February 2, 2024

Vermont Department of Forests, Park, and Recreation
c/o Brad Greenough
Stewardship Forester
5 Perry Street, Suite 20
Barre, VT 05641-4265
Submitted via email: ANR.WRMUPublicComment@vermont.gov

Dear Mr. Greenough,

Please accept the following comments from Vermont Natural Resources Council, Audubon Vermont, and Vermont Center for Ecostudies regarding the Draft Worcester Range Management Unit (WRMU) Long Range Management Plan (LRMP).

Audubon Vermont (Audubon) is a state program of the National Audubon Society, a nonprofit organization with a mission of protecting birds and conserving the places birds and people need to thrive. Vermont Natural Resources Council (VNRC) is a nonprofit organization working to protect and enhance Vermont's natural environment, vibrant communities, productive working landscapes, and rural character and unique sense of place. The Vermont Center for Ecostudies (VCE) advances wildlife conservation in Vermont and across the Americas through scientific research, long-term monitoring, and community engagement. VNRC's, Audubon's, and VCE's interests in the WRMU LRMP are to promote a suite of management and conservation approaches to optimize benefits for biodiversity, wildlife habitat, climate resilience, carbon storage, natural resource and water quality protection, and the public's use and enjoyment of the WRMU.

We appreciate that the Vermont Agency of Natural Resource (ANR) provided the opportunity for public comment on the WRMU LRMP. We have a shared interest in the benefits of diverse management options, including providing wildlife habitat for a diverse suite of species, maintaining habitat connectivity, promoting soil health, protecting headwater streams, connected wetlands and water quality, offering sustainable recreation opportunities, and promoting forest health and resilience, especially in response to climate change. We support management options that promote natural areas and reserves of old forests as well as opportunities for ecological forestry and improvements to forest health through well planned sustainable forest management.

Overall, the draft WRMU LRMP presents a comprehensive and thoughtful approach to natural resource management on public lands that addresses natural communities, the protection of

ecologically sensitive areas, wildlife habitat and biodiversity, ecological forestry principles, fisheries and water resources, forest health, historic and scenic values, and recreation. Considerations related to climate change are also included along with monitoring and evaluation plans. We commend ANR for taking such a holistic view of the natural resources within the WRMU and bringing some of the best available science, including inventories of natural communities, to bear in making management decisions. In particular, we found the natural communities inventory and associated descriptions to be incredibly helpful and we applaud the ANR for basing management decisions around the ecological significance of these communities.

This plan can demonstrate how public lands can be actively and passively managed to achieve a diversity of biodiversity and management goals. Situations such as this, where there is a high degree of oversight and accountability, offer a unique opportunity to promote ecological forestry strategies that mimic natural disturbance dynamics while maintaining, and even enhancing, the health and integrity of a vitally important, publicly-owned large contiguous block of forestland. Similar opportunities are not necessarily possible on private lands. At the same time, the plan presents an opportunity for the retention and support of natural areas and reserve areas, where natural processes drive the development of forest conditions over time, not people. This is increasingly important today where there is a greater understanding of the importance and values of old forests to achieving biodiversity and climate-related goals. The WRMU can support multiple strategies and approaches to forest management and we recognize that finding the right balance is not easy. We commend the ANR for trying to lead with an ecologically focused approach while meeting the diverse obligations and values inherent in public land management.

While we generally support the plan presented by the State, we wish to use this opportunity to share comments, concerns, and recommendations to the proposed plan to better articulate intent and maximize the opportunities afforded within.

Landscape Context: We support the approach to combine the management plans for Elmore State Park, C.C. Putnam State Forest and Middlesex Notch, Middlesex, and Worcester Woods Wildlife Management Areas into one comprehensive management unit. However, we believe the scale, diversity, and quality of the natural resources in the WRMU demand a more robust landscape scale perspective and intentionality than is described in the current draft plan. We believe that considering the landscape context of the WRMU is an essential starting point for management and should guide decision making at all scales during the development and implementation of the plan.

A review of current literature illustrates how the WRMU is an irreplaceable landscape area that anchors a network of resilient and connected lands in northern Vermont.

- Vermont Conservation Design (VCD) describes the WRMU and surrounding lands as a "Highest Priority Interior Forest Block" and "Highest Priority Habitat Block." More specifically, the Staying Connected Initiative, an international public-private partnership that works to maintain landscape connectivity across the Northern Appalachian/Acadian Forest region, has identified the WRMU as the western edge of the Worcester Range to Northeast Kingdom linkage, covering roughly one million acres in Vermont. We appreciate the incorporation of this linkage into the draft LRMP. Just west of the WRMU

lies the Shutesville Hill Wildlife Corridor, the only viable connection between the Green Mountains and the Worcester Range and a critical component of the connection between the Tug Hill Plateau of New York and the Canadian Maritimes. Although mentioned peripherally in the LRMP, including in the general management strategies, we recommend speaking more directly to the ecological importance of maintaining this connectivity.

- The WRMU forest and surrounding forest block has been designated by the National Audubon Society as the 290,389 acre Mansfield/Worcester Priority Forest Block. This designation highlights the forest's importance as core breeding and post breeding habitat for priority birds in the Atlantic Northern Forest Bird Conservation Region (BCR 14). As such it is recognized as one of the critical forest blocks within the Atlantic flyway.

Natural Areas/Ecological Reserve Areas/Old Forest: The WRMU includes an existing 4,057 acre Worcester Range State Natural Area in addition to the newly proposed 5,512 acre District Designation Highly Sensitive Management Area. These are important designations on the WRMU to support natural conditions, headwater protection, and old forest conditions. Current efforts to promote community resilience and biodiversity protection under Act 59 identify Ecological Reserves as one conservation strategy to achieve those goals. An Ecological Reserve is defined as "an area having permanent protection from conversion and that is managed to maintain a natural state within which natural ecological processes and disturbance events are allowed to proceed with minimal interference." Much of the WRMU will likely meet the diverse conservation categories in Act 59 to promote biodiversity and landscape resilience, and although the current Land Management Classifications presented in the plan do not include an Ecological Reserve category, we believe other classifications that do exist set the stage for these goals to be met.

- The Highly Sensitive Management (HSM) category comprises 9,650.8 acres, or 52% of the classified acreage, of the WRMU. HSMs are defined as "In general, these areas will develop under natural processes and natural disturbance regimes and will not be subject to active forest or habitat management." The HSM should be consistent with the Ecological Reserve category to support permanent and durable protection. We recommend designating the 5,512 acre District Designation Highly Sensitive Management Area as a State Natural Area consistent with 10 V.S.A. Section 2607. This would enlarge the existing and adjacent Worcester Range Natural Area and provide a more diverse representation of matrix forest types (northern hardwood, red spruce-northern hardwood, etc.). To the degree a full representation of high and low elevation forest types are not represented in the HSM unit, we recommend maximizing the opportunity for their inclusion and the durable maintenance of diverse forest types in a natural condition through NRA designation.
- In addition to the opportunities to assist with achieving Ecological Reserve goals under Act 59, HSMs also provide a stage for protecting sensitive headwater areas and achieving old forest targets as described in Vermont Conservation Design (VCD). In the Northern Green Mountain biophysical region, VCD calls for 95,000 acres of old forest, with a minimum patch size of 4,000 acres. The HSM and NRA designations would help achieve this goal, and we also recognize several of the Special Management Areas should also assist in meeting VCD old forest targets.

Timber Harvests and Vegetation Management: Active management within the WRMU is anticipated on 10% of the WRMU, and approximately 22% of the available land that is deemed appropriate for vegetation management, over a twenty year period. This amounts to the average management of 139 acres a year. Forest vegetation management is an important strategy for achieving the multiple goals as stated in the draft LRMP. Utilizing ecologically-based silvicultural treatments has the greatest opportunity to promote all of the ecological values and associated ecosystem services while simultaneously providing for locally sourced forest products.

- Each of the 13 planned commercial vegetation management treatments included in the draft LRMP describe the use of uneven-aged silvicultural systems. This approach is highly supportive of developing a compositionally and structurally diverse forest condition over time. The General Strategies and Tactics presented on page 124 of the plan include examples of even-aged silviculture; regular shelterwood, seed tree, and possibly, patch cutting (depending on definition). We recommend removing these even-aged systems from the list of options and replacing with examples such as those provided in *Silviculture with Birds in Mind* (Audubon VT and VT Dept. Forests, Parks, and Recreation 2011) and *Ecological Silviculture: Foundations and Applications* (Palik et al. 2021).
- Gap sizes can be variable in ecological/uneven-aged silviculture, ranging from 1/10 acre up to 2 acres. Gap sizes >1 acre, particularly when multiple gaps occur within a small area, are likely to move structural conditions from closed-canopy mature forest to open-canopy young forest. While a component of young forest on the WRMU is deemed appropriate (to be discussed in the Wildlife and Habitat section of this letter), we recommend the majority of gap sizes to be <1/2 acre in size to better align with natural process dynamics of the matrix northern hardwood forest type.
- We appreciate the incorporation of timing of silvicultural treatments, winter vs summer, to support other management goals such as water quality protection, desired species for regeneration, and reducing conflict with recreation. We encourage the added consideration of harvesting impacts to nesting songbirds. When and where possible we recommend harvesting outside of the primary breeding season (May-July).
- Non-native and invasive plants and pests are among the greatest threats to supporting biodiversity and forest health. The draft LRMP describes current and potential future occurrences of these plants and pests within the WRMU, however, the current plan provides little detail on how current or anticipated presence of non-native and invasive plants and pests will influence management. We recommend additional detail on non-native and invasive plant management scenarios along with a description of how exotic pests, such as emerald ash borer, will influence management during the planning period covered by the plan.
- Finally, while we support the application of uneven-aged silvicultural approaches to meet vegetation management goals, we find that the draft LRMP lacks enough background and information related to the rationale for selecting various treatment units to make completely informed comments on individual treatment areas. We recognize that the LRMP is a high level planning document, and areas will receive additional inventory and review to develop specific silvicultural prescriptions for each treatment. We understand

that the LRMP can't provide this level of detail, but we believe it is valuable to share this kind of information with the public, and we assume a forthcoming rule related to state land management will further flesh out the details for vegetation management planning. If it is not possible to sync the final LRMP with the forthcoming rule for public land management, we strongly encourage the ANR to provide additional information in the LRMP about the goals for conducting vegetation management in individual treatment units, such as the example provided in the FAQ. Allowing the public to see the desired goals for the units, such as promoting more structurally complex forests, could promote greater understanding of the active management components of the LRMP and allow the public to provide more feedback on the proposed management areas, and the selected rational and general approaches for managing in the selected units. Since forest inventory data and site visits have been conducted, we suggest amending the LRMP to provide more detailed information about age classes and forest composition and condition. We would value the opportunity to comment on this information, especially if another round of public comment is afforded.

Wildlife and Habitat Management: From high-elevation montane spruce/fir forest to lowland wetlands, the WRMU provides habitat that supports a diverse wildlife community. For many who enjoy the WRMU and care about its future, wildlife habitat may be one of the more important topics to address and provide consideration for.

- Young forest, also known as early-successional habitat, is a vital habitat condition on the landscape that supports a unique suite of wildlife species. This is a condition that is ephemeral in nature and typically occurs as a 1-20 years post-disturbance event. We appreciate the LRMP's recognition of the importance of this habitat condition and mention to increase the amount over current levels in the WRMU. We also appreciate that ANR will work to opportunistically identify places where young forest creation can be incorporated into uneven-aged management treatments and/or be focused on areas that have been previously disturbed. In uneven-aged management, group (gap) sizes > 1 acre may create conditions suitable for some young forest using wildlife species. Others may require larger gaps of 2 acres or more. In order to accommodate a full suite of wildlife habitat with interests for old forest conditions, we recommend that young forest creation through gaps >1 acre in size account for no more than 312 acres, or ≤2% of the total WRMU, at any given time. Extreme weather events which can naturally create young forest conditions are increasing in frequency. Considering this, indicates a recognition that the VCD target of 5% for the Northern Green Mountains biophysical region, may still be achieved. As a note, the introduction of non-native and invasive plant species into areas of young forest is high due to associated disturbance and creation of open canopy conditions. It is imperative that resources be allocated to monitoring for and responding to situations where this may occur.
- We also want to recognize that the LRMP would manage for 15,600 acres of uninterrupted forest representing a significant ecological entity for interior forest birds and species that rely on intact, unfragmented habitat. We commend forest management efforts that, first and foremost, maintain the current mosaic of unfragmented interior forest across the landscape, and from there, where lacking and opportunity exists, work to restore forest complexity and species diversity at various resolutions and scale. We value

a balanced approach that works to protect diverse and rare conditions, where they exist, through passive management, but also feel that in some cases, active management (specifically, forest manipulation through timber harvests) can serve as an effective strategy that restores forest complexity vital for improved forest bird habitat and greater biodiversity. Here we see an opportunity for ANR to demonstrate this balance and show the role that well thought out, science-based, active management can play in artificially accelerating the development of old forest conditions in the places where these conditions once existed. There is a need for accelerating the creation of old forest conditions because the climate is changing and birds are disappearing at a rate faster than the forest has time to naturally develop into old forest and the conditions necessary to address and respond to these more immediate existential threats.

- In the climate change adaptation section of the draft LRMP, deer browse patterns affecting forest regeneration are named as an immediate climate change impact due to reduced snow winter depths. There is a need to balance deer habitat management with forest regeneration and to ensure that if deer browse impacts forest regeneration that it is addressed. We recommend listing browse pressure as a condition to inform management planning, monitoring browse of regenerating forest patches, and considering alternatives to only recreational hunting, as currently regulated, to manage the deer herd if regeneration is affected.

Water Quality

- The Water Resource Section of the LRMP addresses the importance of headwaters and value of clean water, including Lake Champlain. The LRMP could provide more specific information about how the proposed Land Management Classifications address the importance of retaining healthy forests for water quality and supporting natural stream function for climate resilience.
- The LRMP does not specifically address how the LRMP relates to the Lake Champlain TMDL, how the proposed activities would impact, or be designed to mitigate impacts to, stream health (sedimentation, quality, and habitat), or planned avoidance and restoration measures with the TMDL and reduction of flood risk to downstream communities (including Waterbury and Montpelier) in mind. We recommend additional information is provided to address these.

Forest Operations and Infrastructure

- It is not clear to us if new road construction is anticipated as part of vegetation management on the LRMP. We do not support the development of new permanent roads that could fragment the forest, and we have an overall concern for how proposed treatment areas will be accessed in areas where there are no roads. For example, how will skid roads be designed and laid out and how will these areas (some well above 1,500 ft and on steep slopes) protect small, high gradient, cold-water streams? We have a specific concern related to wetlands off Bear Swamp Road, and headwater streams off of Brownville Road (nine headwater streams originate within the proposed harvest area). If new roads are proposed, which we do not support, the public should have the opportunity to weigh in on the proposed location and extent of roadbuilding.
- The Infrastructure Section should address proposed road design and mechanized equipment access for timber harvest areas. This section speaks to the need to address

some of the existing infrastructure issues on the LRMP, but doesn't provide any commitment to how additional infrastructure will be planned so as to avoid issues that are currently a problem (erosion, undersized culverts, bridge maintenance, etc.).

Recreation

In general, we support the concept of not creating new recreation corridors, or recreation zones where there are currently no recreational opportunities present. We do support efforts in the LRMP to disperse some of the recreational impacts and contain growth in areas that already have a density of trails (although any new development to increase density should go through a robust review process to reduce impacts to sensitive or critical habitat and water quality). It is our understanding that any new major trail proposals would have to go through a plan amendment process with public input, which we support. Our understanding is there would be no change to infrastructure associated with the Skyline Trail (which goes through Bicknell's Thrush habitat), which we support. We also understand there is a desire to improve or formally recognize mountain bike trails through C.C. Putnam State Forest/Rec Area 5: Brownsville. To the degree that these trails have not been evaluated for ecological impacts, we recommend conducting such an evaluation. Finally, we still do not know much about the effects of mountain biking on birds. Perhaps there is an opportunity to research and evaluate the effects of mountain biking and other recreational changes on the forest bird community.

Thank you for the opportunity to comment on the Draft LRMP. Our public lands are highly valued in Vermont and we appreciate the amount of thought, field work, and hard work that goes into the development of a plan of this nature. The Worcester Range is a vitally important large, unfragmented block of forest that is cherished by residents and visitors. Our organizations deeply value the opportunity to comment on the long-term management plan for the lands in the WRMU. Please do not hesitate to reach out to any of the listed signatories below if you have questions or want to discuss our comments.

Sincerely,

Vermont Natural Resources Council
Brian Shupe, Executive Director
Jamey Fidel, Forest and Wildlife Program Director, General Counsel
Karina Daily, Restoration Ecologist

Audubon Vermont
Jillian Liner, Interim Executive Director, Director of Conservation
Steve Hagenbuch, Senior Conservation Biologist and Forester
Tim Duclos, Healthy Forest Program Senior Associate

Vermont Center for Ecostudies
Susan Hindinger, Executive Director
Ryan Rebozo, Director of Conservation Science
Steve Faccio, Conservation Biologist