

Acipenser brevirostrum* (Shortnose Sturgeon)*Priority 1 Species of Greatest Conservation Need (SGCN)****Class:** *Actinopterygii* (Ray-finned Fishes)**Order:** *Acipenseriformes* (Sturgeons And Paddlefishes)**Family:** *Acipenseridae* (Sturgeons)**General comments:**

Federally endangered

No Species Conservation Range Maps Available for Shortnose Sturgeon**SGCN Priority Ranking - Designation Criteria:****Risk of Extirpation:**Maine Status: **Endangered**Federal Status: **Endangered**IUCN Red List Status: **Vulnerable****State Special Concern or NMFS Species of Concern: NA****Recent Significant Declines: NA****Regional Endemic: NA****High Regional Conservation Priority:****Northeast Regional Synthesis (RSGCN):**

Responsibility: High, Concern: Very High

American Fisheries Society, Endangered Species Committee:

Status: Endangered, Trend: declined, Listing: 12, Global Rank: G3, Comment:

High Climate Change Vulnerability: NA**Understudied rare taxa: NA****Historical: NA****Culturally Significant: NA****Habitats Assigned to Shortnose Sturgeon:****Formation Name Freshwater Aquatic****Macrogroup Name Rivers and Streams****Habitat System Name:** Large River ****Primary Habitat**** **Notes:** *adult spawning, juvenile, adult and juvenile overwintering, assumed feeding habitat***Habitat System Name:** Medium River **Notes:** *migratory route***Formation Name Intertidal****Macrogroup Name Intertidal Mudflat****Habitat System Name:** Non-Vascular Mudflat **Notes:** *assumed feeding habitat***Macrogroup Name Intertidal Sandy Shore****Habitat System Name:** Sand Flat **Notes:** *assumed feeding habitat***Macrogroup Name Intertidal Water Column****Habitat System Name:** Confined Channel ****Primary Habitat**** **Notes:** *adult spawning, juvenile, adult and juvenile overwintering, assumed feeding habitat***Habitat System Name:** Embayment**Formation Name Subtidal****Macrogroup Name Subtidal Mud Bottom****Habitat System Name:** Unvegetated **Notes:** *assumed feeding habitat*

Acipenser brevirostrum (Shortnose Sturgeon)

Priority 1 Species of Greatest Conservation Need (SGCN)

Class: *Actinopterygii* (Ray-finned Fishes)

Order: *Acipenseriformes* (Sturgeons And Paddlefishes)

Family: *Acipenseridae* (Sturgeons)

Formation Name Subtidal

Macrogroup Name **Subtidal Pelagic (Water Column)**

Habitat System Name: Confined Channel

Habitat System Name: Nearshore **Notes:** *migratory corridor*

Macrogroup Name **Subtidal Sand Bottom**

Habitat System Name: Submerged Aquatic Vegetation **Notes:** *assumed feeding habitat*

Stressors Assigned to Shortnose Sturgeon:

Stressor 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 Energy Production and Mining

IUCN Level 2 Threat: Renewable Energy

Severity: Moderate Severity **Actionability:** Moderately actionable

Notes: Some proposed renewable energy projects such as tidal barrages or tide driven turbines may significantly impact anadromous species by either obstructing or greatly reducing natural migration routes, as well as mortality associated with turbine strikes.

IUCN Level 1 Threat Human Intrusions and Disturbance

IUCN Level 2 Threat: Recreational Activities

Severity: Moderate Severity **Actionability:** Moderately actionable

Notes: No directed fishing is allowed, but occasional bycatch occurs in recreational fishing. Educational information can help anglers reduce stress during catch and release and limit mortality. Boat strikes are also more frequent in recreational fishing areas.

IUCN Level 1 Threat Natural Systems Modifications

IUCN Level 2 Threat: Dams and Water Management-Use

Severity: Moderate Severity **Actionability:** Moderately actionable

Notes: Some head of tide dams remain in Maine and limit or obstruct access to habitat. Dam removals on the Kennebec and Penobscot have already occurred and opened access to historical habitat, but the long-term effects of reduced habitat could be difficult to recover from.

IUCN Level 1 Threat Pollution

IUCN Level 2 Threat: Domestic and Urban Waste Water

Severity: Moderate Severity **Actionability:** Moderately actionable

Notes: The specific causes of impact are increased non-point source pollution (heavy metals and nutrient inputs), increased turbidity, and lower dissolved oxygen.

IUCN Level 1 Threat Biological Resource Use

IUCN Level 2 Threat: Fishing and Harvesting of Aquatic Resources

Severity: Moderate Severity **Actionability:** Actionable with difficulty

Notes: Directed fishing is prohibited but some bycatch occurs and can lead to mortality especially in trawl nets.

Acipenser brevirostrum (Shortnose Sturgeon)

Priority 1 Species of Greatest Conservation Need (SGCN)

Class: *Actinopterygii* (Ray-finned Fishes)
Order: *Acipenseriformes* (Sturgeons And Paddlefishes)
Family: *Acipenseridae* (Sturgeons)

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: Climate change could reduce or relocate spawning habitat and truncate or shift species natural range, and result in reduced prey (clams and other calcareous animals).

IUCN Level 2 Threat: Storms and Flooding

Severity: Moderate Severity **Actionability:** Actionable with difficulty

Notes: Increased flooding can lead to increased runoff, non-point source pollution, and sedimentation. Preserving or improving stream buffers could help mitigate high velocity runoff.

IUCN Level 2 Threat: Temperature Extremes

Severity: Moderate Severity **Actionability:** Actionable with difficulty

Notes: Range shifts with changing sea surface temperatures may already be occurring.

IUCN Level 1 Threat Energy Production and Mining

IUCN Level 2 Threat: Oil and Gas Drilling

Severity: Moderate Severity **Actionability:** Actionable with difficulty

Notes: There is potential for offshore oil spills in the Gulf of Maine from tankers. The use of oil dispersants increases the effect on pelagic species by increasing the toxicity of oil globules, though the exact effects are not well documented.

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: Effect of invasives largely unknown but might have effect on specific populations (Kennebec). The ability, likelihood, and certainty to mitigate invasives is low.

IUCN Level 1 Threat Pollution

IUCN Level 2 Threat: Garbage and Solid Waste

Severity: Moderate Severity **Actionability:** Actionable with difficulty

Notes: Especially in high recreational use areas, garbage can be eaten by sturgeon and cause blockages. Ring shape garbage also has been found on sturgeon (around body) cutting into them as they grow and causing infection.

IUCN Level 2 Threat: Industrial and Military Effluents

Severity: Moderate Severity **Actionability:** Actionable with difficulty

Notes: Non-point source pollution (heavy metals and nutrient inputs) has been directly related to declining runs. Likelihood is high and increasing (high certainty), current spatial extent is a few locations, , actionability is low because further regulation of effluents is not likely within next 10 years in Maine.

IUCN Level 1 Threat Residential and Commercial Development

IUCN Level 2 Threat: Commercial and Industrial Areas

Severity: Severe **Actionability:** Actionable with difficulty

Notes: Armored shores decrease available forage and over-winter habitat. Spatial extent is fairly low (confined to a few areas), but is substantial in those areas.

Acipenser brevirostrum (Shortnose Sturgeon)

Priority 1 Species of Greatest Conservation Need (SGCN)

Class: *Actinopterygii* (Ray-finned Fishes)
Order: *Acipenseriformes* (Sturgeons And Paddlefishes)
Family: *Acipenseridae* (Sturgeons)

IUCN Level 1 Threat **Transportation and Service Corridors**

IUCN Level 2 Threat: Shipping Lanes

Severity: Moderate Severity **Actionability:** Actionable with difficulty

Notes: Ships can strike sturgeon and lead to mortality.

Species Level Conservation Actions Assigned to Shortnose Sturgeon:

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

Conservation Actions Associated with the Diadromous Fish Guild:

Conservation Action **Category:** Public Outreach **Biological Priority:** moderate **Type:** on-going
 Continue to work with the fishing industry to develop gear modifications that reduce of bycatch of diadromous fishes

Stressor(s) Addressed By This Conservation Action

Fishing and Harvesting of Aquatic Resources

Conservation Action **Category:** Public Outreach **Biological Priority:** high **Type:** on-going
 Conduct education to increase awareness of the importance of these species to maintaining productive ecosystem functioning.

Stressor(s) Addressed By This Conservation Action

Lack of knowledge, Fishing and Harvesting of Aquatic Resources

Conservation Action **Category:** Research **Biological Priority:** high **Type:** on-going
 Improve understanding of species distribution especially in regards to ecosystem interactions, predator-prey relationships, and prey buffering concepts

Stressor(s) Addressed By This Conservation Action

Lack of knowledge

Conservation Action **Category:** Habitat Management **Biological Priority:** high **Type:** on-going
 Encourage improved municipal planning for siting for new or retrofitting development, taking into account future environmental change, to improve connectivity for diadromous fish passage

Stressor(s) Addressed By This Conservation Action

Industrial and Military Effluents, Domestic and Urban Waste Water, Commercial and Industrial Areas , Housing and Urban Areas

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

Stressor(s) Addressed By This Conservation Action

Lack of knowledge

Conservation Action **Category:** Survey and Monitoring **Biological Priority:** critical **Type:** on-going
 Monitor population stock status through surveys and sampling programs

Stressor(s) Addressed By This Conservation Action

Other Threat

Conservation Action **Category:** Research **Biological Priority:** critical **Type:** on-going
 Determine the location and timing of critical habitat use (for endangered species) and important habitat use for diadromous fishes at different life history stages

***Acipenser brevirostrum* (Shortnose Sturgeon)**

Priority 1 Species of Greatest Conservation Need (SGCN)

Class: *Actinopterygii* (Ray-finned Fishes)

Order: *Acipenseriformes* (Sturgeons And Paddlefishes)

Family: *Acipenseridae* (Sturgeons)

Stressor(s) Addressed By This Conservation Action

Lack of knowledge

Conservation Action	Category: Research	Biological Priority: high	Type: new
Investigate methods to reduce incidental bycatch in commercial and recreational fisheries			

Stressor(s) Addressed By This Conservation Action

Fishing and Harvesting of Aquatic Resources

Conservation Action	Category: Research	Biological Priority: high	Type: on-going
Gather information to support management, including stock assessments, population genetics, population monitoring, etc.			

Stressor(s) Addressed By This Conservation Action

Fishing and Harvesting of Aquatic Resources, Lack of knowledge

Conservation Action	Category: Research	Biological Priority: high	Type: new
Improve understanding of the relative roles of natural predation, fishing mortality, and climate change in stock dynamics			

Stressor(s) Addressed By This Conservation Action

Fishing and Harvesting of Aquatic Resources, Lack of knowledge, Problematic Native Species-Diseases, Habitat Shifting or Alteration

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

Broad Taxonomic Group Conservation Actions:

Additional relevant conservation actions for this species are assigned within broader taxonomic groups in Maine's 2015 Wildlife Action Plan: Element 4, Table 4-1.

Habitat Based Conservation Actions:

Additional conservation actions that may benefit habitat(s) associated with this species can be found in Maine's 2015 Wildlife Action Plan: Element 4, Table 4-15. 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, stressors, and voluntary conservation actions identified in the Plan complement, but do not replace, existing work programs and priorities by state agencies and partners.