LDWF Wild Turkey Program Overview/ Annual Report 2023

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Introduction/ History

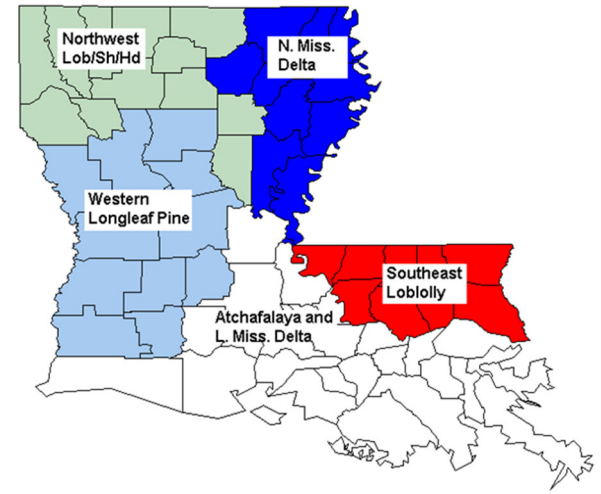
The eastern wild turkey (*Meleagris gallopavo silvestris*) is the largest game bird native to Louisiana. Prior to 1880, the wild turkey population in Louisiana was estimated to be as high as one million birds. However, by the turn of the century, the State's turkey population started a precipitous decline due to exploitation of our virgin forests as well as commercial, subsistence, and unregulated sport hunting. After World War II, Louisiana's wild turkey population was at its lowest point, only 14 isolated flocks totaling less than 1,500 wild turkeys remained throughout the State. In 1962, LDWF, with support from partners such as the National Wild Turkey Federation and private landowners, began trapping and releasing wild turkeys into suitable habitat to restore the population. Today, they are distributed across Louisiana and occupy most available habitat suitable for the species.

Approximately 10,000-25,000 hunters pursue wild turkeys each year. The challenge of balancing the needs of wild turkeys and those that hunt them throughout the State falls on the LDWF Wild Turkey Program. The purpose of this document is to provide an overview/summary of the LDWF Wild Turkey Program, summarize wild turkey population and harvest data, and detail some to the actions necessary to monitor and manage wild turkey populations.

Program Objectives

1) Manage and maintain sustainable wild turkey populations in suitable habitats across Louisiana
2) Provide a high level of technical assistance to hunters and land managers to manage wild turkeys and wild turkey habitat
3) Increase/Improve hunter education, extension outreach, and communications relative to hunting season regulations
4) Be responsive to public concerns and requests

Figure 1. Wild Turkey Management Regions



Population and Harvest Monitoring

Methods for monitoring wild turkey populations are limited compared to other popular game species. Turkeys leave very little consistent evidence of their presence within an area they are using. This makes techniques like browse surveys, used to assess white-tailed deer densities, ineffective. Aerial surveys, used to estimate waterfowl abundance, are also ineffective to sample turkey populations, as turkeys spend less time in open areas and are nearly impossible to detect under dense forest canopies. The most effective activities available for monitoring turkey populations are monitoring annual harvest and assessing annual recruitment/reproduction. Most states across the southeast, including Louisiana, use these two indicators to track population trends for wild turkeys.

Harvest

Wild turkey harvest is monitored using two separate methods in Louisiana; through the *Louisiana Big and Small Game Harvest Survey* (Harvest Survey) and via tag validation data/ reported harvest each year. The Harvest Survey is a mail survey sent out each year to a random subset of people who purchased hunting licenses. Information relative to the estimated number of turkey hunters and estimated turkey harvest dates back to 1980 in this survey. In 2009, LDWF implemented the tagging program for wild turkeys. This requirement offers a different way to track changes in turkey harvest based on the actual number of turkey tags that are validated/reported each year. Results of harvest tag reporting are summarized in a brief report each year. In addition, harvest can be looked at more closely and sorted by parish, management region, and week of the season as illustrated below. Although there are differences between the harvest estimates provided by each survey (likely the result of non-compliance/ reporting rate) the declining trend in turkey harvest in recent years is consistent between both surveys.

Table 1. Harvest survey estimates and validated harvest.

Year	Estimated Hunters	Estimated Harvest	No. Tags Validated
1980	10,800	3,500	*Mandatory Tagging and Harvest Validation Initiated 2009*
1981	12,000	3,900	
1982	15,700	5,700	
1983	17,600	7,800	
1984	15,600	7,800	
1985	19,700	6,500	
1986	16,100	6,100	
1987	16,300	10,100	
1988/89	---No Data---	---No Data---	
1990	21,200	10,900	
1991	19,000	9,400	
1992	21,900	9,900	
1993	22,300	11,100	
1994	18,700	9,000	
1995	20,400	9,400	
1996	20,800	8,000	
1997	20,700	11,200	
1998	20,500	9,200	
1999	19,000	8,000	
2000	19,000	8,300	
2001	21,900	9,000	
2002	25,000	10,900	
2003	25,800	9,000	
2004	*No data*		
2005	21,900	8,600	
2006	11,600	7,000	
2007	17,700	8,300	
2008	19400	8300	
2009	17500	5600	2,586
2010	14000	7000	2,221
2011	19100	7000	2,581
2012	25300	8700	2,043
2013	24500	5300	1,571
2014	24800	6100	1,693
2015	24500	5100	1,777
2016	21600	5800	1,750
2017	22500	6300	2,024
2018***	16900	3700	1,989
2019	14300	4200	1,844
2020	20000	5600	2,117
2021	19600	5500	1,886
2022	24200	9100	2,846
2023	24400	5000	2,833

Note: Harvest survey is based on 6% sample of hunting license holders.
Estimated hunter and harvest data from 2012 to 2020 has been updated from previous results to reflect an error in the number of Lifetime licenses used for calculations during that period.

*** Statewide turkey season delayed by 2 wks.

Figure 2. Estimated statewide turkey harvest based on the Harvest Survey

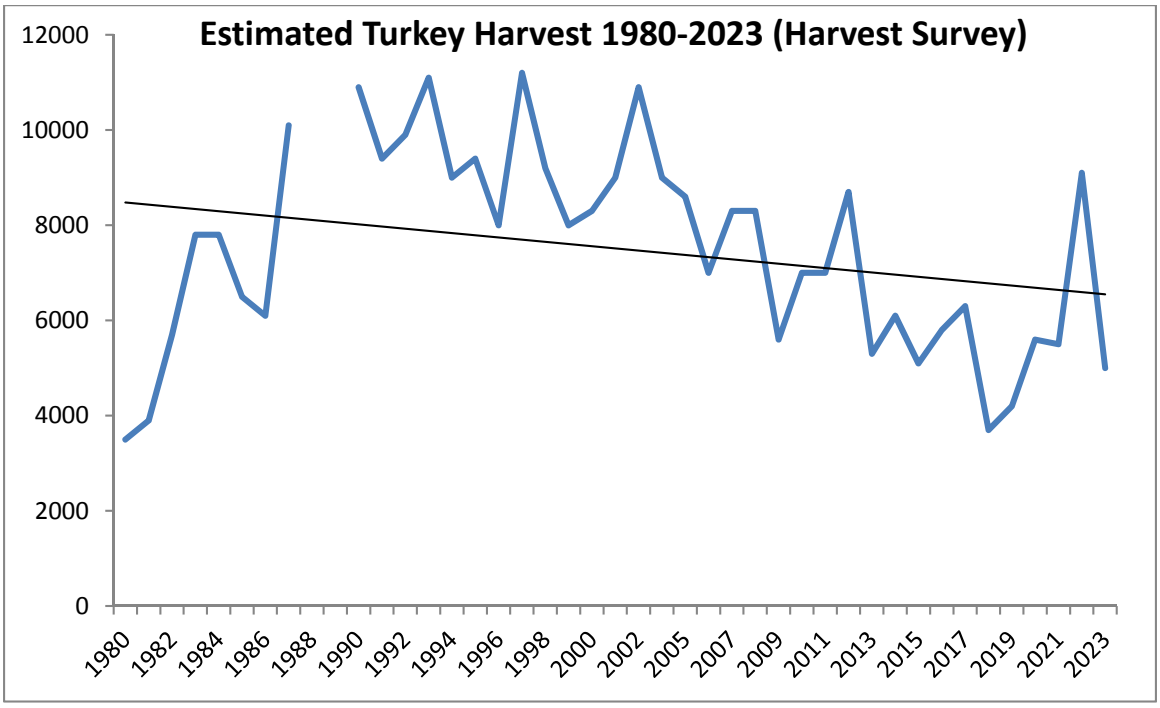


Figure 3. Estimated number of turkey hunters based on the Harvest Survey

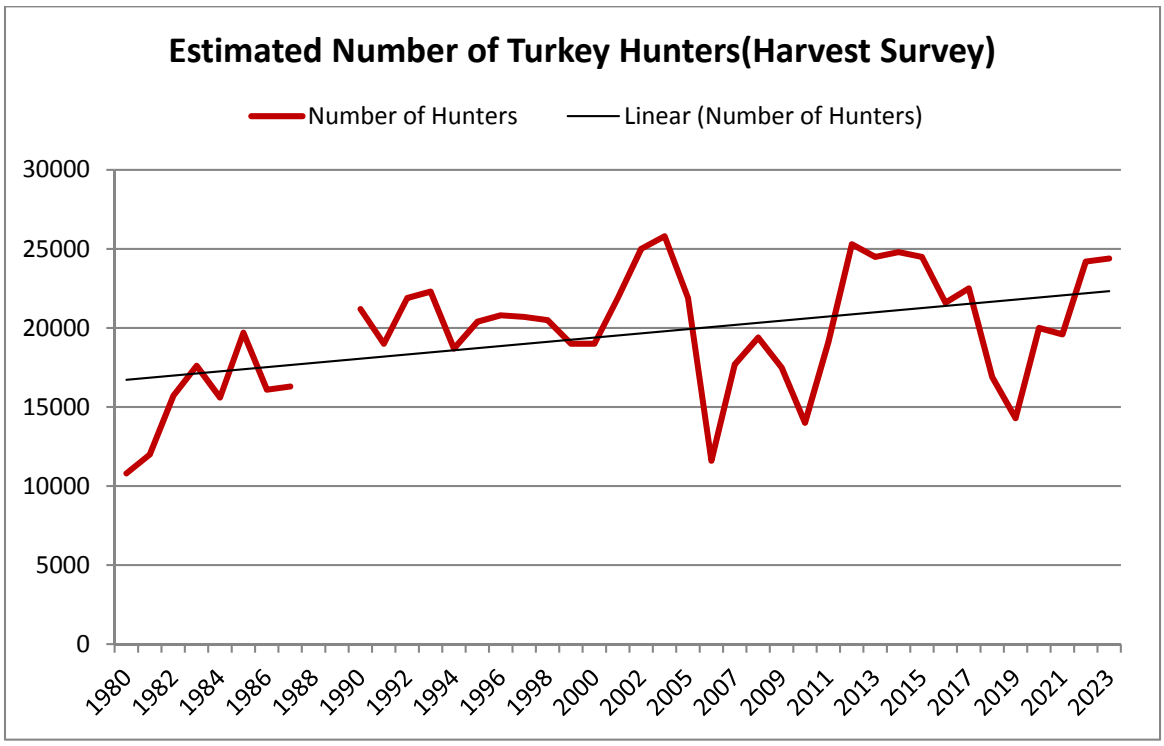


Figure 4. Validated/Reported turkey harvest.

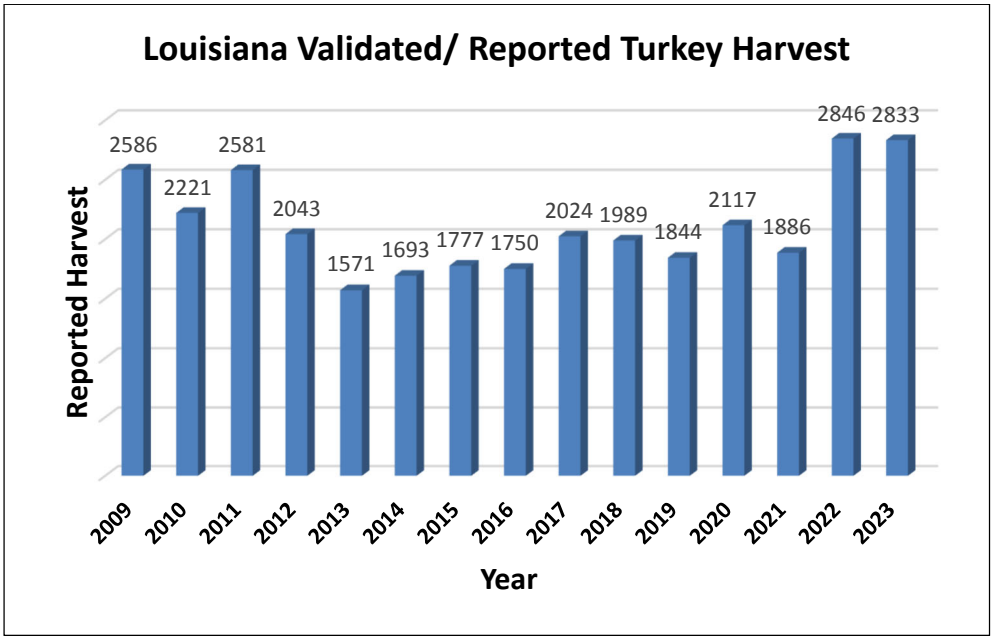


Figure 5. Validated/ Reported turkey harvest by Parish in 2023.

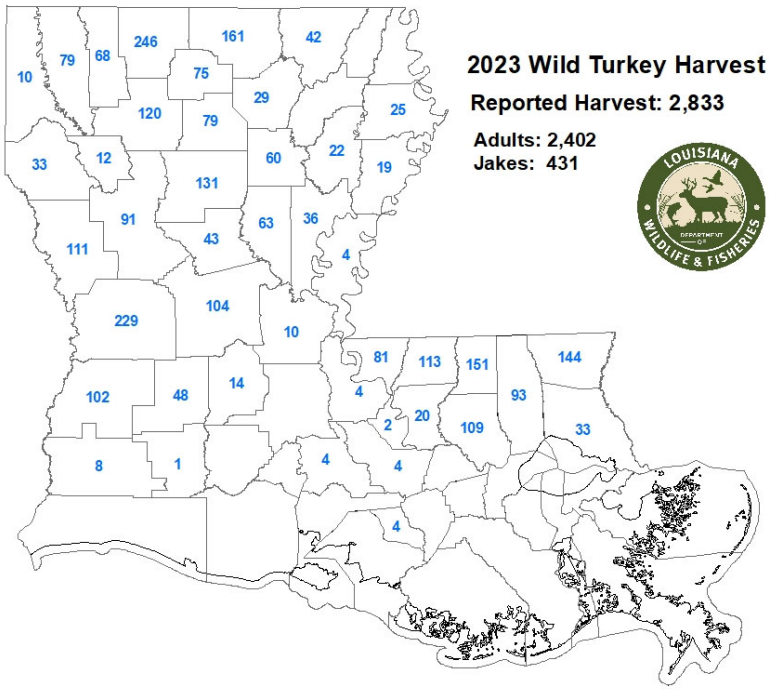


Figure 6. Turkey harvest comparison. Estimated harvest from havrest survey compared to the number of tags validated/ reported harvest.

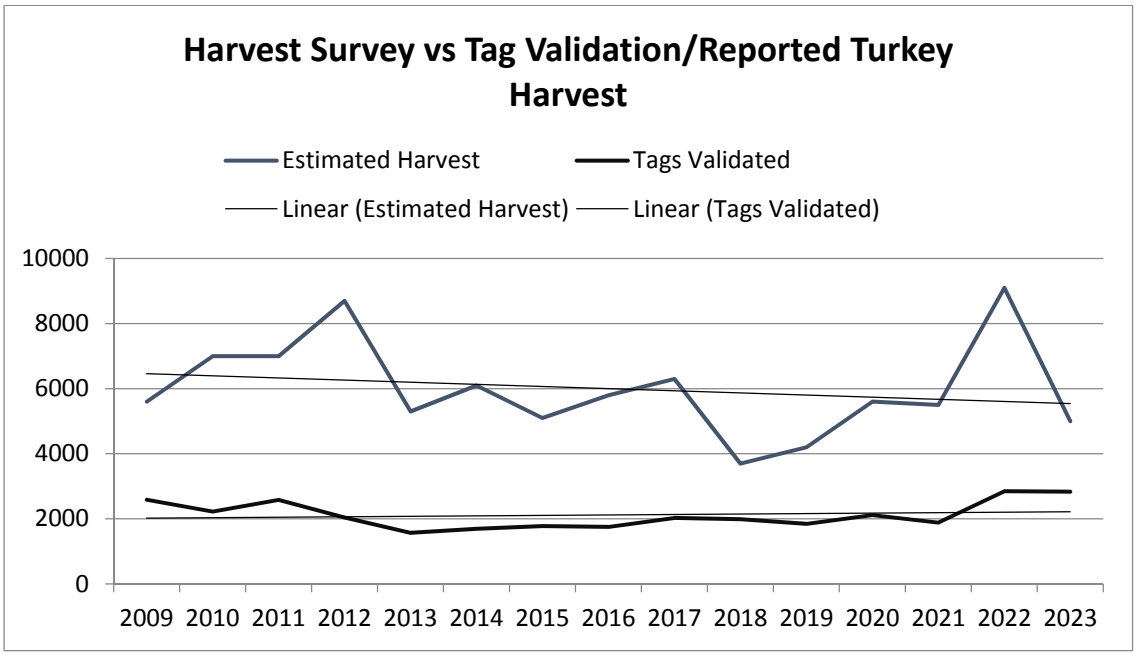


Figure 7. Validated/ reported turkey harvest by Wild Turkey Management Region.

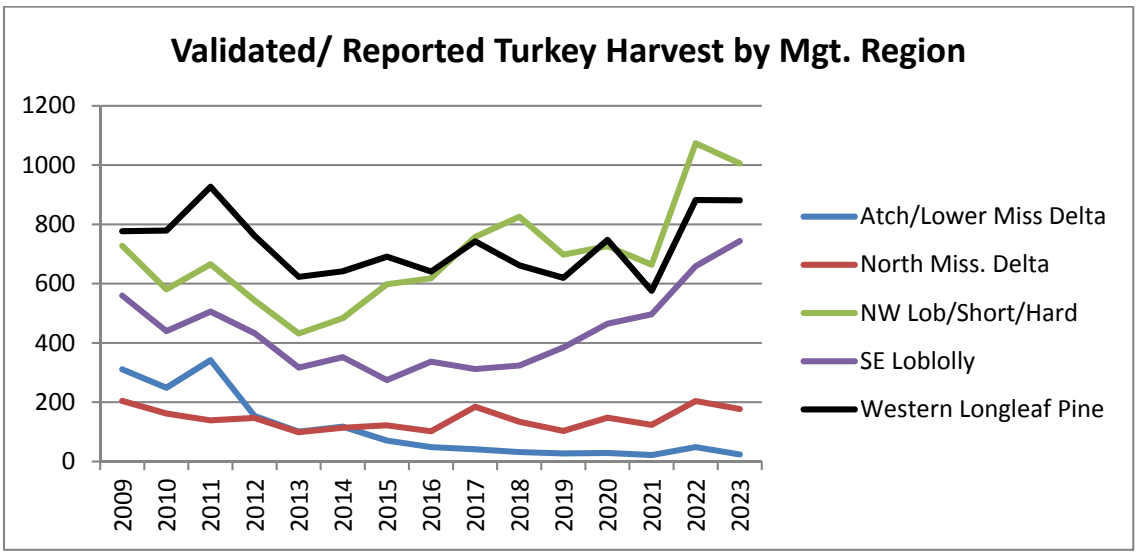
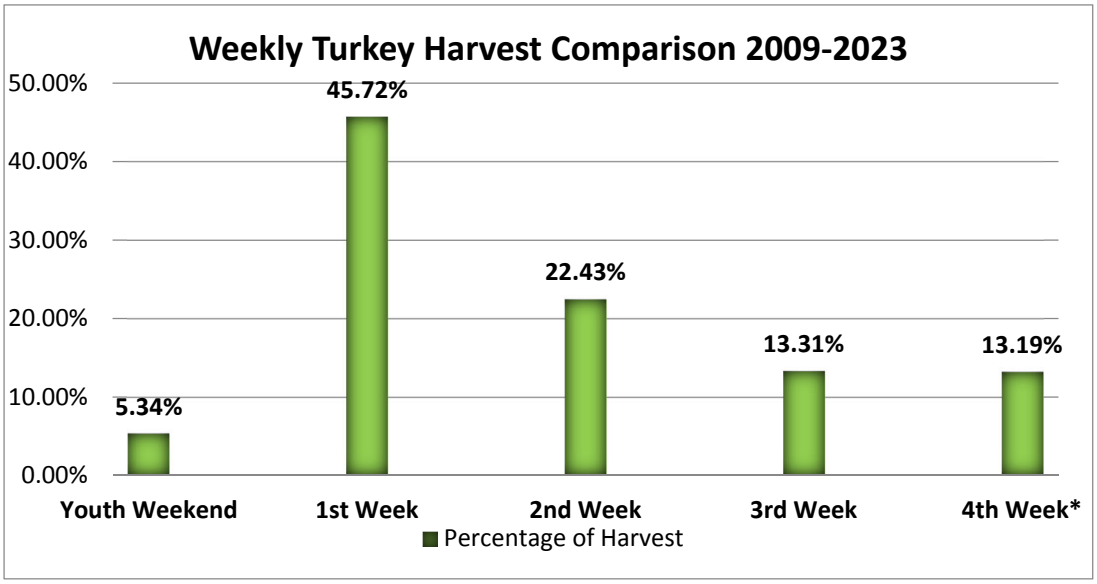


Figure 8. Turkey Harvest by week of the season 2009-2023.



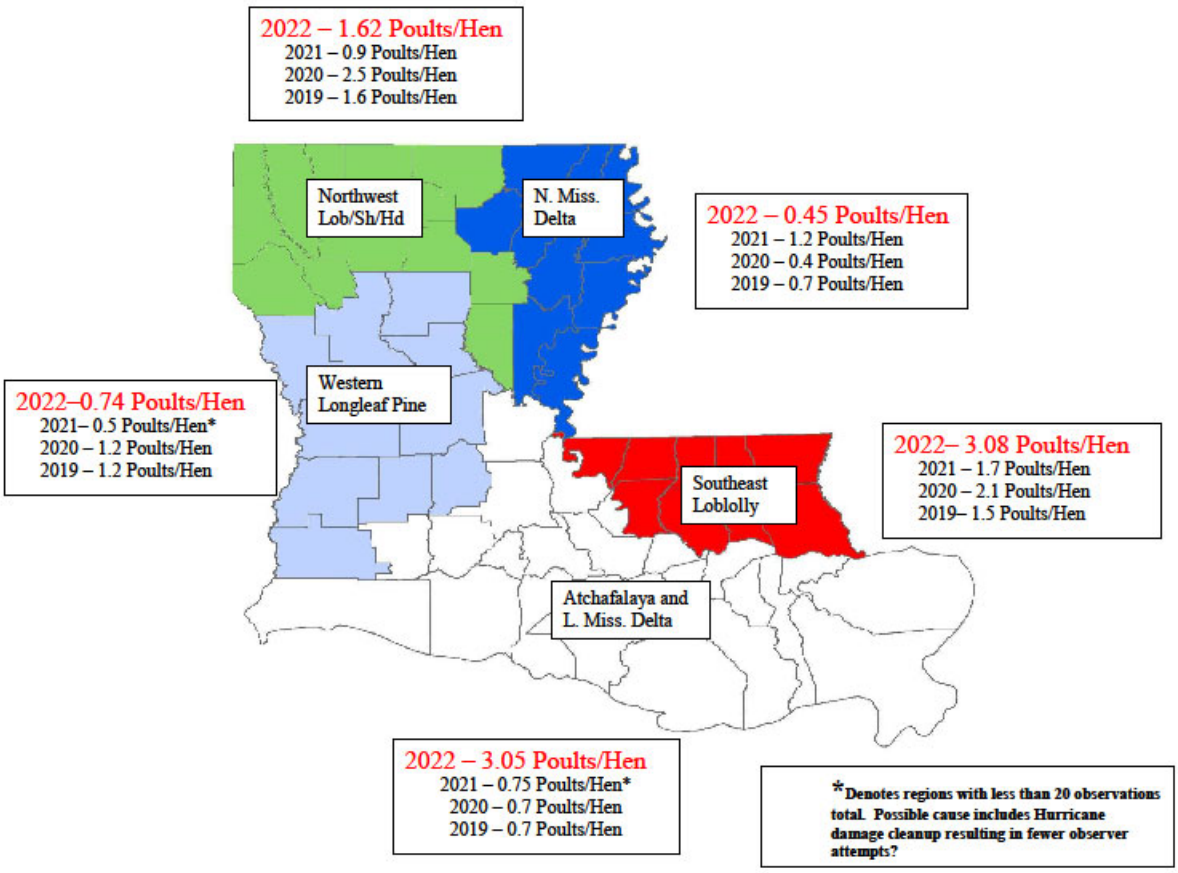
Reproduction/Recruitment

Numerous factors potentially influence wild turkey reproduction annually including the following:

- Environmental Factors
  - Average temperatures
  - Annual precipitation
- Habitat Quality
  - Nesting
  - Brood-rearing
  - Wintering
- Season timing/harvest

LDWF conducts a Wild Turkey Poult Production Survey each year throughout Louisiana to develop population indices and track population trends of wild turkeys. LDWF staff and other volunteers record turkey sightings every July and August to provide data for the Wild Turkey Poult Production Survey, which provides an assessment of reproduction/ recruitment each year. It is important to note that this survey is only an index to reproduction and not a population estimate. In addition, information on sex ratio can be obtained from the data set. The graphs below illustrate poult-per-hen(PPH) ratios for each wild turkey management region. There is significant variation in PPH ratios in all management regions and overall declining trends in all regions but one. The full Wild Turkey Poult Production Survey document is available upon request or on the LDWF website at https://www.wlf.louisiana.gov/page/turkey-research-and-management.

Figure 9. Wild Turkey Production indices for each Wild Turkey Management Region.



Wild Turkey Research

The LDWF Wild Turkey Program has been actively involved in wild turkey research for many years. LDWF conducts and sponsors a number of research projects to study population status, habitat needs, biology, harvest characteristics, and harvest rates. These include gobbling activity surveys, banding studies, and nesting ecology studies. From these studies, we have learned that:

- Turkeys are quite mobile—movements of more than 5 miles are common in contiguous habitat.
- In Louisiana, peak nest initiation for wild turkeys occurs during the first and second week of April.
- Gobbling activity generally increases until the start of hunting season, regardless of the start date (assuming start date is prior to late April).
- Harvest rates can be highly variable each year depending on the site, bag limit, and season length.

- Brood size is generally largest in the western longleaf region of the state.
- Adult gobblers typically make up more than 80% of the reported annual harvest.

In addition to in-State research projects, the LDWF Wild Turkey Program also participates in projects at a regional/ national level through involvement with the Southeastern Association of Fish and Wildlife Agencies' Wild Turkey Working Group.

Past Research Projects/Publications –Louisiana (last 15 years only)

- Reproductive Asynchrony Within Social Groups of Female Eastern Wild Turkeys-Urley et al. 2023
- Status and Distribution of Wild Turkeys in the United States in 2019- Chamberlin et al. 2022
- Recursive Movements of Eastern Wild Turkey Broods in the Southeastern US- Bakner et al. 2022
- Spatial Distribution of Potential Wild Turkey Nest Predators in west-Central Louisiana- Urley et al. 2022
- Nest Site Fidelity and Nesting Success of Female Wild Turkeys- Byrne et al. 2022
- Fine-scale Resource Selection and Behavioral tradeoffs of Eastern Wild Turkey Broods- Nelson et al. 2022
- Spatial Scale and Shape of Prescribed Fires Influence Use by Wild Turkeys- Sullivan et al. 2020
- Behavior and Movement of Wild Turkey Broods- Chamberlain et al. 2020
- Behavioral Strategies During Incubation Influence Nest and Female Survival of Wild Turkeys- Lohr et al. 2020
- Wild Turkey nest Success in Pine-Dominated Forests of the southeastern United States- Crawford et al. 2020
- Incubation Recess Behaviors Influence Nest Survival of Wild Turkeys- Bakner et al. 2019
- Spatiotemporal variability of fire characteristics affect animal responses in pyric landscapes- Cohen 2019
- Home Range Estimator Method and GPS Sampling Schedule Affect Habitat Selection Inferences for Wild Turkeys- Cohen 2018
- Establishing Opening Dates for Spring Wild Turkey Hunting Season- Southeastern Association of Fish and Wildlife Agencies- 2016
- Use of Pine-Dominated Forests by Female Eastern Wild Turkeys Immediately After Prescribed Fire- Yeldell et al. 2017
- Nest Site Selection and Nest Survival of Eastern Wild Turkeys in a Pyric Landscape- Yeldell et al. 2017
- Prescribed Fire Influences Habitat Selection of Female Eastern Wild Turkeys- Yeldell et al. 2017
- Do Movement Behaviors Identify reproductive Habitat Sampling for Wild Turkeys- Conley 2016
- Movements of Wild Turkey Hunters During Spring in Louisiana- Gross et al. 2015
- Space Use, Daily Movements, and Roosting Behavior of Male Wild Turkeys During Spring in Louisiana and Texas- Gross et al. 2015
- Space Use, Movements, and Habitat Selection of Translocated Eastern Wild Turkeys in Northwestern Louisiana- Cohen et al. 2015
- Survival and Recovery Rates on Male Wild Turkeys on Private Lands in North-Central Louisiana- Byrne et ala 2014
- Nesting Ecology of Wild Turkeys in a Bottomland Hardwood Forest- Byrne 2013
- Effects of Variable Spring Harvest Regimes on Annual Survival and Recovery Rates of Male Wild Turkeys in Southeast Louisiana- Chamberlin et al. 2012
- Seasonal Space Use and Habitat Selection of Female Wild Turkeys in a Louisiana Bottomland Forest- Byrne et al. 2011
- Wild Turkey Movements During Flooding After Opening of the Morganza Spillway, Louisiana- Chamberlin et al. 2011
- Seasonal Space Use and Habitat Selection of Adult Raccoons (*Procyon lotor*) in a Louisiana Bottomland Hardwood Forest- Byrne 2011
- Spatial Ecology and Survival of Male Wild Turkeys in a Bottomland Hardwood Forest- Grisham et al. 2008

Ongoing Research/ Publications

- Nesting Ecology/ Female Wild Turkey Movements/ Male Harvest Rates in Western LA- LDWF/LSU
- Male Harvest Rates in Kisatchie National Forest- LDWF/LSU
- Nesting Ecology/ Female Wild Turkey Movements/ Male Harvest Rates in Southeastern LA- LDWF/LSU

Hunting Seasons and Regulations

The LDWF Wild Turkey Program recommends turkey hunting seasons and regulations to the Louisiana Wildlife and Fisheries Commission based on results of population and habitat monitoring and research. Hunting season and regulation changes relative to wild turkeys must address 3 of the 5 criteria listed below to be considered:

1. Landscape scale or habitat issues affecting wild turkey populations
2. Harvest data trends
3. Staff recommendations supported by scientific data
4. Public support
5. Commission request

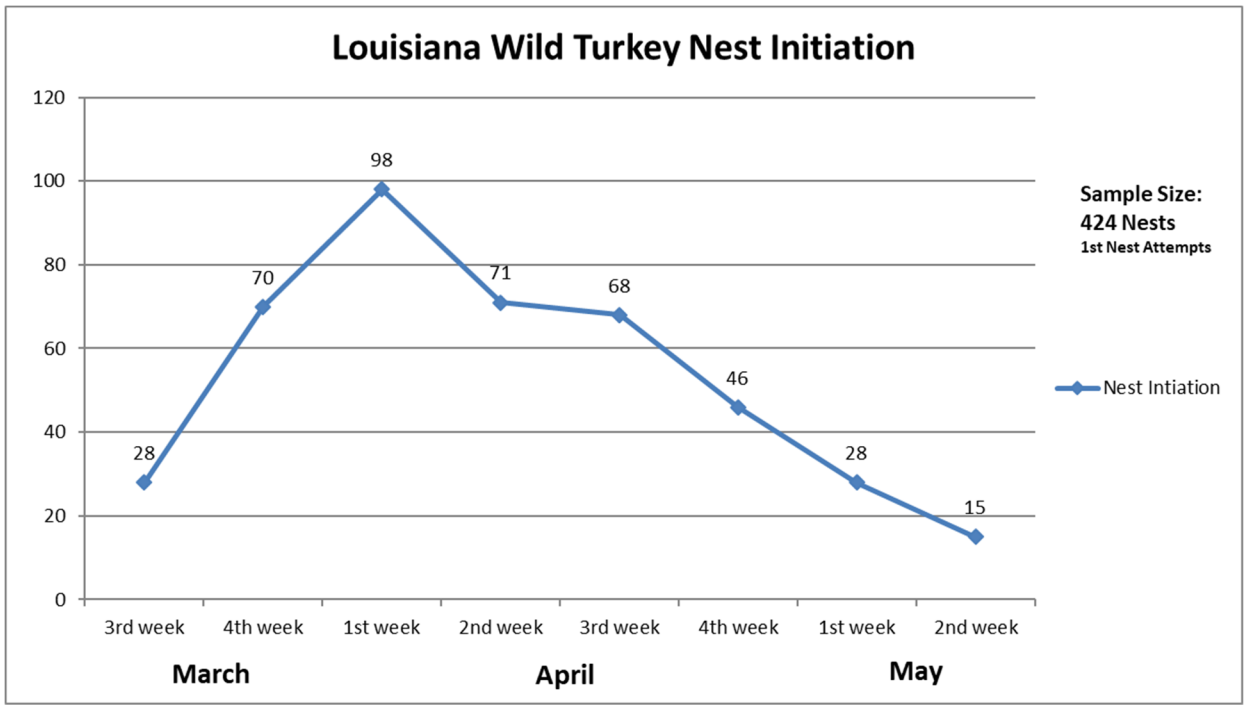
A recent example of a turkey season modification occurred in 2017 when the statewide opening date was changed in an attempt to increase and sustain turkey populations and harvest statewide. Declines in habitat quality as well as downward trends in turkey harvest have been observed throughout much of the state since the early 2000s. In-state research as well as other sources suggested early harvest of male wild turkeys could be contributing to these declines in addition to habitat quality issues. Based on this data, it was recommended that the statewide opening date for wild turkeys be delayed to allow opportunity for increased wild turkey breeding and production when coupled with favorable weather conditions and quality habitat during nesting and brood rearing periods. The data presented below along with harvest data shown in previous graphs support this decision.

Figure 10. Southeastern Association of Fish and Wildlife Agencies' recommendation.

SEAFWA – Establishing Opening Dates for Spring Wild Turkey Seasons Adopted 2016

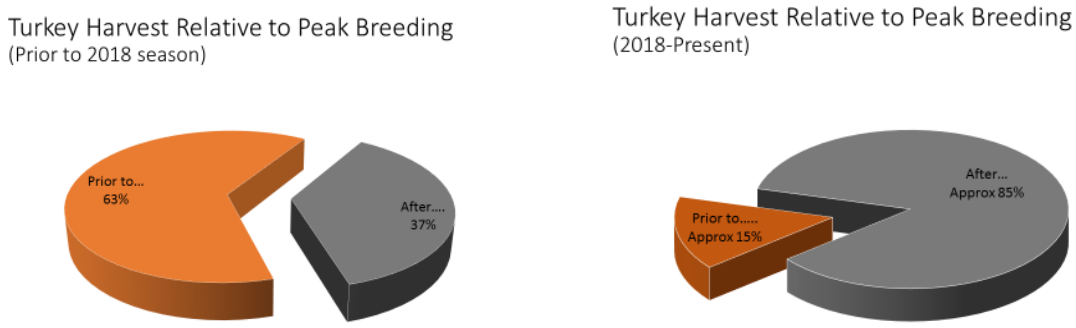
	POTENTIAL POSITIVE FACTORS	POTENTIAL NEGATIVE FACTORS	UNKNOWNS & RESEARCH NEEDS
LIBERAL FRAMEWORK *Opening date prior to peak egg-laying*	- Acknowledges hunter requests - Maximizes hunter opportunity - Encompasses all peaks in gobbling activity - Reduces inclement weather impacts on hunter success and satisfaction	- Population productivity may be reduced via: - Heightened risk of illegal hen kill - Excessive or selective gobbler mortality possibly impacting turkey reproduction	- Risk of illegal hen kill varies and should be assessed state by state - True impact of early-season gobbler mortality likely variable and currently unquantified
RECOMMENDED FRAMEWORK *Opening date concurrent with peak egg laying*	- Reduced risk of illegal hen kill - Diminished risk associated with excessive or selective gobbler mortality - Allows for hunter exposure to secondary peak in gobbling activity - Increased responsiveness of gobblers to hunter calls	- Hunters may miss early gobbling or first peak in gobbling - Requires shorter, more precisely timed frameworks - Some hens may still be at risk of illegal kill	Same as above, plus: - Uncertain effects on hunter satisfaction - Requires accurate knowledge of local nesting and gobbling chronology
CONSERVATIVE FRAMEWORK *Opening date concurrent or following peak nest-incubation*	- Minimized risk of illegal hen kill - Eliminates risks associated with excessive gobbler mortality – all gobblers have become a biologically unneeded surplus	- Occurs late in breeding season resulting in shortest season frameworks - Hunters may miss all gobbling peaks in some years - Warmer temperatures and advanced vegetation becomes problematic to hunters in southern latitudes - Likely requires significant outreach and education for continued hunter buy-in	- Uncertain effects on hunter satisfaction

Figure 11. Louisiana wild turkey nest initiation dates. Combined from Louisiana research projects.



Note: based on known turkey nests tracked with VHF/GPS transmitters from research projects across Louisiana in previous 12 years

Figure 12. Turkey harvest relative to nest initiation/peak breeding before and after regulation change.



In addition, effective in the 2020 Turkey season, the Louisiana Wildlife and Fisheries Commission adopted a season length reduction (30 days to 16 days) for parts of the Atchafalaya and Lower Mississippi Delta management region located in the following parishes: Avoyelles, Iberville, Upper St. Martin, St. Landry, Pointe Coupee, and West Baton Rouge. This change was implemented due to declines in turkey harvest/populations and low reproduction in recent years. It received support from LDWF staff, private landowners, and hunters.

Restocking

Restocking wild turkeys is a management strategy used to introduce birds into areas that have quality habitat but no source population of turkeys for population expansion. In 1962, LDWF began trapping and releasing wild turkeys into suitable habitat to restore the population. Since then, LDWF has released more than 3,913 turkeys in 45 parishes. Locating suitable wild turkey habitat for release sites has been key to the success of the turkey restocking program. Most areas in the State capable of supporting viable wild turkey populations have now been restocked.

Landowners and sportsmen periodically request LDWF to stock wild turkeys. We evaluate these requests according to the following criteria:

- Presence or absence of wild turkeys
- Distance from presently occupied turkey range
- Amount of suitable habitat at the release site
- Support and protection by local residents
- Land use trends
- Potential for expansion

Restocking applications are available upon request or on the LDWF website at https://www.wlf.louisiana.gov/page/turkey-research-and-management.

Habitat Improvement

As with many other wildlife species, quality habitat drives turkey populations. Managing quality habitat for wild turkeys requires a commitment to the resource and a knowledge of their biological requirements. LDWF uses a number of techniques to improve turkey habitat on wildlife management areas and offers technical assistance to interested landowners and managers to improve turkey habitat on public and private lands. Techniques include:

- Active forest management
- Enhancing forest and understory structure
- Managing vegetation (natural and planted) in open areas
- Prescribed burning (in pinelands)

Contact the LDWF Wild Turkey Program:

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