



Ray-finned Fishes

Alewife

Alosa pseudoharengus

Priority 1 Species of Greatest Conservation Need (SGCN)

Class: Ray-finned Fishes (*Actinopterygii*)

Order: Herrings (*Clupeiformes*)

Family: Herrings (*Clupeidae*)



General comments:

Alewives are an ESA Species of Concern from Newfoundland to North Carolina. Similar to Blueback Herring, a 2023 negative 12-month finding (78 FR 48943) concluded that ESA listing was not warranted. Maine removed its state SC status in 2025.

No Species Conservation Range Maps Available

SGCN Priority Ranking - Designation Criteria:

Recent Significant Declines:	Alewife 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: ASFMC Stock Assessment
High Climate Change Vulnerability:	Vulnerability: 3, Confidence: , Reviewers:
Culturally Significant:	Species identified as both biologically vulnerable and culturally significant by Maine’s tribes.
High Regional Conservation Priority:	Northeast Regional Synthesis (RSGCN): Responsibility: High, Concern: High Atlantic States Marine Fisheries Commission Stock Assessments: Status: Depleted, Status Comment: "The coastwide meta-complex of river herring stocks on the US Atlantic coast is depleted to near historic lows. A depleted status indicates that there was evidence for declines in abundance due to a number of factors, but the relative importance of these Reference: Title.pdf (asmfc.org)

Professional Discretion:

Current criteria ranked *Alosa pseudoharengus* as SGCN priority 2, however, species should qualify as SGCN priority 1 based on professional discretion.

Justification: Same priority as Blueback herring

Habitat Associations:

Formation: Freshwater Aquatic	
Macrogroup: Lentic	
	Habitat System: Compromised Water Quality Lakes
	Habitat System: Fishless Lakes and Ponds

Alewife *Alosa pseudoharengus*

Priority 1 SGCN



Formation: Freshwater Aquatic

★ Primary Habitat	Habitat System: High Elevation Lakes and Ponds <i>adult spawning (spring), embryo development, larval development, juvenile development until aged 3-6 months</i>
	Habitat System: Lakes without Depth Data
	Habitat System: Ponds (<10
	Habitat System: Shallow and Intermediate Depth Littoral Lakes
★ Primary Habitat	Habitat System: Shallow and Intermediate Depth Mixed Habitat Lakes <i>adult spawning (spring), embryo development, larval development, juvenile development until aged 3-6 months</i>
	Habitat System: Shallow and Intermediate Depth Pelagic Lakes

Macrogroup: Lotic

★ Primary Habitat	Habitat System: Cold Rivers <i>spawning migration route and some limited spawning</i>
★ Primary Habitat	Habitat System: Non-cold Large Rivers <i>spawning migration route and some limited spawning</i>
	Habitat System: Transitional Small and Medium Rivers
	Habitat System: Unknown Thermal Regime Small and Medium Rivers
	Habitat System: Warm Small and Medium Rivers

Formation: Intertidal

Macrogroup: Intertidal Water Column

	Habitat System: Confined Channel <i>migration route in spring and early summer</i>
	Habitat System: Embayment <i>migration route in spring and early summer, juvenile feeding area</i>
	Habitat System: Exposed Shore <i>migration route for sub-adult (age 1-2) populations from entire Atlantic Coast</i>

Formation: Subtidal

Macrogroup: Subtidal Pelagic (Water Column)

	Habitat System: Confined Channel <i>migration route in spring and early summer</i>
★ Primary Habitat	Habitat System: Nearshore <i>migration route for sub-adult (age 1-2) populations from entire Atlantic Coast</i>
	Habitat System: Offshore <i>migration route for sub-adult (age 1-2) populations from entire Atlantic Coast, but movement is more nearshore than offshore</i>

Threats

Alewife *Alosa pseudoharengus*

Priority 1 SGCN



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 Climate Change and Severe Weather

IUCN Level 2 Threat: Changes in Precipitation and Hydrological Regimes

Severity: High Severity

Actionability: Moderately Actionable

Notes: Increased flooding during the spring can limit upstream swimming ability. Preserving or improving stream buffers could help mitigate high velocity runoff.

IUCN Level 1 Threat Energy Production and Mining

IUCN Level 2 Threat: Renewable Energy

Severity: Moderate Severity

Actionability: Highly Actionable

Notes: Current hydroelectric projects at dams on Maine rivers and some proposed renewable energy projects such as tidal barrages or tide driven turbines may significantly impact anadromous fishes by either obstructing or greatly reducing natural migration routes, as well as mortality associated with turbine strikes or other project infrastructure.

IUCN Level 1 Threat Human Intrusions and Disturbance

IUCN Level 2 Threat: Recreational Activities

Severity: Moderate Severity

Actionability: Highly Actionable

Notes: Extraction and mortality rates differ widely among Maine runs. Implementing voluntary conservation measures, such as continuous escapement or not fishing the run during the first week, can help ensure sustainable harvests

Alewife *Alosa pseudoharengus*

Priority 1 SGCN



IUCN Level 1 Threat Natural Systems Modifications

IUCN Level 2 Threat: Dams and Water Management-Use

Severity: High Severity

Actionability: Moderately Actionable

Notes: Dams can completely block access to spawning grounds. While fishways can provide upstream access around dams, they may not pass all species effectively and/or may fall into disrepair without active maintenance. Actionability is moderate - proactive dam removal happens infrequently (not a high likelihood or certainty), but new small dam construction is slowing. Spatial extent is entire state.

IUCN Level 1 Threat Transportation and Service Corridors

IUCN Level 2 Threat: Roads and Railroads

Severity: High Severity

Actionability: Moderately Actionable

Notes: The majority of the current road/railroad crossings pose some passage problems because they are undersized or hanging during at least some portion of the tide or seasonal flow regime. 'Actionability' is moderate because culverts must be replaced and can be constructed to allow passage, but sometimes are not. Also must wait until the culvert is in need of replacement in most cases which can be 20-30 years. Likelihood is moderate because construction can allow passage. Certainty is low. Spatial extent is high within spawning range.

IUCN Level 1 Threat Biological Resource Use

IUCN Level 2 Threat: Fishing and Harvesting of Aquatic Resources

Severity: Moderate Severity

Actionability: Moderately Actionable

Notes: Extraction and mortality rates differ widely among Maine runs. Implementing voluntary conservation measures, such as continuous escapement or not fishing the run during the first week, can help ensure sustainable harvests

IUCN Level 1 Threat Pollution

IUCN Level 2 Threat: Agricultural and Forestry Effluents

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.

Alewife *Alosa pseudoharengus*

Priority 1 SGCN



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 Residential and Commercial Development

IUCN Level 2 Threat: Commercial and Industrial Areas

Severity: Moderate Severity

Actionability: Moderately Actionable

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.

IUCN Level 2 Threat: Housing and Urban Areas

Severity: Moderate Severity

Actionability: Moderately Actionable

Notes: Residential and urban development can lead to stressed runs. The specific causes of impact are increased non-point source pollution (heavy metals and nutrient inputs), increased turbidity, water withdrawals, disturbance of stream corridor and tree canopy over stream. Likelihood is high and increasing (high certainty), current spatial extent is Southern Maine, but expanding along coast, 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 Precipitation and Hydrological Regimes

Severity: High Severity

Actionability: Actionable with Difficulty

Notes: Changes in annual water trends can affect water trends/discharge during important phases in the life cycle (spawning, rearing, outmigration). Recent NOAA research has shown that droughts and flooding during summer/fall can impact spring flow regimes.

IUCN Level 2 Threat: Changes in Temperature Regimes

Severity: Moderate Severity

Actionability: Actionable with Difficulty

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

Alewife *Alosa pseudoharengus*

Priority 1 SGCN



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: Sea level rise could reduce or relocate spawning habitat and truncate or shift species natural range. Likelihood of adjusting to accommodate is low.

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. If barriers are kept in place to prevent migration of invasives, the impact will be high on migratory species.

IUCN Level 1 Threat Pollution

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.

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 Diadromous Fish Guild:

Alewife *Alosa pseudoharengus*

Priority 1 SGCN



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

Threat(s) Addressed By This Conservation Action

- Fishing and Harvesting of Aquatic Resources

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

Threat(s) Addressed By This Conservation Action

- Fishing and Harvesting of Aquatic Resources
- Lack of knowledge

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

Threat(s) Addressed By This Conservation Action

- Lack of knowledge

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

Threat(s) Addressed By This Conservation Action

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

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

- Changes in Precipitation and Hydrological Regimes
- Changes in Temperature Regimes
- Lack of knowledge

Alewife *Alosa pseudoharengus*

Priority 1 SGCN



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

Threat(s) Addressed By This Conservation Action

- Other Threat

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

Threat(s) Addressed By This Conservation Action

- Lack of knowledge

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

Threat(s) Addressed By This Conservation Action

- Fishing and Harvesting of Aquatic Resources

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

Threat(s) Addressed By This Conservation Action

- Other Threat
- Dams and Water Management-Use
- Lack of knowledge
- Habitat Shifting or Alteration

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

Threat(s) Addressed By This Conservation Action

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

Alewife *Alosa pseudoharengus***Priority 1 SGCN**

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

Threat(s) Addressed By This Conservation Action

- Lack of knowledge
- Fishing and Harvesting of Aquatic Resources

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