

Fish and Wildlife Board Meeting Minutes

Wednesday, February 17, 2021

The Vermont Fish and Wildlife Board held a meeting beginning at 5:00 p.m. on Wednesday, February 17, 2021 via video conference. The Zoom Meeting ID was: 845 6813 8410. Members of the public joined the meeting via Zoom Webinar and over the telephone.

Meeting Agenda:

- 1) Approval of Previous Meeting Minutes.
 - January 20th, 2021
- 2) Public Comments (Limited to 2 minutes per speaker)
- 3) Petition Consideration – Baitfish Harvest on Blacklisted Waters
- 4) 2021 Migratory Game Bird Season Preview – Preliminary Approval
- 5) 2021 Moose Season Recommendation – Preliminary Approval
- 6) Commissioner’s Update
- 7) Roundtable Discussion

Board Members in Attendance: Tim Biebel (Board Chair); Brian Bailey; Michael Bancroft; Wendy Butler; David Fielding; Michael Kolsun; Brad Ferland; Bryan McCarthy; Dennis Mewes; Bill Pickens; Nancy Matthews; Jay Sweeny; and Martin Van Buren.

Department Staff in Attendance: Louis Porter, Commissioner; Mark Scott, Wildlife Director; Eric Palmer, Fish Director; Col. Jason Batchelder, Law Enforcement Director; Catherine Gjessing, General Counsel; Margaret Murphy, Fish Program Manager, Maureen Lynch, Fish Program Manager; Bernie Pientka, Fisheries Biologist; David Sausville, Migratory Game Bird Project Leader; Nick Fortin, Deer and Moose Project Leader; Dr. Katy Gieder, Biometrician and Research Coordinator; Kim Royar, Furbearer Project Leader; John Hall, Outreach and Information Specialist; Noel Dodge, Wildlife Biologist; Matt Lacey, Intern; and Will Duane, Executive Assistant. Department Staff were joined by researchers and staff from the University of Vermont including: Dr. Therese Donovan; Elias Rosenblatt; and Josh Blouin.

Members of the Public in Attendance (Note: Zoom Webinar requests a first and last name for each attendee, the following usernames joined the meeting as attendees): Ben; Paul F. Noel; Brenna Nicole; Scott Hackett-Dalgliesh; Bob Patterson; Molly Cook; Brian O’Gorman; Sophie Bowater; Allan Thompson; Gabriel Tempesta; and Lewis White.

The meeting was called to order by the Chair at 5:00 PM

Public Comments (Limited to 2 minutes per speaker)

Sophie Bowater – Middlesex: I have a question and a comment. Will you consider refusing grants from trophy hunting organizations such as the Safari Club. It is hard to take your moose study seriously when \$125,000 was funded by an organization that supports hunting of elephants, tigers, and giraffes for sport.

Brian O’Gorman – Cape Cod, MA: Humans have been hunting and wearing fur since the stone age and dogs have been domesticated for about 27,000 years. Today, Vermont Fish and Wildlife professionals are highly educated with years of knowledge and experience. These dedicated professionals have science, data, and best management practices to help set seasons and bag limits. I am grateful that you continue to set bag limits, seasons, and appropriate harvest methods. You have not succumbed to mob rule or ballot box pressures. The landowner-hunter situation, I allow hunters to hunt black bear and coyotes, including with the use of hounds. The Vermont Trappers Association mentors youth trappers on my land. People are encouraged through social media to tamper with traps on my land and I’m not sure what to do about that. Finally, I want to thank you for the thoughtful management of fisher and grey fox in Vermont.

Wild-Caught Baitfish Transportation Petition Discussion

Board Chair Tim Biebel stated that the Board had received a petition requesting a change to the baitfish regulations which went into effect in 2020. The Chair stated that he has referred the petition to the Department for its review and asked them to respond. Commissioner Porter requested that Fish Division Director Eric Palmer describe and respond to the petition as well as some recent correspondence that the Department has had regarding East Long Pond.

Fish Division Director Palmer stated that the Board and Department had received a petition from angler Dennis Thompson requesting that anglers with a wild baitfish endorsement be able to move live wild-caught baitfish away from a blacklisted waterbody and keep them alive to bring back at a later time to that same blacklisted waterbody. This is currently not allowed under the baitfish regulations. This petition is a request to make changes to the baitfish rules at section 141. The Department’s recommendation is to table the petition until such time as the baitfish rules are reopened along the previously agreed upon 4-year timeframe. The Chair has also written to Mr. Thompson to say the same, that the baitfish rules are set to be reopened every four years, and that his preference is for the Board to table this petition. If the petition is tabled it would be taken into consideration along with any other proposed changes to the baitfish rules beginning in 2022, with rulemaking in 2023.

Director Palmer asked the board to take a vote on whether they want to open rulemaking on the petition, deny the petition, or table it until a later time.

Chair Biebel explained for new Members that there is an agreement between the Board and the

Department to review the baitfish regulations every four years. Instead of frequently opening the rule up for changes the Board agreed in 2019 to collect and address baitfish petitions when the rules are next scheduled to be open. The Chair supports tabling this petition and to revisit it within the process previously agreed to.

Motion: Brian Baily moved to table the petition for later consideration, David Fielding seconded the motion.

Discussion: Dennis Mewes asked for clarification on the petition and whether it would allow an individual to take wild-caught baitfish from the Connecticut River and take them to a different part of the same river. Director Palmer and Commissioner Porter stated that yes it would, and that might not seem too concerning but, it does create risk for spreading diseases and invasive species, and might affect the rule's enforceability.

Brad Ferland asked if this limitation on transporting baitfish away from and back to blacklisted waters was contemplated or if it was an oversight when the rule was promulgated

Commissioner Porter and Director Palmer and Chair Biebel stated that it was contemplated and the decision was made to restrict the movement of wild-caught baitfish on these waterbodies. There is opportunity for anglers to move bait within the baitfish zones of the state but the blacklisted waters and the regulations associated with them were deliberate. The transportation limitations on moving baitfish to and from blacklisted was put in place purposefully.

Vote: 12-0 rollcall vote to table the petition.

Director Palmer stated that the Board and Department had received another petition from angler Charlie Cutler regarding opening East Long Pond to ice fishing and stocking fish on East Long Pond. Part of the new fish regulation simplification proposal, which the Board recently approved with a first vote at the January 2021 meeting, does allow for ice fishing at East Long Pond. We agree with this request and it was in the proposal approved at the first Board vote in January. Fish division staff have informed Mr. Cutler that this is in process. Regarding stocking, the Department has stopped stocking East Long Pond because there is no longer any public access. Vacant lots have been developed and access is limited, without suitable access for the general public, the Department stopped stocking this pond in 2016.

2021 Migratory Game Bird Season Proposal

Wildlife Division Director Mark Scott described to the board that the presentation at this meeting is a preview of the proposal that the department wants to put out to the hunting community. The Department is looking for input from the Board Members and an informal straw vote to show approval. David Sausville presented on the Department's proposed plan for the upcoming 2021 migratory game bird seasons. Sausville explained to the Board that Vermont is part of the Atlantic Flyway, a group of 17 states and 3 provincial regions of Canada that runs from Nova Scotia and Prince Edward Island down to Georgia. This group of states and provinces works cooperatively to establish annual seasons for migratory game birds. Vermont has three zones for

waterfowl hunting: the Lake Champlain Zone, the Interior Zone, and the Connecticut River Zone. New Hampshire sets regulations for the Connecticut River Zone, Vermont and New York Biologist work together to prepare recommendations for the Lake Champlain Zone.

Director Scott added that the season proposal is a complex set of species and parameters and applauded the work that Sausville has done since taking on the project in 2013. Sausville presented the Department's 2021 season proposal which is attached to these minutes.

Of note:

- Two major surveys, the Eastern Survey area and the Northeast Pair Plot survey were not able to be conducted this year because of COVID, primarily concerns related to bringing the disease to the native peoples of northern Quebec and the Arctic. The only habitat condition data available was via satellite imagery. This imagery indicated lower reproduction rates for some of the arctic nesting birds.
- The estimated total current population of birds within the bird production area is 38.9 million birds. This is above the long-term average. Most of this year's data is based on last year's figures as well as predictive modeling.
- We do know that the current populations are stable and though we do not have concerns about the populations the lack of certainty leads us to a conservative stance.
- There was good brood rearing cover, and the Department found through banding efforts in the fall of 2020 that local reproduction of birds was successful.

Note: The Board held a straw vote on each section of the proposal and approved all of sections with a unanimous vote. The Board will vote on April 7 to approve the final the 2021 migratory bird hunting seasons and bag limits. *The proposal and the slides from the presentation are attached to these minutes.*

2021 Moose Season Recommendation

Commissioner Porter and Director Mark Scott introduced the Department's recommendation for the 2021 Moose hunting season. Director Scott noted that the Department's Furbearer Project Leader Kim Royar has been serving as an interim manager for the Wildlife Species Management Program and the lead of the Big Game Team. The recommendation that the Department is going to show tonight originated within the Big Game Team. The proposal was presented to the Commissioner, Director Scott, and the Warden Service ahead of tonight's meeting for their input. Director Scott emphasized that habitat is perhaps the most critical component to sustaining healthy populations of wildlife species, tonight's presentation will feature new research on moose habitat in Vermont. At this meeting there will be a presentation from Josh Blouin, a Master's student at the University of Vermont and his supervisor Dr. Therese Donovan, wildlife researcher at the University of Vermont Cooperative Unit. Board Members might recall the presentation from Dr. Donovan in 2020 on the moose population radio-collar study that was recently completed. Director Scott provided the credentials and introduced Josh Blouin, graduate student at UVM, Fish and Wildlife Department Deer and Moose Project Leader Nick Fortin, and Department Biometrician and Research Coordinator, Dr. Katy Gieder.

Dr. Gieder provided an overview of moose-health-focused research projects currently underway in Vermont and regionally. Josh Blouin's presentation is one of several other state and regional efforts to gather vital information necessary to answer the key questions that inform science-based and adaptive-management strategies. As new information from this research becomes available the Department will apply that data when answering key management questions. Current research underway includes multi-state and international studies on moose habitat, winter tick issues, genetic health and stress, and tick fungicide efficacy. This research will continue into the future and will focus on regional population dynamics and viability. The Department will continue to rely on the best available science to inform its management decisions and recommendations.

Josh Blouin presented an overview of the key results of his master's research findings assessing moose habitat suitability and fitness consequences of habitat selection during two critical winter tick life stages in Vermont.

In summary:

- Moose were an abundant species on the Vermont landscape until their extirpation in the late 1800s. In the 1960s, 70s, and 80s as commercial timber operations increased more moose forage and habitat developed, moose began to return in large numbers. The species began to exceed its biological and cultural carrying capacity in the early 2000s.
- State managers then decided to decrease that population to around 3,000 individuals, by increasing hunting permits. Moose populations and health conditions have continued to trend downward. This decline initiated the 2017-2019 radio collar survey in WMUs E1 and E2. This research examined mortality and productivity rates.
- The research showed that heavy infestations of winter ticks were a driving force for mortality in the study area. Necropsies of the deceased animals showed as many as 60,000 winter ticks on individual. This is a gruesome way for an individual moose to die.
- Moose and winter tick live in a parasite-host relationship consisting where the tick spends its entire life on one moose after questing in vegetation in moose habitat. Moose are poor groomers.
- This research helps to understand what reproductive rates and mortalities look like here in Vermont. This research also provides an understanding of the relative suitability of habitat here and a foundation for wildlife population managers to make management decisions about wildlife species populations.
- This research has also provided information on moose habitat selection and how these selection decisions by moose affect their fitness, which may lead to a better understanding of the parasite-host relationship.

Deer and Moose Project Leader Nick Fortin presented the Department's 2021 Moose Harvest Recommendation.

- Fortin noted that the northeast corner of Vermont is included in the core range of moose habitat in northern New England. This region is different because it is colder and has longer winters. The longer winters limit the population of whitetail deer. White tail deer

carry brainworm which can affect moose populations. When deer densities are relatively high, researchers have documented declines in moose populations due to brainworm.


- There are also large blocks of unfragmented forest, much of which is operated as industrial timber. This creates young forest habitat, which sustains larger moose populations than other parts of the region.
- Higher moose densities create the problem with winter tick loads that Josh Described previously. Winter ticks are not the same as black-legged ticks or dog ticks that people are likely to come into contact with. Winter ticks are native to Vermont, and they have benefited from climate change. These are single host ticks spending their entire winter on one host. The tick is dependent on getting onto a moose for its success. Moose did not evolve with exterior parasites like ticks. Moose are most active at the time these ticks are questing in the fall. The abundance of moose determines the abundance of the ticks.
- A lower moose density means that there will be lower numbers of ticks that quest onto moose, and drop off in the spring to lay eggs. Tick larva only quest upward to find a host, if there are less moose on the landscape there will be fewer successful questing ticks.
- Moose population objectives are set with the density relationship in mind. In the northeastern part of the state, in the core moose range, we have set a relatively low **population density objective of 0.75 to 1 moose per square mile**. The habitat could likely support a higher density, but the presence and prevalence of winter ticks caused us to set a lower density objective. Research has suggested that at moose densities at 0.75 or lower, winter tick impacts are minimal, as in the rest of Vermont. At densities of 1 per square mile and higher, the impacts of winter ticks become problematic.
- Outside of the Northeast of Vermont we do not see moose densities over 1.0 per square mile. Habitat quality is not even throughout the WMUs of the state. The Department is only recommending issuing permits in wildlife management unit E.
- The department deliberately reduced the moose population in WMU E in the early 2000s. The population has been relatively stable over the last 10 years. The Department's management goal is to have healthy moose. Health measures, like ovulation rates and body weights remain low. We know from research that these health indicators have not improved because of winter ticks. We need to reduce the moose density to reduce the impacts of winter ticks
- The Department's goal is a healthy population of moose. Healthy cows that give birth to healthy calves that survive the winter.
- It may sound counter intuitive to reduce a population to make it more sustainable, but they are going to be more vulnerable to all the other challenges associated with climate change. The healthier they are, the longer they are going to be able to be here.
- In 2020 there were no collared calves in Vermont, though Maine did have collared calves as part of their study. Maine researchers observed a good year of calf survival, Vermont also had very few reports of dead moose in the spring. This was the highest summer calf recruitment in the last four years. Tick impacts for the winter of 2020 seems to have been less intense than previous winters.
- Last fall there were a total of 55 either-sex permits; 40 moose were harvested; 35 were bulls 5 were cows. 6 were taken in the archery season, 34 regular season. Success rates

were relatively high, and weather was favorable during hunting season. Snow conditions likely helped with tracking moose.

- 88% of the moose harvested were bulls, this is the highest percentage we've ever had on a hunt with either-sex permits. 74% of hunters passed on at least on moose including half of unsuccessful hunters. Hunters were being selective, which speaks to the availability of moose out there. The 5 cows harvested will have a negligible impact on the overall population.
- We did collect winter tick counts, winter tick counts on bull moose were similar to past years. The overall trend over the last 8 years is encouraging, but its sill relatively high. This tick count data on harvested moose is not the entire picture because the tick questing period goes beyond moose season, moose can continue to collect ticks after the hunt is ended so we don't know how bad tick loads might get.
- If no cows were harvested now the population would likely remain stable. If ten cows were harvested, we expect the population to trend downward slowly over 18-20 years to get to our population goals. This is too long and would extend this poor moose health situation. The goal of this 2021 recommendation is to harvest 25 cow moose. If this is successful and is continued every year, this could get us to our goal in 9 years, but there's still a lot of variability. If moose population health improves we could lower the number of annual permits in the future.
- We are managing for healthy moose not a certain number.

The Department recommends 100 permits for the 2021 moose hunting season:

Permit Recommendation



	E1	E2	Total
Regular Season			
Either-sex	24	15	39
Antlerless-only	24	16	40
Archery Season			
Either-sex	9	6	15
Auction	<i>choice</i>		3
Special Opportunity	<i>choice</i>		3
TOTAL			100

The presenters, Department staff and Board Members discussed the presentations on the recent research, the Department's recommendation, moose research in other states, and when we might

see improved health metrics. Commissioner Porter and Director Scott asked the Board to show support for the proposal by taking a straw vote on whether to move forward with the recommendation.

Vote: 13-0 rollcall vote to recommend the department proceed with the proposal. Public hearings will be conducted in March, and the Board will vote on the proposal at the April 7, 2021 Board Meeting.

Commissioner Porter stated that Lamoille County Member David Robillard who was not able to attend the meeting, wrote to say that he was opposed to the proposal noting that he felt the permit numbers were too high and he did not support an antlerless hunt.

Commissioner's Update

- We will hold an orientation for new Board Members in the next few months. We've had some concern from legislators and members of the public about social media posts by some members of the Board, so we'll be including an unconscious bias training for all Members at that training.
- We received a petition from Protect Our Wildlife regarding fisher, I like the Department to present on fisher and furbearer management at the Board's June meeting. Staff are working on a presentation.
- The 10-year big game management plan was signed earlier this week, thanks to the Department staff and the public for their work on that.
- The waterfowl, deer and moose hearings are coming up in March, we will have press releases, social media posts, and other outreach as we get closer to the dates. Hearings will be virtual with call-in options and we'll have a voicemail set up and a dedicated email address for public input during the public comment period.
- Staff are still working remotely and are following Covid protocols when at the office and during field work.
- There are a number of active items in the legislature including act 250 work, the budget, the capital bill, and the governor's recommendation for a recreational infrastructure package.
- This is the final meeting for Board Members Bill Pickens and Dennis Mews, they will be sorely missed, and I thank them for their years of service to the people and wildlife of Vermont. The Governor's office will be proceeding with their replacements at some time in the future.

Motion: Dennis Mews moved to adjourn the meeting. Bill Pickens seconded the motion.

The meeting was adjourned at 8:06.

The mission of the Vermont Fish and Wildlife Department is the conservation of all species of fish, wildlife and plants and their habitats for the people of Vermont.

Vermont Fish & Wildlife Department recommendation regarding Baitfish Regulation Petition received from Dennis Thomson on Wednesday, February 3, 2021 at 9:44 AM, submitted via ANR.FWInformation@vermont.gov, Subject: petition on black listed waters.

Petition as Submitted

To VTFW and all involved in regulation process

WE fisherman would like Vermont fish and wildlife to put some trust in fisherman and change the black listed water bait fish rule to read:

Movement - Transport of Personally Harvest Baitfish

Anglers who possess a valid wild baitfish endorsement on their fishing/combination license may transport personally harvested baitfish away from black-list water and use it in the same water body it was harvested in as long as the use of baitfish is allowed on that water.

Only a person with a valid wild baitfish endorsement may transport unused personally harvested baitfish, collected in black-list waters, away from waters for storage or use on that same waterbody.

Department Recommendation to the Vermont Fish and Wildlife Board

Dear Board members,

The Department has received a petition, submitted via email on February 3, 2021.

The petition is requesting the Department work with the Fish and Wildlife Board to amend Title 10 App. V.S.A. §141 Baitfish Regulation to allow anglers to harvest and transport live baitfish away from black-listed waters provided the baitfish are used only on that same black-list water.

The Department recommends that the Fish & Wildlife Board deny this petition and not take up rulemaking.

Rational:

In January 2020 amendments to the baitfish regulation took effect that significantly reduced restrictions that were previously in place regarding the use of wild harvested baitfish. In particular, the amendments provide the ability now for anglers to harvest wild baitfish within designated zones for transport and use on any waters within the same zone.

However, to safeguard the health of Vermont's aquatic communities and fish populations, and to protect the quality angling opportunities that exist throughout the state, there were seven waters that were identified as high-risk areas due to the presence of aquatic invasive species and fish

diseases. These waters have been labeled as Black-List Waters, and the movement of baitfish away from these waters continues to be viewed as a high-risk activity by the Department.

Allowing the transport and movement of wild baitfish, and the water they are contained in, away from high-risk Black-List Waters increases the potential for aquatic invasive species and fish diseases to be spread to other waters of the state, even if anglers have no intention of doing so.

For these reasons we recommend that the Fish and Wildlife Board deny this petition.

Sincerely,

Eric Palmer
Fish Division Director
VT Fish and Wildlife Department

To VTFW and all involved in regulation process

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Only a person with a valid wild baitfish endorsement may transport unused personally harvested baitfish, collected in black-list waters, away from waters for storage or use on that same water body

change.org

Recipient: vermont fish and wildlife

Letter: Greetings,

Vermont Black water bait fish transport

Signatures

Name	Location	Date
dennis thomson	bellows falls, VT	2021-01-20
Kelton Brooks	Castleton, VT	2021-01-20
Chad Simpson	Springfield, VT	2021-01-20
Eric Cummings	Colchester, VT	2021-01-20
Wally Kangas	Chester, VT	2021-01-20
Matt Smith	Marlow, NH	2021-01-20
molly debord	Mason, US	2021-01-20
Kaleb Breitbach	Cedar Rapids, US	2021-01-20
Zubaidah Bandele	Newark, US	2021-01-20
carl jackson	Lake Dallas, US	2021-01-20
Tommy Allen	Houston, US	2021-01-20
Lisa Davis	Concord, US	2021-01-20
Jack Eng	Brooklyn, US	2021-01-20
Roderick Griffin	Gatesville, US	2021-01-20
Maggie Francis	Washington, US	2021-01-20
tyler roberts	Medford, US	2021-01-20
Joseph Michaeli	US	2021-01-20
Halle Elder	Clyde, US	2021-01-20
Jacob Davies	Brandon, US	2021-01-20
Bianca Ballestero	Detroit, US	2021-01-20

Name	Location	Date
Tamy Newson	Los Angeles, US	2021-01-20
Null Null	Seymour, US	2021-01-20
Kaylee Vargas	Brooklyn, US	2021-01-20
veri borle	Boonton, US	2021-01-20
Daniela Lopez	Newark, US	2021-01-20
Simone Franco	Hallandale Beach, US	2021-01-20
Mulu Bezabeh	North Hollywood, US	2021-01-20
Aidin Healey	Pasadena, US	2021-01-20
Presley Hartley	Findlay, US	2021-01-20
Carlos Mendoza	Denver, US	2021-01-20
Elijah Troop	Weaverville, US	2021-01-20
Jason Stevens	Poultney, VT	2021-01-20
Bibiana Bol	Fort Lauderdale, US	2021-01-20
Scott Gasbarro	Walpole, NH	2021-01-20
Ryan coughlin	San Diego, US	2021-01-20
Laurie Ellam	Rutland, VT	2021-01-20
JON INWOOD	Brooklyn, NY	2021-01-20
Franco Carlo	New York	2021-01-20
Adam Belliveau	Saint johnsbury, VT	2021-01-21
Dana Morey	Bellows Falls, VT	2021-01-21
jennifer parrott	Bellows Falls, VT	2021-01-21
Jason Michaud	Colchester, VT	2021-01-21

Name	Location	Date
Seth Naikus	Montpelier, VT	2021-01-21
Mark Bruno	Hartland, VT	2021-01-21
Christopher Gagne	Saint Albans, VT	2021-01-21
Duane Perkins	Putney, VT	2021-01-21
Connor Quigley	Rutland, VT	2021-01-21
William birch	Readsboro, VT	2021-01-21
Devin Cassan	Manchester Center, VT	2021-01-21
Paul Bourn	Barre, VT	2021-01-21
Timothy Sheldon	Dorset, VT	2021-01-21
Edward Lewicki	Manchester Center, VT	2021-01-21
Jennah Lacoste	Manchester Center, VT	2021-01-21
Sam Alger	Williston, VT	2021-01-21
Heath Peters	Brattleboro, VT	2021-01-21
Theresa Budzik	COLCHESTER, VT	2021-01-21
Darthaniel Cassan	Manchester Center, VT	2021-01-21
Jeremiah Boucher	Brattleboro, VT	2021-01-21
John Gonter	Burlington, VT	2021-01-21
Justin Elwood	Isle la motte, VT	2021-01-21
Robert Shaw	Thornton, NH	2021-01-21
Jeremy Martell	Isle la motte, VT	2021-01-21
John Sweet	a'eo, OK	2021-01-21
Jeremy Walah	Schenectady, NY	2021-01-21

Name	Location	Date
Adam Shedrick	Sheldon, VT	2021-01-21
Connor Guyette	Waterbury Center, VT	2021-01-21
Richard Setzer Jr	North Bennington, VT	2021-01-21
Benjamin Godfrey	Orford, NH	2021-01-21
Matthew Barnes	Isle LaMotte, VT	2021-01-22
Cory Curtis	East Charleston, VT	2021-01-22
David Martin	Island Pond, VT	2021-01-22
Corey Diette	Barton, VT	2021-01-22
Jordan Wheeler	Brattleboro, VT	2021-01-22
Tom Burrows	Brooklyn, NY	2021-01-22
Michael Rozzi	South Burlington, VT	2021-01-22
get Get	Belleville, US	2021-01-22
Alayna Wisler	Owosso, US	2021-01-22
Pamela Willms	West Palm Beach, US	2021-01-22
Gabe Kilman	brainerd, US	2021-01-22
sherri hodes	Phoenix, US	2021-01-22
addison c	Lansing, US	2021-01-22
Hope Varley	Smithtown, US	2021-01-22
Alexis Ingle	Florence, US	2021-01-22
Nicole Pacheco	New York, US	2021-01-22
bava morrow	Columbus, US	2021-01-22
Eva Garcia	Red Bank, US	2021-01-22

Name	Location	Date
michelle mercado	Ocala, US	2021-01-22
Melissa Demirjian	US	2021-01-22
Jayonna Brown	Columbus, US	2021-01-22
Maddi Sanders	Hillsboro, US	2021-01-22
Kevin Moll	Fairview Park, US	2021-01-22
Megan Hoard	Greeneville, US	2021-01-22
Brian Malloy	Wilson, US	2021-01-22
kim hale	Wellington, US	2021-01-22
Fawn Byers	Pittsfield, NH	2021-01-22
David Lapan	New York, NY	2021-01-23
Isaac Snow	Enosburg, VT	2021-01-23
Heather Guidry	Sugar Land, US	2021-01-23
Jailon Perry	Youngstown, US	2021-01-23
Aliyah Becerra	Fort Worth, US	2021-01-23
Deborah Spencer	Billerica, US	2021-01-23
Brett Rosen	US	2021-01-23
Peter Finamore	Jackson, US	2021-01-23
grace loviska	Utica, US	2021-01-23
Steven Dompke	South Milwaukee, US	2021-01-23
Jayleen Lucca	Milford, US	2021-01-23
Eunseo Jung	Schaumburg, US	2021-01-23
Tanner Walden	Alburgh, VT	2021-01-23

Name	Location	Date
Shayne Bathalon	Wethersfield, CT	2021-01-24
Chris Roberts	US	2021-01-24
Tanner Bridges	Saint Johnsbury, VT	2021-01-24
Bob Potter	Hanover, NH	2021-01-25
Joshua Simonds	Bronx, NY	2021-01-26
James Sheeran	New Haven, VT	2021-01-27
William Denno	Fairfax, VT	2021-01-27
Lee Stoodley	Putney, VT	2021-01-27
Donny McManus	Poultney, VT	2021-01-27
Tammie Knowles	South Burlington, VT	2021-01-27
John Olson	Essex Junction, VT	2021-01-27
Jenn Garaffa	Walpole, NH	2021-01-27
Sherry Wilford	Newport, VT	2021-01-27
Nathan Perry	Lincoln, VT	2021-01-27
Brandon Parker	Rutland, VT	2021-01-27
David Merrill	Castleton, VT	2021-01-27
Kadin Davis	Vermont, VT	2021-01-27
Jacob Ainsworth	Belvidere, VT	2021-01-27
Brian Dawicki	Milton, VT	2021-01-27
Nicholas Eaton	Rutland, VT	2021-01-28
Stacey Mossey	US	2021-01-28
Robert Bizon	Proctor, VT	2021-01-28

Name	Location	Date
Christophr Koledo	Springfield, VT	2021-01-31
ROBERT Denno	East Hampton, CT	2021-02-02
Tina Ordonez	Houston, US	2021-02-02
Marky Garabedian	Glen Allen, US	2021-02-02
Josh Canning	Boston, US	2021-02-02
Jaycee Profitt	Belleville, US	2021-02-02
Alexis Emans	Portland, US	2021-02-02
lexi gorham	Brockway, US	2021-02-02
Jenifer Rangel	Bakersfield, US	2021-02-02
Nusaiba Afra	Jackson Heights, US	2021-02-02
Jorge Cisneros	Weslaco, US	2021-02-02
Little Froppy	Baton Rouge, US	2021-02-02
Tommy Duong	Saint Paul, US	2021-02-02
Alex Nguyen	Sugarland, US	2021-02-02
QASIM AL-AMERI	Warren, US	2021-02-02
Hailey Hernandez	San Antonio, US	2021-02-02
Hugo Farfan	Waukegan, US	2021-02-02
John Kramer	Marshfield, US	2021-02-02
Timy Dang	Marietta, US	2021-02-02
Valeria Lira	El Paso, US	2021-02-02
Isaiah Ramos	San Antonio, US	2021-02-02
Angelie Almendarez	Houston, US	2021-02-02

Name	Location	Date
Isaac Okeechobee	Murrieta, US	2021-02-02
Daniel Herrera	US	2021-02-02
olympia bravo	rialto, US	2021-02-02
Adamaris Trinidad	Channelview, US	2021-02-02
Araceli Telles	Cudahy, US	2021-02-02
Chaliya Ngwa	Dallas, US	2021-02-02
Lori Dunn	Ooltewah, US	2021-02-02
Bianice Trevino	Houston, US	2021-02-02
Natalia Maltseva	Twentynine Palms, US	2021-02-02
Carmen Patton	Jamaica Plain, US	2021-02-02

2021 MIGRATORY GAME BIRD SEASON PREVIEW

Summary of Issues for Consideration:

The majority of Vermont's waterfowl season is driven by the federal framework for the Atlantic Flyway. Below are a few issues that must be decided for the 2021 hunting season. The Department would like the Board to consider the following:

- Hold the liberal season allowed under the federal framework related to season lengths and daily bag limits. The Board has the option to be more conservative.
- For the 2021 Duck Season.
 - Open the 2021 duck season on a Wednesday, October 13.
 - Any splits within seasons to create segments should be considered for the Lake Champlain and Interior Vermont zones.
 - Interior Zone: October 13 and run through December 11.
 - Lake Champlain Zone: October 13 – Oct. 17 and Oct. 30 - Dec. 23.
- For the 2021 Goose Seasons
 - Open the resident Canada goose season September 1st and continue through September 25.
 - Open the migratory Canada goose season on October 13.
 - Opening the Snow goose season on October 1.
- Hold youth hunting weekend – September 25-26.
- Hold woodcock/snipe season: September 25- November 8.

Background

Migratory game bird managers currently base the migratory bird population estimates and recommendations on predictions derived from long-term biological information and harvest strategies instead of current year surveys. Due to the COVID-19 (SARS-CoV-2) pandemic, most migratory breeding surveys (e.g., the Breeding Waterfowl Population and Habitat Survey, Breeding Bird Survey, and others) conducted by the U.S. Fish and Wildlife Service, Canadian Wildlife Service, US Geological Survey, and State and Provincial agencies were canceled in spring 2020. We therefore have no status information on any duck species as all the estimates or indices for ducks rely on these surveys. In the absence of surveys, the Service used the multi-stock population models and estimate frameworks to predict a median breeding population size. The estimates allow for a liberal season of 60 days with a 6-bird bag limit. Species specific bag limits follow their respective harvest strategies, with the species bag limits being the same as last year.

Tables 1 and 2 provide background information on past migratory game bird hunting seasons. Table 1 shows the hunting seasons approved during 2020 and is provided as a reference while considering bag limits and the seasons frameworks for 2021. Appendix B provides the history, 1942-2020, of Vermont's waterfowl seasons broken down into season type, season length, dates,

and bag limits. This may help one's understanding of how Vermont arrived at our current zones and season types.

Table 2 provides a historic look at waterfowl hunter participation and estimated harvest levels, Vermont waterfowl stamps sold, and the number of individuals that registered with the Harvest Information Program (HIP). HIP is a method used to generate more reliable estimates of hunting activity and number of all migratory birds harvested. The HIP program numbers include youth and adult waterfowl hunters, woodcock, and snipe hunters. Only adult waterfowl hunters, 16 years of age and older, are required to purchase the state waterfowl stamp. The Department will populate the remaining portions of the table this summer after the USFWS examines wings collected randomly from last season's hunters and harvest estimates are completed.

Vermont currently has three waterfowl zones (Figure 1):

- Lake Champlain Zone that we share with New York. Vermont sets the dates for this zone.
- Interior Zone that is entirely within Vermont.
- Connecticut River Zone that we share with New Hampshire. New Hampshire sets the dates for this zone as an extension of their inland zone.

Under Vermont's current three zones, Vermont can split any zone once to create two hunting segments. Vermont currently has sixty days to divide between the two segments in an effort to accommodate the diverse desires of the variety of Vermont waterfowl hunters. The zones were also set up to take into consideration the differences in the physiographic regions of the state and the climatic differences each has. Vermont's next opportunity to adjust zone boundaries and splits is in 2025. Any changes will take effect in the 2026-2031 season and be in effect for 5-years.

Throughout the development of the season recommendations, the Department relied on findings from the Fall 2015 Waterfowl Hunter Survey Summary. The final summary was delivered to the Department in June of 2017. Department staff weighed the survey results heavily while considering recommendations. As stated in the summary, **“survey responses came from waterfowl hunters with a broad background that varied greatly by age, hunting experience, educational and economic background. Therefore, our results and summaries represent the variation in the entire waterfowl hunting user group, not just those who are vocal at public meetings.”** We used the results to make the following decisions:

- Decide when to place the majority of duck hunting days by month. Most hunters prefer October to have the most waterfowl hunting opportunity.
- Determine what day of the week to open the season. Regardless of hunting zone, few (< 12%) hunters do most of their hunting on weekdays. Hunters either hunt weekends or split their time equally between weekdays and weekend hunting.
- Determine when to have the opening day of duck season, Saturday, or Wednesday.
- Determine what week to recommend opening the season. Vermont hunters chose the second week in October as their preferred opening week for ducks and geese.
- Decide which zones to propose for splits and in which seasons. “Goose hunters in the Lake Champlain zone, regardless of residency, chose straight season more than split

seasons. For the Interior Vermont zone, Vermont residents chose straight seasons most commonly for duck and goose seasons”.

- Decide on the length of the Lake Champlain Zone split. Vermont hunters preferred a two-week season split length if one is to be used.

2021 Migratory Game Bird Season

Tables 3 and 4 provide the USFWS season frameworks for the 2021 duck and goose seasons, respectively, the latter including other migratory game birds as well. Potential changes from 2020 hunting seasons shown on Table 4 includes a reduction of the migrant Canada goose daily bag limit from two to one daily and woodcock season framework opening day change from October 1 to September 13. The brant season and daily bag limit will be dependent on the revised harvest strategy, that uses predictions from an Integrated Population Model (IPM), in the Atlantic Brant Hunt Plan beginning with the 2021-2022 hunting season. **Tables 5 and 6 provide the Department’s 2021 hunting season proposal for the Board to consider.**

2021 Duck Season: The 2021 duck season options allow the opportunity to utilize a 60-day season within the dates of September 25, 2021 to January 31, 2022. The allowed daily bag limit is six birds, with species specific limits listed on Table 3. Vermont may allow a possession limit of 18 ducks total. The Board may be more restrictive on the length of the season and bag limits if desired, but the Board cannot set regulations more liberal. The Department recommends taking the liberal hunting option allowed under the federal framework.

The Board has also traditionally held the youth waterfowl weekend the last weekend in September. The Department has withheld any fishing tournament permits for that weekend to reduce conflicts between anglers and youth waterfowlers. The youth weekend must be within 14 days of either end of the federal framework dates.

2021 Goose, Brant, Mergansers, Coots, Snipe, and Woodcock Seasons: Table 4 lays out the season options for geese, brant, mergansers, coots, snipe, and woodcock. The available season lengths, outside dates for the seasons, daily bag limits and possession limits are broken down by species.

We often receive requests to open the migratory Canada goose season in early October. We are not allowed to open the season on migratory Canada geese until October 10th to reduce hunting pressure on the Atlantic population that is flying through the state. Prior to 2010 we were unable to open the season until October 20th. This change came about because of efforts pursued by Vermont and some other New England states. The change in number of breeding pairs of the Atlantic Population of Canada geese is unknown for 2020. Surveys we not conducted due to Covid-19 and concerns for exposing native peoples in northern Canada to the virus from survey staff. Breeding pairs in 2019 totaled 119,500. The total number of birds has decreased from 1.35 million to 622,000 from 2003 to 2019. The overall population has seen an annual decrease of 4% per year, primarily due to low production caused by weather conditions during the nesting and hatching periods.

The Brant Hunt Plan and Harvest Strategy were revised in 2020. The revised plan uses an Integrated Population Model (IPM) to generate a prediction of the brant population. This model prediction will be used in place of the mid-winter survey estimate to determine the annual hunting season recommendation. Advantages of the IPM are that the population estimate is available in the summer, prior to the regulatory flyway meeting and federal register framework publication. In addition, estimates provided by the IPM are less variable than the MWS and will likely result in fewer changes to hunting packages over time. The model prediction for 2021 is 126,000 brant, and the harvest strategy recommends a 50-day season with a 2-bird daily bag limit, which is no change from last year.

2021 Youth Waterfowl Hunting Days: The Department and Board may select two days per duck-hunting zone, designated as “Youth Waterfowl Hunting Days,” in addition to the regular duck seasons. The days must be held outside any regular duck season on a weekend, holiday, or other non-school days when youth hunters would have the maximum opportunity to participate. The days may be held up to 14 days before or after any regular duck-season frameworks or within any split of a regular duck season, or within any other open season on migratory birds. The daily bag limits may include ducks, geese, mergansers, and coots, and would be the same as those allowed in the regular season. Flyway species and area restrictions would remain in effect.

The age of youth hunter eligibility changed in 2016 at the federal level, which allowed the Board to consider changing the youth waterfowl hunter age. States were allowed to use their established definition of age for youth hunters. However, youth hunters may not be 18 years of age or older. In addition, an adult at least 18 years of age must accompany the youth hunter into the field. This adult may not duck hunt but may participate in other seasons that are open on the special youth day. Youth hunters 16 years of age and older must possess a Federal Migratory Bird Hunting and Conservation Stamp (also known as Federal Duck Stamp). In 2016 Vermont changed the youth waterfowl hunters age to 17 and younger. Vermont also requires all hunters 16 years of age and older to have a state duck stamp. Historically, Vermont has been more restrictive than the federal law, by not allowing adults to hunt other species on youth hunting weekends while in the presence of a youth hunter who is hunting under the youth weekend regulations (ex. resident Canada geese). In some years, the end of the resident Canada goose season overlaps the youth waterfowl hunting weekend. This will occur in 2021 for the Saturday of youth weekend if we choose September 25th and 26th as the youth days.

Special Falconry Regulations: Falconry is a permitted means of taking migratory game birds in any State meeting Federal falconry standards in 50 CFR 21.29. These States may select an extended season for taking migratory game birds in accordance with the following:
Extended Seasons: For all hunting methods combined, the combined length of the extended season, regular season, and any special or experimental seasons must not exceed 107 days for any species or group of species in a geographical area. Each extended season may be divided into a maximum of 3 segments. Framework Dates: Seasons must fall between September 1 and March 10.

Daily Bag Limits: Falconry daily bag limits for all permitted migratory game birds must not exceed 3 birds, singly or in the aggregate, during extended falconry seasons, any special or

experimental seasons, and regular hunting seasons in all States, including those that do not select an extended falconry season.

Regular Seasons: General hunting regulations, including seasons and hunting hours, apply to falconry in each State listed in 50 CFR 21.29. Regular season bag limits do not apply to falconry. The falconry bag limit is not in addition to gun limits.

Vermont has traditionally run the falconry season during any open migratory game bird season. Last year falconers had the opportunity to begin on September 1st with the resident Canada goose season and ended their season on December 31st. A three-bird daily bag limit was in effect.

Public Input and Outreach

The Department, in conjunction with the Board, is currently planning to hold two virtual public hearings in 2021. Meetings are tentatively planned for the evenings of March 9th and 11th, beginning at 6:30pm. During the hearings, the Department will review the season options, recommendations, current biological information, answer questions, and record public comments for the Board. The public will be encouraged to submit comments through email or a recorded phone line. Hearing times and web access address will be advertised on the Department website and through news releases.

After the Board approves final season dates and bag limits (scheduled for April 7, 2021 Board meeting), the Department will submit selections to the U.S. Fish and Wildlife Service by April 30th and the information will be sent to a printer for production of the 2021 syllabus of state and federal hunting regulations. The early decision deadlines will allow the Department to have the syllabus available to the public in print version by August 1st, a full month prior to any migratory bird hunting season. Approved seasons will be placed on the Department's website within days after the Board's vote.

Additional Background

In 2016 the Department began fully reviewing the migratory game bird season options with the Board without being under a very short time constraint. As part of the United States Fish and Wildlife Service (USFWS) of the Department of Interior's retrospective regulatory review, they developed a schedule for migratory game bird hunting regulations that was more efficient and provided season dates much earlier than was possible under the old process. There are no longer seasons referred to as "early" (September Canada Goose, Woodcock and Snipe seasons) and "late" (migrant Canada Goose, Snow Goose, Brant, and Duck seasons) season frameworks and selections to work through. With the changes that occurred within the federal framework setting process, we now combine late and early season selections into a single process. Under the current process, USFWS will develop proposed hunting season frameworks for a given year in the fall of the prior year and finalize those frameworks a few months later. We also have a final selection deadline of April 30th instead of August, allowing us more time to announce seasons to hunters and to have the syllabus with regulations easily printed and distributed prior to the start of any migratory game bird hunting season.

In 2018 the Atlantic Flyway region implemented a Multi-Stock Adaptive Harvest Management Strategy based on a suite of four duck species that represent the population dynamics and various habitat types used by waterfowl throughout the flyway, in lieu of relying solely upon the status of eastern mallards. The four species include green-winged teal, common goldeneye, ring-necked duck, and wood ducks. These species compose more than 40% of the harvest within the flyway and supply a sufficient time series of estimates of annual abundance, harvest rates and harvest to monitor population trends. This was necessary because one species, the mallard, was driving all the seasons, which had an effect on multiple species. Within this system, species of concern such as mallard and black duck are also evaluated separately with an assessment under the adaptive harvest management strategies developed for the target species. The objectives are to sustain duck populations for all and to allow harvest where appropriate. The strategy will allow for liberal seasons on species above long-term goals, while maintaining restrictions on populations that we wish to allow growth in.

Legal Framework for Hunting Season Decision

Beginning in 2015 the Board was given authority by Legislature to set the migratory bird hunting regulations by procedure instead of rule. Part of Title 10 § 4082 reads:

(b)(1) Except as provided for under subdivision (2) of this subsection, the Board annually may adopt rules relating to the management of migratory game birds and shall follow the procedures for rulemaking contained in 3 V.S.A. chapter 25. For each such rule, the Board shall conduct a hearing but, when necessary, may schedule the hearing for a day before the terms of the rule are expected to be determined.

(2) Beginning with the 2015 hunting season, the Board may set by procedure the daily bag and possession limits of migratory game birds that may be harvested in each Waterfowl Hunting Zone annually without following the procedures for rulemaking contained in 3 V.S.A. chapter 25. The annual daily bag and possession limits of migratory game birds shall be consistent with federal requirements. Prior to setting the migratory game bird daily bag and possession limits, the Board shall provide a period of not less than 30 days of public notice and shall conduct at least two public informational hearings. The final migratory game bird daily bag and possession limits shall be enforceable by the Department under its enforcement authority in part 4 of this title.

For your information, included below is the segment of the federal register that pertains to establishing zones and splits. The information below only applies to the regular duck season.

Federal Register /Vol. 84, No. 199 /Tuesday, October 15, 2019 / Proposed Rules **55126-27**
Guidelines for Duck Zones and Split Seasons

The following zone and split-season guidelines apply only for the regular duck season:

(1) A zone is a geographic area or portion of a State, with a contiguous boundary, for which independent dates may be selected for the regular duck season.

(2) Consideration of changes for management-unit boundaries is not subject to the guidelines and provisions governing the use of zones and split seasons for ducks.

(3) Only minor (less than a county in size) boundary changes will be allowed for any grandfathered arrangement and changes are limited to the open season.

(4) Once a zone and split option is selected during an open season, it must remain in place for the following 5 years.

Any State may continue the configuration used in the previous 5-year period. If changes are made, the zone and split-season configuration must conform to one of the following options:

(1) No more than four zones with no splits,

(2) Split seasons (no more than 3 segments) with no zones, or

(3) No more than three zones with the option for 2-way (2-segment) split seasons in one, two, or all zones.

Grandfathered Zone and Split Arrangements

When we first implemented the zone and split guidelines in 1991, several States had completed experiments with zone and split arrangements different from our original options. We offered those States a one-time opportunity to continue (“grandfather”) those arrangements, with the stipulation that only minor changes could be made to zone boundaries. If any of those States now wish to change their zone and split arrangement:

(1) The new arrangement must conform to one of the 3 options identified above; and

(2) The State cannot go back to the grandfathered arrangement that it previously had in place.

Management Units

We will continue to utilize the specific limitations previously established regarding the use of zones and split seasons in special management units, including the High Plains Mallard Management Unit. We note that the original justification and objectives established for the High Plains Mallard Management Unit provided for additional days of hunting opportunity at the end of the regular duck season. In order to maintain the integrity of the management unit, current guidelines prohibit simultaneous zoning and/or 3-way split seasons within a management unit and the remainder of the State. Removal of this limitation would allow additional proliferation of zone and split configurations and compromise the original objectives of the management unit.

Mallard Harvest Strategy Stakeholder Engagement

During the Fall 2020 Atlantic Flyway Technical Section meeting conference call, the technical section struggled to define harvest package alternatives (bag limits/season length configurations) to consider in the development of a harvest strategy. Many felt that we lacked key information from our stakeholders to make decisions on harvest packages. The group recommended developing a short web-based survey to answer a few important hunter value questions that are social questions rather than biological.

The mallard committee developed 3 concepts/questions that were conveyed to the Human Dimensions Committee to implement a duck hunter survey throughout the flyway in early 2021. The three concepts are as follows:

- Concept 1 – What is the smallest mallard bag limit we should consider before closing the mallard season?
- Concept 2 – Should we consider hybrid seasons (similar to scaup)?

- Concept 3 – If the overall duck season is shortened through multistock – should the mallard bag limit remain the same to reduce regulation complexity or change to target a 98% shoulder strategy harvest rate

The delivery of the survey to stakeholders will be conducted by each state individually. The survey will be sent to hunters through email starting January 15th and will end on February 1st to allow time to analyze the results prior to the 2021 winter technical section meeting the first week of March. We mailed 1,790 surveys, 20%, to Vermont residents identified as 2020 waterfowl hunters from HIP registration.

Eastern Mallard Collaborative Research Project

Atlantic Flyway states have been asked to participate in a regional study of the eastern mallard population. Vermont is considering participation and would deploy five GSM/GPS units a year over a four-year period. A funding proposal is currently being reviewed at the central office. The project aims to deploy 600 GSM/GPS units on female mallards in eastern Canada and Northeast United States to answer several important questions about mallard movements, productivity, and biases within our banded sample. Specifically, the project proposes the following objectives:

- 1) Quantify and compare reproductive metrics such as reproductive attempts, full-term incubation, and brood-rearing between mallards in the northeast US and eastern Canada, and the extent to which behavior and weather explains variation in reproductive metrics.
 - a. Use proportion of stationary behavior from ACC data and daily displacement from GPS data to infer nesting attempts and success
 - b. Develop detailed time activity budgets of mallard behavior throughout the annual cycle at the sub-population scale
 - c. Explore the extent to which behavior and weather patterns (precipitation, temperature, winter severity) influence reproductive success both directly and through cross-seasonal effects
- 2) Estimate seasonal survival rates of female mallards in Eastern Canada vs. Northeastern US
- 3) Quantify and compare female mallard movements and habitat use and selection throughout the annual cycle in the northeastern US and Eastern Canada
 - a. Understand mallard movements during the pre-season banding window to better inform implications for pre-season banding data analyses.
- 4) Characterize habitat-use and selection of mallards and black ducks throughout the annual cycle.

New York and Pennsylvania will be seeking internal funding to support much of the project but solicited in-kind and financial support from other flyway states, federal and Canadian partners to reach marking sampling goals/distribution and fully fund the project. The timeline for this project would target first deployments of GSM units during the winter of 2021-2022, coinciding with the American black duck joint venture project.

Hosting the Summer 2021 Atlantic Flyway Council and Technical Section

The Vermont Fish and Wildlife Department is once again planning to host the Summer meeting of the Atlantic Flyway Council and Technical Section at the Double Tree by Hilton located in Burlington, from August 22-27, 2021. Originally, we were to host the meeting September 20-25, 2020, which was cancelled and held virtually due to the COVID pandemic. The Council and Technical Section consists of Biologists and Agency Directors from the 17 eastern States, Federal government, Puerto Rico, Virgin Islands, and 6 Canadian Provinces. The Council is responsible for the cooperative management of migratory wildlife species within the Atlantic Flyway of North America. We anticipate between 75-100 plus participants during the week. The Department will keep you updated as the agenda is developed and would like to invite you to attend selected portions or all the general sessions and committee meetings.

Table 1. 2020 Migratory Bird Hunting Seasons

**2020-2021 VERMONT MIGRATORY GAME BIRD HUNTING SEASONS
(regulations in effect September 1, 2020 through April 23, 2021)**

Species	Lake Champlain Zone	Interior Vermont Zone	Connecticut River Zone
Ducks, Coots and Mergansers	Oct. 10 – Nov. 1 Nov. 21 – Dec. 27	Oct. 10 – Dec. 8	Oct. 6 – Nov. 8 Nov. 17 – Dec. 12
Scaup	See Hybrid Season Daily Bag Limit Below	See Hybrid Season Daily Bag Limit Below	Oct. 6 – Nov. 8 (See Bag Limit Nov. 17 – Dec. 12 Chart below)
Canada Geese	Sept. 1 – Sept. 25 Oct. 10 – Nov. 8	Sept. 1 – Sept. 25 Oct. 10 – Nov. 8	Sept. 1 – Sept. 25 Oct. 6 – Nov. 8 Nov. 17 – Dec. 12
Snow Geese (includes blue geese)	Oct. 1 - Dec. 31, 2020 Feb. 26 - Mar. 10, 2021	Oct. 1 - Dec. 31, 2020 Feb. 26 - Mar. 10, 2021	Oct. 6 – Dec. 12 Mar. 11-Apr 23, 2021 applies to land , not CT River waters
Conservation Order (CO)	Mar.11 – Apr 23, 2021	Mar.11 – Apr 23, 2021	
Brant	Oct. 10 – Nov. 28	Oct. 10 – Nov. 28	Oct. 6 – Nov. 8 Nov. 17 – Dec. 2
Woodcock and Common Snipe	Statewide	Oct. 1 – Nov. 14	

Youth Waterfowl Hunting Weekend – September 26 & 27

BAG LIMITS

The daily bag limit is the maximum number of birds of each species that any person may take (or possess in the field) during any one day. The possession limit is three times the daily bag limit for all waterfowl species except snow geese.

Species	Daily Limit	Possession Limit
Ducks *	6	18
Scaup*		
Lake Champlain Zone		
Oct. 10 – Oct. 29	2	6
Oct. 30 – Nov. 1 & Nov. 21 – Dec. 27	1	3
Interior Zone		
Oct. 10 – Oct. 29	2	6
Oct. 30 – Dec. 8	1	3
Connecticut River Zone		
Oct. 6 – Nov. 8 & Nov. 17 – Dec. 12	1	3
Mergansers **	5	15
Coot	15	45
Canada Geese		
September season		
Lake Champlain Zone	8	24
Interior Vermont Zone	8	24
Connecticut River Zone	5	15
Oct. - Dec. season		
Lake Champlain Zone	2	6
Interior Vermont Zone	2	6
Connecticut River Zone	2	6
Snow Geese – <i>see dates above</i>	25	No limit
Mar. 11 – Apr. 23, 2021 (CO)	15	No limit
Brant	2	6
Woodcock	3	9
Common Snipe	8	24

* The daily limit of 6 ducks may include no harlequin, and no more than 2 mallards (1 of which may be hens), 2 black duck, 3 wood ducks, 1 pintail, 2 canvasback, 2 redheads, 2/1 scaup, 4 scoters, 4 eiders, and 4 long-tailed duck.

** The daily limit of 5 mergansers is in addition to the regular duck bag, and together may include no more than 2 hooded mergansers.

Table 2. Vermont Waterfowl Hunting and Harvest Data Comparisons (Lake Champlain and Interior Vermont Zones Combined)

	Federal Duck Stamp Sales	Vermont Duck Stamp Sales	Vermont HIP Registration	No. of Active Adult Duck Hunters	Average Seasonal Duck Bagged Per Hunter	Total Season Estimated Duck Harvest	Total Season Estimated Canada Goose Harvest	Total Season Estimated Snow Goose Harvest
1996	4,812	7,023		3,807	9.35	40,000	0*	3,600
1997	3,791	6,644		2,981	7.85	21,600	0*	1,300
1998	4,345	6,725		3,132	5.78	24,000	2,700	3,300
1999	4,542	6,320		1,600	11.9	25,000	4,100	1,700
2000	4,741	5,418		1,700	10.4	17,700	3,600	4,200
2001	4,824	5,685		1,700	10.4	17,600	4,300	2,200
2002	5,201	5,722		2,600	9.6	26,800	7,100	1,300
2003	5,242	6,012		1,300	12.6	16,300	3,600	3,400
2004	4,723	6,242		2,600	9.3	24,300	7,100	1,700
2005	4,956	5,682		2,400	10.6	25,400	9,300	400
2006	3,391	5,581		2,000	9.9	19,600	7,800	100
2007	3,193	6,137		2,300	9.2	16,700	6,300	500
2008	3,391	5,746	↑\$5-\$7.50	2,900	11.9	34,800	12,300	2,100
2009	not available	6,051		2,400	10.7	25,500	11,500	90
2010	not available	6,065 Last Stamp	5,404***	2,700	8.5	22,900	9,600	0
2011	not available	4,872 First Tag	4,949***	2,600	9.0	23,000	8,300	134
2012	not available	5,882	6,283***	2,100	10.0	20,500	8,600	34
2013	not available	6,436	8,719***	4,000	8.0	31,900	9,600	0
2014	not available	6,635	9,913***	2,600	6.8	17,800	12,300	46
2015	not available	6,244	11,122***	2,600	5.8	14,700	6,733	0
2016	not available	6,016	18,598***	3,400	5.2	17,600	8,800	0
2017	not available	5,954	7,006***	2,500	7.9	19,900	15,900	0
2018	not available	5,725	10,541***	2,100	7.8	16,200	7,400	0
2019	not available	5,620	10,359***	3,000	6.1	18,100	5,600	0
2020	not available	6,089	10,123***	To date not available	To date not available	To date not available	To date not available	To date not available

* Harvest restrictions in effect

** Figures Preliminary

*** Includes youth hunters and woodcock/snipe hunters

VERMONT WATERFOWL HUNTING ZONES*

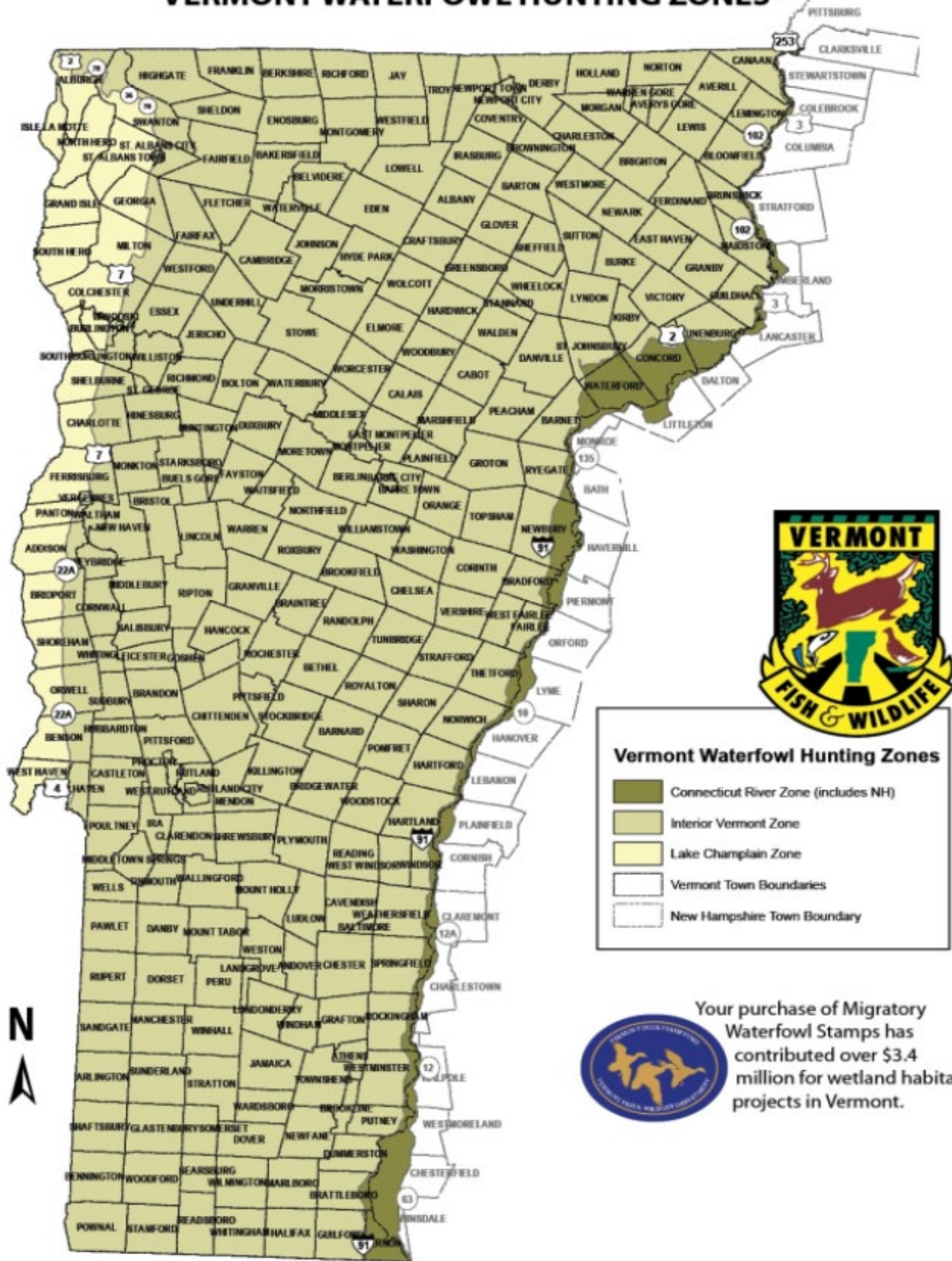


Figure 1. Vermont waterfowl hunting zones

Table 3. USFWS Framework for 2021 Duck Seasons*

<u>LENGTH</u>	<u>OUTSIDE DATES</u>	<u>DAILY BAG</u>	<u>POSSESSION LIMIT**</u>
60 Days	Sept. 25 – Jan. 31	6	18

SPECIES RESTRICTIONS - Daily Bag

MALLARD	2 (only 1 hen)
WOOD DUCK	3
BLACK DUCK	2
PINTAIL	1
REDHEAD	2
SCAUP	2/day for 20-days 1/day for 40-days
SCOTER	4
EIDERS	4
LONG-TAILED DUCK	4
CANVASBACK	2
HARLEQUIN	CLOSED
MOTTLED DUCK	1
FULVOUS WHISTLING DUCK	1
HOODED MERGANSER	2

* Apply to Lake Champlain, Interior Vermont, and Connecticut River Zones.

** Possession limit is equal to three times the daily bag limit for these species.

SHOOTING HOURS - ½ HOUR BEFORE SUNRISE TO SUNSET (all days – all species)

Table 4. USFWS Framework for 2021 Geese, Brant, Merganser, Coot, Snipe, and Woodcock Seasons

<u>SPECIES</u>	<u>SEASON LENGTH</u>	<u>OUTSIDE DATES</u>	<u>DAILY POSSESSION BAG LIMIT**</u>	
Canada Geese				
Resident	25 days	Sept. 1 – Sept. 25	15	45
Regular	30 days	Oct. 10 – Feb. 5	1	3
Snow & Blue Geese	107 days	Oct. 1 – Mar. 10	25	NONE
Brant	50 days	Sept. 25 – Jan. 31	2	6
Mergansers*	60 days	Sept. 25 – Jan. 27	5	15
(Hooded Mergansers)			(2)	(6)
Coots**	60 days	Sept. 25 – Jan. 27	15	45
Snipe	107 days	Sept. 1 – Jan. 31	8	24
Woodcock	45 days	Sept. 13 – Jan. 31	3	9

* Season length for mergansers equals season option chosen for ducks. Mergansers may be included as part of the daily duck bag, in which case the limit would be 6 mergansers/day. Of total merganser bag, only 2 daily and 6 in possession may be Hooded Mergansers.

** Season length for coots equals season option chosen for ducks.

SHOOTING HOURS - ½ HOUR BEFORE SUNRISE TO SUNSET (all days – all species)

Table 5.

2021-2022 WATERFOWL SEASON RECOMMENDATION

LAKE CHAMPLAIN ZONE

	<u>SEASON TYPE</u>	<u>SEASON LENGTH</u>	<u>INCLUSIVE DATES</u>	<u>DAILY LIMIT</u>	<u>POSSESSION LIMIT</u>
DUCKS *	Split	60 Days	<u>Oct. 13 – Oct. 17</u> <u>& Oct. 30 - Dec. 23</u>	6	18
SCAUP*	Split	20 Days	<u>Oct.13–Oct. 17/Oct.30–Nov.13</u>	2	6
	Hybrid	40 Days	<u>Nov. 14 – Dec. 23</u>	1	3
MERGANSERS *	Split	60 Days	<u>Oct. 13 - Oct. 17</u> <u>& Oct. 30 - Dec. 23</u>	5	15
COOTS	Split	60 Days	<u>Oct. 13 - Oct. 17</u> <u>& Oct. 30 - Dec. 23</u>	15	45
GEESE					
Canada Geese	Straight	25 Days	<u>Sept. 1 - Sept. 25</u>	8	24
	Straight	30 Days	<u>Oct. 13 – Nov. 11</u>	1	3
Snow Geese **	Split	107 Days	<u>Oct. 1 - Dec.31, 2021</u> <u>Feb. 24 – Mar. 10, 2022</u>	25	NONE
	Straight(CO)		<u>Mar. 11 – Apr. 23, 2022</u>	15	NONE
Brant	Straight	50 Days	<u>Oct. 13 – Dec. 1</u>	2	6

SHOOTING HOURS - All Waterfowl - All Days - ½ hour before sunrise to sunset

CO: Conservation Order

* Federal species restrictions apply.

** Includes blue geese also.

Table 6.

2021-2022 WATERFOWL SEASON RECOMMENDATION

VERMONT INTERIOR ZONE

	<u>SEASON TYPE</u>	<u>SEASON LENGTH</u>	<u>INCLUSIVE DATES</u>	<u>DAILY LIMIT</u>	<u>POSSESSION LIMIT</u>
DUCKS *	Straight	60 Days	<u>Oct. 13 - Dec. 11</u>	6	18
SCAUP*	Straight	20 Days	Oct. 13 – Nov. 1	2	6
		40 Days	Nov. 2 – Dec. 11	1	3
MERGANSERS *	Straight	60 Days	<u>Oct. 13 - Dec. 11</u>	5	15
COOTS	Split	60 Days	<u>Oct. 13 - Dec. 11</u>	15	45
GEESE					
Canada Geese	Straight	24 Days	<u>Sept. 1 - Sept. 25</u>	8	24
	Straight	30 Days	<u>Oct. 13 – Nov. 11</u>	1	3
Snow Geese **	Straight	107 Days	<u>Oct. 1 - Dec.31, 2021</u> <u>Feb. 24 – Mar. 10, 2022</u>	25	NONE
	Straight(CO)		<u>Mar. 11 – Apr. 23, 2022</u>	15	NONE
Brant	Straight	50 Days	<u>Oct. 13 – Dec. 1</u>	2	6

SHOOTING HOURS - All Waterfowl - All Days - ½ hour before sunrise to sunset

CO: Conservation Order

* Federal species restrictions apply.

** Includes blue geese also.

Table 7.

2021-2022 VERMONT MIGRATORY GAME BIRD HUNTING SEASONS
 (regulations in effect September 1, 2021 through April 2?, 2022)

Species	<u>Lake Champlain Zone</u>	Interior Vermont Zone	Connecticut River Zone
Ducks, Coots and Mergansers	Oct. 13 – Oct. 17 Oct. 30 – Dec. 23	Oct. 13 – Dec. 11	Oct. ? – Nov. ? Nov. ? – Dec. ?
Canada Geese	Sept. 1 – Sept. 25 Oct. 13 – Nov. 11	Sept. 1 – Sept. 25 Oct. 13 – Nov. 11	Sept. ? – Sept. ? Oct. ?2 – Nov. ? Nov. ? – Dec. ?
Snow Geese (includes blue geese)	Oct. 1 - Dec. 31, 2021 Feb. 24 - Mar. 10, 2022 Mar.11 – Apr 23, 2022	Oct. 1 - Dec. 31, 2021 Feb. 24 - Mar. 10, 2022 Mar.11 – Apr 23, 2022	Oct. ? – Dec. ?
Brant	Oct. 13 – Dec. 1	Oct. 13 – Dec. 1	Oct. ? – Oct. ?
Woodcock	Statewide	Sept. 25 – Nov. 8	
Common Snipe	Statewide	Sept. 25 – Nov. 8	

Youth Waterfowl Hunting Weekend – September 25 & 26

BAG LIMITS

The daily bag limit is the maximum number of birds of each species that any person may take (or possess in the field) during any one day. The possession limit is three times the daily bag limit for all waterfowl species except snow geese.

<u>Species</u>	<u>Daily Limit</u>	<u>Possession Limit</u>
Ducks *	6	18
Mergansers **	5	15
Coot	15	45
Canada Geese		
September season		
Lake Champlain Zone	8	24
Interior Vermont Zone	8	24
Connecticut River Zone	5	15
Oct. - Dec. season		
Lake Champlain Zone	1	3
Interior Vermont Zone	1	3
Connecticut River Zone	2	6
Snow Geese	25	No limit
Mar. 11 – Apr. 23, 2022	15	No limit
Brant	2	6
Woodcock	3	9
Common Snipe	8	24

* The daily limit of 6 ducks may include no harlequin, and no more than 2 mallards (only 1 of which may be hens), 2 black duck, 3 wood ducks, 1 pintail, 2 canvasbacks, 2 redheads, 2 or 1 scaup depending on dates, 4 scoters, 4 eiders, and 4 long-tailed duck.

** The daily limit of 5 mergansers is in addition to the regular duck bag, and together may include no more than 2 hooded mergansers.

APPENDIX A

2021 FALL CALENDAR

	SUN	MON	TUES	WED	THUR	FRI	SAT
SEPTEMBER				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
OCTOBER						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
	31						
NOVEMBER		1	2	3	4	5	6
	7	8	9	10	11	12	13
	14	15	16	17	18	19	20
	21	22	23	24	25	26	27
	28	29	30				
DECEMBER				1	2	3	4
	5	6	7	8	9	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30	31	

APPENDIX B

Vermont Waterfowl Seasons				
YEAR	SEASON TYPE	SEASON LENGTH	SEASON DATES	GENERAL BAG LIMIT
1942	Straight	70	Sept. 26 – Dec. 4	10-20
1943	Straight	70	Sept. 25 – Dec. 3	10-20
1944	Straight	80	Sept. 20 – Dec. 8	10-20
1945	Straight	80	Sept. 20 – Dec. 8	7-14
1946	Straight	45	Oct. 5 – Nov. 18	7-14
1947	Straight	30	Oct. 21 – Nov. 19	3-6
1948	Straight	30	Oct. 15 – Nov. 13	3-6
1949	Straight	40	Oct. 21 – Nov. 29	3-6
1950	Straight	40	Oct. 20 – Nov. 28	3-6
1951	Straight	45	Oct. 12 – Nov. 25	3-6
1952	Straight	55	Oct. 7 – Nov. 11	3-6
1953	Straight	60	Oct. 5 – Dec. 3	3-6
1954	Straight	60	Oct. 10 – Dec. 8	3-6
1955	Straight	70	Oct. 5 – Dec. 13	3-6
1956	Straight	70	Oct. 5 – Dec. 13	3-6
1957	Straight	70	Oct. 10 – Dec. 18	3-6
1958	Straight	60	Oct. 10 – Dec. 8	3-6
1959	Straight	50	Oct. 10 – Nov. 28	3-6
1960	Straight	50	Oct. 7 – Nov. 25	3-6
1961	Straight	40	Oct. 14 – Nov. 22	3-6
1962	Straight	40	Oct. 12 – Nov. 20	3-6
1963	Split	45	Oct. 11 – Oct. 27 / Nov. 11 – Dec. 8	3-6
1964	Straight	50	Oct. 10 – Nov. 28	3-6
1965	Straight	50	Oct. 16 – Dec. 4	3-6
1966	Straight	55	Oct. 8 – Dec. 1	3-6
1967	Split	45	Oct. 7 – Nov. 4 / Nov. 25 – Dec. 10	3-6
1968	Straight	50	Oct. 12 – Nov. 30	3-6
1969	Straight	50	Oct. 11 – Nov. 29	3-6
1970	Straight	50	Oct. 10 – Nov. 28	4-8
1971	Straight	50	Oct. 9 – Nov. 27	4-8
1972	Split	50	Oct. 7 – Oct. 15 / Oct. 28 – Dec. 7	4-8
1973	Split	45	Oct. 6 – Oct. 21 / Nov. 3 – Dec. 1	4-8
1974	Straight	50	Oct. 9 – Nov. 27*	4-8
1975	Straight	50	Oct. 8 – Nov. 26*	4-8
1976	Straight	50	Oct. 6 – Nov. 24*	4-8
1977	Straight	50	Oct. 5 – Nov. 23*	4-8
1978	Straight	50	Oct. 4 – Nov. 22*	4-8
1979	Split	50	Oct. 3 – Oct. 14 / Oct. 27 – Dec. 3*	4-8
1980	Straight	50	Oct. 8 – Nov. 26*	4-8
1981	Straight	50	Oct. 10 – Nov. 28*	4-8

YEAR	SEASON TYPE	SEASON LENGTH	SEASON DATES	GENERAL BAG LIMIT
1982	Split	50	Oct. 2 – Oct. 10 / Oct. 16 – Nov. 25*	5-10
1983	Split	50	Oct. 8 – Oct. 16 / Oct. 22 – Dec. 1*	5-10
1984	Straight	50	Oct. 10 – Nov. 28*	5-10
1985	Zoned**	40	Oct. 9 – Oct. 13 / Oct. 26 – Nov. 29 (LCZ)* Oct. 9 – Nov. 17 (IVZ)	5-10 5-10
1986	Zoned**	40	Oct. 8 – Oct. 12 / Oct. 25 – Nov. 28 (LCZ)* Oct. 8 – Nov. 16 (IVZ)	5-10 5-10
1987	Zoned**	40	Oct. 7 – Oct. 11 / Oct. 24 – Nov. 27 (LCZ)* Oct. 7 – Nov. 15 (IVZ)	4-8 4-8
1988	Zoned/Split	30	Oct. 8 – Oct. 23 / Nov. 24 – Dec. 7 (LCZ)* Oct. 8 – Oct. 30 / Nov. 24 – Nov. 30 (IVZ)	3-6 3-6
1989	Zoned/Split	30	Oct. 11 – Oct. 29 / Nov. 23 – Dec. 3 (LCZ) Oct. 11 – Nov. 5 / Nov. 23 – Nov. 26 (IVZ)	3-6 3-6
1990	Zoned/Split	30	Oct. 10 – Oct. 21 / Nov. 15 – Dec. 2 (LCZ) Oct. 10 – Nov. 4 / Nov. 22 – Nov. 25 (IVZ)	3-6 3-6
1991	Zoned/Split	30	Oct. 12 – Oct. 27 / Nov. 23 – Dec. 6 (LCZ) Oct. 12 – Nov. 3 / Nov. 25 – Dec. 1 (IVZ)	3-6 3-6
1992	Zoned/Split	30	Oct. 7 – Oct. 11 / Nov. 7 – Dec. 1 (LCZ) Oct. 7 – Nov. 1 / Nov. 26 – Nov. 29 (IVZ)	3-6 3-6
1993	Zoned/Split	30	Oct. 20 – Nov. 7 / Nov. 25 – Dec. 5 (LCZ) Oct. 13 – Nov. 7 / Nov. 25 – Nov. 28 (IVZ)	3-6 3-6
1994	Zoned/Split	40	Oct. 15 – Nov. 6 / Nov. 19 – Dec. 5 (LCZ) Oct. 8 – Nov. 9 / Nov. 21 – Nov. 27 (IVZ)	3-6 3-6
1995	Zoned/Split	50	Oct. 11 – Oct. 22 / Nov. 4 – Dec. 11 (LCZ) Oct. 4 – Nov. 12 / Nov. 18 – Nov. 27 (IVZ)	4-8 4-8
1996	Zoned/Split	50	Oct. 9 – Oct. 20 / Nov. 2 – Dec. 9 (LCZ) Oct. 2 – Nov. 11 / Nov. 23 – Dec. 1 (IVZ)	5-10 5-10
1997	Zoned**	60	Oct. 4 – Oct. 19 / Oct. 25 – Dec. 7 (LCZ) Oct. 4 – Dec. 2 (IVZ)	4-8*** 4-8***
1998	Zoned**	60	Oct. 7 – Oct. 11 / Oct. 17 – Dec. 10 (LCZ) Oct. 7 – Dec. 5 (IVZ)	6-12 6-12
1999	Zoned**	60	Oct. 6 – Oct. 11 / Oct. 23 – Dec. 15 (LCZ) Oct. 6 – Dec. 4 (IVZ)	6-12 6-12
2000	Zoned/Split	60	Oct. 7 – Oct. 9 / Oct. 21 – Dec. 16 (LCZ) Oct. 7 – Nov. 12 / Nov. 18 – Dec. 10 (IVZ)	6-12 6-12
2001	Zoned/Split	60	Oct. 10 – Oct. 14 / Oct. 20 – Dec. 13 (LCZ) Oct. 10 – Dec. 8 (IVZ) Oct. 2 – Nov. 4 / Nov. 21 – Dec. 16 (CRZ)****	6-12 6-12 6-12
2002	Zoned/Split	60	Oct. 9 – Oct. 13 / Oct. 22 – Dec. 15 (LCZ) Oct. 9 – Nov. 14 / Nov. 23 – Dec. 15 (IVZ) Oct. 2 – Nov. 5 / Nov. 27 – Dec. 21 (CRZ)****	6-12 6-12 6-12

Vermont Waterfowl Seasons – Page 3

YEAR	SEASON TYPE	SEASON LENGTH	SEASON DATES	GENERAL BAG LIMIT
2003	Zoned**	60	Oct. 11 - Oct. 13 / Oct. 25 - Dec. 20 (LCZ) Oct. 11 - Dec. 9 (IVZ) Oct. 7 - Nov. 9 / Nov. 26 - Dec. 21 (CRZ)****	6-12 6-12 6-12
2004	Zoned**	60	Oct. 6 - Oct. 10 / Oct. 23 - Dec. 16 (LCZ) Oct. 6 - Dec. 4 (IVZ) Oct. 5 - Nov. 14 / Nov. 24 - Dec. 12 (CRZ)****	6-12 6-12 6-12
2005	Zoned**	60	Oct. 5 – Oct. 10 / Oct. 26 – Dec. 18 (LCZ) Oct. 5 – Dec. 3 (IVZ) Oct. 4 – Nov.13/ Nov. 23 - Dec. 11 (CRZ)****	6-12 6-12 6-12
2006	Zoned**	60	Oct. 7- Oct. 15/ Oct. 25 - Dec. 14 (LCZ) Oct. 7 - Dec. 5 (IVZ) Oct. 3 - Nov. 5/ Nov. 22 - Dec. 17 (CRZ)****	6-12 6-12 6-12
2007	Zoned**	60	Oct. 10- Oct. 14/ Oct. 27 - Dec. 20 (LCZ) Oct. 10- Dec. 8 (IVZ) Oct. 3- Nov. 4/ Nov. 21 - Dec. 17 (CRZ)****	6-12 6-12 6-12
2008	Zoned**	60	Oct. 8- Oct. 12/ Oct. 25 - Dec. 18 (LCZ) Oct. 8- Dec. 6 (IVZ) Oct. 2- Nov. 2/ Nov. 23 - Dec. 20 (CRZ)****	6-12 6-12 6-12
2009	Zoned**	60	Oct. 10- Oct. 13/ Oct. 24 - Dec. 18 (LCZ) Oct. 10- Dec. 8 (IVZ) Oct. 6- Nov. 8/ Nov. 25 - Dec. 20 (CRZ)****	6-12 6-12 6-12
2010	Zoned**	60	Oct. 6-Oct. 10/Oct. 23 - Dec. 16 (LCZ) Oct. 6-Dec. 4 (IVZ) Oct. 5-Nov. 7/ Nov. 24 – Dec. 19 (CRZ)	6-12 6-12 6-12
2011	Zoned**	60	Oct. 12-Oct. 16/Oct. 29 - Dec. 22 (LCZ) Oct. 12-Dec 10 (IVZ) Oct. 4-Nov. 6/Nov. 23- Dec. 18 (CRZ)****	6-12 6-12 6-12
2012	Zoned**	60	Oct. 13-Oct. 17/Oct. 27 - Dec. 20 (LCZ) Oct. 13-Dec 11 (IVZ) Oct. 2-Nov. 4/Nov. 21- Dec. 16 (CRZ)****	6-12 6-12 6-12
2013	Zoned**	60	Oct. 9-Oct. 13/Oct. 26 - Dec. 19 (LCZ) Oct. 9-Dec 7 (IVZ) Oct. 2-Nov. 3/Nov. 19- Dec. 15 (CRZ)****	6-18 6-18 6-18
2014	Zoned**	60	Oct. 8-Oct. 12/Oct. 25- Dec. 18 (LCZ) Oct. 8-Dec. 6 (IVZ) Oct. 2-Nov. 2/Nov. 16- Dec. 13 (CRZ)****	6-18 6-18 6-18
2015	Zoned**	60	Oct. 10-Oct. 14/Oct. 24- Dec. 17 (LCZ) Oct. 10-Dec. 8 (IVZ) Oct. 6-Nov. 5/Nov. 15- Dec. 13 (CRZ)****	6-18 6-18 6-18
2016	Zoned**	60	Oct. 12-Oct. 16/Oct. 29- Dec. 22 (LCZ) Oct. 12-Dec. 10 (IVZ) Oct. 4-Nov. 6/Nov. 22- Dec. 22 (CRZ)****	6-18 6-18 6-18
2017	Zoned**	60	Oct. 11-Oct. 15/Nov. 7 - Dec. 31 (LCZ) Oct. 11-Dec. 9 (IVZ) Oct. 3-Nov. 5/Nov. 22- Dec. 17 (CRZ)****	6-18 6-18 6-18

2018	Zoned**	60	Oct. 13-Oct. 21/Nov. 10 - Dec. 30 (LCZ)	6-18
			Oct. 13-Dec. 11 (IVZ)	6-18
			Oct. 2-Nov. 4/Nov. 21- Dec. 16 (CRZ)****	6-18
2019	Zoned**	60	Oct. 10-Nov. 1/Nov. 23 - Dec. 29 (LCZ)	6-18
			Oct. 10-Dec. 8 (IVZ)	6-18
			Oct. 2-Nov. 3/Nov. 20- Dec. 16 (CRZ)****	6-18
2020	Zoned**	60	Oct. 10-Nov. 1/Nov. 21 - Dec. 27 (LCZ)	6-18
			Oct. 10-Dec. 8 (IVZ)	6-18
			Oct. 6-Nov. 8/Nov. 17- Dec. 12 (CRZ)****	6-18

* Regular season was followed by a 16-day special goldeneye/scaup season – 3-bird bag

** Lake Champlain Zone – Split Season

Interior Vermont Zone – Straight Season

*** Two teal (either blue-winged or green-winged) allowed in addition to regular bag limit

**** Connecticut River Zone set by New Hampshire Fish and Game Commission, same as NH Inland Zone

VERMONT
PUBLIC WATERFOWL MEETING
MARCH 2021

Summary of the Department's Recommendations

BACKGROUND INFO

[Table 1](#) (Harvest Data Comparison) – Provides background information on past migratory game bird hunting seasons.

SEASON OPTIONS FOR 2021 (Framework)

[Table 2](#) (Duck season options)

[Table 3](#) (Geese, brant, mergansers, coots, snipe, woodcock season options)

DEPARTMENT RECOMMENDATIONS FOR 2021 MIGRATORY GAMEBIRD SEASONS

[Table 4](#) (September Resident Canada Goose Season)

[Figure 1](#) (Youth Waterfowl Hunting Days)

[Figure 2](#) (Vermont Waterfowl Hunting Zones)

[Table 5](#) (Lake Champlain Zone Recommendations)

[Table 6](#) (Vermont Interior Zone Recommendations)

[Table 7](#) (Woodcock and Snipe Seasons Recommendations)

[Table 8](#) (Vermont Waterfowl Seasons History)

[Table 9](#) (Migratory Game Bird Seasons Recommendation Summary)

[Figure 3](#) (Falconry Season Recommendations)

Table 1.

**Vermont Waterfowl Hunting and Harvest Data Comparisons
(Lake Champlain and Interior Vermont Zones Combined)**

	Federal Duck Stamp Sales	Vermont Duck Stamp Sales	Vermont HIP	No. of Active Adult Duck Hunters	Average Seasonal Duck Bagged Per Hunter	Total Season Estimated Duck Harvest	Total Season Estimated Canada Goose Harvest	Total Season Estimated Snow Goose Harvest
1995	4,695	6,715		3,955	6.97	31,700	0*	1,800
1996	4,812	7,023		3,807	9.35	40,000	0*	3,600
1997	3,791	6,644		2,981	7.85	21,600	0*	1,300
1998	4,345	6,725		3,132	5.78	24,000	2,700	3,300
1999	4,542	6,320		1,600	11.9	25,000	4,100	1,700
2000	4,741	5,418		1,700	10.4	17,700	3,600	4,200
2001	4,824	5,685		1,700	10.4	17,600	4,300	2,200
2002	5,201	5,722		2,600	9.6	26,800	7,100	1,300
2003	5,242	6,012		1,300	12.6	16,300	3,600	3,400
2004	4,723	6,242		2,600	9.3	24,300	7,100	1,700
2005	4,956	5,682		2,400	10.6	25,400	9,300	400
2006	3,391	5,581		2,000	9.9	19,600	7,800	100
2007	3,193	6,137		2,300	9.2	16,700	6,300	500
2008	3,391	5,746	↑\$5-\$7.50	2,900	11.9	34,800	12,300	2,100
2009	not available	6,051		2,400	10.7	25,500	11,500	90
2010	not available	6,065 Last Stamp	5,404**	2,700	8.5	22,900	9,600	0
2011	not available	4,872 First Tag	4,949**	2,600	9.0	23,000	8,300	134
2012	not available	5,882	6,283**	2,100	10.0	20,500	8,600	34
2013	not available	6,436	8,719**	4,000	8.0	31,900	9,600	0
2014	not available	6,635	9,913**	2,600	6.8	17,800	12,300	46
2015	not available	6,244	11,122**	2,800	5.8	14,700	6,733	30
2016	not available	6,016	18,598**	3,400	5.2	16,000	8,800	0
2017	not available	5,954	7,006**	2,500	7.9	19,900	15,900	0
2018	not available	5,725	10,541**	2,100	7.8	16,200	7,400	0
2019	not available	5,620	10,359**	3,000	6.1	18,100	5,600	0
2020	not available	6,089	10,123**	To date not available	To date not available	To date not available	To date not available	To date not available

* Harvest restrictions in effect

** Includes youth hunters and woodcock/snipe hunters

Public comments may be emailed to ANR.FWPublicComment@Vermont.gov

Deadline for comments is March 31, 2021

Table 2.

2021 DUCK SEASON OPTIONS*

<u>LENGTH</u>	<u>OUTSIDE DATES</u>	<u>DAILY BAG</u>	<u>POSSESSION LIMIT**</u>
60 Days	Sept. 25 – Jan. 31	6	18

SPECIES RESTRICTIONS - **Daily Bag**

MALLARD	2 (only 1 hen)
WOOD DUCK	3
BLACK DUCK	2
PINTAIL	1
REDHEAD	2
SCAUP	2/Day for 20-days 1/Day for 40-days
SCOTER	4
EIDERS	4
LONG-TAILED DUCK	4
CANVASBACK	2
HARLEQUIN	CLOSED
MOTTLED DUCK	1
FULVOUS WHISTLING DUCK	1
HOODED MERGANSER	2

* Apply to Lake Champlain, Interior Vermont, and Connecticut River Zones.

** Possession limit is equal to three times the daily bag limit for these species.

SHOOTING HOURS - ½ HOUR BEFORE SUNRISE TO SUNSET (all days – all species)

Table 3.**2021 OPTIONS FOR GEESE, BRANT, MERGANSERS, COOTS, SNIPE, WOODCOCK**

<u>SPECIES</u>	<u>SEASON LENGTH</u>	<u>OUTSIDE DATES</u>	<u>DAILY POSSESSION BAG LIMIT**</u>	
Canada Geese				
Resident	25 days	Sept. 1 – Sept. 25	15	45
Regular	30 days	Oct. 10 – Feb. 5	1	3
Snow & Blue Geese	107 days	Oct. 1 – Mar. 10	25	NONE
Brant	50 days	Sept. 25 – Jan. 31	2	6
Mergansers*	60 days	Sept. 25 – Jan. 31	5	15
(Hooded Mergansers)			(2)	(6)
Coots**	60 days	Sept. 25 – Jan. 31	15	45
Snipe	107 days	Sept. 13 – Jan. 31	8	24
Woodcock	45 days	Sept. 13 – Jan. 31	3	9

* Season length for mergansers equals season option chosen for ducks. Mergansers may be included as part of the daily duck bag, in which case the limit would be 6 mergansers/day. Of total merganser bag, only 2 daily and 6 in possession may be Hooded Mergansers.

** Season length for coots equals season option chosen for ducks.

SHOOTING HOURS - ½ HOUR BEFORE SUNRISE TO SUNSET (all days – all species)

Table 4.

2021 SEPTEMBER RESIDENT CANADA GOOSE SEASON RECOMMENDATION

Includes Lake Champlain, Vermont Interior, and Connecticut River Zones

Season Dates: September 1 – 25, 2021 (25 days)

Bag Limits: Lake Champlain Zone: 8 Canada geese/day
Interior Vermont Zone: 8 Canada geese/day
Connecticut River Zone: 5 Canada geese/day

License Required: Vermont Hunting License
Federal Migratory Bird Hunting Stamp
Vermont Migratory Waterfowl Stamp
H.I.P. (Harvest Information Program) Registration

Figure 1.

**VERMONT YOUTH WATERFOWL HUNTING DAYS – SEPTEMBER 25 & 26, 2021
RECOMMENDATION**

Lake Champlain and Interior Vermont Zones

On Saturday and Sunday, September 25 & 26, 2021, hunters 17 years of age or younger on that date may hunt ducks, geese, mergansers, and coots within the Lake Champlain and Interior Vermont zones, within the Connecticut River zone hunters must be 15 years of age or younger, subject to the provisions below:

- (1) Each youth hunter must be properly licensed to hunt in Vermont and must be accompanied by an adult, 18 years of age or older, who is also properly licensed to hunt in Vermont.
- (2) Adults may not hunt waterfowl or carry a firearm while accompanying youth engaged in hunting waterfowl.
- (3) Neither youth 15 years of age and younger nor accompanying adults are required to be in possession of state or federal duck stamps.
- (4) Youth ages 16 and 17 are required to be in possession of a state and federal duck stamp.
- (5) Only ducks, geese, mergansers, and coots may be taken by youth hunters in accordance with prescribed daily bag limits, species restrictions, and other waterfowl hunting regulations in effect in 2021 as contained herein. **The Canada goose limit will be the same as the regular Canada Goose Season (1 birds/day)**
- (6) Shooting hours on September 25 shall be between the hours of 6:11 AM and 6:42 PM.
Shooting hours on September 26 shall be between the hours of 6:12 AM and 6:40 PM.

Figure 2.

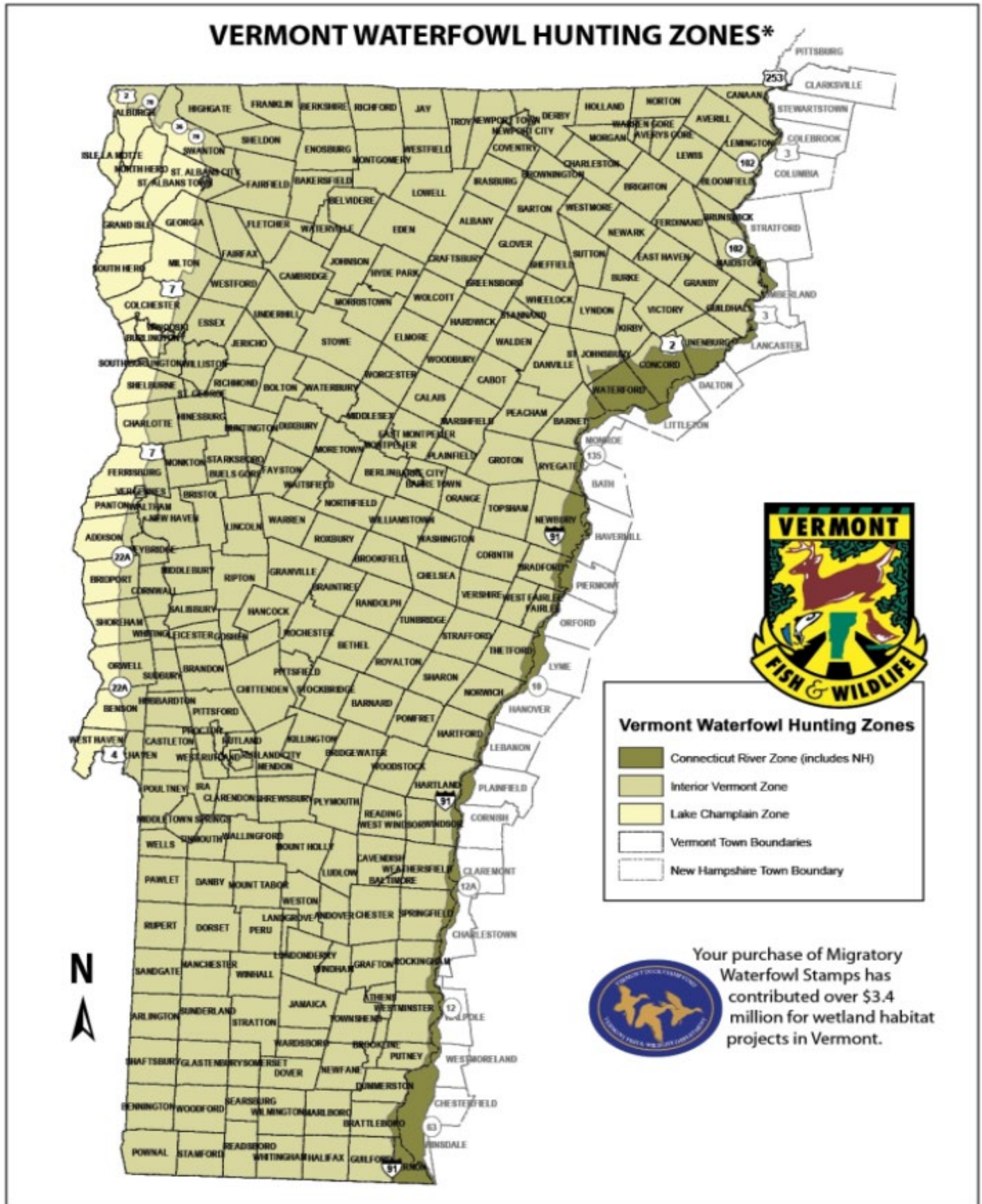


Table 5.

2021-2022 WATERFOWL SEASON RECOMMENDATION

LAKE CHAMPLAIN ZONE

	<u>SEASON TYPE</u>	<u>SEASON LENGTH</u>	<u>INCLUSIVE DATES</u>	<u>DAILY LIMIT</u>	<u>POSSESSION LIMIT</u>
DUCKS *	Split	60 Days	<u>Oct. 13 – Oct. 17</u> <u>& Oct. 30 - Dec. 23</u>	6	18
SCAUP*	Split	20 Days	<u>Oct.13–Oct. 17/Oct.30–Nov.13</u>	2	6
	Hybrid	40 Days	<u>Nov. 14 – Dec. 23</u>	1	3
MERGANSERS *	Split	60 Days	<u>Oct. 13 - Oct. 17</u> <u>& Oct. 30 - Dec. 23</u>	5	15
COOTS	Split	60 Days	<u>Oct. 13 - Oct. 17</u> <u>& Oct. 30 - Dec. 23</u>	15	45
GEESE					
Canada Geese	Straight	25 Days	<u>Sept. 1 - Sept. 25</u>	8	24
	Straight	30 Days	<u>Oct. 13 – Nov. 11</u>	1	3
Snow Geese **	Split	107 Days	<u>Oct. 1 - Dec. 31, 2021</u> <u>Feb. 24 – Mar. 10, 2022</u>	25	NONE
	Straight(CO)		<u>Mar. 11 – Apr. 23, 2022</u>	15	NONE
Brant	Straight	50 Days	<u>Oct. 13 – Dec. 1</u>	2	6

SHOOTING HOURS - All Waterfowl - All Days - ½ hour before sunrise to sunset

CO: Conservation Order

* Federal species restrictions apply.

** Includes blue geese also.

Table 6.

2021-2022 WATERFOWL SEASON RECOMMENDATION

VERMONT INTERIOR ZONE

	<u>SEASON TYPE</u>	<u>SEASON LENGTH</u>	<u>INCLUSIVE DATES</u>	<u>DAILY LIMIT</u>	<u>POSSESSION LIMIT</u>
DUCKS *	Straight	60 Days	<u>Oct. 13 - Dec. 11</u>	6	18
SCAUP*	Straight	20 Days	Oct. 13 – Nov. 1	2	6
		40 Days	Nov. 2 – Dec. 11	1	3
MERGANSERS *	Straight	60 Days	<u>Oct. 13 - Dec. 11</u>	5	15
COOTS	Split	60 Days	<u>Oct. 13 - Dec. 11</u>	15	45
GEESE					
Canada Geese	Straight	25 Days	<u>Sept. 1 - Sept. 25</u>	8	24
	Straight	30 Days	<u>Oct. 13 – Nov. 11</u>	1	3
Snow Geese **	Straight	107 Days	<u>Oct. 1 - Dec. 31, 2021</u>	25	NONE
			<u>Feb. 24 – Mar. 10, 2022</u>		
	Straight(CO)		<u>Mar. 11 – Apr. 23, 2022</u>	15	NONE
Brant	Straight	50 Days	<u>Oct. 13 – Dec. 1</u>	2	6

SHOOTING HOURS - All Waterfowl - All Days - ½ hour before sunrise to sunset

CO: Conservation Order

* Federal species restrictions apply.

** Includes blue geese also.

Table 7.

VERMONT

2021 WEBLESS MIGRATORY GAME BIRD SEASONS RECOMMENDATION

	SEASON DATES	BAG LIMITS	POSSESSION LIMIT
Woodcock	Sept. 25 – Nov. 8	3	9
Snipe	Sept. 25 – Nov. 8	8	24

Public comments may be emailed to ANR.FWPublicComment@Vermont.gov
Deadline for comments is March 31, 2021

Figure 3.

FALCONRY REGULATION

A person possessing a valid falconry permit may take migratory game birds only during open seasons and within designated shooting times as prescribed herein. Daily bag limit shall be a maximum of three legal migratory game birds, singly or in the aggregate, not to exceed restrictive daily bag limits for certain species as listed herein. Possession limit shall be equal to three times the daily limit.

RECOMMENDATION FOR 2021 FALCONRY (HAWKING) SEASON AND BAG LIMITS

- Legal species - all migratory game bird species which have a current open season in Vermont (woodcock, snipe, ducks, geese, brant, mergansers, and coots).
- Season dates - to coincide with established open seasons for each migratory game bird species.
- Hours - to coincide with established legal hours for the taking of migratory game bird species.
- Bag limit - daily bag limit of three (3) legal migratory game birds, singly or in an aggregate of species, but not to exceed established restrictions which currently exist for certain waterfowl species; possession limit is equal to three times the daily limit.

Table 8.

Vermont Waterfowl Seasons

YEAR	SEASON TYPE	SEASON LENGTH	SEASON DATES	GENERAL BAG LIMIT
2009	Zoned**	60	Oct. 10- Oct. 13/ Oct. 24 - Dec. 18 (LCZ) Oct. 10- Dec. 8 (IVZ) Oct. 6- Nov. 8/ Nov. 25 - Dec. 20 (CRZ)****	6-12 6-12 6-12
2010	Zoned**	60	Oct. 6-Oct. 10/Oct. 23 - Dec. 16 (LCZ) Oct. 6-Dec. 4 (IVZ) Oct. 5-Nov. 7/ Nov. 24 - Dec. 19 (CRZ)	6-12 6-12 6-12
2011	Zoned**	60	Oct. 12-Oct. 16/Oct. 29 - Dec. 22 (LCZ) Oct. 12-Dec 10 (IVZ) Oct. 4-Nov. 6/Nov. 23- Dec. 18 (CRZ)****	6-12 6-12 6-12
2012	Zoned**	60	Oct. 13-Oct. 17/Oct. 27 - Dec. 20 (LCZ) Oct. 13-Dec 11 (IVZ) Oct. 2-Nov. 4/Nov. 21- Dec. 16 (CRZ)****	6-12 6-12 6-12
2013	Zoned**	60	Oct. 9-Oct. 13/Oct. 26 - Dec. 19 (LCZ) Oct. 9-Dec 7 (IVZ) Oct. 2-Nov. 3/Nov. 19- Dec. 15 (CRZ)****	6-18 6-18 6-18
2014	Zoned**	60	Oct. 8-Oct. 12/Oct. 25- Dec. 18 (LCZ) Oct. 8-Dec. 6 (IVZ) Oct. 2-Nov. 2/Nov. 16- Dec. 13 (CRZ)****	6-18 6-18 6-18
2015	Zoned**	60	Oct. 10-Oct. 14/Oct. 24- Dec. 17 (LCZ) Oct. 10-Dec. 8 (IVZ) Oct. 6-Nov. 5/Nov. 15- Dec. 13 (CRZ)****	6-18 6-18 6-18
2016	Zoned**	60	Oct. 12-Oct. 16/Oct. 29- Dec. 22 (LCZ) Oct. 12-Dec. 10 (IVZ) Oct. 4-Nov. 6/Nov. 22- Dec. 27 (CRZ)****	6-18 6-18 6-18
2017	Zoned**	60	Oct. 11-Oct. 15/Nov. 7 - Dec. 31 (LCZ) Oct. 11-Dec. 9 (IVZ) Oct. 3-Nov. 5/Nov. 22- Dec. 17 (CRZ)****	6-18 6-18 6-18
2018	Zoned**	60	Oct. 13-Oct. 21/Nov. 10 - Dec. 30 (LCZ) Oct. 13-Dec. 11 (IVZ) Oct. 2-Nov. 4/Nov. 21- Dec. 16 (CRZ)****	6-18 6-18 6-18
2019	Zoned**	60	Oct. 10-Nov. 1/Nov. 23 - Dec. 29 (LCZ) Oct. 10-Dec. 8 (IVZ) Oct. 2-Nov. 3/Nov. 20- Dec. 16 (CRZ)****	6-18 6-18 6-18
2020	Zoned**	60	Oct. 10-Nov. 1/Nov. 21 - Dec. 27 (LCZ) Oct. 10-Dec. 8 (IVZ) Oct. 6-Nov. 8/Nov. 17- Dec. 12 (CRZ)****	6-18 6-18 6-18

** Lake Champlain Zone – Split Season
Interior Vermont Zone – Straight Season

**** Connecticut River Zone set by New Hampshire Fish and Game Commission, same as NH Inland Zone

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Deadline for comments is March 31, 2021

Table 9.

RECOMMENDATIONS**2021-2022 VERMONT MIGRATORY GAME BIRD HUNTING SEASONS
(regulations in effect September 1, 2021 through April 23, 2022)**

Species	Lake Champlain Zone	Interior Vermont Zone	Connecticut River Zone
Ducks, Coots and Mergansers	Oct. 13 – Oct. 17 Oct. 30 – Dec. 23	Oct. 13 – Dec. 11	Oct. ? – Nov. ? Nov. ? – Dec. ?
Canada Geese	Sept. 1 – Sept. 25 Oct. 13 – Nov. 11	Sept. 1 – Sept. 25 Oct. 13 – Nov. 11	Sept. ? – Sept. ? Oct. ? – Nov. ? Nov. ? – Dec. ?
Snow Geese (includes blue geese)	Oct. 1 - Dec. 31, 2021 Feb. 24 - Mar. 10, 2022 Mar.11 – Apr 23, 2022	Oct. 1 - Dec. 31, 2021 Feb. 24 - Mar. 10, 2022 Mar.11 – Apr 23, 2022	Oct. ? – Dec. ?
Brant	Oct. 13 – Dec. 1	Oct. 13 – Dec. 1	Oct. ? – Oct. ?
Woodcock	Statewide	Sept. 25 – Nov. 8	
Common Snipe	Statewide	Sept. 25 – Nov. 8	

Youth Waterfowl Hunting Weekend – September 25 & 26

BAG LIMITS

The daily bag limit is the maximum number of birds of each species that any person may take (or possess in the field) during any one day. The possession limit is three times the daily bag limit for all waterfowl species except snow geese.

<u>Species</u>	<u>Daily Limit</u>	<u>Possession Limit</u>
Ducks *	6	18
Mergansers **	5	15
Coot	15	45
Canada Geese		
September season		
Lake Champlain Zone	8	24
Interior Vermont Zone	8	24
Connecticut River Zone	5	15
Oct. - Dec. season		
Lake Champlain Zone	1	3
Interior Vermont Zone	1	3
Connecticut River Zone	2	6
Snow Geese	25	No limit
Mar. 11 – Apr. 23, 2022	15	No limit
Brant	2	6
Woodcock	3	9
Common Snipe	8	24

* The daily limit of 6 ducks may include no harlequin, and no more than 2 mallards (1 of which may be hens), 2 black duck, 3 wood ducks, 1 pintail, 2 canvasback, 2 redheads, 2 or 1 scaup depending on dates, 4 scoters, 4 eiders, and 4 long-tailed duck.

** The daily limit of 5 mergansers is in addition to the regular duck bag, and together may include no more than 2 hooded mergansers.

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Deadline for comments is March 31, 2021

2021 Moose Harvest Recommendation

to the
Vermont Fish and Wildlife Board



Vermont Fish and Wildlife Department
Agency of Natural Resources
1 National Life Drive, Davis 2
Montpelier, VT 05620-3208
802-828-1000

The Department's goal is to improve the health of moose in northeastern Vermont by reducing winter tick abundance and their impacts on moose health, survival, and birth rate. The Department recommends issuing a combination of either-sex and antlerless-only moose hunting permits in WMUs E1 and E2 to reduce the moose population and thereby reduce winter tick abundance.

The current number of moose in WMU E has been sufficient to sustain winter ticks at high levels that are negatively affecting moose health and survival. Winter ticks are a host-dependent parasite with moose being the primary host responsible for major fluctuations in winter tick densities. Therefore, reduction in moose density decreases the number of available hosts which in turn decreases the number of winter ticks on the landscape. Moose population reduction will be necessary to break the winter tick cycle and improve the health of moose in this region.

Failure to reduce the moose density will perpetuate the current, unhealthy state of the moose population in WMU E for decades and would be inconsistent with the Department's established objective of managing for a healthy moose population. Importantly, 65% of Vermont residents support maintaining a smaller moose population through hunting if it reduces the number of moose that die each year from winter ticks. Only 15% oppose this approach (Responsive Management 2019).

Although winter ticks can be found on moose throughout the northeast, they do not significantly impact moose populations across the more-peripheral parts of their range, including the rest of Vermont, due to lower moose densities that limit tick abundance.

Summary of Key Points

- The moose population is stable in most of Vermont and may be increasing in WMU E (E1 & E2).
- Moose density in WMU E remains above 1 moose/square mile.
 - No WMU outside of the Northeast Kingdom ever had a moose density of 1/mi².
 - Moose densities greater than 1/mi² support high numbers of winter ticks that negatively impact the health of moose.
 - Moose densities below 0.75/mi² support relatively few winter ticks that do not impact moose populations. This is the case in most of Vermont – winter ticks are present, but do not cause population level impacts.
- Results of moose research in WMU E indicate health of moose is very poor in that region.
 - Adult survival remains relatively good, but detrimental health impacts of winter ticks have caused birth rates to be very low.
 - About half of moose calves die each winter, primarily due to heavy winter tick loads.
- The Department recommends 100 moose hunting permits (60 either sex and 40 antlerless only) be allocated in WMU E to reduce moose numbers and thereby reduce the impacts of winter ticks on the health of moose and help maintain a sustainable moose population.
 - This would result in the harvest of 51-66 moose, or about 5% of the current estimated population in WMU E.
- No permits are recommended for the remaining 19 WMUs, which cover 93% of Vermont.

Goals

This recommendation aims to improve the health of moose in WMUs E1 and E2 by reducing the impact of winter ticks and to achieve moose population objectives established in the *2020-2030 Big Game Management Plan*.

Management Objectives

Moose population objectives for each WMU are established in Vermont's *2020-2030 Big Game Management Plan*. These objectives aim to maintain healthy regional moose populations at levels that are socially acceptable and ecologically sustainable.

In WMUs D2, E1, and E2, density objectives reflect the impact of winter ticks on the size and health of the region's moose population. Research has found reduced frequency of tick epizootics (where more than 50% of calves die from winter tick infestations) at moose densities below 1.06/mi² and no tick epizootics at densities below 0.75/mi² (Samuel 2007, Jones 2016). The Department will initially try to maintain moose densities at or below 1/mi² to reduce winter tick abundance and the frequency of epizootics, and improve the health of the moose population. However, if tick impacts are not reduced, the moose density may need to be reduced to 0.75/mi². Ultimately, the goal is to have healthy moose, with fewer calves dying each year from heavy winter tick loads and healthier cows with higher birth rates.

Moose density objectives throughout the rest of moose range in Vermont have been set at 0.5 moose/mi² (Figure 1.). This lower objective reflects ecological limitations on moose densities in these regions due to limited young forest habitat, higher deer densities, and a warming climate. Moose densities in these WMUs have never reached 1/mi².

Hunting thresholds have also been established for each WMU at 75% of the density objective. The Department will only consider hunting moose when densities exceed this threshold. This ensures that the other values of moose are maximized at these lower densities.

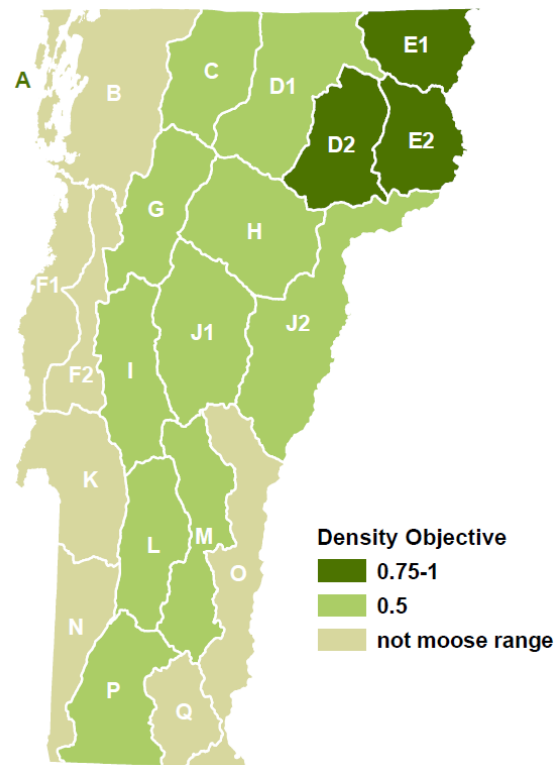


Figure 1. Moose density objectives (moose per square mile of moose habitat) established in Vermont's 2020-2030 Big Game Management Plan.

Population Status

Moose and Winter Ticks

Recent studies in Vermont, New Hampshire, and Maine have concluded that winter ticks are the primary cause of moose mortality across their core range in New England (Musante et al. 2007, 2010, Bergeron et al. 2013, Dunfey-Ball 2017, Jones et al. 2017, Ellingwood et al. 2019, Jones et al. 2019, DeBow 2020), with some moose hosting an astonishingly high number of ticks (>50,000/individual; Jones et al. 2019).

Core moose range (continuous red area in Figure 2) in New England extends from northeastern Vermont through northern New Hampshire and western and northern Maine. This part of the region has a colder climate with longer winters, low deer densities, large blocks of forest, and an abundance of young forest created by commercial timber management which allows it to sustain higher densities of moose than more peripheral parts of their range. Importantly, population-level effects of winter ticks have only been observed in the region's core moose range, where moose densities have been high enough to support large numbers of winter ticks.

Although winter ticks can be found on moose throughout the region, they are not impacting moose populations across the more-peripheral parts of their range in the northeast, including the rest of Vermont, due to lower moose densities which limit tick abundance. Moose numbers outside of the Northeast Kingdom have declined, but the main cause of that decline was not winter ticks. Rather, it was likely due to a combination of declining quantity of young forest, increased parasite loads (particularly brainworm linked to increasing deer densities), and fewer moose in core moose range to migrate out to these other regions.

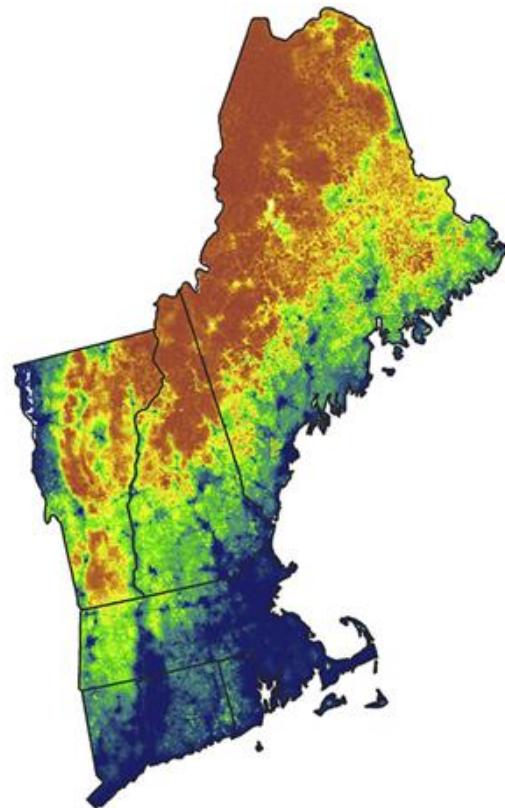


Figure 2. Estimated probability of occurrence of moose in the New England region from Pearman-Gilman et al. 2020.

Vermont Research

During 2017–2019, 126 moose (36 adult cows and 90 calves) were fitted with GPS radio collars in WMU E to monitor survival and birth rates. Results of this research clearly showed that chronic, high winter tick loads have caused the health of moose in WMU E to be poor. Birth rates were low and overwinter calf survival was poor (49%; DeBow 2020). Although observed adult female survival remained relatively good, it was lower than expected for a population without major predators. Survival of breeding age females has significant influence on population trends in long-lived species like moose.

Much of the fieldwork associated with this research concluded in 2019; however, the Department continues to monitor survival and calf recruitment in the remaining collared cows. Additionally, University of Vermont researchers continue to analyze the large amounts of data collected during this

study to expand beyond the survival and health findings. Two additional research studies nearing completion are focused on understanding 1) How winter tick impacts on moose relate to habitat use and quality, and 2) How winter ticks affect moose genetic health and stress levels. Five scientific publications related to this research are currently in the final review stages, with more in production for 2022.

For more information about moose research in Vermont and New England, visit vtfishandwildlife.com.

Population Health

Many factors affect the health of individual moose and the overall population. These include diseases and parasites (e.g., winter ticks and brainworm), habitat quality, and environmental conditions. Ultimately, how fast a population grows and how resilient it is to additional sources of mortality is determined by how long individuals can be expected to live (i.e., the survival rate) and how many new individuals are added to the population each year (i.e., the birth rate).

In the early 2000s, moose were overabundant in WMU E. They were causing significant damage to forest regeneration and their physical condition was declining as habitat quality declined. The Department actively reduced the moose population in this area to bring it into balance with the habitat and to improve the health of moose. By 2011, the population had been reduced to a level the habitat could support; however, health measures did not improve (Figure 3).

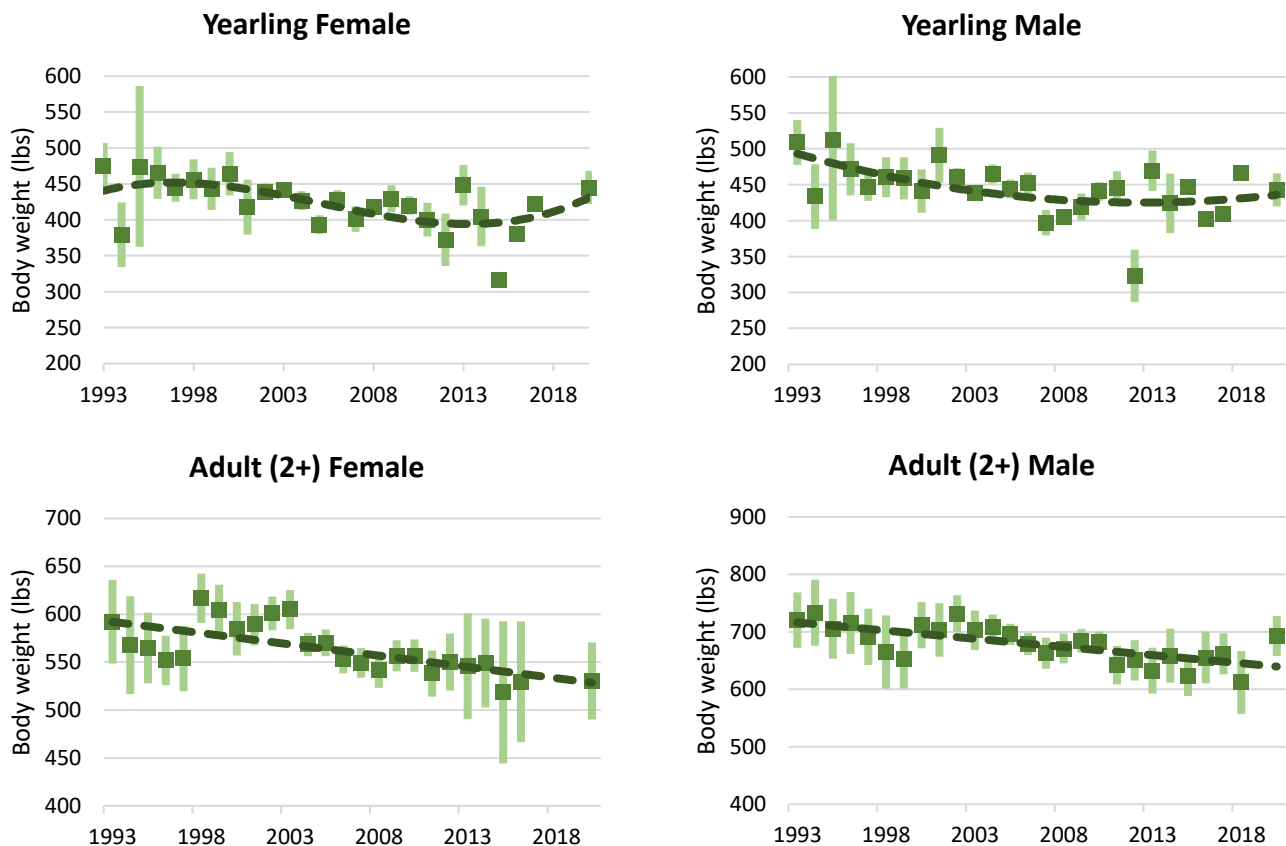


Figure 3. Field-dressed body weights of harvested moose in Wildlife Management Unit E, 1993–2020.

Moose are not currently limited by habitat in the core part of their range, including WMU E (Dunfey-Ball 2017). There is enough available habitat and adequate forage to support the current population. However, habitat quality can influence the distribution of moose on the landscape (i.e., higher densities of moose in areas with the highest quality habitat), which can influence local winter tick abundance and impacts on moose health (Healy et al. 2019). Three publications from moose habitat research in Vermont examining how habitat quality influences moose distribution on the landscape and moose health will be forthcoming in 2021.

Based on comparable moose mortality research in New Hampshire and Maine during 2013–2017, it is possible that moose in WMU E experienced winter tick epizootics in 5 of 6 years from 2014–2019. Multiple years of heavy parasitism may have weakened the overall health of adults in the population and thus made them – and their calves – more susceptible to the effects of parasitism.

Tick Impacts in 2020 and 2021

The severity of annual tick infestations is not only dependent on moose density, but also on climate, including temperature, humidity, wind, and snow. Annual variation in climate conditions results in variation in winter tick loads on moose. As long as climate conditions periodically result in reduced winter tick infestations, moose numbers can continue to fluctuate at densities that perpetuate heavy tick loads and unhealthy moose for the foreseeable future.

Vermont did not have any collared moose calves in 2020. However, survival of collared moose calves in Maine was among the best observed since they began collaring moose in 2014. Anecdotal evidence (e.g., reports of dead moose, bloody beds, engorged ticks in snowmobile trails) suggests that tick impacts were lower in Vermont in 2020. That is supported by observed summer calf recruitment by collared cows, which was the highest since collaring began (4 years). Adult survival was also slightly better. It is likely that the long winter of 2018–2019 was a factor in reducing tick abundance during the winter of 2019–2020.

Winter tick counts on bull moose harvested in October 2020 were comparable to those observed in recent years (Figure 4). While this measure provides an indication of tick abundance on the landscape, final tick loads on individual moose will be largely determined by the length of the questing period. The questing period is typically ended by weather conditions (e.g., persistent snow or freezing conditions) that kill questing winter tick larvae. If the questing period ended early in 2020, tick loads will be moderate and the chance of an epizootic in 2021 will be low. However, if the questing period lasted into December, tick loads could be much heavier. It is not clear whether snow events in mid-October and early November in WMU E were sufficient to end the questing period.

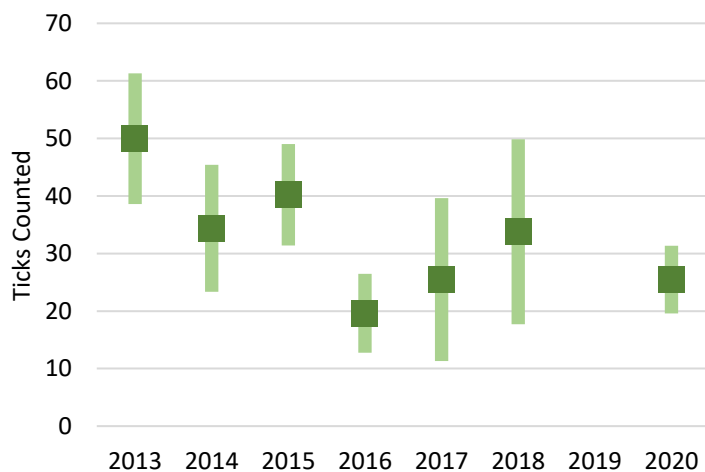


Figure 4. Winter tick counts on bull moose harvested in Wildlife Management Unit E, 2013–2020.

Population Estimates

Regional moose densities in Vermont are estimated from moose sighting rates reported by deer hunters during the November rifle season. This approach was originally developed by the New Hampshire Fish and Game Department by relating sighting rates to moose densities determined by aerial surveys (Bontaites et al. 2000). Aerial surveys conducted in Vermont allowed the Department to modify this model to better fit Vermont sighting data. Sighting rates often vary from year to year due to factors other than the number of moose (e.g., weather conditions), so a 3-year rolling average is used to smooth out some of this variation.

Using this approach, the 2020 (2018–2020 rolling average) density estimates for WMUs E1 and E2 are 2.19 and 1.71 moose/mi², respectively, which are well above the upper density objectives established in the 2020-2030 *Big Game Management Plan* (1 moose/mi²; Table 1).

Moose densities in all other WMUs remain below established hunting thresholds (Table 1).

Table 1. Moose density estimates based on sighting rates by deer hunters and density objectives and hunting thresholds established in the 2020-2030 *Big Game Management Plan*, by WMU. Density estimates are based on average sighting rates during 2018–2020.

WMU	Habitat (mi ²)	Density (moose/mi ²)			Population Estimate	
		Objective	Hunting Threshold	Current Estimate	N	(80% CI)
A	35	n/a	n/a	0.03	1	(1–1)
B	420	n/a	n/a	0.06	25	(19–30)
C	351	0.5	0.38	0.32	112	(91–132)
D1	449	0.5	0.38	0.24	108	(89–128)
D2	346	0.75-1	0.56	0.33	116	(97–135)
E1	306	0.75-1	0.56	2.19	672	(611–732)
E2	326	0.75-1	0.56	1.71	558	(492–623)
F1	108	n/a	n/a	0.07	8	(5–11)
F2	158	n/a	n/a	0.04	6	(4–9)
G	363	0.5	0.38	0.06	23	(16–29)
H	466	0.5	0.38	0.34	159	(136–182)
I	407	0.5	0.38	0.13	52	(41–63)
J1	464	0.5	0.38	0.14	64	(51–77)
J2	633	0.5	0.38	0.25	158	(133–183)
K	359	n/a	n/a	0.04	14	(10–18)
L	346	0.5	0.38	0.25	85	(59–111)
M	424	0.5	0.38	0.27	114	(88–141)
N	275	n/a	n/a	0.04	11	(7–16)
O	478	n/a	n/a	0.03	16	(13–19)
P	447	0.5	0.38	0.12	55	(39–72)
Q	219	n/a	n/a	0.03	6	(4–7)
STATE	7380				2361	(2006–2719)

The Department has received interests for moose hunting from different foresters that have documented moose browse impacts to forest regeneration in different WMUs and are interested in alleviating these impacts to protect forest health. While some of these local areas could sustain a limited moose harvest, the moose population density in all WMUs except E1 and E2 remain below the hunting threshold.

The uneven distribution of functional moose habitat (and therefore moose) in parts of Vermont is a challenge for management. The Department will be reevaluating moose habitat mapping, taking advantage of recent research efforts (e.g., Pearman-Gilman et al. 2020, and forthcoming Blouin et al., currently in review) to better reflect the area of functional habitat in each WMU. This should allow for more meaningful estimates of moose density in WMUs with less homogeneous moose habitat.

Generally, it appears that moose numbers in WMU E have been relatively stable over the past 10 years (Figure 5). Given observed survival and recruitment rates from collared moose, it is unlikely that the moose population in WMU E is currently increasing as rapidly as sighting rates suggest. However, given limited moose harvests – and almost no cow harvest – since 2016, some increase in the population can reasonably be expected. Therefore, this harvest recommendation and all population projections herein are based on a more conservative projected population estimate of 1,000 moose (1.6 moose/mi²; approximately 80% of the 2020 estimate) in the fall of 2021.

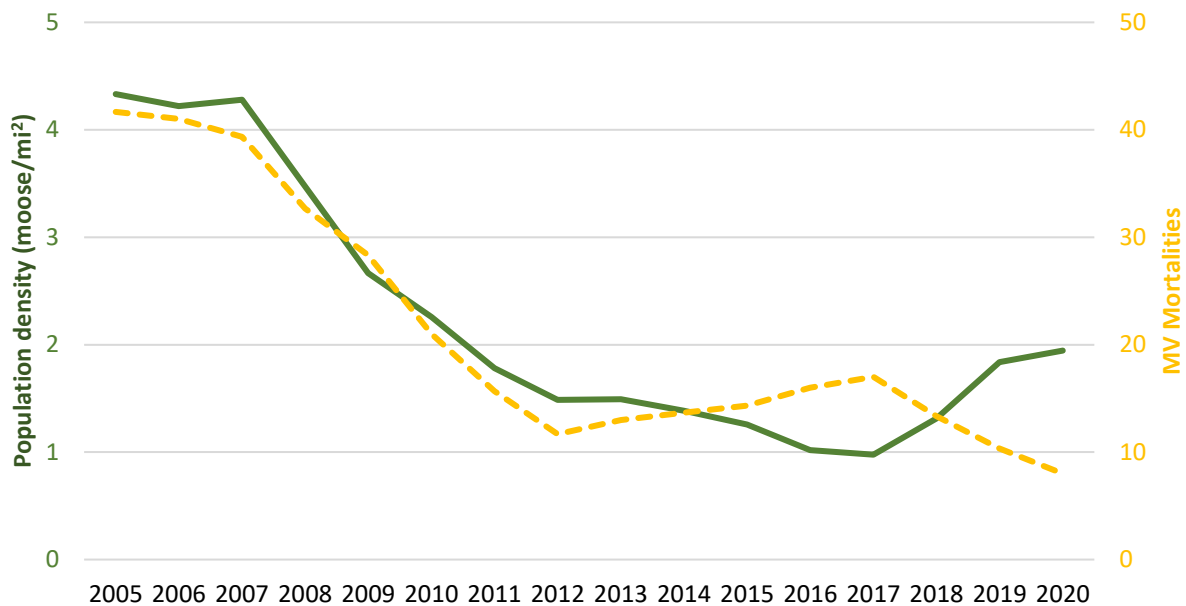


Figure 5. Rolling 3-year average moose density estimates (solid line) and motor vehicle mortalities (dashed line) in WMU E during 2005–2020. Density estimates are based on moose sighting rates reported by deer hunters.

Harvest Recommendation

The results of the moose study clearly show that the current density of moose in WMU E has been sufficient to sustain winter ticks at high levels that are negatively affecting moose health and survival. Research has shown that winter tick abundance is directly related to moose population density. Reducing the density of moose decreases the number of available hosts which in turn decreases the number of winter ticks on the landscape. Moose population reduction will be necessary to break the winter tick cycle and improve the health of moose in this region.

Without management action to reduce the moose population, high tick loads will continue to impact the health of moose in WMU E for the next decade and beyond. The resulting chronic stress, low birth rates, and high calf mortality may prevent the population from growing. However, it will be less resilient to diseases, parasites, and environmental variation, which could cause the population to destabilize. Maintaining a healthy, stable, and sustainable moose population requires action to improve moose health.

Reducing winter tick numbers directly, either by treating moose or the landscape with some form of acaricide or fungal pathogen, is not currently a viable option. Research in this area is ongoing, but the realities of treating an entire landscape or a sufficient portion of the moose population make it unlikely that this will be a practical option in the near future.

The Department recommends harvesting at least 25 adult cow moose (5% of the cow population) in WMU E during the 2021 moose hunting seasons. The Department further recommends that this be accomplished through the issuance of 60 either-sex hunting permits and 40 antlerless-only hunting permits. Given historical success rates and sex-age composition of the harvest for each permit type, this allocation is expected to result in the harvest of approximately 58 moose (range: 51–66) with an expected breakdown of 28 bulls (range: 24–32), 26 cows (20–30), and 4 calves (3–6). Approximately 60% of permits are recommended to be allocated to WMU E1 due to higher moose densities in that WMU. Approximately 25% of either-sex permits are allocated to the archery season, based on the percentage of total applications that were for this season in recent years and the need to obtain sufficient biological data during the regular season. Allocations to the auction, special opportunity, and veterans are set by statute. Permit breakdown by season, type, WMU, and special allocation is provided in Table 2.

Table 2. Recommended 2021 moose hunting permit allocations by season, permit type, and WMU.

	E1	E2	Total
Regular Season¹			
Either-sex	24	15	39
Antlerless-only	24	16	40
Archery Season			
Either-sex	9	6	15
Auction²	choice		3
Special Opportunity³	choice		3
TOTAL			100

¹ Veteran permits are a priority draw for the first 5 regular season permits.

² Auction permits are either sex and winners have choice of season and WMU.

³ *Special Opportunity Permits are either sex and allow choice of season and WMU.*

Population Projections

Based on survival rates and calf recruitment observed from collared moose during 2017–2020, the moose population in WMU E would be expected to remain at its current density in the absence of any moose harvest (Figure 6), consistent with observed population trends over the past 10 years (Figure 5). If winter tick impacts are relatively severe each year (as observed during 2017–2019), tick-induced population declines, with no moose harvest, would take 12 years to reduce the population to 1 moose/mi². This presumably represents an unrealistic, worst-case scenario, and would be inconsistent with the observed population trend over the past decade. Further, detrimental effects on moose health will remain for several years after moose densities are reduced to levels that no longer support high tick loads. Even under this worst-case scenario, taking no management action will perpetuate the current, unhealthy state of the moose population in WMU E for many years and would be inconsistent with the Department’s established objective of managing for a healthy moose population. Importantly, 65% of Vermont residents support maintaining a smaller moose population through hunting if it reduces the number of moose that die each year from winter ticks. Only 15% oppose this approach (Responsive Management 2019).

Starting with a conservative projected population estimate of 1,000 moose in WMU E (E1 and E2 combined) in the fall of 2021, the harvest of 25 adult female moose annually is expected to reduce the population to 1 moose/mi² in 9 years, assuming tick impacts similar to the previous 4 years, and no improvement in birth rates or survival rates (Figure 6). If tick impacts are relatively severe each year, it would take 6 years at this permit allocation to reach 1 moose/mi². Conversely, if tick impacts are reduced, as in 2020, it would take 11 or more years at this allocation to reach 1 moose/mi².

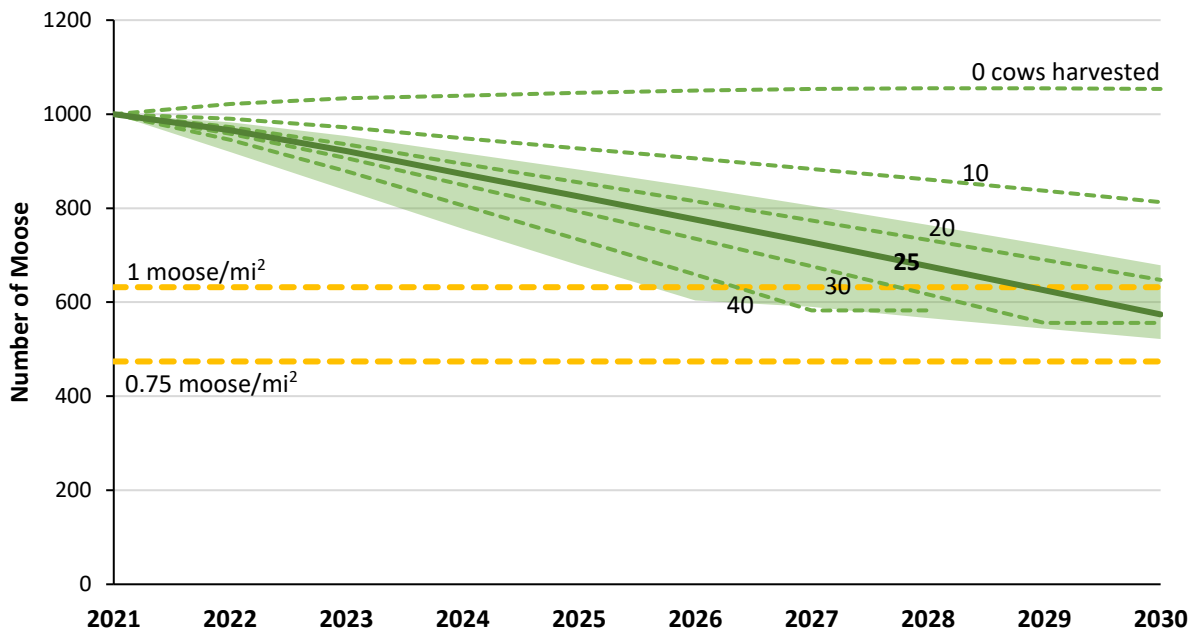


Figure 6. Moose population projections in WMU E at varying annual cow harvests and winter tick impacts, based on a starting population of 1,000 and survival and birth rates from radio-marked moose. Projections assume consistent harvest each year and no improvement in survival or birth rates. Green

shaded area represents the potential range of variation due to varying winter tick impacts at the recommended harvest of 25 cows.

Given the poor health of the moose population and a clearly identified cause, action to address this issue is warranted. The number of permits allocated in 2020 was not sufficient to reduce the moose population in WMU E, even if 10 cows had been harvested, as expected, instead of 5. That conservative allocation was reflective of uncertainty around recent increases in population estimates, lower survival and birth rates observed from collared moose during the first 3 years of monitoring, and very low permit numbers in previous years.

The 2021 harvest recommendation is sufficient to reduce the moose population and thereby reduce winter tick impacts on moose in WMU E. However, it reduces the population slowly enough to allow for adjustments to the harvest, if necessary, even if the actual current density of moose is lower than 1.6 per square mile (1,000 moose). Ideally, moose health should be improved as quickly as possible. However, low survival and birth rates observed from Vermont moose, and broader, regional declines in moose populations justify a continued cautious approach at this time. Management of moose in WMU E and throughout Vermont must continue to be adaptive and respond to new information as it becomes available. If continued monitoring indicates that health, survival, and birth rates remain poor, and the moose population in WMU E remains above the objective, a more aggressive approach may be necessary to improve the health of the region's moose.

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