Bluel Jeopa

Researchers use satellite technology in an attempt to discover why the lesser scaup population has taken a nose dive.

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Biologists across North America are trying to determine why populations of lesser scaup have declined.

Story By Kathy Andrews
Photos By Adele Hodde

It has the biological community scratching their proverbial heads.

Huge rafts of scaup once rode the waves of the Mississippi River each spring and fall as the birds winged their way between their nesting grounds in the far northern reaches of North America and their wintering grounds in Louisiana. According to Illinois Natural History Survey flight data, in the spring of 1958, 465,200 lesser scaup were recorded on Pool 19, compared with an average spring peak from 1992-2001 of 55,533. Fall numbers don't fare any better—from a high in 1948 of 545,000 to a low in the past decade of 20,038.

Two species of scaup occur in North America, lesser scaup (*Aythya affinis*), the most common species in the Midwest, and their larger cousin the greater scaup (*A. marila*). Collectively referred to as bluebills, for obvious reasons, identification of two species requires close observation, and is virtually impossible from the traditional research vessel, an airplane.

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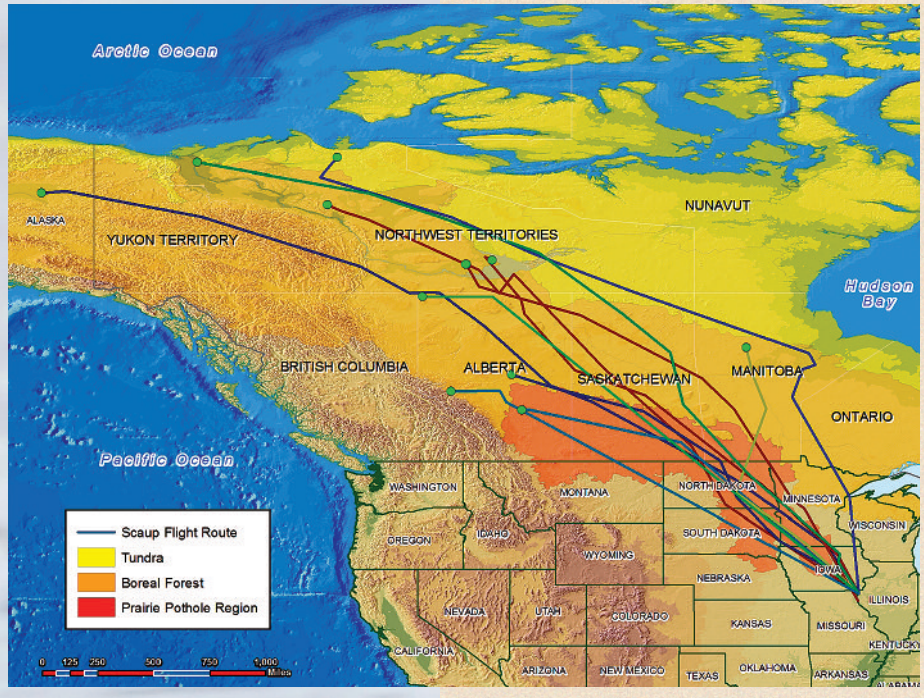
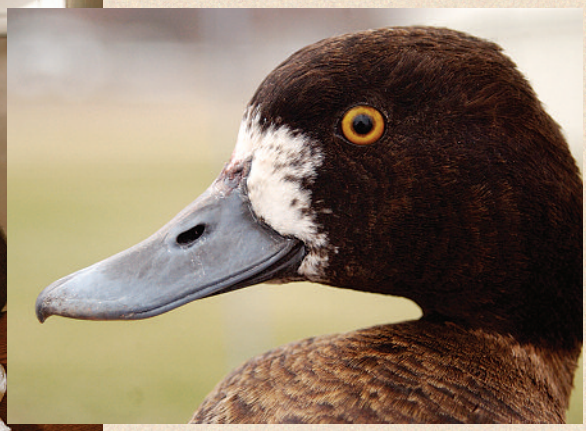


(Ducks Unlimited GIS Department in cooperation with Dr. Al Afton and the Louisiana State University School of Renewable Natural Resources.)

Using satellite technology, biologists are tracking the migratory paths of selected female scaup.

During spring migration, traps placed on Pool 19 of the Mississippi River provide biologists the opportunity to band bluebills. Recovered bands provide migration information.



(Courtesy Lowell Washburn, Iowa DNR.)

Radio transmitters are implanted in a small sample of female scaup.

Leading a diverse team of biologists working to solve the scaup mystery is Al Afton, a U.S. Geological Survey biologist and adjunct professor at Louisiana State University. Afton and other researchers have formed three hypotheses for the scaup decline: accumulation of contaminants, climate and habitat changes on the boreal forest breeding areas, and decreased quality and quantity of food resources on winter and spring migration areas. The latter is the focus of a pilot study initiated on Pool 19 of the Mississippi River in March 2007.

"Pool 19 is a critical area for scaup because of the number of birds passing through the area each spring from a number of different wintering areas," Afton explained. "Traditionally, food supplies there have been very good and the birds have been able to build fat reserves, which is especially important for females to ensure their survival through migration and during the egg-laying and incubation periods."

Biologists spent several weeks on the river last March, trapping, banding and weighing 2,500 scaup. From that large sample, 17 females were selected for a state-of-the-art study involving implanted radio transmitters.

Thanks to this technological advancement, biologists from throughout the country simultaneously receive—on a nearly daily basis—updated locations of those females.

"The use of satellite technology has taken the logistics of being on the ground, or in the airplane, out of the equation of tracking these birds," Afton said. "Radios are expensive, with each one costing approximately $2,750 plus an annual fee of about $800 to obtain the data, but the batteries last two years so we are able to gather considerable information with relatively minor effort in terms of hours in the field."

This month, biologists return to Pool 19 to trap scaup—some will be recaptures that will provide valuable information on survival rates while others will be new birds that will be equipped with a leg band. And from the sample, 20-25 females will be outfitted with radio transmitters, boosting the information biologists will gather on their migration routes.

Collectively, this information will provide biologists with necessary information on how to focus management efforts and prioritize habitat work. It's all in the name of removing bluebills from a state of jeopardy.

For updated information on the project, visit www.ducks.org/scaupstudy.

Project partners include: the Upper Mississippi River and Great Lakes Joint Venture; Prairie Pothole Joint Venture; U.S. Fish and Wildlife Service; Minnesota, Illinois and Iowa Departments of Natural Resources; USGS-Louisiana Cooperative Fish and Wildlife Research Unit; Louisiana State University; Louisiana Department of Wildlife and Fisheries; University of Illinois College of Veterinary Medicine; USGS-Northern Prairie Wildlife Research Center; Ducks Unlimited Inc.; North Dakota Game and Fish Department; Long Point Waterfowl and Wetlands Research Fund; Kibbe Research Station of Western Illinois University; Ontario Ministry of Natural Resources; Des Moines County Conservation Board; Mississippi Valley Calling Association; Louisa County Conservation Board; Tri Oak Foods; and, Missouri Department of Conservation.

Equipped with a band and radio transmitter, movements of this duck can be tracked on near-daily basis.