



255 Sherman Hollow Road
Huntington, VT 05602
Tel: 802-434-3068
Vermont@audubon.org
vt.audubon.org

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To: Senate Natural Resources Committee
From: Jim Shallow, Managing Director
Re: H.233

Thank you for the opportunity to provide comments on H.233. I am here today representing Audubon Vermont. As a program of the National Audubon Society, we are working in Vermont to protect birds and the places they need, today and tomorrow, throughout the Americas using science, advocacy, education and on-the-ground conservation. We collaborate with our grassroots network of seven Audubon chapters, and hundreds of volunteers, 5,000+ members to deliver conservation programs across the state. At the hub of this network is our 255-acre Green Mountain Audubon Center which hosts wildlife and nature programs for people of all ages and backgrounds.

I want to speak to the global significance of our forest and how advances in technology have given us the ability to use established science that recognizes the impact forest fragmentation has on wildlife worldwide and combine it with GIS to create accurate maps of priority forests. Maps that are now easily accessible by planners, developers and local citizens.

The Atlantic Northern Forest of Vermont, New Hampshire, Maine and New York is home to the greatest diversity of breeding bird species in the continental United States.¹ Species like the Black-throated Blue Warbler, Canada Warbler, Wood Thrush, Bicknell's Thrush, and dozens more have in some cases 90% of their global population breeding in this region. Vermont's large forest blocks are a globally important resource. Millions of birds representing dozens of species of birds migrate thousands of miles to breed in our forests. It is no surprise that our state bird the Hermit Thrush is a forest bird. But the populations of many of these seemingly-common species are declining at alarming rates. As a group, eastern forest birds have declined by 32%, due in part to the loss of forest habitat.² Our state bird has declined by 63% over the past 40 years.³ Like the proverbial "canary in the coal mine," these declines are indicative of negative impacts across a range of biodiversity. Vermonters appreciate birds as evidenced by the fact that the 53% of Vermonters watch birds and other wildlife which leads the nation and adds \$288 million to our economy.⁴

Recognizing the role Vermont's forests have in maintaining neo-tropical migratory bird populations, Audubon Vermont's Forest Bird Initiative is implementing a broad range of strategies to address the threats to forest breeding birds in our state and the neighboring Northern Forest states.⁵ Keeping forest birds common in our region requires maintaining and stewarding a network of large blocks of contiguous forests that are biologically and structurally diverse, as well as healthy and resilient. Our Forest Bird Initiative works directly with landowners, foresters, and other partners to support forest

¹ Vermont Biodiversity Report and Partners in Flight Landbird Conservation Plan

² State of the Birds Report 2014

³ Common Birds in Decline, NAS 2007

⁴ 2011 National Survey of Fishing, Hunting and Wildlife Associated Recreation.

⁵ See: <http://vt.audubon.org/forest-bird-initiative-1>

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management and policies that benefits the suite of priority birds in Vermont and along the Atlantic Flyway. We provide technical assistance for landowners, workshops and trainings, demonstration timber harvests designed with birds in mind, and promoting public policies and programs that protect Vermont's forests and wildlife. We have worked with over 400 landowners who collectively own 280,000 acres and trained 200 foresters who manage over million acres in Vermont and New Hampshire. Our work with these individuals, families and local businesses has shown us that Vermonters care about birds and providing them with high quality habitat. However, we also recognize that while strong stewardship of our forests is critical to maintaining and improving habitat conditions, we must also address the threat of forest fragmentation.

Globally and here in Vermont forest fragmentation is recognized as a threat to forest birds. Our State Wildlife Action Plan identifies forest fragmentation as a significant threat to wildlife diversity in Vermont. Likewise, the Department of Fish and Wildlife's "Conserving Vermont's Natural Heritage" (a guide for community planning) lists fragmentation as one of the seven contributing factors of habitat degradation in Vermont⁶. As forest blocks are broken-up breeding habitat becomes less productive due to increased pressure from predators, cowbird nest parasitism, and invasive species. Audubon Vermont supports providing resources and incentives to landowners that will help them keep our forests as well managed forests. It is critical that Vermont continue to maintain a strong Use Value Appraisal program that allows landowners to manage forests for a range of economic and ecological benefits and support funding for forest land easements or full fee acquisition.

The 2015 Forest Fragmentation report recommended a number of strategies to support forest health, integrity and productivity. It recommended we update Act 250 to support forest health and viability because, "Currently, Act 250 does not directly address the impacts of forest fragmentation on forest health, integrity or function, much less the economic viability of working forests."⁷

Audubon supports the intent of H.233 to modernize Act 250 to address forest fragmentation by creating new criteria under Criteria 8 that would specifically address impacts to forest blocks. Requiring Act 250 regulated development to avoid, minimize or mitigate impacts on forest blocks would go a long way toward addressing forces contributing to forest fragmentation.

So how would Act 250 applicants know if their proposed project would need to address forest fragmentation? The bill's Forest Block definition would suffice. However, in recent years, the State of Vermont has developed a GIS data layer for habitat blocks which is easy to access at the Agency's website using the Natural Resources Atlas. Furthermore, the Agency's Bio-finder 2016 Mapping tool is a powerful data set that can help an applicant pinpoint whether or not a project is in a forest block. (<http://biofinder.vt.gov/>) Referencing this tool in the forest block definition would help provide clarity to applicants as to whether their project needs to avoid, minimize or mitigate impacts on a forest block.

For years, the science of GIS has been refining ways to identify and rank forest blocks. At Audubon, I led a forest block analysis project that used land cover data and breeding bird surveys to identify and rank forest blocks in the Atlantic Flyway. This analysis was used by the US Important Bird Areas committee to

⁶ Conserving Vermont's Natural Heritage, A Guide to Community Based Planning for the Conservation of Vermont's Fish and Wildlife and Biodiversity. VT Fish and Wildlife Department. 2004. page 20.

⁷ See 2015 Vermont Forest Fragmentation Report, Vermont Department of Forests Parks and Recreation, April 2015. page.51.

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identify global and continental forest bird important bird areas. In Vermont, I participated in a working group led by Eric Sorenson and John Osborne to develop Vermont's habitat block map. This process identified forest blocks by using 2006 land cover data from NOAA Coastal Change Analysis Program, roads and other land use data. The analysis buffered the roads so that the effects of roads and development are accounted for depending on the size of the road or intensity of the adjacent development. In Bio-finder 2.0, the Habitat Blocks were used to develop a data set of Interior Forest Blocks. I have attached the Component Abstract from the Interior Forest Blocks. You will see that the definition of an interior forest block tracks well with the definition you have used in H.233. The Interior Forest Blocks are ranked by biophysical regions in Vermont. This ranking allows for a stratified prioritization so that a networked of blocks throughout Vermont are identified. Having a well dispersed network of forest blocks is important not just for wildlife, but also for helping Vermont's forests be more resilient in the face of climate change.

This data set represents an accurate and defensible map of forest blocks in Vermont. As stated in the Bio-finder 2.0 component abstract, "Interior Forest Blocks are spatially accurate. They are not modeled but rather based on land use cover data.... This data set excludes road, development and agriculture, ensuring that only unfragmented habitat is included."⁸ I believe incorporating this data set into your definition would give applicants and communities the clarity they need to design projects and evaluate the potential impacts to priority forest blocks.

Thank you for your attention to maintaining Vermont's forested landscape. Audubon Vermont and our members look forward to working with you to keep Vermont's forests as forests.

⁸ Biofinder 2.0 Component Abstract: Interior Forest Blocks, Vermont Agency of Natural Resources 2016 release.