Aquatic And Terrestrial Snails

Spindle Shell

Ptychatractus ligatus

Priority 2 Species of Greatest Conservation Need (SGCN)

Class: Aquatic And Terrestrial Snails *(Gastropoda)*
Order: Mostly Sea Snails *(Neograstropoda)*
Family: *(Ptychatractidae)*

General comments:

Species in the family Fasciolariidae, commonly called Spindle Shells, are elongate marine snails with tapered ends and distinct spiral ridges. They inhabit sandy or muddy bottoms from shallow waters to deeper offshore habitats. Many are active predators, feeding on bivalves and other gastropods.

No Species Conservation Range Maps Available

SGCN Priority Ranking - Designation Criteria:

Recent Significant Declines:	Spindle 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, in review; last record in Cobscook Bay 1973; climate change - Southward et al. 1995; Schiel et al. 2004; understudied as dredge by-catch, 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 *assumed mating and egg-laying habitat, juvenile and adult feeding habitat*

Macrogroup: Subtidal Pelagic (Water Column)

	Habitat System: Nearshore *larval development and dispersal*
	Habitat System: Offshore *larval development and dispersal*

Threats

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

Spindle Shell *Ptychatractus ligatus*

Priority 2 SGCN

	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 "predator," and subsequently results in decreased benthic diversity through trophic cascades and thus decreases the availability of food for other species. Large-scale incidental catch contributes to these effects. 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.

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 orginating from aquaculture can reduce populations size. Direct effects could include toxicicity of tributyl compounds shown in other gastropods. 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 1 Threat Climate Change and Severe Weather

IUCN Level 2 Threat: Changes in Temperature Regimes

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

Notes: Spindle shells are cold-water species. Increased water temperatures may have interactive effects with ocean pH decreasing suvivorship of larvae and growth rate shown for other molluscs. Likelihood is high (high certainty) and large scale. The ability to mitigate sea temperature change is low.

Spindle Shell *Ptychatractus ligatus*

Priority 2 SGCN

IUCN Level 1 Threat Climate Change and Severe Weather

IUCN Level 2 Threat: Habitat Shifting or Alteration

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

Notes: Ocean acidification may result in decreased suvivorship of larvae, and growth and feeding shown in other molluscs. Likelyhood is high and large scale. The ability to mitigate sea level rise and 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: Invasive non-native and alien diseases 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 Gastropods 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

Spindle Shell *Ptychatractus ligatus*

Priority 2 SGCN

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
Reduce the use of tributilyn compounds as a biocide and antifouling prophalactic	Policy	critical	new

Threat(s) Addressed By This Conservation Action

- Agricultural and Forestry Effluents

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