STATE OF ONTARIO'S PROTECTED AREAS

Life Science Representation

2021

Ontario

State of Ontario's Protected Areas
Indicator Report

Life Science Representation

This indicator summarizes provincial representation of ecosystem diversity and targets.

Status

Status: Fair

Trend (Long-range): Improving

Why it's important

Representation of natural diversity is a fundamental basis for conservation planning and has been used as the foundation for protected areas system planning in Ontario since the 1970s. Representation is based on the principle that the full range of Ontario's natural diversity should be systematically identified and protected. Fundamentally, protected and conserved areas should conserve representative examples of known biological diversity within ecologically defined regions. Examples of natural diversity that are not adequately protected are known as gaps in representation.

How we monitor

Ontario seeks to secure the best examples of ecosystems that represent the diversity of the province. For terrestrial ecosystems, Ontario's approach uses naturally occurring associations of landforms and vegetation types (LV) within each of Ontario's 71 ecodistricts as surrogates of biodiversity. The area of each LV association within protected areas is tallied and compared against minimum representation guidelines. These minimum representation guidelines stipulate that for each LV association, at least 1% or 50 hectares of its total area in the ecodistrict should be included within protected areas. A gap in representation occurs when these minimum guidelines or targets are not met.

GapTool is a GIS-based analytical tool to help prepare information on ecological representation and identify gaps in representation based on remotely sensed data. GapTool provides tabular reports, maps, and spatial data on the ecological representation for all of Ontario's 71 ecodistrict and almost 900 protected and conserved areas, including provincial parks, conservation reserves, dedicated protected areas in the Far North of Ontario, wilderness areas, privately protected areas and other effective area-based conservation measures (OECMs). All of these protected areas and OECMs contribute toward broad biodiversity targets such as Aichi Target 11 and Canada Target 1.

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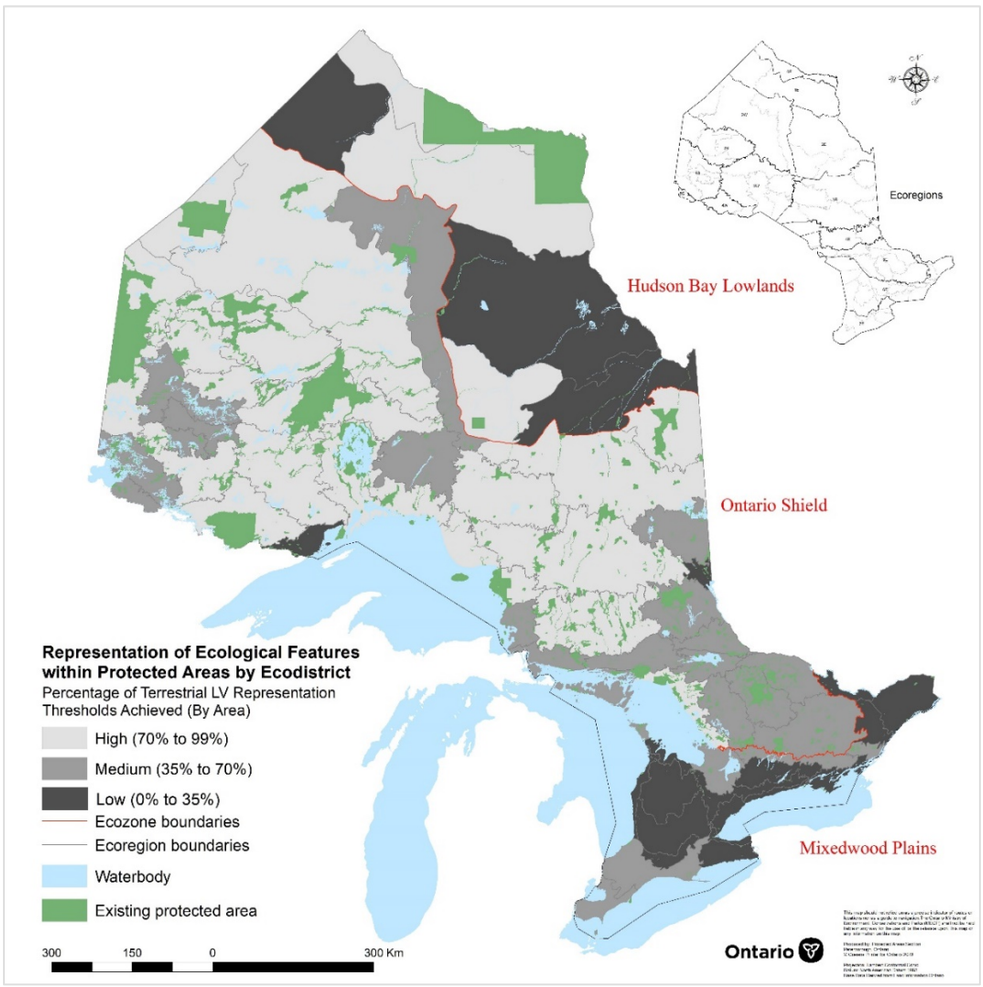
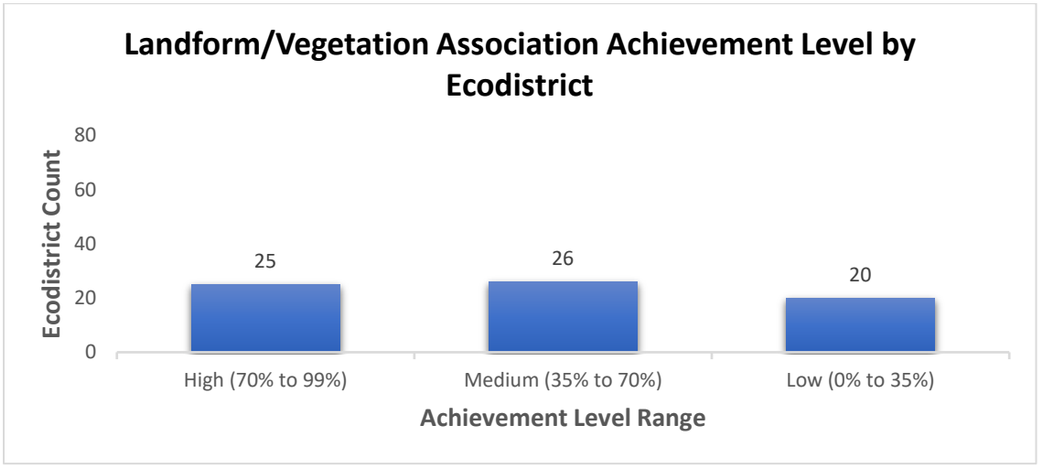
Data





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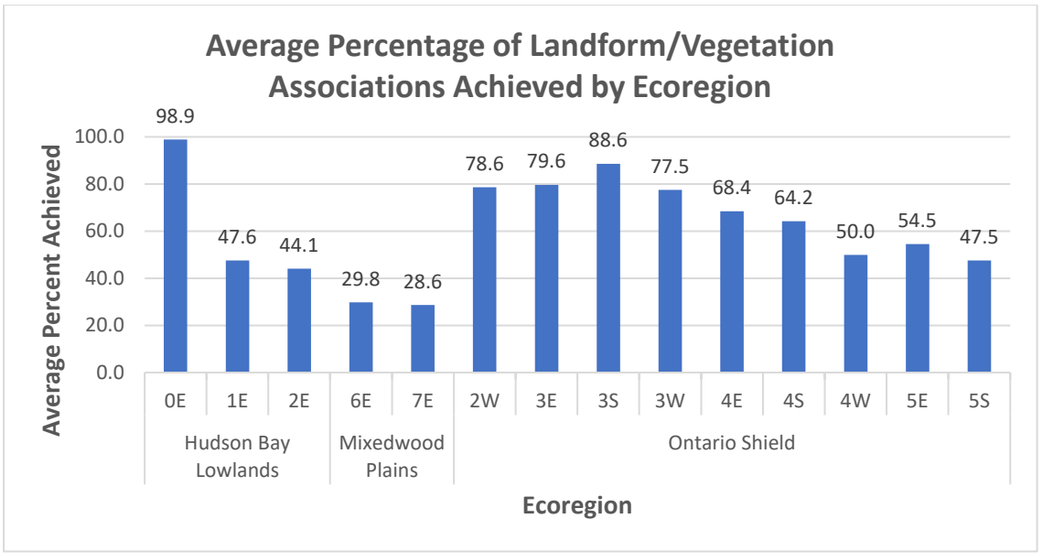

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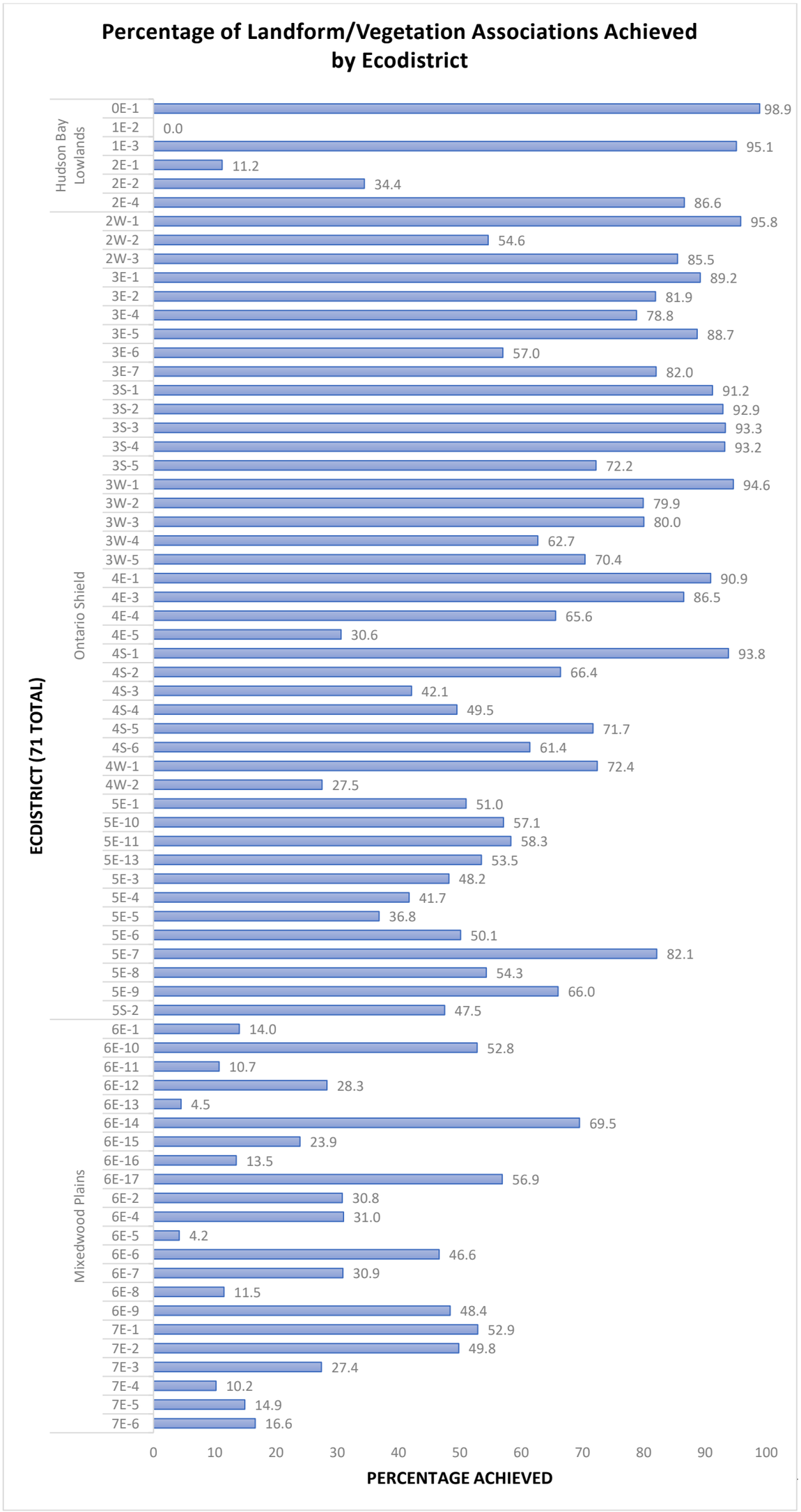

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What's happening

No ecodistrict in the province has yet met the minimum thresholds for all naturally occurring landform/vegetation associations.

Hudson Bay Lowlands Ecozone
Polar Bear Provincial Park is a very large park that accounts for nearly all the area protected within the ecozone. The two ecodistricts it overlaps with have achieved a high level of representation. Of the remaining ecodistricts, three range from being entirely unrepresented to having a low level of representation. The terrestrial biodiversity in the sixth ecodistrict in this ecozone is well represented.

The current levels of life science representation in the Hudson Bay Lowlands is different from the last assessment in 2011 despite the establishment of no new protected areas due to improvements to the input landform/vegetation data sets.

Ontario Shield Ecozone
Life science representation in protected areas in the Ontario Shield Ecozone is more evenly distributed than in the Hudson Bay Lowlands, with most of the ecodistricts achieving medium to high levels of representation. The identification of Dedicated Protected Areas through community-based land use planning in the Far North of Ontario has greatly improved the life science representation of two of the ecodistricts within the ecozone.

The current levels of life science representation in other parts of the Ontario Shield Ecozone differs from the last assessment in 2011 due to improvements to the input landform/vegetation data sets and modest increases in the numbers and/or size of protected areas.

Mixedwood Plains Ecozone
Most of the land in the Mixedwood Plains Ecozone is privately owned and cannot become regulated protected areas unless purchased or secured by other means. As such, over two thirds of the ecodistricts in the ecozone have low levels of life science representation achievement. The remaining ecodistricts are only moderately better-represented.

Despite the low overall representation in Southern Ontario, nearly all the ecodistricts experienced an increase in representation levels compared to the last assessment in 2011. This increase was due to improvements to the input landform/vegetation data sets and modest increases in the numbers and/or sizes of protected areas, including privately protected areas.

Indicator last updated

October 2020

Data source(s)

Documentation:

- Crins, W.J. and P.S.G. Kor. 2000. Natural heritage gap analysis methodologies used by the Ontario Ministry of Natural Resources. Draft – January 6, 2000. Open File Natural Heritage Technical Report 2000-1. Ontario Ministry of Natural Resources, Peterborough, Ontario
- Davis, R.G. 2006. GapTool users guide. Ontario Ministry of Natural Resources, Peterborough, Ontario. 52p + app.

- Davis, R.G. and L. McCalden. 2004. Representing Ontario's ecosystems: Ontario's approach to representing ecosystems in a system of protected areas. Ontario Ministry of Natural Resources, Peterborough, Ontario. 8p.
- Ministry of Natural Resources. 2008. State of Ontario's Protected Areas Technical Report #2 - Protection. 57p + app.

Software:

GapTool, 2006 (revised 2019)

Spatial Data:

- Protected and Conserved Areas
    - Provincial Park, Regulated (Land Information Ontario (LIO))
    - Conservation Reserve, Regulated (LIO)
    - Far North Dedicated Protected Area (Regulated under PPCRA and non-regulated) (LIO)
    - Wilderness Area (LIO)
    - National Park (LIO)
    - Area of Natural and Scientific Interest (LIO)
    - Privately Protected Area (Canadian Protected and Conserved Areas Database (CPCAD))
    - Other Effective Area-based Conservation Measure (CPCAD)
- Landform/Vegetation datasets
    - LVFN
        - Landform data: Surficial Geology of Southern Ontario, Quaternary Geology of Ontario, NEOGTS
        - Vegetation data: Far North Land Cover
    - LVFRI
        - Landform data: Surficial Geology of Southern Ontario, Quaternary Geology of Ontario, NEOGTS
        - Vegetation data: FRI (Forest Resource Inventory)
    - LVSOLRIS
        - Landform data: Surficial Geology of Southern Ontario, Quaternary Geology of Ontario, NEOGTS
        - Vegetation data: SOLRIS (Southern Ontario Land Resource Inventory System)
    - LV2000
        - Landform data: Surficial Geology of Southern Ontario, Quaternary Geology of Ontario, NEOGTS
        - Vegetation data: Land Cover 2000

Related links

N/A