

# Illinois Natural History Survey - University of Illinois

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### Least tern *Sterna antillarum*

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**TAXONOMY**

- Phylum: Chordata
- Class: Aves
- Order: Charadriiformes
- Family: Laridae
- Genus: *Sterna*
- Species: *Sterna antillarum*
- Authority: Lesson

Comments on taxonomy:

Least tern, *Sterna antillarum* is split from the little tern, *S. albifrons* which is confined to the old world \*15,18\*. The interior least tern, *S.a. anthalassos*, is found in Illinois \*05,18\*. Mengel (1965) did not recognize *S.a. anthalassos* at Bell I \*12\*. For other common names see \*03\*.

**OCCURENCE IN ILLINOIS**

Mid May-early Sept.; uncommon local migrant and summer resident in south, rare migrant and post-breeding wanderer in remainder of state. No evidence of nesting in Illinois since 1974 at Cairo, Ill., Even these were probably post-breeding wanderers (see 21-28). Two historical nesting colonies: 1 on Bell I, in Ohio River near Shawnee Town, Galatin Co.; 1 on Mosenthein I, in Mississippi River near E. St. Louis, Madison Co. \*02\*.

**STATUS**

Items in **bold** indicate applicable categories

Forest Service Categories: S = recommended for regional sensitive status, F = forest listed species, M = management indicator species

Federal Status:

<b>Endangered</b>	Threatened	Proposed for listing
Candidate for proposal	Recovery plan approved	Recovery plan received (USFWS)
Recovery plan in preparation	Under notice of review	Delisted
<b>Migratory</b>	EPA indicator	Forest Serv.- Shawnee species

State Status:

<b>Endangered</b>	Threatened	Proposed
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Other:

Game	Furbearer	<b>Nongame protected</b>	
Sportfish	Commercial	Pest	None of the above

Comments on status:

Named on Illinois endangered species list in 1977. See \*02\*. Also protected under Illinois Wildlife Code 1971 \*29\* and Migratory Bird Treaty Act 1918 \*20\*. The interior least tern (*S.a. anthalassos*) currently is being considered for federal listing under category 2, federal register VOL.47., 1982 \*30\*.

**HABITAT ASSOCIATIONS**

Items in **bold** indicate applicable categories

General habitat:

Unknown	Terrestrial	<b>Aquatic</b>	<b>Riparian</b>
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USFS timber inventory forest size class:

Unknown	Unstocked	Seedling	Sapling
Seedling/sapling	Pole	Mature	Over mature

Land use and land cover:

Unknown		Urban	Residential Commercial Industrial Transportation, communication Complex industrial/commercial Mixed Other
Agricultural	Crop, pasture Orchards, groves, nurseries Feedlot Other	Rangeland	Herbaceous Shrub and brush Mixed
Forestland	Deciduous Evergreen Mixed	<b>Water</b>	<b>Stream</b> <b>Lake</b> <b>Reservoir</b> Bay
Wetland	Forest Non-forest	<b>Barren</b>	Salt flat <b>Beach</b> <b>Sand</b> Rock Mine Transit Mix

Forest cover types: No records.

Associated tree species: No records.

National wetland inventory classifications:

System	Subsystem	Class	Subclass	Water regime modifiers	Water chemistry
Lacustrine	Littoral	Beach/bar	Cobble/gravel	Permanent nontidal	Freshwater
Lacustrine	Littoral	Beach/bar	Sand	Permanent nontidal	Freshwater
Riverine	Lower perennial	Beach/bar	Cobble/gravel	Permanent nontidal	Freshwater
Riverine	Lower perennial	Beach/bar	Sand	Permanent nontidal	Freshwater

Comments on species-habitat associations:

In illinois nested on sand bars in Mississippi and Ohio River \*02\*.

Important plant and animal association: Small fishes.

Principle, almost exclusive food item \*05,14\*.

High value habitats

Habitat	Structural stage	Season
Beaches	Special habitat	Spring/summer
Lakes and ponds	Special habitat	Summer
Low-gradient large river	Special habitat	Spring/summer

Species-habitat interrelations: Requirements for location of interior least tern colonies include 1) presence of sandbars, 2) existence of favorable water levels, 3) availability of food. For more details see \*05\*.

## GUILDS

**Feed-guilding:**

Habitat	Structural stage	Season	Feed-guilds
Lakes and ponds	Special habitat	Summer	Water surface- fish Water column- fish
Low-gradient large river	Special habitat	Spring/summer	Water surface- fish Water column- fish

Comments on feed-guilding:

No comments.

**Breed-guilding:**

Habitat	Structural stage	Season	Breed-Guilds
Low-gradient large river	Special habitat	Spring/summer	Surface of water column-river/lake/marsh, unconsolidated sand substrate Terrestrial surface, beaches (mud, sand, rock) without hydrophytes Terrestrial surface, bare ground (sand to rubble)
Beach	Special habitat	Spring/summer	Surface of water column-river/lake/marsh, unconsolidated sand substrate Terrestrial surface, beaches (mud, sand, rock) without hydrophytes Terrestrial surface, bare ground (sand to rubble)

Comments on breed-guilding:

Courtship rarely takes place in ternery \*05\*. Copulation may take place on beaches or water surface \*05,11\*. Later phases take place on sandbar and adjacent shallows \*05\*.

## FOOD-HABITS

Trophic level is CARNIVORE

Food item	Life stage/plant part
Osteichthyes (bony fishes)	Unknown

Cypriniformes (carps, minnows, loaches)	Unknown
<b>Important:</b>	
Osteichthyes (bony fishes)	Unknown
Cypriniformes (carps, minnows, loaches)	Unknown
<b>Juvenile:</b>	
Osteichthyes (bony fishes)	Unknown
Cypriniformes (carps, minnows, loaches)	Unknown
<b>Adult:</b>	
Osteichthyes (bony fishes)	Unknown
Cypriniformes (carps, minnows, loaches)	Unknown

Comments on food habits:

*General:* In Illinois the least tern feeds almost wholly on small fishes, almost invariably the river shiner at Bell I. See \*05,13\*

*Juvenile:* Almost solely small fishes \*05,06,11\*

*Adult:* See [FH].

## ENVIRONMENTAL ASSOCIATIONS

General:

- Air temperature:see comments
- Biodegradable organics: clean waters that have not been polluted
- Aquatic habitat zone: pelagic- needs open water
- Water level: see comments
- Aquatic habitats: sandy beaches
- Aquatic habitats: sandbars
- Aquatic habitats: island inhabitant
- Aquatic habitats: sloughs, bayous
- Aquatic habitats: oxbow
- Aquatic habitats: backwaters

Limiting:

- Air temperature:see comments
- Biodegradable organics: clean waters that have not been polluted
- Aquatic habitat zone: pelagic- needs open water
- Water level: see comments
- Aquatic habitats: sandy beaches
- Aquatic habitats: sandbars

Egg

- Air temperature: see comments

Feeding juvenile:

- Biodegradable organics: clean waters that have not been polluted
- Aquatic habitat zone: pelagic- needs open water
- Aquatic habitats: sloughs, bayous
- Aquatic habitats: oxbow
- Aquatic habitats: backwaters

Resting juvenile:

- Aquatic habitats: sandy beaches
- Aquatic habitats: sandbars

## Feeding adult:

- Biodegradable organics: clean waters that have not been polluted
- Aquatic habitat zone: pelagic- needs open water
- Aquatic habitats: sloughs, bayous
- Aquatic habitats: oxbow
- Aquatic habitats: backwaters

## Resting adult:

- Aquatic habitats: sandy beaches
- Aquatic habitats: sandbars

## Breeding adult:

- Biodegradable organics: clean waters that have not been polluted
- Water level: see comments
- Aquatic habitats: sandbars
- Aquatic habitats: sloughs, bayous
- Aquatic habitats: oxbow
- Aquatic habitats: backwaters

## Comments on environmental associations:

*General:* In Illinois invariably associated with large rivers with sandbars.

*Egg:* Eggs partly incubated by sun. Viable incubation temperatures range from 95.4-102 degrees F, optimum 98.4 degrees F.

*Feeding juvenile:* See [FA]. Receive food at colony when flightless, later travel with parents to fishing areas \*05\*.

*Resting juvenile:* Lie prostrate on sand, gather on sand bars \*05,06,17\*.

*Feeding adult:* Hunt over river near colony, about nearby sloughs, backwaters and ox-bow lakes \*05,12\*.

*Resting adult:* Roost on beaches at night, rest on old logs, drift accumulations, beaches and sand bars after breeding season \*05,06,08,11\*.

*Breeding adult:* Limiting requirements: 1) presence of sandbars, 2) existence of favorable water levels, 3) availability of food \*05\*.

**LIFE HISTORY**

**Origin:** Native \*01,15\*

**Physical description:** Smallest of American terns. Length 8 1/2-9 1/2 in.; wingspread 20 in. female smaller. sexes alike. Breeding adult: body white, black-capped with white forehead, yellow bill with black tip, yellow feet. Black leading edge of wing. Immature & winter adult: nape with line to eye dark, dark bill, feet yellow. Immatures have much black on forewing \*03,19\*.

**Reproduction:** Breeds in Illinois early June-late July \*05\*. For history of nesting in Illinois see \*08\*. If arrive and nesting site immersed, feed and rest nearby. Courtship begins here but is halted until emergence of sand bar which may help synchronize breeding activities \*05\*. Courtship ritualized & includes aerial glide & posturing parade. For description see \*05,11\*. In Ga. began immediately and lasted 20 days. Courtship not performed in ternery. Copulation on land or water, often exchange fish, duration 3 sec. \*05\*. Unclear who chooses territory, or if established before nest. Female makes final nest scrape \*11\*. Nest - simple shallow depression in sand or gravel \*03,05,13\*. Eggs are variable, pale to olive buff, spotted from lilac to dark brown. Dimensions approx. 31 x 23.5 mm \*03,05,13\*. Ave. clutch size 2 or 3 (1-4). 3 Egg clutches in north, 2 egg in south part of range \*03,05,11,12,13\*. Eggs layed on consecutive days \*05,11\*. Incubation begins soon after 1st egg layed \*05\*. Both sexes incubate mean = 20 days \*05,11,12\*. Hatchling covered with cryptic down weighing approx 4.9 g \*05\*. For growth & development of young and parental care see \*05\*. Some post-breeding wandering \*05\*. Family groups may be maintained through migration \*05,11\*. Usually 1 brood/ year \*03,06\*. Suggested may raise 2 or 3 in warmer climate \*03,04\*. Male and female attain sexual maturity at 2 yrs. \*11,17\*. Maximum breeding age unknown.

**Behavior:** Least tern is a migrant, present in Ill. From late May- early Sept. \*01\*. Are not as colonial as some tern spp., nesting in well scattered groups. See \*05\* for density in Ill. Areas within few feet of nest are defended by both sexes, with the space between nests neutral \*05\*. Home range unknown, but carried fish from 16,000 ft., see \*06\*. Post-fledging young flew 5 km off colony to roost \*17\*. When young able to fly, terns desert colony, feeding along river near nesting area, eventually wander along rivers and about lakes several wks.

before migration \*05\*. Apparently, migrate in family groups \*05,11\*. California least terns do not return to natal site see \*11\*. Preferred fishing sites occur along sandbar or colony during breeding season and extend along river and accompanying waters later in season \*05\*. Viciously attack intruders, but not as aggressive as other tern spp \*04\*.

**Limiting factors:** Sandbars are preferred nesting habitat. Water levels dictate start of breeding activities \*05\*. Severe floods may delay or prevent nesting. Colony at St. Louis was consistently flooded and apparently abandoned \*21-28\*. River alterations \*02,03, 05,16\*. Human disturbance \*02,03\*. Enemies \*03,05,09,11\*. Pollution \*09\*. Requirements for location of ternery 1) presence of sandbars, 2) existence of favorable water levels, 3) availability of food \*05\*.

**Population parameters:** Relative trend in Illinois is down. Last successful nesting possibly 1977 \*27\*. Mississippi River population 150 mi. south of Cairo, Il. appears flourishing, est. 600 birds \*16\*. River alterations could cause decrease. Hager (1937) in Hardy reported mortality to be highest from hatching to fledging, 9% reaching flying stage (n=212) \*05\*. For Bell I., Il., 65% hatching success, of 55 chicks 2 or 3.6% survived to flying stage see \*05\*. Hardy (1957) reports low adult mortality \*05\*. Ratio of 1 yng to 4 adults observed in 1957 after breeding season \*05\*. Marples (1934) assumed ave. lifespan 5 years, reasoning if each female lay 11 eggs during lifetime, only 2 would need to survive to maintain the population, therefore approx. 70% mortality could be tolerated \*05\*. Fledging success considered good if 1.0-1.5, moderate at 0.5-1.0, poor 0-0.5 \*17\*. Oldest individual, 21 yrs. 01 mos. \*10\*. Sex ratio unknown.

## MANAGEMENT PRACTICES

### Beneficial:

- Maintaining undisturbed/undeveloped areas
- Maintaining early stage of ecological succession
- Maintaining natural areas and nature preserves
- Maintaining unique or special habitat features (wetlands, snags, caves, cliffs, talises, etc.)
- Preserving endangered species habitat
- Preserving sensitive species habitat
- Performing special survey prior to prescription
- Performing field survey prior to prescription
- Controlling land use and human activities
- Seasonal restriction of human use of habitats
- Controlling pollution
- Controlling pollution in aquatic habitats
- Controlling water levels
- Creating artificial islands or rafts
- Developing/maintaining lakes and ponds
- Creating/maintaining islands within permanent impoundments
- Developing/maintaining wetlands
- Protecting existing wetlands
- Restricting human disturbance during migration, breeding, and nesting
- Maintaining undisturbed resting areas for migrating birds
- Developing islands for waterfowl

### Adverse:

- Recreational development
- Channelization
- Navigational improvements such as channelization and locks and dams
- Dredging
- Providing public access (develop roads, trails, parking areas or provide legal access)

### Comments on management practices:

For management recommendations for Illinois see \*02,05\*. Nest site manipulation see \*07\*. For demise and management in Calif. see

\*11\*. Least tern is protected by the Illinois Endangered Species Act 1972, \*02\*, Migratory Bird Treaty Act 1918 \*20\*, & Illinois Wildlife Code 1971 \*29\*.

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