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, 2023 – June 30, 2024

Purpose/Target Name: PROJECT 5 - MIGRATORY GAME BIRD RESEARCH AND MANAGEMENT

Objective Name: JOB 1 - MUTE SWAN MANAGEMENT

Objective Statement: To monitor the distribution and control the abundance of the state's feral mute swan population.

Summary: Between April 10 and April 28, breeding and non-breeding free-flying mute swans were located (Table 1). One nesting pair and 5 non-breeding adults were observed. Eggs were addled to prevent hatching.

Target Date: June 30th annually 2021-2025.

Status of Progress: On schedule.

Significant Deviations: None.

Objective Approach: Population monitoring efforts occur annually statewide as a spring breeding survey. Egg addling, oiling and pithing will be employed in order to maintain a stable statewide population.

Results: Details of mute swan management activities at 28 locations are provided in Table 1.

Custom Qualitative Indicator/Output: The distribution of the feral mute swan population has been monitored and its abundance controlled.

Recommendations and Remarks: Continue job as planned.

Prepared by: Jessica Carloni
Migratory Game Bird Project Leader
July 16, 2024

Table 1.

NEW HAMPSHIRE MUTE SWAN MANAGEMENT SUMMARY 2024

DATE	TOWN	LOCATION	NEST	TOTAL EGGS	NUMBER OF SWANS / ACTIONS
4/16/24	Derry	Beaver Lake	0	0	0
4/16/24	Durham	Young Drive	0	0	0
4/16/24	Durham	Mill Pond	0	0	0
4/16/24	Durham	Longmarsh Road	0	0	0
4/16/24	Durham	Dame Road	0	0	0
4/16/24	Durham	Adams Point	0	0	0
4/19/24	Franklin	Webster Lake	0	0	0
4/17/24	Hudson	Tonic Pond	0	0	0
4/17/24	Kingston	Powwow Pond	0	0	3 Adults
4/16/24	Lee	Gile Road	0	0	0
4/16/24	Lee	Route 125	0	0	0
4/19/24	Merrimack	Horseshoe Pond	0	0	0
4/19/24	Merrimack	Naticook Lake	0	0	0
4/17/24	Nashua	Upper Mines Falls	0	0	0
4/17/24	Nashua	Mines Falls	1	10	1 nesting pair, addled eggs
4/16/24	Newington	GBNWR	0	0	0
4/16/24	Newmarket	Lamprey River	0	0	0
4/16/24	Newmarket	Lubberland Creek	0	0	0
4/16/24	Nottingham	Nottingham Lake	0	0	0
4/19/24	Pelham	Harris Pond	0	0	0
4/19/24	Rollinsford	Fresh Creek	0	0	0
4/19/24	Rollinsford	Salmon Falls River	0	0	0
4/16/24	Rye	Fuller Farm	0	0	0
4/16/24	Rye	Abenaki CC	0	0	0
4/16/24	Rye	Eel Pond	0	0	0
4/17/24	Salem	World’s End Pond	0	0	0
4/17/24	South Hampton	Tuxbury Pond	0	0	2 Adults
4/19/24	Windham	Cobbett’s Pond	0	0	0

Totals: 1 nesting pair, 5 Non-breeding Adults

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, 2023 – June 30, 2024

Purpose/Target Name: PROJECT 5 - MIGRATORY GAME BIRD RESEARCH AND MANAGEMENT

Objective Name: JOB 2 - STATEWIDE BREEDING WATERFOWL POPULATION STUDIES

Objective Statement: A breeding population survey targeting primarily mallards, black ducks, wood ducks and Canada geese will be conducted statewide from April 15 - May 14 each year. The survey is intended to provide an index of breeding waterfowl populations in the Atlantic Flyway specifically, the Northeastern United States. Eleven northeastern states will participate in surveying over 1,500 breeding bird plots. A total of 75 plots are assigned to New Hampshire and are distributed throughout 3 physiographic zones. Each plot is randomly selected and is one-kilometer square. In addition, monitoring nest success of cavity nesting waterfowl of at least 130 nest boxes will be conducted statewide each winter.

Summary: The annual Waterfowl Breeding Plot Survey was conducted from April 18 – May 6. Seventy-five (75) randomly established one-kilometer square plots were assigned following guidelines developed by the Mallard Committee of the Atlantic Flyway Waterfowl Council Technical Section (Figure 1).

Target Date: June 30th annually 2021-2025.

Status of Progress: On schedule.

Significant Deviations: None.

Objective Approach: A breeding population survey targeting primarily mallards, black ducks, wood ducks and Canada geese will be conducted statewide from April 15 - May 14 each year. The survey is intended to provide an index of breeding waterfowl populations in the Atlantic Flyway; specifically, the northeastern United States. Eleven northeastern states will participate in surveying over 1,500 breeding bird plots. A total of 75 plots are assigned to New Hampshire and are distributed throughout 3 physiographic zones. Each plot is randomly selected and is 1 sq. km.

Nest boxes for cavity nesting waterfowl (wood duck and hooded merganser) will be monitored and maintained on selected marshes statewide. Boxes are examined annually during the winter and data on use is recorded and analyzed. Shavings are replaced, repairs made, and boxes are replaced when and where necessary. Approximately 25 new nest boxes are dispersed annually for adding to existing and newly managed marshes.

Results: The waterfowl nesting season was considered average throughout the state. In 2024, individual observations of mallards, black ducks, and Canada geese decreased from the level observed in 2023 while wood ducks increased (Table 2). The estimated number of breeding pairs calculated for New Hampshire indicated mallards, wood ducks, and black ducks were below the long-term average and Canada geese were above the long-term average (Table 3). Ten species of breeding waterfowl were observed in the 2024 survey. Other species observed were common mergansers, common goldeneye, hooded mergansers, ring-necked ducks, buffleheads, and green winged teal. The breeding pair estimates for the entire Northeast Survey Area are summarized in Table 4.

Nest Boxes

In the winter of 2023/2024, a total of 72 nesting boxes were inspected for use by nesting wood ducks and hooded mergansers at 17 marshes. Ice conditions were not safe to conduct checks in the southeastern part of the state. Evidence of use by waterfowl was observed in 32 (52%) of the 72 functional boxes inspected. Wood ducks

accounted for 44% of the observed use, which is higher than the 5-year average of 14%. Hooded mergansers nested in 34% of the boxes used by waterfowl, which is lower than the previous 5-year average of 80% (Table 5).

Waterfowl were considered to have been successful in hatching young in 52% of the nests that were initiated, which was lower than the past five year average of 74%.

Custom Qualitative Indicator/Output: An annual breeding population survey targeting mallards, black ducks, wood ducks and Canada geese has been conducted between April 18 and May 14. Waterfowl use of nest boxes on Department managed marshes are monitored annually.

Recommendations and Remarks: The Atlantic Flyway Breeding Waterfowl Survey was conducted for the fourteenth consecutive spring. Data from the survey, when combined with data from other states, provides the Atlantic Flyway Technical Section and the U.S. Fish and Wildlife Service an important annual estimate of breeding waterfowl in the Atlantic Flyway. This job should continue annually as planned due to the importance of these data for the Atlantic Flyway. Monitoring the use and maintaining the functionality of duck nest boxes is important for cavity nesting species in NH.

Prepared by: Jessica Carloni
Migratory Game Bird Project Leader
July 16, 2024

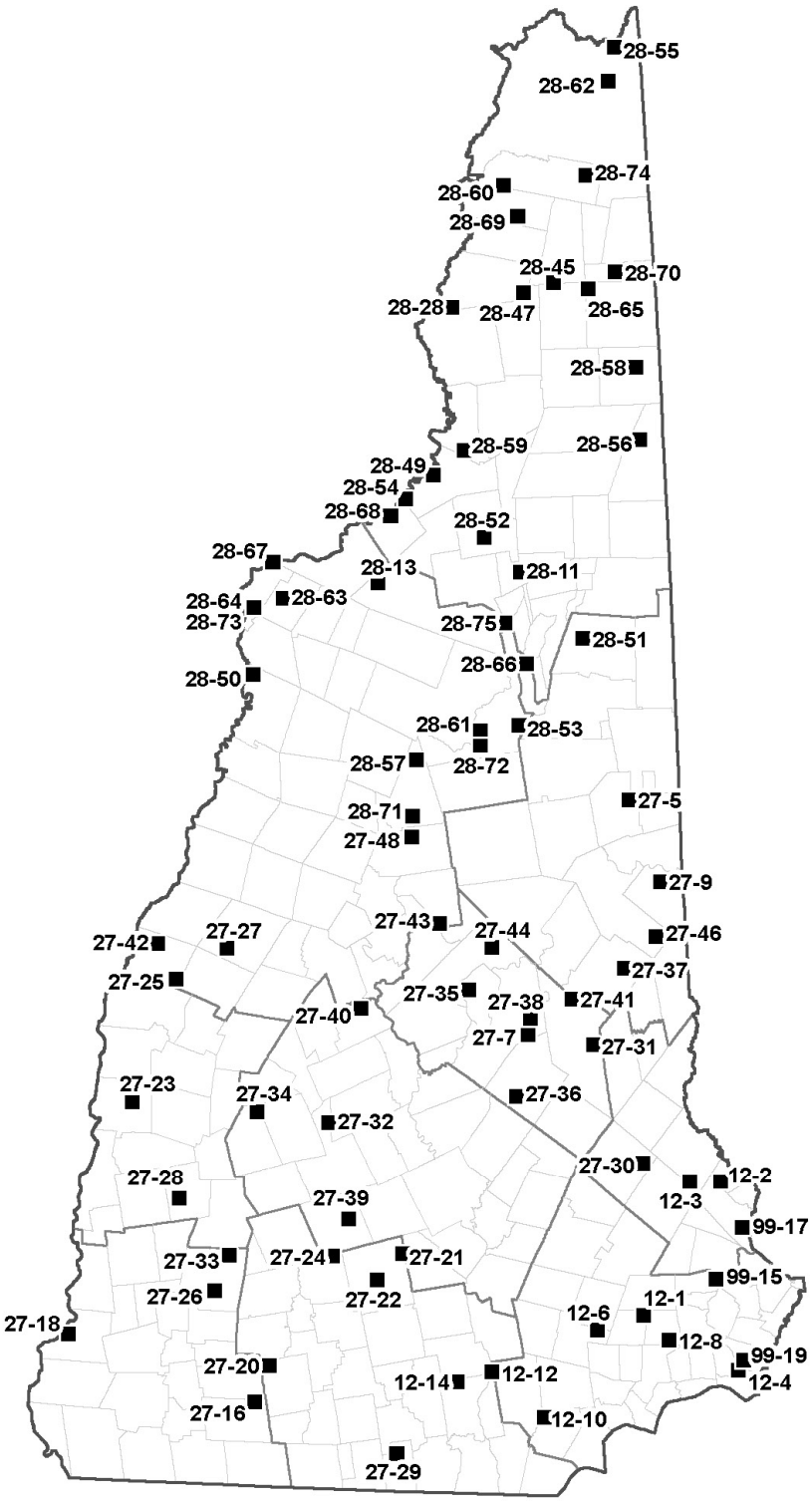

Figure 1. BREEDING PLOT SURVEY LOCATIONS IN NEW HAMPSHIRE

Table 2.

WATERFOWL BREEDING PAIR INDEX IN NEW HAMPSHIRE BREEDING UNITS
APRIL 18-MAY 6, 2024

PHYSIOLOGICAL ZONE	# OF PLOTS	MALLARD	BLACK DUCK	WOOD DUCK	CANADA GEESE
SM + 12	12	2	1	0	4
27	31	8	0	6	8
28	31	7	2	5	6
2024 TOTALS:	**74**	**17**	**3**	**11**	**18**
(2023 TOTALS)	(75)	(19)	(5)	(10)	(24)

Table 3.

TOTAL NUMBER OF BREEDING PAIRS CALCULATED FOR NEW HAMPSHIRE
(1993 – 2024)

YEAR	MALLARD	BLACK DUCK	WOOD DUCK	CANADA GEESE
1993	22,555	7,513	11,514	-
1994	18,725	3,118	7,646	898
1995	17,598	7,853	11,731	4,264
1996	20,557	5,784	13,220	6,368
1997	16,060	3,463	7,553	3,408
1998	13,083	4,582	8,139	6,790
1999	18,576	3,836	8,140	4,985
2000	16,724	3,671	10,616	7,591
2001	11,063	1,330	4,407	5,166
2002	16,677	4,151	16,503	5,630
2003	12,570	2,444	11,022	5,728
2004	25,406	4,407	19,496	5,938
2005	24,693	4,606	17,575	6,686
2006	17,788	3,803	9,474	10,112
2007	19,351	925	12,993	8,129
2008	16,647	728	7,597	10,797
2009	13,489	1,517	5,005	6,901
2010	14,182	1,827	11,711	6,914
2011	9,667	2,302	7,107	10,690
2012	12,939	2,038	10,793	4,937
2013	15,014	2,240	12,546	9,396
2014	18,649	7,593	12,852	13,611
2015	12,847	837	13,541	9,757
2016	10,373	1,106	14,712	6,069
2017	9,452	1,841	15,716	8,510
2018	9,153	418	15,337	8,613
2019	11,501	3,628	15,856	10,076
2020	9,678	1,913	3,518	9,684
2021	20,952	3,140	10,088	11,877
2022	9,173	1,917	8,197	12,583
2023	12,930	1,146	8,639	9,622
2024	11,015	553	6,216	12,955
Long-term average: (1994-2023)	**15,184**	**2,939**	**11,058**	**7,724**

Table 4.

TOTAL NUMBER OF BREEDING PAIRS CALCULATED FOR THE NORTHERN ATLANTIC FLYWAY STATES (1993 – 2024)

YEAR	MALLARD	BLACK DUCK	WOOD DUCK	CANADA GEESE
1993	324,020	39,464	140,506	-
1994	427,254	29,472	148,298	202,281
1995	404,837	32,670	172,944	245,233
1996	403,919	31,674	156,201	277,608
1997	383,296	29,792	186,127	326,982
1998	374,612	31,833	184,725	324,648
1999	421,492	38,693	195,197	379,479
2000	359,398	36,006	174,417	339,936
2001	385,824	31,942	187,322	392,055
2002	400,730	29,026	202,090	405,898
2003	347,309	28,863	167,135	389,793
2004	387,141	25,028	173,292	394,626
2005	358,214	21,471	195,916	410,544
2006	345,742	24,907	194,578	384,715
2007	332,549	24,714	196,717	390,630
2008	301,455	24,204	185,781	377,535
2009	308,685	17,234	170,049	321,478
2010	300,067	15,231	197,475	359,627
2011	277,214	18,140	184,559	363,841
2012	292,799	13,407	200,618	312,766
2013	289,552	23,426	177,710	341,100
2014	301,699	20,907	209,525	357,492
2015	258,762	20,756	194,915	357,219
2016	260,793	15,214	210,335	354,215
2017	213,962	12,465	191,550	347,325
2018	221,111	15,063	189,705	369,815
2019	267,566	25,222	191,801	363,186
2020*	280,454	16,482	204,095	364,885
2021	243,928	18,638	202,084	364,486
2022	235,923	16,368	201,376	372,230
2023	215,879	9,505	216,492	349,898
2024	194,285	12,427	155,334	350,608
Long-term average: (1994-2023)	**320,072**	**23,278**	**188,768**	**351,384**

***Not all states completed survey due to COVID-19**

Table 5.

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PERCENT USE OF NEST BOXES BY HOODED MERGANSERS AND WOOD DUCKS (1990 – 2023)

Year	% use	
	HOME	WODU
1990	67	30
1991	59	40
1992	61	39
1993	59	39
1994	55	41
1995	63	32
1996	55	40
1997	55	41
1998	52	45
1999	54	41
2000	64	33
2001	53	42
2002	59	36
2003	65	33
2004	70	25
2005	60	33
2006	63	25
2007	71	24
2008	64	26
2009	64	29
2010	71	24
2011	68	25
2012	64	30
2013	62	22
2014	57	21
2015	80	18
2016	83	8
2017	86	11
2018	80	9
2019	83	8
2020	73	20
2021	76	23
2022	88	12
2023	34	44
5-year average (2018-2022)	**80**	**14**

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, 2023 – June 30, 2024

Purpose/Target Name: PROJECT 5 - MIGRATORY GAME BIRD RESEARCH AND MANAGEMENT

Objective Name: JOB 3 - PROFESSIONAL EXCHANGE AND DISSEMINATION OF PROJECT INFORMATION

Objective Statement: To participate in programs associated with migratory game bird research and management in New Hampshire. To assist provincial, federal, state, local and private conservation agencies in implementation of the Atlantic Flyway Waterfowl Management Plan, other migratory game bird management plans, and to prepare all associated research reports and annual performance reports.

Summary: Several waterfowl-related meetings were held or attended during the project segment. These include the Atlantic Flyway Council and Technical Section meetings and one annual season setting waterfowl regulation meeting. Waterfowl hunting seasons were recommended and adopted (see Appendix 1 and 2). Numerous correspondence related to migratory game birds were processed.

Target Date: June 30th annually 2021-2025.

Status of Progress: On schedule.

Significant Deviations: None.

Objective Approach: Prepare materials and provide technical assistance to the Atlantic Flyway Waterfowl Council, federal, state and private wildlife agencies and attend meetings and conferences that lead to the efficient management of waterfowl and other migratory game birds. Prepare all associated performance reports and research proposals.

Attend annual Atlantic Flyway Waterfowl Council meetings to share research and management findings and opinions, to increase understanding and cooperation between the 17 states and 6 eastern provinces of Canada that comprise the Atlantic Flyway.

Information is also provided to town, state and county agencies as well as sportsmen's groups and individuals relative to migratory game bird research and management within the state.

Results: The following meetings were attended:

1. The fall Atlantic Flyway Council and Technical Section Meeting was attended in Lancaster, Pennsylvania. The meeting was held September 10 – September 15, 2023.
2. The winter Atlantic Flyway Technical Section Meeting was attended in Niagara Falls, NY. The meeting occurred February 25 - February 29, 2024.
3. The New Hampshire Waterfowl Regulations Public Meeting was held on March 20, 2024 from 6-7:30 pm at the Fish & Game Headquarters in Concord, NH. Public comment was accepted via email for those who could not attend. The 2024 – 2025 New Hampshire Waterfowl hunting seasons were adopted through federal and state rulemaking from the proposals drafted by the Waterfowl Project Leader and approved by the Wildlife Division Chief.

The hunting season dates for all migratory game bird species are described in detail in the 2024-2025 New Hampshire Migratory Bird Hunting Regulations leaflet (Appendix 1). Appendix 2 is a map of the New Hampshire waterfowl hunting zones.

Federal Aid performance reports were prepared and submitted.

Custom Qualitative Indicator/Output: New Hampshire has participated in programs associated with migratory game bird research and management. Governmental and private conservation agencies have assisted in implementing the Atlantic Flyway Waterfowl Conservation Plan and other migratory game bird management plans. All associated research and annual performance reports have been prepared.

Recommendations and Remarks: Continue with job as planned.

Prepared by: Jessica Carloni
Migratory Game Bird Project Leader
July 16, 2024

Appendix 1. NH MIGRATORY BIRD HUNTING REGULATIONS (2024-2025).

Species	Northern Zone	Inland & Ct. River Zone	Coastal Zone	Bag Limit	Possession Limit
Ducks[A]	Oct. 2 – Nov. 30	Oct. 9 – Nov. 11 Nov. 27 – Dec. 22	Oct. 3 – Oct. 9 Nov. 27 – Jan. 18	6	18
Mergansers[B]	Dates same as ducks			5	15
Coots	Dates same as ducks			15	45
Sea Ducks[C]	Dates same as ducks			4	12
Canada Geese (Sept)	Statewide Sep. 1 – Sep. 25			5	15
Canada Geese (Regular)	Dates same as ducks			2	6
Snow Geese	Dates same as ducks			25	NONE
Brant	Oct. 2 – Oct. 31	Oct. 9 – Nov. 7	Oct. 3 – Oct. 9 Nov. 27 – Dec. 19	1	3
Falconry	Dec. 1 – Jan. 12	Nov. 12 – Nov. 26 Dec. 23 – Jan. 19	Jan. 27 – Mar. 10	3	9
Woodcock	Statewide: Oct. 1 – Nov. 14			3	9
Common Snipe	Statewide: Sep. 15 – Nov. 14			8	24
Crow	Statewide: Aug. 15 – Nov. 30, 2024 Mar. 16 – Mar. 31, 2025			NONE	NONE
Youth Waterfowl Hunting Weekend	Statewide: September 28 & 29, 2024			Same as regular season	
Veteran & Active Military Weekend[D]	Statewide: January 25 & 26, 2025			Same as regular season	

[A] Includes all species of ducks, with the following restrictions: No more than 4 mallards (2 of which may be a hen), 2 black ducks, 3 wood ducks, 1 pintail, 2 canvasbacks, 2 redheads, 1 scaup, and no more than 3 scoters, 3 long-tailed ducks, or 3 eiders (1 of which may be a hen). The harlequin duck season is closed. Possession limits are three times the daily bag limit (e.g. The mallard possession limit is 12, of which 6 may be hens).

[B] The daily bag limit of 5 mergansers is in addition to the daily bag limit of 6 ducks. Possession limits are three times the daily bag limit.

[C] Sea ducks are part of the general duck bag in all zones. The daily bag limit for sea ducks is 4 and the possession limit is 12.

[D] *Veteran & Active Military Personnel:* Veterans (as defined in section 101 of title 38, U.S. Code) and members of the Armed Forces on active duty, including members of the National Guard and Reserves on active duty (other than for training), may participate. All hunters must possess a Federal Duck Stamp. Proof of eligibility is required and must be carried on person while hunting.

Requirements for Migratory Bird Hunting in New Hampshire

Species	NH Hunting License	NH Waterfowl License	Federal Duck Stamp	HIP Permit	Non-Toxic Shot	Firearm Plug
Ducks, mergansers, brant, Canada geese (regular)	✓	✓	✓	✓	✓	✓
Woodcock and snipe	✓			✓		✓
Crow	✓					

*Firearm plug not required for September Canada Geese

Appendix 1. (Cont.)

SUMMARY OF FEDERAL REGULATIONS

In addition to State regulations, the following Federal rules apply to the taking, possession, shipping, transporting, and storing of migratory game birds. This is only a summary. Each hunter should also consult actual Federal regulations, which may be found in Title 50, Code of Federal Regulations, Part 20.

RESTRICTION. No person shall take migratory game birds:

- With a trap, snare, net, crossbow, rifle, pistol, swivel gun, shotgun larger than 10-guage, punt gun, battery gun, machine gun, fishhook, poison, drug, explosive, or stupefying substance.
- With a shotgun capable of holding more than three shells, unless it is plugged with a one-piece filler which is incapable of removal without disassembling the gun.
- From a sink box (a low floating device, having a depression affording the hunter a means of concealment beneath the surface of the water).
- From or with the aid or use of a car or other motor-driven land conveyance, or any aircraft, except that paraplegics and single or double amputees of the legs may take from any stationary motor vehicle or stationary motor-driven land conveyance. “Paraplegic” means an individual afflicted with paralysis of the lower half of the body with involvement of both legs, usually due to disease of or injury to the spinal cord.
- From or by means of any motor boat or sail boat unless the motor has been completely shut off and/or the sail furled, and its progress therefrom has ceased.
- By the use or aid of live decoys. All live, tame or captive ducks and geese shall be removed for a period of 10 consecutive days prior to hunting, and confined within an enclosure which substantially reduces the audibility of their calls and totally conceals such tame birds from the sight of migratory waterfowl.
- Using records or tapes of migratory bird calls or sounds, or electrically amplified imitations of birds calls.
- By means or aid of any motorized conveyance or any sail boat used for the purpose of or resulting in the driving, rallying, chasing, or stirring up of birds.
- By the aid of baiting, or on or over any baited area, where a person knows or reasonably should know that the area is or has been baited. Baiting means the direct or indirect placing, exposing, depositing, distributing, or scattering of salt, grain, or other feed that could serve as a lure or attraction for migratory game birds to, on, or over any areas where hunters are attempting to take them. Any such area will remain a baited area for ten days following the complete removal of all such salt, grain or other feed.

CLOSED SEASON. No person shall take migratory game birds during the closed season.

SHOOTING OR HAWKING HOURS. No person shall take migratory game birds except during the hours open to shooting and hawking as prescribed.

DAILY BAG LIMIT. No person shall take in any one day more than one daily bag limit.

TAGGING. No person shall give, put or leave any migratory game birds at any place or in the custody of another person unless the birds are tagged by the hunter with the following information:

1. The hunter’s signature.
2. The hunter’s address.
3. The total number of birds involved, by species.
4. The dates such birds were killed.

CUSTODY OF BIRDS OF ANOTHER. No person or business shall receive or have in custody any migratory game birds belonging to another person unless such birds are properly tagged.

FIELD POSSESSION LIMIT. No person shall possess more than one daily bag limit tagged or not tagged while in the field or while returning from the field to one’s car, hunting camp, home, etc.

WANTON WASTE. No person shall kill or cripple any migratory game bird without making a reasonable effort to retrieve the bird and retain it in their actual custody.

POSSESSION OF LIVE BIRDS. Wounded birds reduced to possession shall be immediately killed and included in the daily bag limit.

DRESSING. No person shall completely field dress any migratory game bird (except doves and band-tailed pigeons) and then transport the birds from the field. The head or one fully feathered wing must remain attached to all such birds while being transported from the field to one’s home or to a migratory bird preservation facility.

SHIPMENT. No person shall ship migratory game birds unless the package is marked on the outside with: (a) the name and address of the person sending the birds, (b) the name and address of the person to whom the birds are being sent, and (c) the number of birds, by species, contained in the package.

IMPORTATION. For information regarding the importation of migratory birds killed in another country, hunters should consult 50 CFR 20.61 through 20.66. One fully-feathered wing must remain attached to all migratory game birds being transported between the port of entry and one’s home or to a migratory bird preservation facility. No person shall import migratory game birds belonging to another person.

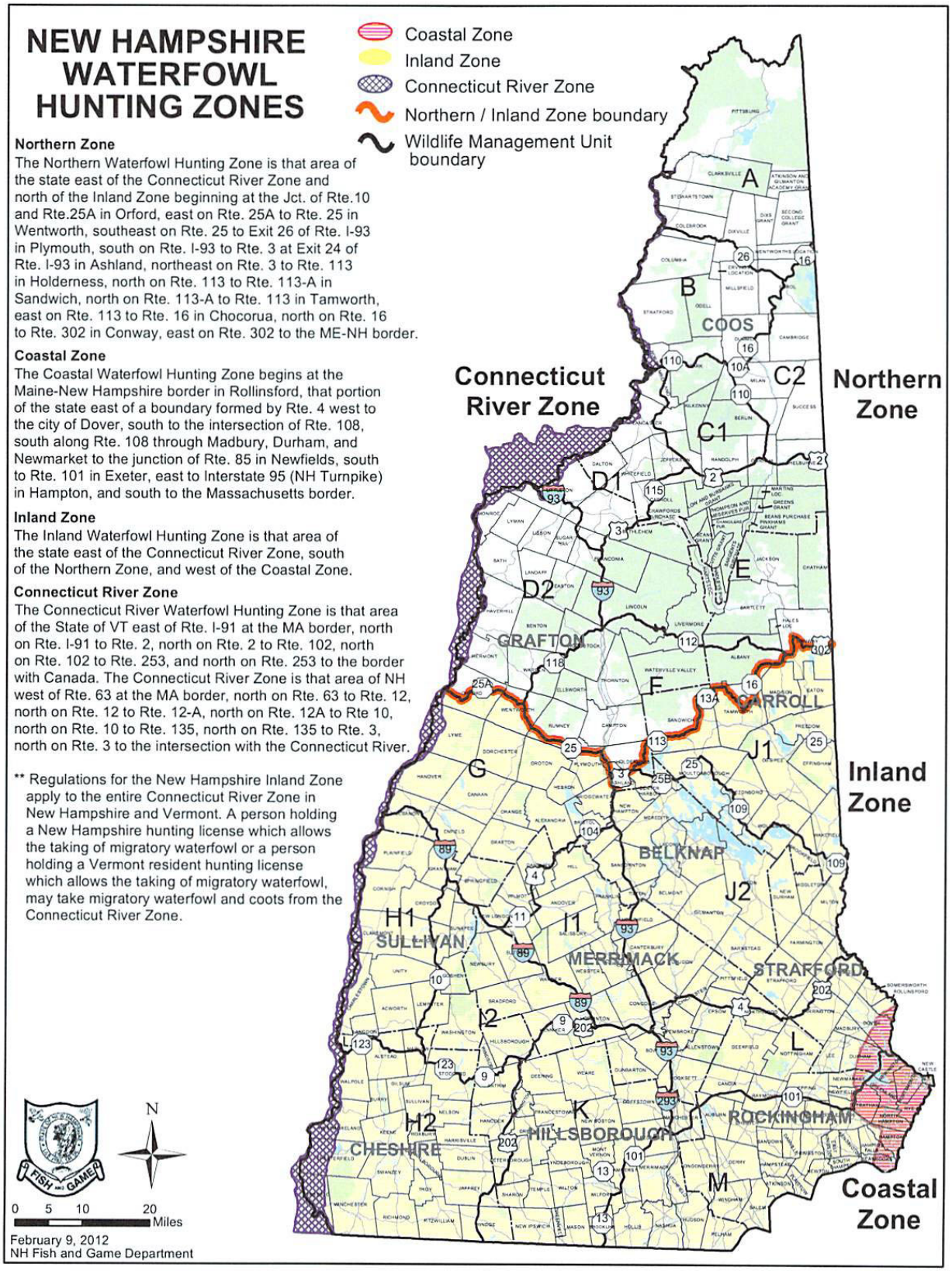
MIGRATORY BIRD HUNTING AND CONSERVATION STAMP.
The law requires that each waterfowl hunter 16 years of age and over must carry on their person a valid Migratory Bird Hunting and Conservation Stamp, or duck stamp, signed in ink across the face.

DUAL VIOLATION. Violation of State migratory bird regulations is also a violation of Federal regulations.

CAUTION: More restrictive regulations may apply to National Wildlife Refuges open to public hunting. For additional information on Federal regulations, contact Resident Special Agent, U.S. Fish and Wildlife Service, P.O. Box 1101, Portsmouth NH 03802, (603) 433-0502. Great Bay National Wildlife Refuge, (603) 431-7511. Lake Umbagog National Wildlife Refuge, (603) 482-3415.

BANDED WATERFOWL: Please report all banded waterfowl at **www.reportband.gov**
This publication is intended for information purposes only. The officially filed rules may be examined at Administrative Procedures Division – Office of Legislative Services, State House, Concord, New Hampshire 03301.

Appendix 2. NH WATERFOWL HUNTING ZONES.



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, 2023 – June 30, 2024

Purpose/Target Name: PROJECT 5 - MIGRATORY GAME BIRD RESEARCH AND MANAGEMENT

Objective Name: JOB 4 - STATEWIDE WATERFOWL BANDING

Objective Statement: To annually band puddle ducks and Canada geese to obtain data on mortality, survival and general information on migration and distribution of harvest. The Department will also assist other state and federal agencies with disease monitoring and surveillance efforts associated with waterfowl or other migratory bird species and staff will be trained and equipped to safely assist with these activities.

Summary: In September 2023, a total of 537 ducks were captured and banded in NH. The total included 276 wood ducks, 245 mallards, 11 American black ducks, 3 blue-winged teal, 1 northern pintail, and 1 mallard/black duck hybrid. Three of the banding sites were located in Coos County, 2 in Merrimack County, 2 in Grafton County, and one site was in Rockingham County. Rocket nets were utilized at four sites and bait traps were used at four sites. In January and February of 2024 a total of 279 ducks were captured at seven sites which included 271 mallards, 6 mallard/black duck hybrids, and 2 American black ducks. Bait traps were used at six sites and a rocket net was used at one site.

In June of 2024, a total of 862 Canada geese were captured and 692 were banded throughout the state (Table 8). A USDA Wildlife Services biologist swabbed a subsample of geese (25) for HPAI during three of the seven days of goose banding.

Target Date: June 30th annually 2021-2025.

Status of Progress: On schedule.

Significant Deviations: None.

Objective Approach: Banding of puddle ducks will be conducted primarily on Department management areas through the use of bait traps, rocket nets and capture of box-nesting females. Primary species will be wood ducks, mallards and black ducks. Efforts will be made to band both pre-hunting season and wintering populations. The objective is to band at least 300 dabbling ducks and 500 Canada geese each year. Banding of Canada geese will be conducted during the summer molt at select sites throughout the state. Banding data is provided to the U.S. Fish and Wildlife service for detailed analysis on a flyway-wide basis.

Results: The following capture and banding activities were completed during this segment.

Ducks

A total of 537 ducks were captured and banded during pre-hunting season efforts in September 2023. Bait traps accounted for most (79%) of the captures and rocket nets accounted for 21% of the captures. A total of 276 wood ducks, 245 mallards, 11 American black ducks, 3 blue-winged teal, 1 northern pintail, and 1 mallard/black duck hybrid were banded (Table 6). A total of 463 HPAI swabs were collected by USDA Wildlife Services.

Statewide, the ratio of juvenile mallards to female mallards was 3.3 which indicates an average year for duckling survival. Wood ducks experienced an above average brood survival with 5.5 juveniles/adult female in the state (Table 7).

A total of 279 ducks were captured and banded during winter banding operations in January and February of 2024. A total of 271 mallards, 6 mallard/black duck hybrids, and 2 American black ducks were banded at seven sites. A total of 248 HPAI swabs were collected by USDA Wildlife Services.

Spring nest box checks to band adult hen wood ducks and hooded mergansers did not occur during the project segment.

Canada Geese

In June of 2024, a total of 862 Canada geese were captured and 692 were banded throughout the state (Table 8). A USDA Wildlife Services biologist swabbed a subsample of geese (25) for HPAI during three of the seven days of goose banding. New Hampshire's banding effort for ducks and geese is part of the New England Zone Cooperative effort and the data are submitted to the U.S. Fish and Wildlife Service for analysis with other Atlantic Flyway banding data. During the project segment the puddle duck and goose goals were met and exceeded.

Custom Qualitative Indicator/Output: Puddle ducks and Canada geese have been annually banded to provide data on mortality, survival, and information on migration and distribution of harvest. When needed, Department staff have safely assisted in sampling for disease monitoring and surveillance efforts.

Recommendations and Remarks: Continue with job and efforts to meet Atlantic Flyway banding quotas.

Prepared by: Jessica Carloni
Waterfowl Project Leader
July 16, 2024

Table 6.

2023 PRE-HUNTING SEASON DUCK BANDING SUMMARY BY REGION

Region	Location	Mallard	Mallard X black duck	Black duck	Wood duck	Blue-winged teal	Northern pintail	Total
1	Groveton (rocket net)	0	0	0	39	0	0	39
	Stratford (rocket net)	0	0	0	26	0	0	26
	Umbagog NWR (rocket net)	0	0	0	39	0	0	39
	Region 1 Total	**0**	**0**	**0**	**104**	**0**	**0**	**104**
2	Haverhill (swim-in trap)	1	0	0	49	0	0	50
	Ashland (walk-in trap)	22	0	1	21	0	0	44
	Region 2 Total	**23**	**0**	**1**	**70**	**0**	**0**	**94**
3	Derry (rocket net)	10	0	0	0	0	0	10
	Hopkinton (swim-in trap)	72	1	5	102	3	1	184
	Exeter (walk-in trap)	140	0	5	0	0	0	145
	Region 3 Total	**222**	**1**	**10**	**102**	**3**	**1**	**339**
STATE TOTAL		**245**	**1**	**11**	**276**	**3**	**1**	**537**

Table 7.

2023 PRE-HUNTING SEASON DUCK BANDING SUMMARY BY AGE & SEX

Region	Species	Hatch Year		Adult	
		Male	Female	Male	Female
1	Wood duck	36	28	30	10
2	Mallard	3	8	3	9
	Black duck	0	0	1	0
	Wood duck	29	12	18	10
3	Mallard	77	55	55	35
	Black duck	3	4	2	1
	Wood duck	37	27	28	11
	Blue-winged teal	0	0	3	0
	Northern pintail	0	1	0	0

Region 1: Wood duck ratio of HY to AD Female = 6.4

Region 2: Wood duck ratio of HY to AD Female = 4.1

Region 3: Mallard ratio of HY to AD Female = 3.8

Statewide: Mallard ratio of HY to AD Female = 3.3
Wood duck ratio of HY to AD Female = 5.5

**brood survival ratios were calculated by species when sample size was large enough*

Table 8.

2024 CANADA GOOSE BANDING SUMMARY

DATE	COUNTY	TOWN	LOCATION	AD	HY	RECAPTURE	TOTAL
6/19/2024	Hillsborough	Weare	Perkins Pond	3	10	3	16
6/19/2024	Hillsborough	Hillsborough	Near Emerald Lake	4	23	13	40
6/19/2024	Hillsborough	Hopkinton	Kennedy Farm	2	4	1	7
6/20/2024	Belknap	Laconia	Opechee Bay	31	0	12	43
6/20/2024	Belknap	New Hampton	Pemigewasset River	6	9	21	36
6/21/2024	Carroll	Tuftonboro	Sunny Meadows Farm	12	14	3	29
6/21/2024	Belknap	Alton	Berry's Bait	7	8	0	15
6/24/2024	Merrimack	Allenstown	Suncook River	20	16	27	63
6/24/2024	Rockingham	Portsmouth	Corpus Christi	3	10	13	26
6/24/2024	Rockingham	Newmarket	Rockingham CC	4	9	0	13
6/24/2024	Strafford	Barrington	Christmas Dove	1	15	7	23
6/25/2024	Rockingham	Windham	Windham CC	26	36	0	62
6/25/2024	Rockingham	Londonderry	603 Brewery	26	20	11	57
6/25/2024	Rockingham	Kensington	TL Dairy Bar	6	9	3	18
6/26/2024	Coos	Bretton Woods	Mt Washington Resort	15	42	12	69
6/26/2024	Grafton	Bethlehem	Miller Pond	5	18	13	36
6/26/2024	Coos	Northumberland	Forbes Farm	28	65	30	123
6/27/2024	Coos	Pittsburg	First CT Lake	8	4	0	12
6/27/2024	Coos	Pittsburg	Back Lake	10	23	1	34
6/27/2024	Coos	Clarksville	West Road	10	16	0	26
6/27/2024	Coos	Columbia	Routhier Field	41	73	0	114
Totals: 21 Capture Drives				**268**	**424**	**170**	**862**

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, 2023 – June 30, 2024

Purpose/Target Name: PROJECT 5 - MIGRATORY GAME BIRD RESEARCH AND MANAGEMENT

Objective Name: JOB 5 - WEBLESS MIGRATORY GAME BIRD MANAGEMENT AND INVENTORY

Objective Statement: To annually determine the relative distribution and density of breeding woodcock in New Hampshire.

Summary: The Woodcock Singing Ground Survey was coordinated by the Department's Waterfowl Project Leader who issued cooperators the necessary forms and materials supplied by the U.S. Fish and Wildlife Service. Thirteen woodcock routes were surveyed (Table 9).

Target Date: June 30th annually 2021-2025.

Status of Progress: On schedule.

Significant Deviations: None.

Objective Approach: Instructions for conducting the Woodcock Survey are described in detail on the U.S. Fish and Wildlife Service survey form. Participants are required to 1) run the routes in New Hampshire during the 3-week period beginning April 25 and ending May 15; 2) begin counts approximately 22 minutes after sunset (15 minutes if cloud cover exceeds 75 percent); 3) make counts during a 30- to 35- minute period following the recommended starting time; 4) count singing male woodcock for two minutes at each of 10 listening stops along a 3.6 mile route at a 0.4 mile spacing interval; 5) do not make counts during heavy rain, snow, high wind, or temperatures below 40°F; 6) counts by new observers are not included when determining changes in the population index between consecutive years.

A total of 18 routes have been established throughout New Hampshire - eight of which are designated as "constant zeros", conducted once every five years because no birds were heard during two consecutive previous years. The state migratory bird biologist coordinates this federally supervised survey. The U.S. Fish and Wildlife Service issue coordinators the necessary forms, maps, instructions and materials for conducting the survey. The state coordinator then distributes the materials to the cooperators. The cooperators of the survey are state wildlife biologists.

In addition to the 18 survey routes described above and associated with the U.S. Fish and Wildlife Service supervised woodcock survey effort, the Department will survey eight additional routes annually using the same methodology to supplement the routes run for the Service. These additional routes have been established to provide coverage of additional areas of the state and enhance sample sizes for small game management purposes. The results of the U.S. Fish and Wildlife Service supervised routes and the eight additional routes established by the Department will be used by the small game project to assess woodcock abundance in New Hampshire on a regional basis.

Results:

Woodcock

Twelve of the 18 New Hampshire Woodcock Singing Ground routes were surveyed during April 25 – May 15, 2024 (Table 9).

In 2024, the northern New Hampshire routes averaged 4.2 singing males per route, the central routes averaged 3.0 singing males per route, and the southern routes averaged 2.0 singing males per route. Statewide numbers of singing male woodcock were considered average for the spring of 2024. Generally, northern routes in the state have higher numbers of singing males per route than southern routes.

The Eastern Management Region experienced a significant declining 10-year (2013-2023) trend of -1.18% per year. Overall, both management regions (Eastern and Central Management Regions) had a significant long-term (1968-2023) declining trend of -0.86% per year for the Eastern Management Region and -0.53% per year for the Central Management Region (Seamans and Rau 2023).

Literature cited:

Seamans, M.E., and R.D. Rau. 2023. American woodcock population status, 2023. U.S. Fish and Wildlife Service, Laurel, Maryland.

Custom Qualitative Indicator/Output: The relative distribution and density of breeding woodcock have been determined annually.

Recommendations and Remarks: Data collected in NH are essential to federal regional management efforts. Continue with job as planned.

Prepared by: Jessica Carloni
Migratory Game Bird Project Leader
July 16, 2024

Table 9.

2024 Woodcock Singing Ground Survey Summary

Route #	Route Name	Date	# of Woodcock	# of Stops
1	Pittsburg	4/26/2024	1	10
2	Stark	4/29/2024	7	10
3	Errol	5/6/2024	8	10
4	Bethlehem	4/29/2024	3	10
5	Pinkhams Grant	5/1/2024	2	10
7	Moultonborough	4/25/2024	3	10
9	Plainfield	5/6/2024	4	10
10	Alexandria	5/7/2024	4	10
15	Mount Vernon	4/29/2024	1	10
16	Londonderry	5/13/2024	3	10
18	Richmond	5/1/2024	2	10
19	Effingham/Ossipee	5/14/2024	1	10
		Total	**39**	**120**

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, 2023 – June 30, 2024

Purpose/Target Name: PROJECT 5 - MIGRATORY GAME BIRD RESEARCH AND MANAGEMENT

Objective Name: JOB 6 - SUPPORT OF ATLANTIC FLYWAY COUNCIL COOPERATIVE PROJECTS

Objective Statement: To pay annual assessments as agreed to by members of the Atlantic Flyway Council for support of approved cooperative waterfowl management projects.

Summary: The annual assessment has been paid and the AFTS Banding Committee provided the attached 2023 Preseason Waterfowl Banding Report for the Atlantic Flyway Cooperative Waterfowl Banding Program.

Target Date: June 30th annually 2021-2025.

Status of Progress: On schedule.

Significant Deviations: None.

Objective Approach: The New Hampshire Fish and Game Department is a member of the Atlantic Flyway Council (AFC), which formally consults with the U.S. Fish and Wildlife Service (FWS) to cooperatively manage waterfowl populations across Canada, the U.S. and Mexico. The AFC and FWS develop banding, research and management sampling schemes which are paid for, in part, by member states. The Council has annually agreed to pay dues and assessments for cooperative waterfowl management projects, including banding studies, since 1963. The Wildlife Management Institute (WMI) has been retained by the AFC to administer and invoice states for this program. The Department will pay its share of annual assessments to WMI or any successor organization to support cooperative waterfowl management projects as approved by the AFC and FWS.

Results: The annual assessment has been paid using states funds only due to a related audit finding during the Department's recent audit of its Wildlife and Sport Fish Restoration grants. Appendix 3 provides the results of 2023 banding activity by member AFC member jurisdictions.

Custom Qualitative Indicator/Output: Annual assessments for the support of Atlantic Flyway Council for support of cooperative waterfowl management projects have been paid. However, no federal reimbursement was made for the most recent assessments.

Recommendations and Remarks: Continue with job as planned using state funds only to pay the annual assessment costs until an appropriate approach is determined for federal aid participation. Any NH Fish and Game staff time spent coordinating with AFC or WMI to support this job will continue to be charged to the grant.

Prepared by: Jessica Carloni
Migratory Game Bird Project Leader
July 16, 2024

JOB PROGRESS REPORT
SURVEYS AND INVENTORIES

States: Maine, New Hampshire, Vermont, Massachusetts, Connecticut Rhode Island, New York, Pennsylvania, West Virginia, New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina, Florida, Georgia

Cooperators: Provincial Game Departments of Ontario, Quebec, Nova Scotia, New Brunswick, Prince Edward Island, and Newfoundland, U.S. Fish and Wildlife Service, Canadian Wildlife Service; Wildlife Management Institute, and various private agencies

Job Title: Atlantic Flyway Cooperative Waterfowl Banding Program

Period Covered: July 1, 2023 to September 30, 2023 (Ducks)
June 1, 2023 to September 30, 2023 (Canada geese and eiders)

Summary:

More ducks were banded in Eastern Canada in 2023 than in 2022. Banding efforts were reduced in 2022 from historic levels due to issues associated with the highly pathogenic avian influenza (HPAI) outbreak and other staffing related problems. Total ducks banded increased 24% (+2,772), black ducks banded increased 37% (+722) and pre-season Canada goose bandings increased 16% (+1,817) from 2022 to 2023. Provincial totals are as follows:

Province	Total Ducks*		Black Ducks		Canada Geese	
	2022	2023	2022	2023	2022	2023
Prince Edward Island	117	134	1	0	597	541
New Brunswick	2,330	2,009	531	833	10	7
Nova Scotia	590	886	95	116	0	0
Ontario	2,445	4,314	125	110	7318	8,901
Quebec	5,334	6,106	963	1,359	3,722	3,892
Newfoundland/Labrador	677	816	233	252	0	123
Total	**11,493**	**14,265**	**1,948**	**2,670**	**11,647**	**13,464**

*Total ducks includes black ducks.

The Atlantic Flyway states banded 1% fewer ducks (-141), 49% fewer black ducks (-95) and pre-season Canada goose bandings decreased 4% (-555) in 2023 than in 2022. State totals are as follows:

State	Total Ducks*		Black Ducks		Canada Geese	
	2022	2023	2022	2023	2022	2023
Connecticut	456	502	1	3	998	980
Delaware	50	75	0	0	253	336
Florida	956	974	0	0	0	0
Georgia	423	442	0	0	93	411
Maine	1,203	1,098	148	35	15	5
Maryland	573	453	6	0	1,020	937
Massachusetts	609	247	2	1	797	798
New Hampshire	534	472	8	8	0	652
New Jersey	1,041	473	8	1	1,589	1,498
New York	1,634	2,344	8	14	3,016	2,278
North Carolina	1,099	737	0	0	0	297
Pennsylvania	1,830	2,279	13	17	3,075	2,392
Rhode Island	32	8	0	0	694	545
South Carolina	1,253	1,036	0	0	0	0
Vermont	551	936	1	21	343	542
Virginia	153	164	0	0	977	480
West Virginia	0	16	0	0	495	659
Total	**12,397**	**12,256**	**195**	**100**	**13,365**	**12,810**

*Total ducks includes black ducks.

Contents:

Data are presented on pre-season waterfowl bandings during 2022 (final) and 2023 (preliminary) in eastern Canada and Atlantic Flyway States.

Background:

The Atlantic Flyway Cooperative Banding Program was initiated in 1965 by the Atlantic Flyway Council to determine population dynamics of selected waterfowl species in eastern Canada. This information is required to formulate waterfowl hunting regulations and to have some knowledge of waterfowl population levels in the Atlantic Flyway. These data are important to the states because much of their hunted waterfowl originates in Canada. The Atlantic Flyway Council approved another 5-year extension (2026-2030) of this program in March 2024. Revised banding goals have been established by the North American Duck Banding Needs Document (1989). Emphasis will be on American black ducks, mallards, wood ducks, green-winged teal, ring-necked duck, and common goldeneye to provide information on species related to multi-stock management.

Since 1965, totals of 1,230,984 ducks and 748,016 Canada geese have been banded in eastern Canada. During the same period, 1,103,507 ducks and 661,944 Canada geese have been banded in the Atlantic Flyway states.

Objectives:

(1) To determine distribution of harvest from breeding and wintering areas, and to define breeding areas source of harvest based on band recovery information.

(2) To determine changes in harvest pressure on various populations of waterfowl as measured by recovery and/or harvest rates.

(3) To determine annual and/or long-term survival rates for important breeding and wintering populations of waterfowl.

Procedures:

Provincial Wildlife Departments and the Canadian Wildlife Service have been instrumental in making necessary arrangements and conducting the Cooperative Banding in Canada. Crew leaders and/or cooperators should send their reports to one main person in each province (provincial or CWS or state) who shall be responsible for sending in banding schedules to the BBL in a timely fashion. The banding committee, with the help of Patrick Devers, Atlantic Flyway Representative, will retrieve the data from the BBL and compile an annual report.

Black duck banding activities were conducted in all of the six Atlantic Flyway Provinces. Pre-season banding was conducted in the Atlantic Flyway States under quotas established in the North American Duck Banding Needs Document (1989).

The Wildlife Management Institute continues to provide administrative assistance in collecting Cooperative State Funds and distributing these funds through grants-in-aid and direct payment of bills approved by the Banding Committee. Prompt payment of state shares to the Institute is highly desirable.

Findings:

A minimum of 14,265 ducks and 13,464 Canada geese were banded during 2023 pre-season efforts in eastern Canada. The number of ducks banded was higher than the number banded in 2022. In the Atlantic Flyway States that reported bandings, totals of 12,256 ducks and 12,810 Canada geese were banded in 2023. The final numbers of each species banded in 2022 and preliminary totals for 2023 are shown in attached tables.

Data Analysis:

The Cooperative Banding Contract allows Cooperative Funds to be used for data analysis. Funds were not used in this segment for analysis. However, data from this program does continue to be used to monitor populations. There are plans to use these data to determine distribution of harvest by state and province and to check harvest rates of specific production areas as they relate to individual states and/or provinces. This has been done for black duck and Canada goose. Both the Black Duck and the Canada Goose Management Plans made considerable use of banding data. Wood duck banding data are used to derive harvest rate estimates used within multi-stock adaptive harvest management. Banding data are also used in the Mallard Harvest Strategy.

Financial:

The project financial report dated January 12, 2024 from the Wildlife Management Institute indicates that thirteen of the seventeen 2024 state assessments have been posted to the account by WMI. Reminders will be sent to the remaining four states (NH, NY, NJ and VA) to submit 2024 payments. The account currently has a balance of $141,106.07. An additional $36,000 in expected state funds (FY24 invoices) and a transfer of $95,000 from the USFWS provides an expected balance of $272,106.07 available for 2024 work. Funding requests for 2024 projects from the three project partners totals $216,622 (CWS-Atlantic $63,370, CWS-Quebec $82,077 and Ontario MNRF $71,175). The projected balance remaining in the account following the conclusion of 2024 work totals $55,484.07.

Recommendations:

Banding in eastern Canada should continue in 2024 as in 2023 with continued emphasis on those banding sites that band large numbers of black ducks, mallards, wood ducks, green-winged teal, ring-necked ducks, common goldeneye, Canada geese, and other important species. Increased emphasis should be placed on the speedy and thorough analysis of data with the results being made available to the Atlantic Flyway Council as soon as possible. States should make use of the available data in their own programs.

Pre-season (June through September) waterfowl bandings of Atlantic Flyway Provinces from USGS Bird Banding Lab as of March 27, 2024 (2022 final and 2023 preliminary).

Province	2022	2023
New Brunswick	**2,340**	**2,016**
American Black Duck	531	833
American Black Duck Dominant X Mallard Hybrid	31	54
American Wigeon	27	27
Black-bellied Whistling Duck	1	0
Blue-winged Teal	96	34
Canada Goose	10	7
Common Eider	23	0
Gadwall	16	1
Green-winged Teal	541	248
Hooded Merganser	2	1
Mallard	535	494
Mallard Dominant X American Black Duck Hybrid	8	13
Mallard X American Black Duck Hybrid	0	1
Mallard X American Black Duck Intermediate	9	3
Northern Pintail	8	9
Northern Shoveler	10	6
Red-breasted Merganser	23	0
Ring-necked Duck	100	70
Wood Duck	369	215
Newfoundland/Labrador	**677**	**939**
American Black Duck	233	252
American Black Duck Dominant X Mallard Hybrid	4	4
Blue-winged Teal	1	0
Canada Goose	0	123
Common Eider	0	24
Green-winged Teal	377	500
Mallard	43	32
Mallard Dominant X American Black Duck Hybrid	6	3
Northern Pintail	13	1
Nova Scotia	**590**	**886**
American Black Duck	95	116
American Black Duck Dominant X Mallard Hybrid	3	3
American Wigeon	10	43
Blue-winged Teal	73	98
Gadwall	20	10
Green-winged Teal	200	303
Hooded Merganser	2	1
Mallard	97	213
Mallard Dominant X American Black Duck Hybrid	5	4
Northern Pintail	3	3

Province	2022	2023
Northern Shoveler	2	4
Other Hybrid Duck	1	0
Ring-necked Duck	44	32
Wood Duck	35	56
Ontario	**9,763**	**13,215**
American Black Duck	125	110
American Black Duck Dominant X Mallard Hybrid	5	9
American Wigeon	20	64
Blue-winged Teal	102	296
Bufflehead	6	21
Canada Goose	7,318	8,901
Common Goldeneye	12	8
Common Merganser	1	0
Gadwall	0	2
Green-winged Teal	97	504
Hooded Merganser	72	127
Lesser Scaup	13	4
Mallard	1,088	2,005
Mallard Dominant X American Black Duck Hybrid	4	1
Mallard X American Black Duck Hybrid	1	0
Northern Pintail	1	21
Northern Shoveler	1	5
Red-breasted Merganser	1	0
Ring-necked Duck	201	312
Wood Duck	695	825
Prince Edward Island	**714**	**675**
American Black Duck	1	0
Blue-winged Teal	16	7
Canada Goose	597	541
Gadwall	0	30
Green-winged Teal	95	90
Hooded Merganser	0	1
Mallard	3	2
Ring-necked Duck	2	4
Quebec	**9,058**	**10,004**
American Black Duck	963	1,359
American Black Duck Dominant X Mallard Hybrid	26	12
American Wigeon	0	1
Blue Goose	0	3
Blue-winged Teal	98	31
Canada Goose	3,722	3,892
Common Eider	145	13
Common Goldeneye	6	15

Province	2022	2023
Common Merganser	1	1
Gadwall	4	9
Greater Snow Goose	1	0
Green-winged Teal	1,032	1,839
Hooded Merganser	8	2
Lesser Snow Goose	1	0
Mallard	2,815	2,627
Mallard Dominant X American Black Duck Hybrid	4	1
Mallard X American Black Duck Hybrid	4	1
Northern Pintail	20	27
Redhead	3	0
Ring-necked Duck	11	9
Small Canada/Cackling Goose	0	3
Wood Duck	194	159
Grand Total	**23,142**	**27,735**

Pre-season (June through September) waterfowl bandings of Atlantic Flyway States from USGS Bird Banding Lab as of March 27, 2024 (2022 final and 2023 preliminary).

State	2022	2023
Connecticut	**1,454**	**1,482**
American Black Duck	1	3
Canada Goose	998	980
Mallard	455	487
Wood Duck	0	12
Delaware	**303**	**412**
Canada Goose	253	336
Blue-winged Teal	0	1
Green-winged Teal	0	2
Mallard	28	16
Wood Duck	22	56
Florida	**963**	**985**
Black-bellied Whistling-Duck	48	89
Fulvous Whistling-Duck	3	2
Mottled Duck	494	525
Other Hybrid Duck	18	5
Wood Duck	393	353
Georgia	**516**	**853**
Black-bellied Whistling-Duck	49	9
Canada Goose	93	411
Mallard	0	2
Wood Duck	374	431
Maine	**1,221**	**1,103**
American Black Duck	148	35
American Black Duck Dominant X Mallard Hybrid	4	2
American Wigeon	0	1
Blue-winged Teal	1	2
Canada Goose	15	5
Gadwall	0	1
Green-winged Teal	4	5
Mallard	626	884
Mallard Dominant X American Black Duck Hybrid	3	3
Mallard X American Black Duck Hybrid	3	0
Mallard X American Black Duck Intermediate	0	1
Ring-necked Duck	5	6
Wood Duck	409	158
Maryland	**1,618**	**1,435**
American Black Duck	6	0
Canada Goose	1,020	937
Mallard	51	1
Wood Duck	516	452

State	2022	2023
Massachusetts	**1,413**	**1,046**
American Black Duck	2	1
Blue-winged Teal	0	1
Canada Goose	797	798
Green-winged Teal	4	1
Hooded Merganser	1	0
Mallard	247	99
Mallard Dominant X American Black Duck Hybrid	1	1
Wood Duck	354	144
New Hampshire	**534**	**1,124**
American Black Duck	8	8
Blue-winged Teal	13	3
Canada Goose	0	652
Mallard	162	183
Mallard Dominant X American Black Duck Hybrid	1	1
Northern Pintail	0	1
Wood Duck	350	276
New Jersey	**2,630**	**1,971**
American Black Duck	8	1
Canada Goose	1,589	1,498
Mallard	371	194
Mallard X American Black Duck Intermediate	0	1
Wood Duck	642	277
New York	**4,650**	**4,622**
American Black Duck	8	14
American Black Duck Dominant X Mallard Hybrid	0	1
American Wigeon	0	1
Blue-winged Teal	5	29
Canada Goose	3,016	2,278
Common Merganser	1	0
Gadwall	0	1
Green-winged Teal	70	487
Mallard	760	799
Mallard Dominant X American Black Duck Hybrid	2	1
Mallard X American Black Duck Hybrid	1	0
Northern Pintail	1	13
Redhead	0	1
Ring-necked Duck	15	2
Wood Duck	771	995
North Carolina	**1,100**	**1,034**
Canada Goose	0	297
Wood Duck	1,099	737
Pennsylvania	**4,907**	**4,673**

State	2022	2023
American Black Duck	13	17
American Black Duck Dominant X Mallard Hybrid	1	1
Blue-winged Teal	40	67
Canada Goose	3,075	2,392
Green-winged Teal	10	351
Mallard	647	782
Mallard X American Black Duck Hybrid	0	1
Mallard X American Black Duck Intermediate	3	0
Northern Pintail	6	6
Northern Shoveler	0	1
Wood Duck	1,110	1,053
Rhode Island	**729**	**553**
Canada Goose	694	545
Mallard	29	0
Wood Duck	3	8
South Carolina	**1,253**	**1,036**
Black-bellied Whistling-Duck	51	8
Mottled Duck	102	297
Wood Duck	1,100	731
Vermont	**894**	**1,478**
American Black Duck	1	21
Canada Goose	343	542
Green-winged Teal	0	120
Mallard	94	479
Mallard X American Black Duck Hybrid	0	1
Northern Pintail	0	23
Wood Duck	456	292
Virginia	**1,130**	**644**
Blue-winged Teal	6	3
Canada Goose	977	480
Green-winged Teal	4	2
Mallard	2	5
Ring-necked Duck	0	1
Wood Duck	141	153
West Virginia	**495**	**675**
Canada Goose	495	659
Wood Duck	0	16
Grand Total	**25,810**	**25,126**

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, 2023 to June 30, 2024

Purpose/Target Name: PROJECT 6 - FURBEARER RESEARCH AND MANAGEMENT

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

Objective Statement: To annually gather and analyze annual harvest information from trappers, fur-buyers and wildlife control operators.

Summary: A total of 421 trapping licenses were sold for the 2023-2024 (2023) trapping season, 135 over-68 trapping licenses were active. The estimated value of the pelts taken by trappers during the 2023 season was calculated to be $42,351. The number of licensed trappers increased, though harvest for all species decreased when compared to the 2022 season. Beaver, coyote, otter, fisher, mink, muskrat, raccoon, red fox, skunk and weasel harvests were below their respective 3-year averages while gray fox, was above the respective 3-year average. The number of trap nights for beaver, increased from the 2022 season and 3-year average. While coyote, fisher, gray fox, red fox, mink, muskrat, otter skunk, and weasel had decreased effort. Beaver, otter, mink, and red fox experienced an increase in pelt values from the 2022-2023 season.

Target date: June 30th annually 2021-2025.

Status of progress: On schedule.

Deviations: None.

Objective Approach: Annual furbearer harvest data will be collected from licensed trappers and fur-buyers via mandatory annual trapper and fur-buyer reports. Failure to submit said reports is punishable under state law. Otter pelts will be tagged in accordance with state law by conservation officers to allow for export under US programs for CITES, while other species (e.g., fisher) may be tagged depending on data, research, and/or law enforcement considerations. Catch per unit effort data will be generated and will serve as the principal means by which we track population change.

Harvest data will also be collected from licensed Wildlife Control Operators (WCOs). Since July 2003 WCO's have been required by law to be licensed and are required to submit an annual report of furbearer species taken by town. Failure to report results in loss of their license for the next year. While these data are not analyzed in the same fashion as trapping data, the data is factored in to management decision making.

Furbearer carcasses may be collected to allow for the collection of: 1) furbearer population demographic data, 2) heavy metal and/or toxicant samples, and/or 3) trap performance/impact data as part of national trap testing for the formulation of best management practices.

Annual harvest data will be summarized on the basis of 5 furbearer management regions. Catch per unit effort (CPUE) data will be generated by species, region, year, and historic trends will be monitored to detect notable deviations from established norms.

Results: Furbearers are taken throughout the state and trapping remains an important management tool in NH. The number of trapping licenses sold has remained low for the last decade including 421 for the 2023 -2024 season. For most of our furbearer species the harvest was well distributed across furbearer management regions (Table 1). Pelt values have experienced a dramatic decline since the historic highs of the 1970's. The decline is particularly dramatic when inflation is considered. Table 2 traces harvest and pelt prices from 2012 to present.

Data analysis suggests that furbearer catch per unit effort represents our best indicator of population trends in the state. Therefore in addition to harvest, trappers are required to provide data on the number of traps and trap nights set per species. Effort data has been available since 1994 and facilitates long-term trend analysis. These data are used to calculate trap nights per species per year (Table 3). By using total trapper effort and the total harvest by species, harvest rates are calculated and are reported as catch per 100 trap-nights of effort (Table 4). Statewide catch per unit effort data are summarized in Table 5. Based on the average pelt value of the Maine Trappers Association's winter auction and the total harvest by species, the economic value of the 2023 season harvest was calculated to be $42,351 (Table 6). Three-year mean harvests and pelt prices are compared to the current year harvests and prices to determine trends. NH Wildlife Control Operators (WCOs) have been required to purchase a license and report their catch since 2003. The 2022 season represents the most recently available WCO data since these reports are not due until June 30 and many come in late. WCOs took significant proportions of several species. Opossums, skunks, beavers, and raccoons captured by WCOs due to conflict constituted a significant proportion of the statewide catch (Table 7).

Beaver

The 2023 take of 1,109 beaver was down 14.7% from the 2022 season and down 10.4% from the previous 3-year average. The pelt value of $30.75 was up 13.1% from $27.20 the previous year and was 70.2% above the previous 3-year average. There was a statewide total of 19,147 trap-nights of effort, which was 16.2% above the previous trap year (Table 3). Catch per 100 trap-nights per WMU is listed in Table 4-a. Table 5 indicates that the statewide catch per 100 trap nights was 5.79 versus 7.89 the previous year. Beaver pelts were valued at $34,102 to trappers (Table 6). Beavers remain a significant furbearer species in New Hampshire due in part to the diversity of species living in the habitats they create. Beavers provide a significant amount of recreational trapping opportunity and WCO work.

Otter

The 2023 otter harvest was 76. This was 24% below the previous year's harvest of 100 and 26% below the 3-year average. The pelt value at $35.50 was 7.6% above the previous year and was 49% above the previous 3- year average. Trapper effort was 1,948 trap-nights, a decrease of 44.8% from the previous year (Table 3). A season bag limit of 10 otters was established in 1994, and has continued to this day. Catch per 100 trap-nights per WMU is listed in Table 4-g. The mean statewide catch per 100 trap-nights was 2.82, consistent with the previous year (2.83; Table 5). Past data analysis suggests that a harvest of 350 otter or more, for several years, could cause a decline in NH's population. The 2023 harvest of 76 is an acceptable harvest. Since 1980 the threshold of 350 has only been attained or surpassed in 1993, 1994, 1996, and 2001.

Mink

A total of 18 mink were harvested, a decrease of 48.6% from the previous year and 62.2% below the previous 3-year average. The pelt value of $9.90 was 23.8% above the previous year and 40.1% above the previous 3-year average. An effort of 1,945 trap-nights was 15.5% below the previous year (Table 3). The mean statewide catch per 100 trap-nights was 0.87 compared to 1.52 the previous year. Trapper effort decreased (Table 3) accompanied by a reduction in take when compared to historic levels (Table 4-e).

Muskrat

Trappers took 285 muskrat, an increase of 26.7% from the previous year's harvest of 225 and 10.9% below the previous 3-year average. The pelt value decreased from $2.35 to $2.30, a decrease of 2.1%, and 26.2% below the 3-year average. Trapper effort was 2,452 trap-nights was 40.7% below the previous year. Catch per 100 trap-nights per WMU is listed in Table 4-f. The mean statewide catch per 100 trap-nights was 10.24 versus 5.45 the previous year (Table 5).

Fisher

The fisher harvest was 6, a decrease of 68.4% from the previous year and 76.6% below the previous 3-year average. Fisher pelt values were $33.38, a decrease of 6% from the previous year, and 18.5% above the previous 3-year average. Trapper effort was 1,313 trap-nights which was 35.2% below the previous year (Table 3). Fisher catch per 100 trap-nights per WMU data is listed in Table 4-c. The average statewide catch rate of fisher harvest per 100 trap-nights was 0.46, compared to 0.94 in 2023 (Table 5).

Bobcat

The bobcat season remains closed to trapping and hunting. Trappers report the capture and release of bobcats from their sets. Thirty-six bobcats were reported incidentally captured and released while 1 bobcat was reported killed. These reports suggest that bobcats occur over a wide area of the state and that the population may be increasing.

Raccoon

Trappers took a total of 148 raccoons, a decrease of 42% from the previous year and 30.2% below the previous 3-year average. The pelt value, was $8.00 and 15.8% below the previous year. However, the value was 3.2% above the previous 3-year average. Trapper effort was 3,821 trap nights (Table 4-h), down 35.5% from the previous year. The mean statewide raccoon catch rate per hundred trap-nights (Table 5) was 3.25 compared to 4.3 the previous year. Catch rates per WMU are provided in Table 4-h. Trapper interest in raccoons remains very low compared to harvests as high as 5,000 over two decades ago. The mid-Atlantic strain of raccoon rabies continues to be endemic in the state.

Fox

Trappers took a total of 27 gray fox and 50 red fox. The gray fox harvest was down 10.0% from the previous year and up 50% from the previous 3-year average. Gray fox pelt value decreased 27.9% to $15.50 from the previous year and was 5.6% below the previous 3-year average. The red fox harvest decreased 31.5% from the previous year and was 18.5% below the previous 3-year average. Red fox pelt value increased 5.2% to $18.3 and was 35.9% from the previous 3-year average. Trappers expended 4,604 trap-nights in pursuit of red fox, which was 58.5% below the previous year and gray fox trapper effort was 4,109 trap-nights, a decrease of 54.5% from the previous year (Table 3). Catch per unit effort for both fox species increased from the 2022-23 to the 2023-24 season, from 0.33 to 0.39 for gray fox, and from 0.66 to 0.80 for red fox. See Tables ,4-d, and 4-i for details regarding fox catch rates.

Coyote

The coyote take decreased 25.2% from 214 to 160. The trapper take was 46.9% below the previous 3-year average. The pelt value decreased 16.7% from $15.00 to $12.50. The pelt value was 129% below the previous 3-year average. Trapper effort was 8,605 trap-nights, which was down 37.9% from the previous year (Table 3). The mean statewide catch per 100 trap-nights increased from 1.55 to 1.86 (Table 5). Catch rates per WMU are summarized in Table 4-b. A formal coyote trapping season was established in 2005.

Conclusions: Analysis of the harvest data is critical to our understanding of the status of New Hampshire furbearer populations, as well as the influence of trapping on furbearers. Trapping plays a key role in mitigating the effects of some species, especially beaver, on forest lands, crops, roadways, and other human uses of the land. While most people appreciate the presence of these species, their attitudes often abruptly change when they have a negative encounter. Furbearers are a valuable natural resource. Trapping and hunting continues to provide valuable services to the state's citizens.

Custom Qualitative Indicator/Output: Annual harvest information from trappers, fur-buyers and wildlife control operators has been gathered and analyzed.

Recommendations: We recommend that this job continue as planned because it provides critical information for furbearer management in New Hampshire. Harvest data reports obligate trappers to report on the basis of Wildlife Management Units (WMUs). Extensive efforts have been undertaken by our data managers to refine historic furbearer harvest records on the basis of WMUs.

Prepared by: _____

Patrick Tate
Furbearer Project Leader
July 15, 2024

Table 1. NEW HAMPSHIRE 2023-24 TOTAL TRAPPER TAKE BY SPECIES AND REGION (INCLUDING INCIDENTAL TAKE)

Total Trapper Take												
Region	BEAVER	COYOTE	FISHER	GRAY FOX	MINK	MUSKRAT	OPOSSUM	OTTER	RACCOON	RED FOX	SKUNK	WEASEL
NORTH	228	50	2	2	5	109	0	17	47	10	11	9
WHITE MTNS	199	62	0	17	6	35	10	6	36	18	20	1
CENTRAL	296	17	1	5	3	43	9	17	18	16	3	1
SOUTHWEST	142	14	0	1	1	29	9	14	10	5	3	2
SOUTHEAST	244	17	3	2	3	69	30	22	37	1	6	0
TOTAL	1109	160	6	27	18	285	58	76	148	50	43	11

Table 2. NEW HAMPSHIRE STATEWIDE FURBEARER HARVEST AND PRICE RECORDS (2012-2023)

Part 1: Grey Fox /Red Fox/Lynx/Marten/Mink/Bear/Beaver/Bobcat

		Gray Fox		Red Fox		Lynx		Marten		Mink		Beaver		Bobcat	
Season (Year)	Number of Licensed Trappers	No.	Average Price	No.	Average Price	No.	Average Price	No.	Average Price	No.	Average Price	No.	Average Price	No.	Average Price
2012	474	150	$33.82	291	$37.00	-	-	9	-	385	$16.00	2484	$22.59	14	-
2013	560	169	$28.97	257	$38.00	-	-	4	-	275	$11.56	2269	$19.78	5	-
2014	557	76	$16.00	162	$20.00	-	-	23	-	257	$5.55	2044	$11.93	9	-
2015	548	103	$11.00	163	$18.74	-	-	5	-	166	$7.51	2152	$12.04	7	-
2016	479	47	$12.67	98	$11.69	-	-	4	-	106	$6.78	1085	$12.02	1	-
2017	454	56	$8.60	115	$21.00	-	-	0	-	87	$8.00	1140	$16.00	0	-
2018	463	24	$14.50	114	$14.50	-	-	3	-	75	$9.00	1145	$15.50	5	-
2019	420	23	$16.75	132	$17.50	-	-	1	-	32	$8.00	1056	$9.20	3	-
2020	422	33	$12.50	82	10.75	-	-	0	-	32	$8.00	893	$12.00	2	-
2021	416	13	$15.25	52	$12.25	-	-	5	-	42	$5.20	1167	$15.00	3	-
2022	393	42	$21.50	80	$17.40	-	-	-	-	41	$8.00	1175	$27.20	2	-
2023	421	27	$15.50	50	$18.30	-	-	0	-	18	$9.90	1109	$30.75	X	-

Year = the year when the season opened, even though the seasons cross into a second calendar year.

Table 2. NEW HAMPSHIRE STATEWIDE FURBEARER HARVEST AND PRICE RECORDS (2012-2023) (Cont'd)

Part 2: Muskrat/Otter/Raccoon/Skunk/Weasel/Coyote/Fisher

		Muskrat		Otter		Raccoon		Skunk		Weasel		Coyote		Fisher	
Season (Year)	Number of Licensed Trappers	No.	Average Price	No.	Average Price	No.	Average Price	No.	Average Price	No.	Average Price	No.	Average Price	No.	Average Price
2012	474	1800	$9.13	285	$59.43	571	$8.26	226	$3.00	91	$3.00	509	$22.22	269	$72.50
2013	560	1658	$7.10	241	$38.75	563	$5.71	144	-	31	-	482	$20.97	216	$55.16
2014	557	1383	$4.59	166	$22.67	454	$5.90	74	-	64	-	434	$14.21	225	$38.53
2015	548	1420	$2.30	160	$31.68	415	$3.15	156	$5.00	59	$1.00	485	$16.88	132	$30.07
2016	479	515	$2.95	143	$22.00	281	$2.91	74	$5.17	19	$1.75	338	$13.62	83	$32.65
2017	454	500	$3.50	82	$36.00	230	$6.00	106	$4.50	21	-	390	$20.00	44	$37.50
2018	463	518	$3.90	77	$24.00	218	$6.50	51	-	59	-	282	$31.50	42	$24.00
2019	420	272	$3.37	101	$35.00	159	$0.00	84	-	20	-	322	$35.00	35	$35.00
2020	422	327	$4.00	84	$20.50	203	$6.00	63	-	21	-	277	$23.80	32	$22.00
2021	416	335	$3.00	106	$18.00	206	$7.75	48	$8.75	19	$2.00	277	$14.00	23	$27.00
2022	393	226	$2.35	106	$33.00	261	$9.50	76	$17.00	22	$2.25	203	$15.00	19	$35.50
2023	421	285	$2.30	76	$35.50	148	$8.00	43	-	11	-	160	$12.50	6	$33.38

Year = the year when the season opened, even though the seasons cross into a second calendar year.

Table 3. NEW HAMPSHIRE TRAPPER EFFORT – CALCULATED TRAP-NIGHTS PER SPECIES PER SEASON

Year	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
BEAVER	46994	38962	36996	47630	16632	16478	15430	22245	21066	16678	16480	19147
COYOTE	34955	40108	35744	47182	27196	25591	13766	31870	22860	14198	13850	8605
FISHER	18892	22880	16988	12197	5202	4068	3580	4296	2497	1509	2025	1313
GRAY FOX	14053	18711	10997	13121	10001	5482	1499	8930	1077	1862	9024	4109
MINK	26881	25862	13489	11585	7023	4978	3654	2884	4544	2677	2303	1945
MUSKRAT	37110	32706	29454	26956	9596	7656	8211	6179	3947	5198	4132	2452
OTTER	22631	15531	8467	11135	5279	4956	3017	6144	3189	4301	3532	1948
RACCOON	22897	21233	20647	12725	19867	6254	8440	10077	6845	6883	5927	3821
RED FOX	21721	22830	14439	18972	13895	7051	5731	13076	4867	2810	11099	4604

Note: Only data records with complete take, effort and WMU information have been included in this table.
*These data may differ from that of previous reports due to late data submittals.

Table 4-a. Beaver take, trap nights of effort and catch per 100 trap-nights given as take/effort with catch per 100 trap-nights in parentheses

WMU	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
A	84/1208 (6.95)	72/628 (11.46)	87/597 (14.57)	94/618 (15.21)	32/258 (12.40)	62/596 (10.40)	41/309 (13.27)	32/553 (5.79)	44/1136 (3.87)	30/210 (14.29)	23/129 (17.83)	62/6723 (0.92)
B	65/516 (12.60)	67/1013 (6.61)	145/2558 (5.67)	126/1762 (7.15)	146/1762 (8.29)	90/1464 (6.15)	57/541 (10.54)	46/517 (8.90)	33/525 (6.29)	47/412 (11.41)	25/248 (10.08)	65/496 (13.10)
C1	48/134 (35.82)	36/117 (30.77)	23/90 (25.56)	26/204 (12.75)	10/52 (19.23)	23/194 (11.86)	20/78 (25.64)	21/108 (19.44)	30/69 (43.48)	37/106 (34.91)	22/158 (13.92)	25/126 (19.84)
C2	54/1753 (3.08)	22/386 (5.70)	37/177 (20.90)	59/3051 (1.93)	47/302 (15.56)	35/401 (8.73)	25/215 (11.63)	32/209 (15.31)	28/116 (24.14)	16/406 (3.94)	58/269 (21.56)	44/360 (12.22)
D1	31/288 (10.76)	68/1510 (4.50)	84/1613 (5.21)	56/528 (10.61)	53/462 (11.47)	64/1330 (4.81)	20/180 (11.11)	7/116 (6.03)	68/1016 (6.69)	46/351 (13.11)	45/436 (10.32)	57/242 (23.55)
D2	76/911 (8.34)	126/1357 (9.29)	98/1094 (8.96)	144/1656 (8.70)	63/795 (7.92)	65/585 (11.11)	64/473 (13.53)	68/1094 (6.22)	41/352 (11.65)	50/426 (11.74)	68/1061 (6.41)	99/1506 (6.57)
E	30/173 (17.34)	9/16 (56.25)	11/184 (5.98)	16/201 (7.96)	18/100 (18.00)	25/88 (28.41)	29/244 (11.89)	22/210 (10.48)	27/179 (15.08)	14/315 (4.44)	44/163 (26.99)	50/702 (7.12)
F	49/2070 (2.37)	75/996 (7.53)	61/1295 (4.71)	48/808 (5.94)	24/173 (13.87)	46/269 (17.10)	24/102 (23.53)	26/413 (6.30)	47/625 (7.52)	46/402 (11.44)	40/702 (5.70)	25/253 (9.88)
G	167/9864 (1.69)	219/4250 (5.15)	125/3898 (3.21)	220/3650 (6.03)	82/747 (10.98)	29/266 (10.90)	49/396 (12.37)	95/703 (13.51)	46/471 (9.77)	71/982 (7.23)	97/640 (15.16)	66/740 (8.92)
H1	59/738 (7.99)	39/992 (3.93)	26/327 (7.95)	53/1227 (4.32)	39/592 (6.59)	26/433 (6.00)	15/192 (7.81)	20/1184 (1.69)	18/658 (2.74)	49/872 (5.62)	38/689 (5.52)	18/75 (24.00)
H2	194/1979 (9.80)	186/2715 (6.85)	155/2329 (6.66)	138/2866 (4.82)	38/1805 (2.11)	21/244 (8.61)	74/468 (15.81)	92/2713 (3.39)	38/390 (9.74)	86/1775 (4.85)	37/718 (5.15)	30/402 (7.46)
I1	128/2342 (5.47)	172/4424 (3.89)	99/1022 (9.69)	125/1523 (8.21)	54/729 (7.41)	48/422 (11.37)	67/463 (14.47)	102/1458 (7.00)	71/676 (10.50)	73/459 (15.90)	80/399 (20.05)	29/138 (21.01)
I2	122/1013 (12.04)	138/2952 (4.67)	109/1018 (10.71)	117/2160 (5.42)	49/1067 (4.59)	47/630 (7.46)	132/1126 (11.72)	82/1155 (7.10)	46/1281 (3.59)	43/614 (7.00)	62/435 (14.25)	17/112 (15.18)
J1	134/3186 (4.21)	93/1214 (7.66)	66/345 (19.13)	84/1023 (8.21)	47/537 (8.75)	39/733 (5.32)	57/553 (10.31)	58/338 (17.16)	32/215 (14.88)	65/638 (10.19)	77/1315 (5.86)	89/1091 (8.16)
J2	352/6580 (5.35)	179/3538 (5.06)	234/3817 (6.13)	211/2702 (7.81)	161/2071 (7.77)	147/2481 (5.93)	245/2448 (10.01)	230/4647 (4.95)	156/3668 (4.25)	84/791 (10.62)	93/1602 (5.81)	112/2078 (5.39)
K	310/6076 (5.10)	221/4149 (5.33)	231/3351 (6.89)	264/6069 (4.35)	97/1277 (7.60)	100/2388 (4.19)	144/3564 (4.04)	105/3640 (2.88)	104/1476 (7.05)	126/2307 (5.46)	120/2253 (5.33)	77/1066 (7.22)
L	143/1831 (7.81)	197/2423 (8.13)	182/8506 (2.14)	223/7153 (3.12)	102/1644 (6.20)	166/2061 (8.05)	165/2447 (6.74)	160/1775 (9.01)	146/2913 (5.01)	130/2218 (5.86)	148/1886 (7.85)	68/702 (9.69)
M	438/6332 (6.92)	405/6282 (6.45)	271/4775 (5.68)	240/10429 (2.30)	140/2259 (6.20)	107/1893 (5.65)	143/1631 (8.77)	120/1412 (8.50)	192/5300 (3.62)	235/3394 (6.92)	223/3377 (6.60)	176/2335 (7.54)
ALL	2484/46994 (5.29)	2324/38962 (5.96)	2044/36996 (5.52)	2244/47630 (4.71)	1202/16632 (7.23)	1140/16478 (6.92)	1371/15430 (8.89)	1318/22245 (5.92)	1167/21066 (5.54)	1248/16678 (7.48)	1300/16480 (7.89)	1109/19147 (5.79)

Note: Only data with complete take, effort and WMU information have been included in this table.
*These data may differ from that of previous reports due to late data submittals.

Table 4-b. Coyote take, trap nights of effort and catch per 100 trap nights given as take/effort with catch per 100 trap nights in parentheses

WMU	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
A	67/4731 (1.42)	28/1584 (1.77)	18/1029 (1.75)	34/1820 (1.87)	34/2289 (1.49)	30/4861 (0.62)	19/1117 (1.70)	30/1144 (2.62)	37/1074 (3.45)	13/701 (1.85)	1/125 (0.80)	12/274 (4.38)
B	12/516 (2.33)	8/1260 (0.63)	22/987 (2.23)	25/2295 (1.09)	25/2435 (1.03)	53/3998 (1.33)	31/2725 (1.14)	20/6020 (0.33)	67/2923 (2.29)	14/1387 (1.01)	12/375 (3.20)	19/830 (2.29)
C1	8/78 (10.26)	22/445 (4.94)	28/1403 (2.00)	8/105 (7.62)	31/1831 (1.69)	18/194 (9.28)	20/366 (5.46)	12/341 (3.52)	19/414 (4.59)	24/354 (6.78)	4/20 (20.00)	3/40 (7.50)
C2	12/478 (2.51)	19/538 (3.53)	29/1225 (2.37)	36/3564 (1.01)	25/2481 (1.01)	44/1430 (3.08)	21/670 (3.13)	29/323 (8.98)	31/1297 (2.39)	18/334 (5.39)	19/476 (3.99)	9/204 (4.41)
D1	28/1388 (2.02)	28/961 (2.91)	36/1450 (2.48)	18/390 (4.62)	47/1036 (4.54)	52/1395 (3.73)	9/95 (9.47)	9/269 (3.35)	13/162 (8.02)	9/138 (6.52)	10/166 (6.02)	10/174 (5.75)
D2	35/2200 (1.59)	23/1532 (1.50)	39/2191 (1.78)	29/1302 (2.23)	10/628 (1.59)	28/380 (7.37)	16/171 (9.36)	23/541 (4.25)	6/108 (5.56)	37/781 (4.74)	13/498 (2.61)	18/486 (3.70)
E	11/432 (2.55)	5/694 (0.72)	9/309 (2.91)	12/440 (2.73)	4/115 (3.48)	7/93 (7.53)	28/452 (6.19)	16/920 (1.74)	18/680 (2.65)	24/2068 (1.16)	30/5155 (0.58)	34/3548 (0.96)
F	8/350 (2.29)	11/228 (4.82)	5/102 (4.90)	3/165 (1.82)	6/68 (8.82)	7/122 (5.74)	7/94 (7.45)	20/775 (2.58)	23/909 (2.53)	16/589 (2.72)	4/111 (3.60)	7/134 (5.22)
G	60/2251 (2.67)	48/2868 (1.67)	36/3008 (1.20)	61/1694 (3.60)	33/732 (4.51)	15/422 (3.55)	22/384 (5.73)	33/736 (4.48)	5/382 (1.31)	16/829 (1.93)	13/642 (2.02)	13/281 (4.63)
H1	30/4670 (0.64)	12/2913 (0.41)	5/380 (1.32)	11/3762 (0.29)	7/708 (0.99)	3/290 (1.03)	4/272 (1.47)	7/484 (1.45)	3/465 (0.65)	1/15 (6.67)	6/308 (1.95)	7/264 (2.65)
H2	65/1685 (3.86)	40/4055 (0.99)	24/1170 (2.05)	65/3565 (1.82)	12/1687 (0.71)	16/787 (2.03)	7/255 (2.75)	20/3343 (0.60)	19/1664 (1.14)	18/1723 (1.04)	6/345 (1.74)	3/232 (1.29)
I1	28/1878 (1.49)	27/1886 (1.43)	46/4426 (1.04)	34/1787 (1.90)	31/2813 (1.10)	26/1560 (1.67)	26/941 (2.76)	25/3861 (0.65)	34/1774 (1.92)	6/174 (3.45)	10/366 (2.73)	1/125 (0.80)
I2	39/2307 (1.69)	53/2675 (1.98)	38/1648 (2.31)	23/2195 (1.05)	7/556 (1.26)	9/304 (2.96)	32/954 (3.35)	5/562 (0.89)	5/750 (0.67)	11/231 (4.76)	12/556 (2.16)	N/A
J1	20/1064 (1.88)	10/199 (5.03)	22/458 (4.80)	13/1622 (0.80)	2/672 (0.30)	14/2505 (0.56)	4/799 (0.50)	33/4288 (0.77)	16/2007 (0.80)	11/960 (1.15)	3/258 (1.16)	2/100 (2.00)
J2	31/4897 (0.63)	47/5681 (0.83)	23/5593 (0.41)	38/4993 (0.76)	39/3527 (1.11)	27/2170 (1.24)	17/439 (3.87)	41/3361 (1.22)	46/2117 (2.17)	8/730 (1.10)	18/1177 (1.53)	1/260 (0.38)
K	24/1822 (1.32)	68/6175 (1.10)	25/2579 (0.97)	43/7861 (0.55)	18/2143 (0.84)	10/2804 (0.36)	12/2059 (0.58)	12/958 (1.25)	8/1916 (0.42)	15/1099 (1.36)	14/836 (1.67)	4/382 (1.05)
L	19/1479 (1.28)	13/2093 (0.62)	9/840 (1.07)	19/1974 (0.96)	19/1081 (1.76)	16/1685 (0.95)	13/1011 (1.29)	17/2746 (0.62)	18/2383 (0.76)	34/1434 (2.37)	8/501 (1.60)	8/1004 (0.80)
M	12/2729 (0.44)	23/4321 (0.53)	20/6946 (0.29)	28/7648 (0.37)	33/2394 (1.38)	15/591 (2.54)	11/962 (1.14)	12/1198 (1.00)	41/1835 (2.23)	6/651 (0.92)	31/1935 (1.60)	9/267 (3.37)
ALL	509/34955 (1.46)	485/40108 (1.21)	434/35744 (1.21)	500/47182 (1.06)	383/27196 (1.41)	390/25591 (1.52)	299/13766 (2.17)	364/31870 (1.14)	409/22860 (1.79)	281/14198 (1.98)	214/13850 (1.55)	160/8605 (1.86)

Note: Only data with complete take, effort and WMU information have been included in this table.
*These data may differ from that of previous reports due to late data submittals.

Table 4-c. Fisher take, trap nights of effort and catch per 100 trap nights given as take/effort with catch per 100 trap nights in parentheses

WMU	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
A	24/922 (2.60)	15/733 (2.05)	9/657 (1.37)	7/816 (0.86)	N/A	1/61 (1.64)	2/35 (5.71)	N/A	N/A	2/40 (5.00)	1/58 (1.72)	1/92 (1.09)
B	5/56 (8.93)	7/105 (6.67)	12/651 (1.84)	5/65 (7.69)	1/63 (1.59)	N/A	5/191 (2.62)	3/285 (1.05)	2/361 (0.55)	4/278 (1.44)	3/90 (3.33)	1/261 (0.38)
C1	9/290 (3.10)	3/125 (2.40)	10/266 (3.76)	0/60 (0.00)	N/A	2/126 (1.59)	N/A	N/A	1/1 (100)	N/A	N/A	N/A
C2	10/476 (2.10)	2/201 (1.00)	6/200 (3.00)	0/90 (0.00)	0/4 (0.00)	N/A	2/148 (1.35)	0/4 (0.00)	0/4 (0.00)	N/A	1/8 (12.50)	0/40 (0.00)
D1	1/8 (12.50)	N/A	5/1813 (0.28)	N/A	N/A	N/A	0/42 (0.00)	1/210 (0.48)	2/117 (1.71)	0/30 (0.00)	0/30 (0.00)	N/A
D2	3/146 (2.05)	2/238 (0.84)	4/696 (0.57)	6/402 (1.49)	2/60 (3.33)	1/55 (1.82)	2/72 (2.78)	0/20 (0.00)	1/12 (8.33)	0/14 (0.00)	1/56 (1.79)	0/40 (0.00)
E	4/110 (3.64)	6/420 (1.43)	9/1111 (0.81)	9/680 (1.32)	4/134 (2.99)	N/A	N/A	1/40 (2.50)	0/28 (0.00)	N/A	N/A	N/A
F	4/239 (1.67)	9/975 (0.92)	9/906 (0.99)	1/159 (0.63)	1/64 (1.56)	0/81 (0.00)	1/173 (0.58)	4/342 (1.17)	1/195 (0.51)	0/118 (0.00)	4/414 (0.97)	N/A
G	11/1210 (0.91)	9/2012 (0.45)	16/491 (3.26)	14/1150 (1.22)	9/346 (2.60)	5/285 (1.75)	5/506 (0.99)	8/291 (2.75)	4/74 (5.41)	6/227 (2.64)	3/160 (1.88)	1/150 (0.67)
H1	12/812 (1.48)	6/449 (1.34)	1/375 (0.27)	8/1116 (0.72)	1/492 (0.20)	1/176 (0.57)	1/132 (0.76)	2/180 (1.11)	3/180 (1.67)	N/A	N/A	N/A
H2	26/2083 (1.25)	19/3520 (0.54)	16/1101 (1.45)	11/1143 (0.96)	10/496 (2.02)	5/719 (0.70)	4/147 (2.72)	3/479 (0.63)	2/80 (2.50)	1/122 (0.82)	0/136 (0.00)	N/A
I1	7/1244 (0.56)	8/1609 (0.50)	10/1159 (0.86)	6/884 (0.68)	3/202 (1.49)	2/193 (1.04)	1/209 (0.48)	4/399 (1.00)	2/341 (0.59)	0/140 (0.00)	1/107 (0.93)	0/156 (0.00)
I2	12/1085 (1.11)	8/594 (1.35)	6/462 (1.30)	2/472 (0.42)	2/37 (5.41)	0/108 (0.00)	0/72 (0.00)	2/340 (0.59)	3/158 (1.90)	N/A	0/56 (0.00)	0/14 (0.00)
J1	3/112 (2.68)	3/182 (1.65)	1/164 (0.61)	0/325 (0.00)	N/A	2/380 (0.53)	2/170 (1.18)	1/10 (10.00)	3/92 (3.26)	1/90 (1.11)	2/123 (1.63)	0/180 (0.00)
J2	27/3538 (0.76)	16/3075 (0.52)	15/1439 (1.04)	9/616 (1.46)	15/845 (1.78)	9/559 (1.61)	4/525 (0.76)	4/810 (0.49)	0/98 (0.00)	0/148 (0.00)	2/277 (0.72)	0/175 (0.00)
K	29/2469 (1.17)	26/3616 (0.72)	21/1699 (1.24)	9/1134 (0.79)	4/774 (0.52)	3/636 (0.47)	1/458 (0.22)	2/403 (0.50)	0/292 (0.00)	2/80 (2.50)	0/80 (0.00)	0/21 (0.00)
L	18/1364 (1.32)	20/1651 (1.21)	22/1149 (1.91)	10/873 (1.15)	18/355 (5.07)	3/311 (0.96)	2/184 (1.09)	3/120 (2.50)	3/78 (3.85)	3/73 (4.11)	0/274 (0.00)	2/46 (4.35)
M	64/2728 (2.35)	57/3375 (1.69)	53/2649 (2.00)	41/2212 (1.85)	20/1330 (1.50)	10/378 (2.65)	12/516 (2.33)	5/363 (1.38)	9/386 (2.33)	3/149 (2.01)	1/156 (0.64)	1/138 (0.72)
ALL	269/18892 (1.42)	216/22880 (0.94)	225/16988 (1.32)	138/12197 (1.13)	90/5202 (1.73)	44/4068 (1.08)	44/3580 (1.23)	43/4296 (1.00)	36/2497 (1.44)	22/1509 (1.46)	19/2025 (0.94)	6/1313 (0.46)

Note: Only data with complete take, effort and WMU information have been included in this table.
*These data may differ from that of previous reports due to late data submittals.

Table 4-d. Gray fox take, trap nights of effort and catch per 100 trap nights given as take/effort with catch per 100 trap nights in parentheses

WMU	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
A	N/A	1/28 (3.57)	N/A	N/A	2/532 (0.38)	N/A	2/168 (1.19)	N/A	N/A	N/A	1/30 (3.33)	N/A
B	N/A	N/A	N/A	N/A	2/630 (0.32)	N/A	N/A	N/A	N/A	0/670 (0.00)	N/A	N/A
C1	1/32 (3.13)	5/324 (1.54)	N/A	0/40 (0.00)	2/800 (0.25)	2/180 (1.11)	N/A	2/1 (200)	N/A	N/A	N/A	N/A
C2	1/80 (1.25)	11/300 (3.67)	N/A	2/200 (1.00)	2/800 (0.25)	3/960 (0.31)	N/A	N/A	N/A	N/A	N/A	N/A
D1	1/37 (2.70)	N/A	2/36 (5.56)	N/A	N/A	N/A	N/A	N/A	N/A	0/40 (0.00)	N/A	N/A
D2	1/360 (0.28)	17/719 (2.36)	0/57 (0.00)	1/41 (2.44)	2/248 (0.81)	3/196 (1.53)	3/222 (1.35)	N/A	N/A	N/A	4/492 (0.81)	1/24 (4.17)
E	1/4 (25.00)	3/474 (0.63)	2/32 (6.25)	2/42 (4.76)	1/8 (12.50)	2/28 (7.14)	2/18 (11.11)	1/18 (5.56)	2/388 (0.52)	1/6 (16.67)	7/7224 (0.10)	7/3534 (0.20)
F	1/12 (8.33)	2/29 (6.90)	1/2 (50.00)	2/15 (13.33)	3/40 (7.50)	7/52 (13.46)	2/56 (3.57)	3/126 (2.38)	N/A	2/120 (1.67)	3/78 (3.85)	1/6 (16.67)
G	14/1302 (1.08)	18/1760 (1.02)	14/2597 (0.54)	5/714 (0.70)	2/252 (0.79)	3/233 (1.29)	2/312 (0.64)	N/A	N/A	N/A	4/372 (1.08)	3/170 (1.76)
H1	10/491 (2.04)	7/1066 (0.66)	3/760 (0.39)	2/735 (0.27)	1/28 (3.57)	N/A	N/A	N/A	2/84 (2.38)	1/4 (25.00)	1/30 (3.33)	N/A
H2	16/481 (3.33)	6/108 (5.56)	6/722 (0.83)	10/1668 (0.60)	3/470 (0.64)	4/98 (4.08)	N/A	1/42 (2.38)	N/A	2/370 (0.54)	1/28 (3.57)	N/A
I1	3/178 (1.69)	18/1802 (1.00)	6/308 (1.95)	17/1312 (1.30)	5/1180 (0.42)	11/1120 (0.98)	2/102 (1.96)	8/3600 (0.22)	N/A	N/A	5/238 (2.10)	1/125 (0.80)
I2	14/1243 (1.13)	7/609 (1.15)	0/150 (0.00)	10/1340 (0.75)	3/273 (1.10)	3/112 (2.68)	6/350 (1.71)	1/290 (0.34)	0/60 (0.00)	1/12 (8.33)	N/A	N/A
J1	6/105 (5.71)	4/214 (1.87)	2/232 (0.86)	5/622 (0.80)	3/482 (0.62)	3/245 (1.22)	N/A	3/28 (10.71)	1/10 (10.00)	1/182 (0.55)	1/4 (25.00)	N/A
J2	39/3840 (1.02)	20/2518 (0.79)	8/2316 (0.35)	4/422 (0.95)	5/1233 (0.41)	5/1198 (0.42)	1/10 (10.00)	8/680 (1.18)	6/71 (8.45)	0/160 (0.00)	N/A	N/A
K	9/1536 (0.59)	11/1730 (0.64)	11/983 (1.12)	13/3488 (0.37)	4/1340 (0.30)	4/898 (0.45)	3/225 (1.33)	1/360 (0.28)	1/84 (1.19)	1/180 (0.56)	3/168 (1.79)	1/70 (1.43)
L	10/1485 (0.67)	14/3072 (0.46)	4/1018 (0.39)	4/512 (0.78)	11/1248 (0.88)	6/82 (7.32)	3/36 (8.33)	1/5 (20.00)	N/A	N/A	N/A	2/180 (1.11)
M	23/2867 (0.80)	28/3958 (0.71)	17/1784 (0.95)	24/1970 (1.22)	4/437 (0.92)	0/80 (0.00)	N/A	1/3780 (0.03)	3/380 (0.79)	0/118 (0.00)	0/360 (0.00)	N/A
ALL	150/14053 (1.07)	172/18711 (0.92)	76/10997 (0.69)	101/13121 (0.77)	55/10001 (0.55)	56/5482 (1.02)	26/1499 (1.73)	30/8930 (0.34)	15/1077 (1.39)	9/1862 (0.48)	30/9024 (0.33)	16/4109 (0.39)

Note: Only data with complete take, effort and WMU information have been included in this table.
*These data may differ from that of previous reports due to late data submittals.

Table 4-c. Mink take, trap nights of effort and catch per 100 trap nights given as take/effort with catch per 100 trap nights in parentheses

WMU	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
A	20/548 (3.65)	12/983 (1.22)	7/117 (5.98)	16/532 (3.01)	5/240 (2.08)	N/A	N/A	N/A	1/1 (100)	1/56 (1.79)	0/6 (0.00)	N/A
B	11/200 (5.50)	6/248 (2.42)	18/1352 (1.33)	5/473 (1.06)	14/106 (13.21)	6/136 (4.41)	11/300 (3.67)	1/98 (1.02)	4/206 (1.94)	1/12 (8.33)	N/A	N/A
C1	13/186 (6.99)	8/152 (5.26)	13/145 (8.97)	4/182 (2.20)	0/8 (0.00)	3/314 (0.96)	N/A	1/32 (3.13)	4/78 (5.13)	3/8 (37.50)	N/A	N/A
C2	8/300 (2.67)	4/219 (1.83)	6/518 (1.16)	12/624 (1.92)	3/18 (16.67)	N/A	2/40 (5.00)	N/A	N/A	0/28 (0.00)	N/A	5/60 (8.33)
D1	1/12 (8.33)	1/30 (3.33)	24/583 (4.12)	3/8 (37.50)	7/704 (0.99)	18/1080 (1.67)	3/178 (1.69)	1/20 (5.00)	34/2700 (1.26)	0/55 (0.00)	N/A	N/A
D2	9/151 (5.96)	32/9365 (0.34)	67/2836 (2.36)	20/1669 (1.20)	14/538 (2.60)	3/165 (1.82)	0/36 (0.00)	5/150 (3.33)	3/19 (15.79)	5/144 (3.47)	4/159 (2.52)	2/100 (2.00)
E	1/52 (1.92)	N/A	1/144 (0.69)	1/170 (0.59)	2/14 (14.29)	3/20 (15.00)	7/808 (0.87)	1/6 (16.67)	N/A	2/12 (16.67)	1/15 (6.67)	2/10 (20.00)
F	24/1232 (1.95)	28/1650 (1.70)	8/444 (1.80)	5/352 (1.42)	9/207 (4.35)	15/139 (10.79)	10/145 (6.90)	3/303 (0.99)	0/12 (0.00)	6/176 (3.41)	16/433 (3.70)	2/292 (0.68)
G	57/8478 (0.67)	27/1769 (1.53)	19/542 (3.51)	7/495 (1.41)	4/74 (5.41)	4/171 (2.34)	2/374 (0.53)	0/6 (0.00)	N/A	5/151 (3.31)	4/101 (3.96)	N/A
H1	28/869 (3.22)	4/862 (0.46)	7/224 (3.13)	1/140 (0.71)	1/60 (1.67)	N/A	1/14 (7.14)	N/A	1/208 (0.48)	1/7 (14.29)	1/70 (1.43)	N/A
H2	28/1536 (1.82)	19/1019 (1.86)	3/498 (0.60)	19/351 (5.41)	4/325 (1.23)	N/A	2/11 (18.18)	N/A	N/A	2/364 (0.55)	0/270 (0.00)	0/318 (0.00)
I1	17/466 (3.65)	22/1344 (1.64)	10/534 (1.87)	8/439 (1.82)	12/1310 (0.92)	4/296 (1.35)	0/3 (0.00)	1/398 (0.25)	6/336 (1.79)	0/56 (0.00)	0/35 (0.00)	0/24 (0.00)
I2	18/1151 (1.56)	5/684 (0.73)	3/212 (1.42)	3/526 (0.57)	5/381 (1.31)	1/182 (0.55)	1/91 (1.10)	5/390 (1.28)	2/255 (0.78)	N/A	2/84 (2.38)	0/14 (0.00)
J1	19/635 (2.99)	11/394 (2.79)	16/1124 (1.42)	14/970 (1.44)	5/362 (1.38)	8/244 (3.28)	11/248 (4.44)	2/362 (0.55)	5/193 (2.59)	8/280 (2.86)	1/139 (0.72)	1/208 (0.48)
J2	49/3237 (1.51)	41/2809 (1.46)	20/2335 (0.86)	26/1662 (1.56)	16/1730 (0.92)	9/177 (5.08)	12/194 (6.19)	5/595 (0.84)	6/280 (2.14)	1/189 (0.53)	N/A	1/124 (0.81)
K	38/4247 (0.89)	21/1339 (1.57)	22/795 (2.77)	17/783 (2.17)	4/69 (5.80)	11/1932 (0.57)	5/1114 (0.45)	4/251 (1.59)	0/86 (0.00)	3/583 (0.51)	3/161 (1.86)	1/42 (2.38)
L	20/1422 (1.41)	26/1472 (1.77)	4/93 (4.30)	5/1552 (0.32)	1/56 (1.79)	1/88 (1.14)	N/A	0/111 (0.00)	0/25 (0.00)	N/A	N/A	N/A
M	24/2159 (1.11)	14/1523 (0.92)	9/993 (0.91)	4/657 (0.61)	4/821 (0.49)	1/34 (2.94)	8/98 (8.16)	4/162 (2.47)	2/145 (1.38)	2/556 (0.36)	3/830 (0.36)	3/753 (0.40)
ALL	385/26881 (1.43)	281/25862 (1.09)	257/13489 (1.91)	170/11585 (1.47)	110/7023 (1.57)	87/4978 (1.75)	75/3654 (2.05)	33/2884 (1.14)	68/4544 (1.50)	40/2677 (1.49)	35/2303 (1.52)	17/1945 (0.87)

Note: Only data with complete take, effort and WMU information have been included in this table.
*These data may differ from that of previous reports due to late data submittals.

Table 4-d. Muskrat take, trap nights of effort and catch per 100 trap nights given as take/effort with catch per 100 trap nights in parentheses

WMU	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
A	116/1436 (8.08)	187/1505 (12.43)	158/4956 (3.19)	298/4410 (6.76)	21/250 (8.40)	52/324 (16.05)	77/677 (11.37)	7/8 (87.50)	38/240 (15.83)	8/60 (13.33)	3/5 (60.00)	5/84 (5.95)
B	77/840 (9.17)	41/311 (13.18)	175/2425 (7.22)	78/280 (27.86)	58/312 (18.59)	5/84 (5.95)	7/98 (7.14)	N/A	13/200 (6.50)	0/6 (0.00)	N/A	8/35 (22.86)
C1	14/170 (8.24)	15/144 (10.42)	N/A	65/561 (11.59)	N/A	11/308 (3.57)	N/A	N/A	4/28 (14.29)	1/6 (16.67)	N/A	N/A
C2	101/1497 (6.75)	82/1141 (7.19)	59/914 (6.46)	181/1312 (13.80)	0/42 (0.00)	20/287 (6.97)	N/A	15/54 (27.78)	40/140 (28.57)	7/18 (38.89)	3/120 (2.50)	72/195 (36.92)
D1	43/348 (12.36)	142/1042 (13.63)	54/1215 (4.44)	6/20 (30.00)	96/1294 (7.42)	112/1665 (6.73)	4/169 (2.37)	19/270 (7.04)	11/22 (50.00)	2/48 (4.17)	1/90 (1.11)	13/38 (34.21)
D2	43/425 (10.12)	91/5703 (1.60)	166/1701 (9.76)	140/2673 (5.24)	74/680 (10.88)	28/80 (35.00)	32/164 (19.51)	20/108 (18.52)	6/82 (7.32)	41/306 (13.40)	26/153 (16.99)	19/153 (12.42)
E	0/100 (0.00)	N/A	0/40 (0.00)	2/16 (12.50)	3/13 (23.08)	N/A	29/412 (7.04)	2/18 (11.11)	3/8 (37.50)	2/44 (4.55)	2/18 (11.11)	3/60 (5.00)
F	4/484 (0.83)	21/778 (2.70)	7/208 (3.37)	10/146 (6.85)	7/28 (25.00)	19/93 (20.43)	27/66 (40.91)	1/44 (2.27)	5/16 (31.25)	6/30 (20.00)	10/48 (20.83)	5/24 (20.83)
G	166/8009 (2.07)	134/3015 (4.44)	91/1104 (8.24)	67/1541 (4.35)	32/164 (19.51)	30/90 (33.33)	7/15 (46.67)	12/83 (14.46)	13/50 (26.00)	34/93 (36.56)	30/116 (25.86)	10/45 (22.22)
H1	78/1523 (5.12)	22/848 (2.59)	10/322 (3.11)	24/717 (3.35)	18/240 (7.50)	5/22 (22.73)	2/7 (28.57)	1/180 (0.56)	N/A	13/185 (7.03)	4/72 (5.56)	N/A
H2	127/2596 (4.89)	145/3041 (4.77)	48/4418 (1.09)	26/412 (6.31)	15/490 (3.06)	8/210 (3.81)	4/42 (9.52)	2/38 (5.26)	41/162 (25.31)	13/388 (3.35)	5/552 (0.91)	N/A
I1	60/606 (9.90)	76/2066 (3.68)	61/1987 (3.07)	66/1414 (4.67)	6/635 (0.94)	6/124 (4.84)	4/109 (3.67)	24/696 (3.45)	9/186 (4.84)	4/58 (6.90)	3/220 (1.36)	1/54 (1.85)
I2	13/469 (2.77)	38/1950 (1.95)	8/186 (4.30)	51/864 (5.90)	16/382 (4.19)	31/190 (16.32)	15/448 (3.35)	24/601 (3.99)	30/426 (7.04)	3/100 (3.00)	4/63 (6.35)	3/40 (7.50)
J1	87/949 (9.17)	36/324 (11.11)	22/414 (5.31)	54/1088 (4.96)	13/292 (4.45)	17/260 (6.54)	14/36 (38.89)	13/99 (13.13)	22/168 (13.10)	16/225 (7.11)	14/515 (2.72)	19/230 (8.26)
J2	220/4363 (5.04)	179/3194 (5.60)	123/2991 (4.11)	103/3402 (3.03)	63/2408 (2.62)	59/1285 (4.59)	95/860 (11.05)	109/1940 (5.62)	72/943 (7.64)	40/346 (11.56)	32/334 (9.58)	9/215 (4.19)
K	94/3413 (2.75)	58/1622 (3.58)	72/2039 (3.53)	55/1496 (3.68)	16/595 (2.69)	34/1909 (1.78)	42/2314 (1.82)	22/150 (14.67)	18/239 (7.53)	27/939 (2.88)	8/116 (6.90)	25/321 (7.79)
L	100/1418 (7.05)	149/1961 (7.60)	105/1224 (8.58)	35/2158 (1.62)	39/507 (7.69)	31/238 (13.03)	88/944 (9.32)	41/678 (6.05)	22/291 (7.56)	10/59 (16.95)	23/354 (6.50)	8/87 (9.20)
M	457/8464 (5.40)	242/4061 (5.96)	224/3310 (6.77)	171/4446 (3.85)	70/1264 (5.54)	32/487 (6.57)	110/1850 (5.95)	51/1212 (4.21)	55/746 (7.37)	106/2287 (4.63)	57/1356 (4.20)	51/871 (5.86)
ALL	1800/37110 (4.85)	1658/32706 (5.07)	1383/29454 (4.70)	1432/26956 (5.31)	547/9596 (5.70)	500/7656 (6.53)	557/8211 (6.78)	363/6179 (5.87)	402/3947 (10.18)	333/5198 (6.41)	225/4132 (5.45)	251/2452 (10.24)

Note: Only data with complete take, effort and WMU information have been included in this table.
*These data may differ from that of previous reports due to late data submittals.

Table 4-g. Otter take, trap nights of effort and catch per 100 trap nights given as take/effort with catch per 100 trap nights in parentheses

WMU	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
A	3/184 (1.63)	2/65 (3.08)	3/48 (6.25)	2/21 (9.52)	3/32 (9.38)	3/27 (11.11)	2/57 (3.51)	1/6 (16.67)	5/336 (1.49)	4/136 (2.94)	4/152 (2.63)	0/288 (0.00)
B	2/24 (8.33)	3/120 (2.50)	4/264 (1.52)	5/384 (1.30)	8/239 (3.35)	6/450 (1.33)	3/28 (10.71)	3/90 (3.33)	3/336 (0.89)	3/62 (4.84)	1/6 (16.67)	4/31 (12.90)
C1	N/A	N/A	1/9 (11.11)	4/150 (2.67)	2/40 (5.00)	2/188 (1.06)	N/A	1/14 (7.14)	2/5 (40.00)	0/8 (0.00)	N/A	N/A
C2	6/216 (2.78)	10/205 (4.88)	N/A	5/537 (0.93)	N/A	2/15 (13.33)	N/A	N/A	N/A	N/A	N/A	6/168 (3.57)
D1	1/8 (12.50)	1/4 (25.00)	13/1597 (0.81)	1/4 (25.00)	3/30 (10.00)	3/1090 (0.28)	1/14 (7.14)	2/40 (5.00)	1/84 (1.19)	1/18 (5.56)	8/240 (3.33)	4/17 (23.53)
D2	1/14 (7.14)	8/742 (1.08)	6/253 (2.37)	15/470 (3.19)	6/480 (1.25)	4/90 (4.44)	4/99 (4.04)	9/118 (7.63)	2/109 (1.83)	6/35 (17.14)	6/113 (5.31)	2/12 (16.67)
E	5/20 (25.00)	3/14 (21.43)	1/9 (11.11)	1/9 (11.11)	2/12 (16.67)	2/6 (33.33)	N/A	N/A	N/A	1/3 (33.33)	1/14 (7.14)	N/A
F	5/315 (1.59)	4/322 (1.24)	2/236 (0.85)	2/110 (1.82)	5/90 (5.56)	5/70 (7.14)	5/94 (5.32)	4/78 (5.13)	0/5 (0.00)	6/234 (2.56)	9/170 (5.29)	1/15 (6.67)
G	20/7536 (0.27)	12/940 (1.28)	12/452 (2.65)	3/222 (1.35)	7/130 (5.38)	10/195 (5.13)	1/32 (3.13)	3/32 (9.38)	2/14 (14.29)	9/188 (4.79)	11/162 (6.79)	2/9 (22.22)
H1	1/1 (100)	4/300 (1.33)	3/203 (1.48)	3/955 (0.31)	4/140 (2.86)	1/5 (20.00)	N/A	N/A	2/260 (0.77)	4/367 (1.09)	1/8 (12.50)	N/A
H2	28/1340 (2.09)	18/1007 (1.79)	20/483 (4.14)	9/484 (1.86)	8/426 (1.88)	1/28 (3.57)	4/204 (1.96)	3/2221 (0.14)	2/70 (2.86)	11/282 (3.90)	11/732 (1.50)	6/40 (15.00)
I1	13/1933 (0.67)	9/537 (1.68)	8/233 (3.43)	8/407 (1.97)	11/381 (2.89)	3/27 (11.11)	2/56 (3.57)	2/313 (0.64)	4/50 (8.00)	4/132 (3.03)	8/271 (2.95)	N/A
I2	14/261 (5.36)	10/1054 (0.95)	5/440 (1.14)	2/500 (0.40)	0/17 (0.00)	2/107 (1.87)	9/571 (1.58)	7/340 (2.06)	6/124 (4.84)	2/100 (2.00)	N/A	N/A
J1	16/477 (3.35)	10/411 (2.43)	3/372 (0.81)	10/491 (2.04)	16/291 (5.50)	6/416 (1.44)	13/328 (3.96)	6/183 (3.28)	4/80 (5.00)	2/28 (7.14)	7/203 (3.45)	6/208 (2.88)
J2	40/4320 (0.93)	26/2313 (1.12)	25/1704 (1.47)	19/3247 (0.59)	18/809 (2.22)	14/1045 (1.34)	28/650 (4.31)	33/1371 (2.41)	16/463 (3.46)	9/190 (4.74)	7/284 (2.46)	1/40 (2.50)
K	39/1418 (2.75)	38/1944 (1.95)	25/1233 (2.03)	25/1703 (1.47)	12/972 (1.23)	8/766 (1.04)	6/170 (3.53)	14/470 (2.98)	11/300 (3.67)	17/912 (1.86)	8/208 (3.85)	7/178 (3.93)
L	25/1015 (2.46)	32/1628 (1.97)	19/529 (3.59)	17/1013 (1.68)	22/538 (4.09)	6/138 (4.35)	10/563 (1.78)	21/520 (4.04)	16/479 (3.34)	11/27 (40.74)	9/140 (6.43)	7/376 (1.86)
M	66/3549 (1.86)	51/3925 (1.30)	16/402 (3.98)	32/428 (7.48)	19/652 (2.91)	4/293 (1.37)	7/151 (4.64)	10/348 (2.87)	22/474 (4.64)	21/1579 (1.33)	9/829 (1.09)	9/566 (1.59)
ALL	285/22631 (1.26)	241/15531 (1.55)	166/8467 (1.96)	163/11135 (1.46)	146/5279 (2.77)	82/4956 (1.65)	95/3017 (3.15)	119/6144 (1.94)	98/3189 (3.07)	111/4301 (2.58)	100/3532 (2.83)	55/1948 (2.82)

Note: Only data with complete take, effort and WMU information have been included in this table.
*These data may differ from that of previous reports due to late data submittals.

Table 4-h. Raccoon take, trap nights of effort and catch per 100 trap nights given as take/effort with catch per 100 trap nights in parentheses

WMU	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
A	32/635 (5.04)	43/1300 (3.31)	27/581 (4.65)	42/250 (16.80)	16/1426 (1.12)	12/143 (8.39)	10/212 (4.72)	2/70 (2.86)	3/14 (21.43)	7/83 (8.43)	12/142 (8.45)	11/170 (6.47)
B	37/1021 (3.62)	38/1085 (3.50)	50/1876 (2.67)	3/668 (0.45)	39/1147 (3.40)	33/739 (4.47)	34/1457 (2.33)	11/40 (27.50)	7/76 (9.21)	20/1143 (1.75)	10/304 (3.29)	11/434 (2.53)
C1	2/28 (7.14)	1/4 (25.00)	5/82 (6.10)	3/143 (2.10)	6/376 (1.60)	2/3 (66.67)	2/2 (100)	N/A	3/8 (37.50)	6/10 (60.00)	2/120 (1.67)	2/4 (50.00)
C2	10/434 (2.30)	18/232 (7.76)	6/384 (1.56)	9/285 (3.16)	17/916 (1.86)	11/51 (21.57)	12/35 (34.29)	3/5 (60.00)	8/15 (53.33)	7/17 (41.18)	N/A	1/30 (3.33)
D1	N/A	2/14 (14.29)	N/A	N/A	4/120 (3.33)	1/5 (20.00)	2/11 (18.18)	2/2 (100)	1/42 (2.38)	9/82 (10.98)	21/172 (12.21)	11/119 (9.24)
D2	8/598 (1.34)	28/309 (9.06)	23/1805 (1.27)	40/121 (33.06)	14/399 (3.51)	5/137 (3.65)	2/6 (33.33)	9/71 (12.68)	5/14 (35.71)	10/315 (3.17)	20/526 (3.80)	5/96 (5.21)
E	7/204 (3.43)	N/A	N/A	18/238 (7.56)	N/A	6/48 (12.50)	20/296 (6.76)	24/184 (13.04)	23/442 (5.20)	26/420 (6.19)	26/376 (6.91)	16/654 (2.45)
F	12/415 (2.89)	17/524 (3.24)	10/194 (5.15)	0/3 (0.00)	4/46 (8.70)	17/120 (14.17)	7/68 (10.29)	1/576 (0.17)	7/828 (0.85)	8/242 (3.31)	7/99 (7.07)	4/229 (1.75)
G	29/489 (5.93)	25/1285 (1.95)	22/263 (8.37)	23/1116 (2.06)	24/635 (3.78)	5/140 (3.57)	2/344 (0.58)	0/120 (0.00)	1/84 (1.19)	2/4 (50.00)	4/196 (2.04)	1/1 (100)
H1	62/3778 (1.64)	17/1516 (1.12)	12/554 (2.17)	11/354 (3.11)	2/150 (1.33)	1/360 (0.28)	3/100 (3.00)	2/93 (2.15)	6/288 (2.08)	12/120 (10.00)	19/335 (5.67)	2/28 (7.14)
H2	45/1776 (2.53)	28/1236 (2.27)	35/1806 (1.94)	14/350 (4.00)	9/345 (2.61)	4/315 (1.27)	7/111 (6.31)	3/107 (2.80)	12/172 (6.98)	15/71 (21.13)	8/146 (5.48)	N/A
I1	16/314 (5.10)	30/822 (3.65)	16/825 (1.94)	25/913 (2.74)	31/1242 (2.50)	17/271 (6.27)	10/40 (25.00)	13/814 (1.60)	8/465 (1.72)	4/78 (5.13)	10/127 (7.87)	2/91 (2.20)
I2	27/653 (4.13)	16/805 (1.99)	4/251 (1.59)	9/560 (1.61)	4/471 (0.85)	1/20 (5.00)	7/99 (7.07)	7/401 (1.75)	2/146 (1.37)	5/204 (2.45)	5/208 (2.40)	0/7 (0.00)
J1	19/143 (13.29)	19/108 (17.59)	18/301 (5.98)	17/573 (2.97)	10/434 (2.30)	10/735 (1.36)	15/301 (4.98)	9/470 (1.91)	5/186 (2.69)	8/842 (0.95)	6/203 (2.96)	7/143 (4.90)
J2	99/6338 (1.56)	53/4159 (1.27)	55/3833 (1.43)	59/1366 (4.32)	48/1993 (2.41)	39/1283 (3.04)	26/390 (6.67)	6/25 (24.00)	12/270 (4.44)	7/622 (1.13)	14/347 (4.03)	7/235 (2.98)
K	48/2402 (2.00)	54/2120 (2.55)	60/2657 (2.26)	66/2362 (2.79)	31/1478 (2.10)	11/589 (1.87)	26/3183 (0.82)	26/2943 (0.88)	24/1309 (1.83)	14/748 (1.87)	14/584 (2.40)	8/537 (1.49)
L	24/1168 (2.05)	59/2252 (2.62)	36/1347 (2.67)	54/1102 (4.90)	40/1644 (2.43)	30/522 (5.75)	46/1234 (3.73)	30/2917 (1.03)	29/890 (3.26)	9/117 (7.69)	17/115 (14.78)	20/565 (3.54)
M	94/2501 (3.76)	129/3462 (3.73)	75/3888 (1.93)	41/2321 (1.77)	22/7045 (0.31)	25/773 (3.23)	18/551 (3.27)	29/1239 (2.34)	34/1596 (2.13)	22/1765 (1.25)	60/1927 (3.11)	16/478 (3.35)
ALL	571/22897 (2.49)	577/21233 (2.72)	454/20647 (2.20)	434/12725 (3.41)	321/19867 (1.62)	230/6254 (3.68)	249/8440 (2.95)	177/10077 (1.76)	190/6845 (2.78)	191/6883 (2.77)	255/5927 (4.30)	124/3821 (3.25)

Note: Only data with complete take, effort and WMU information have been included in this table.
*These data may differ from that of previous reports due to late data submittals.

Table 4-i. Red fox take, trap nights of effort and catch per 100 trap nights given as take/effort with catch per 100 trap nights in parentheses

WMU	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
A	34/1157 (2.94)	29/1804 (1.61)	26/1413 (1.84)	20/1094 (1.83)	17/1595 (1.07)	9/420 (2.14)	26/857 (3.03)	49/417 (11.75)	8/330 (2.42)	3/150 (2.00)	1/30 (3.33)	2/67 (2.99)
B	5/360 (1.39)	12/1260 (0.95)	12/1061 (1.13)	9/1059 (0.85)	8/1158 (0.69)	4/200 (2.00)	21/1689 (1.24)	14/1589 (0.88)	5/480 (1.04)	1/790 (0.13)	1/8 (12.50)	1/34 (2.94)
C1	5/52 (9.62)	3/300 (1.00)	N/A	0/40 (0.00)	4/1600 (0.25)	1/6 (16.67)	1/1 (100)	N/A	N/A	N/A	N/A	N/A
C2	2/24 (8.33)	7/426 (1.64)	5/334 (1.50)	2/200 (1.00)	3/800 (0.38)	5/78 (6.41)	N/A	N/A	N/A	N/A	N/A	N/A
D1	3/62 (4.84)	7/105 (6.67)	2/56 (3.57)	1/33 (3.03)	6/900 (0.67)	9/214 (4.21)	N/A	N/A	N/A	0/40 (0.00)	N/A	N/A
D2	7/766 (0.91)	10/590 (1.69)	10/261 (3.83)	8/370 (2.16)	5/224 (2.23)	9/196 (4.59)	2/147 (1.36)	11/346 (3.18)	1/30 (3.33)	N/A	3/352 (0.85)	N/A
E	3/22 (13.64)	1/70 (1.43)	4/131 (3.05)	1/9 (11.11)	4/33 (12.12)	5/44 (11.36)	2/35 (5.71)	7/787 (0.89)	5/409 (1.22)	3/49 (6.12)	12/7235 (0.17)	10/3549 (0.28)
F	1/80 (1.25)	3/72 (4.17)	3/50 (6.00)	N/A	0/10 (0.00)	11/54 (20.37)	6/20 (30.00)	14/433 (3.23)	9/402 (2.24)	6/277 (2.17)	7/262 (2.67)	2/90 (2.22)
G	30/1336 (2.25)	28/1474 (1.90)	21/1465 (1.43)	21/1526 (1.38)	6/228 (2.63)	1/348 (0.29)	8/340 (2.35)	6/220 (2.73)	2/168 (1.19)	N/A	9/534 (1.69)	9/294 (3.06)
H1	15/2720 (0.55)	5/806 (0.62)	6/1110 (0.54)	9/1159 (0.78)	0/126 (0.00)	N/A	1/180 (0.56)	N/A	N/A	N/A	3/182 (1.65)	4/60 (6.67)
H2	17/404 (4.21)	21/1156 (1.82)	4/183 (2.19)	9/2619 (0.34)	2/224 (0.89)	4/459 (0.87)	2/42 (4.76)	2/246 (0.81)	N/A	4/94 (4.26)	N/A	1/8 (12.50)
I1	11/1050 (1.05)	11/1474 (0.75)	13/832 (1.56)	26/1747 (1.49)	8/1427 (0.56)	5/830 (0.60)	2/98 (2.04)	21/3828 (0.55)	8/602 (1.33)	2/90 (2.22)	5/498 (1.00)	5/143 (3.50)
I2	33/1276 (2.59)	18/1304 (1.38)	4/264 (1.52)	7/1280 (0.55)	4/315 (1.27)	N/A	22/860 (2.56)	7/994 (0.70)	3/170 (1.76)	5/21 (23.81)	N/A	N/A
J1	5/200 (2.50)	6/248 (2.42)	0/222 (0.00)	0/642 (0.00)	4/524 (0.76)	5/543 (0.92)	3/216 (1.39)	2/1145 (0.17)	8/616 (1.30)	4/412 (0.97)	4/225 (1.78)	2/178 (1.12)
J2	36/4548 (0.79)	20/2632 (0.76)	7/2768 (0.25)	13/1270 (1.02)	15/1688 (0.89)	23/1355 (1.70)	4/29 (13.79)	16/2545 (0.63)	8/538 (1.49)	0/188 (0.00)	12/410 (2.93)	N/A
K	28/2528 (1.11)	37/2598 (1.42)	20/1042 (1.92)	10/3152 (0.32)	11/1630 (0.67)	6/1772 (0.34)	14/761 (1.84)	8/497 (1.61)	11/560 (1.96)	2/268 (0.75)	5/649 (0.77)	0/40 (0.00)
L	20/2240 (0.89)	22/3421 (0.64)	8/1304 (0.61)	7/707 (0.99)	6/862 (0.70)	13/186 (6.99)	1/360 (0.28)	1/1 (100)	2/6 (33.33)	0/24 (0.00)	5/158 (3.16)	0/36 (0.00)
M	36/2896 (1.24)	17/3090 (0.55)	17/1943 (0.87)	24/2065 (1.16)	12/551 (2.18)	5/346 (1.45)	3/96 (3.13)	1/28 (3.57)	8/556 (1.44)	3/407 (0.74)	6/556 (1.08)	1/105 (0.95)
ALL	291/21721 (1.34)	257/22830 (1.13)	162/14439 (1.12)	167/18972 (0.88)	115/13895 (0.83)	115/7051 (1.63)	118/5731 (2.06)	159/13076 (1.22)	78/4867 (1.60)	33/2810 (1.17)	73/11099 (0.66)	37/4604 (0.80)

Note: Only data with complete take, effort and WMU information have been included in this table.
*These data may differ from that of previous reports due to late data submittals.

Table 5. Statewide catch per 100 trap nights of effort for the 2012 – 2023 NH trapping seasons

SPECIES	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
BEAVER	5.29	5.96	5.52	4.71	7.23	6.92	8.89	5.92	5.54	7.48	7.89	5.79
COYOTE	1.46	1.21	1.21	1.06	1.41	1.52	2.17	1.14	1.79	1.98	1.55	1.86
FISHER	1.42	0.94	1.32	1.13	1.73	1.08	1.23	1	1.44	1.46	0.94	0.46
GRAY FOX	1.07	0.92	0.69	0.77	0.55	1.02	1.73	0.34	1.39	0.48	0.33	0.39
MINK	1.43	1.09	1.91	1.47	1.57	1.75	2.05	1.14	1.5	1.49	1.52	0.87
MUSKRAT	4.85	5.07	4.7	5.31	5.7	6.53	6.78	5.87	10.18	6.41	5.45	10.24
OTTER	1.26	1.55	1.96	1.46	2.77	1.65	3.15	1.94	3.07	2.58	2.83	2.82
RACCOON	2.49	2.72	2.2	3.41	1.62	3.68	2.95	1.76	2.78	2.77	4.3	3.25
RED FOX	1.34	1.13	1.12	0.88	0.83	1.63	2.06	1.22	1.6	1.17	0.66	0.8

Note: Only data with complete take, effort and WMU information have been included in this table.
*These data may differ from that of previous reports due to late data submittals.

Table 6. NH Pelt Value by Species for the 2023 Season

	PELT VALUE ($)	NUMBER TRAPPED	TOTAL VALUE ($)
Beaver	$30.75	1,109	$34,102
Otter	$35.50	76	$2,698
Mink	$9.90	18	$178
Muskrat	$2.30	285	$656
Fisher	$33.38	6	$200
Raccoon	$8.00	148	$1,184
Red Fox	$18.30	50	$915
Gray Fox	$15.50	27	$419
Coyote	$12.50	160	$2,000
Weasel	-	11	$0
Skunk	-	43	$0
TOTAL			$42,351

*Based on statewide NH trapper harvest data and average of in-state Maine fur auction prices paid per pelt.

Table 7. 2022/2023 NH Furbearer Take by Trappers and Wildlife Control Operators

Species	By Trapper*	By WCO	Total	Percent by WCO
Beaver	1300	1340	2640	50.76
Coyote	220	35	255	13.73
Fisher	19	1	20	5.00
Gray Fox	44	2	46	4.35
Mink	40	6	46	13.04
Muskrat	245	70	315	22.22
Opossum	67	130	197	65.99
Otter	117	23	140	16.43
Raccoon	282	306	588	52.04
Red Fox	87	17	104	16.35
Skunk	80	598	678	88.20
Weasel	22	6	28	21.43

*These data may differ from that of previous reports due to late data submittals.

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, 2023 to June 30, 2024

Purpose/Target Name: PROJECT 6 - FURBEARER RESEARCH AND MANAGEMENT

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

Objective Statement: To collect for management purposes, non-harvest data including road kill data, incidental take data, biological samples from carcasses, and demographics data derived from the necropsy of carcasses collected by the furbearer project. Disease, parasite and other health issues potentially impacting furbearer species will be monitored and evaluated.

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Summary: Road kill and observation data were collected from reports filed by wildlife biologist, conservation officers, trappers, the general public, and regional Fish and Game staff. This subjective information is used to further evaluate regional and local field conditions in our efforts to formulate season recommendations. Bobcat sighting reports and carcass collection continue to be an integral part of monitoring for that species. Wildlife diseases potentially affecting furbearer populations were evaluated.

Target date: June 30th annually 2021-2025.

Status of progress: On schedule.

Deviations: None.

Objective Approach: Non-hunting mortality may be collected via reports submitted by department staff. Carcasses and/or samples may be collected by staff incidental to pelt tagging or as a result of trapping or incidental mortality. All incidentally killed bobcat and marten carcasses will be systematically collected and delivered to the furbearer biologist for necropsy. Information regarding cause, location and date of death will be provided with each carcass, using existing department forms to include non-harvest mortality forms and special wildlife permits. All carcasses will be examined by the furbearer biologist to assess age, sex, weight, physical condition and reproductive status. All data will be entered into an electronic database for storage and analysis.

A spring turkey hunter survey was established to determine hunter effort and furbearer sightings of eastern coyote, bobcat, fisher, gray fox, and red fox. All data will be entered into an electronic database for storage and analysis.

Results: Bobcat carcasses were collected through incidental trapper take, road-kills, and other sources of mortality in an effort to evaluate population health and status (Table 1). A total of 89 bobcats were trapped and/or handled. This included 1 trap mortality, 36 trapped and released, 46 road-killed, 2 shot/agriculture damage, 1 shot for another reason, 2 unknown, 1 natural causes and 0 euthanized. All mortalities were collected and necropsied during the 2023-2024 season (Table 3). However, date of mortality may not have occurred during the 2023 - 2024 season.

Age data for some animals reported in Table 1 will not become available during this grant segment and will subsequently be reported in the next grant segment (Table 2 as an example). This lag is due to the period of time when teeth are collected, submitted to the lab for aging, received and incorporated into data sets.

The spring turkey hunter survey recorded sighing rates (per 100 hunter hours) for bobcat (0.0.90), eastern coyote (1.77), fisher (0.13), gray fox (0.21), and red fox (1.07; Table 4).

Conclusions: Collection of bobcat carcasses continues to provide valuable information on the causes of mortality and sex and age structure of the bobcat population. Increasing sample sizes provide increased confidence in estimates of bobcat productivity and survival. The potential impacts of wildlife diseases on New Hampshire's furbearers are being assessed.

Custom Qualitative Indicator/Output: Non-harvest data including road kill, incidental take, biological samples from carcasses, and bobcat demographics data from carcass necropsies have been collected. Diseases, parasites and other furbearer health issues have been monitored and evaluated.

Recommendations: Continue to collect and assess bobcat carcasses for use in evaluating bobcat population status and to assess the potential impacts of wildlife diseases and other non-harvest mortality on furbearer species.

Prepared by: _____

Patrick Tate
Furbearer Project Leader
July 17, 2023

Table 1. Bobcat necropsy results from animals processed during 2023-2024

Date Killed	Cause	Sex	Weight (lbs.)	Age	Town	Placental Scars
8/1/2022	Vehicle	Unknown		4	Milford	
2/5/23	Vehicle	Female	17.5	0	Newington	1
8/4/23	Vehicle	Female	12.25	0	Derry	0
8/5/2023	Vehicle	Female	16.25	1	Plaistow	3
8/1/2022	Vehicle	Unknown		4	Milford	
2/5/23	Vehicle	Female	17.5	0	Newington	3
8/4/23	Vehicle	Female	12.25	0	Derry	
8/5/2023	Vehicle	Female	16.25	1	Plaistow	
8/5/2023	Vehicle	Male	14.75	1	Wolfeboro	
8/7/2023	Vehicle	Female	17	2	Lancaster	0
12/22/2022	Vehicle	Male	14	0	Keene	
1/5/2023	Vehicle	Male	20	3	Reg 2	
11/21/2022	Vehicle	Male		0	Hinsdale	
5/24/2023	Vehicle	Female		1	Reg 4 Freezer	
12/30/2022	Natural	Male	19.5	11	Cole brook	
5/18/2023	Vehicle	Male		5	Randolph	3
2/22/2023	Vehicle	Male	26	2	Hopkinton	0
4/20/2023	Vehicle	Male	25	2	Bow	0
8/29/2023	Ag/Shot	Male	20.25	4	Gilmanton	
10/5/2023	Ag/Shot	Female	19.25	4	Bedford	0
10/7/2023	Vehicle	Female	9.25	X	Kensington	1
10/20/2023	Vehicle	Female	8.5	0	Bedford	2
4/16/2023	Vehicle	Male	16.75	1	Londonderry	
3/20/2023	Trapped	Female	12.25	0	Jaffrey	1
10/27/2023	Vehicle	Female	16.25	1	Londonderry	0
5/10/2023	Vehicle	Female	12.75	1	Harrisville	3
6/29/2023	Vehicle	Male	18	1	Manchester	
3/11/2023	Vehicle	Male	22.25	2	Hinsdale	3
12/21/2023	Vehicle	Male	16.5		Manchester	
12/28/2023	Vehicle	Female	22.5		Allenstown	
1/7/2024	Vehicle	Male			Merrimack	
1/15/2024	Vehicle	Male	15		Londonderry	
1/19/2024	Vehicle	Male	17		Epsom	
1/22/2024	Vehicle	Male	12.75		Londonderry	
1/29/2024	Vehicle	Male	29		Concord	
2/12/2024	Vehicle	Male	28.5		Hampton Falls	
2/13/2024	Vehicle	Male	33.5		Nashua	
2/20/2024	Vehicle	Male	30.5		Hollis	
12/7/2023	Vehicle	Male	13		Swanzey	
1/22/2024	Vehicle	Male	12.75		Londonderry	
1/29/2024	Vehicle	Male	29		Concord	
10/8/2023	Shot	Female			Langdon	
1/22/2024	Vehicle	Female	12		Swanzey	
11/24/2023	Unknown	Female	5.5		Warner	
11/1/2023	Unknown	Female			Reg 4 Freezer	
1/13/2024	Vehicle	Female	8		Charlestown	
3/8/2024	Vehicle	Male	23.5		Londonderry	

Table 1. Bobcat necropsy results from animals processed during 2023-2024 (cont.)

10/8/2023	Shot	Female			Langdon	
1/22/2024	Vehicle	Female	12		Swanzey	
11/24/2023	Unknown	Female	5.5		Warner	
11/1/2023	Unknown	Female			Reg 4 Freezer	
1/13/2024	Vehicle	Female	8		Charlestown	
3/8/2024	Vehicle	Male	23.5		Londonderry	
3/15/2024	Vehicle	Female	20.75		Seabrook	
5/10/2022	Vehicle	Female			Whitefield	
4/18/2024	Vehicle	Male	21		East Kingston	
10/11/2023	Vehicle	Male	33.5		Boscawen	
4/3/2024	Vehicle	Female	10.5		Hampton	
4/28/2024	Vehicle	Male			Madbury	
5/16/2024	Vehicle	Female	16		Hooksett	
5/11/2024	Vehicle	Male	31		Hooksett	
3/15/2024	Vehicle	Female	20.75		Seabrook	
5/10/2022	Vehicle	Female			Whitefield	
4/18/2024	Vehicle	Male	21		East Kingston	
10/11/2023	Vehicle	Male	33.5		Boscawen	

*Age data was not available for all bobcats listed in this table. Remaining ages will be reported during the next grant segment.

Table 2. Bobcat necropsy results from animals processed during 2022-2023

Date Killed	Cause	Sex	Weight (lbs.)	Age	Town	Placental Scars
7/6/2022	Vehicle	Female		1		
7/25/2022	Shot			X	Dunbarton	
7/23/2022	Vehicle	Male	20.75	1	Lee	
8/2/2022	Vehicle	Female	4	0	Dunbarton	0
8/15/2022	Vehicle		4.5	0	Hampton	
8/30/2022	Vehicle	Female	8.5	0	Brentwood	0
8/30/2022	Vehicle	Female	8.5	0	Brentwood	0
5/29/2022	Vehicle	Male	19.5	1	Strafford	
7/6/2022	Vehicle	Female	14	2	Deerfield	0
10/31/2020	Vehicle	Female	18.5	1	Kingston	4
7/17/2022	Vehicle	Female	17.5	3	Gilmanton	2
8/20/2022	Vehicle	Male	18.75	1	Weare	
10/3/2022	Vehicle	Male		1	Pembroke	
10/9/2022	Vehicle	Male		1	Merrimack	
11/10/2021	Vehicle	Male		0	Derry	
10/13/2022	Vehicle	Female	18	2	Salem	3
11/7/2022	Vehicle	Female		2	Epping	3
11/7/2022	Vehicle	Female	8.5	0	Marlboro	0
6/2/2022	Vehicle	Female	14	1	Swansey	0
9/5/2022	Vehicle	Male	23.5	1	Reg4	
11/7/2022	Vehicle	Female	20.5	3	Gilmanton	2
11/2/2022	Vehicle	Male	28	1	Raymond	
11/9/2022	Vehicle	Male	29	1	Seabrook	
11/17/2022	Vehicle	Male	11	0	North Hampton	
12/7/2022	Vehicle	Male	36	4	New Durham	
12/8/222	Vehicle	Female	19.5	2	Merrimack	2
12/27/2022	Vehicle	Male	16.5	0	Hampton	
1/4/2023	Vehicle	Female	18	1	Norttingham	0
1/4/2023	Vehicle	Male	15	0	Nashua	
1/18/2023	Vehicle	Female		1	Epping	
2/9/2023	Vehicle	Male	11.5	0	Hollis	
1/13/2023	Vehicle	Female	14.5	0	Atkinson	0
2/15/2023	Vehicle	Male	13.25	0	Merrimack	
2/16/2023	Vehicle	Male		1	Exeter	
2/19/2023	Vehicle	Female		X	Bedford	0
12/19/2022	Trapped	Female	15.50	3	Danbury	2
2/16/2023	Vehicle	Male	20.00	1	Rumney	
3/23/2023	Vehicle	Male		X	Stratham	
3/27/2023	Vehicle	Female	19.50	4	Raymond	3
4/13/2023	Vehicle	Male	25.00	4	Hudson	
4/21/2023	Vehicle	Male	14.50	0	Goffstown	

Table 3. New Hampshire bobcat data collected during the period 7/1/23 through 6/30/24.

Trapped Bobcats		Other Bobcat Sources				
Killed	Released	Illegally killed	Roadkills	Natural Loss	Shot	Agriculture Damage
1	36	0	46	1	1	2

Table 4. 2024 Spring Turkey Hunter Furbearer Observation Rate.

2024	# HUNTER DAYS	TOTAL HOURS EFFORT	TOTAL # OBSERVED					MEAN # OBSERVED PER 100 HUNTER HOURS					WMUs
REGION			RED FOX	GRAY FOX	COYOTE	FISHER	BOBCAT	RED FOX	GRAY FOX	COYOTE	FISHER	BOBCAT	
NORTH	185	634	12	0	10	1	2	1.89	0.00	2.25	0.10	0.40	A,B,C2,D1
WHITE MTNS	121	1149	19	3	15	1	12	2.19	0.36	2.06	0.16	1.18	C1,D2,E,F
CENTRAL	1169	4396	36	10	47	2	30	0.69	0.04	1.27	0.04	0.63	G,I1,J1,J2
SOUTHWEST	1138	4143	36	15	60	5	59	1.09	0.22	1.50	0.18	1.57	H1,H2,I2,K
SOUTHEAST	873	3113	23	4	69	3	9	0.95	0.43	2.57	0.18	0.37	L,M
STATEWIDE	3686	13434	126	32	201	12	112	1.07	0.21	1.77	0.13	0.90	ALL

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, 2023 to June 30, 2024

Purpose/Target Name: PROJECT 6 - FURBEARER RESEARCH AND MANAGEMENT

Objective Name: JOB 3 - FORMULATION OF POPULATION MANAGEMENT RECOMMENDATIONS

Objective Statement: Furbearer season recommendations to achieving furbearer management goals and objectives will be developed and evaluated annually or biennially.

Summary: Biologically based furbearer trapping and hunting seasons were established during the previous grant segment and will remain unchanged through spring 2025. This job was inactive during this reporting period.

Target date: June 30th annually 2021-2025.

Status of progress: On schedule.

Deviations: None.

Objective Approach: Trapping season rules and seasons are reviewed, typically on a biennial basis. Information from preceding trapping seasons is evaluated in conjunction with short and long-term trend information and furbearer population objectives. Initial season recommendations will be developed by the Furbearer Project Leader and reviewed, evaluated and modified as necessary by the Department Game Management Team. Input from regional biologists and law enforcement staff is solicited, initial recommendations are formulated for presentation to the Wildlife Programs Committee and then presented to the Commission. Upon receipt of initial approval, proposals are presented for public input at 3 to 5 public hearings. The Game Management Team revisits the initial proposals taking public comment into consideration, and presents them to the Executive Director and Commission for their final review and approval. Only those costs incurred up to, and including, development of final management recommendations will be charged to this grant.

Results: This segment marked an off year for biennial rulemaking for furbearers and other game species. Following the close of the 2023-2024 seasons, harvest data was analyzed and summarized but no additional changes were made for the 2024-2025 furbearer seasons. Biologically based seasons will again be reviewed and established starting in December 2024 and completed in spring 2025. Furbearer season recommendations are formulated on a biennial basis.

Conclusions: Data generated in this project (Jobs 1 and 2) allows for the formulation of science-based furbearer management recommendations under this job (Job 3).

Custom Qualitative Indicator/Output: Annual or biennial season recommendations consistent with achieving furbearer management goals and objectives have been developed and evaluated.

Recommendations: Catch per unit effort data will continue to serve as our primary index to furbearer population status. Our existing season-setting framework appears to provide a solid foundation for recommendation formulation and review. Continue this job as planned.

Prepared by: _____

Patrick Tate
Furbearer Project Leader
July 17, 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, 2023 to June 30, 2024

Purpose/Target Name: PROJECT 6 - FURBEARER RESEARCH AND MANAGEMENT

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

Objective Statement: To actively communicate with diverse furbearer management stakeholders and the general public interested in furbearer management in New Hampshire. To facilitate peer communication and information exchange. To disseminate information and data generated in the New Hampshire furbearer management project to all interested parties.

Summary: Furbearers continue to be a topic of significant public interest. Coyotes, beaver, fisher, wolves, and mountain lions, continually generate significant interest from the public and corresponding media inquiries. Federal Aid reports and furbearer harvest summaries were prepared.

Target date: June 30th annually 2021-2025.

Status of progress: On schedule.

Deviations: None.

Objective Approach: Furbearer management project information, goals, and accomplishments will be communicated to the public through a variety of techniques. These will include preparation of annual Federal Aid reports, harvest summaries, magazine articles, web site reports, video productions, newsletter articles, harvest summaries, pamphlets, slide presentations, assorted personal communications and formal group presentations. Television, radio, and newspaper interviews will be given as circumstances warrant. Information may include advocating changes in trapping methods and procedures as recommended through a national Best Management Practices research effort funded by the International Association of Fish and Wildlife Agencies (IAFWA). Professional technical meetings and pertinent workshops will be attended in order to disseminate and receive information relevant to furbearer management experiences and practices.

Results: Inquiries regarding furbearer species coming from students, teachers, reporters, naturalists, environmental consultants, and the general public, were answered. The project leader presented information to various public groups, on an approximate monthly basis, depicting current furbearer trends and populations (derived through this Federal Aid Project). Presentations encouraged an understanding of the need for active management, including trapping and hunting of furbearer species. The project leader used this job to share specific information and data generated by this project to consultants and others.

On an approximate weekly basis the project leader provided interviews and/or information to various news media and outlets regarding various aspects of NH's furbearer project. Coyotes, bobcats, wolves, and mountain lions continued to be a common focus of public concern and inquiry. Routine correspondence and e-mail requests for information, sighting reports, or other furbearer related topics were responded to.

On an annual basis the New Hampshire Trappers Association (NHTA) holds a fall rendezvous/business meeting, which is attended by the project leader. Furbearer questions or concerns from the NHTA and other attendees are routinely discussed in an open environment.

On an annual basis the project leader attends the Northeast Fur Resources Technical Committee. Topics discussed included: regional data reporting, fisher populations, CITES- bobcat information, muskrat population dynamics, and an array of other applicable furbearing animal topics.

An annual furbearer summary report was printed in the widely distributed “2023 New Hampshire Wildlife Harvest Summary” (see NH Federal Aid Report W-89-R-21, Project 1, Job 4, Appendix 1). Due to the wide variety of furbearer species and substantial public ignorance regarding their ecology and management, this job remains an integral part of the furbearer project. Specific information from this project are routinely included in the following publications: The New Hampshire Fish and Game (NHF&G) biennial report and Wildlife Journal Magazine, the Annual Fur Regulation Digest, the NHF&G Annual Harvest Report, The Northeast Furbearer Technical Committee Status Report, the CITES annual river Otter/Bobcat Report, and data made available to the news media as reported above.

Federal Aid Reports covering this grant segment were completed as required, in a professional and timely fashion.

Conclusions: Public and constituent communication is a critical aspect of furbearer management in our rapidly urbanizing environment. The better informed the public and constituents are, the greater the support for science-based management. Peer communication is another important aspect of successful furbearer management, both in terms of comparing and contrasting data, and also in terms of exchanging ideas and learning from the experiences of others.

Custom Qualitative Indicator/Output: Active communication has occurred with furbearer management stake holders and the public. Communication and information exchanges with peers have been facilitated. Information and data generated by the furbearer project has been disseminated to all interested parties.

Recommendations: Outreach and communications are essential components of wildlife stewardship. Continue this job as planned.

Prepared by: _____

Patrick Tate
Furbearer Project Leader
July 17, 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, 2023 to June 30, 2024

Purpose/Target Name: PROJECT 7 - SMALL GAME RESEARCH AND MANAGEMENT

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

Objective Statement: To develop, implement and expand an annual grouse productivity index for New Hampshire from grouse wing and tail samples provided by small game hunters.

Summary: A pilot grouse wing (age) and tail (sex) survey was initiated in 2005 in the town of Pittsburg, NH. In 2006, the survey was expanded to include all of NH north of Route 112 and subsequently went statewide in 2012. During this reporting period, a total of 140 usable samples and survey cards were submitted. A shotgun was provided by The Ruffed Grouse Society to serve as an incentive for hunter participation.

Target date: June 30th annually 2021-2025.

Status of progress: On schedule.

Significant Deviations: None.

Objective Approach: Grouse wing and tail sample packets will be distributed to specific outlets throughout the sample region. Each packet will include 2 envelopes for wing and tail submission and two matching survey cards. The survey cards record sample collection date and location, hunting methods employed, hours hunted, grouse (or woodcock) flushed, and grouse crop contents. Packets will be picked up from and returned to outlets by participating small game hunters. Completed packets will be collected by regional Fish and Game staff for return to the small game project leader. Wing and tail survey participants will be solicited through the Department's web site, press releases and direct communications with the small game project. A donated firearm will serve as an incentive for participation by small game hunters. Wings and tail samples will be aged and sexed by the small game project leader and interested volunteers. Survey card data will be summarized by the project leader. Data from samples and cards will be summarized in a brief report and provided to participants. Data will also be summarized in the project annual small game summary report. The number of juveniles harvested per adult female per year will serve as an index to annual grouse recruitment into the fall population. Flush rates will serve as a secondary index to grouse (and woodcock) abundance.

Results: Ruffed grouse wing and tail survey packets (Appendix 1) were assembled and placed at advertised locations, including Fish and Game Department Headquarters and the four regional offices. Hunters were solicited to participate through a small game survey mailing, various publications and news releases. Posters were placed at participating locations. Completed survey envelopes containing a wing and tail from a harvested ruffed grouse and a completed survey card were returned to a participating location for pick-up. Samples were then relayed to the Small Game Biologist at the Region 2 Office in New Hampton and were stored in a freezer until they were analyzed by the Small Game Biologist.

Aging and sexing of grouse samples was accomplished using widely accepted methods described by DeStefano et al. (1983). A total of 143 samples were received and 140 were deemed useable (sex and age could be determined). Of the 140 usable samples, 58 were adults, of which 30 (52%) were males and 28 (48%) were females (Table 1). Eighty two (59%) usable samples were juveniles. The juvenile to adult female ratio was 2.93, these results were higher than the 1.26 reported last year (Appendix 2). The wing/tail survey cards include crop contents data and number of flushes per hour providing additional information on habitat/food use and fall abundance (see Appendix 2). Wing/tail data in the future will become more valuable as hunter participation increases and as data from multiple sample years are accumulated.

Conclusions: This job provides us with the means to generate useful productivity data. Equally important, the project generates significant public interest and simultaneously builds knowledge, enthusiasm and active participation in ruffed grouse management efforts in New Hampshire.

Custom Qualitative Indicator/Output: An annual grouse productivity index based on wing and tail samples provided by hunters has been developed and implemented. Efforts to expand number and distribution of participants have been made.

Recommendations: Continue this job as planned and continue efforts to increase the study area to include the entire state. This will increase public participation and overall sample size.

Submitted by: _____
Brett Ferry
Small Game Project Leader
July 1, 2024

Literature Cited:

DeStefano, S.A., S. R. Craven and R. L. Ruff. 1983. A Grouse in the Hand: Tips for Examining, Aging and Sexing Ruffed Grouse. Univ. of Wisconsin Extension.

Table 1. Age and sex summary from 2023 ruffed grouse wing and tail study.

AGE	FEMALE	MALE	TOTAL	JUV:AD FEMALE
ADULT	28	30	58	**2.93**
JUVENILE	37	45	82	NA
TOTAL	65	75	140	NA

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, 2023 to June 30, 2024

Purpose/Target Name: PROJECT 7 - SMALL GAME RESEARCH AND MANAGEMENT

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

Objective Statement: To quantify New Hampshire small game hunter activities and observations in order to generate an index of New Hampshire small game species distribution and abundance, and to produce annual regional density indices of ruffed grouse and American woodcock from spring field surveys. Potential impacts of diseases and parasites will be monitored and evaluated.

Summary: A small game hunter survey was conducted during the 2023-2024 season. Small game sighting data were solicited from small game hunters. All data were entered into electronic data sets and analyzed.

A total of 46 ruffed grouse drumming routes and 31 woodcock singing routes were run during spring 2023 in New Hampshire. Of the 31 woodcock routes, 12 were federal routes assigned by the Fish and Game Migratory Bird Project and U.S. Fish and Wildlife Service, and 19 routes were assigned by the Small Game Project.

No actionable reports of disease or parasite issues in small game species were received by the Department this segment.

Target date: June 30th annually 2021-2025.

Status of progress: On schedule.

Significant Deviations: None.

Objective Approach: Volunteer small game hunter participants will be solicited through the Department's web site, news releases, magazine and newspaper articles, speaking engagements, and targeted mailings. An effort will be made to identify as many as 400 New Hampshire small game hunting survey cooperators through various means and outreach efforts. Volunteers will be provided posted, addressed small game survey cards that will serve to quantify regional hunting effort and sighting rates. Returned survey data will be electronically stored and analyzed on an annual basis. Volunteers will receive an annual project summary brochure (see Job 4) as a reward for past survey participation and incentive for future cooperation. A donated firearm will serve as an incentive for participation in the small game survey.

Standard ruffed grouse drumming route methodologies will be employed to conduct approximately 43 grouse survey routes. Routes will be randomly stratified across 5 management regions. All data will be electronically stored and analyzed on an annual basis. Woodcock data from U.S. Fish and Wildlife Service routes, as well as additional routes established by the Department as described in W89R Project 5, Job 5 will be used to assess woodcock abundance in 5 small game management regions.

The potential impacts of parasites, diseases and other wildlife health issues on small game species will be monitored and evaluated. The Department will work through the Northeast Wildlife Disease Cooperative (NWDC) and other similar disease surveillance organizations to gain access to wildlife disease and parasite diagnostics and testing, technical support with wildlife health issues and educational resources.

Results:

Small Game Hunter Surveys

A small game hunter survey and associated letter (Appendix 3) was designed, printed, and distributed to volunteer participants. Survey participants were solicited through speaking engagements, newspaper articles, news releases, at public hearings, and by inserting an informational pamphlet into moose hunter packets. In addition, migratory bird hunters in the National Migratory Bird Harvest Information (HIP) database were sent survey cards. The survey was also made available online through the NH Fish and Game website. All survey data were entered and summarized electronically with SAS or Access software. Small game hunters submitted 129 completed small game surveys for the 2023/24 season, which spans the period 09/01/23 - 03/31/24. Small game survey data are summarized in Tables 2-9 in this report, and Figures 1-3 in the "2023-2024 New Hampshire Small Game Summary Report" (see Job 4). On a monthly basis, 71% of small game hunting occurred during October (Table 2). Ruffed grouse were the most sought-after small game species in NH, accounting for 67% of hunting hours, while woodcock accounted for 23% of hunter effort (Table 3). In terms of hunter effort, over half (56%) occurred in the North Region, followed by the Central Region (16%), Southeast (11%) Southwest (10%), and the White Mountains (7%) Regions (Table 4, see map, Appendix 4). Ruffed grouse hunting in the North Region accounted for the most small game hunter hours (Table 5). The percentage of survey respondents who hunted with a dog (64%) was higher than the number hunting without a dog (36%; Table 6). Woodcock hunters using a dog (98%) were far more prevalent than those without a dog (Table 6). Woodcock were seen at a rate of 1.98 birds per hunter hour (Table 7). Grouse observation rates by hunters using a dog were highest in the North region, lower and similar in the Central and White Mountains, followed by the Southwest and Southeast regions (Table 8). Woodcock observation rates by dog hunters were highest in the North region followed by the White Mountains, the Southeast, Central, and Southwest regions, respectively (Table 9). A graphic representation and detailed interpretation of small game survey data can be seen in W-89-R-21, Project 7, Job 4, Appendix 8, Figures 1-3.

Grouse and Woodcock Survey Routes

Statewide ruffed grouse drumming routes were established in 1999. These routes were randomly placed in each of 18 wildlife management units (WMUs), at a rate of 2 routes per WMU. On average, each WMU consists of 500 square miles. WMUs were delineated on topographic maps printed in the "New Hampshire Atlas and Gazetteer". These maps were divided into a grid system consisting of 4-square mile blocks. X and Y coordinates were randomly selected in order to randomly select 2 four-square mile blocks in each WMU. Ten-mile grouse drumming routes were then subjectively mapped on roads that either began in or passed through the randomly selected blocks. Regional biologist identified routes within these randomly selected blocks that traversed diverse habitat representative of the larger block. Roads with high volumes of traffic and/or high-speed traffic were avoided. Ruffed grouse survey methodologies are described on the attached ruffed grouse survey form (Appendix 5). Woodcock surveys were conducted using existing U.S. Fish and Wildlife Service methodologies. Non-federal woodcock routes were run in those WMU's not covered by our existing U.S. Fish and Wildlife Service woodcock survey route program. Non-federal routes were run on segments of the randomly established ruffed grouse drumming routes.

Forty-six grouse routes were completed in 2024. Survey route data are summarized on the basis of 5 Small Game Management Regions (Appendix 4). Grouse survey route data are summarized in Appendix 6 and Tables 10 and 11. Regional long-term trends (2015-2024) for grouse drumming routes are depicted in Figure 4 in Appendix 8. Grouse were most abundant in the North Region followed by the White Mountains and Central Regions, where an average of 0.74, 0.20 and 0.09 drumming events per stop, respectively, were heard. The number of drumming events heard per stop in 2024 increased in the North and White Mountain regions and decreased in the other three regions (Table 10). The 2024 North Country Index increased to 0.62 drumming events per stop (see Figure 5 in Appendix 8). The White Mountain National Forest (WMNF) staff completed 2 of 6 miscellaneous routes this year. See W-89-R-21, Project 7, Job 4, Appendix 8, Figures 4 and 5, for further details on 2024 grouse route results.

Woodcock singing ground survey routes provide an index to the overall abundance of resident singing males and population trends. Woodcock density patterns varied throughout the state (Appendix 7). The number of woodcock heard per stop in 2024, increased in all regions of the state expect the White Mountains which remained stable. (Table 12). See W-89-R-21, Project 7, Job 4, Appendix 8, and Figure 8 for further details that depict long-term trends from the woodcock survey routes.

Disease Monitoring and Surveillance

The Department completed the three-year multistate West Nile virus surveillance project in 2020 to assess the detection of West Nile virus infection rates in hunter-harvested ruffed grouse, therefore no disease monitoring occurred during this segment.

Conclusions: Small game hunter surveys allow the Fish and Game Department to quantify hunter activity and observations, which provide inexpensive indices for key small game species, and engage important constituents in direct and routine communications. Grouse and woodcock surveys provide us with an efficient on-the-ground means to generate useful management data that is of significant public interest. With accumulating years of survey and route data, we are gaining substantial insight into the dynamics and relative abundance of these important small game species. Over time, survey results have proven to provide valuable trend data for management decision-making.

Custom Qualitative Indicator/Output: Small game hunter activities and observations have been quantified and used to generate an index to small game species distribution and abundance. Regional density indices of ruffed grouse and American woodcock have been produced annually. Potential impacts of parasites and diseases on small game populations have been monitored and evaluated.

Recommendations: Our use of assorted surveys to monitor small game hunter activity and small game populations have proven to be an efficient and cost-effective method for monitoring small game hunter activity and small game populations. This job should be continued as planned.

Submitted by: _____

Brett Ferry
Small Game Project Leader
July 1, 2024

Table 2. Hunter effort by month during 2023-2024.

MONTH	HUNTER HOURS	% HUNTER HOURS
September	111	4%
October	2163	71%
November	511	17%
December	229	7%
January	19	1%
February	13	<1%
March	15	<1%
TOTAL	**3059**	

Table 3. Total hunter effort by species during 2023-2024.

SPECIES HUNTED	HOURS	% HUNTER HOURS
GROUSE	2049	67%
WOODCOCK	695	23%
SQUIRREL	268	9%
HARE	40	1%
RABBIT	7	<1%
TOTAL	**3059**	

Table 4. Total hunter effort by region during 2023-2024.

REGION	HOURS HUNTED	% HUNTER HOURS
NORTH	1701	56%
WHITE MOUNTAINS	228	7%
CENTRAL	495	16%
SOUTHWEST	292	10%
SOUTHEAST	344	11%
TOTAL	**3059**	

Table 5. Total hunter effort by species and region during 2023-2024.

REGION	GROUSE	WOODCOCK	SQUIRREL	HARE	RABBIT
NORTH	73%	30%	0%	0%	0%
WHITE MOUNTAINS	7%	12%	4%	0%	0%
CENTRAL	11%	22%	27%	100%	0%
SOUTHWEST	5%	24%	12%	0%	0%
SOUTHEAST	5%	12%	57%	0%	100%

Table 6. Hours of effort by species with or without the aid of a dog during 2023-2024.

DOG	GROUSE	WOODCOCK	SQUIRREL	HARE	RABBIT	PERCENT
Y	1122.5	528.5	2	35	0	64%
N	723.9	13	209	0	6	36%

Table 7. Hunter observation rates per 100 hunter hours during 2023-2024.

HUNTING FOR	HOURS HUNTED	TOTAL SEEN	PER 100 HTR HOURS
GROUSE	2049	1895	92
WOODCOCK	695	1378	198
SQUIRREL	268	286	107
HARE	40	12	30
RABBIT	7	1	14

Table 8. Summary of grouse observations by region with the aid of a dog during 2023-2024.

REGION	HOURS HUNTED	TOTAL SEEN	PER 100 HUNTER HOURS	PER HOUR HUNTED
NORTH	911	1136	125	1.2
WHITE MOUNTAINS	62	46	74	0.7
CENTRAL	123	82	67	0.7
SOUTHWEST	22	3	14	0.1
SOUTHEAST	5	0	0	0.0

Table 9. Summary of woodcock observations by region with the aid of a dog during 2023-2024.

REGION	HOURS HUNTED	TOTAL SEEN	PER 100 HUNTER HOURS	PER HOUR HUNTED
NORTH	171	573	336	3.4
WHITE MOUNTAINS	49	104	214	2.1
CENTRAL	124	188	152	1.5
SOUTHWEST	143	182	128	1.3
SOUTHEAST	44	80	184	1.8

Table 10. Grouse drumming index by small game regions and statewide, 1999-2024.

YEAR	NORTH	WHITE MOUNTAINS	CENTRAL	SOUTHWEST	SOUTHEAST	STATEWIDE
1999	0.70	0.63	0.24	0.21	0.15	0.39
2000	0.70	0.62	0.36	0.10	0.18	0.39
2001	0.84	0.84	0.54	0.44	0.03	0.54
2002	0.95	0.79	0.57	0.30	0.08	0.54
2003	0.40	0.58	0.43	0.45	0.14	0.40
2004	0.56	0.58	0.23	0.18	0.00	0.31
2005	0.68	0.85	0.42	0.50	0.00	0.49
2006	0.45	0.44	0.28	0.25	0.06	0.30
2007	0.53	0.80	0.36	0.30	0.12	0.42
2008	0.62	0.37	0.38	0.23	0.08	0.34
2009	0.65	0.68	0.43	0.35	0.10	0.44
2010	0.84	0.36	0.43	0.26	0.22	0.42
2011	0.82	0.56	0.40	0.30	0.08	0.43
2012	1.51	0.86	0.30	0.43	0.06	0.63
2013	1.01	0.40	0.40	0.13	0.04	0.40
2014	1.00	0.46	0.24	0.19	0.00	0.38
2015	0.88	0.27	0.32	0.33	0.02	0.36
2016	0.95	0.35	0.34	0.06	0.00	0.34
2017	1.06	0.23	0.29	0.20	0.00	0.36
2018	0.90	0.33	0.31	0.41	0.00	0.39
2019	0.88	0.22	0.17	0.21	0.00	0.30
2020	0.53	0.35	0.25	0.16	0.00	0.26
2021	0.60	0.28	0.23	0.06	0.02	0.24
2022	0.79	0.60	0.15	0.08	0.02	0.33
2023	0.55	0.15	0.10	0.09	0.04	0.19
2024	0.74	0.20	0.09	0.03	0.00	0.21

Table 11. North Country ruffed grouse drumming Index, 1996-2024.

Year	Drumming Index
1996	0.65
1997	0.4
1998	0.52
1999	0.54
2000	0.67
2001	0.74
2002	0.76
2003	0.17
2004	0.41
2005	0.73
2006	0.48
2007	0.6
2008	0.65
2009	0.68
2010	0.7
2011	0.67
2012	1.21
2013	1.03
2014	0.84
2015	0.84
2016	0.68
2017	0.88
2018	0.91
2019	0.68
2020	0.49
2021	0.46
2022	0.54
2023	0.47
2024	0.62

Table 12. Regional results from woodcock singing ground surveys, 1999-2024.

YEAR	NORTH	WHITE MOUNTAINS	CENTRAL	SOUTHWEST	SOUTHEAST	STATEWIDE
1999	0.7	0.48	0.53	0.3	0.15	0.43
2000	0.67	0.36	0.31	0.25	0.1	0.34
2001	0.91	0.24	0.24	0.1	0.05	0.31
2002	0.54	0.29	0.4	0.22		0.36
2003	0.68	0.47	0.22	0.2	0.2	0.35
2004	0.62	0.4	0.2	0.23	0.3	0.35
2005	0.86	0.4	0.28	0.08	0.13	0.35
2006	0.62	0.22	0.31	0.3	0.35	0.36
2007	0.3	0.22	0.17	0.25	0.17	0.22
2008	0.26	0.4	0.24	0.34	0.13	0.27
2009	0.56	0.35	0.42	0.23	0.18	0.35
2010	0.66	0.28	0.33	0.25	0.35	0.37
2011	0.5	0.25	0.45	0.23	0.25	0.34
2012	0.56	0.38	0.37	0.38	0.43	0.42
2013	0.48	0.45	0.35	0.2	0.28	0.35
2014	0.6	0.52	0.45	0.24	0.23	0.41
2015	0.48	0.26	0.43	0.1	0.1	0.27
2016	0.56	0.26	0.28	0.43	0.23	0.35
2017	0.5	0.32	0.23	0.57	0.1	0.34
2018	0.34	0.26	0.25	0.2	0.13	0.24
2019	0.46	0.3	0.13	0.4	0.1	0.28
2020	0.7	0.22	0.4	0.4	0.03	0.35
2021	0.56	0.33	0.28	0.33	0.03	0.31
2022	0.78	0.33	0.25	0.4	0.15	0.38
2023	0.84	0.28	0.29	0.16	0.1	0.33
2024	0.94	0.28	0.44	0.36	0.15	0.48

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, 2023 to June 30, 2024

Purpose/Target Name: PROJECT 7 - SMALL GAME RESEARCH AND MANAGEMENT

Objective Name: JOB 3 - FORMULATION OF SMALL GAME POPULATION MANAGEMENT RECOMMENDATIONS

Objective Statement: To formulate science-based small game management recommendations on a biennial basis.

Summary: This segment was not a scheduled biennial season year therefor no changes to existing framework were presented to the game management team. A house bill to change the season framework on gray squirrel was introduced through the legislative process but failed to make it through to a vote, therefore no changes were made.

Target date: June 30th annually 2021-2025.

Status of progress: On schedule.

Significant Deviations: None.

Objective Approach: Hunting seasons are established on a biennial basis through the administrative rule-making process. Information from preceding hunting seasons is evaluated in conjunction with short and long-term trend information. Initial season recommendations are developed by the Small Game Project Leader and reviewed, evaluated and modified as necessary by the Department Game Management Team. Input from regional biologists and law enforcement staff is considered, initial recommendations are reviewed by the Game Management Team, and preliminary season recommendations are subsequently developed at the Wildlife Programs Committee meeting for evaluation by the Executive Director and Commission. These preliminary recommendations are presented at public hearings around the state and public comments are incorporated by the Game Management Team and a final recommendation developed for approval by the Commission and Executive Director. Only costs incurred up to, and including, final season recommendations will be charged to the grant.

Results: This segment was not a scheduled biennial season-setting year and the small game project leader did not present any changes to the season framework. The “New Hampshire Game Management Plan (2016-2025)” will continue to guide management decisions for select game species (ruffed grouse and snowshoe hare) and promote the maintenance of young forest habitat for ruffed grouse and snowshoe hare. See W-89-R-15, Project 8, Job 2 for details on the planning process and the revised plan.

Conclusions: New Hampshire’s current small game hunting framework adequately satisfies the Department’s stewardship responsibilities and the recreational interests of our constituents.

Custom Qualitative Indicator/Output: Science-based small game management recommendations have been formulated biennially.

Recommendations: No change in this job is recommended.

Submitted by: _____

Brett Ferry
Small Game Project Leader
July 1, 2024

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, 2023 to June 30, 2024

Purpose/Target Name: PROJECT 7 - SMALL GAME RESEARCH AND MANAGEMENT

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

Objective Statement: To efficiently and effectively communicate with interested New Hampshire small game stakeholders. To maintain a productive working relationship and good information exchange with small game management professionals. To ensure that our small game project leader is familiar with the best available small game management methods and techniques. To prepare and distribute in a timely fashion, an annual small game management report to cooperators, the public, and the media, and to prepare and deliver high quality Federal Aid reports in a timely fashion.

Summary: The small game project leader met with assorted small game interest groups to share project information and survey results, promote interest in small game, discuss technical issues, provide technical support, to receive public input and opinion, and to inform and educate the public. The annual small game summary report was created and distributed, and Federal Aid reports were completed as required.

Target date: June 30th annually 2021-2025.

Status of progress: On schedule.

Significant Deviations: None.

Objective Approach: An annual small game summary report detailing results from a hunter survey and population monitoring efforts, will be produced and available to view on our web site. A brochure will be produced and distributed to survey respondents and other small game stakeholders. The brochure will also be distributed to interested media, various Fish and Game offices for public dissemination, and in response to in-state and out of state small game hunting inquiries. Summary report contents will be used as an annual source of news releases, popular articles, technical information, and public presentations. Approximately 600 brochures will be printed annually, unless experience indicates greater production is warranted. Communication of small game species status, management goals and accomplishments will be facilitated through a variety of techniques including presentations, news releases, correspondence and phone calls, and other means as warranted. Professional conferences, workshops, technical work group meetings and training sessions will be attended when beneficial to accomplishing project objectives. Required Federal Assistance performance reports will be completed annually.

Results: The “2023/24 New Hampshire Small Game Summary Report” (see Appendix 8) was completed and made available on the department’s web site. Approximately 1,000 copies of the condensed brochure with a focus on our two most sought-after small game species, ruffed grouse and the woodcock, were be printed and distributed in summer of 2024. A copy of the condensed brochure was sent to past survey participants to encourage their continued survey participation. In addition, copies of the brochure are routinely sent to prospective survey participants in an effort to encourage their future participation. Brochures continue to be distributed by Department staff to encourage interest in and knowledge of New Hampshire small game species.

Project activities included working with regional biologists, staff from the Division’s habitat program, and other key partners to manage habitat for small game species. The project leader also shared technical information generated through this project with landowners interested in managing their lands for small game species and with outdoor writers from throughout the country, interested in New England small game information, issues, and status. The project leader shared survey information and results with Department Game Management Team members, and completed Federal Aid reports in a timely and professional manner.

Conclusions: Based on positive input received to date, focused distribution of small game summary results leads to increased survey participation rates and heightened interest in our state small game resources. The survey activities of this project generate information of great public interest, and serve to create interest in both small game population and habitat management.

Custom Qualitative Indicator/Output: Effective and efficient communication with small game stakeholders has occurred. Productive working relationships and good information exchange with small game management professionals have been maintained. The small game project leader is familiar with the best available small game management methods and techniques. Small game reports and Federal Aid reports are prepared and distributed annually.

Recommendations: No change in this job is recommended. The annual small game summary report will continue to be used to encourage survey participation, to educate the public and, to create interest in and appreciation for New Hampshire small game resources. The Small Game Project Leader will continue to actively interact with all interested parties in order to maximize project success.

Submitted by: _____

Brett Ferry
Small Game Project Leader
July 1, 2024

Appendix 1. Grouse Wing and Tail Survey Card for 2023

NEW HAMPSHIRE FISH AND GAME DEPARTMENT
huntnh.com

F&W1412A.indd

RUFFED GROUSE WING AND TAIL SURVEY

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone #: _____ Email address: _____

Date: _____ Town bird harvested from: _____

Hours hunted for this bird: _____ Did you hunt with a dog? ❑ yes ❑ no

Ruffed Grouse flushed: _____ # Woodcock flushed: _____

Crop contents: _____

Personal notes: (weather, cover conditions, wild fruit) _____

_____

Remember, the hours hunted and birds flushed are for this sample only! Thank you.

INCLUDE THIS FORM WITH YOUR DRY WING AND TAIL SAMPLE IN AN ENVELOPE AND RETURN TO PARTICIPATING STORE.

Instructions for removing wing and tail:

Hunters are asked to help in data collection by providing a wing and a tail fan with rump feathers from a harvested ruffed grouse. This information is used for determining the sex and age composition and general health of local populations.

- Remove one complete wing from your harvested bird and the whole tail, including the rump feathers (see illustration below). Please remove all flesh from the samples and allow the parts to dry for a few days before placing them in the envelope. **DO NOT PLACE THE SAMPLES IN PLASTIC BAGS OR WRAP IN PLASTIC.**
- Complete the enclosed survey and place both the survey card and the wing and tail in the manila envelope and seal. **Only one wing and tail per envelope, please.**
- Drop off the packet at one of the participating stores listed on the sheet included in the packets.
- **Packets must be turned in no later than the first Saturday in January to be included in the raffle for a shotgun** donated by The Ruffed Grouse Society. Only completed and usable packets will be included in the drawing.

If you have any questions, call Karen Bordeau, Small Game Project Leader for New Hampshire Fish and Game, at 603-744-5470.

Thank you for participating and have a safe hunting season!

The rump feathers are those found at the base of the tail.

Appendix 2. Wing and Tail Summary Report for 2023 Ruffed Grouse Season.

Ruffed Grouse Wing and Tail Survey in New Hampshire

In 2023, hunters were again asked to submit ruffed grouse wings and tails from harvested birds and fill out a survey card for each. This biological information continues to increase our knowledge of ruffed grouse and provides us with age and sex composition, distribution data and a juvenile to adult female ratio. The number of samples submitted was down from the 188 submitted last year, which reflects the lower hunter observation rates for grouse. However, the data indicates an increase in the juvenile/adult female ratio indicating that despite decreased observation rates female grouse were able to successfully fledge young. The long-term trend for the number of grouse flushed per hour hunted is depicted in Figure 7. Below are some of the highlights from last year's wing and tail survey:

- 143 samples collected with 140 being useable
- Samples were taken from 22 towns, Pittsburg (50%) and Clarksville (15%) accounted for 65% of the samples
- 58 adult grouse were harvested (28 females, 30 males) compared to 82 juveniles (37 females, 45 males). Juvenile to adult female ratio was 2.93
- 82% of samples were harvested in October
- 67% of the hunters used a dog
- 1.5 grouse were flushed per hour hunted (460 hours hunted, 692 flushed grouse)
- 50 hunters reported flushing woodcock, with a rate of 0.72 flushed per hour
- Hunters came from 9 other states besides NH, including ME, MA, CT, RI, NJ, MD, NY, PA, and NC.
- Reported crop content included maple samaras, birch catkins, mushrooms, raspberry, fern and clover leaves, alder leaves and mountain ash.
- 83 of the samples were the gray color phase, 33 were intermediate, and 24 were red

Fig 6. Results from ruffed grouse wing and tail survey showing the long-term trend (2014-2023) for the juvenile to adult female ratio.

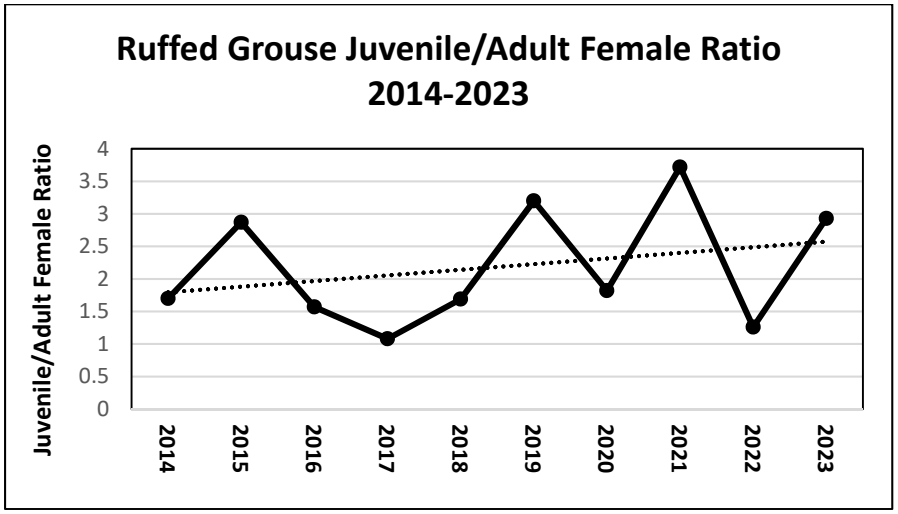
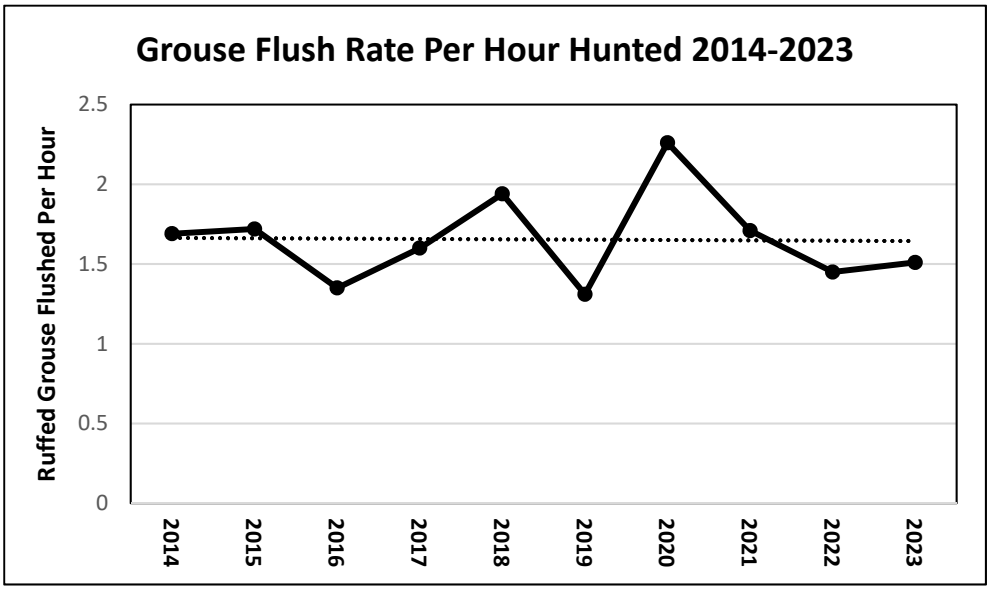


Fig.7. Results from the ruffed grouse wing and tail survey showing the long-term trend (2014-2023) for the number of grouse flushed per hour hunted.



Appendix 3. NH Small Game Hunter Survey Card 2023/2024

2023/2024 SMALL GAME HUNTER SURVEY

Return by January 8, 2024, for Fall Hunting or April 8, 2024, for Winter Hunting

NAME: _____ DATE OF BIRTH: _____

MAILING ADDRESS: _____ TELEPHONE: _____

TOWN OF RESIDENCE: _____ STATE: ____ ZIP: _____

❑ YES ❑ NO DID YOU DO MOST OF YOUR SMALL GAME HUNTING WITH A DOG?

MONTH	DAY	WMU	TOWN HUNTED	# HOURS HUNTED	# WOODCOCK SEEN	# GROUSE SEEN	# GRAY SQUIRREL SEEN	#COTTONTAIL RABBIT SEEN	#SNOWSHOE HARE SEEN	SPECIES PRINCIPALLY HUNTING FOR*

PLEASE DO NOT INCLUDE OBSERVATIONS WHILE PHEASANT HUNTING.

F&W23004.indd

*USE UNDERLINED 2 LETTERS OF SPECIES YOU WERE PRINCIPALLY HUNTING FOR.
WO=Woodcock, GR=Grouse, SQ=Gray Squirrel, RA=Cottontail Rabbit, HA=Snowshoe Hare

Appendix 3. NH Small Game Hunter Survey Card 2023/2024 (cont.).

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 2126 CONCORD NH

POSTAGE WILL BE PAID BY ADDRESSEE

WILDLIFE DIVISION
NH FISH AND GAME DEPARTMENT
11 HAZEN DR
CONCORD NH 03301-9853

New Hampshire Small Game Wildlife Management Units (WMUs) and Regions

Please use these WMU designations when filling in your survey.

TO MAIL: FOLD AND SEAL THIS EDGE - NO POSTAGE NECESSARY

Help Fish and Game with this important survey and YOU COULD WIN!

The Sturm Ruger Company has generously donated a Standard American Rifle, which will be awarded to one of the participants of this survey. To qualify for the drawing, your completed survey must be received by January 9, 2023, for fall hunting and April 10, 2023, for winter hunting.

Good Luck and Safe Hunting!

Appendix 3. NH Small Game Hunter Survey Card Cover letter 2023/2024

New Hampshire
Fish and Game Department

225 Main Street, Durham NH 03824-4732
(603) 868-1095
Headquarters: 11 Hazen Drive, Concord, NH 03301
(603) 271-3421

FAX (603) 868-3305
TDD Access: Relay NH 1-800-735-2964
Web site: www.WildNH.com

Scott R. Mason
Executive Director

July 11, 2024

Dear Small Game Hunting Enthusiast:

Thank you to all small game hunters who participated in the 2023-2024 hunter surveys. The information you provide is used to monitor, manage and conserve small game species in New Hampshire. Annual data collection efforts provide information that allows biologist to manage small game populations at healthy levels for public enjoyment, including future hunting opportunity. This report of all small game species is available online and an abbreviated summary brochure of grouse and woodcock will be available in print and mailed to last year's participants.

We received 129 useable small game survey cards and 140 usable grouse wing and tail samples during the survey period. The more hunters who fill out and send in surveys, the better our data for understanding small game species population trends. Making a copy of your card each year is also a good way to track your own hunting success. Taking youth hunters out for small game can lead to success that they can build on and hold their interest in the sport. Help them fill out a survey card and let them know their submitted observations are used to inform management decisions. Sturm Ruger has once again donate a firearm to be raffled off at the conclusion of our small game seasons!

Signing up to become a small game survey participant is easy. Simply call the New Hampshire Fish and Game Department Wildlife Division at (603) 271-2461 or e-mail your name and mailing address to wildlife@wildlife.nh.gov. Be sure to mention your interest in the small game survey. You can also download a survey form off the NH Fish and Game website (www.huntnh.com) under the surveys section on the Small Game and Upland Bird page.

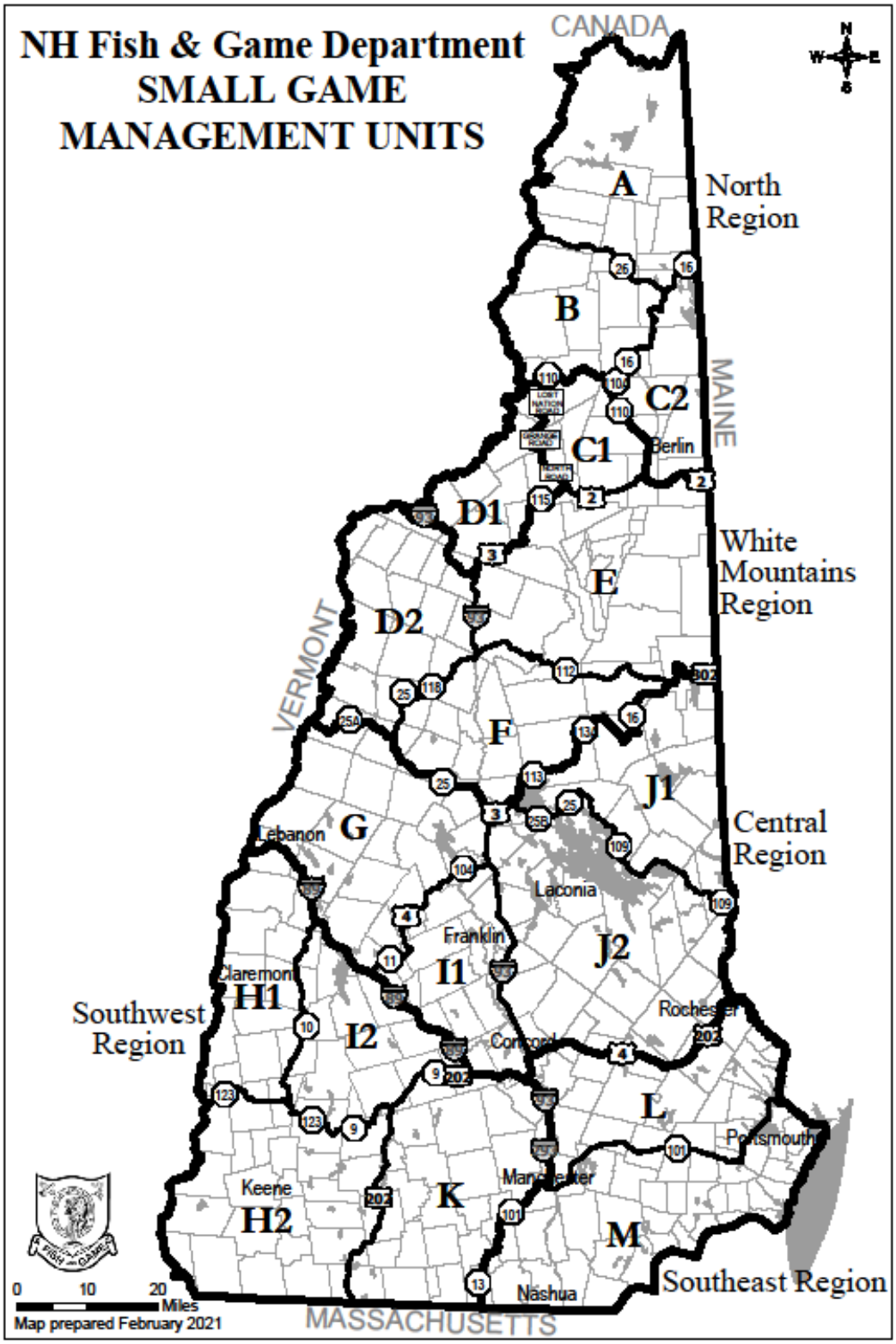
Ruffed grouse and woodcock continue to be New Hampshire's two most sought after small game species and are the main focus of this summary. Of the surveys received during 2023-2024, 67% of the hunter-hours resulted from hunting ruffed grouse and 23% resulted from woodcock hunting. While all the data provided from your surveys is highly valued and used by the small game project, the increased effort and data associated with grouse and woodcock allow for an in-depth focus on these two popular species. Included in this summary report are long-term trends for grouse observation rates, breeding surveys for grouse (drumming) and woodcock (singing ground), and results from the grouse wing and tail survey.

The Small Game Hunter Survey has proven to be an efficient means of achieving a good understanding of the distribution, abundance and trends of our small game populations. **YOUR** participation is important to the success of our small game survey. With a better understanding of population dynamics, we hope to achieve improved management and to provide enhanced opportunities for public enjoyment of New Hampshire's small game species.

We want your feedback. If you have comments to share or ideas to offer, or if you would like to learn about our annual grouse wing and tail collection efforts, please feel free to contact me directly at (603) 744-5470. I look forward to hearing from you!

Have a safe and enjoyable hunting season in New Hampshire.
Sincerely,
Brett Ferry
Brett Ferry
Small Game Project Leader

Appendix 4. Small Game Management Regions



Appendix 5. Data Form for 2024 Grouse Routes

YEAR 2024 RUFFED GROUSE & TURKEY SURVEY DATA FORM
NH FISH AND GAME DEPARTMENT

ROUTE NUMBER (*USE ASSIGNED ROUTE NUMBERS ONLY*): _____
WMU: _____ Town: _____ Date of Survey: ____/____/____
Observer's Name: _____ Was this route run by you last year? _____
If Volunteer, please provide your phone number: _____

OFFICIAL SUNRISE _____:_____ ROUTE START TIME _____:_____	SKY CONDITION ___ Clear ___ ¼ Overcast ___ ½ Overcast ___ ¾ Overcast ___ >¾ Overcast	TEMP Fahrenheit ___ 35-39 ___ 40-49 ___ 50-59 ___ 60+	WIND (MPH) ___ Calm ___ Gentle (1-3) ___ Light (4-7) ___ Moderate (8-12) ___ Strong (> 12)	PRECIP ___ None ___ Mist ___ Snow ___ Fog ___ Light Rain

Stop #	Odometer Reading	Time	Total Drumming Events Heard	Total No. Gobblers Heard	Disturbance				Comments
					Low	Mod	High	*Reject*	
1	.	:							
2	.	:							
3	.	:							
4	.	:							
5	.	:							
6	.	:							
7	.	:							
8	.	:							
9	.	:							
10	.	:							
	TOTALS								

IMPORTANT: ***PLEASE READ THESE INSTRUCTIONS CAREFULLY AND COMPLETELY***

1. **Record the total number of grouse drumming events heard; not the number of individual grouse heard.**
2. **Record the total number of individual gobblers (male turkeys) heard; not the number of gobbles heard.**
3. Conduct surveys between 15 April and 10 May
4. Begin routes 30 minutes BEFORE sunrise.
5. Stops should be at 1- mile intervals.
6. Listen for exactly 4 minutes.
7. Do not conduct surveys if temperatures are below normal, or in moderate wind or persistent rain.
8. Mail, Fax or Email all completed forms by May 15 to Brett Ferry, NH Fish & Game Dept, Region 2, PO Box 417, New Hampton, NH 03256. Fax: 603-744-6302. Email: brett.ferry@wildlife.nh.gov
9. Under "Disturbance" only check ***Reject*** if disturbance is dramatic enough to warrant rejection of the stop as a survey point.
10. Questions should be directed to Brett Ferry 603-744-5470.

DATAFORM.DOC

Appendix 6. Ruffed Grouse Survey Route Data for 2024

STRATIFIED GROUSE ROUTES
ROUTES FOR 2024

RT NO.	WMU	TOWN	DATE	GROUSE	TURK	STOPS	OBSERVER
NORTH							
01	B	DUMMER	05/01/24	03	06	10	Henry Jones
02**	D1	WHITEFIELD	04/24/24	11	04	10	John Sojka
03	D1	LANCASTER	04/19/24	19	05	10	Henry Jones
04	B	COLUMBIA	04/22/24	04	04	10	Jake Debow
05	C1	BERLIN	05/01/24	06	01	10	John Sojka
06	C2	MILAN	05/03/24	02	00	10	John Sojka
07	B	STRATFORD	04/24/24	09	00	10	Henry Jones
08	A	CLARKSVILLE	04/28/24	05	05	10	Jake Debow
				59	25	80	
Events/Birds per Stop				.74	.31		
WHITE MOUNTAINS							
09	E	JACKSON	05/03/24	00	00	10	R. Fuda
10	F	CAMPTON	05/03/24	02	02	10	Brad Green (V)
11	E	CHATHAM	04/16/24	00	02	10	R. Fuda
12	D2	BENTON	04/19/24	02	00	10	B. Ferry
13	D2	SUGAR HILL	04/29/24	03	01	10	A. TIMMINS
14	F	RUMNEY	04/27/24	05	04	10	Wally Archer (V)
				12	09	60	
Events/Birds per Stop				.20	.15		
CENTRAL							
15	I1	WEBSTER	04/24/24	02	05	10	D. Bailey
16	J2	PITTSFIELD	04/30/24	00	02	10	K. Wadiak
17	G	CANAAN	04/15/24	00	06	10	T. FLYNN
18	J1	TUFTONBOROUGH	05/03/24	00	02	10	E. GEIB
19	J1	FREEDOM	05/07/24	05	04	10	E. GEIB
20	I1	HILL	04/26/24	00	08	10	B. Ferry
21	G	GRAFTON	05/03/24	00	00	10	T. FLYNN
22	J2	GILMANTON	05/07/24	00	03	10	L. VERVILLE
				07	30	80	
Events/Birds per Stop				.09	.38		
SOUTH WEST							
23	H1	LANGDON	04/16/24	01	01	10	A. KEATING
24	H1	CROYDON	04/24/24	00	01	10	B. Ferry
25	I2	GOSHEN/LEM	04/30/24	00	01	10	B. Ferry
26	H2	NELSON	04/17/24	00	05	10	A. KEATING
27	I2	HILLSBOROUGH	05/03/24	00	02	10	K. Wadiak
28**	H2	WINCHESTER	04/15/24	00	06	10	A. KEATING
29	K	SHARON	04/16/24	01	01	10	D. Bailey
40	K	LYNDEBOROUGH	05/9/24	00	04	10	J. OEHLER
				02	21	80	
Events/Birds per Stop				.03	.25		

**Route moved slightly in 2024 due to road conditions

Appendix 6. Ruffed Grouse Survey Route Data for 2024 (cont.)

SOUTH EAST							
30	L	DOVER	04/18/24	00	02	10	J. CARLONI
32	M	CHESTER	04/16/24	00	01	10	J. CARLONI
33	L	ALLENSTOWN	04/29/24	00	04	10	D. BAILEY
34	M	DERRY	05/04/24	00	03	10	P. TATE
36	M	SALEM	04/16/24	00	04	10	P. TATE
				00	14	50	
Events/Birds per Stop				.00	.28		

2024 NORTH COUNTRY GROUSE INDEX

RT. NO.	WMU	TOWN	DATE	GROUSE	TURK	STOPS	OBSERVER	LOCAL
06	C2	MILAN	05/03/24	02	00	10	J. Sojka	Mari Grande
07	B	STRATFORD	04/24/24	09	00	10	H. Jones	Nash Stream
08	A	CLARKSVILLE	04/28/24	05	05	10	JDEBOW	Deadwater
50	A	PITTSBURG	05/03/24	12	02	10	JDEBOW	Smith Brook
51	A	PITTSBURG	04/29/24	06	06	10	JDEBOW	Indian Stream
52	A	ERROL	05/08/24	04	00	10	JDEBOW	Greenough
54	A2	DARTMOUTH	00/00/24	00	00	10	Kevin EVANS	Loomis
55	A2	DARTMOUTH	04/30/24	10	00	10	Riley PATRY	Swift
56	A2	DARTMOUTH	05/08/24	09	00	10	Riley PATRY	Dead Diamond
00 (CLNA)	A2	PITTSBURG	04/28/24	05	01	10	John Sojka	East Inlet
				62	14	100		
Events/Birds per Stop				.62	.14			

2024 MISC ROUTES *

RT. NO	WMU	TOWN	DATE	GROUSE	TURK	STOPS	OBSERVER	LOCAL
70	D2E/W	BENTON	__/__/__	00	00	00	B.HILLMAN	WMNF
71	F	THORNTON	05/15/23	00	00	10	K.VANGOR	WMNF
72	E	JEFFERSON	__/__/__	00	00	00	B.HILLMAN	WMNF
73	E/F	ALBANY	__/__/__	00	00	00	J.DUBUQUE	WMNF
74	E	BEANS PUR	__/__/__	00	00	00	Jay. MILOT	Wild R.
76	E	GORHAM	05/06/24	00	00	10	Bill ONEILL	Pinkham
				00	00	20		
Events/Birds per Stop				.00	.00			

*NOT INCLUDED IN ANALYSIS

Appendix 7. Woodcock Survey Results for 2024

2024 WOODCOCK ROUTE RESULTS

INCLUDES FEDERAL ROUTES ASSIGNED BY THE WATERFOWL PROJECT
AND 19 ROUTES (BOLD TEXT/NO'S) RUN FOR THE SMALL GAME PROJECT

RT. NO.	WMU	TOWN	DATE	WOODC	STOPS	OBSERVER
NORTH REGION						
001	A	PITTSBURG	04/26/24	01	10	J. DEBOW
002	B	STARK	04/29/24	07	10	H. JONES
003	B/C2	ERROL	05/06/24	08	10	J. DEBOW
100	**D1**	**LANCASTER**	**05/06/24**	**16**	**10**	**H. JONES**
101	**B**	**COLUMBIA**	**04/29/24**	**15**	**10**	**J. DEBOW**
				47	**50**	
Woodcock per Stop				**.94**		
WHITE MOUNTAINS REGION						
004	E	BETHLEHEM	04/29/24	03	10	A. TIMMINS
005	E	PINKHAM GRANT	05/01/24	02	10	H. JONES
006	D2	WARREN	__/__/__	00	00	K. BORDEAU**
106	**E**	**CHATHAM**	**05/07/24**	**02**	**10**	**R. Fuda**
109	**E**	**JACKSON**	**05/06/24**	**04**	**10**	**R. Fuda**
				11	**40**	
Woodcock per Stop				**.28**		
CENTRAL REGION						
010	G	ALEXANDRIA	05/07/24	04	10	B. Ferry
007	J1	MOULTONBOROUGH	04/24/24	03	10	R. Fuda
011	I1	CONCORD	__/__/__	00	00	J. CARLONI**
104	**I1**	**FRANKLIN**	**05/09/24**	**10**	**10**	**B. Ferry**
019	J1	EFFINGHAM	05/14/24	01	10	R. Fuda*
105	**J2**	**LOUDON**	**05/13/24**	**04**	**10**	**B. Ferry**
				22	**50**	
Woodcock per Stop				**.44**		
SOUTH WEST REGION						
009	H1	PLAINFIELD	05/06/24	04	10	B. Ferry
014	H2/I2	STODDARD	/ /	00	00	E. ROBINSON**
013	H2	WALPOLE	/ /	00	00	A. KEATING
015	I1	MT VERNON	04/29/24	01	10	A. KEATING
018	H2	RICHMOND	05/01/24	02	10	A. KEATING
102	**H1**	**LANGDON**	**05/09/24**	**06**	**10**	**A. KEATING**
103	**I2**	**HILLSBOROUGH**	**05/07/24**	**05**	**10**	**K. Wadiak**
				18	**50**	
Woodcock per Stop				**.36**		

Appendix 7. Woodcock Survey Results for 2024 (cont.)

SOUTH EAST REGION						
012	L	BARRINGTON	__/__/__	00	00	J. CARLONI**
107	L	EPSOM	05/13/24	00	10	J. CARLONI
016	M	LONDONDERRY	05/13/24	03	10	P. TATE
017	M	E.KINGSTON	/ /	00	00	P. TATE**
				03	20	
Woodcock per Stop				.15		

WOODCOCK ROUTES FOR WOODCOCK INITIATIVE

RT. NO.	WMU	TOWN	DATE	WOODC	STOPS	OBSERVER
60	A	SOUTH BAY BOG	__/__/__	00	00	J. Sojka
61	A	SCOTT BOG	04/26/24	04	10	J. Sojka
63	L	PISSCASSIC	04/26/24	04	03	P. TATE
64	I1	KEARSARGE	__/__/__	00	00	
65	I1	CHADWICK MEAD	/ /	00	00	
				08	13	
Woodcock per Stop				.62		

WOODCOCK ROUTES FOR SECOND COLLEGE GRANT

SC1	A	DEAD DIAMOND LOWER	05/04/24	05	10	R. PATRY
SC2	A	DEAD DIAMOND UPPER	05/13/24	03	10	R. PATRY
SC3	A	LAMB VALLEY	05/07/24	04	10	R. PATRY
SC4	A	LOOMIS VALLEY	04/30/24	01	10	R. PATRY
SC5	A	SOUTH SIDE ROAD	05/04/24	03	07	K. EVANS
SC6	A	SWIFT LOWER	04/29/24	03	10	R. PATRY
SC7	A	WINTER ROAD	05/04/24	00	05	K. EVANS
SC8	A	SWIFT UPPER	05/03/24	03	10	K. EVANS
				22	72	
Woodcock per Stop				.31		

**Constant zero routes

* Route 019 was formerly route 08, relocated in 2021 and listed as route 019

Appendix 8. New Hampshire Small Game Summary Report and NH Ruffed Grouse and American Woodcock Survey Results brochure for 2023-2024.

Note: The embedded objects below are electronic versions of the “2023-2024 New Hampshire Small Game Summary Report” and the 2023-2024 NH Ruffed Grouse and American Woodcock Survey Results” brochure in PDF format..

Small Game
Summary Report

Grouse and
Woodcock Survey Res

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, 2023 to June 30, 2024

Purpose/Target Name: PROJECT 8 - COORDINATION AND ADMINISTRATION

Objective Name: JOB 1 - SUPERVISION AND ADMINISTRATION

Objective Statement: To efficiently and effectively administer, coordinate and supervise game project implementation.

Summary: Grant projects were administered, coordinated and supervised by the wildlife programs supervisor and wildlife division chief in order to maximize grant efficiency, productivity and success. Game program project activities (deer, bear, moose, wild turkey, migratory birds, furbearers and small game) were coordinated and supervised to ensure their continued success. Annual reports including federal aid reports, the wildlife harvest summary and the small game summary report were successfully produced in a timely fashion. Season recommendations were formulated, subjected to internal and external review, and accepted for implementation.

Target date: June 30th annually 2021-2025.

Status of progress: On schedule.

Deviations: None.

Objective Approach: Grant projects will be administered, coordinated and supervised by the game program administrator and division chief in order to maximize grant efficiency, productivity and success. Activities of the game program administrator and division chief will include but not be limited to: oversight of project budgets; coordination of project communications with internal and external partners; administration of project contracts and research initiatives; administration and coordination of seasonal project staffing; supervision and coordination of biennial season recommendations; administration and coordination of Federal Aid and Harvest Summary report production and general project supervision.

Results: All aspects of the New Hampshire Fish and Game Department's game management programs (deer, bear, moose, wild turkey, migratory game birds, furbearers and small game) were administered, coordinated and supervised as required to achieve the goals and objectives specified in our existing Application for Federal Aid (AFA).

W-89-R related administration, coordination and supervision activities included: work prioritization and scheduling, coordination of field projects and data collection, review and editing of summary documents, reports and correspondence, coordination of game program meetings with diverse interests and constituencies, and processing of purchase orders and travel requests pertinent to game program operations. Additional activities included the drafting and editing of project-related press releases and popular articles, the handling of media inquiries and interviews, routine public communications (written and verbal), check station administration, data entry coordination, contract administration, and administration and coordination of season setting activities.

This segment was not a year for biennial season setting involving a full review of all game management data and formulation of draft season proposals. However, various administrative rules (Fis 300 and 1102.07), including rules related to hunting waterfowl and other migratory birds, were readopted and/or modified as needed. Only those costs incurred up to, and including, development of final season recommendations were charged to this grant.

Federal Aid report production schedules were defined, format requirements and guidelines were distributed, and draft reports were reviewed, edited and submitted to the department Federal Aid Coordinator. In addition, the "2023 NH Wildlife Harvest Summary" and "2023/2024 NH Small Game Summary Report" were produced and

distributed. For the third year, the NH Small Game Summary was made available online only and a smaller printed brochure was produced with summary information for our two most popular small game species, ruffed grouse and American woodcock. Administrative duties associated with these reports included the formulation and implementation of a production schedule and guidelines, the review and editing of drafts from each project (deer, moose, black bear, wild turkey, migratory game birds, furbearers and small game) and the production and distribution of printed copies. A total of 1,000 printed copies of the 2023 Wildlife Harvest Summary and 1,000 copies of the 2023/24 NH Ruffed Grouse and American Woodcock Survey Results brochure were ordered. Electronic versions of each were also made available on the Department's web site. The "2023 NH Wildlife Harvest Summary" is also available in NH Federal Aid Report, W-89-R-21, Project 1, Job 4, Appendix 1 while the "2023/2024 NH Small Game Summary Report" and the "2023/24 NH Ruffed Grouse and American Woodcock Summery Results" brochure are available in NH Federal Aid Report, W-89-R-21, Project 7, Job 4, Appendix 8. Time was also spent administering the annual season information, editing press releases and updating game project information on the department web site (www.HuntNH.com).

Conclusions: Skillful administration is critical to the successful implementation of New Hampshire's deer, bear, moose, wild turkey, furbearer, waterfowl and small game projects. These projects were successfully administered during the past reporting year, as evidenced by the efficient implementation and management of these projects, the timely production of assorted project annual reports, and the successful formulation and implementation of select season recommendations. Based on past experience, this job has proven to be an efficient and effective means of quantifying grant administration over our game species projects.

Custom Qualitative Indicator/Output: Game project implementation has been efficiently and effectively administered, coordinated, and supervised.

Recommendations: Continue this job as planned.

Submitted by:_____

Andrew Timmins
Game Programs Supervisor
August 1, 2024

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, 2023 to June 30, 2024

Purpose/Target Name: PROJECT 8 - COORDINATION AND ADMINISTRATION

Objective Name: JOB 2 - PLANNING

Objective Statement: To establish comprehensive long-term goals and objectives for game species populations.

Summary: The 10-year game management plan which was developed during segment 15 and the "New Hampshire Game Management Plan 2016-2125" (see Appendix I) continued to guide game management recommendations during this segment and will continue to guide game management for the next 2 years. During this grant segment, staff have started to prepare for the revising the plan for the period 2026-2035.

Objective Approach: The methodology used for plan development and revision will begin with the establishment of a public participation plan (PPP). This PPP will outline methods and procedures for the collection of public opinion and desires relative to game population status. Assistance from professional public relations and facilitation experts may be used to assist in this process and subsequent public input efforts. Key stakeholders will be identified and methods of public input will be evaluated and may include scientifically valid random telephone surveys, self-selected web-based questionnaires, and public meetings to solicit input and open house sessions. Game project leaders will develop comprehensive species assessments providing information on the history and status of game species and their management in New Hampshire which will be made available on the Department's web site.

Previous plans developed under this grant have served the department well and will serve as a basis for revision of species population goals and objectives. Project leaders will develop initial draft species plans incorporating biological and social considerations and including public input from surveys and questionnaires which will then be made available to the public. A series of public input meetings will be conducted around the state to solicit input on the initial draft plan. Additional opportunity for comments will be provided by email or in writing. Public input to the initial draft will be used by the department to develop a revised plan which will also be made available to the public for review. Public comments will again be solicited at open house sessions allowing participants to discuss plan goals and objective with project leaders. Comments received will be used to develop a final draft plan which will be presented to the Fish & Game Commission for their review. Following this review by the Commission, a final plan will be presented to the Commission and Executive Director for their final comment and approval. This plan will then serve to guide game species population management and provide species goals and objectives to be achieved through biennial season recommendations. The current plan, completed in 2015 and guiding game management for the period 2016-2025 includes goals and objectives for deer, moose, bear, turkey, and select small game species. Planning for other game species is being considered but no specific timeframe has been established.

Target date: June 30th annually 2021-2025.

Status of progress: On schedule.

Deviations: None.

Results: Management of big game species during this segment continue to be guided by a 10-year plan developed during segment 15 (see Appendix I). Efforts to develop a New Hampshire Big Game Management Plan for the period 2026-2035 began in November 2023 and are outlined in Appendix 2. Planning activities to date have included (1) updating species assessments by project biologists; (2) holding a Game Management Team meeting to discuss and finalize the planning approach; (3) a presentation to the Commission to inform them of the process; (4) development of draft survey questions; and (5) establishing a contract with the University of New Hampshire

Survey Center to conduct a New Hampshire residents' preference survey during December 2024 as it relates to the management of big game species within the state.

The Game Programs Supervisor has been reviewing species assessments and finalizing the contract with the survey center. This planning process will be mostly completed during the next grant segment and a new Big Game Management Plan will take effect January 1, 2026.

Conclusions: While active on an infrequent basis, this job provides the basis for the development of plans establishing the long-range goals and objectives used to guide the management of New Hampshire's game species.

Custom Qualitative Indicator/Output: Comprehensive long-term goals and objectives for game species populations have been established.

Recommendations: Continue this job as planned.

Submitted by:_____

Andrew Timmins
Game Programs Supervisor
August 1, 2024

Appendix I. New Hampshire Game Management Plan 2016-2025

Note: The embedded object below is an electronic version of the “New Hampshire Game Management Plan 2016-2025” in PDF format. To open it for viewing or printing requires that the Adobe Reader be installed on your computer.

NHGameManagement Plan2016-2025.pdf

Appendix 2. New Hampshire Game Management Plan revision schedule.

Schedule for Big Game Species Management Planning (2026-2035) Process

November 2, 2023

Date	Activity
December 2023	Start updating/creating species Assessments
January 2024	Wildlife Division discuss and finalize approach to GMP process
January 2024	Start contract with Responsive Management to complete opinion survey
February 2024	Present information regarding planning process to Commission as an information item
March 2024	Draft Game Management Questionnaire
May 2024	Complete Game Management Questionnaire and prepare for distribution
June 2024	Complete species assessments
August 2024	Establish a Planning web page that includes process, schedule and species assessments
August 2024	Announcement to key partners that process is beginning and refer to planning web page; press release
November 2024	Responsive Management conducts survey
December 2024	Distribute Game Management Questionnaire
February 2025	Initial draft of plan completed
February 2025	Add draft plan to web planning page
February 2025	Announcement to key partners that a draft plan is available and input sessions are approaching
March-April 2025	Hold public input sessions; solicit input (open house approached used in past) from public and commission
April 2025	Establish end date for public input
May 2025	GMT finalize GMP based on public input
May 2025	Add revised plan to web planning page
May 2025	Present GMP to Commission as an information item
June 2025	Commission will be asked to finalize and adopt GMP
June - September 2025	GMP completed
January 2026	GMP takes effect

Note: Due to the current rulemaking cycle, a full rulemaking session is slated to occur Jan-May, 2025