



For maps of the Mississippi River Pools, including an overall vicinity map and detailed maps with access areas for each pool, visit [fws.gov/refuge/Upper\\_Mississippi\\_River/map.html](http://fws.gov/refuge/Upper_Mississippi_River/map.html).

SUE FLETCHER

## MIGRATION STOPS ON THE MISSISSIPPI OFFER A RARE CHANCE TO HEAR AND SEE THESE STARS.

*Ruth Nissen*

On a clear morning in October, Brenda Kelly, DNR wildlife manager, looks intently out the window of a small plane at the Mississippi River below her. The plane is flying 150 feet above the surface of the water near La Crosse. Her eyes scan the edges of clumps of marsh plants for feeding mallards and move quickly to examine half-submerged logs in the shadows of neighboring trees for loafing wood ducks.

Kelly is conducting a waterfowl aerial survey as part of a team of biologists from the U.S. Fish and Wildlife Service, Wisconsin Department of Natural Resources and Illinois Natural History Survey. The team conducts these surveys in navigation pools 4 through 14 of the Upper Mississippi River National Wildlife and Fish Refuge, which stretches from Wabasha, Minn. to Rock Island, Ill. The surveys are flown by three crews, with each crew responsible for different stretches of the river. Kelly and I are responsible for pools 8 through 11 from La Crosse to Dubuque, Iowa.

As the plane crosses the main channel of the Mississippi River near Brownsville, Minn., Kelly glances ahead through the windshield at the Pool 8 Wisconsin Islands Closed Area and announces over the radio, "The swans are here!"

The swans have traveled far from their arctic breeding areas. They have

spent over a month on the vast marshes and shallow lakes of the Prairie Pothole Region of Canada, followed by the Dako-

tas and western Minnesota before stopping here.

During the third week of October the first few small flocks appear on the river. Their numbers slowly build, but by late October and through November thousands of tundra swans will be spread along the Upper Mississippi River reaching a peak population around the second week of November. The peak has averaged 37,870 during the last 10 years with the majority of these birds found on the stretch of the river from Alma, Wis. (Pool 4) to Lynxville, Wis. (Pool 9).

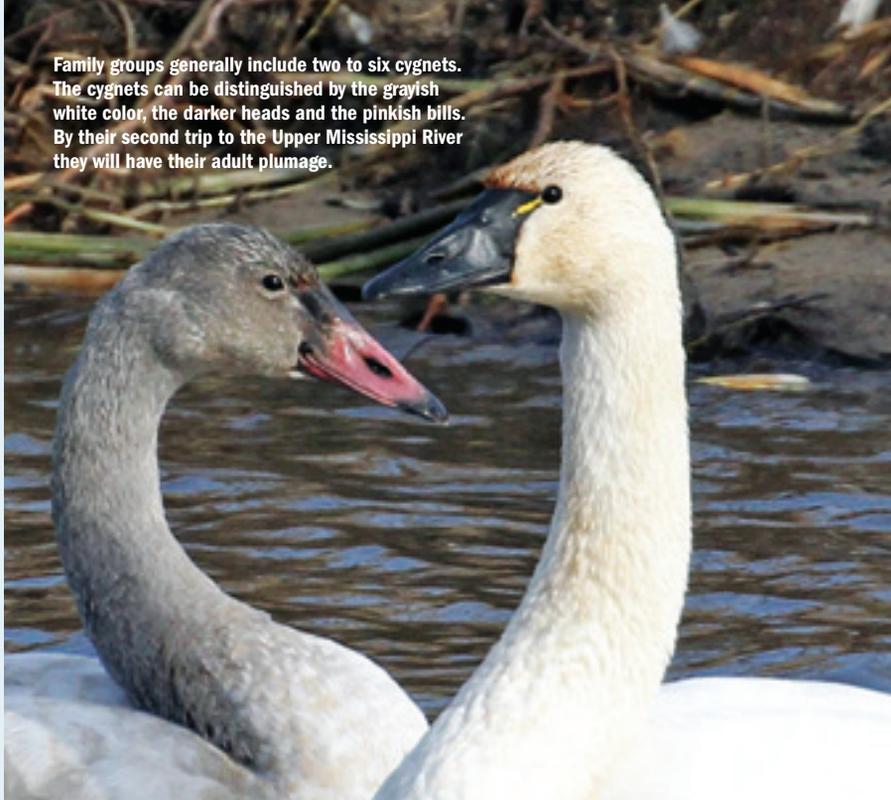
The Mississippi River is just one stop in a migration journey from the tundra to their wintering grounds along the mid-Atlantic coast. Migrating during the day and night their melodious, qua-



RUTH NISSEN

**These large, elegant birds will generally linger on the Upper Mississippi River to rest and feed for a little over a month. Many of them will stay on the river until it freezes, which generally occurs in late November.**

Family groups generally include two to six cygnets. The cygnets can be distinguished by the grayish white color, the darker heads and the pinkish bills. By their second trip to the Upper Mississippi River they will have their adult plumage.



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vering, who-who-who calls are heard at a great distance as they fly along in their familiar V-formation. During flight, the swans average 30 to 45 mph, but travel faster with a tail wind. They generally fly at altitudes of 2,000 to 4,500 feet, but have been sighted at elevations of 6,000 to 8,000 feet where flocks have been struck by aircraft.

During the fall, 20 to 45 percent of the eastern population of tundra swans uses this stretch of the river as a stopover point, making it a critical staging area during fall migration. It is especially important to family groups traveling with cygnets (young swans). Over half the cygnets produced in a year will spend time on the Upper Mississippi River during the fall flight. Relatively undisturbed resting areas combined with easily accessible, rich food resources allow the cygnets to replenish depleted energy reserves and continue to grow.

While here, the swans feed mainly on starchy bulbs or tubers of plants such as arrowhead (duck potato), wild celery and sago pondweed. Tubers are buried in the mud on the river bottom, but the swans are well equipped with powerful legs, large webs and prominent toes to stir up the soft mud to dislodge the tubers. With their long necks they can usually reach the bottom by just immersing their head and neck, but sometimes in deeper water, they tip up so that only the tail protrudes above the water.

One arrowhead plant may produce as many as 40 tubers. This productivity is critical for sustaining a peak population

of 37,000 swans.

“An individual swan requires about 1/2 pound of tubers daily to maintain weight. Therefore, a population of 10,000 swans would require around 5,000 pounds of tubers per day,” explains Kevin Kenow, U.S. Geological Survey research wildlife biologist. “However, swans may consume on the order of 6 pounds of tubers per day while gaining weight on the Upper Mississippi River during migration.”

Despite feeding so many swans, the size and density of the arrowhead beds on the river do not appear to be impacted the following year. This is attributed to the effect of diminishing returns for the swan’s amount of energy expended. When the density of tubers reaches a point where it is not worth their time to dig for them, they move to other sites. This leaves enough tubers for the plants to begin anew the following spring.

The number of swans using the river has increased over the last 15 years as a



ALAN STANKOVITZ

One of the main attractions for the swans are tubers from arrowhead, an aquatic plant that grows on the water’s edge. The swans dig for the tubers, which grow similar to potatoes.

result of improved river conditions combined with management and habitat restoration activities.

“In lower Pool 8, a summer drawdown was conducted in 2001 and 2002, which helped to re-establish beds of emergent plants such as arrowhead and river bulrush,” says Kelly. “This was followed by a habitat restoration project, completed in 2012, that benefitted a variety of birds, animals, fish and mussels.”

This project — Pool 8 Phase-III — was funded through the federal Upper Mississippi River Restoration Program. It was designed to restore nearly 3,000 acres of Mississippi River ecosystem by reconstructing an island complex similar to what existed in 1954, forming an area protected from wave action and currents to promote aquatic plant beds. This allowed the re-established beds of arrowhead and bulrush to further expand. Wild rice appears to be another major beneficiary of the island restoration project.

The island complex also improved waterfowl migration habitat by providing loafing areas, in addition to protection from the cold winds of November and December, which previously had howled across lower Pool 8. As a result of this work, tundra swan and other waterfowl use of this area has increased.

Similar restoration work has been completed in other pools. A drawdown has been conducted and an island construction project has been completed in Pool 5, while a similar island construction project is underway in Pool 9.

In contrast, Rieck’s Lake, near Alma was previously a swan hot spot, but the habitat changed as sediment carried by the Buffalo River was deposited. This changed the vegetation from primarily arrowhead to another, less desirable plant from a swan’s point of view — bur reed — and there is very little open water. Consequently, not as many swans gather here as in the past. The character of the Mississippi River will continue to change and the birds will adjust.

The swans will spend almost six months of the year in migration. They fly over 3,000 miles from the nesting area to their wintering areas. Satellite tracking has shown that from the Upper Mississippi River the majority of swans head east to the Great Lakes Region, and then undertake the final leg southeast to the wintering grounds of the mid-Atlantic coast. They will reach their destination by late December and spread out along the mid-Atlantic area.



Prior to island reconstruction in lower Pool 8 there were few islands and even fewer plant beds like arrowhead to attract tundra swans and other waterfowl.



The Brownsville Overlook, located three miles south of Brownsville, Minn. provides a world-class spectacle of swans and other waterfowl in and around the restored island complex in lower Pool 8 of the Mississippi River.

Other swans, particularly those without cygnets in tow, will migrate nonstop from the Upper Mississippi River to the East Coast, a flight of about 1,000 miles. The majority will spend the winter in North Carolina. The rest are spread between Virginia, Maryland, Delaware, Pennsylvania and New Jersey. Their northward journey begins in March.

The thousands of tundra swans that congregate on this part of the Upper Mississippi River every fall offer interested spectators an unparalleled viewing opportunity that attracts thousands of visitors each year. In 2014 over 13,000 visits were made to watch swans and

other waterfowl at the overlooks near La Crosse. In the past, visitors to Rieck's Lake in Alma came from 42 states and 25 countries to watch the swans.

The attraction of this unique and special place for people is best described by Don Hultman, retired refuge manager of the Upper Mississippi River National Wildlife and Fish Refuge.

"Birds have a unique way of touching our minds and hearts," Hultman suggests. "Perhaps it is their color and their ability to fly unaided by technology. Perhaps what holds us in awe is the mystery and magic of migration. The panorama of marsh, islands and bluffs,

swans, geese, ducks and coots, pelicans and eagles combined with the sounds of the swans talking to each other allows us to connect with the miracle of migration, and helps link a part of natural history with our own history. People have been watching these gatherings and passages of swans, geese and ducks for thousands of years. May it always be so."

This autumn, take the time to enjoy this world-class spectacle which exists on our doorstep and, "Catch the swan migration." 

*Ruth Nissen is stationed in La Crosse and works with the Mississippi River Team in the Department of Natural Resources.*

## WHERE TO SEE SWANS ON THE MISSISSIPPI RIVER

### WISCONSIN:

- Rieck's Lake Park just north of Alma
- Lower Spring Lake Overlook, South River Road, Buffalo City (overlook will be completed in 2016)
- Lake Onalaska Overlook, County Highway ZB, Brice Prairie, five miles north of Onalaska
- Shady Maple Overlook, south of La Crosse on Highway 35
- Potosi Point, south end of Potosi on Highway 133, Point Road

### MINNESOTA:

- Brownsville Overlook, located three miles south of Brownsville on Highway 26
- Weaver Bottoms, north of Minneiska on Highway 61

A driving loop using the Great River Scenic Byway is possible by using the bridges over the Mississippi River at Wabasha, Minn.; Winona, Minn.; La Crosse, Wis.; or Lansing, Iowa.

Although swans may not be present at every site, all the time, eagles, pelicans and large concentrations of other waterfowl generally use these same areas.

For up to date information, call the Upper Mississippi Refuge-La Crosse District Office (608-779-2399) or visit the Refuge's home page on the Internet at [fws.gov/refuge/upper\\_mississippi\\_river](http://fws.gov/refuge/upper_mississippi_river).

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