



Insects

Yellow Bumble Bee

Bombus fervidus

Priority 2 Species of Greatest Conservation Need (SGCN)

Class: Insects (*Insecta*)

Order: Ants, Bees, Wasps And Sawflies (*Hymenoptera*)

Family: Honey Bees, Bumble Bees, And Allies (*Apidae*)



General comments:

The Yellow Bumble Bee (family Apidae, genus Bombus) is distinguished by its primarily yellow abdomen and thorax, a black band between — but not under — the wings, and black (vs. yellow) hairs on the face. It prefers open grasslands and farmland, and is widely distributed across the U.S., southern Canada, and Mexico; but it has shown long-term declines in relative abundance and area of occupancy, particularly in northern parts of its range. It is listed as Special Concern in Maine, where it is not commonly observed, with records declining in recent years despite a six-year statewide bumble bee atlasing project. Threats to this species likely include habitat loss and fragmentation, pesticides, introduced pathogens, and climate change.

Species Conservation Range Maps:

Town Map: [Bombus fervidus_Towns.pdf](#)

Subwatershed Map: [Bombus fervidus_HUC12.pdf](#)

SGCN Priority Ranking - Designation Criteria:

Risk of Extirpation:	Maine Status: None	Federal Status: None	IUCN Red List Status: see Global Vulnerability criteria
State Special Concern:	Yellow Bumble Bee is listed as a species of Special Concern in Maine.		
Global Vulnerability:	Yellow Bumble Bee is designated as Vulnerable by the International Union for the Conservation of Nature (IUCN).		
High Regional Conservation Priority:	NatureServe: Global Rank: G3 State Rank: S2		

Habitat Associations:

Formation: Agricultural

Macrogroup: Agricultural

Habitat System: Agricultural Macrogroup - Unknown Habitat System
typically open grasslands, farmland, rural/suburban gardens, urban parks

Formation: Developed

Macrogroup: Urban-Suburban Built

Habitat System: Urban-Suburban Built Macrogroup - Unknown Habitat System
typically open grasslands, farmland, rural/suburban gardens, urban parks

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Formation: Grassland & Shrubland

Macrogroup: Ruderal Shrubland & Grassland

Habitat System: Ruderal Shrubland & Grassland Macrogroup - Unknown Habitat System
typically open grasslands, farmland, rural/suburban gardens, urban parks

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

IUCN Level 1 Threat Other Options

IUCN Level 2 Threat: Other Threat

Severity: High Severity**Actionability:** Moderately Actionable

Notes: pesticides (e.g., seed/nursery stock inoculation; homeowner, agricultural and forest management applications of insecticides and herbicides; herbicide spraying along roadsides and powerline ROWs) can cause direct mortality of bees, affect behavior, weaken immune systems, decrease forage plant availability, etc

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 Agriculture and Aquaculture

IUCN Level 2 Threat: Annual and Perennial Non-timber crops

Severity: Moderate Severity**Actionability:** Moderately Actionable

Notes: this species' preferred habitat is open grasslands/fields with preferred forage plants (e.g., clover, vetch, thistle); conversion of these habitats to tilled monoculture crops can reduce, degrade and fragment habitat

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IUCN Level 1 Threat Energy Production and Mining

IUCN Level 2 Threat: Renewable Energy

Severity: Moderate Severity

Actionability: Moderately Actionable

Notes: loss of open grasslands and farm fields to renewable energy development can reduce, degrade and fragment habitat

IUCN Level 1 Threat Natural Systems Modifications

IUCN Level 2 Threat: Removing or Reducing Human Maintenance

Severity: Moderate Severity

Actionability: Moderately Actionable

Notes: loss of grassland/field habitat to forest succession can reduce and fragment habitat

IUCN Level 1 Threat Other Options

IUCN Level 2 Threat: Education & Outreach

Severity: Moderate Severity

Actionability: Moderately Actionable

Notes: some threats and challenges facing pollinators can be minimized through enhanced public outreach and advocacy (e.g., pesticide use, habitat management and creation, best practices for commercial/private hive management, awareness and appreciation)

IUCN Level 2 Threat: Lack of knowledge

Severity: Moderate Severity

Actionability: Moderately Actionable

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

IUCN Level 1 Threat Residential and Commercial Development

IUCN Level 2 Threat: Commercial and Industrial Areas

Severity: Moderate Severity

Actionability: Moderately Actionable

Notes: the loss of preferred grassland/field habitat to development can contribute to habitat loss and fragmentation

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IUCN Level 1 Threat Residential and Commercial Development

IUCN Level 2 Threat: Housing and Urban Areas

Severity: Moderate Severity

Actionability: Moderately Actionable

Notes: while this species will use suburban gardens and parks for foraging, the loss of preferred grassland/field habitat to development can contribute to habitat loss and fragmentation

IUCN Level 1 Threat Climate Change and Severe Weather

IUCN Level 2 Threat: Changes in Precipitation and Hydrological Regimes

Severity: Moderate Severity

Actionability: Actionable with Difficulty

Notes: extreme and/or prolonged events (flooding or drought) can cause direct mortality, flooding of ground nests, disruption of activity patterns, impacts to forage plant availability and quality, etc.

IUCN Level 2 Threat: Changes in Temperature Regimes

Severity: Moderate Severity

Actionability: Actionable with Difficulty

Notes: potential impacts from climate change could exceed species' temperature thresholds, disrupt activity patterns, affect forage plant quality, lessen snow pack cover, etc; studies have shown that of all the potential climate change variables, increased temperature has the largest effect on bumble bee occupancy

IUCN Level 2 Threat: Habitat Shifting or Alteration

Severity: Moderate Severity

Actionability: Actionable with Difficulty

Notes: potential impacts of climate change (e.g., impact on forage plant bloom phenology and nectar/pollen quality, increased temperatures, extreme weather, increased frequency and duration of flooding or drought, shifting *Bombus* distribution, changing/shifting plant communities, etc.)

IUCN Level 1 Threat Invasive and Other Problematic Species, Genes and Diseases

IUCN Level 2 Threat: Intrinsic Biological Limitations

Severity: Moderate Severity

Actionability: Actionable with Difficulty

Notes: inherent characteristics of life history (e.g., small colony size, annual life cycle, late emergence, genetic predispositions to disease, etc) and demographics (e.g., low densities, fragmented populations, reduced genetic diversity) all contribute to threat sensitivity and challenges for conservation and recovery

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IUCN Level 1 Threat Invasive and Other Problematic Species, Genes and Diseases

IUCN Level 2 Threat: Invasive Non-native-Alien Species-Diseases

Severity: High Severity**Actionability:** Actionable with Difficulty

Notes: introduced pathogens, parasites, and diseases from imported commercial *Bombus* and honeybee colonies; impacts on native plant communities from invasive non-native plants; competition from non-native introduced pollinators

IUCN Level 1 Threat Other Options

IUCN Level 2 Threat: Unknown

Severity: Moderate Severity**Actionability:** Actionable with Difficulty

Notes: may be unknown threats or combinations of threats contributing to range-wide declines of some bumble bee species

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 Bumble Bees Guild:

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

Threat(s) Addressed By This Conservation Action

- Other Threat
- Lack of knowledge

Conservation Action	Category	Biological Priority	Type
Analyze results of the Maine Bumble Bee Atlas project, 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

- Education & Outreach
- Lack of knowledge

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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 pollinators and to promote the alternative use of Integrated Pest Management practices.	Public Outreach	high	on-going

Threat(s) Addressed By This Conservation Action

- Education & Outreach
- Other Threat

Conservation Action	Category	Biological Priority	Type
Increase MDIFW staff capacity for survey 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 inform land managers and homeowners about creating and managing habitat for native pollinators, and the importance of using native plants.	Public Outreach	moderate	on-going

Threat(s) Addressed By This Conservation Action

- Invasive Non-native-Alien Species-Diseases
- Education & Outreach

Conservation Action	Category	Biological Priority	Type
Develop/distribute outreach materials to raise public awareness and appreciation of native pollinator 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 a statewide bumble bee atlas project.	Survey and Monitoring	high	completed

Conservation Action	Category	Biological Priority	Type
Update NatureServe Sinks for all Maine bumble bee species based on results of the Maine Bumble Bee Atlas.	Research	high	completed

Threat(s) Addressed By This Conservation Action

- Lack of knowledge

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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