



Crustaceans

Spiny Lebbeid Shrimp

Lebbeus groenlandicus

Priority 2 Species of Greatest Conservation Need (SGCN)

Class: Crustaceans (*Malacostraca*)

Order: Decapods (*Decapoda*)

Family: (*Thoridae*)



General comments:

The Spiny Lebbeid Shrimp is a small, cold-water crustacean in the family Hippolytidae. It inhabits rocky subtidal zones and kelp beds, where it shelters among algae and feeds on detritus, small invertebrates, and organic matter. This shrimp is recognized by its elongated rostrum with small dorsal spines, translucent body marked with reddish or brown striping, and slender walking legs. It is considered at risk in Maine due to its limited distribution and the vulnerability of its shallow coastal habitat to warming waters, pollution, and disturbance from shoreline development and fishing activity.

No Species Conservation Range Maps Available

SGCN Priority Ranking - Designation Criteria:

Recent Significant Declines:	Spiny Lebbeid Shrimp is currently undergoing steep population declines, which has already led to, or if unchecked is likely to lead to, local extinction and/or range contraction. Notes: recent decline - last record in Cobscook Bay 1979; climate change - Arctic Province species; understudied - little known about this species, professional judgement
High Climate Change Vulnerability:	Vulnerability: 3, Confidence: , Reviewers:

Habitat Associations:

Formation: Subtidal

Macrogroup: Subtidal Coarse Gravel Bottom

★ Primary Habitat	Habitat System: Coarse Gravel <i>assumed off-shore mating habitat, assumed habitat of egg-bearing females; eggs hatch, assumed juvenile feeding habitat; nearshore and offshore, assumed male & spent female feeding habitat offshore</i>
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Macrogroup: Subtidal Mud Bottom

★ Primary Habitat	Habitat System: Unvegetated <i>feeding habitat offshore, assumed habitat of egg-bearing females; eggs hatch, assumed juvenile feeding habitat; nearshore and offshore, assumed male & spent female feeding habitat offshore</i>
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Macrogroup: Subtidal Pelagic (Water Column)

	Habitat System: Nearshore <i>larval development and dispersal</i>
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Spiny Lebbeid Shrimp *Lebbeus groenlandicus*

Priority 2 SGCN



Formation: Subtidal

Habitat System: Offshore
larval development and dispersal

Macrogroup: Subtidal Sand Bottom

★ Primary Habitat

Habitat System: Unvegetated
assumed off-shore mating habitat, assumed habitat of egg-bearing females; eggs hatch, assumed juvenile feeding habitat; nearshore and offshore, assumed male & spent female feeding habitat offshore

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 Pollution

IUCN Level 2 Threat: Agricultural and Forestry Effluents

Severity: High Severity

Actionability: Moderately Actionable

Notes: Crustacean larvae and adults are exceptionally sensitive to excessive nutrients, toxic chemicals (including pesticides and chemical therapeutants), and/or sediments.

IUCN Level 2 Threat: Domestic and Urban Waste Water

Severity: High Severity

Actionability: Moderately Actionable

Notes: Crustacean larvae and adults are exceptionally sensitive to excessive nutrients, toxic chemicals (including pesticides and chemical therapeutants), and/or sediments.

Spiny Lebbeid Shrimp *Lebbeus groenlandicus***Priority 2 SGCN****IUCN Level 1 Threat Biological Resource Use****IUCN Level 2 Threat: Fishing and Harvesting of Aquatic Resources****Severity:** High Severity**Actionability:** Actionable with Difficulty

Notes: Unintentional catch by commercial trawling reduces population size and subsequently results in local extinctions, impaired role of the functional group "predator," and subsequently results in decreased benthic diversity through trophic cascades and thus decreases the availability of food for other species.

IUCN Level 1 Threat Climate Change and Severe Weather**IUCN Level 2 Threat: Changes in Temperature Regimes****Severity:** High Severity**Actionability:** Actionable with Difficulty

Notes: Spiny lebbeid shrimp are cold-water species. Increased water temperatures have interactive effects with ocean pH decreasing survivorship of larvae and growth rate of crustaceans. Likelihood is high (high certainty) and large scale. The ability to mitigate sea temperature change is low.

IUCN Level 2 Threat: Habitat Shifting or Alteration**Severity:** High Severity**Actionability:** Actionable with Difficulty

Notes: Ocean acidification results in decreased survivorship of larvae, and growth and feeding by crustaceans. Likelihood is high and large scale. The ability to mitigate ocean acidification is low.

IUCN Level 1 Threat Invasive and Other Problematic Species, Genes and Diseases**IUCN Level 2 Threat: Invasive Non-native-Alien Species-Diseases****Severity:** Moderate Severity**Actionability:** Actionable with Difficulty

Notes: Invasives could have effects largely unknown at this time. Likelihood is high and large scale (throughout the region), so actionability is low.

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 Shrimp Guild:

Spiny Lebbeid Shrimp *Lebbeus groenlandicus*

Priority 2 SGCN



Conservation Action	Category	Biological Priority	Type
Develop molecular tools to identify where specimens are collected.	Research	high	on-going

Threat(s) Addressed By This Conservation Action

- Fishing and Harvesting of Aquatic Resources

Conservation Action	Category	Biological Priority	Type
Ground-truth mapped habitat and compare to historical maps to monitor change over time, may require updating mapping plans to map more frequently	Survey and Monitoring	high	on-going

Threat(s) Addressed By This Conservation Action

- Fishing and Harvesting of Aquatic Resources

Conservation Action	Category	Biological Priority	Type
Through education and collaboration, reduce the use of antifouling agents and biocides that negatively affect SGCN, and investigate alternative biofouling agents.	Policy	critical	on-going

Threat(s) Addressed By This Conservation Action

- Agricultural and Forestry Effluents

Conservation Action	Category	Biological Priority	Type
Expand existing education and research among researchers and managers to improve understanding and close data loopholes in order to inform management	Research	high	on-going

Threat(s) Addressed By This Conservation Action

- Domestic and Urban Waste Water

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