



Insects

Boreal Snaketail

Ophiogomphus colubrinus

Priority 1 Species of Greatest Conservation Need (SGCN)

Class: Insects (*Insecta*)

Order: Dragonflies And Damselflies (*Odonata*)

Family: Clubtails (*Gomphidae*)



General comments:

The Boreal Snaketail is a mostly northern dragonfly in the Clubtail family (Gomphidae). This species is only known from three watersheds statewide, where it occupies large streams and rivers with sand, gravel, or rock substrate. Listed as state Threatened, this dragonfly is considered at risk from shoreline disturbance, pollution, and climate change.

Species Conservation Range Maps:

Town Map: [Ophiogomphus colubrinus Towns.pdf](#)

Subwatershed Map: [Ophiogomphus colubrinus_HUC12.pdf](#)

SGCN Priority Ranking - Designation Criteria:

Risk of Extirpation:	Maine Status: Threatened	Federal Status: None	
High Regional Conservation Priority:	NatureServe: Global Rank: G5 State Rank: S1		

Habitat Associations:

Formation: Freshwater Aquatic

Macrogroup: Lotic

	Habitat System: Compromised Water Quality <i>St John River</i>
★ Primary Habitat	Habitat System: Non-cold Large Rivers <i>Penobscot River</i>
★ Primary Habitat	Habitat System: Transitional Small and Medium Rivers <i>Saco River</i>
★ Primary Habitat	Habitat System: Unknown Thermal Regime Small and Medium Rivers

Threats

Threat Priority Level based on Severity and Actionability		Moderate Severity	High Severity
	Highly Actionable	Medium-High	High
	Moderately Actionable	Medium	Medium-High
	Actionable with Difficulty	Low	Low

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Priority 1 SGCN



Actionable with Difficulty

Low

Low

IUCN Level 1 Threat Other Options

IUCN Level 2 Threat: Resource Needs

Severity: High Severity

Actionability: Moderately Actionable

Notes: MDIFW lacks funding and staff to implement conservation actions for SGCN invertebrates (e.g., surveys and monitoring, research, habitat protection, outreach and education)

IUCN Level 1 Threat Biological Resource Use

IUCN Level 2 Threat: Logging and Wood Harvesting

Severity: Moderate Severity

Actionability: Moderately Actionable

Notes: Intensive forestry in the shoreland zone can affect water quality and riparian habitat

IUCN Level 1 Threat Other Options

IUCN Level 2 Threat: Education & Outreach

Severity: Moderate Severity

Actionability: Moderately Actionable

Notes: some threats and challenges can be minimized through enhanced public outreach and advocacy (e.g., pesticide use, habitat management, improved stream crossings, awareness and appreciation)

IUCN Level 2 Threat: Lack of knowledge

Severity: Moderate Severity

Actionability: Moderately Actionable

Notes: lack of comprehensive knowledge about distribution, status, habitat, life history

IUCN Level 2 Threat: Other Threat

Severity: Moderate Severity

Actionability: Moderately Actionable

Notes: pesticides (e.g., homeowner, agricultural, forest and water quality management applications of insecticides and herbicides; herbicide spraying along roadsides and shorelines) can directly and indirectly affect nymphs and adults (e.g., decrease aquatic vegetation for egg-laying and emergence, decrease insect prey, direct and indirect toxicity)

Boreal Snaketail *Ophiogomphus colubrinus***Priority 1 SGCN****IUCN Level 1 Threat Pollution****IUCN Level 2 Threat: Agricultural and Forestry Effluents****Severity:** Moderate Severity**Actionability:** Moderately Actionable

Notes: in riparian buffer or aquatic system where run off/application of pesticides, fertilizers, and other chemicals can degrade water quality and impact nymphs

IUCN Level 2 Threat: Domestic and Urban Waste Water**Severity:** Moderate Severity**Actionability:** Moderately Actionable

Notes: impacts to water quality from point and non-point sources

IUCN Level 1 Threat Residential and Commercial Development**IUCN Level 2 Threat: Commercial and Industrial Areas****Severity:** Moderate Severity**Actionability:** Moderately Actionable

Notes: in riparian habitat where land use and loss of intact forest canopy can degrade aquatic habitat integrity and water quality

IUCN Level 2 Threat: Housing and Urban Areas**Severity:** Moderate Severity**Actionability:** Moderately Actionable

Notes: land use and loss of intact forest canopy in riparian habitat can degrade aquatic habitat integrity and water quality;

IUCN Level 1 Threat Transportation and Service Corridors**IUCN Level 2 Threat: Roads and Railroads****Severity:** Moderate Severity**Actionability:** Moderately Actionable

Notes: in riparian buffer where loss of intact forest canopy can degrade aquatic habitat integrity and water quality (e.g., run-off, road salt); in stream channel where construction, maintenance, and poorly designed stream crossings can cause erosion of stream banks, sedimentation, water quality degradation, and direct mortality

Boreal Snaketail *Ophiogomphus colubrinus***Priority 1 SGCN****IUCN Level 1 Threat Agriculture and Aquaculture****IUCN Level 2 Threat: Annual and Perennial Non-timber crops****Severity:** Moderate Severity**Actionability:** Actionable with Difficulty**Notes:** Degradation of the riparian zone affects water quality and roosting/feeding habitat**IUCN Level 1 Threat Climate Change and Severe Weather****IUCN Level 2 Threat: Habitat Shifting or Alteration****Severity:** Moderate Severity**Actionability:** Actionable with Difficulty**Notes:** this species is near the southern edge of its range in Maine, where it is vulnerable to impacts of climate change**IUCN Level 1 Threat Natural Systems Modifications****IUCN Level 2 Threat: Dams and Water Management-Use****Severity:** Moderate Severity**Actionability:** Actionable with Difficulty**Notes:** Dams degrade habitat quality for many lotic species specialists**Species Level Conservation Actions:**

None. Only species specific conservation actions that address high (red) or medium-high (orange) priority threats are summarized here.

Conservation Actions Associated with the Riverine Odonates Guild:

Conservation Action	Category	Biological Priority	Type
Analyze results of the Maine Dragonfly & Damselfly Survey, research and incorporate external Maine records (historical and modern), and produce a summary document and conservation assessment.	Research	high	on-going

Threat(s) Addressed By This Conservation Action

- Lack of knowledge

Boreal Snaketail *Ophiogomphus colubrinus***Priority 1 SGCN**

Conservation Action	Category	Biological Priority	Type
Increase MDIFW staff capacity for survey, research, and conservation of SGCN invertebrates.	Policy	critical	new

Threat(s) Addressed By This Conservation Action

- Education & Outreach
- Lack of knowledge
- Resource Needs

Conservation Action	Category	Biological Priority	Type
Develop/distribute outreach materials to raise public awareness and appreciation of freshwater aquatic insect ecology, threats and conservation needs.	Public Outreach	moderate	on-going

Threat(s) Addressed By This Conservation Action

- Education & Outreach

Conservation Action	Category	Biological Priority	Type
Conduct comprehensive statewide surveys to inform status, distribution, threats, and habitat use.	Survey and Monitoring	high	on-going

Threat(s) Addressed By This Conservation Action

- Lack of knowledge

Conservation Action	Category	Biological Priority	Type
Develop/distribute Best Management Practices for landowners, land managers and conservation partners to avoid and minimize impacts of intensive land use activities (e.g., forestry, stream crossings, agriculture, development, hydro facilities).	Habitat Management	high	on-going

Threat(s) Addressed By This Conservation Action

- Roads and Railroads
- Housing and Urban Areas
- Commercial and Industrial Areas
- Domestic and Urban Waste Water
- Agricultural and Forestry Effluents
- Education & Outreach
- Logging and Wood Harvesting
- Annual and Perennial Non-timber crops

Boreal Snaketail *Ophiogomphus colubrinus***Priority 1 SGCN**

Conservation Action	Category	Biological Priority	Type
Develop/distribute guidelines and outreach materials to inform conservation partners, land use managers, and the general public about the impacts of pesticides on native insects and to promote the alternative use of Integrated Pest Management practices.	Public Outreach	moderate	on-going

Threat(s) Addressed By This Conservation Action

- Education & Outreach
- Other Threat

Conservation Action	Category	Biological Priority	Type
Conduct a statewide dragonfly/damselfly atlas project.	Survey and Monitoring	high	completed

Threat(s) Addressed By This Conservation Action

- Lack of knowledge
- Education & Outreach

Conservation Action	Category	Biological Priority	Type
Update NatureServe S-ranks for all Maine Odonata based on results of the Maine Damselfly and Dragonfly Survey.	Research	high	completed

Threat(s) Addressed By This Conservation Action

- Lack of knowledge

Broad Taxonomic Group Conservation Actions:

Additional relevant conservation actions for this species are assigned within broader taxonomic groups in Maine's Wildlife Action Plan: Element 4.

Habitat Based Conservation Actions:

Additional conservation actions that may benefit habitat(s) associated with this species can be found in Maine's Wildlife Action Plan: Element 4. Click on the Habitat Grouping of interest to launch a habitat based report summarizing relevant conservation actions and associated SGCN.

The Wildlife Action Plan was developed through a lengthy participatory process with state agencies, targeted conservation partners, and the general public. The Plan is non-regulatory. The species, threats, and voluntary conservation actions identified in the Plan complement, but do not replace, existing work