

PROJECT STATEMENT

STATE: DELAWARE

GRANT: W38R-11

GRANT TITLE: WILDIFE INVESTIGATIONS – WILD TURKEY

JOB SCHEDULE: OCTOBER 1, 2009 – SEPTEMBER 30, 2010



STATE: Delaware**GRANT NUMBER AND TITLE:**

W 38R – Wildlife Investigations: Wild Turkey

OBJECTIVE:

To restore and maintain wild turkey populations in all suitable habitat while maximizing recreational use of this resource.

JOB NUMBER AND TITLE:

Job 1. Wild Turkey Harvest Evaluation

JOB OBJECTIVE:

To monitor the annual wild turkey harvest and associated hunter effort and collect biological data from harvested birds.

ACTIVITY:

Delaware's 2010 spring turkey hunting season was 18 days long, running from 10 April to 30 April 2010. Private land hunters were allowed to hunt all 18 days of the season; public land hunters were selected through a preseason lottery to hunt one of three season segments, each six days long during the same 18-day period. These seasons ran from Saturday through the following Friday (no Sunday hunting). In 2010 a youth hunt was permitted on private lands and occurred on April 3. Mandatory check stations were set up to collect biological information from all harvested birds. Only bearded birds may be legally harvested.

TARGET DATE:

September 30, 2010

STATUS:

On schedule – per approved extension.

REMARKS:

In 2010, a new state record of 366 birds were taken, up 17% from the 2009 harvest of 312 birds, the previous state harvest record (Figure 1). Three turkeys (2 hens and 1 male) were illegally harvested and excluded from this analysis. Forty-three turkeys were taken on public

lands, most notably at Redden State Forest (SF) (n=10) and Norman G. Wilder Wildlife Area (WA) (n=7) (Table 1). During Delaware's first youth turkey hunt, 9 birds were harvested. For the purposes of harvest reporting, Delaware is divided into 4 management regions, comprised of 17 turkey harvest management zones (Figure 2). Reported harvest on both public and private lands was highest in zone 6, which accounted for 13% of the total harvest (Figure 3). Birds were harvested in all management regions, except the Northern region, comprised of zones 1A and 1B (formerly combined into Zone 1) and characterized by mostly suburban, urban and industrial development, including the cities of Wilmington and Newark. The Southern region accounted for 47% of the total harvest, followed by the Interior region (42%), and the Bayshore region (10%). Forty-four percent of the reported harvest occurred during first week of the season (Figure 4). Weeks two and three produced the remaining 31% and 22% of the reported harvest, respectively (Figure 4). This temporal harvest pattern has been relatively consistent in recent years. Adult gobblers comprised 66% of the male harvest, the same harvest composition as observed during the 2009 season. The average live-weight of adult gobblers was 20.2 lbs, with the largest bird weighing 24.75 lbs.

RECOMMENDATIONS:

This job should be continued, especially since the harvest of turkeys in Delaware continues to increase significantly with record harvests occurring in each of the last six seasons.

PREPARED BY:

Matthew DiBona
Gamebird biologist

REVIEWED BY:

Rob Hossler
Program Manager – Game Species

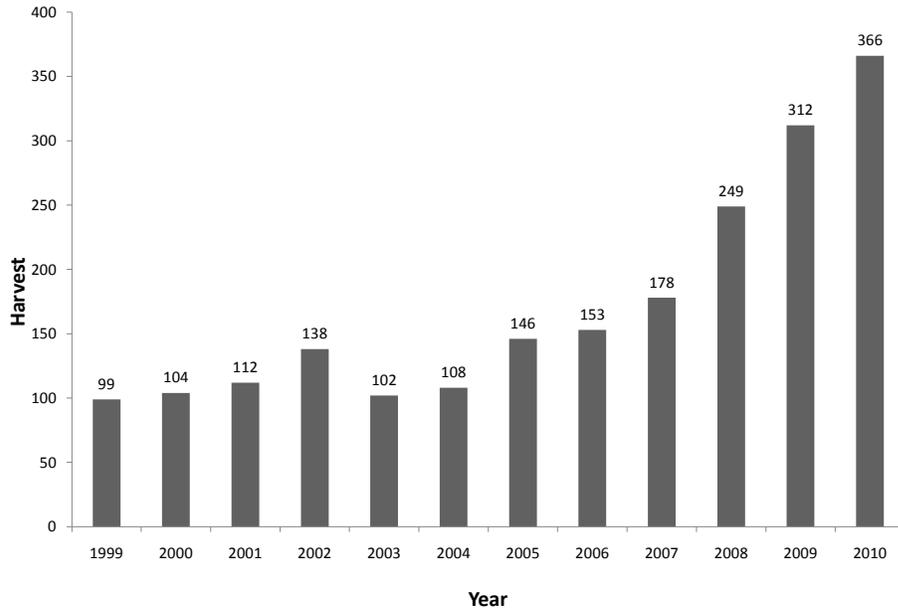


Figure 1. Annual harvest of wild turkeys in Delaware.

Table 1. Harvest distribution among public lands hunted during the 2010 Delaware spring turkey season.

Area	Harvest
Assawoman WA	0
Blackbird Reserve	1
Blackbird SF	2
Blackiston WA	5
Cedar Swamp WA	0
Little Creek WA	4
Marshy Hope WA	1
Midlands WA	4
Milford Neck WA	0
Nanticoke WA	2
Norman G. Wilder WA	7
Old Furnace WA	2
Prime Hook WA	0
Redden SF	10
Taber SF	2
Ted Harvey CA/Logan Lane Tract	0
Ted Harvey CA/Buckaloo Tract	0
Urban/Fortney Tracts	2
Woodland Beach WA	1
Total	43

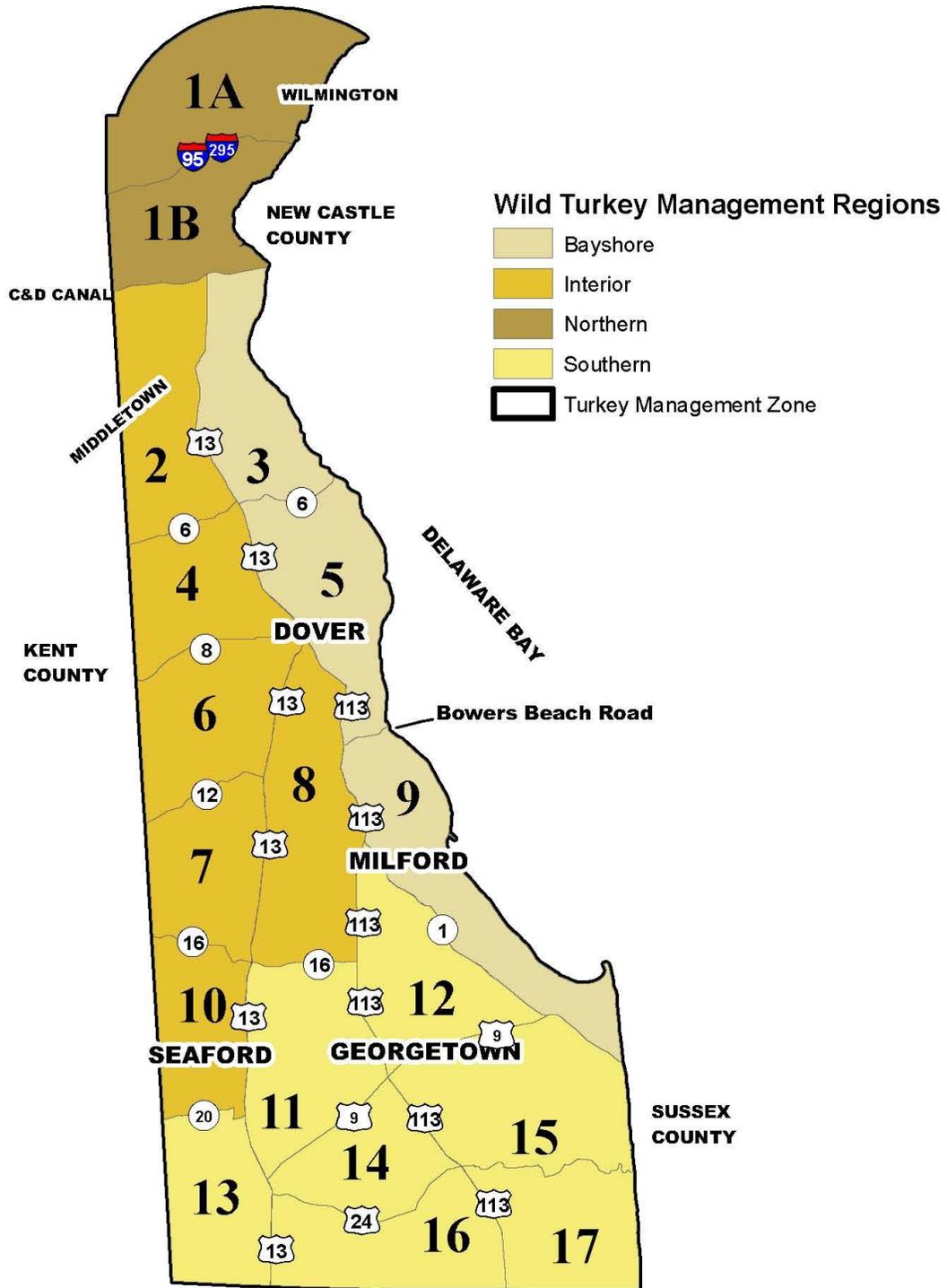


Figure 2. Wild turkey management regions in Delaware

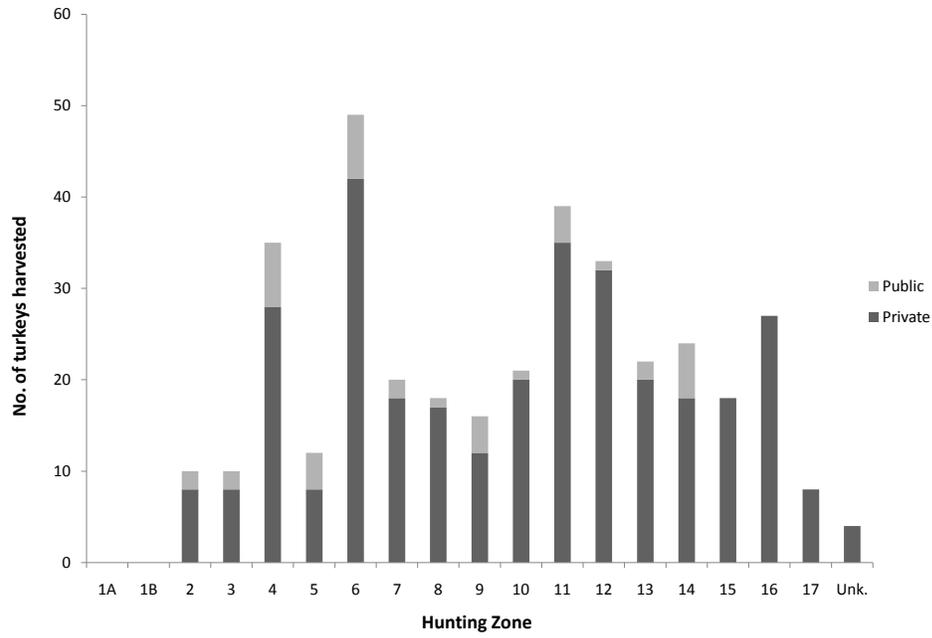


Figure 3. Spring 2010 Delaware turkey harvest on public and private lands by hunting zone.

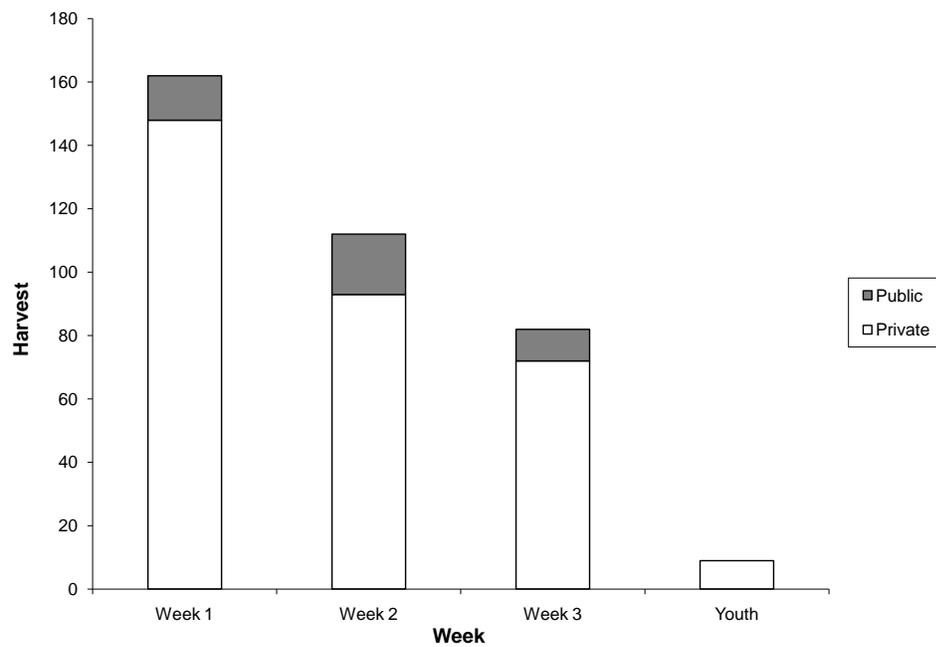


Figure 4. Spring 2010 turkey harvest by week on public and private lands.

STATE: Delaware

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JOB NUMBER AND TITLE:

Job 2. Acquisition and Release of Wild Turkeys

JOB OBJECTIVE:

To locate suitable release sites for wild turkeys in Delaware and to acquire and release a minimum of 15 birds at each location.

ACTIVITY:

No activity

TARGET DATE:

September 30, 2010

STATUS:

N/A

REMARKS:

None

RECOMMENDATIONS:

None

PREPARED BY:

Matthew DiBona, Gamebird Biologist

STATE: Delaware

GRANT NUMBER AND TITLE:

W 38R – Wildlife Investigations: Wild Turkey

OBJECTIVE:

To restore and maintain wild turkey populations in all suitable habitat while maximizing recreational use of this resource.

JOB NUMBER AND TITLE:

Job 3. Wild turkey abundance, distribution, reproductive success and habitat use.

JOB OBJECTIVE:

To evaluate wild turkey distribution, flock sizes, brood numbers and sizes and general habitat use.

ACTIVITY:

No Activity

TARGET DATE:

September 30, 2010

STATUS:

No activity

REMARKS:

None

RECOMMENDATIONS:

None

PREPARED BY:

Matthew DiBona, Gamebird Biologist

STATE: Delaware

GRANT NUMBER AND TITLE:

W 38R – Wildlife Investigations: Wild Turkey

OBJECTIVE:

To restore and maintain wild turkey populations in all suitable habitat while maximizing recreational use of this resource.

JOB NUMBER AND TITLE:

Job 4. Wild turkey abundance, distribution, reproductive success and habitat use.

JOB OBJECTIVE:

To evaluate the reproductive ecology, habitat use, and survival of wild turkeys in Delaware

ACTIVITY:

Turkey movements and nests were monitored to determine the reproductive ecology of wild turkeys on the Delmarva Peninsula, specifically Sussex County, Delaware. Our specific objectives are to determine nesting success, clutch size and determine adult hen and poult survival.

We trapped turkeys between December 15 2009 and March 15 2010, capturing 62 birds. All captured birds received leg bands and we equipped 36 hens with transmitters. We started monitoring movements 14 days after capture. From December 22 to August 31, we collected 2,156 locations on radio marked hens. To date, we have documented 18 mortalities (14 fox, 2 owl, 1 illegal harvest, and 1 unknown) with most mortality (94%) being associated with predation. As of August 31, we had 13 hens still alive with 5 birds missing. Four of the missing 5 birds are juveniles, which we believed dispersed from the study area. We believe the final missing bird is the result of transmitter failure. We plan to look for all 5 when we conduct aerial telemetry next Spring.

We documented 25 hens (15 on private land and 10 on public land) nesting this year, but only 8 (6 on private land and 2 on public land) had successful nests. Of the hens that nested, 22 were adults and 3 were juveniles at time of capture. We observed a 50% mortality of the broods with one lost due to predation of the hen and 3 by unknown causes. We still had 4 broods alive as of 31 August 2010. The nest initiation dates ranged from April 23 to June 17 with most (80%) occurring the first week of May. The hatching dates ranged from June 1 to June 15 with most (88%) hatching occurring during the first week of June. We were able to locate eggs for 15 of the 25 nests. We documented 101 eggs in these nests. Unknown predators destroyed 38 of these eggs and 63 eggs hatched. The average clutch size was 8.4 eggs (range = 4-14).

TARGET DATE:

September 30, 2010

STATUS:

On schedule – per approved extension. Additionally, because the project began a year late, we will need to extend the project by a least one year into another grant segment.

REMARKS:

We are still collecting poult data, but we have encountered issues estimating the number of poults and survival of those poults. The actual poult counts are skewed by multiple hens rearing broods together so we are using an index of individual poults per hen. We will proceed with trapping starting in the beginning of December and continue through March. We will attach transmitters to an additional 30 birds for the upcoming nesting season.

RECOMMENDATIONS:

This job should be continued

PREPARED BY:

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University of Delaware

REVIEWED BY:

Rob Hossler
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Delaware Division of Fish and Wildlife

GRANT NUMBER AND TITLE:

W 38R – Wildlife Investigations: Wild Turkey

OBJECTIVE:

To restore and maintain wild turkey populations in all suitable habitat while maximizing recreational use of this resource.

JOB NUMBER AND TITLE:

Job 5. Wild Turkey Genetics

JOB OBJECTIVE:

To evaluate the genetic diversity of the wild turkey population in Delaware.

ACTIVITY:

During this reporting period the Delaware State University graduate student has continued to extract DNA and running PCRs on both the wild turkey samples and the domestic turkey samples. The plan is to have all of the data analyzed by late April 2010 and to defend her thesis by August of 2011.

TARGET DATE:

September 30, 2010

STATUS:

On schedule- per approved extension.

REMARKS:

The graduate student was able to collect 46 genetic samples from Division-operated check stations in 2008 and 77 samples in 2009. She has also received genetic samples from cooperating state agencies in the northeast to conduct comparative genetic analyses between Delaware turkeys and birds from source stock states that originally donated turkeys to Delaware during restoration activities in the 1980s and 1990s. Tentative analyses will include spatial and temporal comparisons of genetic structure and diversity of the Delaware turkey population, including comparisons among samples collected in each county and by year. Samples will also be tested for hybridization with domestic turkey stock. Source stock comparisons will examine genetic structure and diversity between source states and the Delaware turkey population.

RECOMMENDATIONS:

This job should be continued

PREPARED BY:

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REVIEWED BY:

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