Louisiana Natural Resource News

Newsletter of the Louisiana Association of Professional Biologists
Louisiana Chapter of The Wildlife Society

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LAPB Member News

Dr. Kim Marie Tolson, ULM, was selected to serve on the Louisiana Feral Hog Management Advisory Task Force created by the Louisiana legislature. At the first meeting of the Task Force Dr. Tolson was selected as the Chair of the committee—congratulations Dr. Toslon!

Whooping Cranes Get Much Needed Boost

The Louisiana Whooping Crane population got a much needed a boost in 2016 when the reintroduction project received a record 25 juvenile cranes from two captive breeding centers. Seventeen juveniles were transported to the Rockefeller Wildlife Refuge in Grand Chenier, while the remaining 8 went to the White Lake Wetlands Conservation Area in Gueydan. With these 25 new juveniles, the Louisiana non-migratory population now numbers 59 individuals. All members of the population have been captive reared except for one juvenile (LW1-16) who was hatched in a crawfish field in Jefferson Davis Parish in April 2016 by a newly formed pair. LW1-16 is the first Whooping Crane to hatch in the wild in Louisiana in over 75 years, and marks an important milestone for the reintroduction project.

Aerial Waterfowl Surveys in Louisiana: 47 years and Still Counting

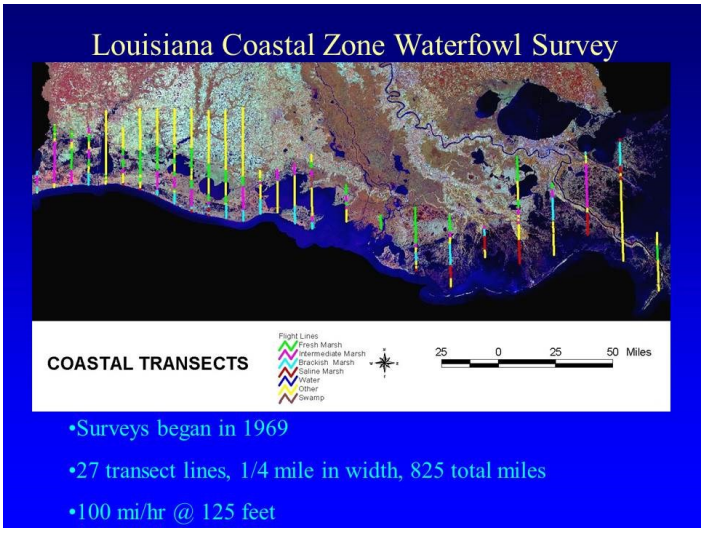
Larry Reynolds, LDWF Waterfowl Program, Program Manager

Estimating population size from aircraft has been an important part of waterfowl conservation since at least 1955 when the Waterfowl Breeding Population and Habitat Survey became operational. This survey actually began in 1946, but methods were standardized in 1955. Since then, this joint U.S. Fish and Wildlife Service/Canadian Wildlife Service effort has provided scientifically credible estimates of nesting ducks and ponds over the vast breeding grounds of the northern United States, Canada and Alaska. It is the largest-scale, longest running wildlife survey on the planet, and resulting data are used from basic monitoring reports to models that inform harvest-management decisions to ecological research published in well-respected scientific journals.

Using aircraft provides huge advantages over other survey methodology. Like the vast roadless wilderness used by large numbers of breeding ducks, Louisiana's coastal marshes are difficult to access. Millions of wintering ducks cannot be seen without varying types of boats, each with a limited range of marsh/water conditions in which they function, and visibility of birds is highly variable and unpredictable. Consequently, counting birds in a random, representative sample of habitat across the coastal landscape is nearly impossible without the use of aircraft.

Coastal Transect and Catahoula Lake Surveys

Louisiana Department of Wildlife and Fisheries (LDWF) implemented an aerial survey of ducks in the coastal zone and Catahoula Lake in 1969. Twenty-seven systematic random transects were located across coastal Louisiana from the Texas line to the mouth of the Mississippi River (Figure 1). The 17 lines in southwest Louisiana are 7.5 miles apart while the 10 in southeast Louisiana are 15 miles apart. Fewer lines were flown in SE LA because of less variation in duck counts between the lines. Each line is flown in a fixed-wing airplane 125 feet from the ground at 100 mph, and observers count all ducks, by species, out 220 yards from both sides of the plane. Observers also identify the coastal marsh type with help from maps produced from the most recent coastwide vegetation survey (see https://pubs.usgs.gov/sim/3290/pdf/sim3290.pdf). The resulting counts from the quarter-mile wide strips can be statistically expanded to provide an estimate of ducks over the entire coastal zone. Since 1969, the coastal transect survey has produced estimates of ducks by species using fresh, intermediate, brackish, and saline marsh as well as adjacent agricultural and swamp habitats in south Louisiana.

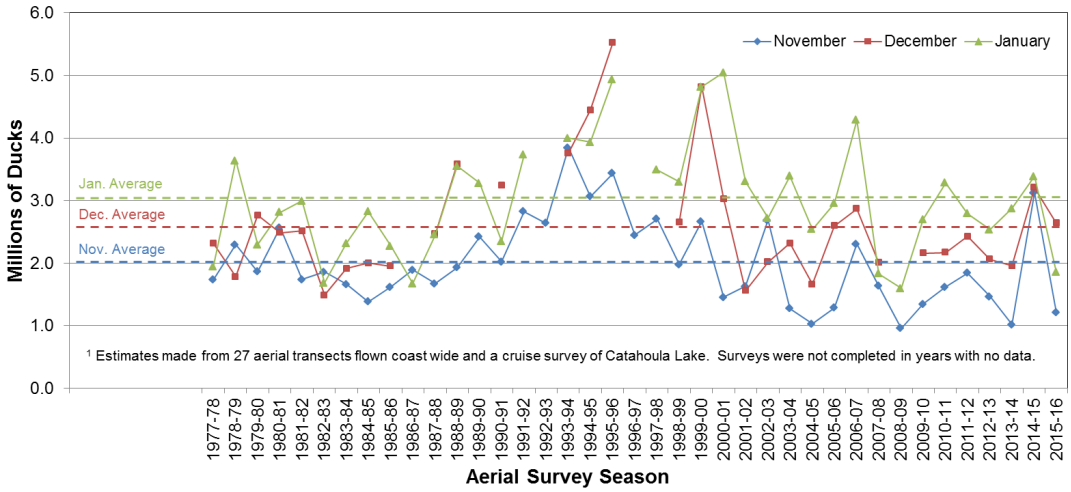


Unlike the transect survey, ducks on Catahoula Lake are counted using a "cruise" survey. Instead of flying a sample of the habitat, the 30,000-acre lake area is strategically flown to avoid double-counting flushed birds while covering the entire area to enumerate all ducks using the lake habitat. Catahoula Lake is one of the most important migration and wintering habitats in the Mississippi Flyway, especially during the early fall migration period. Counts at Catahoula Lake combined with estimates generated from the coastal transect survey provide a consistent population index to monitor changes in duck numbers, species composition, and marsh habitat use for nearly 5 decades.

Uses of Aerial Waterfowl Survey Data

The coastal transect and Catahoula Lake aerial surveys are conducted in September, November, December and January each year, so long as weather and mechanical reliability of LDWF aircraft allows. The September survey focuses on early-migrating blue-winged teal and is conducted just prior to opening the September teal hunting season. It provides an estimate of bluewings available to hunters, an assessment of the early migration, and the first large-scale look at wetland habitat conditions across the coastal marshes and vegetative composition at Catahoula Lake for the season. Because blue-winged teal and resident mottled ducks are the only species present in any numbers, the September survey totals are much lower than those from later surveys, when most duck species are in some stage of fall migration. The most highly anticipated survey for hunters is in November, just prior to opening day of the regular duck season, and the most important survey for population monitoring is in January. The January survey is part of the coordinated mid-winter waterfowl inventory, which is flown in all states in the Mississippi Flyway in the same week and provides information on distribution as well as estimates of population size. Total ducks seen on those surveys since 1977 is displayed in Figure 2.

Total duck estimates[1] for Coastal Louisiana and Catahoula Lake, 1977-78 to 2015-16

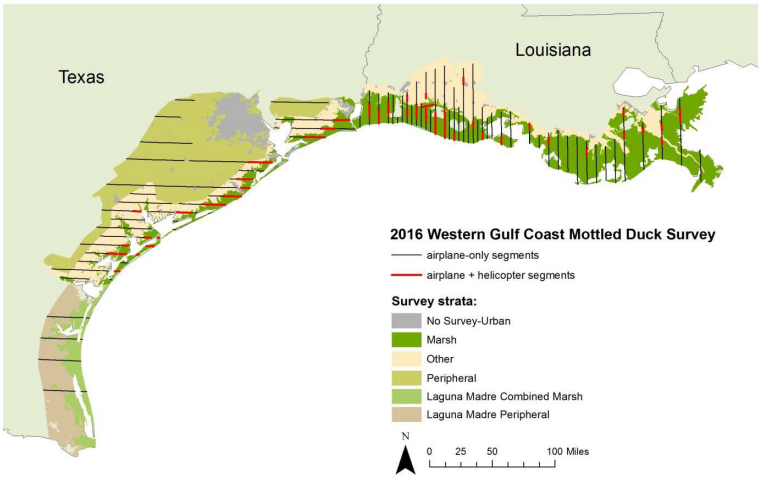


Aerial waterfowl survey data are used in conservation planning, show some important changes in species distribution, and indicate potential trends that may be important in setting harvest regulations. Continental duck population goals from the North American Waterfowl Management Plan are "stepped down" or allocated to individual regions based on the January mid-winter inventory. Those regional population goals determine how much food energy, and thus habitat acreage, needs to be provided on the landscape. Those goals should shift as mid-winter population distributions shift. Figure 3 shows the statewide January estimate and proportion of Mississippi Flyway mallards in Louisiana, both of which have declined over the last 20 years. Estimates in total ducks from the November survey since 2000, although highly variable, also appear to be declining, suggesting that ducks are arriving later than in the past. Indicated changes like these from our aerial surveys are used to adjust habitat conservation goals and activities. In addition, aerial survey data from particular transect lines are often requested to inform local conservation projects or habitat damage assessments.

Other Aerial Waterfowl Surveys

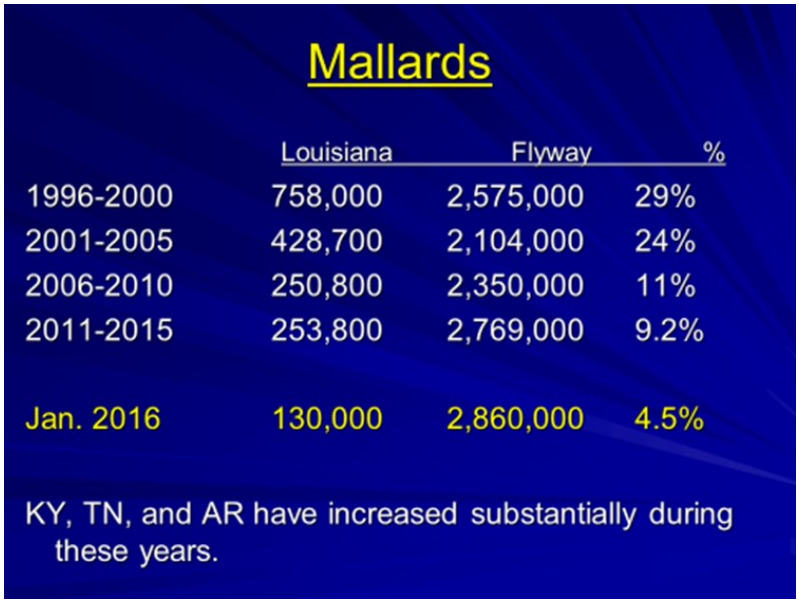
LDWF conducts 4 other aerial waterfowl surveys. Cruise surveys of standardized areas in northeast Louisiana and northwest Louisiana in November, December, and January. Ducks and geese are counted in the same geographic area (polygons) each survey, so counts are comparable between months and years. However, population estimates for the northwest or northeast regions of the state cannot be generated because these polygons are not a random, representative sample of habitats. A transect survey of lakes Maurepas, Pontchartrain, and Borgne is conducted in December and January to estimate the number of scaup using that continentally important wintering area in southeast Louisiana. Lastly, an aerial survey is conducted in early April to estimate the number of breeding mottled ducks in the coastal zone of south Louisiana.

The mottled duck survey is the most intensive one of the year. It consists of the same 27 transects plus an additional 15 lines in the coastal marsh to reduce the variation in our estimates (Figure 3). Unlike in the fall and winter, mottled ducks seen in April are assumed to be nesting in that location and will remain in the same location. Observations are "geo-referenced" using a computer-linked GPS unit activated when mottled ducks are seen and recorded. Selected 5-mile segments of transects flown by the fixed-wing aircraft are then re-surveyed with a low-flying, zig-zagging helicopter to flush all mottled ducks in the quarter-mile strip. The ratio of birds seen in the helicopter to those seen from the fixed-wing in that same surveyed strip forms a "visibility correction factor" (VCF). The VCF has ranged from 2.5 to 4.5 in recent years, meaning observers in the helicopter sees 2 to 4 times the birds seen in the fixed-wing aircraft. Counts from the airplane are corrected for visibility to arrive at the final population estimates.



Future of Aerial Waterfowl Surveys in Louisiana

Alternative methods and technologies are continually evaluated to find more efficient, cheaper, and safer ways to get the same or better population estimates. High quality aerial photography, multi-spectral scanning, digital video, and use of drones have been evaluated as replacement methods for our current aerial surveys. But for now, there is no suitable substitute primarily because these alternative methods do not allow both species identification and a large enough defined sample area to allow us to generate credible estimates over the landscape. So currently, our effort is focused on improving the quality of our surveys and survey data while increasing its utility. Cruise surveys should be converted, where practical, to more random techniques, like transects, to be more representative and generate population estimates rather than area-specific counts. Observations on fall and winter surveys might be geo-referenced like in the mottled duck survey. Those data could then be linked to other databases, like the Coastwide Reference Monitoring System, and linkages between ducks and marsh processes or other ecological dynamics could be evaluated. There is still much to be learned from keeping some trained eyes in the sky over Louisiana's expansive waterfowl habitat.



Get your cameras ready!

There will be a photography contest at the 2017 LAPB annual meeting. The contest will be open to all registered conference attendees and winners will be announced during the evening social, so make plans to attend the social for 2017. Any wildlife/biology/landscape/research, etc. type theme will be allowed. More details to follow.

Who We Are

The Louisiana Association of Professional Biologists is a diverse group of natural resource specialists including, but not limited to, foresters, botanists, wildlife biologists, wetland scientists, fisheries biologists, and students who are dedicated to the economically sound and science-based protection, management, and use of Louisiana's natural resources through peer-reviewed research, mentoring, ecologically sound habitat management, and informed public policy.

We're On The Web!!!

www.labiologists.org

Questions, Comments, or Suggestions?

Contact Any Member of Our Executive Board

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