Socio-economic Analysis of Designating the Proposed Island Lake Wilderness Area

NOVEMBER 2023



OVERVIEW

Before a new wilderness area can be designated, an analysis of the socio-economic impact of the designation must be completed and made available to the public. This is required by the Wilderness Areas Protection Act.

On July 13, 2021 the Province shared information and initiated public consultation on the Ingram River Conservation Lands. This formal consultation closed on September 27, 2021.

Completion of a socio-economic analysis of the proposed designation is required for the Island Lake site. The other wilderness areas, conservation areas, and parks consulted on at the same time, were either part of a similar analysis included in the Province's 2013 Parks and Protected Areas Plan or do not require such analysis because the site is an addition to an existing wilderness area. not a new wilderness area.

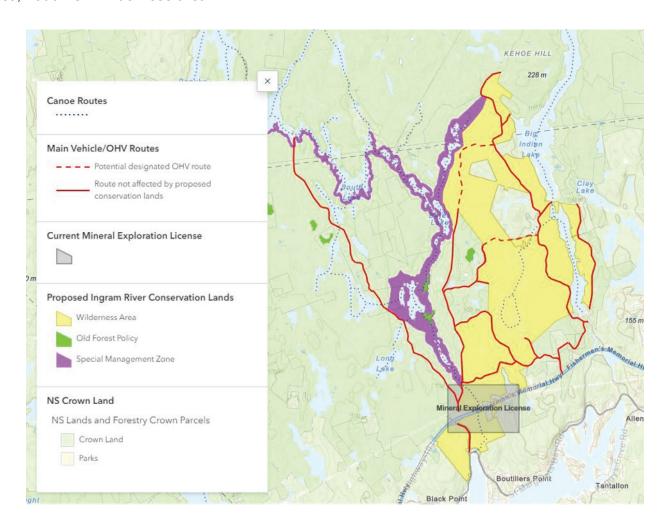


Figure 1 – Site Boundary Map of Proposed Island Lake Wilderness Area used for Public Consultation (yellow area). Note Mineral Exploration License has expired after the consultation ended.

What follows is an analysis of the anticipated socio-economic effects of designating the proposed Island Lake Wilderness Area. This has been prepared by government, consistent with previous socio-economic analyses for planned new wilderness areas. The current analysis is based on publicly available information, published material, and internal expertise, and is informed by information received during the public consultation and consultation with the Nova Scotia Mi'kmag.

The analysis considers a range of social and economic benefits and costs of designation. The intent of the analysis is to help foster understanding and support informed discussion and government decision-making.

ANTICIPATED EFFECTS OF DESIGNATION

1.1 ECOSYSTEM SERVICES AND VALUES

The proposed 3,870 ha Island Lake Wilderness Area is centred around Island Lake and extends north to Little Walsh Lake and south, across highway 103, to Ingramport. This site will protect a large patch of conifer forest woodlands, lakes, wetlands and watercourses, including part of the lower Ingram River.

On the map (Figure 1), the boundaries of the proposed new Wilderness Area are shown in yellow. Island Lake and all its Crown lands islands are part of the proposed Wilderness Area, including the two larger islands which were acquired from Bowater Mersey Paper Company in 2007 for conservation purposes. The proposed Wilderness Area surrounds the existing 454 ha Old Annapolis Road Nature Reserve. The proposed designation expands on previous efforts to protect and restore old forest in this region when the nature reserve was designated in 2016. This designation will also help protect wetlands, watercourses, and provide a high-quality natural setting for outdoor recreation. To support management of existing off-highway vehicle and hiking trails in the vicinity of Old Annapolis Road under the *Wilderness Areas Protection Act*, a 20 ha portion of the existing Old Annapolis Road Nature Reserve, between Old Annapolis Road and Island Lake, will be included in the Wilderness Area. The remainder of the nature reserve will not be designated as Wilderness Area.

With its lakes, islands, river and surrounding hills, the proposed Wilderness Area offers many scenic highlights. It is used and enjoyed for a variety of outdoor activities, including sport fishing, canoeing, hunting, camping, campsite lease use and off-highway vehicle riding. A highlight is Island Lake which, at 211 ha, is the largest lake in the proposed Wilderness Area. With its many islands, coves and surrounding hills, the lake is relatively sheltered from winds and is a popular destination for outdoor recreation.

The Island Lake area offers opportunities for hiking. The Old Annapolis Road Hiking Trail was established and maintained by the former Bowater Mersey Paper Company. The Province supports continued parking at this historic trailhead and public enjoyment of the walking trail and nearby small beach. The hiking trail follows parts of the shore of Rees Lake and northeast end of Island Lake and passes through some older forest stands. By including a portion of Old Annapolis Road Nature Reserve within the proposed Wilderness Area boundary, the entire trail would be within the Wilderness Area. Use of this trail would continue if designated.

Portions of the site consist of ecosystem elements which are poorly represented in Nova Scotia's protected areas network¹. It also overlaps with a mainland the moose core habitat zone delineated

¹ Source: Internal analysis by Nova Scotia Environment and Climate Change.

in the Department of Natural Resources and Renewables (NRR) 2021 Recovery Plan for the Moose in Mainland Nova Scotia. The factors affecting decline of endangered mainland moose are complex and not fully understood. One trend is that mainland moose are typically faring best in areas with low road density². Protected areas contribute to maintaining or restoring low road density in parts of Nova Scotia's landscape and may help moose in this and other ways.

Efforts are being made by researchers around the world to quantify the value of natural ecosystems to society, typically referred to as "ecosystem services". This includes the value of carbon storage and sequestration; water quality and storage; conservation of species and genetic resources; and maintenance of habitat for pollinators, wildlife and recreation, among other services. An example is a 2013 assessment by Global Forest Watch Canada of Nova Scotia's protected areas system which estimates an average annual value of \$5,827 / hectare for ecosystem services of the system³. Another example is a 2017 assessment by TD Bank Group and the Nature Conservancy of Canada (NCC)⁴, which estimates the value of ecosystem services of NCC's Long Tusket Lake lands, in southwestern Nova Scotia, at a minimum of \$26,250 / hectare annually. These local examples illustrate that the value of ecosystem services in Nova Scotia may be quite significant. Neither of these reports assess to what extent these values would differ if the lands were not protected.

² Snaith, T.V. and K.F. Beazley. 2004. The Distribution, Status and Habitat Associations of Moose in Mainland Nova Scotia. Proc. N.S. Inst. Sci. Volume 42, Part 2, pp. 263-317.

³ Lee P., R. Cheng and M. Hanneman. 2013. The Inclusive Wealth of Nova Scotia's Protected Areas: A Preliminary Estimate of Nature's Benefits. Global Forest Watch Canada Report #3; International Year of Sustainable Energy for All. 94 pp. ISBN: 978-1-927430-00-2.

⁴ TD Economics & Nature Conservancy of Canada. 2017. Putting a Value on the Ecosystem Services Provided by Forests in Canada: Case Studies on Natural Capital and Conservation. 37 pp.

Anticipated Effects of Wilderness Area Designation – Ecosystem Values

Value	Current Situation	Without Designation	With Designation
Biodiversity conservation	 Old forest and low level of historic forest disturbance. Habitat for species that prefer or need older, undisturbed forest, including for movement across the landscape (ecological connectivity). Habitat for endangered mainland moose and numerous other species-at-risk. Productive aquatic ecosystems. Landscape ecosystem elements which are not well represented in protected areas system. 	 Old forest areas identified under the Old Growth Forest Policy conserved in a manner consistent with that policy. Existing biodiversity, including species-atrisk, managed in a manner consistent with existing Crown lands approaches. Possible fragmentation of terrestrial habitat and loss of old forest. Potential disruption to aquatic habitat and ecological connectivity value. 	 Maintain and potentially increase native biological diversity. Help sustain rare and vulnerable species. Better represent examples of Nova Scotia's diverse landscapes within protected areas network.
Maintaining natural processes	Range of ecosystem services provided by forests, lakes, and wetlands, especially for maintaining air quality, water regulation, and quality.	Potential adverse effects to ecosystem services should land use and development occur.	Help secure and maintain valuable ecosystem services such as air quality, water regulation, water supply, soil formation and erosion control.
Climate change mitigation and adaptation	Existing carbon storage and sequestering function of older forest and wetlands.	Potential decline in carbon storage by forests and wetlands over time should land use and development occur.	Designation can help maintain high levels of carbon storage. Currently, the benefits of this are global.

1.2 COMMERCIAL VALUES

The proposed Wilderness Area has potential for resource development. It also has value for research, education, and nature-based tourism. Designation of a wilderness area at Island Lake would affect these values to varying degrees.

Forestry Resources

The Province has commitments to supply wood to various sawmills, including a timber licence agreement to provide wood to WestFor Management Inc. Much of the land base of the proposed Wilderness Area exists within Westfor's agreement area. Designation of Island Lake Wilderness Area would not allow for commercial forest harvesting within the wilderness area.

Much of the land base within the proposed Island Lake Wilderness Area has a history of forest management in recent decades.

Forests in the proposed wilderness area range from recently harvested to old growth. The Department of Natural Resources and Renewables has identified 103 ha as old growth forest under its *Old Growth Forest Policy*. Such sites are off-limits to logging regardless protected area status. According the 2022 Crown Land Forest Model, the remaining operable forest land (sometimes referred to as "working forest") that would be available for timber harvesting were the area not to be protected is about 2,990 ha. With designation as wilderness area, these lands would no longer be available for forestry. They represent about 0.8% of the roughly 364,000 ha of operable Crown forestry lands in western Nova Scotia. Just over half of these lands (about 1,625 ha) are comprised of stands that are older than 40 years and potentially mature enough to be considered for harvesting in the near-term if no wilderness area were established.

Mineral Exploration and Development

Designation would prohibit future exploration and potential mine development within the Wilderness Area. A 262 ha portion of the proposed Wilderness Area, centred around highway 103, overlapped with a mineral exploration licence when the site was announced for protection in 2021. However, this has since expired and was not renewed.

Based on mineral potential mapping initially developed in 2010⁵ by the Department of Natural Resources and Renewables, mineral potential at the proposed Wilderness Area ranges from low to high.

⁵ Geological Resource Atlas, Mineral Resource Potential, Central/Eastern Area of Nova Scotia by Nova Scotia Department of Natural Resources, Open File Map ME 2010-004 (Sheet 3 of 4), 2010, ISN: 22377

Energy Resources

Designation will prohibit future energy development. The underlying rock types in the vicinity of Island Lake are not known to host petroleum resources. This part of Nova Scotia is not considered to have potential for petroleum resources, based on the *Nova Scotia Onshore Petroleum Atlas*⁶.

The estimated mean annual wind speed in the vicinity of Island Lake is modelled to be about 5.10 m/s with mean wind energy of about 133.25 W/m 2 7 . Based on this, wind energy potential within the proposed Wilderness Area is considered low to moderate. No existing energy-related licenses or rights overlap with the proposed Wilderness Area.

About 4.7 km of electrical transmission line passes through the proposed Wilderness Area just north of Highway 103. Another 4 km of transmission line passes through the area north of Island Lake. Nova Scotia Power (NSPI) will retain the authority to operate and maintain these transmission lines.

Tourism Values

Designation of a wilderness area secures the long-term environmental quality of an area, which is vital for nature-based tourism use, development, and marketing. Low impact outdoor recreational use is permitted in wilderness areas, and trails or other infrastructure for such recreation can be authorized. Examples of existing commercial tourism activities in Nova Scotia's wilderness areas are documented in this report: https://www.novascotia.ca/nse/protectedareas/docs/NS_Protected_Areas_Commercial_Benefits_Final_Report.pdf

No outfitting activities or other commercial tourism use of the Island Lake area were identified while conducting this analysis. The old forest, lakes, and trails of the proposed Wilderness Area could be attractive for some tourism-related use. The proximity of this area to Halifax with its growing population, and easy vehicle access via road way make it an excellent candidate area for tourism opportunities. The area is extensively used for outdoor recreation by residents, and others visiting the area for day trips.

Two parcels south of HW 103 are directly accessible from the Rails to Trails corridor, and may provide excellent front country tourism opportunities.

Research and Education

Protected areas are ideal for education and long-term research on natural ecosystems. Designation of Crown lands at Island Lake will assure that any changes in ecosystems are not related to local land use and development. The older forest and other ecosystem elements which have become uncommon in Nova Scotia may make the area especially appealing for education or research. The site is reasonably accessible and could potentially be used for education or research by local

⁶ Nova Scotia's Onshore Petroleum Atlas project (2013-2017). https://energy.novascotia.ca/onshore-atlas-version-1-2017.

⁷ Source: Wind Atlas produced by Environment and Climate Change Canada: http://www.windatlas.ca/index-en.php.

schools or nearby universities. Any expenditures or other economic impact related to such uses are typically considered as a type of commercial use.

Anticipated Effects of Wilderness Area Designation – Commercial Values

Value	Current Situation	Without Designation	With Designation
Forestry Resources	 Productive forest with harvestable wood supply. 103 ha is considered old forest and is currently off-limits to harvesting. 	Continued economic benefits associated with forestry on lands outside old growth forest policy areas.	 Loss of wood supply available for forestry. Reduction in economic benefits associated with forestry. Risk of loss of economic activity.
Mineral Exploration and Development	Exploration activity and expenditures associated with regional exploration licences that overlap with a portion of Island Lake (about 262 ha within the proposed Wilderness Area).	 Continued economic benefits associated with exploration and maintenance of mineral rights. Possibility of realizing the full mining development potential of lands in and near the proposed Wilderness Area. Does not affect a future decision by a proponent to register a project pursuant to the relevant legislative authorities in pursuit of a pathway for potential EA approval. 	 Since new mineral rights cannot be granted where no existing rights are in place, there will be an unknown loss related to the discovery and development of potential deposits, which are currently unknown. Would limit mining-related development within the Wilderness Area. Risk of loss of economic activity.
Energy Resources	 No existing development. Low to medium wind energy potential. No known potential for petroleum development. 	Potential for energy development.	Loss of access to area for potential energy development

Tourism Values	No known current tourism use.	 Current use patterns likely to continue in foreseeable future, Access to lands for potential tourism use that is compatible with Crown lands management. 	Potential increase in value for nature tourism as wilderness area is managed and promoted. Potential loss of tourism values for activities incompatible with wilderness area designation.
Research and Education Values	Little known recent use for research or educational purposes.	 Research and education opportunities may increase or decrease, depending on type and purpose of research. Continued access to lands for research and education use. 	 Overall increase in value, over time, of lands for education and research on natural ecosystems. Continued access to lands for research and education use.

1.3 INDIVIDUAL USE VALUES

Individual use values are those values that occur directly to individual users, and for which there is no direct commercial sale for the use itself. This includes outdoor recreation involving the use of motorized vehicles (off-highway vehicles and other off-road vehicles), fishing, hunting and trapping, and wilderness (non-motorized) recreation (such as walking, canoeing, kayaking, camping, photography, and wildlife viewing).

Vehicle Use

Vehicle use is generally prohibited in wilderness areas but can be authorized within wilderness areas under the *Wilderness Areas Protection Act* in certain circumstances. Off-highway vehicle (OHV), 4X4 truck or similar vehicle access can also be accommodated by not including specified access routes as part of the wilderness area.

Based on field assessments and consultation feedback, most vehicle use within the proposed Wilderness Area is for recreational enjoyment. Additionally, trails are used for some for fishing and campsite lease access.

The proposed Wilderness Area boundary avoids many existing forest access roads and trails, as can be seen on the consultation mapping (solid red lines in Figure 1). The use of vehicles on these routes will be unaffected by wilderness area designation. Subject to environmental protection consideration, the Department of Environment and Climate Change (ECC) can amend existing

provincial trail management agreements with the All-Terrain Vehicle Association of Nova Scotia (ATVANS) and Snowmobilers Association of Nova Scotia (SANS) to allow continued ATV and snowmobile use on essential connecting routes through the proposed Wilderness Area. This may include OHV access routes shown on the map as red dotted lines. ECC intends to continue to work with OHV organizations and others to identify priority routes.

Within a wilderness area, the Minister of Environment and Climate Change may authorize motorboat use for sportfishing and campsite lease access.

Sport Fishing, Hunting and Trapping

The proposed Island Lake Wilderness Area is popular for angling and hunting, based on public consultation feedback. Since fishing, hunting, and trapping are generally permitted in wilderness areas, designation will have a limited impact on these activities. Use patterns may change somewhat, depending on the extent of vehicle access. Bear baiting is not permitted in wilderness areas.

Wilderness Recreation

Based on public consultation, it is understood that the area is currently used for non-motorized recreation, such as walking, canoeing, wildlife viewing and camping. There is a high level of non-motorized use in the area. Wilderness Area designation will help secure the area for low-impact, self-propelled outdoor recreation opportunities in a wilderness setting, including hiking, walking, camping, canoeing, wildlife viewing, and other activities. Bicycle use can be authorized on designated trails. Wilderness recreation in the area is likely to increase over time.

Campsite Leases

Campsite leases occur within the proposed Island Lake Wilderness Area. If the area is designated, these would be honoured and converted to campsite licences when the leases come up for renewal. Though there are some minor differences, this licence is much like a campsite lease, but is issued under the *Wilderness Areas Protection Act* rather than under the *Crown Lands Act*.

Overland vehicle access to campsite leases can be licenced under the Act for maintenance or removal of structures. Motorboat access to campsite leases can be licenced for any purpose. ECC has yet to develop a licensing program for campsite lease access in wilderness areas. In the interim, leaseholders may access their campsites by vehicle on existing and direct routes.

Adjacent (Private) Land

There are no inheld private parcels at the proposed Island Lake Wilderness Area that could be affected by designation. Several private parcels abut the southern boundary of the proposed Wilderness Area, including one with frontage on MacDonald Lake. Designation will not affect use or access to these properties.

Anticipated Effects of Designation – Individual Values

Value	Current Situation	Without Designation	With Designation
Vehicle Use	 Extensive off-highway vehicle (OHV) and some 4X4 vehicle use occurs in the area. Vehicle use both for recreational riding and for access to fishing and hunting opportunities and to access campsite leases. 	Current vehicle use is likely to continue, subject to changing land use, and applicable legislation and policies (e.g., Crown Lands Act, Off-Highway Vehicles Act).	 Loss of some OHV and 4X4 vehicle use. ECC intends to maintain vehicle access to each of the three lakes. This may differ somewhat from current vehicle access. Motorboat use allowed for fishing and campsite lease access.
Sportfishing, Hunting and Trapping	 Moderate to use for sportfishing. Some hunting and trapping, based on consultation feedback. 	Current use patterns likely to continue in foreseeable future, subject to Crown lands, sportfishing, and wildlife management consideration.	 Use patterns may change due to modified vehicle access. Loss associated with potential bear baiting. Bear baiting could still occur next to or near the Wilderness Area. Protecting habitat of the area may benefit some harvestable species in the long term.
Wilderness (non-motorized) Recreation	Some existing outdoor recreation use, such as hiking/ walking, camping, wildlife viewing, photography, as well as canoeing and other boating.	Potential decline in outdoor recreation uses and opportunities over time if land is developed.	Protects land base for wilderness recreation use compatible with Wilderness Areas Protection Act.

		Continued access to area for outdoor recreation compatible with Crown lands management.	Possible increase in wilderness recreation uses and value over time as the lands are managed and promoted for protected area goals.
Campsite Leases	Existing campsite leases.	Campsite lease uses and access continue in accordance with provincial policies and Crown lands management.	Campsite leases will be honoured. These will be converted to campsite licences under the Wilderness Area Protection Act upon lease renewal.
			Vehicle access by land and boat can be licensed. Access by land would be limited for maintenance once a licensing program is developed for wilderness areas. In the interim, vehicle access is permitted on direct routes.
Adjacent Private Land	 No inheld private land (inholdings or lands surrounded by a protected area). No access to adjacent private land 	Not applicable – no private lands affected.	Not applicable – no private lands affected.

1.4 MI'KMAQ INTERESTS AND VALUES

Parks and protected areas, including wilderness areas, help protect lands that are important to the Mi'kmaq of Nova Scotia. The Province is aware that the lakes and some lands within the proposed Island Lake Wilderness Area are used and valued by the Mi'kmaq.

Wilderness area designations may affect the ability for Mi'kmaq to access areas for hunting, fishing, and gathering, which are Aboriginal and Treaty rights affirmed in Section 35 of the *Constitution Act*, 1982. Therefore, formal consultation on designations for Nova Scotia's parks and

protected areas, including wilderness areas, have been ongoing between the Province and the Mi'kmaq of Nova Scotia since 2012. Through the consultation process potential impacts to Section 35 Aboriginal and Treaty rights are identified.

The Province will also continue to work with the Mi'kmaq of Nova Scotia to explore options related to Mi'kmaq use of the proposed Island Lake Wilderness Area and other existing or proposed protected areas in a manner consistent with legislative requirements and acknowledging the principles of the Mi'kmaq concept of Netukulimk. "Netukulimk means, as defined by the Mi'kmaq, the use of the natural bounty provided by the Creator for the self-support and well-being of the individual and the community by achieving adequate standards of community nutrition and economic well-being without jeopardizing the integrity, diversity, or productivity of the environment." Much of this work has occurred through a Mi'kmaq—Nova Scotia Protected Areas Selection and Management Technical Advisory Group, which was formed in 2011 for the purposes of considering Mi'kmaq use and environmental considerations into the overall process of protected lands designation and management.

The very north end of the proposed Wilderness Area borders on a large block of Crown lands which is part of the Mi'kmaw Forestry Initiative (MFI). This is a forestry pilot project that gives Nova Scotia Mi'kmaw forest planning and management responsibility. The project creates opportunities for jobs, training and Mi'kmaw businesses in silviculture and harvesting.

Anticipated Effects of Designation - Mi'kmag Interests and Values

Value	Current Situation	Without Designation	With Designation
Mi'kmaq Interests and Values	The Mi'kmaq of Nova Scotia use Island Lake for fishing and other traditional uses and use vehicles for access and outboard motors for fishing.	Continued use of lands by the Mi'kmaq of Nova Scotia compatible with Crown lands management.	 Overall benefit expected, though possible loss of value for select activities, such as building of hunting camps and resource development. Motorboat use will continue to be permitted for fishing. It is expected that vehicle access to
			the lakes will be maintained. Some access points may differ from those currently used.

⁸ Environmental Goals and Climate Change Reduction Act. 2021, c. 20, s. 1.

1.5 SOCIETAL VALUES

Societal values are those values that occur broadly to the benefit of all of society and are not attributed to an individual's use of the environment. This includes cultural and heritage values and existence values.

Cultural and Heritage Values

Designation of lands with cultural and heritage significance helps protect the province's uniqueness and diversity. It contributes to a sense of identity and community, in this case of communities near the purposed Island Lake Wilderness Area. Key indicators used to assess cultural and heritage values include long-standing traditions of hunting, fishing and recreation.

As evident from public consultation feedback, the proposed Wilderness Area is a place of high value to local residents and users of the area. Its intergenerational history of fishing, hunting, camp use and other recreation was highlighted in numerous submissions. This history contributes to the cultural heritage of the province. Designation is expected to benefit cultural and heritage values of the proposed Wilderness Area.

Existence Values

Existence values are spiritual or psychological values which are not related to direct use of an area. People may hold values for natural areas simply because they exist, even though they may not visit or use the land in question.

Maintaining large natural spaces can strengthen cultural identity and heritage values and can inspire artists and others. They also represent a legacy for future generations, known as bequest value. A variety of submissions from the public consultation identified the importance of the proposed Wilderness Area for its intrinsic value, and so that it may be used and enjoyed by future generations. Designation will help conserve exis-tence values associated with these lands.

Anticipated Effects of Designation - Individual Values

Value	Current Situation	Without Designation	With Designation
Cultural and Heritage Values	Area holds significant cultural heritage value to local residents and other recreational users, based on consultation feedback.	Continued maintenance of some cultural heritage values through Crown lands management.	 Protects outdoor and wilderness recreation heritage. More assured protection of any sites of cultural and archaeological value.

Existence Values	 Old forest, healthy lakes, habitat for many species. Nova Scotians have a desire to maintain natural areas for use and benefit of future 	Potential loss of biodiversity and decline in some outdoor recreation values as resource use and development occur.	Conservation and protection of existing ecosystems and species.
	generations.		

1.6 OTHER VALUES

Due to project scope and data limitations, the socio-economic analysis does not consider all possible values. For example, the impacts of designation on human health, value of adjacent land, and community or regional development are not evaluated.