

PERFORMANCE REPORT

State: New Hampshire **Grant:** F20AF11939

Grant Type: Survey and Inventory

Grant Title: NH – WILDLIFE RESEARCH AND MANAGEMENT (W-89-R-21)

Period Covered: July 1, 2022 – June 30, 2023

Purpose/Target Name: PROJECT 4 – WILD TURKEY RESEARCH AND MANAGEMENT

Objective Name: JOB 1 – HARVEST MORTALITY DATA COLLECTION, ENTRY AND ANALYSIS

Objective Statement: To annually collect and analyze spring and fall turkey season harvest data and to assess population status in relationship to population objectives.

Summary:

2022 Fall Turkey Season

The combined fall archery (303 turkeys) and fall shotgun (502 turkeys) season total of 805 turkeys was an increase compared to the fall 2021 harvest when 584 turkeys were reported. Spring 2022 was the fourth year that hunters were allowed to harvest a second bird in the spring. Hunters that did not harvest a second bird during the spring were able to use their second tag and harvest a bird during fall. The fall 2022 harvest ratio resulted in 389 females (48.3%) and 416 males (51.7%) being harvested.

2023 Spring Turkey Season

The May 2023 Spring Season total of 5,580 turkeys was comprised of 9 (0.2%) bearded hens, 1,410 jakes (25.3%), and 4,161 toms (74.5%:Fig.1). This included youth weekend which registered 483 turkeys or 8.7% of the season total.

The May 2023 harvest was similar (-2.5%) to the record spring harvest (5,725) achieved in 2022. This was the fifth year that hunters could harvest a second bird in certain Wildlife Management Units (WMU). A total of 1,054 hunters registered two birds in spring 2023 which was very similar to the preceding year when 1,116 hunters harvested two birds in spring. Spring harvest this past May represented the fifth consecutive year that the spring harvest has exceeded 5,000 birds which was likely attributed to a combination of factors including 1) the rule change that took place in 2019 allowing two birds to be harvested in designated WMUs, 2) increased hunting participation since the COVID pandemic in 2020, and 3) ideal weather during the nesting and brood rearing period resulting in greater recruitment.

Target Date: June 30th annually 2021 – 2025.

Status of Progress: On schedule.

Significant Deviations: None.

Objective Approach: Approximately 60 turkey registration stations will be established throughout the state. Required registration report forms, related supplies, turkey seals and instruction will be organized and provided to stations prior to the onset of spring and fall seasons. Registration stations will be visited periodically throughout established seasons, to ensure registration procedures are followed and to gather completed data for submission to data-entry staff. Data will be verified and entered on an on-going basis throughout each season. Turkeys will be aged and sexed by plumage, beard, spur and weight characteristics. Registration station personnel will be provided with guidelines for distinguishing age and sex classes. Algorithms will be run during analysis to verify that accurate sexing and aging has occurred. Questionable data will be reviewed and adjusted as necessary.

by the project leader. Computerized harvest data will be analyzed to provide summaries of kill by WMU, age and sex. Spring gobbler kill per square mile of identified turkey habitat in each WMU will serve as the principal population index. The spring gobbler kill per permit issued will be monitored to assess possible changes in hunter efficiency, which could result from changes in turkey abundance or hunting pressure. The population index will be contrasted against established objectives to assess whether season adjustments are warranted. Harvest data will also be used to monitor long-term population trends. Each year's data will be entered into a comprehensive historic turkey data set.

Results:

2022 Fall Turkey Season

The combined archery and shotgun harvest for fall 2022 was 805 turkeys which was an increase from 584 the year before. Hunters that did not harvest a second bird during spring were able to use their second tag to harvest a bird during fall. The 2022 fall harvest sex ratio was nearly equal with 389 females (48.3%) to 416 males (51.7%; Table 1).

2022 Fall Archery Season

Of the 805 turkeys taken during fall 2022, 303 (37.6%) were taken by archery including 114 adult females (37.6%), 17 immature females (5.6%), 142 adult males (46.9%), and 30 immature males (9.9%). The WMUs with the highest take for fall archery were J2 (43), M (38), and G (35). These three units were among the highest for the fall archery season the previous year as well (Table 2).

2022 Fall Shotgun Season

Of the 805 turkeys taken during fall 2022, 502 (62.4%) were taken by shotgun including 223 adult females (44.4%), 35 immature females (7.0%), 192 adult males (38.2%), and 52 immature males (10.4%). The WMUs with the highest take for fall shotgun were J2 (77), K (59), and G (58). Wildlife management units J2 and K were the highest the previous year as well (Table 3).

The fall shotgun season runs for 7 days during the month of October starting on a Monday and ending the following Sunday. Most turkeys were taken on opening day (132) followed by the last day (82; Table 4).

2023 Spring Turkey Season

Youth Weekend

The special youth weekend hunt took place the weekend prior to the start of the 2023 regular season and resulted in 483 turkeys harvested, representing 8.7% of the season total. In comparison, last year's youth hunt took 428 turkeys (7.5%). Previous years youth hunts included 542 (10% of total spring harvest) in 2021 and 500 (8.74%) in 2020. The number of youth under the age of 16 harvesting two birds remains somewhat consistent. This year, 86 minors harvested two birds during the spring season compared to 73 and 79 during the previous two years, respectively.

Turkey Harvest by Day of Spring Season

Opening day occurred on a rainy Monday and resulted in 588 male turkeys harvested, or 10.6% of the season total. This was down compared to last year's opening day when 1,293 (22.7%) birds were harvested but similar to the previous years (13.0%).

As in previous years, harvest rates were highest early in the month and lessened towards the end of the month. This year, the first week (May 1-7) resulted in 2,760 (49.5%) of the total harvest being taken. The second week (May 8-14) resulted in 1,169 (21.0%), week three (May 15-21) resulted in 627 (11.3%), and week four (May 22-27) resulted in 393 (7.1%) of the total spring harvest. The final three days of the season, Memorial Day weekend (May 29-31) resulted in 139 (2.5%) of the total spring harvest including 39 birds taken on the last day (Table 5).

Harvest by Age

Statewide male harvest was comprised of 1,410 jakes (25.3%) and 4,161 toms (74.7%) for a juvenile to adult gobbler harvest ratio of 0.34 jakes to 1.00 toms) which was below the recent average of 0.43 (Table 6).

The five age categories of gobblers during 2023 were comprised primarily of 2 and 3 year old birds again this year (35.9% and 27.7%, respectively). Jakes comprised 25.3% of the take and 4 and 5 year old birds made up a combined 11.1%. (Table 7). Older aged toms make up a small proportion of the New Hampshire turkey population. A total of 94 (1.7%) toms were registered that had long spurs indicating an age of 5 years or older. This is almost identical to last year when 84 (1.5%) of registered birds were aged at 5 years or more and is down slightly from the previous year with 109 (2%) 5+ year old birds registered in 2021.

Male Harvest by WMU During Spring Season

The statewide harvest of gobblers was similar (-2.3%) during 2022 and 2023 (Table 8). The WMUs that saw the largest changes in harvest this spring were Units J2, K and L. All of these units were down this year compared to last. Unit J2 was down 59 birds compared to last year, Unit K was down 47 birds and Unit L was down 48 birds. The WMUs with least amount of change were Unit C1, C2 and E. Unit C1 was up by 4 birds, Unit C2 was down by 7 birds and Unit E was down by 5 birds. Out of the 18 units statewide, half 9 had increased and 9 had decreased harvest (Table 8).

A total of 4,526 hunters were successful at harvesting a turkey this spring which is down from 4,606 last year but an increase from 4,442 in 2021. Among this year's successful hunters, 3,472 (76.7%) registered one bird and 1,054 (23.3%) registered two birds. In comparison, 1,116 and 956 hunters harvested 2 birds in 2022 and 2021, respectively. Out of the 1,054 hunters who harvested two birds in 2023, 968 were adults and 86 were minors under the age of 16.

Harvest Comparison by KPSM by WMU

The state average for all 18 WMUs in 2023 was 0.77 gobblers killed per square mile (Fig. 2) and was nearly identical to last year (0.78 gobblers killed per square mile).

For the fifth year in a row, unit J1 (0.50) was at or below the threshold of 0.50 gobbler kill per square mile recommended to allow for a fall shotgun season. A rule change was made during spring 2023 to remove the fall shotgun season in Unit J1. Unit G had also been just below the threshold for several years and was being monitored, however it has started to show an upward trend with 0.58 and 0.60 KPSM last year over the past two years. Unit I1 has been above the 0.75 KPSM threshold set to liberalize the season for four consecutive years and had a recent KPSM of 0.83. It was decided to liberalize this Unit to allow two birds in the spring season starting in 2024. Wildlife Management Units H1 (1.52 KPSM), H2 (1.04 KPSM), J2 (1.28 KPSM), K (1.14 KPSM), L (1.19 KPSM), and M (1.10) all continue to have KPSM greater than 1.0 and continue to have the most liberal hunting season strategies in place (Table 9). The number of towns that had a harvest of 1.0 or more KPSM was down this year with 73 towns compared to 84 last year but similar to 71 in 2021 (Table 10).

Towns with Greatest Turkey Harvest

The towns with the most harvest were: Claremont (79), Alton (77), Plainfield (72), Concord (70), Westmoreland (69), Loudon (68), Gilmanton (67), Newport (67), Cornish (64), and Belmont (62). Of these top 10 towns, 7 were also in the top 10 last year. Gilmanton was also one of the transplant towns during the 1970s-1990s when turkeys were being translocated. The town of Weare, which is also one of the original transplant towns continued to be among those towns with 50 or more birds registered again this year (Table 11).

Online vs. In-person Registration Stations

Online registration was implemented during spring 2020 in response to the COVID-19 and the uncertainty whether or not traditional registration stations would remain open and able to register turkeys. This past year was the fourth year that an online registration option was made available to hunters. Hunter feedback has been positive therefore online registration has remained an option since 2020.

During spring 2023, a total of 3,019 (54.1%) successful hunters opted for the online registration while 2,561 (45.9%) registered turkeys in person at a physical check station. In comparison, during spring 2022, a total of 2,739 (48.0%) hunters registered online while 2,962 (52.0%) registered their turkeys in person (Table 12).

There were 48 active registration stations throughout the state during spring 2023. This was almost identical to the 49 stations last year but down slightly from 53 stations in 2021. Of the 48 active stations, 9 stores registered 100 or more turkeys (Table 13). The three busiest stations included Morse Sporting Goods in Hillsborough (193), Wildlife Sport Outfitters (187) in Manchester, and Drewsville General Store in Walpole (181)..

Turkey Measurements

Heavy gobblers were numerous during the May 2023 season (Table 14). The heaviest were: 28.3, 26.5, 26.3, and 26.0 (3 birds). There were 20 birds registered weighing 25 pounds or more compared to 27 last year and 12 in 2021. The longest beard was 11.75 inches and the longest spurs were 2.0 and 1.5 inches.

Conclusions:

1. The fall 2022 harvest of 805 turkeys was 14.1% of the spring 2022 harvest of 5,725 turkeys. It is generally desired that the fall harvest not be greater than 20% of the spring harvest.
2. The 2023 spring harvest of 5,580 birds was consistent with the spring 2022 harvest of 5,725 with a difference of 145 birds (-2.5%). The total spring harvest has remained above 5,000 for five consecutive years since the 2 birds in the spring option was implemented.
3. For the fifth consecutive spring hunting season, J1 continued to be at, or below the 0.50 gobbler kill per square mile criteria for a unit to allow a fall shotgun season. Unit G which had also been below the threshold in recent years experienced an increase in 2022. Unit I1 had a KPSM of 0.83 this year making this four consecutive years of exceeding the 0.75 KPSM threshold set to consider liberalizing the hunting strategy for that unit.
4. Spring 2023 was the fourth year that an online registration option was available to hunters. Again this year registration methods were nearly split with 54.1% of successful turkey hunters using the online registration and 45.9% going to a physical station to register their harvest in person.
5. Spring 2023 was the fifth year that hunters had the option to harvest two birds in designated wildlife management units. This year 1,054 (23.3%) of successful hunters harvested two birds in the spring.
6. A total of 4,526 hunters were successful at harvesting a turkey this spring which is down from 4,606 last year but an increase from 4,442 in 2021.

Custom Qualitative Indicator/Output: Spring and fall harvest data have been collected, entered and analyzed. Population status in relationship to population objectives has been assessed.

Recommendations: Continue this job as planned.

Submitted by: _____

Allison Keating
Turkey Project Leader
July 2023

Table 1. Fall 2022 combined turkey harvest for archery and shotgun seasons by Wildlife Management Unit.

WMU	HEN	MALE	TOTAL
A	0	4	4
B	1	3	4
C1	0	2	2
C2	0	2	2
D1	3	4	7
D2	37	34	71
E	2	2	4
F	1	6	7
G	47	46	93
H1	34	28	62
H2	38	42	80
I1	22	28	50
I2	23	25	48
J1	24	18	42
J2	62	58	120
K	36	53	89
L	33	34	67
M	26	27	53
Totals	389	416	805
Percents	48.3%	51.7%	

Table 2. Fall 2022 turkey archery harvest by Wildlife Management Unit.

WMU	ADULT HEN	IMMATURE HEN	JAKE	TOM	TOTAL
A	0	0	0	4	4
B	1	0	0	3	4
C1	0	0	0	2	2
C2	0	0	0	2	2
D1	3	0	0	4	7
D2	3	1	5	7	16
E	2	0	0	2	4
F	1	0	1	5	7
G	15	4	0	16	35
H1	2	3	0	3	8
H2	7	1	3	15	26
I1	3	0	1	5	9
I2	8	0	0	10	18
J1	7	0	1	10	18
J2	23	2	7	11	43
K	11	2	3	14	30
L	13	3	5	11	32
M	15	1	4	18	38
TOTALS	114	17	30	142	303
PERCENTS	37.6%	5.6%	9.9%	46.9%	

Table 3. Fall 2022 turkey shotgun harvest by Wildlife Management Unit.

WMU	ADULT HEN	IMMATURE HEN	JAKE	TOM	TOTALS
A	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED
B	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED
C1	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED
C2	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED
D1	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED
D2	24	9	5	17	55
E	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED
F	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED
G	27	1	5	25	58
H1	24	5	8	17	54
H2	29	1	4	20	54
I1	16	3	4	18	41
I2	14	1	3	12	30
J1	11	6	1	6	24
J2	32	5	9	31	77
K	19	4	7	29	59
L	17	0	5	13	35
M	10	0	1	4	15
TOTALS	223	35	52	192	502
PERCENTS	44.4%	7.0%	10.4%	38.2%	

Table 4. Fall 2022 fall shotgun harvest by day.

DATE	DAY OF WEEK	# OF BIRDS
October 10	Monday	132
October 11	Tuesday	56
October 12	Wednesday	58
October 13	Thursday	45
October 14	Friday	55
October 15	Saturday	74
October 16	Sunday	82
TOTAL		502

Table 5. Male turkey harvest by day of season during May 2023.

Date	Day of Week	Gobbler Harvest	Date	Day of Week	Gobbler Harvest
April 22	Saturday	1	May 15	Monday	64
April 29	Saturday	343	May 16	Tuesday	63
April 30	Sunday	139	May 17	Wednesday	50
May 1	Monday	588	May 18	Thursday	59
May 2	Tuesday	420	May 19	Friday	75
May 3	Wednesday	285	May 20	Saturday	173
May 4	Thursday	209	May 21	Sunday	143
May 5	Friday	318	May 22	Monday	51
May 6	Saturday	519	May 23	Tuesday	38
May 7	Sunday	421	May 24	Wednesday	43
May 8	Monday	146	May 25	Thursday	47
May 9	Tuesday	119	May 26	Friday	55
May 10	Wednesday	124	May 27	Saturday	93
May 11	Thursday	112	May 28	Sunday	66
May 12	Friday	161	May 29	Monday	64
May 13	Saturday	299	May 30	Tuesday	36
May 14	Sunday	208	May 31	Wednesday	39

Table 6. Harvest ratios (jakes to toms) by WMU during May 2023.

WMU	# JAKES	# TOMS	JAKE TO TOM HARVEST RATIO <i>Reported as # Jakes to 1.0 Tom</i>
A	27	49	0.55
B	28	43	0.65
C1	9	15	0.60
C2	6	21	0.29
D1	28	62	0.45
D2	74	194	0.38
E	8	26	0.31
F	14	85	0.16
G	81	253	0.32
H1	146	391	0.37
H2	154	500	0.31
I1	72	192	0.38
I2	34	180	0.19
J1	44	168	0.26
J2	243	695	0.35
K	152	500	0.30
L	146	345	0.42
M	144	442	0.33
TOTALS	1410	4161	0.34
PERCENTS	25.3%	74.7%	

Table 7. Male turkey harvest by WMU and age class during May 2023.

WMU	1	2	3	4	5	Total
A	27	31	17	0	1	76
B	28	25	15	2	1	71
C1	9	7	7	1	0	24
C2	6	12	8	1	0	27
D1	28	44	17	1	0	90
D2	74	104	48	33	9	268
E	8	17	6	2	1	34
F	14	44	30	9	2	99
G	81	112	107	28	6	334
H1	146	182	151	48	10	537
H2	154	247	176	68	9	654
I1	72	93	79	15	5	264
I2	34	102	57	20	1	214
J1	44	87	67	13	1	212
J2	243	340	266	78	11	938
K	152	235	183	72	10	652
L	146	168	116	49	12	491
M	144	150	195	82	15	586
TOTALS	1410	2000	1545	522	94	5571
PERCENTS	25.3%	35.9%	27.7%	9.4%	1.7%	

Table 8. Male harvest by WMU during May 2023 and 2022.

WMU	2022	2023	# Change
A	66	76	10
B	49	71	22
C1	20	24	4
C2	34	27	-7
D1	81	90	9
D2	284	268	-16
E	39	34	-5
F	81	99	18
G	320	334	14
H1	522	537	15
H2	674	654	-20
I1	252	264	12
I2	261	214	-47
J1	190	212	22
J2	997	938	-59
K	699	652	-47
L	539	491	-48
M	595	586	-9
TOTALS	5703	5571	-132

Table 9. Male KPSM by WMU during May 2023 and 2022.

WMU	2023 Male Harvest	Habitat (Mi ²)	2023 KPSM	2022 KPSM
A	76	424.44	0.18	0.16
B	71	251.65	0.28	0.19
C1	24	144.62	0.17	0.14
C2	27	177.69	0.15	0.19
D1	90	193.11	0.47	0.42
D2	268	402.46	0.67	0.71
E	34	451.29	0.08	0.09
F	99	372.65	0.27	0.22
G	334	555.15	0.60	0.58
H1	537	353.86	1.52	1.48
H2	654	626.12	1.04	1.08
I1	264	317.97	0.83	0.79
I2	214	327.64	0.65	0.8
J1	212	426.81	0.50	0.45
J2	938	733.4	1.28	1.36
K	652	569.91	1.14	1.23
L	491	412.97	1.19	1.3
M	586	532.39	1.10	1.12
ALL	5571	7274.13	0.77	0.78

Table 10. Towns with 1.00 or more turkeys KPSM during May 2023.

Town	KPSM	Town	KPSM	Town	KPSM	Town	KPSM
BELMONT	2.07	CHICHESTER	1.38	HOPKINTON	1.16	SWANZEY	1.03
WESTMORELAND	1.93	PLAINFIELD	1.38	DURHAM	1.16	CHESTERFIELD	1.03
CLAREMONT	1.84	DUNBARTON	1.37	DERRY	1.16	AUBURN	1.03
MADBURY	1.82	SEABROOK	1.35	LEBANON	1.15	JAFFREY	1.02
GREENLAND	1.79	WILTON	1.34	ROCHESTER	1.13	MONT VERNON	1.01
LANGDON	1.79	WALPOLE	1.33	DEERFIELD	1.12	LITCHFIELD	1.01
PITTSFIELD	1.69	MARLBOROUGH	1.32	HOLLIS	1.11	ALSTEAD	1.01
RYE	1.68	NELSON	1.32	CONCORD	1.10	LYNDEBOROUGH	1.00
KENSINGTON	1.68	NEW BOSTON	1.29	CHARLESTOWN	1.10	SUNAPEE	1.00
NORTHWOOD	1.67	NEWMARKET	1.27	BROOKFIELD	1.10	NEW DURHAM	1.00
DOVER	1.65	BRENTWOOD	1.25	MASON	1.09		
ROLLINSFORD	1.64	PEMBROKE	1.25	TROY	1.09		
CHESTER	1.58	ASHLAND	1.25	TEMPLE	1.08		
NEWPORT	1.55	BATH	1.22	GOFFSTOWN	1.08		
CORNISH	1.53	LONDONDERRY	1.22	HINSDALE	1.08		
EPSOM	1.53	GILFORD	1.21	BENNINGTON	1.07		
FRANCESTOWN	1.49	ALTON	1.21	WEARE	1.06		
LOUDON	1.48	FARMINGTON	1.21	LEE	1.06		
EPPING	1.44	UNITY	1.19	ENFIELD	1.04		
ATKINSON	1.43	ACWORTH	1.18	HANCOCK	1.04		
STRATHAM	1.39	GILMANTON	1.17	BARNSTEAD	1.03		

Table 11. Towns with 50 more turkeys harvested during May 2023.

Town	Total
CLAREMONT	79
ALTON	77
PLAINFIELD	72
CONCORD	70
WESTMORELAND	69
LOUDON	68
GILMANTON	67
NEWPORT	67
CORNISH	64
BELMONT	62
WEARE	60
DEERFIELD	57
NEW BOSTON	55
EPSOM	52
LONDONDERRY	51
WINCHESTER	50
ROCHESTER	50

Table 12. Method of registration used by hunters during May 2020 -2023.

	Online		In Person	
	Number	%	Number	%
2023	3,019	54.1%	2,561	45.9%
2022	2,739	48.0%	2,962	52.0%
2021	2,394	44.6%	2,977	55.4%
2020	3,041	53.4%	2,652	46.6%

Table 13. Registration Stations with the Most Turkeys Registered, 2023.

Station Name	Town	Number of Turkeys
MORSE SPORTING GOODS	HILLSBOROUGH	193
WILDLIFE SPORT OUTFITTERS	MANCHESTER	187
DREWSVILLE GENERAL STORE	WALPOLE	181
TACKLE SHACK - NEWBURY	NEWBURY	177
MERIDEN DELI MART INC	MERIDEN	141
BERRY'S BAIT	NEW DURHAM	126
BARN STORE OF NEW ENGLAND LLC	SALISBURY	121
SWIFTWATER WAY STATION	BATH	107
PAWTUCKAWAY TRADING POST	RAYMOND	102

Table 14. Heaviest gobblers (25+ pounds) taken during May 2023.

Hunter Name - Residence	Weight	Beard Length	Spur Length	WMU	Town of Kill
ALEXANDER HARRIS - DURHAM	28.25	5	0.375	L	DURHAM
JOHN GALLE JR. – PENACOOK	26.5	5	0.500	J2	CONCORD
DENNIS DIKMAK – GOSHEN	26.25	9	1.000	H1	GRANTHAM
LEWIS EATON III - HAMPSTEAD	26	10.25	1.000	M	ATKINSON
JOSHUA BELYEA – ORFORD	26	9	1.000	G	ORFORD
JAMES DIMARZIO – RINDGE	26	9	0.875	H2	RINDGE
BLAKE SCARINZA – BOW	25.75	11.75	1.063	K	BOW
MINOR UNDER 18 - NEW DURHAM	25.5	9.5	1.125	J2	ALTON
JOHN YURCAK JR – WILTON	25.5	9	1.000	K	WILTON
BRANDON RACKLIFF - HUDSON	25.25	10.25	1.000	K	MASON
JESSE DAVIS – CONCORD	25.25	10	1.125	J2	CONCORD
SCOTT LANIA – CONCORD	25	11	1.000	I1	CONCORD
DONALD COTE JR - MONT VERNON	25	11	0.875	K	LYNDEBOROUGH
LARRY GAEDTKE – LEE	25	10.5	1.000	M	RYE
MINOR UNDER 18 – LACONIA	25	10.25	0.875	M	LONDONDERRY
THOMAS FRENCH – BARRINGTON	25	10	1.000	M	STRATHAM
JASON CAIRELLI – CROYDON	25	9.75	0.625	I2	CROYDON
NIOMI STANLEY – CHARLESTOWN	25	9.5	1.000	H1	CHARLESTOWN
ROBERT GREEN – BRISTOL	25	9	1.125	G	GROTON
MINOR UNDER 18 - WOLFEBORO	25	8.5	1.000	J1	TUFTONBORO

Figure 1. Spring harvest by town during May 2023.

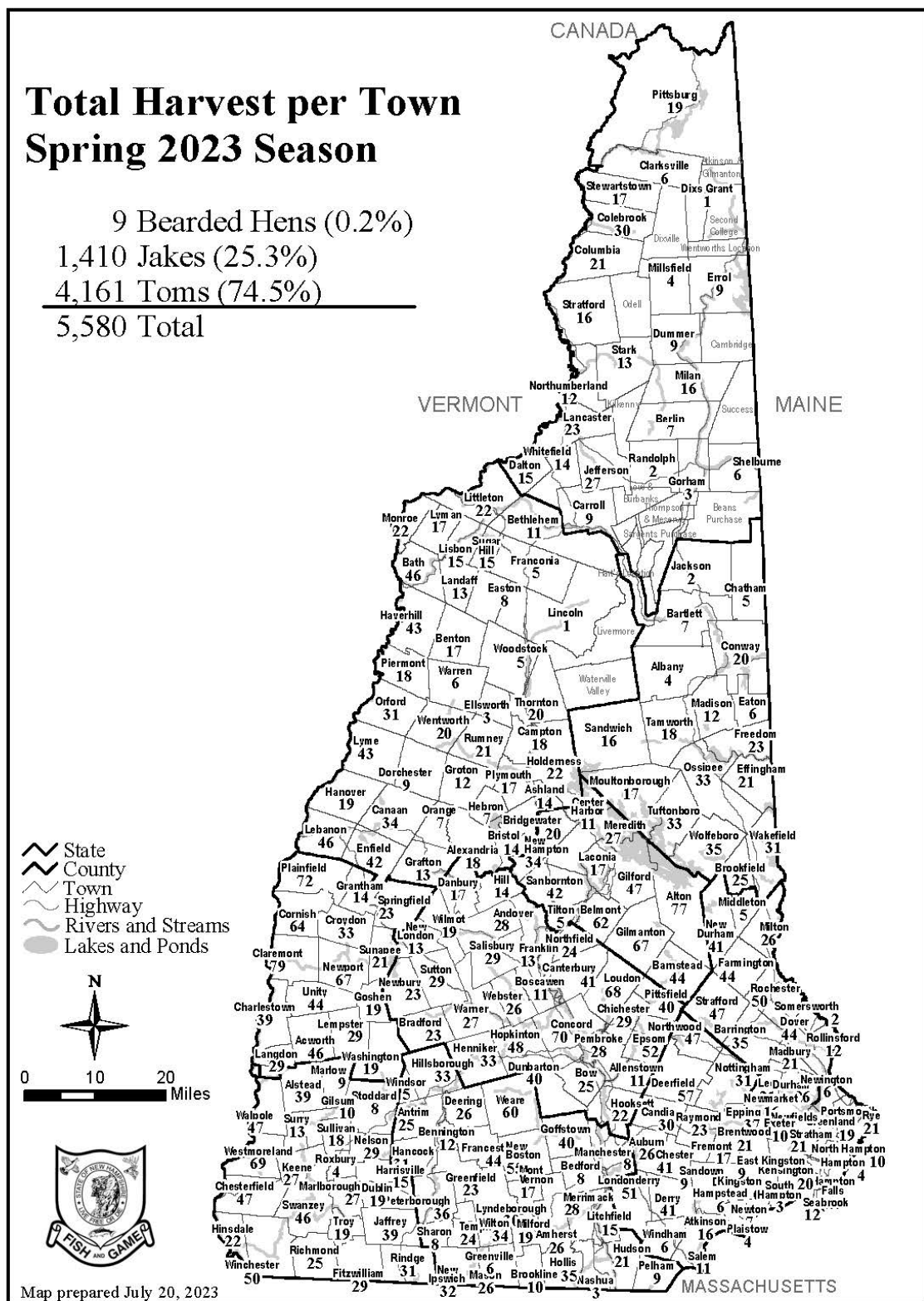
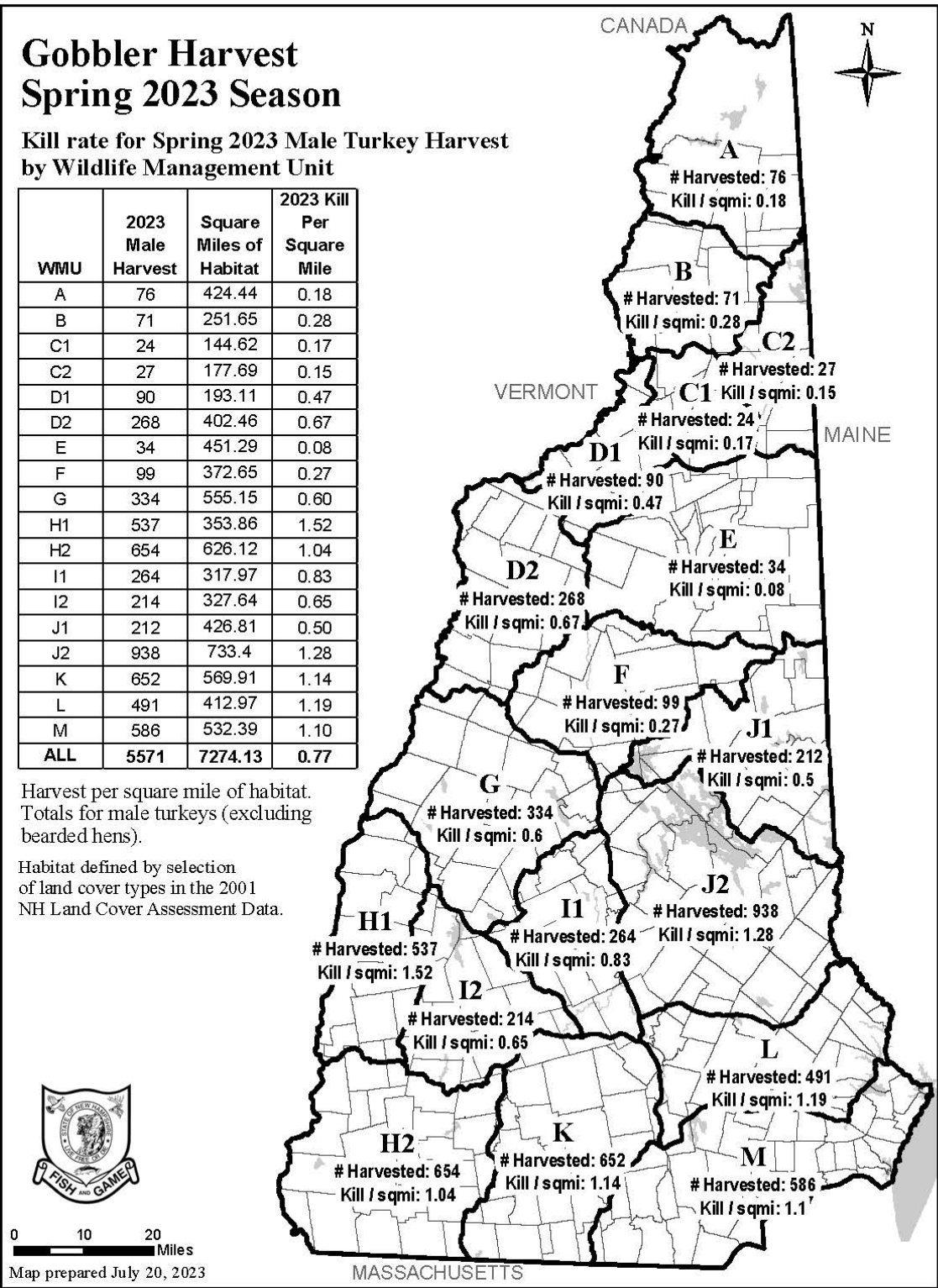


Figure 2. Spring harvest by Wildlife Management Unit during May 2023.



PERFORMANCE REPORT

State: New Hampshire **Grant:** F20AF11939

Grant Type: Survey and Inventory

Grant Title: NH – WILDLIFE RESEARCH AND MANAGEMENT (W-89-R-21)

Period Covered: July 1, 2022 – June 30, 2023

Purpose/Target Name: PROJECT 4 – WILD TURKEY RESEARCH AND MANAGEMENT

Objective Name: JOB 2 – NON-HARVEST DATA COLLECTION, ENTRY AND ANALYSIS

Objective Statement: To annually coordinate, collect and analyze non-harvest data including mortality data, summer brood survey and winter flock survey data, research project information and turkey complaints. The potential impacts of parasites, diseases and other non-harvest mortality on the turkey population will be monitored and evaluated.

Summary: During the 2022 Summer Online Brood Survey there were 1,094 brood observations reported compared to 1,264 in 2021. Statewide the average productivity was 3.22 poults per hen representing an increase compared to 2.95 and 2.13 in 2021 and 2020, respectively.

The 2023 Online Winter Flock Survey received 835 flock reports totaling 15,098 turkeys for an average of 18.08 turkeys per flock. By far the greatest percentage of food use was at backyard birdfeeders (73%).

The spring turkey hunter survey was conducted during the 2023 turkey season for the fifth consecutive year. Hunters were asked to record information on their hunting activity and turkey observations in order to provide the Department with additional information on hunter distribution and effort as well as turkey population status.

Trapping efforts did not take place during winter 2023 due to an outbreak of Highly Pathogenic Avian Influenza. In previous years, NHFG worked in partnership with USDA Wildlife Services to trap, band and relocate turkeys from Pease International Tradeport to mitigate hazards to aviation and reduce the potential for bird strikes with military and civilian aircrafts. Trapping efforts may resume during winter 2024.

Turkey-related complaints continued to be low throughout New Hampshire and were down compared to last year. A total of 12 calls were recorded during this reporting period versus 16 the preceding year. The majority (75%) of reports were concerns about damage to personal property. Two reports (16.7%) were in regards to nuisance and one report (8.3%) was concerns over consumption/contamination of hayfields.

Target Date: June 30th annually 2021-2025.

Status of progress: On schedule.

Significant Deviations: None.

Objective Approach: Web-based winter flock and summer brood surveys will be implemented annually. Supplemental standardized survey cards will be distributed to participating staff and volunteers (approximately 35 participants are anticipated). Web data will be downloaded and analyzed electronically while data from survey cards will be summarized by the project leader. Results will be used to assess winter flock distribution and abundance, to monitor annual turkey productivity, to forecast season expectations, to interpret harvest data and to monitor population status. Turkey permit sales data will be used to assess overall hunter participation. Hunter surveys may be employed to quantify hunter activities and to assess management option preferences.

The potential impacts of parasites, diseases and other health issues on turkey will be monitored and evaluated. Presently the potential impacts of lymphoproliferative disease virus (LPDV) and avian pox are being monitored.

The Department will work through the New Hampshire Veterinary Diagnostic Lab (NHVDL) to gain access to wildlife disease and parasite diagnostics and testing, technical support with wildlife health issues and educational resources.

When necessary, turkeys will be trapped on a regional basis and banded. Band return rates from registered birds will be monitored. Results will be used to assess harvest and survival rates and to help monitor regional population status.

USDA Wildlife Services data on turkey complaints will be summarized annually, in order to identify possible conflicts with management objectives and in order to track trends in turkey complaints over time. Research initiatives will be formulated as necessary to address management needs.

Results:

Winter Flock Surveys

2022 Mast Crop

It was a very lean mast year for most species. Oak and beech both scored less than half the 10-year average. Blackberry, raspberry and blueberry were all down as well. Apple was on par with the 10-year average and beaked hazelnut was slightly higher than the 10-year average.

Winter Conditions 2022-2023

Monadnock Region

According to the National Weather Service, between January 1 and March 31, the city of Keene received a total of 51.9" of snow which was above the normal of 40.6" for that time period. There were a total of 29 days during the three month period with >6" of snow depth on the ground. Snow depths ranged from 0" – 18".

Concord Area

According to the National Weather Service between January 1 and March 31, the city of Concord received a total of 58.7" of snow which was above the normal of 47.6" for that time frame. There were a total of 58 days during the three month period with >6" snow depths on the ground. Snow depths ranged from 0"-17".

North Country

According to the National Weather Service, between January 1 and March 31, the town of Pittsburg received a total of 71.1" of snow which was below the normal of 83.3" for that time frame. There were a total of 71 days during the three month period with >6" snow depths on the ground. Snow depths ranged from 2" – 38". The month of March had snow depths of 19"-38" every day of the whole month.

One notable storm occurred on March 14, 2023. This noreaster resulted in 18+ inches of snow for the Monadnock Region and 4-8" in the North Region. It was a long lasting storm with almost 24 hours of heavy wet snow.

Snow had cleared from much of Concord and parts south by early April and lingered until mid-late April in the north country when temperatures started to rise and cause melting.

2023 Online Winter Flock Survey

For the 15th consecutive year, the Department conducted an online turkey flock survey in which the public reported their flock sightings between January 1 and March 31.

A total of 835 flocks were reported totaling 15,098 turkeys statewide. This was up compared to the previous year when 772 flocks and a total of 13,201 turkeys were reported. The increase in 2023 may be due to a combination of factors including periods of snow throughout the state that may have limited turkeys mobility combined with a lack of hard mast crop such as beech and oak the previous fall, which may have attracted turkeys to more back yard bird feeders or human placed food sources.

Again this year, by far the greatest percentage of reported food use was 267 flocks (73%) feeding at backyard birdfeeders. This was followed by 60 reports (16%) feeding on corn or grain and another 34 flocks (9%) of turkeys feeding on acorns and beechnuts. Reported use of apples/crab apples was only 2% (8 flocks).

The average number of turkeys in a flock statewide was 18 which was similar to the previous three-year average (17). Unit M (163) had the highest number of flocks reported again this year, followed by unit L (127), and unit J2 (123).

During winter 2023, a total of 23 turkeys with visible lesions which may be indicative of avian pox or LPDV were reported from 11 towns from 7 different WMUs. This is very similar to last year when reports came from 13 towns and 6 WMUs. Overall, reports of symptomatic turkeys remains low.

Attitudes towards winter flocks of wild turkeys continue to be favorable with 87.8% of participants indicating they like or strongly like seeing wild turkeys on the landscape. A total of 8.7% of participants were neutral and a combined 3.5% dislike or strongly dislike wild turkeys.

Summer Brood Surveys:

2022 Online Summer Brood Survey

For the 12th consecutive year, the Department conducted an online Summer Brood Survey in which the public reported sightings of hens and poults between June 1 and August 31. A total of 1,094 brood reports were received, down slightly from 1,264 broods reported during 2021.

Productivity was looked at for the month of August because at this time the poults are larger and more readily seen and counted, and most attrition of young turkeys has already occurred. For the state as a whole, the average productivity was 3.22 poults per hen (pph). This is an increase from the previous two years when 2.95 and 2.13 pph were reported in 2021 and 2020, respectively. The highest average on record was 4.38 poults per hen reported during 2011 which was the first year of the survey.

Reports were received from 203 towns which was down from last summer when 239 towns reported broods. There were 6 towns which recorded 175 or more total turkeys (hens and poults combined). The following towns recorded the highest number of turkeys observed: Londonderry (264), Deerfield (226), Hooksett (222), Alton (199), Bedford (178), and Epsom (176).

There were 13 avian pox/LPDV reports from summer 2022. An overwhelming 94.5% of respondents like or strongly like wild turkeys.

Hatching weather spring 2022

Monadnock Region

According to the National Weather Service, the spring and summer months for Keene were all below average for rainfall. Total rainfall compared to normal rainfall for each month were as follows: May 2.83" total (3.77" normal); June 2.46" total (4.41" normal); July 3.64 (4.49" normal) and August 1.83" total (4.28" normal). Temperatures ranged from a low of 28 during the month of May to a high of 95 in both July and August.

Concord Area

According to the National Weather Service, the spring and summer months for Concord were also below average for rainfall. Total rainfall compared to normal rainfall for each month were as follows: May 2.99" total (normal 3.47"); June 3.24" total (3.77" normal); July 3.03" total (3.62 normal) and August 3.54" total (3.63" normal). Temperatures ranged from a low of 28 during the month of May to a high of 98 in August.

North Country

According to the National Weather Service, the spring and summer months for Pittsburg experienced more rain and more low temperatures compared to other parts of the state. Total rainfall compared to normal rainfall for each month were as follows: May 4.54" total (4.47 normal); June 4.38" total (5.14" normal); July 5.41" total (4.91" normal)

and August 6.67" (4.76 normal). Temperatures ranged from a low of 26 during the month of May to a high of 87 for the month of August. The north country also experienced low temperatures of 35 in June and 39 in July.

Turkey Hunter Survey:

Prior to the start of the spring 2023 turkey season a turkey hunter survey was direct mailed to 11,000 previously successful turkey hunters who were asked to document their daily turkey hunting activity. Previously successful hunters were selected because experience with other Department game management surveys has indicated that previously successful hunters are more likely to participate in the survey and return a card and exhibit higher observation rates than hunters randomly selected from a pool of license holders. For each day hunted, hunters were asked to record the date, town and wildlife management unit hunted, hours hunted, and number of gobblers heard.

A total of 560 usable surveys were received yielding a response rate of 5.1% in 2023. This is a decrease from last year (733 responses and 6.7% response rate) but similar to the prior year when the response rate was 5.7%. The highest response rate recorded was 7.3%, which was the first year of the survey in 2019.

Statewide, the total number of days hunted in 2023 was 3,384 which is down compared to 4,083 in 2022 and 3,891 in 2021. The total number of hours reported hunted in 2023 was 11,932, which was also down compared to 14,086 in 2022 and 13,949 hours in 2021.

The total number of gobblers heard in 2023 was 7,462, which was down compared to 10,252 reported in 2022, and 8,901 reported heard in 2021.

The mean number of gobblers heard per 100 hunter hours was 62.4 which was also down compared to last year (71.5). This year was the fifth year this survey has been conducted (Table 1).

The New Hampshire Chapter of the National Wild Turkey Federation supported this turkey hunter survey effort again this year by donating a raffle prize. All hunters who completed and returned the survey by the specified deadline will be entered into a drawing for the raffle prize. In addition, the National Wild Turkey Federation name and logo was included on the printed survey materials direct mailed to participants.

Banded Birds

No banded birds were harvested during the fall 2022 or spring 2023 seasons.

Turkey Conflicts:

Turkey related complaints continued to be low throughout New Hampshire and were below the previous two reporting periods. A total of 12 calls were recorded during this reporting period compared to 16 calls last reporting period and 32 calls prior to that. The majority of reports (75%) were concerns about damage to personal property, lawn, flowers, vehicles, horses, livestock, and feed. Two reports (16.7%) were nuisance related and one report (8.3%) had to do with consumption/contamination concerns in hayfields.

Conclusions:

1. The 2022 Online Summer Brood Survey received reports from 203 towns.
2. The 2022 Online Summer Brood Survey for the month of August indicated an average productivity of 3.22 poults per hen. .
3. The incidence of avian pox/LPDV virus in turkeys remains relatively low throughout the state.
4. Respondents likeability towards wild turkeys remains high. The 2022 summer brood survey results indicated that 94.5% of survey participants either like, or strongly like, wild turkeys in New Hampshire and the 2023 winter flock survey indicated that 87.8% of survey participants either like, or strongly like wild turkeys.
5. The online Winter Flock Survey resulted in a total of 835 flocks and 15,098 turkeys being reported.

Custom Qualitative Indicator/Output: Non-harvest data have been collected and analyzed including mortality data, the summer brood survey, winter flock survey research projects and turkey complaints. Potential impacts of parasites, diseases and other non-harvest mortality on the turkey population has been monitored and evaluated.

Recommendations: Continue this job as planned.

Submitted by: _____

Allison Keating
Turkey Project Leader
July 2023

Table 1. Spring turkey hunter survey results by turkey management region, 2020-2023.

Region	# of Hunter days (N)	Total hours of effort	Total # of gobblers heard	Mean # of gobblers heard per 100 hunter hours	Units Included
2020					
North	119	408	111	24.48	A, B, C1 & C2
White Mtn.	146	520	246	43.48	E&F
W. Central	547	1,838	1,007	51.79	D1, D2 & G
E. Central	1,045	3,851	1,914	49.4	J1 & J2
South West	1,030	3,759	1,856	47.66	H1, H2, I1 & I2
South East	2,135	7,483	4,536	58.37	K, L & M
2020 ALL	5,022	17,859	9,670	52.23	All
2021					
North	124	414	153	38.64	A, B, C1 & C2
White Mtn.	152	479	257	53.67	E&F
W. Central	462	1,527	912	59.09	D1, D2 & G
E. Central	893	3,355	2,104	62.33	J1 & J2
South West	838	3,114	1,811	57.2	H1, H2, I1 & I2
South East	1,422	5,061	3,664	69.08	K, L & M
2021 ALL	3,891	13,949	8,901	62.1	All
2022					
North	109	373	142	46.00	A, B, C1 & C2
White Mtn.	164	613	429	67.89	E&F
W. Central	415	1351	1144	84.55	D1, D2 & G
E. Central	929	3088	2199	67.29	J1 & J2
South West	913	3318	2398	73.47	H1, H2, I1 & I2
South East	1553	5344	3940	71.84	K, L & M
2022 ALL	4,083	14,086	10,252	71.52	All
2023					
North	152	562	283	52.76	A, B, C1 & C2
White Mtn.	103	405	203	44.87	E&F
W. Central	411	1390	833	62.30	D1, D2 & G
E. Central	583	1985	1174	55.68	J1 & J2
South West	828	2964	1696	56.95	H1, H2, I1 & I2
South East	1307	4626	3273	71.75	K, L & M
2023 ALL	3,384	11,932	7,462	62.39	All

NEW HAMPSHIRE TURKEY MANAGEMENT UNITS

Turkey Management Regions and Wildlife Management Units (WMUs)

North Region: WMUs A, B, C1 and C2
 West Central Region: WMUs D1, D2 and G
 White Mountains Region: WMUs E and F
 East Central Region: WMUs J1 and J2
 Southwest Region: WMUs H1, H2, I1 and I2
 Southeast Region: WMUs K, L and M

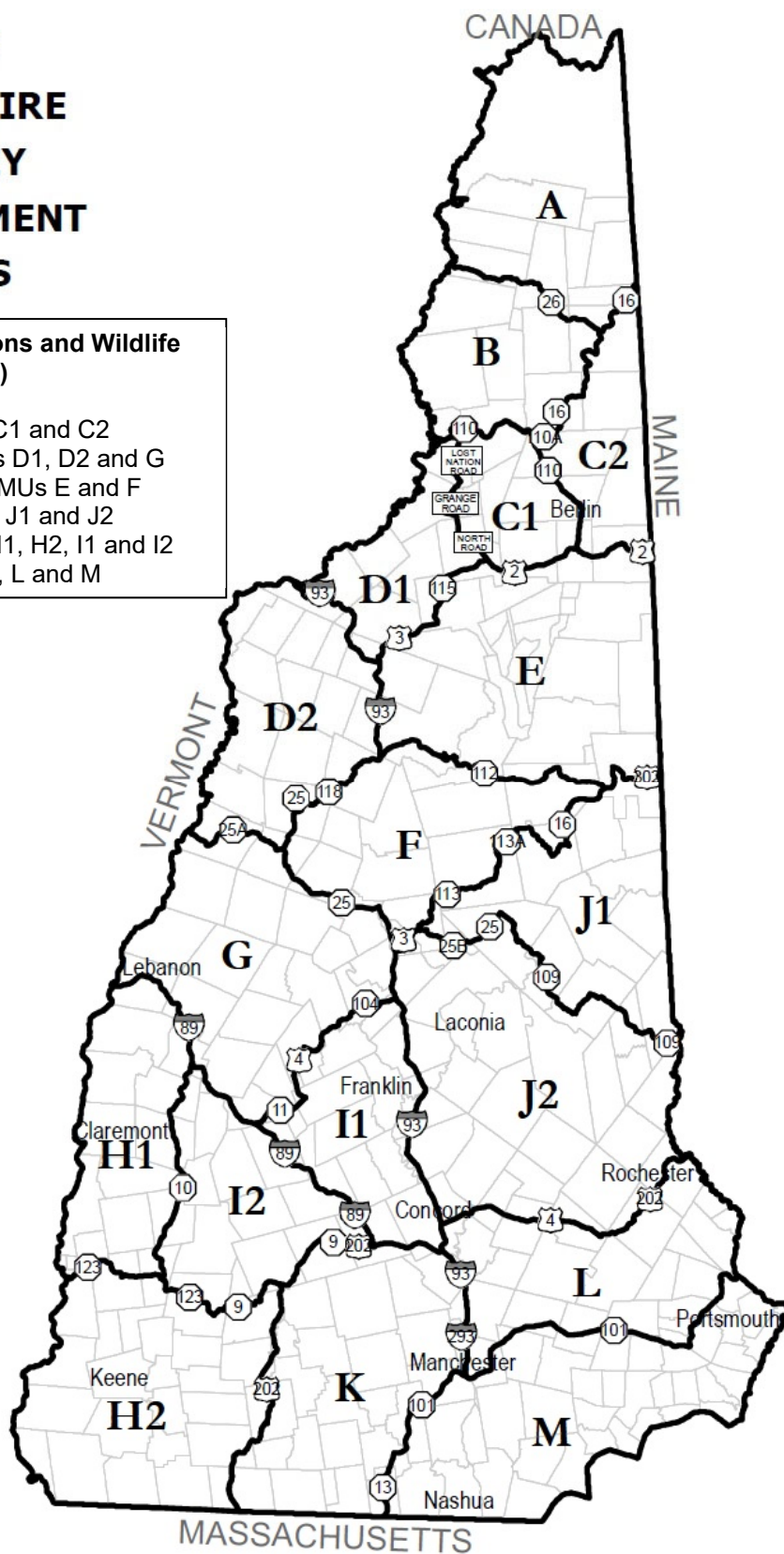


Figure 1. Turkey management units and regions.

PERFORMANCE REPORT

State: New Hampshire **Grant:** F20AF11939

Grant Type: Survey and Inventory

Grant Title: NH – WILDLIFE RESEARCH AND MANAGEMENT (W-89-R-21)

Period Covered: July 1, 2022 – June 30, 2023

Purpose/Target Name: PROJECT 4 – WILD TURKEY RESEARCH AND MANAGEMENT

Objective Name: JOB 3 – FORMULATION OF TURKEY POPULATION MANAGEMENT RECOMMENDATIONS

Objective Statement: To formulate science-based recommendations on an annual or biennial basis for the continued management of New Hampshire's wild turkey population, consistent with achievement of existing turkey management goals and population objectives.

Summary: Turkey hunting data from the fall and spring seasons, as well as non-harvest data from the online winter flock and summer brood surveys and the direct mail turkey hunter survey continued to be collected, analyzed and reviewed and will be used as needed for the rule making process next year.

Target Date: June 30th annually 2021 – 2025.

Status Progress: On schedule.

Significant Deviations: None.

Objective Approach: Turkey registration data from the spring and fall hunting seasons will be used as the basis for the formulation of management recommendations. Data from the summer brood survey and winter flock census will also be used. Management recommendations will be formulated based on objectives identified in our existing 10-year big game management plan. Recreational value including hunting recreation and public viewing will be taken into account as will the frequency of turkey/human conflicts.

Hunting season recommendations will be formulated biennially. Information from preceding hunting seasons will be evaluated in the context of short and long-term trends and turkey population objectives on a Wildlife Management Unit (WMU) basis. Initial season recommendations will be developed by the Turkey Project Leader and reviewed, evaluated and modified as necessary by the Game Management Team. Input from regional biologists and law enforcement staff will be considered and draft recommendations will be subsequently developed at a Wildlife Programs Committee meeting for evaluation by the Executive Director. These preliminary recommendations will be presented at public hearings around the state and public comment will be incorporated by the Game Management Team and a final recommendation developed for review and adoption by the Executive Director and Commission. Only those costs up to, and including, development of final season recommendations will be charged to the grant. Unpredictable factors such as unusually severe winters could adversely impact turkey populations and result in a re-evaluation of existing season frameworks during non-season setting years.

Results:

Rule Making

The biennial rule making process began during winter 2022 and concluded in the spring 2023.

Turkey harvest data, as well as non harvest data from online surveys and hunter surveys, were reviewed along with the Department's current Big Game Management plan that details criteria for liberalizing seasons among WMUs. Recommended changes included:

- Removing the fall shotgun season in WMU J1 due to consistent low spring harvests in previous years. The spring KPSM has recently been below the 0.50 threshold set in the Big Game Management Plan to allow for a fall shotgun season. The spring KPSM has been at, or below, the 0.50 threshold every year except for one.
- Adding the 2-bird bag limit during the spring season in WMU I1. The spring KPSM has been above the 0.75 threshold set in the Big Game Management Plan to allow for the 2-bird limit during spring for 3 consecutive years.
- Removing the requirement to legally register the first harvested spring bird before harvesting a second spring bird in designated WMUs where 2 birds in spring are allowed.
- Prohibiting the practices of reaping and fanning.

The NHFG Game Management Team met to review and discuss potential changes for all big game species, including turkeys. Proposals were presented to the NHFG Commission, 3 public hearings were held at different locations across the state and a public comment period was held to acquire public input. Proposals were revised based on input from the Commission and the public. Ultimately, all proposed turkey related changes occurred except for removing the requirement to legally register the first harvested turkey before harvesting a second turkey during the spring season.

Conclusions:

1. The biennial rule making process took place winter 2022 through spring 2023. Turkey harvest and non-harvest data were reviewed, recommendations were proposed, public input was received, proposal recommendations were revised, and final changes took effect in June 2023.
2. The fall shotgun season was removed from WMU Unit J1 and a 2-bird limit in the spring season was added to WMU I1.
3. Definitions for the practices of reaping and fanning were established and both practices were prohibited.

Custom Qualitative Indicator/Output: Science-based management recommendations consistent with achievement of existing turkey management goals and population objectives have been formulated on an annual or biennial basis.

Recommendations: Continue this job as planned.

Submitted by: _____

Allison Keating
Turkey Project Leader
July 2023

PERFORMANCE REPORT

State: New Hampshire **Grant:** F20AF11939

Grant Type: Survey and Inventory

Grant Title: NH – WILDLIFE RESEARCH AND MANAGEMENT (W-89-R-21)

Period Covered: July 1, 2022 – June 30, 2023

Purpose/Target Name: PROJECT 4 – WILD TURKEY RESEARCH AND MANAGEMENT

Objective Name: JOB 4 – PROFESSIONAL EXCHANGE AND DISSEMINATION OF PROJECT INFORMATION

Objective Statement: To effectively communicate with diverse turkey management stakeholders and the general public interested in turkeys; to facilitate peer, legislative and public review of our turkey management program; to maintain working relationships and information exchange with turkey biologist and ensure that the turkey project leader is familiar with the latest scientific knowledge and management techniques; and to prepare and disseminate turkey project information and findings to the public, the Fish and Wildlife Service, and other interests stakeholders.

Summary: The yearly federal aid progress report, status reports for the Northeast Upland Game Bird Committee, and the turkey section of the Department Wildlife Harvest Summary were prepared. Turkey management related press releases were written and issued. The project leader participated in regular technical committee meetings and provided data for a regional brood monitoring effort.

Target Date: June 30th annually 2021 – 2025.

Status of Progress: On schedule.

Significant Deviations: None

Objective Approach: Turkey management accomplishments, findings, management goals and population objectives will be communicated through the project leader and through print and electronic media. Turkey technical meetings, workshops and conferences will be attended and communications with the National Wild Turkey Federation, its staff and its chapters will be conducted. Research proposals, management techniques and project information needs will be considered and evaluated. Federal aid reports, turkey harvest summary reports and other turkey related information associated with New Hampshire turkey management will be prepared and disseminated to stakeholders. The turkey project leader will receive and/or provide training necessary for the successful implementation of this project.

Results:

The project leader participated in regular meetings with the Northeast Upland Game Bird Technical Committee, the National Wild Turkey Federation Technical Committee and the New Hampshire Chapter of NWTF Board of Director meetings.

The project leader traveled to Natural Bridge, VA in September 2022 to attend and participate in the annual Upland Game Bird Technical Committee meeting.

Summer brood survey data was provided to the National Wild Turkey Federation Technical Committee for incorporation into a standardized, regional monitoring effort.

The project leader coordinated with Public Affairs staff to write and issue press releases for the fall 2022 turkey hunting season, the 2023 online winter flock survey, the 2023 spring hunting season and the 2023 online summer brood survey as well as updating relevant information on the Department website for each of these.

The project leader participated in 2 social media based interviews regarding turkey hunting and general turkey population questions, gave one presentation to a local community group on turkeys and the history of the restoration, participated in one NWTF youth program and in the annual Learn to Turkey Hunt Mentoring Program coordinated in partnership between the Department and local chapters of the National Wild Turkey Federation.

A summary of the spring and fall turkey seasons was written and included in the "2022 New Hampshire Wildlife Harvest Summary."

The yearly progress reports (Wild Turkey Research & Management) W-89-R, Project 4 were written..

Annual reports were written and submitted to the Northeast Upland Game Bird Technical Committee Meeting.

Conclusions: This job was implemented as planned, and diverse stakeholders and constituents were kept informed of project activities.

Custom Qualitative Indicator/Output: Effective communication with turkey management stakeholders and the public has taken place. Peer, legislative and public review of the turkey management program has been facilitated. Working relationships and information exchange with turkey biologists has been maintained. Turkey project information has been prepared and disseminated to the public, the USFWS and other stakeholders.

Recommendations: Continue this job as planned.

Submitted by: _____

Allison Keating
Turkey Project Leader
July 2023