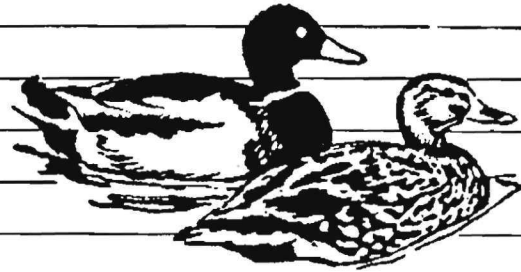


Research

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Telemetry Study Identifies Movement Patterns and Migration Routes of Northern Pintails Instrumented in Louisiana

Declines of the northern pintail (*Anas acuta*) breeding population have increased interest in pintail biology. Habitat availability and use by northern pintails are of particular interest as factors that may have contributed to their decline. Northern pintails are believed to be highly nomadic, with frequent long-distance movements to utilize ephemeral habitats. Our study was begun to identify movement patterns and environmental factors influencing movements of northern pintails wintering in Louisiana, which can then assist with the identification of areas needed for refuge acquisition and the timing of management practices. Providing high-quality habitat is an important aspect of northern pintail management in Louisiana.

Backpack Radio Transmitters Are Used

Northern pintails were captured with bait traps and rocket nets at Catahoula Lake,

Louisiana, in late October and early November 1992. Fifty after-hatch-year and 39 hatch-year females were instrumented with backpack radio transmitter packages featuring a mortality sensor and a 180-day expected lifespan. Instrumented females were located weekly from aircraft. Flights covered Louisiana, eastern Arkansas, western Mississippi, and western Texas. In March 1993, flights extended into southern Missouri and western Tennessee, with one flight over Missouri, Illinois, Iowa, South Dakota, and Nebraska. At an altitude of 1,220 to 1,980 m, signal reception was as far as 64 km.

Hunting Is the Most Important Cause of Mortality

Ten (20%) after-hatch-year and 6 (16%) hatch-year females died during the monitoring period. Of these, 12 females were known to have been killed by hunters. Four additional females were found dead during the waterfowl season, but a cause of death could not be determined.

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Movements Are Limited to Agricultural Areas

Northern pintails remained in the vicinity of Catahoula Lake until mid-November, when waterfowl hunting season opened and more wetland acreage became available elsewhere. Most movements were in a northward direction to northeast Louisiana, where the instrumented birds primarily used flooded rice fields. In late December, when fields flooded in Arkansas, further northward movements were observed. A gradual northward movement within Arkansas was observed until mid-March, when increased ambient temperatures thawed wetlands north of Arkansas.

Northern Pintails Instrumented in Louisiana Are Located on Migration

In late March, an aerial search was made to locate instrumented northern pintails during spring migration. Most suitable habitat in northern Louisiana, Arkansas, and Missouri was surveyed. The flight path continued up the Mississippi River to the Des Moines River, northward to the Raccoon River, and then westward up the Missouri River to Lake Andes National Wildlife Refuge. From Lake Andes, the flight path continued westward through the sandhills of Nebraska to Valentine, Nebraska. The aerial search continued northward to Aberdeen, South Dakota, and then southeastward to Peoria, Illinois. Observers found open water south of the frost line, which was almost a straight line from Aberdeen toward Peoria. From Peoria, the return flight path was southward, down the Illinois River to St. Louis, Missouri, and then down the east side of the Mississippi River.

We located 23 of 70 surviving female northern pintails instrumented at Catahoula Lake (Figure)—one in northern Louisiana, four in Arkansas, two in Missouri, five in Illinois, two in Iowa, and nine in South Dakota. No instrumented

birds were located in the sandhills region of Nebraska.

Management Suggestions

Limited movement of northern pintails instrumented at Catahoula Lake, Louisiana, to southwest Louisiana and west Texas suggests that northern pintails using these areas stage in October somewhere other than Catahoula Lake. Extensive movements by wintering northern pintails suggests that quality habitat be maintained over a broad region in Louisiana and Arkansas to provide proper flooding condition with variable precipitation.

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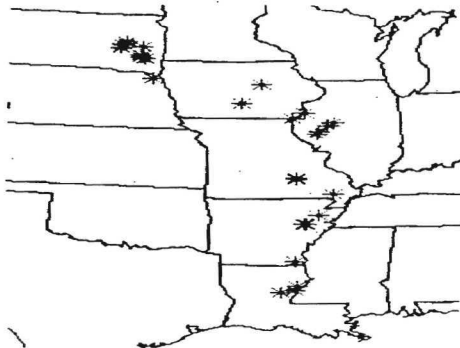


Figure. Locations (indicated by asterisk) of instrumented northern pintails (*Anas acuta*) located during migration in late March 1993.