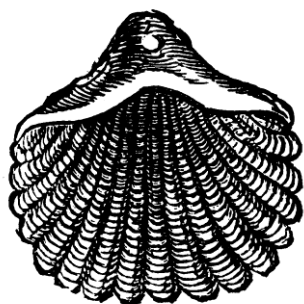




Brachiopods

Lamp Shell

Terebratulina septentrionalis

Priority 2 Species of Greatest Conservation Need (SGCN)

Class: Brachiopods (*Rhynchonellata*)

Order: Articulate Brachiopods (*Terebratulida*)

Family: (*Cancellothyrididae*)



General comments:

Lamp Shell lives attached to hard substrates such as rocks or shells from the low intertidal to deeper waters. Its bivalve-like shell is hinged at the rear and opens slightly at the front to extend a lophophore (a crown of tentacles used for filter feeding). Although it resembles a clam, the Lamp Shell belongs to the phylum Brachiopoda and is more closely related to bryozoans than to mollusks.

No Species Conservation Range Maps Available

SGCN Priority Ranking - Designation Criteria:

Recent Significant Declines:	Lamp Shell 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 - Trott 2004; climate change - Arctic Province species; understudied - understudied, targeted collecting by supply companies
High Climate Change Vulnerability:	Vulnerability: 3, Confidence: , Reviewers:

Habitat Associations:

Formation: Intertidal

Macrogroup: Intertidal Bedrock

* Primary Habitat	Habitat System: Low-Intertidal <i>spawning, juvenile and adult feeding habitat</i>
--------------------------	--

Macrogroup: Intertidal Gravel Shore

* Primary Habitat	Habitat System: Lower Intertidal <i>spawning, juvenile and adult feeding habitat</i>
--------------------------	--

Formation: Subtidal

Macrogroup: Subtidal Bedrock Bottom

* Primary Habitat	Habitat System: Bedrock <i>spawning, juvenile and adult feeding habitat</i>
--------------------------	---

* Primary Habitat	Habitat System: Erect Epifauna <i>spawning, juvenile and adult feeding habitat</i>
--------------------------	--

* Primary Habitat	Habitat System: Kelp Bed <i>spawning, juvenile and adult feeding habitat</i>
--------------------------	--

Lamp Shell *Terebratulina septentrionalis*

Priority 2 SGCN



Formation: Subtidal

Macrogroup: Subtidal Coarse Gravel Bottom

★ Primary Habitat	Habitat System: Coarse Gravel <i>spawning, juvenile and adult feeding habitat</i>
★ Primary Habitat	Habitat System: Erect Epifauna <i>spawning, juvenile and adult feeding habitat</i>

Macrogroup: Subtidal Pelagic (Water Column)

	Habitat System: Nearshore <i>larval development and dispersal</i>
	Habitat System: Offshore <i>larval development and dispersal</i>

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 Biological Resource Use

IUCN Level 2 Threat: Fishing and Harvesting of Aquatic Resources

Severity: High Severity **Actionability:** Highly Actionable

Notes: Large-scale, unintentional catch by commercial trawling reduces population size and subsequently results in local extinctions, impaired role of the functional group "suspension feeders." Likelihood is high (high certainty) and large scale (throughout the region where this species occurs). Actionability is low for incidental catch. Intentional collection by aquarium trade leads to significant population reductions with similar effects. Likelihood is high (high certainty) and small-scale so actionability is high.

Lamp Shell *Terebratulina septentrionalis*

Priority 2 SGCN



IUCN Level 1 Threat Pollution

IUCN Level 2 Threat: Agricultural and Forestry Effluents

Severity: High Severity

Actionability: Moderately Actionable

Notes: Loss of habitat due to excessive nutrients, toxic chemicals (including pesticides and chemical therapeutants), and/or sediments originating from aquaculture can reduce populations size. Direct effects could include toxicity of tributyl compounds shown in other marine invertebrates. Likelihood is high (high certainty). Current spatial extent is expanding along coast along with development of the aquaculture industry, so actionability is moderate, i.e. the threat can be minimized in newly developing areas.

IUCN Level 2 Threat: Industrial and Military Effluents

Severity: High Severity

Actionability: Moderately Actionable

Notes: Oil spills are toxic to species with intertidal distributions. Local scale spills have an unpredictable likelihood and actionability is moderate and influenced by response time to spills.

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: Lamp shells are cold-water species. Increased water temperatures may have interactive effects with ocean pH decreasing survivorship of larvae and growth rate shown for other marine invertebrates. 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 are unknown at this time but could result in decreased survivorship of larvae, and growth and feeding shown in other marine invertebrates. The ability to mitigate ocean acidification is low.

Lamp Shell *Terebratulina septentrionalis*

Priority 2 SGCN



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 such as encrusting colonial tunicates (*Didemnum vexillum*) could decrease availability of habitat and have other 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 Brachiopod Guild:

Conservation Action	Category	Biological Priority	Type
Encourage the use of more targeted fishing gear in order to reduce bycatch and habitat disturbance	Public Outreach	high	on-going

Threat(s) Addressed By This Conservation Action

- Fishing and Harvesting of Aquatic Resources

Conservation Action	Category	Biological Priority	Type
Reduce the collection and possession of live specimens	Policy	critical	new

Threat(s) Addressed By This Conservation Action

- Fishing and Harvesting of Aquatic Resources

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

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

- Marine and Freshwater Aquaculture

Broad Taxonomic Group Conservation Actions:

Additional relevant conservation actions for this species are assigned within broader taxonomic groups in Maine's Wildlife

Lamp Shell *Terebratulina septentrionalis*
Priority 2 SGCN



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