Next Area [4]		
/ Over Water		Nest Area ✓ esting Area ☐	SUBSTRATE:	
Calm Water □		/ /	Sand: ✓ Gravel: □	
		$\sim$	Gravel:	
Land Side			VECETATION	
Channel Side 🗆	MID-CHANNEI	- □ -→	VEGETATION: Type:	
MID-CHANNEL SANDBAR Rapid	Currents		Distance:	
	River Side		Distance.	1 001
	SANDBAR Center Land Side		FIELD CONDITION	S20
River Side 🔲	Calm Water		Temperature: _	91 °F
/ / <del>/ 7 / </del> / ' '	777		Rain: No	
	1174	7-7-7	Wind: 5 mph	
			% Cloud: 60	
OTHER NOTES:				
Left Bank. Perimeter count alo scrapes. One Bald Eagle in im		nattached sand bar	. Six terns resting at	waterline, 3 on
				TN side
OBSERVERS:	Boyds, Campen,	Fowlkes, Grubaugh	, Rumancik, Thron	
RIVER GAGE READING:	Mer	mphis		9.2 F
	(Gage I	Location)	(El	evation)

			FLY	□ BOAT ✓
SPECIES: Interior Least Tern (S	terna antillarum ath	alassos)		
DATE: <u>7/12/2009</u> TIM	E OF DAY:1	6:40	RIVER MILE _	740.5
LOCALITY: Crittenden		SITE NAME:	Sycamor	e Chute Dikes
County/Parish	State		NUMBERS SIG	HTED:
WHERE SITED: Latitude:	35 20764		Adults:	70
The state of the s	90.07227		Juveniles:	T.
_	3-200 databas - 200 in 10	not.	Eggs:	
Approximate Distance to Water:		<u>eet</u>	Chicks:	No
Over Water	MID-CHANNEL   urrents  River Side	4	Gravel: Debris: VEGETATION: Type: Cott Distance: FIELD CONDIT	re: 91 <sup>O</sup> F
OTHER NOTES:				
Right Bank. Flush count on attack x 1200 ft. with many scrapes. For established.				
-				AR side
OBSERVERS:	Boyds, Campen, Fo	wlkes, Grubaugh	, Rumancik, Thro	on
RIVER GAGE READING:	Mempl	nis		9.2 F
	(Gage Loc	ation)	<del>77</del> 9.	(Elevation)

FLY L	BOAT 🗸
SPECIES: Interior Least Tern (Sterna antillarum athalassos)	
DATE: TIME OF DAY: 8:45 RIVER MILE	733.0
LOCALITY: Crittenden AR SITE NAME: Engineer Ba	ar Dikes
County/Parish State NUMBERS SIGHTE	D:
WHERE SITED: Latitude: 35.12364 Adults:	
Longitude. 90.10428	
Approximate Distance to Water: 150 Feet Chicks:	No
IN FLIGHT Over Sandbar	S-11
Wind: <u>10 mpl</u>	1
% Cloud: <u>100</u>	
OTHER NOTES:  Right Bank. Flush count on low, flat to gently undulating, attached sand bar. Six active screening behavior. Canine tracks and 5 Canada Geese.	apes and
	AR side
OBSERVERS: Boyds, Campen, Fowlkes, Grubaugh, Rumancik, Thron	
RIVER GAGE READING: Memphis _ 7	'.9 F

			FLY	□ BOAT ✓
SPECIES: Interior Least Tern	(Sterna antillarum a	thalassos)		
DATE:7/13/2009 T	IME OF DAY:	9:11	RIVER MILE	729.5
LOCALITY: Shelby		SITE NAME:	Vice Preside	ents Island #46
County/Paris	sh State		NUMBERS SIGH	ITED:
WHERE SITED: Latitude:	35.12428		Adults: _	66
	90.15978		_	1.20.00012.700
Approximate Distance to Water	er: 70	Feet		4(2), 1(1) No
MID-CHANNEL SANDBAR Rapid		*	FIELD CONDITION	Feet ON: e: 83 °F
OTHER NOTES:				
Left Bank. Flush count. Low, Canada Geese present.	unattached, clean, po	oint sand bar with 1	0% gravel in patc	hes. Twelve
5				TN side
OBSERVERS:	Boyds, Campen, I	owlkes, Grubaugh	, Rumancik, Thro	n
RIVER GAGE READING:	Mem	phis		7.9 F
	(Gage L	ocation)		(Elevation)

			FLY	□ BOAT ✓
SPECIES: Interior Least Tern	(Sterna antillarum a	athalassos)		
DATE: <u>7/14/2009</u> T	TIME OF DAY:	8:00	RIVER MILE _	725.0
LOCALITY: Crittenden		SITE NAME:	Dismal	Point Dikes
County/Paris	sh State		NUMBERS SIG	HTED:
WHERE SITED: Latitude:	35.0691			4
Longitude	90.1838			<u> </u>
Approximate Distance to Water	er:	Feet		No
IN FLIGHT Over Sandbar	ON GROUND On	Nest Area □	SUBSTRATE:	
Over Water -	/ / On Re	sting Area 🗸	Sand:	✓
Calm Water	·	47 II	Gravel:	<b>▽</b>
Land Side			Debris:	
Channel Side	- MID CHANNEL		VEGETATION:	
Charmer side	MID-CHANNEL	<sup>□</sup> →	Type:	
MID-CHANNEL SANDBAR Rapid	Currents River Side		Marie W	Feet
SIDE CHANNE	L SANDBAR Center		FIELD CONDIT	ION:
River Side 📑	Land Side C		Temperatu	re: 83 °F
7777	777		Rain: No	
	/ / / 7	7-7-7	Wind: <u>10</u>	) mph
•			% Cloud:	60
OTHER NOTES:				
Right Bank. Low, attached ba	r, resting only. Imma	ture Bald Eagle als	so present.	
<u> </u>				
57				AR side
OBSERVERS:	Boyds, Campen,	Fowlkes, Grubaugh	, Rumancik, Thro	on
RIVER GAGE READING:	24222	nphis		7.2 F
	(Gage L	ocation)		(Elevation)

			FLY	BOAT	~
SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)			
DATE:7/14/2009 T	TIME OF DAY:	8:25	RIVER MILE _	716.5	
LOCALITY: Desoto	MS	SITE NAME:	Cow Is	sland Bend	
County/Paris	sh State		NUMBERS SIGI	HTED:	
WHERE SITED: Latitude:	35.0122		Adults:	229	
Longitude	e: 90.28744		Juveniles:	1.100	
Annyayimata Diatanas ta Wat	100	Foot	Eggs:	4(1), 3(2)	
Approximate Distance to Water	er. 100	reet	Chicks:	No	
MID-CHANNEL SANDBAR Rapid			Gravel:  Debris:  VEGETATION:  Type:  Distance:  FIELD CONDITI	Feet ON: re: 91 OF	
OTHER NOTES:  Left Bank. Flush counts at upp	per and lower end of	unattached, 2mile lo	ong,low (3ft.) und	ulating, sand bai	r
with colony concentrated on unewly formed colony.					
	D	F	B	MS side	
OBSERVERS:	Boyds, Campen,	Fowlkes, Grubaugh	, Kumancik, Thro	n	
RIVER GAGE READING:	NAME OF THE PARTY	nphis		7.2 F	
	(Gage I	_ocation)		(Elevation)	

			FLY [	BOAT 🗹
SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)		
DATE: <u>7/14/2009</u>	TIME OF DAY:	8:45	RIVER MILE	710.5
LOCALITY: Crittender	n AR	SITE NAME:	Cat Islan	nd Dikes
County/Pari WHERE SITED: Latitude			NUMBERS SIGHT Adults:	
	e: NA		Eggs:	No
MID-CHANNEL SANDBAR Rap			SUBSTRATE:  Sand:   Gravel:   Debris:   VEGETATION:  Type:   Distance:   FIELD CONDITION  Temperature:  Rain: No  Wind: 5 mp  % Cloud: 90	Feet N: 92 OF
OTHER NOTES:  Two feeding along dike field.				
OBSERVERS:	Boyds, Campen,	Fowlkes, Grubaugh	ı, Rumancik, Thron	AR side
RIVER GAGE READING:		mphis	100	7.2 F
AL STATE OF THE ST	(Gage	Location)	(E	Elevation)

			FLY	BOAT	~
SPECIES: Interior Least Tern (	Sterna antillarum a	athalassos)			
DATE: <u>7/14/2009</u> TI	ME OF DAY:	9:20	RIVER MILE _	706.5	
LOCALITY: Crittenden		SITE NAME:	Seypell	Dikes Upper	
County/Parish	State		NUMBERS SIG	HTED:	
WHERE SITED: Latitude:	34.89416		Adults:	400	
	90.26083			:	
Approximate Distance to Water	80	Feet		2	
Approximate distance to water	00	1 eet	Chicks:	No	
MID-CHANNEL SANDBAR	On Re	*	Gravel: Debris: VEGETATION: Type: Distance:	Feet ION: re: 85 °F	
OTHER NOTES:					
Right Bank. Flush count on hig on scrapes.	h (12ft.), unattached	d, clean sand bar (1	100 x 2200ft.). C	Over 55 terns sitt	ting
5 5				AR side	
OBSERVERS:	Boyds, Campen,	Fowlkes, Grubaugh	, Rumancik, Thro	on	
RIVER GAGE READING:	Men	nphis		7.2 F	
	(Gage L	ocation)		(Elevation)	

			FLY	BOAT	~
SPECIES: Interior Least Tern (	Sterna antillarum a	athalassos)			
DATE: <u>7/14/2009</u> TII	ME OF DAY:	9:30	RIVER MILE	705.2	
LOCALITY: Crittenden	AR	SITE NAME:	Seypell	Dikes Lower	
County/Parish	State		NUMBERS SIGH	HTED:	
WHERE SITED: Latitude:	34.88873		Adults:	110	
	90.28032				
Approximate Distance to Water	: 100	Feet		2 No	
River Side	On Re	*	Gravel: [Debris: [Deb	Feet ON: re: 85 ° F	
OTHER NOTES:  Right Bank. Flush count on low behavior with some nests in wrabar.					on
5				Ar side	
OBSERVERS:	Boyds, Campen,	Fowlkes, Grubaugh	, Rumancik, Thro		
RIVER GAGE READING:	Men	nphis	=======================================	7.2 F	
	(Gage L	.ocation)		(Elevation)	

			FLY	BOAT 🗹
SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)		
DATE:7/14/2009	TIME OF DAY:	9:54	RIVER MILE	702.8
LOCALITY: Crittenden	AR	SITE NAME:	Pickett D	ikes
County/Paris WHERE SITED: Latitude:	34.87374	e e	NUMBERS SIGHTE Adults:	
Longitud  Approximate Distance to Wate	e: <u>90.31387</u> er: <u>200</u>		Eggs:	
MID-CHANNEL SANDBAR Rapi			SUBSTRATE:  Sand:  Gravel:  Debris:  VEGETATION:  Type:  Distance:  FIELD CONDITION:  Temperature:  Rain:  No  Wind:  5 mph  % Cloud: 100	Feet 87 <sup>O</sup> F
OTHER NOTES:  Left Bank. Perimeter count o	n very low (1ft.), una	attached sand bar.		
OBSERVERS:	Boyds, Campen	, Fowlkes, Grubaugh	, Rumancik, Thron	AR side
RIVER GAGE READING:	Me	emphis	7	7.2 F
	(Gage	Location)	- (Ele	evation)

			FLY	□ BOAT ✓
SPECIES: Interior Least Tern	(Sterna antillarum a	athalassos)		
DATE:7/14/2009 TI	ME OF DAY:	10:10	RIVER MILE	700.0
LOCALITY: Crittenden	AR	SITE NAME:	Basket	Bar diikes
County/Parish	h State		NUMBERS SIGH	TED:
WHERE SITED: Latitude:	NA		Adults:	
Longitude	:NA			
Approximate Distance to Water	r	Feet	20	No
MID-CHANNEL SANDBAR	On Re		FIELD CONDITIO	Feet
/ / <del>/ 7 / 7</del> / 77	7777		Rain: No	. sur
		777	Wind: <u>5 m</u> % Cloud: <u>1</u>	
OTHER NOTES: Right Bank. Attached bar with	six resting at waterli	ne and 9 feeding al		
9				
OBSERVERS:	Boyds, Campen.	Fowlkes, Grubaugh	, Rumancik, Thron	AR side
RIVER GAGE READING:		nphis	101 III	7.2 F
entre operate and to the formation of the first of the fi	Paragraph (1)	ocation)	=	(Elevation)

		FLY	BOAT 🗸
SPECIES: Interior Least Tern	(Sterna antillarum athalassos)		
DATE:7/14/5009 T	ME OF DAY:10:30	RIVER MILE	692.3
LOCALITY: Tunica	MS SITE NA	ME:Rabbit Isl	and
County/Paris	h State	NUMBERS SIGHTED	<b>)</b> :
WHERE SITED: Latitude:	34.81047	Adults:	
Longitude	90.46430	Juveniles:	
Approximate Distance to Wate	r: <u>300 Feet</u>	Eggs:	No
IN FLIGHT Over Sandbar	ON GROUND On Nest Area ✓	SUBSTRATE:	
Over Water	On Resting Area	Sand: ✓	
Calm Water	·	Gravel:	
Land Side 🗆	$\sim$	Debris:	
Center .	MID CHANNEL .	VEGETATION:	
Channel Side 🗆	MID-CHANNEL ☐ →	Type:	
MID-CHANNEL SANDBAR	Currents River Side 🗹	Distance:	Feet
	L SANDBAR Center  ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	FIELD CONDITION:	
River Side 🔲	Calm Water	Temperature:	86 °F
1 7 <del>7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7</del>	777	Rain: No	
	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Wind: 5 mph	
		% Cloud: 100	
OTHER NOTES:			
	arge, high (3-10ft.) 1.5 mile long by terns sitting on scrapes inland. Fir colony.		
			MS side
OBSERVERS:	Boyds, Campen, Fowlkes, Grub	augh, Rumancik, Thron	
RIVER GAGE READING:	Helena	=14	1.7 F
	(Gage Location)	(Ele	vation)

			FLY	BOAT	<b>~</b>
SPECIES: Interior Least Tern	(Sterna antillarum a	athalassos)			
DATE:7/14/2009 T	IME OF DAY:	11:05	RIVER MILE _	686.5	
LOCALITY: Lee	AR	SITE NAME:	Mho	on Bend	
County/Paris	h State		NUMBERS SIGI	HTED:	
WHERE SITED: Latitude:	34.73556		Adults:	32	
	90.45821		Juveniles:		
Approximate Distance to Wate	<b>P</b>	Foot	Eggs:		
Approximate distance to water	1.00 g	<u>reet</u>	Chicks:	No	
IN FLIGHT Over Sandbar   Over Water   Calm Water   Land Side   Center .  Channel Side   MID-CHANNEL SANDBAR  Rapid	On Re	Nest Area 🔽 sting Area 🗆	Gravel: [ Debris: [ VEGETATION: Type: Willo	ows	
SIDE CHANNE	LSANDBAR Center  Land Side  Land		FIELD CONDITI	ION:	
River Side 🖳	Calm Water		Temperatur	re: 89 °F	
77777	747		Rain: No		
	1174	7-7-7	Wind: 5 r	mph	
			% Cloud:	100	
OTHER NOTES:					
Right Bank. Flush count yields future colony site. Sand bar ur Gull also present.				and 1 Ring-bille	ed
000000000000000000000000000000000000000	Davida O	Faudkaa Ombariik	Diman-il Ti	AR side	<u> </u>
OBSERVERS:		Fowlkes, Grubaugh	, rumancik, i nro		
RIVER GAGE READING:	0400001111	ena .ocation)	=======================================	14.7 F	
	(Gage L	ocation)		(Elevation)	

			FLY	BOAT	~
SPECIES: Interior Least Tern (	Sterna antillarum a	athalassos)			
DATE: <u>7/14/2009</u> TII	ME OF DAY:	11:30	RIVER MILE _	680.3	
LOCALITY: Tunica		SITE NAME:	Bordeau	x Point Dikes	
County/Parish	State		NUMBERS SIG	HTED:	
WHERE SITED: Latitude:	NA		Adults:	5	
Longitude:	NA			<u> </u>	
Approximate Distance to Water	:	Feet	Eggs:	No	
			CHICKS.	INO	
IN FLIGHT Over Sandbar	ON GROUND On	Nest Area	SUBSTRATE:		
✓ / Over Water - □	On Res	sting Area 🗸	221	✓	
Calm Water		47.II			
Land Side			Debris:		
Center .	And allering		VEGETATION:		
Channel Side 🗆		□ →	Type: Will		
MID-CHANNEL SANDBAR	Currents ☐ ¬↓¬¬,↓¬¬,•¬¬¬,¬	_	Distance:	1000 Feet	
SIDE CHANNEL	River Side ☐ SANDBAR Center ☑			1121	
River Side □	Land Side 🗹	1	FIELD CONDIT	TON: re: <u>87                                   </u>	
<b>┣</b> <del>╱</del>	Calm Water	] ~~			
	177		Rain: No		
	, , ,-	<del></del>	Wind: <u>5</u> 1	mph	
			% Cloud:	98	
OTHER NOTES:					
Left Bank. Perimeter count of 5 with small willows on upstream	birds resting at wat end. Resting bar or	terline. Sand bar 5 nly.	ft. and gently slo	ping and attache	ed
				MS side	<u> </u>
OBSERVERS:	Boyds, Campen,	Fowlkes, Grubaugh	, Rumancik, Thro	on	
RIVER GAGE READING:	Hel	ena		14.7 F	
	(Gage L	ocation)		(Elevation)	

			FLY	BOAT V
SPECIES: Interior Least Tern	(Sterna antillarum a	athalassos)		
DATE:7/14/2009 T	ME OF DAY:	12:09	RIVER MILE	676
LOCALITY: Lee		SITE NAME:	Below Walnut	Bend Dikes
County/Paris	h State		NUMBERS SIGHTE	D:
WHERE SITED: Latitude:	NA		Adults:	
Longitude	:NA		Juveniles:	
Approximate Distance to Wate	r:	Feet	Eggs: Chicks:	No
MID-CHANNEL SANDBAR	On Re		SUBSTRATE:  Sand:  Gravel:  Debris:  VEGETATION:  Type:  Distance:  FIELD CONDITION:  Temperature:  Rain:  No  Wind:  5 mph  % Cloud: 95	Feet : 88 °F
OTHER NOTES:			70 01044. <u>00</u>	
Right Bank. Barely exposed sa signs of breeding or reproducti		Terns in flight and	I 26 resting at the wat	erline. No
5				AR side
OBSERVERS:	Boyds, Campen,	Fowlkes, Grubaugh	, Rumancik, Thron	
RIVER GAGE READING:	24222111111	lena		4.7 F
	(Gage L	ocation)	(Ele	evation)

				FLY	BOAT	~
COUNTY  Tunica	SPECIES: Interior Least Tern (S	terna antillarum ath	alassos)			
County/Parish State  NUMBERS SIGHTED:  Adults: 150  Juveniles:	DATE:7/14/2009 TIM	E OF DAY:1	2:09	RIVER MILE	672.1	
NUMBERS SIGHTED:  Adults: 150  Juveniles:	LOCALITY: Tunica	MS	SITE NAME:	St. Fra	ancis Bend	
Approximate Distance to Water: 450 Feet Chicks: No    Substrate   Substrate   Substrate   Substrate   Sand: Sand: Sand: Sand: Sand: Sand: Sand: Sand: Substrate   Substrate   Substrate   Sand: Substrate	County/Parish	State		NUMBERS SIGH	HTED:	
Approximate Distance to Water: 450 Feet Chicks: No    NFLIGHT	WHERE SITED: Latitude: _	34.62107		26		
Approximate Distance to Water: 450 Feet Chicks: No    No	Longitude: _	90.50377				
SUBSTRATE:   Sand:	Approximate Distance to Water:	450 Fe	<u>eet</u>			
Left Bank. Perimeter count and flush count on very long (3 mi. x 1 mi.) unattached, sand bar (3-10 ft. elevation). Most terns along the waterline but 4 sitting on scrapes inland. Evidence of human activity.  MS side  OBSERVERS:  Boyds, Campen, Fowlkes, Grubaugh, Rumancik, Thron  RIVER GAGE READING:  Helena  14.7 F	Over Water .   Calm Water .   Land Side	MID-CHANNEL  Urrents  River Side  SANDBAR Center  Land Side  Calm Water  Calm Water	g Area	Sand: Gravel: Debris: VEGETATION: Type: Distance: FIELD CONDITIC Temperatur Rain: No Wind: 5 n	Feet ON: re: 89 ° F	
MS side  OBSERVERS: Boyds, Campen, Fowlkes, Grubaugh, Rumancik, Thron  RIVER GAGE READING: Helena = 14.7 F	Left Bank. Perimeter count and					
OBSERVERS: Boyds, Campen, Fowlkes, Grubaugh, Rumancik, Thron  RIVER GAGE READING: 14.7 F	elevation). Most terns along the	waterline but 4 sitting	on scrapes inla	nd. Evidence of h	numan activity.	
RIVER GAGE READING: Helena = 14.7 F	a				MS side	•
Name of the second seco	OBSERVERS:	Boyds, Campen, For	wlkes, Grubaugh	, Rumancik, Thro	n	
	RIVER GAGE READING:	WARRION DO NOT THE REAL PROPERTY.	Book III III o	=======================================		

			FLY	′ 🗆	BOAT	~
SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)				
DATE:7/14/2009 T	ME OF DAY:	13:13	RIVER MILE _		667.8	3:
LOCALITY: Phillips		_ SITE NAME:	Prairie	Point D	Dikes	
County/Paris	n State		NUMBERS SIG	HTED:		
WHERE SITED: Latitude:	34.56587		Adults:	D <del>.C.</del>		
Longitude	90.55711		Juveniles: Eggs:			
Approximate Distance to Wate	r: <u>1200</u>	Feet	Chicks:			
MID-CHANNEL SANDBAR	On Re		<b>5</b>	ge willow 2500 TION: ure: mph	Feet	
OTHER NOTES:						
Right Bank. Flush count on low chick of the survey noted here and Deer tracks. Relic mussel and Fat Pocketbook. Fat Pocket in elevation. Also one live Blue	~1 week old. Also s shells found on bar etbook was freshly	signs of predation or were Fragile Paper dead and over 1,000	n eggs with Grea shell, Mapleleaf,	t Blue F Yellow	leron trad Sandshe	cks ell, 4 ft.
OBSERVERS:	Boyds, Campen,	Fowlkes, Grubaugh	, Rumancik, Thr	on		
RIVER GAGE READING:	0.45-0.50 0.00 0.00	lena Location)	<b>=</b>	14.7 (Eleva	1111111	

			FLY [	BOAT <b>✓</b>
SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)		
DATE:7/14/2009 T	IME OF DAY:	14:45	RIVER MILE	655.6
LOCALITY: Phillips		SITE NAME:	Montezuma To	owhead Dikes
County/Paris	h State		NUMBERS SIGHT	ED:
WHERE SITED: Latitude:	34.37618		Adults:	
Longitude	90.65429			
Approximate Distance to Water	r:	Feet	Eggs: Chicks:	No
MID-CHANNEL SANDBAR	On Re		SUBSTRATE: Sand: Gravel: Debris:  VEGETATION: Type: Distance: FIELD CONDITION Temperature: Rain: No Wind: 5 mpl	Feet N: 89 °F
OTHER NOTES:				
Right Bank. Perimeter count of bar only.	n very low (<2ft.), sr	mall (200 x 100ft.) h	nalf sand, half gravel	bar. Resting
5		1200000		AR side
OBSERVERS:	Boyds, Campen,	Fowlkes, Grubaugh	, Rumancik, Thron	
RIVER GAGE READING:	Paragraph of the control of the cont	lena	=	14.7 F
	(Gage I	ocation)	(E	levation)

			FLY	□ BOAT ✓
SPECIES: Interior Least Terr	(Sterna antillarum	athalassos)		
DATE:7/14/2009	TIME OF DAY:	14:50	RIVER MILE	651.8
LOCALITY:Coahom	a MS	SITE NAME:	Friars F	Point Dikes
County/Pa	rish State		NUMBERS SIGH	ITED.
			Adults:	
WHERE SITED: Latitude	e: NA	_28	/-	31
Longitu	ide: NA	<b>-</b> 9		
Approximate Distance to Wa	ater:	Feet	(C) (C)	No
			CHICKS.	NO
<u>IN FLIGHT</u> Over Sandbar	ON GROUND O	n Nest Area	SUBSTRATE:	
Over Water	32	Resting Area 🗸	Sand:	<u> </u>
Calm Water		11		7. 
	<u>~</u>	$\sim$ / $\parallel$	Gravei: Debris:	_
Land Side	-		Debris.	_
Channel Side	A MID-CHANNE		VEGETATION:	
\	<i>'</i>	→	Type:	
MID-CHANNEL SANDBAR	apid Currents 🗍 ┼	_	Distance:	Feet
	River Side	N 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
1 / IX	NEL SANDBAR Center Land Side	<b>₫</b> ,	FIELD CONDITION	ON:
River Side	Calm Water		Temperature	e: <u>89                                   </u>
77777	7		Rain: No	
	1179	~~~	Wind: 5 m	nph
			% Cloud: 9	95
OTHER NOTES			TOO TO STATE AND A STATE OF THE	
OTHER NOTES:				
Left Bank. Perimeter count	on resung par only.			
				MS side
OBSERVERS:	Boyds, Camper	ı, Fowlkes, Grubaugh	, Rumancik, Thro	
RIVER GAGE READING:	100	lelena	en en in	14.7 F
	(Gage	Location)	_	(Elevation)

			FLY	□ BOAT ✓
SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)		
DATE: <u>7/14/2009</u> 1	TIME OF DAY:	15:00	RIVER MILE	647.9
LOCALITY: Phillips	AR	_ SITE NAME:	Kangaroo Po	oint Dikes Upper
County/Paris WHERE SITED: Latitude: Longitude Approximate Distance to Wate	34.36700 e: 90.70734	<u>Feet</u>	Eggs:	
MID-CHANNEL SANDBAR Rapi	MID-CHANNE  Currents  River Side  Land Side  Calm Water	*	Gravel: Debris: VEGETATION: Type: Distance: FIELD CONDITIC Temperatur Rain: No Wind: 5 n	Feet ON: e: 89 °F
OBSERVERS:	Boyds Campen	Fowlkes, Grubaugh	Rumancik Thro	AR side
RIVER GAGE READING:		elena	.,	
NIVER GAGE READING.	0.45-0.45-0.00	Location)	=	14.7 F (Elevation)

			FLY [	BOAT
SPECIES: Interior Least Tern	Sterna antillarum	athalassos)		
DATE: <u>7/14/5009</u> TI	ME OF DAY:	15:24	RIVER MILE	646.5
LOCALITY: Phillips		_ SITE NAME:	Kangaroo Point	Dikes Lower
County/Parish	n State		NUMBERS SIGHTE	ED:
WHERE SITED: Latitude:	34.36644		Adults:	33
~	90.73659		Eggs:	
Approximate Distance to Water	r: <u>150</u>	<u>Feet</u>	Chicks:	No
IN FLIGHT Over Sandbar ✓	ON GROUND On	Nest Area ✓	SUBSTRATE:	
∠ / / Over Water - □	/ / On Re	esting Area	Sand:	
Calm Water		47.1	Gravel:	
Land Side			Debris:	
Channel Side	MID-CHANNEL		VEGETATION:	
· · /		`	Туре:	
MID-CHANNEL SANDBAR	Currents	- 57 - 57 <b>9</b> -155	Distance:	Feet
	SANDBAR Center Land Side		FIELD CONDITION	:
River Side	Calm Water	_ ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Temperature:	91 °F
1 7 <del>7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7</del>			Rain: No	
	/ / / 7	7-7-7	Wind: 5 mph	
			% Cloud: 90	
OTHER NOTES:				
Right Bank. Perimeter count of Three sitting on scrapes and ot			oft. Elevation, flat bai	of clean sand.
				AR side
OBSERVERS:	Boyds, Campen,	Fowlkes, Grubaugh	, Rumancik, Thron	
RIVER GAGE READING:	He	lena		14.7 F
	(Gage I	_ocation)	(EI	evation)

FLY ☐ BOAT ☑

SPECIES: Interior Least Tern (St	erna antillarum a	thalassos)		
DATE:TIME	OF DAY:	15:40	RIVER MILE	643.4
LOCALITY: Coahoma  County/Parish	State	SITE NAME:	Old To  NUMBERS SIGH  Adults:	TED:
WHERE SITED: Latitude: Longitude: Approximate Distance to Water:	90.76402	<u>Feet</u>	Juveniles: _ Eggs: _	2 No
Over Water .   Calm Water .   Land Side	On Res	*	SUBSTRATE: Sand: Gravel: Debris:  VEGETATION: Type: Distance: FIELD CONDITION Temperature Rain: No Wind: 5 m % Cloud: 9	Feet  ON: 91
OTHER NOTES:  Left Bank. Flush count on attache present.	ed, 8 ft. elevated b	par of clean sand.	Canine tracks and	Cattle Egrets
OBSERVERS:	Boyds, Campen I	Fowlkes, Grubaugh	. Rumancik. Thron	MS side
RIVER GAGE READING:	1001	ena		14.7 F
	NAP-2-5	ocation)	=======================================	(Elevation)

			FLY	BOAT	~
SPECIES: Interior Least Tern	(Sterna antillarum a	athalassos)			
DATE:7/15/2009	TIME OF DAY:	9:52	RIVER MILE _	640.3	
LOCALITY: Phillips		SITE NAME:	Island #6	2 Dikes Upper	
County/Par	ish State		NUMBERS SIG	HTED:	
WHERE SITED: Latitude	34 30482		Adults:	92	
	de: 90.73929		Juveniles:	<u> </u>	
	Wi -construction in the second		Eggs:	2,3	
Approximate Distance to Wa	ter: <u>1000</u>	Feet	Chicks:	Yes	
MID-CHANNEL SANDBAR  SIDE CHANN  River Side	ON GROUND OII		Gravel: Debris:  VEGETATION: Type: Will Distance:  FIELD CONDIT	1000 Feet TION: are: 88 F	
OTHER NOTES:  Right Bank. Flush count on scrapes. Bar sloping in eleving	unattached, clean sand ation up to 10 ft. Many	d bar undulating wit chicks from 4 days	h patches of graves to 1 week old.	vel and many Many canine	
trackes and heron tracks.					
	D1- 0	C		AR side	)
OBSERVERS:	Boyds, Camp	oen, Grubaugh, Rui	mancik, I hron		
RIVER GAGE READING:	WAR-1-0-11   1   1   1   1   1   1   1   1   1	ena		13.9 F	
	(Gage L	ocation)		(Elevation)	

			FLY		BOAT	~
SPECIES: Interior Least Tern (Ste	erna antillarum	athalassos)				
DATE: <u>7/15/2009</u> TIME	OF DAY:	10:05	RIVER MILE _		637.3	
LOCALITY: Phillips	AR	SITE NAME:	Island #6	2 Dike	s Lower	
County/Parish	State		NUMBERS SIG			
WHERE SITED: Latitude:	34.27662 90.76811		Juveniles:	0.60		
-	- Contractive Cont	Face			1 100	
Approximate Distance to Water:	Ø <del></del>	reet	Chicks:	5 <u>K</u> -	No	
Over Water Over Water Over Water In Calm Wat	MID-CHANNEI rents  River Side [	*	Gravel:	TION:  ire:  mph	Feet 89 °F	
OTHER MOTES			70 Oldu.	<u> </u>		
OTHER NOTES:  Right Bank. Perimeter count on a Revetment. Resting only.	attached, low (4 f		ordering chute be	hind Isl	and #63	Bar
	5010-750				AR side	
OBSERVERS:		pen, Grubaugh, Ru	mancik, Thron	60 <b>-</b> 00-000		
RIVER GAGE READING:	0.40-0.00	lena Location)	=		9 F ation)	

		FLY	BOAT ✓
SPECIES: Interior Least Tern (Ste	erna antillarum athalassos)		
DATE: <u>7/15/2009</u> TIME	OF DAY:10:36	RIVER MILE _	629.5
LOCALITY: Phillips		AME:Island	I #64 Dikes
County/Parish	State	NUMBERS SIG	HTED:
WHERE SITED: Latitude:	34.21799		70
Longitude:	90.84954		
Approximate Distance to Water:	150 Feet		2,3 Yes
Over Water .   Calm Water .   Land Side	ON GROUND On Nest Area  On Resting Area  MID-CHANNEL  rents  River Side  NDBAR Center  Land Side  Calm Water  Calm Water	Gravel: Debris:  VEGETATION: Type: Cot Distance:  FIELD CONDIT Temperatu Rain: No	2000 Feet TION: are: 89 F
OTHER NOTES:			
Right Bank. Flush count on flat, se debris, many scrapes with chick tra			
a a			AR side
OBSERVERS:	Boyds, Campen, Grubaug	gh, Rumancik, Thron	
RIVER GAGE READING:	Helena		13.9 F
	(Gage Location)		(Elevation)

FLY ☐ BOAT ☑

SPECIES: Interior Least Tern (S	terna antillarum a	nthalassos)		
DATE: <u>7/15/2009</u> TIM	E OF DAY:	10:53	RIVER MILE	625.3
LOCALITY: Coahoma  County/Parish	State	SITE NAME:	Sunflower Cu	ED:
WHERE SITED: Latitude: _ Longitude: _ Approximate Distance to Water:	90.89412	Feet_	Juveniles:	
MID-CHANNEL SANDBAR	On Res	*	SUBSTRATE: Sand: Gravel: Debris:  VEGETATION: Type: Distance: FIELD CONDITION Temperature: Rain: No Wind: 5 mpt % Cloud: 5	Feet I: 89 °F
OTHER NOTES:  Left Bank. Perimeter count on sr entrance to Desoto Lake. Nine n		at, 2000 x 200ft.,mi	d-channel bar, unatta	ached at
OBSERVERS:	Boyds, Camp	pen, Grubaugh, Rui	mancik, Thron	MS side
RIVER GAGE READING:	Hel	in a second of the second of t		13.9 F
esse menger gereil und eine Statistische uns eine den der Will (1900 zu Pork Statistisch)	242-242	ocation)	=	levation)

		FLY ☐ BOAT 🗹
SPECIES: Interior Least Tern (Ste	erna antillarum athalassos)	
DATE: <u>7/15/2009</u> TIME	OF DAY:11:00	RIVER MILE624.7
		ME: Sunflower Cut-Off Lower
County/Parish	State	NUMBERS SIGHTED:
WHERE SITED: Latitude:	34.16903	Adults: 83
Longitude:	90.90265	Juveniles: Eggs: 1,2,3
Approximate Distance to Water:	75	Chicks: No
Over Water	River Side	SUBSTRATE:  Sand:  Gravel:  Debris:  VEGETATION:  Type:  Distance:  Feet  FIELD CONDITION:  Temperature:  91  F  Rain:  No  Wind:  5 mph  % Cloud:  5
OTHER NOTES:		
Left Bank. Flush count on low (4 f breasting along the waterline. Nin	t.), unattached sandbar with no one birds on scrapes.	debris. Many birds courting and
	2/11/14	MS side
OBSERVERS:	Boyds, Campen, Grubaugh,	Rumancik, Thron
RIVER GAGE READING:	Helena	= 13.9 F
	(Gage Location)	(Elevation)

			FLY [	BOAT	~
SPECIES: Interior Least Tern (Ste	erna antillarum a	thalassos)			
DATE: <u>7/15/2009</u> TIME	OF DAY:	11:18	RIVER MILE	623	
LOCALITY: Phillips	AR	SITE NAME:	Below Ludlo	ow Dikes	
County/Parish	State		NUMBERS SIGHTE	ED:	
WHERE SITED: Latitude:	34.16035		Adults:		
Longitude:	90.92811		Juveniles: Eggs:		
Approximate Distance to Water:	200	<u>Feet</u>	Chicks:	No	
IN FLIGHT Over Sandbar ✓	ON GROUND On N	lest Area ✓	CURCTRATE		
Over Water		ting Area	SUBSTRATE:		
Calm Water □	<u> </u>	/ /	Sand: ☑ Gravel: ☑		
Camivaci L		$\langle \langle \rangle  $			
Land Side		$\sim$	Debris:		
Channel Side	MID-CHANNEL		VEGETATION:		
		<sup>-</sup> →	Type:		
MID-CHANNEL SANDBAR Rapid Cun		_	Distance:	Feet	
SIDE CHANNEL SA	. River Side ✓ NDBAR Center —				
River Side	∫ Land Side □		FIELD CONDITION	S-2-1	
	Calm Water [	النخر ا	Temperature:	94 F	
1 / <del>7 / 7 / 1</del>	7	<b>&gt;</b> →	Rain: No		
°	(	7-7-7	Wind: 5 mph	I	
			% Cloud: <u>5</u>		
OTHER NOTES:					
Right Bank. Perimeter count on a on scrapes.	ttached, low (4 ft.)	, gently sloping ba	r of mostly gravel. F	ive terns sittir	ng
				AR side	
OBSERVERS:	Boyds, Camp	en, Grubaugh, Ru	mancik, Thron		
RIVER GAGE READING:	Hele	ena		13.9 F	
	(Gage Lo	ocation)	(EI	evation)	

FLY ☐ BOAT ☑

SPECIES: Interior Least Tern (S	terna antillarum	athalassos)		
DATE: <u>7/15/2009</u> TIM	E OF DAY:	11:25	RIVER MILE	620.3
LOCALITY: Coahoma County/Parish WHERE SITED: Latitude:	State		NUMBERS SIGH	
	90.5430	8	Eggs:	No
MID-CHANNEL SANDBAR	On R		Distance: _	ws/Cottonwoods  800 Feet  ON: e: 95 F
OTHER NOTES:  Left Bank. Perimeter count along Fifteen sitting on scrapes. Thirty-opposite bank.				
OBSERVERS:	Boyds, Can	npen, Grubaugh, Ru	mancik, Thron	MS side
RIVER GAGE READING:		elena	HILLS AND HILLS	13.9 F
	(Gage	Location)	- a	(Elevation)

			FLY	□ BOAT ✓
SPECIES: Interior Least Tern (S	terna antillarum	athalassos)		
DATE: <u>7/15/2009</u> TIMI	E OF DAY:	12:00	RIVER MILE	612.4
LOCALITY: Desha  County/Parish		SITE NAME:	Below Knowlt	on Dikes Upper
County/Faiisii	State		NUMBERS SIGH	TED:
WHERE SITED: Latitude:	34 03316		Adults:	53
	90.89326		Juveniles: _	
***	- construction and annual 10	Face	Eggs:	1
Approximate Distance to Water:	100	reet	Chicks:	No
IN FLIGHT Over Sandbar □ Over Water □  Calm Water □  Land Side ☑ Center . ☑ Channel Side ☑  MID-CHANNEL SANDBAR  Rapid Cu  SIDE CHANNEL S.  River Side □  River Side □  Side CHANNEL S.	MID-CHANNEL		SUBSTRATE: Sand: Gravel: Debris:  VEGETATION: Type: Distance: FIELD CONDITION Temperature Rain: No Wind: 5 m % Cloud: 5	Feet  ON: 94
OTHER NOTES:				
Right Bank. Flush count on medi on scrapes.	um-sized, unattad	ched, clean, sandba	r (6 ft. high). Man	y observed sitting
				AR side
OBSERVERS:	Boyds, Cam	pen, Grubaugh, Rui	mancik, Thron	
RIVER GAGE READING:	He	lena		13.9 F
	(Gage I	_ocation)	_ (	(Elevation)

			FLY [	BOAT ✓
SPECIES: Interior Least Tern (	Sterna antillarum a	athalassos)		
DATE: <u>7/15/2009</u> TI	ME OF DAY:	12:07	RIVER MILE	612.2
LOCALITY: Desha  County/Parish	AR State	SITE NAME:	Below Knowlto	n Dikes Lower
oouniyii ano	. Claic		NUMBERS SIGHT	ED:
WHERE SITED: Latitude:	34 02794		Adults:	60
	90.90060		Juveniles:	
	en		Eggs:	2,3
Approximate Distance to Water	: 60	Feet	Chicks:	No
MID-CHANNEL SANDBAR	MID-CHANNEL  Currents  River Side  SANDBAR Center  Land Side  Calm Water	*		Feet N:
	ETHIN SERVE			AR side
OBSERVERS:	Boyds, Camp	oen, Grubaugh, Rui	mancik, Thron	
RIVER GAGE READING:	NAN-TEN TO THE TOTAL PROPERTY.	ena		13.9 F
	(Gage L	ocation)	(E	Elevation)

			FLY	BOAT	~
SPECIES: Interior Least Tern (St	terna antillarum	athalassos)			
DATE: <u>7/15/2009</u> TIMI	E OF DAY:	12:20	RIVER MILE	608	
LOCALITY: Bolivar		SITE NAME:	Island	#70 Dikes	
County/Parish	State		NUMBERS SIGH	HTED:	
WHERE SITED: Latitude: _	34.02286		Adults: _		
Longitude: _	90.96428				
Approximate Distance to Water:	60	Feet	75	No	
Over Water   Calm Water   Land Side  Center  Channel Side   MID-CHANNEL SANDBAR  Rapid Cu	On Re		Gravel: Debris: VEGETATION: Type: Distance: FIELD CONDITION Temperature Rain: No	Feet ON: re: 92 °F	
OTHER NOTES:					
Left Bank. Perimeter count on locourting behavior. Three terns si		nd bar with some g	gravel patches, un	attached and n	nuch
5 5				MS side	e
OBSERVERS:	Boyds, Cam	pen, Grubaugh, Ru	mancik, Thron		
RIVER GAGE READING:	0.40-0-0.00 0.00 0.00	lena	=	13.9 F	
	(Gage l	ocation)		(Elevation)	

			FLY [	BOAT ✓
SPECIES: Interior Least Terr	(Sterna antillarum	athalassos)		
DATE:7/15/2009	TIME OF DAY:	12:42	RIVER MILE	602.7
LOCALITY: Bolivar	MS	SITE NAME:	Henrico	Dikes
County/Pa	rish State		NUMBERS SIGHT	FD·
WIJEDE CITED: 1-444	22.0000		Adults:	
WHERE SITED: Latitude		•	26	
Longitu	de: 91.0500	K1		
Approximate Distance to Wa	ater:	Feet	Chicks:	No
MID-CHANNEL SANDBAR RE	<u>ON ORCOND</u> O			Feet N:
OTHER NOTES:			0.029   1.055 0.050 0.050 0.00	
Right Bank. Perimeter cour	t on small, low 5 ft.), t	flat, attached sand b	ar with 3 terns sitting	on scrapes.
5 5				AR side
OBSERVERS:	Boyds, Can	npen, Grubaugh, Ru	mancik, Thron	
RIVER GAGE READING:	Н	elena		13.9 F
	(Gage	Location)	(F	levation)

FLY ☐ BOAT ☑

SPECIES: Interior Least Tern (S	terna antillarum a	athalassos)		
DATE:7/15/2009 TIM	E OF DAY:	12:56	RIVER MILE _	599.6
LOCALITY: Bolivar  County/Parish		SITE NAME:	Smith NUMBERS SIG	
	91.07776		Juveniles:	105
MID-CHANNEL SANDBAR	ON GROUND On	Nest Area ✓ sting Area □	SUBSTRATE: Sand: Gravel: Debris: VEGETATION: Type: Will	No  No  No  1300 Feet
SIDE CHANNEL S	River Side  ANDBAR Center  Land Side  Calm Water	1	FIELD CONDIT Temperatu Rain: No Wind: 51 % Cloud:	re: 93 °F
OTHER NOTES:  Left Bank. Perimeter count. Larger present on land side of bar ~ 150 2 sandpipers. Twenty-five sitting	0 ft. from waterline	e. Terns resting an	d courting at the	
OBSERVERS:	Boyds, Camp	oen, Grubaugh, Rui	mancik, Thron	INO SIGC
RIVER GAGE READING:	242742	ocation)	=-	14.4 F (Elevation)

			FLY	BOAT	~
SPECIES: Interior Least Tern (S	terna antillarum a	thalassos)			
DATE: <u>7/15/2009</u> TIM	E OF DAY:	14:25	RIVER MILE	595.1	;
LOCALITY: Desha		SITE NAME:	Victoria E	Bend Dikes	
County/Parish	State		NUMBERS SIGH	ITED:	
WHERE SITED: Latitude: _	33.92955		Adults: _		
Longitude: _	91.01824		Eggs: _		
Approximate Distance to Water:	500	Feet	Chicks:	No	
IN FLIGHT Over Sandbar	ON GROUND On N	Nest Area ✓	SUBSTRATE:		
Over Water → 🗹 ,		sting Area	Sand: 🔽	<b>a</b>	
Calm Water	<del></del>	( /	Gravel:	<u> </u>	
- Tunion 17		$\sim$	Debris:	_	
Land Side  Center			VECETATION		
Channel Side 🗆	MID-CHANNEL	✓>	VEGETATION: Type:		
MID-CHANNEL SANDBAR Rapid Co	ırrents 🔲		MONEY AV	Wiles do	
1 10	River Side		Distance: _	Feet	
SIDE CHANNEL S	ANDBAR Center L		FIELD CONDITIO	ON:	
River Side	Calm Water		Temperature	e: 92 °F	
77777	7		Rain: No		
	// /	7-7-7	Wind: 5 m	ıph	
			% Cloud: <u>1</u>	0	
OTHER NOTES:					
Right Bank. Perimeter count. Lov on scrapes.	v, unattached, gent	ly sloping sand ba	r 6 ft. in elevation.	Ten terns sittin	ng
-				AR side	
OBSERVERS:	Boyds, Camp	en, Grubaugh, Rui	mancik, Thron		
RIVER GAGE READING:	Arkans	as City		14.4 F	
	(Gage L	ocation)	19	(Elevation)	

FLY ☐ BOAT ☑

SPECIES: Interior	Least Tern (Sterna a	ntillarum at	halassos)		
DATE: 7/15/20	09 TIME OF D	OAY:	14:48	RIVER MILE	589.5
	Bolivar County/Parish	MS State	SITE NAME:	NUMBERS SIGI	HTED:
WHERE SITED:	Latitude: 33. Longitude: 91.			Juveniles:	2,3
Approximate Dista	ance to Water:	70 F	Feet		No
Calm Water  Land Side  Cente  Channel Sid	er Water	On Rest		Gravel: [ Debris: [ VEGETATION: Type: Distance: _	Feet ON: ee: 93 °F
OTHER NOTES:  Left Bank. Flush of scrapes.	count on long (1 mile),	barely attach	ned, undulating 6	ft. sand bar with	45 terns setting on
OBSERVERS:	В	oyds, Campe	en, Grubaugh, Rui	mancik, Thron	MS side
RIVER GAGE REA	DING:	Arkansa	Barra (A)		14.4 F
		(Gage Lo	cation)		(Elevation)

			FLY	Г □ ВО	AT 🗹	•
SPECIES: Interior Least Tern	(Sterna antillarum a	athalassos)				
DATE:7/15/2009 TI	ME OF DAY:	15:15	RIVER MILE _	583.7	e.	_
LOCALITY: Desha		SITE NAME:	Malone	Field Dikes		
County/Parisl	h State		NUMBERS SIG	HTED:		
WHERE SITED: Latitude:	33.78616		Adults:	62		
	91.05230		Juveniles:	/ <u>X-</u>		
~	William Control of the Control of th	Fact	Eggs:	7		
Approximate Distance to Water	r. <u>600</u>	reet	Chicks:	Yes	<u> </u>	
MID-CHANNEL SANDBAR	On Re		Gravel: Debris:  VEGETATION: Type: Will Distance:  FIELD CONDIT Temperatu Rain: No Wind: 5	800 Fee TION: are: 94	<sup>D</sup> F	
			% Cloud:	3		_
OTHER NOTES:						
Right Bank. Flush count along chicks up to 2 weeks of age. C					es and	<u></u>
				AR	side	=
OBSERVERS:	Boyds, Cam	pen, Grubaugh, Ru	mancik, Thron			_
RIVER GAGE READING:	Arkans	sas City		14.4 F		
	(Gage L	ocation)		(Elevation)		

			FLY [	BOAT 🗸
SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)		
DATE:7/15/2009	TIME OF DAY:	15:40	RIVER MILE	581
LOCALITY: Desha	AR	SITE NAME:	Cat Isl	and
County/Paris	sh State		NUMBERS SIGHTE	ED:
WHERE SITED: Latitude:	NA		Adults:	28
	e: NA		Juveniles:	
	946 + 1094,554		Eggs:	
Approximate Distance to Water	er:	reet	Chicks:	No
MID-CHANNEL SANDBAR Rapi			SUBSTRATE:  Sand:  Gravel:  Debris:  VEGETATION:  Type:  Distance:  FIELD CONDITION  Temperature:  Rain:  No  Wind:  5 mph  % Cloud: 5	Feet : 94 <sup>O</sup> F
OTHER NOTES:			70 Oloud. <u>0</u>	
Right Bank. Perimeter count reproduction.	with all birds at the v	vaterline resting on f	eeding nearby. No s	igns of
a a				AR side
OBSERVERS:	Boyds, Can	npen, Grubaugh, Ru	mancik, Thron	
RIVER GAGE READING:	Arkar	sas City	1	14.4 F
	(Gage	Location)	(FI	evation)

			FLY	□ BOAT ✓
SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)		
DATE: <u>7/15/2009</u>	TIME OF DAY:	15:52	RIVER MILE	579
LOCALITY: Bolivar	MS	SITE NAME:	Below Pre	entiss Dikes
County/Pari	sh State		NUMBERS SIGH	TED:
WHERE SITED: Latitude	33.75251		Adults: _	
Longitud	e:91.13266		Juveniles: _ Eggs:	
Approximate Distance to Wat	er: 100	Feet	Andrew Andrews	No
MID-CHANNEL SANDBAR Rap	ON OROGIND OF		Rain: No	Feet
		<b></b> 1	% Cloud: <u>5</u>	6
OTHER NOTES:				
Left Bank. Perimeter count all but 5 sitting on scrapes. Great				
et				MS side
OBSERVERS:	Boyds, Cam	pen, Grubaugh, Rui	mancik, Thron	
RIVER GAGE READING:	24222	sas City		14.4 F
	(Gage	Location)		(Elevation)

FLY ☐ BOAT ☑

SPECIES: Interior Least Tern (St	erna antillarum athalassos)	
DATE:TIME	E OF DAY:16:06	RIVER MILE574.2
LOCALITY: Desha County/Parish  WHERE SITED: Latitude: _ Longitude: _ Approximate Distance to Water:	State  33.70733  91.17040	Caulk Neck Cut-Off  NUMBERS SIGHTED:  Adults: 50  Juveniles:
Over Water   Calm Water   Calm Water   Center   Channel Side   Calm Water   Channel Side   Calm Water   Channel Side   Calm Water   Cal	Tents ✓	SUBSTRATE:  Sand:  Gravel:  Debris:  VEGETATION:  Type: Cottonwoods  Distance: Feet  FIELD CONDITION:  Temperature: 94 ° F  Rain: No  Wind: 5 mph  % Cloud: 5
Right Bank. Small, low (3 ft.), atta	ached sand bar with most birds coun el patches. Two Caspian Terns pre	
OBSERVERS:	Boyds, Campen, Grubaugh, Ru	AR side mancik, Thron
RIVER GAGE READING:	Arkansas City	14.4 F
A Company of the Comp	(Gage Location)	(Elevation)

FLY ☐ BOAT ☑

SPECIES: Interior	Least Tern (Sterna	antillarum atha	alassos)		
DATE:7/15/20	08 TIME OF I	DAY:16	5:20	RIVER MILE _	569.8
WHERE SITED:	Bolivar  County/Parish  Latitude: 33  Longitude: 91  ance to Water:	State .67964 .22231		NUMBERS SIG Adults: Juveniles: Eggs:	
Calm Water  Land Side  Cente  Channel Sid	er Water , 🔽	On Resting	4	SUBSTRATE: Sand: Gravel: Debris:  VEGETATION: Type: Will Distance:  FIELD CONDIT	lows/Cottonwoods  1500 Feet  TION:  ure: 95 F
OTHER NOTES:  Left Bank. Flush lots of debris. Two	n count. Wide, attach o week-old chicks pre	ed, flat sand an sent.		nlty sloping up t	o 5 ft. elevation with
OBSERVERS:	F	Boyds, Campen	, Grubaugh, Ru	mancik. Thron	MS side
RIVER GAGE REA		Arkansas		, , , , , , , , , , , , , , , , , , , ,	14.4 F
, E. C. OL HEN	<del></del>	(Gage Loca	Sec. 1001	=	(Elevation)

			FLY	BOAT	~
SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)			
DATE: <u>7/15/2009</u>	TIME OF DAY:	16:45	RIVER MILE	563.3	;
LOCALITY: Desha	AR	SITE NAME:	Chicot La	anding Dikes	
County/Pari WHERE SITED: Latitude	sh State		NUMBERS SIGH Adults:	61	
Longitud Approximate Distance to Wat	le: 91.14978 er: 1300	Feet	Eggs:	No	
MID-CHANNEL SANDBAR Rap	MID-CHANNEL  id Currents  River Side  EL SANDBAR Center  Land Side  Calm Water   Calm Water   The control of th		FIELD CONDITION Temperature Rain: No Wind: 5 m	Feet ON: e: 93 °F	w
OBSERVERS:	Boyds, Cam	pen, Grubaugh, Ru	mancik, Thron	AIT SILE	
RIVER GAGE READING:	Arkans	sas City	=	14.4 F	
	(Gage I	ocation)		(Elevation)	

			FLY	BOAT	<b>~</b>
SPECIES: Interior Least Tern (S	Sterna antillarum	athalassos)			
DATE: <u>7/15/2009</u> TIM	IE OF DAY:	17:07	RIVER MILE	559.5	
LOCALITY: Desha	AR	SITE NAME:	Choctaw	/ Bar Island	
County/Parish	State		NUMBERS SIGH	HTED:	
WHERE SITED: Latitude:	NA		Adults: _		
Longitude:	NA				
Approximate Distance to Water:		Feet		No	
			Officks.	140	
IN FLIGHT Over Sandbar	£7.	Nest Area	SUBSTRATE:		
✓ / Over Water · ✓	/ On Re	sting Area ✓	Sand:	2	
Calm Water		/i	Gravel:	_	
Land Side		$\sim$	Debris:		
Channel Side	MID-CHANNEL		VEGETATION:		
	urrents	` →	Type:		
MID-CHANNEL SANDBAR	River Side [		Distance: _	Feet	
	SANDBAR Center L		FIELD CONDITIO	O <mark>N:</mark>	
River Side 🖳	Calm Water		Temperature	e: <u>93                                   </u>	
77777	7		Rain: No		
	1174	7-7-	Wind: 5 m	ıph	
			% Cloud: <u>5</u>	j	
OTHER NOTES:					
Right Bank. Perimeter count alconly.	ong attached bar do	ownstream point of	Choctaw Bar Islan	d. Resting bar	
				AR side	
OBSERVERS:	Boyds, Cam	pen, Grubaugh, Ru	mancik, Thron		
RIVER GAGE READING:	Arkans	sas City		14.4 F	
	(Gage l	ocation)		(Elevation)	

			FLY [	BOAT 🗹
SPECIES: Interior Least Tern (S	terna antillarum	athalassos)		
DATE:7/15/2009 TIM	IE OF DAY:	17:15	RIVER MILE	553.6
LOCALITY: Bolivar	MS	SITE NAME:	Huningto	n Point
County/Parish	State		NUMBERS SIGHTI	ED:
WHERE SITED: Latitude:	33.54860		Adults:	
Longitude: _	91.22844		Juveniles: Eggs:	
Approximate Distance to Water:	50	Feet	(E)(E)	No
IN FLIGHT Over Sandbar   ✓	ON GROUND On	Nest Area ✓	OUDOTD ATE	
Over Water		sting Area	SUBSTRATE:	
Calm Water		/ /	Sand: ☑	
Caini water	-	$\sim$ / $\parallel$	Gravel:	
Land Side		$\sim$	Debris:	
Channel Side	MID-CHANNEL	. 🗆 📗	VEGETATION:	
		` →	Type:	
MID-CHANNEL SANDBAR	urrents  River Side	- 57 - 57 <b>7⊑</b> 55 - <b>1</b>   1	Distance:	Feet
SIDE CHANNEL S	SANDBAR Center L		FIELD CONDITION	<b>l</b> :
River Side	Calm Water		Temperature:	93 °F
17777	77		Rain: No	
	′′′/	<del></del>	Wind: 5 mph	1
			% Cloud: <u>5</u>	
OTHER NOTES:				
Left Bank. Perimeter count alon at the waterline and one sitting o	g low, flat, small sa n scrape.	and bar (200 x 2,00	0 ft.), unattached wit	th many resting
<del></del>				MS side
OBSERVERS:	Boyds, Cam	pen, Grubaugh, Ru	mancik, Thron	
RIVER GAGE READING:	Arkans	sas City		14.4 F
	(Gage l	ocation)	(E	levation)

			FLY [	BOAT 🗹
SPECIES: Interior Least Tern (	Sterna antillarum	athalassos)		
DATE: <u>7/15/2009</u> TI	ME OF DAY:	17:30	RIVER MILE	550.3
LOCALITY: Bolivar	MS	SITE NAME:	Offutt La	anding
County/Parish	State		NUMBERS SIGHTE	ED:
WHERE SITED: Latitude:	NA		Adults:	
Longitude:	NA			
Approximate Distance to Water	B	Feet	(C) (C)	No
IN FLIGHT Over Sandbar	ON OPOUND O			
Over Water		n Nest Area ☐ esting Area ✓	SUBSTRATE:	
Market Market		,	Sand: ☑	
Calm Water	3,000	$\sim$ / $\parallel$	Gravel:	
Land Side			Debris:	
Channel Side	MID-CHANNE		VEGETATION:	
	Currents	→	Type:	
MID-CHANNEL SANDBAR	River Side		Distance:	Feet
	SANDBAR Center [		FIELD CONDITION	l:
River Side ☑	Calm Water		Temperature:	93 °F
17777	+7+		Rain: No	
	// /-	<del></del>	Wind: 5 mph	1
			% Cloud: <u>5</u>	
OTHER NOTES:				
Left Bank. Perimeter count yie	lds 19 resting at wa	terline but no other	activity.	
				MS side
OBSERVERS:	Boyds, Cam	pen, Grubaugh, Rui	mancik, Thron	
RIVER GAGE READING:	Arkan	sas City		14.4 F
	(Gage	Location)	(E	levation)

			FLY	□ BOAT ✓
SPECIES: Interior Least Tern (Ste	rna antillarum	athalassos)		
DATE:7/16/2009 TIME	OF DAY:	11:40	RIVER MILE	533.4
LOCALITY: Washignton	MS	SITE NAME:	Island #	#84 Dikes
County/Parish	State		NUMBERS SIGH	ITED:
WHERE SITED: Latitude:	33.31903		Adults: _	650
	91.17683			
Approximate Distance to Water:	50	Feet		2,3 No
IN FLIGHT Over Sandbar ✓ Over Water □  Calm Water □  Land Side ✓ Center ✓ Channel Side □  MID-CHANNEL SANDBAR Rapid Currer  SIDE CHANNEL SAI  River Side □	MID-CHANNEI ents  River Side [	*	FIELD CONDITION Temperature Rain: No	Feet  ON: e: 93 °F
OTHER NOTES:				
Left Bank. Flush count along gentl 3 miles long x 1/2 mile wide. Many	y sloping, 4 ft. h y sitting on scrap	nigh sand bar, gently bes all across bar.	undulating and u	nattached. Colony
OBSERVERS:	Boyds Davin F	Fowlkes, Grubaugh,	Rumancik Three	MS side
			ramanon, mon	25.0.5
RIVER GAGE READING:	0.40-0.00	enville Location)	=)*	25.0 F (Elevation)

			FLY [	□ BOAT ✓
SPECIES: Interior Least Tern (	Sterna antillarum	athalassos)		
DATE: <u>7/16/2009</u> TIM	ME OF DAY:	12:10	RIVER MILE	528.6
LOCALITY: Washington	MS	SITE NAME:	Refug	e Dikes
County/Parish	State		NUMBERS SIGH	TED:
WHERE SITED: Latitude:	33.26586		Adults:	68
Longitude:	91.12115			
Approximate Distance to Water:	100	Feet	Eggs:	200
IN FLIGHT Over Sandbar ✓	ON GROUND Or	Nest Area ✓	Chicks: SUBSTRATE:	165
Over Water -	On Re	esting Area	Sand:	]
Calm Water		4/ .	Gravel:	]
Land Side			Debris:	]
Channel Side	MID-CHANNE		VEGETATION:	
		" →	Type: Willov	VS
MID-CHANNEL SANDBAR	Currents		Distance:	80 Feet
	SANDBAR Center Land Side (		FIELD CONDITIO	N:
River Side 🔲	Calm Water		Temperature	:: <u>93                                  </u>
777777			Rain: No	
	1174	<del></del>	Wind: <u>10 n</u>	nph
			% Cloud: 90	0
OTHER NOTES:				
Left Bank. Flush count along st unattached with human and coy				
o o				MS side
OBSERVERS:	Boyds, Davin, F	Fowlkes, Grubaugh,	Rumancik, Thron	
RIVER GAGE READING:	040000000000000000000000000000000000000	enville	— H	25.0 F
	(Gage	Location)	(	(Elevation)

			FLY	□ BOAT ✓
SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)		
DATE: 7/16/2009	TIME OF DAY:	12:20	RIVER MILE _	526.5
LOCALITY: Chicot	AR	SITE NAME:	Aconia	Chute Dikes
County/Paris			NUMBERS SIG	
	e: NA	e.		
Approximate Distance to Water	er:	Feet	Chicks:	No
MID-CHANNEL SANDBAR Rapi			VEGETATION: Type: Distance:	Feet ON: re: 89 °F
OTHER NOTES:  Three terns in transit mid-char	nnel.			
				AR side
OBSERVERS:	Boyds, Davin,	Fowlkes, Grubaugh,	Rumancik, Thron	i.
RIVER GAGE READING:	National Co.	enville Location)	=	25.0 F (Elevation)

			FLY	□ BOAT ✓
SPECIES: Interior Lea	st Tern <i>(Sterna antilla</i>	rum athalassos)		
DATE: 7/16/2009	TIME OF DAY:	12:30	RIVER MILE	523
LOCALITY:	Chicot A	SITE NAME:	Seven	Oaks Dikes
WHERE SITED:  Approximate Distance  IN FLIGHT Over San  Over W  Calm Water [  Land Side [  Center . [  Channel Side [  MID-CHANNEL SANDBA]	MID-CH Rapid Currents River E CHANNEL SANDBAR Cen	Feet  On Nest Area □ On Resting Area ☑  ANNEL □ Side ☑	Juveniles:  Eggs: Chicks:  SUBSTRATE: Sand: Gravel: Debris:  VEGETATION: Type: Distance:  FIELD CONDITI	No No Feet
OTHER NOTES: Right Bank. Perimete	er count along small (30	x 100ft.), very low bar of	% Cloud: §	
OBSERVERS:	Boyds, Da	vin, Fowlkes, Grubaugh,	Rumancik, Thron	
RIVER GAGE READIN	NAME OF THE PARTY	Greenville		25.0 F
	(G	Sage Location)		(Elevation)

		FLY	BOAT 🗸
SPECIES: Interior Least Tern (	Sterna antillarum athalassos)		
DATE: <u>7/16/2009</u> TIM	ME OF DAY:12:40	RIVER MILE	519.1
	AR SITE NAM	IE: Island #86 Dil	kes Upper
County/Parish	State	NUMBERS SIGHTE	D:
WHERE SITED: Latitude:	33.13810	Adults:	
Longitude:	91.09719	Juveniles: Eggs:	1
Approximate Distance to Water:	1200 Feet	Chicks:	
MID-CHANNEL SANDBAR	ON GROUND On Nest Area  On Resting Area  MID-CHANNEL   River Side  SANDBAR Center  Land Side  Calm Water	SUBSTRATE:  Sand:   Gravel:   Debris:   VEGETATION:  Type:   Distance:   FIELD CONDITION:  Temperature:   Rain:  No  Wind:  15 mpl  % Cloud: 80	Feet 89 °F
OTHER NOTES:			
	oded island. Colony on sand expos gently undulating with some large of d 5 nests.		
000000000000000000000000000000000000000	Devide Devile Faullian Control	nh Dimanaile There	AR side
OBSERVERS:	Boyds, Davin, Fowlkes, Grubaug		
RIVER GAGE READING:	Greenville (Gage Location)	<b>=</b>	5.0 F
	(Gage Location)	(Ele	evation)

			FLY	BOAT	<b>~</b>
SPECIES: Interior Least Tern (St	erna antillarum atl	nalassos)			
DATE: <u>7/16/2009</u> TIME	OF DAY:	12:50	RIVER MILE _	517.5	
LOCALITY: Washington		SITE NAME:	Island #8	6 Dikes Lower	
County/Parish	State		NUMBERS SIG	HTED:	
WHERE SITED: Latitude:	33.12731		28	68	
Longitude:	91.09986		Juveniles: Eggs:	<u> </u>	
Approximate Distance to Water:	60 Fe	<u>eet</u>	(F)	No	
Over Water   Calm Water   Land Side   Center   Channel Side   Rapid Cur	On Restir	4	Gravel: Debris: VEGETATION: Type: Distance:	Feet ION: re: 88 °F	
		/ /	% Cloud:	50.1	
OTHER NOTES:  Right Bank. Unattached, low (3 ft entire length.	:.) <mark>, medium s</mark> ize (1/2	2 x 1/4 mile), gen			ong
				AR side	)
OBSERVERS:	Boyds, Davin, Fow		Rumancik, Thror		
RIVER GAGE READING:	Greenv (Gage Loc		— B	25.0 F (Elevation)	
	(Cage Loc			(Lievation)	

			FLY	BOAT	<b>~</b>
SPECIES: Interior Least Tern (St	erna antillarum a	athalassos)			
DATE:7/16/2009 TIME	E OF DAY:	13:03	RIVER MILE	514.0	;
LOCALITY: Washington		SITE NAME:	Leot	a Dikes	
County/Parish	State		NUMBERS SIGH	HTED:	
WHERE SITED: Latitude: _	33.09130		Adults: _		
Longitude: _	91.16341				
Approximate Distance to Water:	200	Feet	Chicks:	No	
IN FLIGHT Over Sandbar ✓	ON GROUND On	Nest Area	CURCTRATE		
Over Water , 🗹	V.	sting Area	SUBSTRATE:	<b>a</b>	
Calm Water		Z /	Sand: Gravel:	= <del>0</del> /:	
		$\sim$	Debris:		
Land Side		٦	VEGETATION:		
Channel Side	MID-CHANNEL	. 🗆 🛶 📗	Type:		
MID-CHANNEL SANDBAR Rapid Cu	rrents 🗌		MODEL AND	EV. An	
1 10	River Side		Distance: _	Feet	
SIDE CHANNEL SA	ANDBAR Center L		FIELD CONDITION	ON:	
River Side 🖺	Calm Water		Temperature	e: 91 <sup>0</sup> F	
77777			Rain: No		
	///	<del></del>	Wind: <u>15</u>	mph	
			% Cloud: 5	50	
OTHER NOTES:					
Left Bank. Perimeter count along scrapes.	low, sand and gr	avel bar. Several t	erns at the water I	ine, but 2 sitting	g on
-				MS side	•
OBSERVERS:	Boyds, Davin, F	owlkes, Grubaugh,	Rumancik, Thron	9	
RIVER GAGE READING:	Gree	nville		25.0 F	
	(Gage L	ocation)		(Elevation)	

			FLY	BOAT	~
SPECIES: Interior Least Tern	(Sterna antillarum a	athalassos)			
DATE:7/16/2009 T	IME OF DAY:	13:20	RIVER MILE _	508.5	
LOCALITY: Chicot		SITE NAME:	Cracraft	Lower Dikes	
County/Paris	h State		NUMBERS SIGN	HTED:	
WHERE SITED: Latitude:	33.0375		Adults:	49	
Longitude	91.1567			•	
Approximate Distance to Wate	r:	Feet		3 No	
MID-CHANNEL SANDBAR Rapid	ON GROUND On On Re  MID-CHANNEL  Currents  River Side  Land Side  Calm Water  Calm Water		FIELD CONDITI	Feet ON: re: 91 °F	
OTHER NOTES:					
Three terns in transit, mid-char	nnel.				
	Davide Davie 5	evidles Combanis	Duma on all. The	AR side	
OBSERVERS:	300 - 3000	owlkes, Grubaugh,	rumancik, infon		
RIVER GAGE READING:		nville .ocation)	=	25.0 F (Elevation)	
	(Cage L	/		(Licvation)	

			FLY		BOAT	<b>~</b>
SPECIES: Interior Least Tern (5	Sterna antillarum	athalassos)				
DATE: <u>7/16/2009</u> TIM	ME OF DAY:	13:30	RIVER MILE _	5	03	;
LOCALITY: Issaquena		_ SITE NAME:	Corre	gidor Dik	es	
County/Parish	State		NUMBERS SIG	HTED:		
WHERE SITED: Latitude:	32.95889		Adults:		800	
Longitude:	91.3890		Juveniles:			
Approximate Distance to Water:	70	Feet	Eggs: Chicks:			
MID-CHANNEL SANDBAR	On Re		SUBSTRATE: Sand: Gravel: Debris:  VEGETATION: Type: Distance:  FIELD CONDIT Temperatu Rain: No Wind: 18 % Cloud:	ION: ure: 9	Feet	
Left Bank. Flush count. Long (3 present river stage and up to 12	ft. elevation. Colo	ony across entire ba	r with over 200 k	-Off, unat oirds sittir	ttached ng on	at
scrapes. Many chicks up to 1 w	eek of age present	. Deer and human	tracks present.			
OBSERVERS:	Boyds, Davin. F	owlkes, Grubaugh,	Rumancik, Thro		MS side	<u>}</u>
RIVER GAGE READING:	310 - 3100	enville		25.0 F		
and the second s	040000000000000000000000000000000000000	Location)	=	(Elevati		

			FLY	BOAT	~
SPECIES: Interior Least Tern	(Sterna antillarun	n athalassos)			
DATE: 7/16/2009	TIME OF DAY:	13:42	RIVER MILE _	499.5	
LOCALITY:East Carro	II LS	SITE NAME:	Wison	Point Dikes	
County/Pari	sh State		NUMBERS SIG	HTED:	
WUEDE OITED			Adults:		
WHERE SITED: Latitude:	•		25		
Longitud	e: NA	<del>-</del> 19	- many		
Approximate Distance to Wat	er:	Feet	Chicks:	No	
MID-CHANNEL SANDBAR Rap			VEGETATION: Type: Distance:	Feet ON: re: 91 °F	
			% Cloud:	90	
OTHER NOTES:					
Four terns in transit.					
				LA side	ý
OBSERVERS:	Boyds, Davin,	Fowlkes, Grubaugh,	Rumancik, Thron		
RIVER GAGE READING:	Gre	e <mark>enville</mark>		25.0 F	
	(Gage	Location)	270	(Elevation)	

			FLY [	BOAT	~
SPECIES: Interior Least Tern (S	terna antillarum a	thalassos)			
DATE: <u>7/16/2009</u> TIMI	E OF DAY:	14:25	RIVER MILE	491.3	
LOCALITY: Issaquena		SITE NAME:	Baleshed La	anding Dikes	
County/Parish	State		NUMBERS SIGHT	ΓED:	
WHERE SITED: Latitude: _	32.84701		Adults:		
Longitude: _	91.12215		Juveniles:		
Approximate Distance to Water:	50 I	<u>-eet</u>	Eggs: Chicks:	No	
IN FLIGHT Over Sandbar  Over Water .   Calm Water .   Land Side		lest Area ☑ ting Area □	SUBSTRATE:  Sand:  Gravel:  Debris:  VEGETATION: Type:		
MID-CHANNEL SANDBAR Rapid Cu	rrents ☐ River Side ☑		Distance:	**************************************	
SIDE CHANNEL S.	ANDBAR Center 🗹		FIELD CONDITIO		
	Calm Water	1 ~~	Temperature:	92 F	
	Tyring		Rain: No	88	
		7	Wind: <u>10 m</u>	301	
Marilla Adamana			% Cloud: <u>90</u>	)	
OTHER NOTES:  Left Bank. Perimeter count along Stack Island. Eighteen terns observed.			(1 mile x 200 ft.) ι	upstream from	
о О				MS side	<u> </u>
OBSERVERS:	Boyds, Davin, Fo	wlkes, Grubaugh,	Rumancik, Thron		
RIVER GAGE READING:	Green		<b>=</b>	25.0 F	
	(Gage Lo	ocation)	(E	Elevation)	

			FLY	□ BOAT ✓
SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)		
DATE:7/16/2009 T	IME OF DAY:	14:40	RIVER MILE	482.2
LOCALITY:Issaquena	MS	SITE NAME:	Ajax Bar	Dikes Upper
County/Paris	h State		NUMBERS SIGH	HTED:
WHERE SITED: Latitude:	32.74483	M2	Adults:	
Longitude	91.14117	in the second		2.2
Approximate Distance to Water	r: <u>200</u>	Feet		2,3 No
MID-CHANNEL SANDBAR Rapid			FIELD CONDITION	Feet ON: e: 91 °F
OTHER NOTES:				
Left Bank. Flush count between shells. Goose tracks along with			400 ft. amd empty	scrapes with half-
				MS side
OBSERVERS:	Boyds, Davin,	Fowlkes, Grubaugh,	Rumancik, Thron	
RIVER GAGE READING:	0.45-0.60	ksburg	E	20.3 F
	(Gage	Location)		(Elevation)

			FLY	BOAT	~
SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)			
DATE: <u>7/16/2009</u> TI	ME OF DAY:	14:55	RIVER MILE	480	
LOCALITY: Issaquena	MS	_ SITE NAME:	Ajax Bar [	Dikes Lower	
County/Parisl	n State		NUMBERS SIGH	ITED:	
WHERE SITED: Latitude:	32.73710		Adults:	375	
Longitude	91.11741				
Approximate Distance to Water	r:100	Feet	1 3331	2,3 Yes	
MID-CHANNEL SANDBAR	On Re		SUBSTRATE: Sand: Gravel: Debris:  VEGETATION: Type: Distance: FIELD CONDITION Temperature Rain: Yes Wind: 10 r	Feet  ON: e: 91 °F	
OTHER NOTES:					
Left Bank. Flush count on sma ft. in elevation Several chicks	iller, unattached san up to 1 week of age	nd bar below Y shap . Fifteen sitting on	ed dike 2000 x 700 scrapes along wrad	0 ft. and up to 3 ck lines.	35
t <del>.</del>				MS side	
OBSERVERS:	Boyds, Davin, F	owlkes, Grubaugh,	Rumancik, Thron		
RIVER GAGE READING:	0.40-0.001111111111111111111111111111111	sburg	=	20.3 F	
	(Gage I	Location)		(Elevation)	

			FLY [	BOAT [	~
SPECIES: Interior Least Tern (S	terna antillarum	athalassos)			
DATE:7/16/2009 TIM	IE OF DAY:	15:10	RIVER MILE	477	
LOCALITY: East Carroll		SITE NAME:	Point Loo	kout Dike	
County/Parish	State		NUMBERS SIGHT		
WHERE SITED: Latitude:			Adults: Juveniles:	2	
	NA				
Approximate Distance to Water:	( <del>-</del>	Feet	Chicks:	No	
<u>IN FLIGHT</u> Over Sandbar ☐	ON GROUND On	Nest Area	SUBSTRATE:		
Over Water , 🗸	/ On Re	sting Area 🗌	Sand:		
Calm Water	-	$\langle \langle \rangle  $	Gravel:		
Land Side		$\sim$	Debris:		
Channel Side	MID-CHANNEL	. 🗷 🔛	VEGETATION:		
MID-CHANNEL SANDBAR Rapid Co	urrents .	7	Type:		
1 10	River Side [		Distance:	Feet	
SIDE CHANNEL S	SANDBAR Center L		FIELD CONDITION	52	
River Side	Calm Water	انہز ت	Temperature:	91 °F	
1 / / / 7 / / /	777		Rain: No		
	. , ,		Wind: <u>10 m</u>		
			% Cloud: <u>70</u>		
OTHER NOTES:	200 to 1				
Two terns flying in transit mid-ch	annei.				
-				LA side	_
OBSERVERS:	Boyds, Davin, F	owlkes, Grubaugh,	Rumancik, Thron		
RIVER GAGE READING:	Vick	sburg		20.3 F	
	(Gage l	ocation)	(E	Elevation)	

			FLY [	BOAT 🗹
SPECIES: Interior Leas	st Tern (Sterna antillaru	m athalassos)		
DATE: <u>7/16/2009</u>	TIME OF DAY:	15:20	RIVER MILE	470
LOCALITY: Iss	saquena MS	SITE NAME:	Arcadia Po	int Dikes
	nty/Parish State atitude: <u>na</u>		NUMBERS SIGHTE	4
	ongitude: <u>na</u> to Water:		Eggs:	
Calm Water  Land Side  Center . Channel Side  MID-CHANNEL SANDBAF	ater - Or	e —	SUBSTRATE:  Sand:   Gravel:   Debris:   VEGETATION:  Type:   Distance:   FIELD CONDITION  Temperature:   Rain: No	Feet : 91 °F
OTHER NOTES:		7 7 7 7	% Cloud: <u>60</u>	h
Four terns flying in tra	nsit mid-channel.			
				MS side
OBSERVERS:	Boyds, Davir	, Fowlkes, Grubaugh,	Rumancik, Thron	
RIVER GAGE READING	MARKET ALL	icksburg	<b></b>	20.3 F
	(Gad	ge Location)	(EI	evation)

			FLY	BOAT	~
SPECIES: Interior Least Tern (S	terna antillarum a	athalassos)			
DATE:7/16/2009 TIM	E OF DAY:	15:43	RIVER MILE	461	
LOCALITY: East Carroll		SITE NAME:	Willow C	Cutoff Dikes	
County/Parish	State		NUMBERS SIGH	HTED:	
WHERE SITED: Latitude: _	32.54429		Adults: _		
	91.10239				
Approximate Distance to Water:	S	Feet	Chicks:	No	
IN FLIGHT Over Sandbar	ON GROUND On	Nest Area	SUBSTRATE:		
Over Water		sting Area 🗸	Sand:	7	
Calm Water		{	Gravel:	<del>-</del> 54	
Land Side			Debris:		
C Center .		_ ]	VEGETATION:		
Channel Side 🗆	MID-CHANNEL	□ →	Type:		
MID-CHANNEL SANDBAR Rapid Cu	irrents [	<i>x</i>	Manager 45	20 Au	
1 1	River Side		Distance: _	Feet	
SIDE CHANNEL S	ANDBAR Center		FIELD CONDITION	ON:	
River Side 🔲	Land Side • Calm Water			e: 90 °F	
77777	7		Rain: No		
	1174	7-7-7	Wind: <u>10</u>	mph	
			% Cloud: 2	25	
OTHER NOTES:					
Right Bank. Perimeter count alor resting at the waterline on upstream		bar, gently sloping	up to 10 ft. elevat	tion. All terns	
o				Log was to	
OBSERVERS:	Boyds, Davin, F	owlkes, Grubaugh,	Rumancik, Thron	LA side	
RIVER GAGE READING:	Vick	sburg		20.3 F	
	(Gage L	ocation)	<del></del>	(Elevation)	

			FLY	BOAT	~
SPECIES: Interior Least Tern (S	terna antillarum a	thalassos)			
DATE:7/16/2009 TIM	E OF DAY:	16:09	RIVER MILE	447.3	;
LOCALITY: Madison		SITE NAME:	Marshall	Cutoff Dikes	
County/Parish	State		NUMBERS SIGH	HTED:	
WHERE SITED: Latitude: _	32.40044		Adults: _		
Longitude: _	90.99691		Eggs:		
Approximate Distance to Water:	30	<u>Feet</u>	(C) (C)	No	
<u>IN FLIGHT</u> Over Sandbar ✓ Over Water	ON GROUND On N	Nest Area  ting Area	SUBSTRATE:	Z	
Calm Water 🗌		$\langle /      $	Gravel:		
Land Side		$\sim$	Debris:		
Channel Side	MID-CHANNEL		VEGETATION:		
MID-CHANNEL SANDBAR Rapid Cu	ırrents .	7	Type:		
1 1	River Side 🗹	7 17941	Distance: _	Feet	
	ANDBAR Center ✓ Land Side ✓		FIELD CONDITION	22	
River Side 📗	Calm Water		Temperature	e: 91 <sup>0</sup> F	
	77	<b>\</b>	Rain: No		
	, , , ,-	<del></del>	Wind: <u>5 m</u>	nph	
			% Cloud: 4	40	
OTHER NOTES:  Right Bank. Perimeter count alon scrapes.	g low (2 ft.), small	(200 x 75 ft.), clea	n sand bar with 2	observed sitting	j on
				LA side	3
OBSERVERS:	Boyds, Davin, Fo	owlkes, Grubaugh,	Rumancik, Thron	9	
RIVER GAGE READING:	Vicks		<b>=</b>	20.3 F	
	(Gage Lo	ocation)		(Elevation)	

			FLY [	BOAT 🗹
SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)		
DATE: 7/16/2009	TIME OF DAY:	16:30	RIVER MILE	441.5
LOCALITY: Warren	MS	SITE NAME:	Yazoo (	Cutoff
County/Paris WHERE SITED: Latitude: Longitud Approximate Distance to Wate	NA e: NA er:ON GROUND On	Feet  Nest Area  esting Area	Eggs: Chicks:	
MID-CHANNEL SANDBAR Rapi	MID-CHANNE  d Currents  River Side  EL SANDBAR Center  Land Side  Calm Water		Sand:  Gravel:  Debris:  VEGETATION:  Type:  Distance:  FIELD CONDITION  Temperature:  Rain: No	Feet I:
OTHER NOTES:	/ / T->-> 	7-7-7	Wind: <u>5 mpt</u> % Cloud: <u>30</u>	
Two terns flying in transit mid-	-channel.			
OBSERVERS:	Boyds, Davin, F	Fowlkes, Grubaugh,	Rumancik, Thron	MS side
RIVER GAGE READING:	242-122	ssburg Location)		20.3 F levation)

FLY ☐ BOAT ☑

SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)		
DATE: 7/17/2009	TIME OF DAY:	8:42	RIVER MILE _	428.7
LOCALITY: Warren County/Pari		SITE NAME:	Below Ra	
WHERE SITED: Latitude: Longitud	32.24336 e: 90.97723		Juveniles:	79
Approximate Distance to Water	er: <u>20</u>	Feet		No
MID-CHANNEL SANDBAR Rapi	ON OROUND OIL		Gravel: [ Debris: [ VEGETATION: Type: Distance: FIELD CONDITI	Feet  ON: re: 78 °F
OTHER NOTES:  Left Bank. Perimeter count a				
miles x 200 ft.) with 22 terns s Blue Heron, 1 Cattle Egret, ar			-dilled Grebe, 2 A	MS side
OBSERVERS:	Boyds, Fowl	kes, Grubaugh, Rur	mancik, Thron	IVIO SIUC
RIVER GAGE READING:	24222	sburg Location)		19.8 F (Elevation)

			FLY	BOAT	~
SPECIES: Interior Least Tern (S	terna antillarum a	thalassos)			
DATE:7/17/2009 TIM	E OF DAY:	8:55	RIVER MILE	419.0	
LOCALITY: Warren		SITE NAME:	Newton	Bend Dikes	
County/Parish	State		NUMBERS SIGH	HTED:	
WHERE SITED: Latitude: _	32.12355		Adults: _		
Longitude: _	91.03762		Juveniles: _ Eggs:		
Approximate Distance to Water:	150	Feet	25	No	
MID-CHANNEL SANDBAR	On Res	<b>A</b>	Gravel:  Debris:  VEGETATION:  Type:  Distance:  FIELD CONDITION	Feet	
77777	7	<u> </u>	Rain: No	200	
		<del></del>	Wind: 5 n	©	
OTHER NOTES:			% Cloud: <u>9</u>	33	
Right Bank. Perimeter count ald setting on scrapes.	ong long, attached,	undulating sand ba	ar (1 mile x 300 ft	.) with six terns	
st				MS side	
OBSERVERS:	Boyds, Davin, Fo	wlkes, Grubaugh,	Rumancik, Thron		
RIVER GAGE READING:	Vicks		= = = = = = = = = = = = = = = = = = = =	19.8 F	
	(Gage L	ocation)		(Elevation)	

			FLY	□ BOAT
SPECIES: Interior Least Tern (	Sterna antillarum a	thalassos)		
DATE: <u>7/17/2009</u> TIM	ME OF DAY:	9:05	RIVER MILE	415.2
LOCALITY: Tensas		SITE NAME:	Togo Island	Dikes Upper
County/Parish	State		NUMBERS SIGH	TED:
WHERE SITED: Latitude:	32.11706		Adults: _	
Longitude:	91.10526		Juveniles: _ Eggs:	
Approximate Distance to Water:		Feet	26	No
MID-CHANNEL SANDBAR	On Rest	*	FIELD CONDITIO	Feet  ON:  : 78 °F
OTHER NOTES:				
Left Bank. Perimeter count on uscrapes.	unattached, low, flat	sand bar (800 x 1	00 ft.). Twelve terr	ns sitting on
				MS side
OBSERVERS:	Boyds, Davin, Fo	wlkes, Grubaugh,	Rumancik, Thron	
RIVER GAGE READING:	Vicks	Barrier and		19.8 F
	(Gage Lo	ocation)		(Elevation)

			FLY	BOAT	~
SPECIES: Interior Least Tern (	Sterna antillarum a	thalassos)			
DATE: <u>7/17/2009</u> TIM	ME OF DAY:	9:10	RIVER MILE	414.3	
LOCALITY: Tensas		SITE NAME:	togo Island	d Dikes Lower	
County/Parish	State		NUMBERS SIGH	HTED:	
WHERE SITED: Latitude:	32 10746		Adults:	15	
	91.10071		Juveniles:		
	Fit — Control of the State of the Control of the Co	Fact	Eggs:		
Approximate Distance to Water:		reet	Chicks:	No	
MID-CHANNEL SANDBAR	On Res	*	Gravel:  Debris:  VEGETATION:  Type:  Distance:  FIELD CONDITION	Feet ON: e: 79 °F	
OTHER NOTES:					
Left Bank. Another drift count ju small (900 x 300 ft.), unattached		ny yields 5 terns o	n scrapes. Sand	bar is low and	
5				MS side	
OBSERVERS:	Boyds, Davin, Fo	wkes, Grubaugh,	Rumancik, Thron		
RIVER GAGE READING:	Vicks	burg	-	19.8 F	
	(Gage L	And the second s	<del>-</del>	(Elevation)	

Right Bank. Flush count along upstream attached point of Middle Ground Island, mid height bar (8ft.) with canine tracks and 2 chicks, 1 week old. Six terns tending scrapes. Many Cliff Swallows also present.  LA side  OBSERVERS:  Boyds, Davin, Fowlkes, Grubaugh, Rumancik, Thron  RIVER GAGE READING:  Vicksburg  19.8 F				FLY [	BOAT ✓
Country/Parish State NUMBERS SIGHTED:  WHERE SITED: Latitude: 32.07082	SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)		
County/Parish State NUMBERS SIGHTED:  WHERE SITED: Latitude: 32.07082	DATE: <u>7/17/2009</u> TI	ME OF DAY:	9:16	RIVER MILE	409.7
NUMBERS SIGHTED:  Adults: 67  Juveniles:  Eggs: 1  Approximate Distance to Water: 75 Feet  NIFLIGHT Over Sandbar ON ON GROUND ON Nest Area Over Water: On Resting Area On Resting Area On Resting Area On Side On Resting Area	LOCALITY:Claiborne	MS	SITE NAME:	Yucatar	n Dikes
Approximate Distance to Water: 91,07567	County/Paris	n State		NUMBERS SIGHT	ED:
Approximate Distance to Water: 75 Feet Chicks: Yes    NFLIGHT	WHERE SITED: Latitude:	32.07082		, e	
Approximate Distance to Water: 75 Feet Chicks: Yes    NEIGHT Over Sandbar	Longitude	91.07567			
Over Water  On Resting Area  Gravel:  Gravel:  Debris:  VEGETATION:  Type:  Distance:  Feet    Note	Approximate Distance to Water	r: <u>75</u>	Feet		
Right Bank. Flush count along upstream attached point of Middle Ground Island, mid height bar (8ft.) with canine tracks and 2 chicks, 1 week old. Six terns tending scrapes. Many Cliff Swallows also present.  LA side  OBSERVERS:  Boyds, Davin, Fowlkes, Grubaugh, Rumancik, Thron  RIVER GAGE READING:  Vicksburg  19.8 F	Over Water	MID-CHANNE  Currents  River Side  SANDBAR Center  Land Side  Calm Water	esting Area	Sand:  Gravel:  Debris:  VEGETATION:  Type:  Distance:  FIELD CONDITION  Temperature:  Rain: No Wind: 5 mp	Feet N: 79 °F
canine tracks and 2 chicks, 1 week old. Six terns tending scrapes. Many Cliff Swallows also present.  LA side  OBSERVERS:  Boyds, Davin, Fowlkes, Grubaugh, Rumancik, Thron  RIVER GAGE READING:  Vicksburg  19.8 F	OTHER NOTES:  Right Bank. Flush count along	upstream attached	point of Middle Gro	und Island, mid heig	ht bar (8ft.) with
OBSERVERS: Boyds, Davin, Fowlkes, Grubaugh, Rumancik, Thron  RIVER GAGE READING: 19.8 F	canine tracks and 2 chicks, 1 w	eek old. Six terns to	ending scrapes. Ma	ny Cliff Swallows als	so present.
RIVER GAGE READING: Vicksburg = 19.8 F		D I. D	- 11 - 6 1 - 1	D	LA side
Refugee And A	OBSERVERS:	Boyas, Davin, I	owikes, Grubaugh,	rumancik, i hron	
(Cadde Location)	RIVER GAGE READING:	24222	The second secon	=	19.8 F Elevation)

DATE: 7/17/2009 TIME OF DAY: 10:02 RIVER MILE 393  LOCALITY: Tensas LA SITE NAME: Bondurant Towhead Dikes  County/Parish State  NUMBERS SIGHTED:  Adults: 150  Juveniles: Eggs: 2,3  Approximate Distance to Water: 400 Feet  NUMBERS SIGHTED:  Adults: 150  Juveniles: Eggs: 2,3  Chicks: No  SUBSTRATE:  Sand: Gravel: Debris: Debris: Debris: Debris: Distance: 2000 Feet  River Side River Side Calm Water File Condition: Temperature: 82 ° File Calm Water File Calm Wat				FLY [	BOAT	~
LOCALITY: Tensas LA SITE NAME: Bondurant Towhead Dikes    County/Parish   State   NUMBERS SIGHTED:	SPECIES: Interior Least Tern (Ste	erna antillarum at	halassos)			
NUMBERS SIGHTED:  WHERE SITED: Latitude:	DATE: <u>7/17/2009</u> TIME	OF DAY:	10:02	RIVER MILE	393	
WHERE SITED: Latitude: 31.89713			SITE NAME:	Bondurant To	owhead Dikes	0
Approximate Distance to Water: 400 Feet Eggs: 2,3  Approximate Distance to Water: 400 Feet Chicks: No  INFLIGHT Over Sandbar On Nest Area On Resting Area On R	County/Parish	State		NUMBERS SIGHT	TED:	
Approximate Distance to Water: 400 Feet	WHERE SITED: Latitude:	31 89713		Adults:	150	
Approximate Distance to Water: 400 Feet				Juveniles:		
INFLIGHT Over Sandbar		-constant and substitution and substitut	-tone x t	Eggs:	2,3	
Over Water On Resting Area Substrate:    Over Water On Resting Area Substrate: Substrate: Sand: Substrate: Sand: On Resting Area San	Approximate Distance to Water:	400 F	<u>-eet</u>	Chicks:	No	
// Cloud. <u>05</u>	Over Water .    Calm Water .    Land Side	MID-CHANNEL rents ☐ River Side ☐ NDBAR Center ☑ Land Side ☐ Calm Water ☑	ing Area	Sand:	vs 000 Feet N: : 82 F	
OTHER NOTES:	OTHER NOTES:					
Right Bank. Flush count on undulating, gently sloping sand bar on upstream side of woooded island up to 10 ft. elevation. Bar extends 1 mile x 3/4 mile. Six active scrapes with human tracks, Great Blue Heron tracks present. Light mobbing of observers.	10 ft. elevation. Bar extends 1 mi	le x 3/4 mile. Six a	g sand bar on ups active scrapes wit	stream side of wood h human tracks, Gr	eat Blue Hero	n
OBSERVERS: Boyds, Davin, Fowlkes, Grubaugh, Rumancik, Thron	OBSERVERS:	Royds Davin For	wkes Grubaugh	Rumancik Thron	LA side	<u> </u>
				ramanon, mon		*
RIVER GAGE READING: Natchez = 27.8 F  (Gage Location) (Elevation)	RIVER GAGE READING:	0.40-0.00   1.00   0.70	(Berry 11) ex	= (1		

			FLY [	□ BOAT ✓
SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)		
DATE: <u>7/17/2009</u>	TIME OF DAY:	10:15	RIVER MILE	390
LOCALITY: Tensas	LA	SITE NAME:	Browns F	ield Dikes
County/Par	rish State		NUMBERS SIGH	TED:
WHERE SITED: Latitude	· NA		Adults:	2
	de: NA		Juveniles: _	
			Eggs:	
Approximate Distance to Wa	ter:	Feet	Chicks:	No
MID-CHANNEL SANDBAR Ra	<u>ON GROOND</u>	*	SUBSTRATE:  Sand:  Gravel:  Debris:  VEGETATION:  Type:  Distance:  FIELD CONDITION  Temperature  Rain:  No  Wind:  5 mg  % Cloud:  96	0 Feet  ON: : 86 ° F
OTHER NOTES:				
Two terns flying mid-channe	La			
				LA side
OBSERVERS:	Boyds, Davin,	Fowlkes, Grubaugh,	Rumancik, Thron	
RIVER GAGE READING:	Na	atchez		27.8 F
	(Gage	Location)	**************************************	Elevation)

		FLY □ BOAT ☑
SPECIES: Interior Least Tern (S	terna antillarum athalassos)	
DATE: <u>7/17/2009</u> TIM	E OF DAY:	RIVER MILE383.2
		Below Spithead Towhead Dikes
County/Parish	State	NUMBERS SIGHTED:
WHERE SITED: Latitude:	31 82997	Adults: 50
	91.34646	Juveniles:
		Eggs: 2
Approximate Distance to Water:	80 Feet	Chicks: No
MID-CHANNEL SANDBAR	ON GROUND On Nest Area  On Resting Area   MID-CHANNEL   Irrents  River Side  ANDBAR Center  Land Side  Calm Water   Calm Water	SUBSTRATE:  Sand:  Gravel:  Debris:  VEGETATION:  Type: Willows  Distance: 2000 Feet  FIELD CONDITION:  Temperature: 86 ° F  Rain: No  Wind: 10 mph  % Cloud: 90
OTHER NOTES:		
Left Bank. Flush count along und	dulating, gently sloping, 8 ft. high sar g on a scrape. Colony (1 x 1/4 mile)	d bar with small patches of willows located on downstream end of island
o o		MS side
OBSERVERS:	Boyds, Davin, Fowlkes, Grubaugh	Rumancik, Thron
RIVER GAGE READING:	Natchez	= 27.8 F
	(Gage Location)	(Elevation)

			FLY [	BOAT ✓
SPECIES: Interior Least Tern (	Sterna antillarum a	athalassos)		
DATE: <u>7/17/2009</u> TI	ME OF DAY:	11:10	RIVER MILE	378
LOCALITY:Tensas	LA	SITE NAME:	Water Pr	roof Dikes
Approximate Distance to Water	NA NA		Juveniles: Eggs: Chicks:	TED: 7 No
Over Water .	On Re		SUBSTRATE: Sand: Gravel: Debris:  VEGETATION: Type: Distance: FIELD CONDITION Temperature Rain: No Wind: 10 n	Feet N: : 86 °F
OTHER NOTES:  Seven terns flying mid -channe	l.			LA side
OBSERVERS:	Boyds, Davin, F	owlkes, Grubaugh,	Rumancik, Thron	Er ( Side
RIVER GAGE READING:	NAN-THAN STATE OF THE STATE OF	chez .ocation)	=	27.8 F Elevation)

			FLY		BOAT	<b>~</b>
SPECIES: Interior Least Tern (St	erna antillarum at	halassos)				
DATE: <u>7/17/2009</u> TIME	E OF DAY:	13:30	RIVER MILE _	3	357.4	
LOCALITY: Adams		SITE NAME:	Carthag	e Point	Dikes	
County/Parish	State		NUMBERS SIG	HTED:		
WHERE SITED: Latitude: _	31.51478		Adults:	76		
Longitude: _	91.49639		Juveniles: Eggs:	4 <u>8-</u>		
Approximate Distance to Water:	E	<u>eet</u>	Chicks:	7 <u>8</u>	No	
IN FLIGHT Over Sandbar ✓ Over Water □ Calm Water □	A	est Area □ ng Area ☑	Gravel:	<b>v</b>		
Land Side Center Channel Side	MID-CHANNEL [		VEGETATION:			
Panid Cu		<sup>-</sup> →	Type: Will	ows		-
MID-CHANNEL SANDBAR	River Side 🔽		Distance:	2000	Feet	
SIDE CHANNEL S	ANDBAR Center  Land Side  Land		FIELD CONDIT		0	
River Side	Calm Water	- No.	Temperatu	ire:	90 °F	
1 / / / T / '/	77	<b>&gt;</b>	Rain: No			
	, ,-	<del></del>	Wind: 5	© 1_1[]]		
20 10 22			% Cloud:	100		
OTHER NOTES:  Left Bank. Attempted flush count the waterline. No signs of reprodu		ittached sand and	l gravel bar, but	all birds	resting a	at
					MS side	9
OBSERVERS:	Boyds, Davin, Fov	vlkes, Grubaugh,	Rumancik, Thro	n		
RIVER GAGE READING:	Natch (Gage Lo	Barrier and		27.8 (Flava	17 11111	
	(Cage Lo	oddon)		(Eleva	HOII)	

		FLY	□ BOAT ✓
SPECIES: Interior Least Tern (St	terna antillarum athalassos)		
DATE: <u>7/17/2009</u> TIME	E OF DAY:	RIVER MILE _	349.6
LOCALITY: Adams	MS SITE NAME:	Opposite Warr	nicott Landing Dikes
County/Parish	State	NUMBERS SIG	HTED:
WHERE SITED: Latitude:	31.41997	Adults:	105
	91.49334	Juveniles:	<u>X</u>
		Eggs:	1,2,3
Approximate Distance to Water:	300 Feet	Chicks:	No
Over Water   Calm Water   Land Side  Center  Channel Side   MID-CHANNEL SANDBAR  Rapid Cu	ON GROUND On Nest Area  On Resting Area   MID-CHANNEL   rrents  River Side  ANDBAR Center  Land Side  Calm Water  Calm Water	Gravel: Debris:  VEGETATION: Type: Will Distance:  FIELD CONDIT	re: 88 °F
			Al-Market Market Control
	ars between dikes with some patches downstream end. Nests surprisingly		
50 50		NAC	MS side
OBSERVERS:	Boyds, Davin, Fowlkes, Grubaugh,	Rumancik, Thro	1
RIVER GAGE READING:	Natchez		27.8 F
	(Gage Location)		(Elevation)

			FLY [	BOAT ✓
SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)		
DATE: <u>7/17/2009</u> 1	TIME OF DAY:	14:30	RIVER MILE	337
LOCALITY:Adams	MS	SITE NAME:	Fritz Isla	and Dikes
County/Paris	sh State		NUMBERS SIGHT	
WHERE SITED: Latitude:	NA		Adults:	
Longitude	e: NA			
Approximate Distance to Water	er:	Feet	even ve	No
MID-CHANNEL SANDBAR  SIDE CHANNE  River Side			SUBSTRATE:  Sand:  Gravel:  Debris:  VEGETATION:  Type:  Distance:  FIELD CONDITIO  Temperature:  Rain:  No  Wind: 5 mg  % Cloud: 10	Feet N: : 88 °F
OTHER NOTES:				
Two terns flying mid-channel				
	and the second			LA side
OBSERVERS:	Boyds, Davin,	Fowlkes, Grubaugh,	Rumancik, Thron	
RIVER GAGE READING:	NAME OF THE OWNER OWNER OF THE OWNER OWNE	tchez	<b>=</b> )**	27.8 F
	(Gage	Location)	(1	Elevation)

			FLY [	BOAT 🗸
SPECIES: Interior Least Tern	(Sterna antillarum	athalassos)		
DATE: <u>7/17/2009</u> T	TIME OF DAY:	14:45	RIVER MILE	329.3
LOCALITY: Adams		_ SITE NAME:	Jackson	Point
County/Paris	sh State		NUMBERS SIGHTI	ED:
WHERE SITED: Latitude:	31.24505		Adults:	
Longitude	91.64962			1
Approximate Distance to Water	er:	Feet	Chicks:	
MID-CHANNEL SANDBAR Rapid			SUBSTRATE:  Sand:  Gravel:  Debris:  VEGETATION:  Type:  Distance:  FIELD CONDITION  Temperature:  Rain:  No  Wind:  5 mpt  % Cloud:  95	Feet I: 87
OTHER NOTES:				
Left Bank. Flush count on mid topped, 0.75 mile x 300 ft. wid			lid sand, 4 ft. vertica	l height, flat-
				MS side
OBSERVERS:	Boyds, Davin, F	owlkes, Grubaugh,	Rumancik, Thron	
RIVER GAGE READING:	NAME OF THE PARTY	tchez		27.8 F
	(Gage	Location)	(E	levation)

		FLY □ BOAT ☑
SPECIES: Interior Least Tern (Ste	erna antillarum athalassos)	
DATE: <u>7/17/2009</u> TIME	OF DAY:15:33	RIVER MILE304.5
LOCALITY: West Feliciano		Shreves Bar
County/Parish	State	NUMBERS SIGHTED:
WHERE SITED: Latitude:	30.99254	Adults:185
Longitude:	91.64989	Juveniles:3
Approximate Distance to Water:	500	Chicks: No
Over Water .   Calm Water .   Land Side	ON GROUND On Nest Area  On Resting Area   MID-CHANNEL  Pents  River Side  NDBAR Center  Land Side  Calm Water  Calm Water	SUBSTRATE:  Sand:  Gravel:  Debris:   VEGETATION:  Type: Willows/Cottonwoods  Distance: 300 Feet  FIELD CONDITION:  Temperature: 80 F  Rain: No  Wind: 5 mph  % Cloud: 95
OTHER NOTES:		
	tached, upstream point of large islans feeding in back chute. One Casp	nd with bar gently sloping up to 10 ft. ian Tern, 4 Mississippi Kites being
		MS side
OBSERVERS:	Boyds, Davin, Fowlkes, Grubaugh,	Rumancik, Thron
RIVER GAGE READING:	Natchez (Gage Location)	= 27.8 F
	(Cage Location)	(Elevation)

			FLY		BOAT	~
SPECIES: Interior Least Tern (St	terna antillarum ath	alassos)				
DATE: <u>7/17/2009</u> TIME	E OF DAY:	16:00	RIVER MILE _	3	300.5	
LOCALITY: Adams		SITE NAME:	Hog	Point Dik	ces	
County/Parish	State		NUMBERS SIG	HTED:		
WHERE SITED: Latitude: _	30.94092		Adults:	280		
Longitude:	91.65082		Juveniles: Eggs:	1 Y Y-		
Approximate Distance to Water:	100 Fe	<u>eet</u>	Chicks:	5 <u>8</u>	No	
<u>IN FLIGHT</u> Over Sandbar ✓	ON GROUND On Ne	st Area ✓	SUBSTRATE:			
Over Water -	On Restin	g Area 🔲	Sand:	✓		
Calm Water		./ .	Gravel:			
Land Side 🗆			Debris:			
Channel Side	MID-CHANNEL	, II	VEGETATION:			
		<sup>-</sup> →	Type: Wil	lows		
MID-CHANNEL SANDBAR	rrents  River Side		Distance:	1000	Feet	
	ANDBAR Center 🗹		FIELD CONDIT	TON:		
River Side	Calm Water		Temperatu	ıre:	91 °F	
177777			Rain: No	à.		
		·	Wind: 5	mph		
			% Cloud:	95		
OTHER NOTES:						
Right Bank. Perimeter count along Five sitting on scrapes with 3 Cas				3 ft. ele	evation.	
-					MS side	•
OBSERVERS:	Boyds, Davin, Fow	lkes, Grubaugh,	Rumancik, Thro	n		
RIVER GAGE READING:	Natch	ez		27.8	F	
	(Gage Loc	ation)		(Eleva	tion)	