

Mainland Moose Conservation Initiative

Engaging Nova Scotians in Citizen Science
Action for Moose Conservation, 2024-2025



Progress Report



Fig 1. Ingram River Proposed Wilderness Area Guided Hike and Moose Workshop

Project Purpose

To enhance public awareness of the issues faced by mainland moose and their habitats, and to increase moose sighting reports, in 2024, we set out to engage Nova Scotians at events designed to improve their moose scat and track identification skills, through a survey asking them about their experiences with moose and in moose habitat, and through citizen science action in a trail camera monitoring network.

Summary

- 1,512 individuals engaged in educational workshops or in direct citizen science action. 7 more events planned for 2025.
- 25 volunteers monitoring 20 trail cameras on the Chebucto Peninsula and 10 in Cumberland/Colchester. 30 more cameras planned for launch, mostly in Cumberland/Colchester, in 2025.
- 593 written responses to our public knowledge survey revealing potential geographic trends in moose sightings, 24 new sighting reports, and a concerning overall lack of sighting reporting, across the province.

Results

Thanks to the support of our Species At Risk Fund donors, the Nova Scotia Habitat Conservation Fund, and Wildlife Habitat Canada's Community Conservation Action program, from April 2024 to March 2025, we were able to facilitate a total of 12 events across Nova Scotia, grew and maintained a network of volunteer trail camera stewards, and hosted a public knowledge survey, engaging a total of 1,512 participants in guided hikes, public talks, verbal or written survey responses, and through direct citizen science action. Participants learned about mainland moose habitat needs, behaviours, and the threats that have led to the current status as an endangered species, learned how to identify moose tracks and scat, report sightings, and gave us with insights into local-level environmental change and participant assumptions and feelings about moose.



Fig 2 (top left) Mainland Moose Conservation Initiative Outreach Activities 2024-2025. Modified from Government of Nova Scotia. (n.d.). Counties of Nova Scotia – Mi'kma'ki (Map No. CMC246-02). GeoNOVA. Retrieved from <https://geonova.novascotia.ca> (imbedded images) Participants at Wentworth Valley event Oct 4th, 2024



Fig 3. Participants at Ingram River event, May 4th, 2024

Event Highlights

- 12 events engaging 747 Nova Scotians: 6 (347) in Halifax, 2 (61) in Cumberland/Colchester, 3 (330) on the South Shore and Annapolis Valley area, 1 (9) in Guysborough.
- 11 new moose sighting reports, most (10) of which resulted from engagement with citizens at educational events who either described a recent sighting to staff at the event or reported it to staff or directly to the province after the event.
- Participant feedback: “It was great to meet you on the hike. Environmental groups need to make a difference for wildlife and natural spaces in the coming years. You already contributed by doing your project and taking part in things like the talk and hike. I filled out the survey, hoping you get a lot of responses.” -Cumberland County Hike Participant

Trail Camera Network Highlights

- 25 volunteers monitoring 20 cameras on the Chebucto peninsula and 10 in Cumberland/Colchester.
- 11 new moose sighting reports, one of which was directly related to engagement with trail camera volunteers, reported to the provincial hotline.
- Data-sharing agreement with Department of Natural Resources in early 2025, allowing for more strategic placement of cameras in future project iterations.

Public Knowledge Survey Highlights

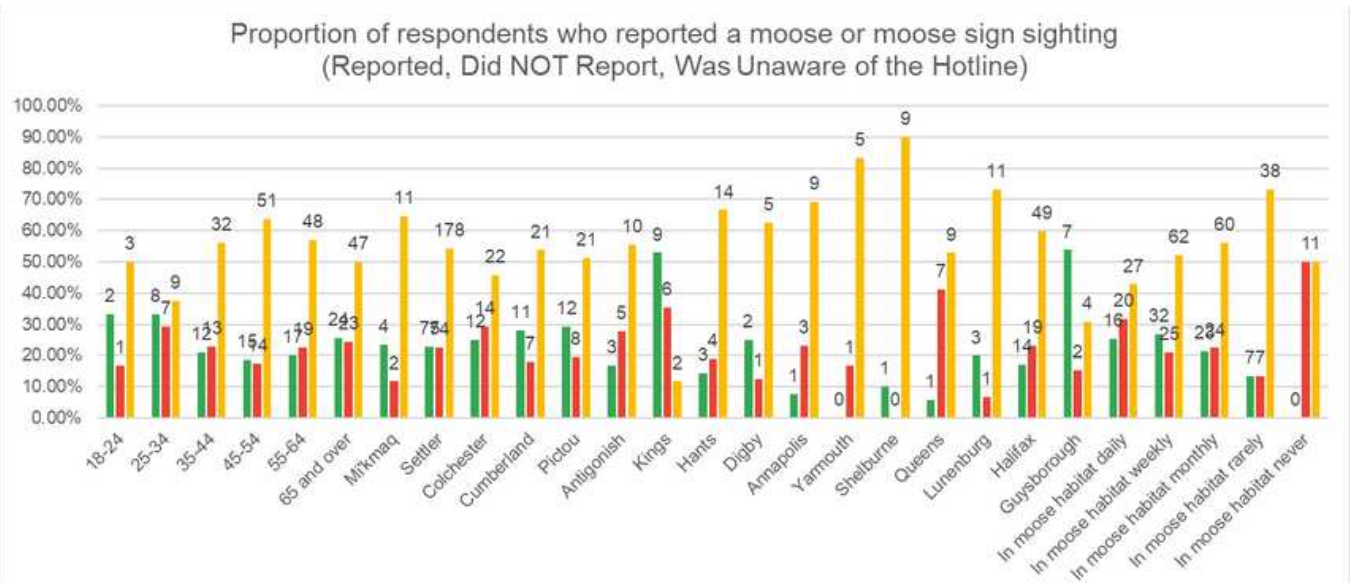
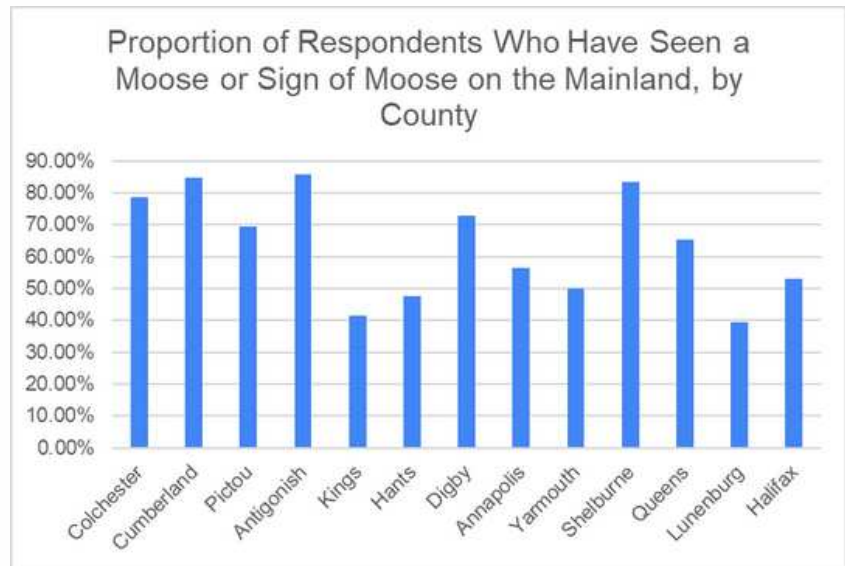
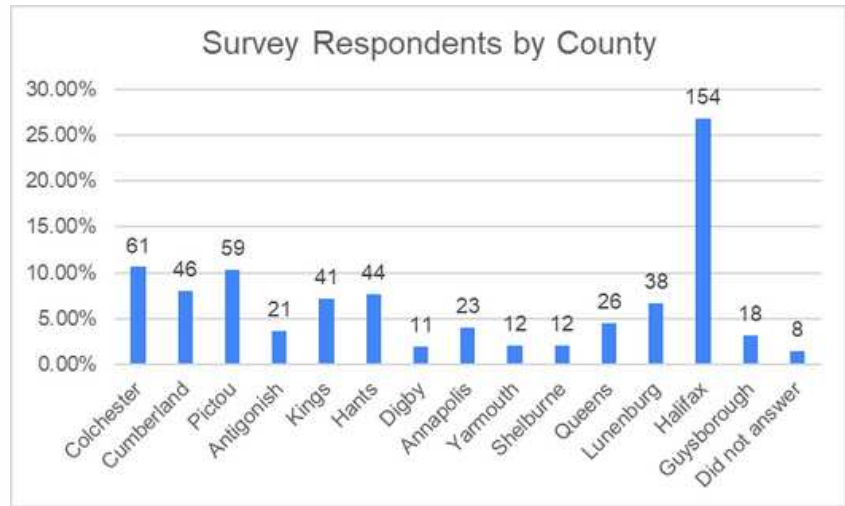
- 76% of Nova Scotians were confident they could reliably identify moose tracks or scat. Older (45+) respondents and those from Antigonish, Queens, Pictou, and Colchester counties may have been more likely to respond with confidence in their identification skills but our sample sizes across geographic areas were not large enough to allow for statistical analysis of this possible trend.
- 61% of Nova Scotians have seen at least one moose on the mainland over their lifetime but all suggested that their sightings have become less frequent. Very few young Nova Scotians (18-24) responded to the survey but over half of those had never seen a moose on the mainland.

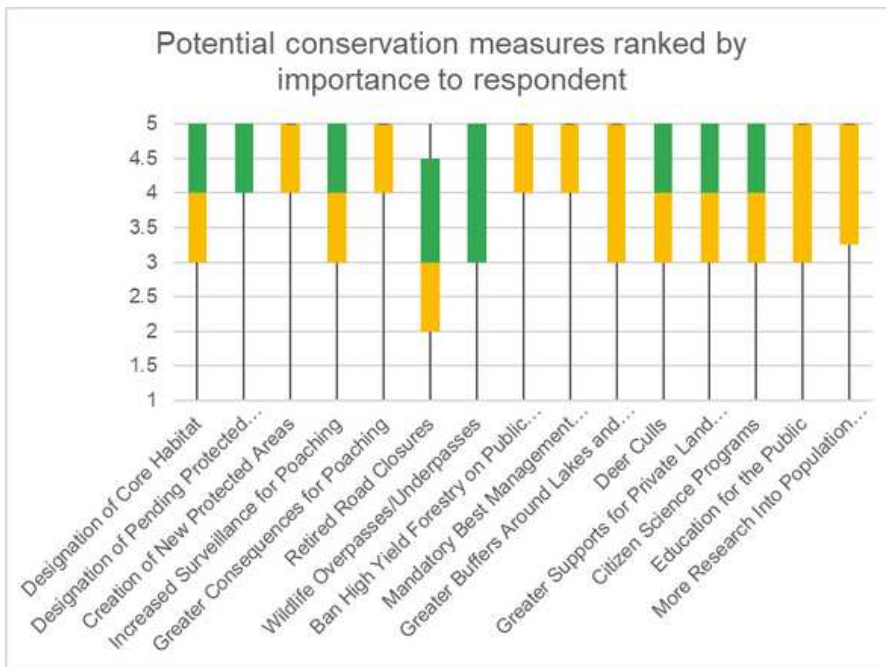
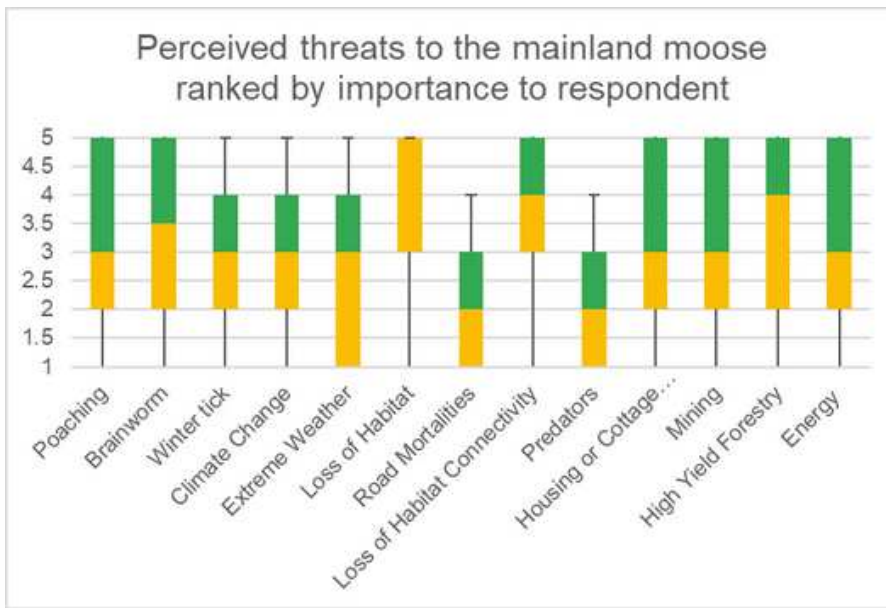
- Being in the woods more often may impact the likelihood of seeing a moose or moose sign but this effect levels out once a respondent indicated they were in the woods at least monthly. Low sample size prevented statistical analysis of this potential trend.

- Deer sightings are common and frequent across the province. Due to this lack of variability we were not able to determine if respondents who were more likely to report seeing deer were any more or less likely to also report seeing moose or moose sign.

- Some event attendees and comments to our social media posts discussed the potential for black bear predation as an important threat or possible local reason for low moose

sighting reports. However these commenters did not all fill out the survey, which overall showed lower public concern about predation. We did not analyze social media commentary.





- 77% of respondents who had seen a moose or moose sign on the mainland did NOT report their sighting to the provincial hotline. 22% chose not to make the report and 55% were unaware of the provincial hotline. Sample sizes were too low to reveal geographic trends, though reporting may be more common in Kings and Guysborough counties.
- Respondents who indicated they were in moose habitat daily were least likely to say they were unaware of the provincial hotline but also most likely to say they would choose NOT to report moose sightings. Some Mi'kmaq respondents indicated reporting to community authorities instead of the province.
- Nova Scotians are clearly concerned about the mainland moose. Survey

respondents ranked most threats moderate to high in their perceived importance to the species' overall health and, similarly, ranked most potential conservation measures as highly important. On average, Nova Scotians are less concerned about the risks posed by road collisions and predators and more concerned about habitat loss, habitat connectivity loss, high yield forestry, brainworm, poaching, and development in forests. Retiring old logging roads was the only potential conservation measure that respondents differed on. Each threat and each potential conservation measure saw extreme outliers, but generally Nova Scotians agreed on their assessment of each factors' importance for the recovery of the mainland moose. Closing old logging roads seems to have elicited a more varied response. Due to low sample sizes, we cannot say if this trend varied by geographic area, age group, or other factors, but may merit further investigation.

Lessons Learned

Our survey findings suggest that moose sightings may be severely under-reported. Our project emphasizes the need for continued public education and serious efforts to surmount communication barriers between the province and the public. Our research was limited by low survey responses in some counties, preventing analysis of possible geographic trends. We were also not able, due to capacity issues, to analyze comments made to project-specific social media content, which could have provided more insight into public observations and opinions. Understanding the threats and opportunities for conserving moose requires understanding the people living and working in moose country, so we are hopeful that continued work in these areas may yield more useful information for conservation management efforts.

Our project partners were instrumental in achieving and exceeding our goals, as event co-hosts, in assisting with project planning, or providing expert consult over the course of the project. We expect many of these groups and individuals to be valuable collaborators going forward and hope to continue our work together. Building new partnerships with hunting and guiding groups, outdoor outfitters, and other groups engaging rural stakeholders would benefit our reach. We hope to continue the Mainland Moose Conservation Initiative and engage more Nova Scotians in 2025-2026 and we plan to emphasize continued partnership in this goal.

Collaborating with the Department of Natural Resources was not as quick or easy as working with other partners, our partnership limited by government staff capacity and procedural barriers. Securing our data sharing agreement earlier in this project would have allowed for more strategic trail camera placement. We were also not able to secure information on permitting requirements for transporting a skeletal sample retrieved from a remote field site to a regional office for confirmation of species identification, resulting in staff deciding to bring the sample in anyway and being gently reprimanded for not having the permit. Given the necessity of collaborating with conservation groups and the public



Fig 4. Participants at Blue Mountain Birch Cove Lakes event, Jan 22, 2025

to deliver on the goals of the Recovery Plan for the Mainland Moose, and how often we heard from citizens who were frustrated at the lack of communication they had received from the province, improving communication approaches within the Department may be key to securing new sighting reports for furthering mainland moose conservation action.

Some participants at events in the Halifax area were unaware of the endangered status of the mainland moose, often confusing them with the Cape Breton population. Young Nova Scotians, as revealed by our survey and through discussion with youth under 18 at our public events, were unlikely to have ever seen a moose and were also often surprised to learn that the mainland moose is a listed species at risk. However, upon learning more, they were reliably excited to do something to help the moose and especially engaged in hands-on activities like art-making. Though citizen science efforts for understanding moose population trends may be more appropriately targeted at adult rural residents, there may be opportunities for rural youth (and for the large number of youth living in our cities) to contribute in similar or other ways to conservation efforts. We feel there is significant potential for conservation action through the public school system and informal educational environments like nature clubs.

Recommendations for Future Work

- More survey responses from under-represented counties would provide greater statistical power to analyze trends in moose sighting reports and public opinion on topics related to moose conservation. Our work over 2025-2026 will prioritize areas where 2024-2025 results suggested moose sightings (but not necessarily reports) are more common. This may leave gaps in Hants, Kings, Lunenburg, and Yarmouth counties that could be filled by other groups.
- Many Nova Scotians are unaware of the provincial reporting hotline or choose not to report their moose sightings. Targeting strategic outreach efforts (such as in-person events, paid advertising, etc) to the areas our project has identified as most likely to yield a moose sighting (Antigonish, Cumberland, Shelburne, Colchester) may increase reports to the hotline. Increasing reporting will require breaking down the communication- and trust-related barriers our survey revealed between the public and the province.
- More trail cameras would provide more passive monitoring power to citizen science efforts. Future camera placement could be focused either in areas where sighting reports are higher, to confirm public reports, in areas of suitable habitat, or in other areas to support or refute suspicions of moose absence. We will place 30 more cameras in areas more likely to produce moose sightings over 2025-2026, mostly in Cumberland and Colchester counties.
- Survey data allows for easy trend analysis but not all Nova Scotians will respond to a written or verbal survey, especially if the questions are overly technical. We shortened and simplified our 2024-2025 survey from a more detailed 2023 pilot in order to secure more responses. It may be strategic to use multiple versions of a public knowledge survey to capture the size and breadth of public knowledge desired.

Thank you



We could not have completed this year's work without the direct or in-kind support of friends at:

the St. Mary's Trail Association, St Mary's River Association, Friends of Blue Mountain Birch Cove Lakes, Ducks Unlimited Canada, Ecology Action Centre, Blomidon Naturalists Society, Nature Canada, Halifax Field Naturalists, Hike Nova Scotia, Immigrant Services Association of Nova Scotia, Cumberland Trails Association, Save Our Old Forests, Clean Annapolis River Project Society, Nova Scotia Museum of Natural History, Green Nova Scotia First, St Margarets Bay Stewardship Association, Wildlife Habitat Canada and the Province of Nova Scotia through the Nova Scotia Habitat Conservation Fund.



Fig 5. Photos contributed by trail camera network volunteers, varying dates, locations withheld for this public report