



SGCN and Habitat Threats

Level 1 Threat Climate Change and Severe Weather

Level 2 Threat: Habitat Shifting or Alteration

Major changes in habitat composition and location

Species Associated With This Threat:

SGCN Priority Level P1 = 112 / P2 = 133 / P3 = 15

Class	Ray-finned Fishes (<i>Actinopterygii</i>)	SGCN Priority
Alewife (<i>Alosa pseudoharengus</i>)		1
Severity: Moderate Severity	Actionability: Actionable with Difficulty	
Sea level rise could reduce or relocate spawning habitat and truncate or shift species natural range. Likelihood of adjusting to accommodate is low.		
American Eel (<i>Anguilla rostrata</i>)		1
Severity: Moderate Severity	Actionability: Actionable with Difficulty	
Oceanic changes due to climate change may affect migration, spawning and recruitment.		
American Shad (<i>Alosa sapidissima</i>)		1
Severity: Moderate Severity	Actionability: Actionable with Difficulty	
Sea level rise could reduce or relocate spawning habitat and truncate or shift species natural range. Likelihood of adjusting to accommodate is low.		
Atlantic Bluefin Tuna (<i>Thunnus thynnus</i>)		3
Severity: High Severity	Actionability: Actionable with Difficulty	
Changes in SST, prey composition and locations may have significant impacts on forage base, location of forage areas, and timing and location of spawning.		
Atlantic Cod (<i>Gadus morhua</i>)		2
Severity: High Severity	Actionability: Actionable with Difficulty	
As a coldwater species, changes in habitat associated with climate change and other environmental variables may limit the ability of the population to reach its potential, and may cause shifts in range or range truncation.. Additionally, while reduced fishing pressure may allow cod stocks to rebuild slightly, changed in habitat associated with climate change and other environmental variables may limit the ability of the population to reach its potential.		
Atlantic Cod (<i>Gadus morhua</i>)		2
Severity: Moderate Severity	Actionability: Actionable with Difficulty	
Atlantic Salmon (<i>Salmo salar</i>)		1
Severity: High Severity	Actionability: Actionable with Difficulty	
Ocean temperature change causes shifts in Atlantic salmon food sources these shift could affect ocean survival. Spatial extent Ocean migration.		



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Level 2 Threat: Habitat Shifting or Alteration

Class	Ray-finned Fishes (<i>Actinopterygii</i>)	SGCN Priority
	Atlantic Sturgeon (<i>Acipenser oxyrinchus</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty 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).	
	Atlantic Wolffish (<i>Anarhichas lupus</i>)	2
	Severity: High Severity Actionability: Actionable with Difficulty As a coldwater species, changes in habitat associated with climate change and other environmental variables may limit the ability of the population to reach its potential, and may cause shifts in range or range truncation.	
	Blueback Herring (<i>Alosa aestivalis</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty Sea level rise could reduce or relocate spawning habitat and truncate or shift species natural range. Likelihood of adjusting to accommodate is low.	
	Bridle Shiner (<i>Notropis bifrenatus</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty Habitat relationships are largely unknown, therefore projected changes due to climate change are unknown.	
	Brook Trout (<i>Salvelinus fontinalis</i>)	2
	Severity: Moderate Severity Actionability: Moderately Actionable BKT rely on access to cold water/thermal refugia during stressful times. These areas are likely to shift in location and level of importance due to climate change	
	Creek Chubsucker (<i>Erimyzon oblongus</i>)	2
	Severity: Moderate Severity Actionability: Moderately Actionable Instream habitat condition is often compromised due to past and on-going changes to physical habitat and climate.	
	Cusk (<i>Brosme brosme</i>)	2
	Severity: High Severity Actionability: Actionable with Difficulty As a coldwater species, changes in habitat associated with climate change and other environmental variables may limit the ability of the population to reach its potential, and may cause shifts in range or range truncation.	



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Class	Ray-finned Fishes (<i>Actinopterygii</i>)	SGCN Priority
	Haddock (<i>Melanogrammus aeglefinus</i>)	3
	Severity: High Severity Actionability: Actionable with Difficulty As a coldwater species, changes in habitat associated with climate change and other environmental variables may limit the ability of the population to reach its potential, and may cause shifts in range or range truncation. Additionally, While reduced fishing pressure may allow cod stocks to rebuild slightly, changed in habitat associated with climate change and other environmental variables may limit the ability of the population to reach its potential.	
	Landlocked Atlantic Salmon (<i>Salmo salar sebago</i>)	2
	Severity: Moderate Severity Actionability: Moderately Actionable Some habitat conditons can be rehabilitated if addressed	
	Rainbow Smelt (<i>Osmerus mordax</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty Sea level rise could reduce or relocate spawning habitat. Liklihood of adjusting coastal development to accommodate is low.	
	Redfin Pickerel (<i>Esox americanus americanus</i>)	2
	Severity: Moderate Severity Actionability: Moderately Actionable Sea level rise may affect some RPK sites since the fish occurs in FW streams in extremely close proximity to saltmarshes. Maintaining migration corridors and stream connectivity between saltmarsh and proximal FW systems is important for species persistence as sea level rises.	
	Shortnose Sturgeon (<i>Acipenser brevirostrum</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty 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).	
	Striped Bass (<i>Morone saxatilis</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty Climate change could reduce or relocate spawning, rearing, and overwintering habitat and shift species natural range. Liklihood of adjusting to accommodate is low. Abundance and assemblages of prey species will likely be altered.	
	Winter Flounder (<i>Pseudopleuronectes americanus</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty While reduced fishing pressure may allow Gulf of Maine stocks to rebuild slightly, changed in habitat associated with climate change and other environmental variables may limit the ability of the population to reach its potential.	

Class Amphibians (*Amphibia*)

SGCN Priority



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Class Amphibians (<i>Amphibia</i>)		SGCN Priority
Blue-spotted Salamander (<i>Ambystoma laterale</i>)		3
Severity: Moderate Severity Actionability: Actionable with Difficulty Climate change; potential impacts predicted for long-hydroperiod vernal pools and swamps		
Class Sea Stars (<i>Asteroidea</i>)		SGCN Priority
Common Sea Star (<i>Asterias rubens</i>)		2
Severity: High Severity Actionability: Moderately Actionable Ocean acidification results in decreased survivorship of larvae, and growth and feeding by adult sea stars. The likelihood of habitat shifting and alteration is high and large scale. The ability to mitigate ocean acidification is low.		
Common Sun Star (<i>Crossaster papposus</i>)		2
Severity: High Severity Actionability: Actionable with Difficulty Common Sun Stars are cold-water species. Ocean acidification results in decreased survivorship of larvae, and growth and feeding by adult sea stars. Likelihood is high and large scale. The ability to mitigate ocean acidification is low.		
Forbes's Starfish (<i>Asterias forbesi</i>)		2
Severity: Moderate Severity Actionability: Actionable with Difficulty Ocean acidification results in decreased survivorship of larvae, and growth and feeding by adult sea stars. The likelihood of habitat shifting and alteration is high and large scale. The ability to mitigate ocean acidification is low.		
Purple Sunstar (<i>Solaster endeca</i>)		2
Severity: High Severity Actionability: Actionable with Difficulty Ocean acidification results in decreased survivorship of larvae, and growth and feeding by adult sea stars. Likelihood is high and large scale. The ability to mitigate ocean acidification is low.		
White Sea Star (<i>Stephanasterias albula</i>)		2
Severity: High Severity Actionability: Actionable with Difficulty Ocean acidification results in decreased survivorship of larvae, and growth and feeding by adult sea stars. Likelihood is high and large scale. The ability to mitigate ocean acidification is low.		
Class Birds (<i>Aves</i>)		SGCN Priority
American Kestrel (<i>Falco sparverius</i>)		2
Severity: Moderate Severity Actionability: Moderately Actionable Loss of grassland and open land habitats due to land conversion, development, afforestation, and changing land use practices can reduce foraging opportunities, diminish prey abundance, limit availability of nest cavities, and increase both competition for nest sites and predation risk to adults and young.		



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Class	Birds (<i>Aves</i>)	SGCN Priority
	American Pipit (<i>Anthus rubescens</i>) Severity: High Severity Actionability: Actionable with Difficulty The greatest long-term threat to American Pipits in Maine is loss of alpine tundra due to upslope treeline shifts and shrinking snowpack from climate change. Even small encroachments could eliminate breeding habitat on Katahdin.	2
	Arctic Tern (<i>Sterna paradisaea</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty Long term threat of climate change related sea level rise	1
	Atlantic Puffin (<i>Fratercula arctica</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty	2
	Barn Swallow (<i>Hirundo rustica</i>) Severity: Moderate Severity Actionability: Moderately Actionable Conversion of farms to development or forest succession reduces suitable habitat.	2
	Bicknell's Thrush (<i>Catharus bicknelli</i>) Severity: High Severity Actionability: Actionable with Difficulty Climate change is expected to dramatically reduce the extent of balsam fir and associated montane spruce-fir forests. Modeled scenarios predict >50% habitat loss within 30 years and up to 90% loss by the end of the century. As a high-elevation specialist, Bicknell's Thrush is particularly vulnerable to the upward shift of forest zones. While mitigation at the global level is difficult, local planning and habitat connectivity may buffer some impacts.	1
	Black-and-white Warbler (<i>Mniotilta varia</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty Some shifting of habitat but species has "room to move"	3
	Blackpoll Warbler (<i>Setophaga striata</i>) Severity: High Severity Actionability: Actionable with Difficulty Climate change is shrinking the elevational and latitudinal extent of spruce-fir habitats in the Northeast. Blackpolls are at risk of range retraction and population sink dynamics at the lower margins of their range due to upward shifts in forest zones and interspecific competition.	1
	Blue-winged Warbler (<i>Vermivora cyanoptera</i>) Severity: Moderate Severity Actionability: Moderately Actionable Loss of early successional habitat to forest succession	3



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Class	Birds (<i>Aves</i>)	SGCN Priority
	Boreal Chickadee (<i>Poecile hudsonicus</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty Boreal Chickadees are near the southern edge of their range in Maine, and are highly tied to spruce-fir forests, which are projected to contract significantly with climate change. Atlas data already show loss from the Downeast region (though the cause of this is unknown). Warming temperatures and associated shifts in forest composition (toward hardwoods or mixed forests) pose a direct long-term threat.	2
	Brown Thrasher (<i>Toxostoma rufum</i>) Severity: Moderate Severity Actionability: Moderately Actionable Long-term fire suppression can contribute to forest maturation and loss of early successional habitat, which Brown Thrashers depend on for nesting and foraging. While large-scale wildfires aren't common in Maine, the lack of disturbance, or proper management (including prescribed fire) allows many suitable shrubland and edge habitats to succeed to closed-canopy forest.	2
	Chestnut-sided Warbler (<i>Setophaga pensylvanica</i>) Severity: Moderate Severity Actionability: Moderately Actionable Loss of early successional habitat to forest succession	3
	Common Tern (<i>Sterna hirundo</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty Sea level rise	3
	Eastern Meadowlark (<i>Sturnella magna</i>) Severity: Moderate Severity Actionability: Highly Actionable Land abandonment and the decline of small farms in Maine have led to natural succession of grasslands into shrublands or forests, reducing the availability of open, contiguous breeding habitat. Meadowlarks are especially sensitive to habitat fragmentation and woody encroachment.	1
	Eastern Whip-poor-will (<i>Antrostomus vociferus</i>) Severity: Moderate Severity Actionability: Moderately Actionable Loss of early successional habitat to forest succession	2
	Fox Sparrow (<i>Passerella iliaca</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty Warming temperatures may alter boreal forest structure and reduce availability of cool, moist spruce-fir habitats preferred by Fox Sparrows. Peatland drying could reduce suitable breeding areas in poor conifer swamps or forested peatlands	2



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Class	Birds (<i>Aves</i>)	SGCN Priority
	Harlequin Duck (<i>Histrionicus histrionicus</i>) Severity: High Severity Actionability: Actionable with Difficulty Loss of offshore habitats due to sea level rise, may be mitigated through protection of upland areas that will allow intertidal areas to migrate inland.	1
	Leach's Storm-petrel (<i>Hydrobates leucorhoa</i>) Severity: Moderate Severity Actionability: Moderately Actionable Burrow nester	2
	Least Flycatcher (<i>Empidonax minimus</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty Climate change poses a long-term threat by potentially altering the availability and distribution of suitable habitats. Changes in temperature and precipitation patterns can affect forest composition and the abundance of insect prey.	3
	Least Tern (<i>Sternula antillarum</i>) Severity: High Severity Actionability: Actionable with Difficulty Nesting habitat loss from sea level rise will be difficult to reverse. Existing development and hardened shorelines will not allow Maine beaches to migrate inland as sea level rise occurs.	1
	Lesser Yellowlegs (<i>Tringa flavipes</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty Loss of salt marsh and other coastal habitats due to sea level rise. Reversibility depends on ability of salt marsh and other coastal habitats to migrate inland as sea level rise occurs.	1
	Lincoln's Sparrow (<i>Melospiza lincolnii</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty Predicted range loss in eastern U.S.; vulnerable to climate-driven shifts in wetland/bog structure.	2
	Mourning Warbler (<i>Geothlypis philadelphia</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty Mourning Warblers rely on disturbance-dependent habitats that are dynamic and transient. Warming-driven shifts in forest composition or altered disturbance regimes may affect the frequency, structure, and distribution of suitable breeding habitats over time.	2
	Nelson's Sparrow (<i>Ammodramus nelsoni</i>) Severity: High Severity Actionability: Moderately Actionable Sea-level rise is leading to increased frequency of nest flooding, habitat loss, and reduced nesting success in tidal marshes, especially smaller, fragmented marshes used by Nelson's Sparrow in Maine. While marsh migration may offset some losses, steep topography and development often limit inland movement.	2



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Class Birds (<i>Aves</i>)	SGCN Priority
Olive-sided Flycatcher (<i>Contopus cooperi</i>)	2
Severity: Moderate Severity Actionability: Actionable with Difficulty Climate change may alter boreal and montane forest composition and phenology, potentially reducing the availability habitat during the breeding season.	
Pine Grosbeak (<i>Pinicola enucleator</i>)	2
Severity: Moderate Severity Actionability: Actionable with Difficulty Climate change may be causing upward shifts in treeline and altering high-elevation coniferous forests, reducing the extent and quality of suitable breeding habitat for Pine Grosbeak in Maine. These changes may limit nesting opportunities in the state, where the species already breeds at the southern edge of its range.	
Piping Plover (<i>Charadrius melodus</i>)	1
Severity: High Severity Actionability: Actionable with Difficulty Sea-level rise and beach erosion will contribute to loss of nesting habitat. Existing development and hardened shorelines will prevent Maine beaches from migrating inland as sea level rise occurs.	
Purple Sandpiper (<i>Calidris maritima</i>)	1
Severity: High Severity Actionability: Actionable with Difficulty Habitat loss from sea level rise may be mitigated by conservation of upland areas that will allow for intertidal areas to migrate inland. Impacts to intertidal invertebrate prey base may occur from ocean acidification.	
Razorbill (<i>Alca torda</i>)	2
Severity: Moderate Severity Actionability: Actionable with Difficulty Sea level rise flooding low topographical islands	
Red Knot (<i>Calidris canutus rufa</i>)	1
Severity: High Severity Actionability: Actionable with Difficulty Sea level rise will impact beach and offshore habitats; conservation of upland areas may allow beach and mudflat habitats to migrate inland as sea level rises. Limited opportunities in southern Maine.	
Red-necked Phalarope (<i>Phalaropus lobatus</i>)	2
Severity: High Severity Actionability: Actionable with Difficulty Impacts to copepod prey base from ocean acidification may not be mitigated.	



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Class Birds (<i>Aves</i>)	SGCN Priority
Roseate Tern (<i>Sterna dougallii</i>)	1
Severity: Moderate Severity Actionability: Actionable with Difficulty	
Sea level rise has been implicated as a significant threat as most of the islands that provide nesting space for Roseate Terns are very low sites, but threat is most likely a very long term issue	
Ruby-crowned Kinglet (<i>Corthylio calendula</i>)	2
Severity: Moderate Severity Actionability: Actionable with Difficulty	
Ruby-crowned Kinglet abundance is positively correlated with minimum temperatures and frost-free days, and wintering individuals are more common during warmer years. As climate change alters the extent and composition of boreal and subalpine spruce-fir forests, breeding habitat suitability in Maine may decline or shift northward. This habitat dependence makes the species vulnerable to changes in forest structure and snowpack dynamics driven by warming temperatures.	
Ruddy Turnstone (<i>Arenaria interpres</i>)	2
Severity: High Severity Actionability: Actionable with Difficulty	
Habitat loss from sea level rise could be mitigated through conservation of upland areas that will allow intertidal habitats to migrate inland. Impacts to invertebrate prey base from acidification may be difficult to minimize.	
Rusty Blackbird (<i>Euphagus carolinus</i>)	2
Severity: High Severity Actionability: Actionable with Difficulty	
Drying of boreal wetlands, shifting hydrology, and/or loss of consistently wet conditions in bogs and conifer swamps may render breeding habitat unsuitable.	
Saltmarsh Sparrow (<i>Ammospiza caudacuta</i>)	1
Severity: High Severity Actionability: Moderately Actionable	
Sea level rise and tidal flooding - Nest loss from regular high tides, increasingly worsened by sea-level rise, is the primary driver of population decline. Nesting is tightly linked to the lunar cycle and tidal timing, and even slight increases in mean water levels increase flooding risk.	
Sanderling (<i>Calidris alba</i>)	2
Severity: High Severity Actionability: Actionable with Difficulty	
Habitat loss from sea level rise and impacts to invertebrate prey base from ocean acidification may be severe. Conservation of upland areas may allow for intertidal areas to migrate inland as sea level rise occurs.	
Semipalmated Sandpiper (<i>Calidris pusilla</i>)	2
Severity: High Severity Actionability: Actionable with Difficulty	
Sea level rise may be mitigated through conservation of upland areas that will allow intertidal habitats to migrate inland. Ocean acidification may impact invertebrate prey base.	



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Class	Birds (<i>Aves</i>)	SGCN Priority
	Short-eared Owl (<i>Asio flammeus</i>) Severity: Moderate Severity Actionability: Moderately Actionable Reforestation and development have led to the loss of large, intact grasslands, contributing to population declines.	1
	Solitary Sandpiper (<i>Tringa solitaria</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty Loss of marsh habitats due to sea level rise may be mitigated through environmental review process. Protection of upland areas may allow marsh habitats to migrate inland.	3
	Tennessee Warbler (<i>Leiothlypis peregrina</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty Climate change may cause loss or transformation of the spruce-fir forests and peatland habitats Tennessee Warblers rely on, particularly at the southern edge of their range. Potential effects include drying of bogs, northward retreat of coniferous forest, and changing insect phenology.	1
	Tree Swallow (<i>Tachycineta bicolor</i>) Severity: Moderate Severity Actionability: Moderately Actionable Loss of early successional foreaging habitat to forest succession	2
	Whimbrel (<i>Numenius phaeopus</i>) Severity: High Severity Actionability: Actionable with Difficulty Habitat loss from sea level rise and impacts to invertebrate prey base from ocean acidification may occur. Conservation of upland habitats may allow intertidal areas to migrate inland as sea level rise occurs.	2
	Yellow-bellied Flycatcher (<i>Empidonax flaviventris</i>) Severity: High Severity Actionability: Actionable with Difficulty Warming is reducing spruce-fir habitat at southern range edge.	2
	Yellow-billed Cuckoo (<i>Coccyzus americanus</i>) Severity: Moderate Severity Actionability: Moderately Actionable Loss of early successional habitat to forest succession	3
Class	Marine And Freshwater Molluscs (<i>Bivalvia</i>)	SGCN Priority
	Atlantic Great Piddock (<i>Zirfaea crispata</i>) Severity: High Severity Actionability: Actionable with Difficulty Ocean acidification may result in decreased survivorship of larvae, and growth and feeding shown in other molluscs. Likelihood is high and large scale. The ability to mitigate ocean acidification is low.	2



SGCN and Habitat Threats

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Class Marine And Freshwater Molluscs (*Bivalvia*)

SGCN Priority

Tidewater Mucket (*Atlanticoncha ochracea*)

1

Severity: Moderate Severity**Actionability:** Actionable with Difficulty

this species occurs in tidal stretches of rivers (e.g., Merrymeeting Bay) that could be impacted by increasing salinity levels due to climate change, which could displace those populations

Class Sharks, Rays, And Skates (*Chondrichthyes*)

SGCN Priority

Barndoor Skate (*Dipturus laevis*)

3

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

Climate driven increases in ocean temperature are occurring and will have long-term effects on global fisheries. Consequently, the first acclimatizing response to temperature variations in fishes is typically to shift spatial distribution in order to stay within their ideal thermal tolerance range. Particularly it's expected "cold-water" fish species ranges are anticipated to be reduced. Thus, more research is needed to better understanding the genetic and physiological sensitivity of skates to climate change. In addition, it will also be important to determine how temperature changes will alter distribution in common prey items. Ocean acidification could also have an impact on eggcase structure/integrity, which could significantly affect the success/recovery of these populations. However, more research is needed

Basking Shark (*Cetorhinus maximus*)

2

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

Climate driven increases in ocean temperature are occurring and will have long-term effects on global fisheries. Consequently, the first acclimatizing response to temperature variations in fishes is typically to shift spatial distribution in order to stay within their ideal thermal tolerance range. More research is needed to better understanding the physiological sensitivity of elasmobranchs to climate change. In addition, it will also be important to determine how temperature changes will alter distribution in common prey items.

Porbeagle (*Lamna nasus*)

2

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

Climate driven increases in ocean temperature are occurring and will have long-term effects on global fisheries. Consequently, the first acclimatizing response to temperature variations in fishes is typically to shift spatial distribution in order to stay within their ideal thermal tolerance range. Particularly it's expected "cold-water" fish species ranges are anticipated to be reduced. Thus, more research is needed to better understanding the genetic and physiological sensitivity of skates to climate change. In addition, it will also be important to determine how temperature changes will alter distribution in common prey items. Ocean acidification could also have an impact on eggcase structure/integrity, which could significantly affect the success/recovery of these populations. However, more research is needed



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Class Sharks, Rays, And Skates (*Chondrichthyes*)

SGCN Priority

Shortfin Mako (*Isurus oxyrinchus*)

2

Severity: High Severity

Actionability: Actionable with Difficulty

Climate driven increases in ocean temperature are occurring and will have long-term effects on global fisheries. Consequently, the first acclimatizing response to temperature variations in fishes is typically to shift spatial distribution in order to stay within their ideal thermal tolerance range. Particularly it's expected "cold-water" fish species ranges are anticipated to be reduced. Thus, more research is needed to better understanding the genetic and physiological sensitivity of elasmobranchs to climate change. In addition, it will also be important to determine how temperature changes will alter distribution in common prey items.

Smooth Skate (*Malacoraja senta*)

2

Severity: High Severity

Actionability: Actionable with Difficulty

Climate driven increases in ocean temperature are occurring and will have long-term effects on global fisheries. Consequently, the first acclimatizing response to temperature variations in fishes is typically to shift spatial distribution in order to stay within their ideal thermal tolerance range. Particularly it's expected "cold-water" fish species ranges are anticipated to be reduced. Thus, more research is needed to better understanding the genetic and physiological sensitivity of skates to climate change. In addition, it will also be important to determine how temperature changes will alter distribution in common prey items. Ocean acidification could also have an impact on eggcase structure/integrity, which could significantly affect the success/recovery of these populations. However, more research is needed.

Thorny Skate (*Amblyraja radiata*)

2

Severity: High Severity

Actionability: Actionable with Difficulty

Climate driven increases in ocean temperature are occurring and will have long-term effects on global fisheries. Consequently, the first acclimatizing response to temperature variations in fishes is typically to shift spatial distribution in order to stay within their ideal thermal tolerance range. Particularly it's expected "cold-water" fish species ranges are anticipated to be reduced. Thus, more research is needed to better understanding the genetic and physiological sensitivity of skates to climate change. In addition, it will also be important to determine how temperature changes will alter distribution in common prey items. Ocean acidification could also have an impact on eggcase structure/integrity, which could significantly affect the success/recovery of these populations. However, more research is needed.



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Class Sharks, Rays, And Skates (*Chondrichthyes*)

SGCN Priority

White Shark (*Carcharodon carcharias*)

2

Severity: Moderate Severity**Actionability:** Actionable with Difficulty

Climate driven increases in ocean temperature are occurring and will have long-term effects on global fisheries. Consequently, the first acclimatizing response to temperature variations in fishes is typically to shift spatial distribution in order to stay within their ideal thermal tolerance range. More research is needed to better understanding the physiological sensitivity of elasmobranchs to climate change. In addition, it will also be important to determine how temperature changes will alter distribution in common prey items.

Winter Skate (*Leucoraja ocellata*)

1

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

Climate driven increases in ocean temperature are occurring and will have long-term effects on global fisheries. Consequently, the first acclimatizing response to temperature variations in fishes is typically to shift spatial distribution in order to stay within their ideal thermal tolerance range. Particularly it's expected "cold-water" fish species ranges are anticipated to be reduced. Thus, more research is needed to better understanding the genetic and physiological sensitivity of skates to climate change. In addition, it will also be important to determine how temperature changes will alter distribution in common prey items. Ocean acidification could also have an impact on eggcase structure/integrity, which could significantly affect the success/recovery of these populations. However, more research is needed.

Class Sea Urchins (*Echinoidea*)

SGCN Priority

Green Sea Urchin (*Strongylocentrotus droebachiensis*)

2

Severity: Moderate Severity**Actionability:** Actionable with Difficulty

The impacts of increasing ocean acidification on sea urchins is poorly understood (low certainty), but the effects of the threat are likely to occur, statewide (pervasively), given that sea urchins have a calcareous shell and spines and larvae have a calcareous skeleton.

Class Aquatic And Terrestrial Snails (*Gastropoda*)

SGCN Priority

American Pelican Foot (*Arrhoges occidentalis*)

2

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

Ocean acidification may result in decreased survivorship of larvae, and growth and feeding shown in other molluscs. Likelihood is high and large scale. The ability to mitigate ocean acidification is low.

Clathrate Trophon (*Boreotrophon clathratus*)

2

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

Ocean acidification may result in decreased survivorship of larvae, and growth and feeding shown in other molluscs. Likelihood is high and large scale. The ability to mitigate ocean acidification is low.



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Class Aquatic And Terrestrial Snails (*Gastropoda*)

SGCN Priority

Murex (*Boreotrophon truncatus*)

2

Severity: High Severity

Actionability: Actionable with Difficulty

Ocean acidification may result in decreased survivorship of larvae, and growth and feeding shown in other molluscs. Likelihood is high and large scale. The ability to mitigate ocean acidification is low.

Pygmy Whelk (*Colus pygmaeus*)

2

Severity: High Severity

Actionability: Actionable with Difficulty

Ocean acidification may result in decreased survivorship of larvae, and growth and feeding shown in other molluscs. Likelihood is high and large scale. The ability to mitigate ocean acidification is low.

Six-whorl Vertigo (*Vertigo morsei*)

1

Severity: Moderate Severity

Actionability: Actionable with Difficulty

Impacts of climate change to habitat could become a concern for a specialist that is primarily found in much cooler regions.

Spindle Shell (*Ptychotractus ligatus*)

2

Severity: High Severity

Actionability: Actionable with Difficulty

Ocean acidification may result in decreased survivorship of larvae, and growth and feeding shown in other molluscs. Likelihood is high and large scale. The ability to mitigate sea level rise and ocean acidification is low.

Class Sea Cucumbers (*Holothuroidea*)

SGCN Priority

Orange-footed Sea Cucumber (*Cucumaria frondosa*)

2

Severity: Moderate Severity

Actionability: Actionable with Difficulty

The impacts of increasing ocean acidification on sea cucumbers is poorly understood (low certainty), but the effects of the threat are likely to occur, statewide (pervasively), given that sea cucumbers have calcified body structures.

Psolus (*Psolus fabricii*)

2

Severity: Moderate Severity

Actionability: Actionable with Difficulty

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

Psolus (*Psolus phantapus*)

2

Severity: High Severity

Actionability: Actionable with Difficulty

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



SGCN and Habitat Threats

Level 2 Threat: Habitat Shifting or Alteration

Class	Sea Cucumbers (<i>Holothuroidea</i>)	SGCN Priority
	Sea Cucumber (<i>Thyonidium drummondii</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty Ocean acidification results in decreased survivorship of larvae, and growth and feeding by adult echinoderms. Likelihood is high and large scale. The ability to mitigate ocean acidification is low.	2
Class	Insects (<i>Insecta</i>)	SGCN Priority
	Arctic Fritillary (<i>Boloria chariclea grandis</i>) Severity: High Severity Actionability: Actionable with Difficulty Climate change; a boreal species at the extreme southern edge of its range	1
	Ashton's Cuckoo Bumble Bee (<i>Bombus ashtoni</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty potential impacts of climate change (e.g., impact on forage plant bloom phenology and nectar/pollen quality, increased temperatures, extreme weather, increased frequency and duration of flooding or drought, shifting host species distribution, changing/shifting plant communities, etc.)	1
	Big Bluet (<i>Enallagma durum</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty impacts of climate change could shift and degrade brackish habitats used by this species	1
	Boreal Snaketail (<i>Ophiogomphus colubrinus</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty this species is near the southern edge of its range in Maine, where it is vulnerable to impacts of climate change	1
	Brown's Comb Minnow Mayfly (<i>Ameletus browni</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty potential impacts of climate change (e.g., increased water temperature, lack of snowmelt at high elevations, loss of high elevation habitat, etc)	2
	Canada Whiteface (<i>Leucorrhinia patricia</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty Climate change; boreal peatland species at extreme southern edge of range	3



SGCN and Habitat Threats

Level 2 Threat: Habitat Shifting or Alteration

Class	Insects (<i>Insecta</i>)	SGCN Priority
	Indiscriminate Cuckoo Bumble Bee (<i>Bombus insularis</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty potential impacts of climate change (e.g., impact on forage plant bloom phenology and nectar/pollen quality, increased temperatures, extreme weather, increased frequency and duration of flooding or drought, shifting Bombus distribution, changing/shifting plant communities, etc.)	2
	Katahdin Arctic (<i>Oeneis polixenes katahdin</i>) Severity: High Severity Actionability: Actionable with Difficulty tundra habitat is limited and has nowhere to shift if climate change alters or reduces habitat	1
	Lemon Cuckoo Bumble Bee (<i>Bombus citrinus</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty potential impacts of climate change (e.g., impact on forage plant bloom phenology and nectar/pollen quality, increased temperatures, extreme weather, increased frequency and duration of flooding or drought, shifting host species distribution, changing/shifting plant communities, etc.)	2
	Margined Tiger Beetle (<i>Ellipsoptera marginata</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty Habitat could be lost or damaged with rising sea levels and increased frequency of extreme storms and flooding	1
	Mocha Emerald (<i>Somatochlora linearis</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty severe droughts produced by climate change may make the small headwater streams it occurs in too dry for larvae to persist.	1
	Needhams Skimmer (<i>Libellula needhami</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty impacts of climate change could shift and degrade saltmarsh habitats used by this species	2
	Northern Blue (<i>Plebejus idas scudderii</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty Climate change; a northern species at the extreme southern edge of its range	2
	Provancher's Armored Mayfly (<i>Baetisca rubescens</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty potential impacts of climate change (e.g., increased water temperature, lack of snowmelt at high elevations, loss of high elevation habitat, etc)	2



SGCN and Habitat Threats

Level 2 Threat: Habitat Shifting or Alteration

Class	Insects (<i>Insecta</i>)	SGCN Priority
	Quebec Emerald (<i>Somatochlora brevicincta</i>)	3
	Severity: Moderate Severity Actionability: Actionable with Difficulty Climate change; mostly boreal specialist of peatland habitats at the southern edge of its range	
	Rambur's Forktail (<i>Ischnura ramburii</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty impacts of climate change could shift and degrade brackish habitats used by this species	
	Ringed Boghaunter (<i>Williamsonia lintneri</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty Increased drought or evapotranspiration could compromise long hydroperiod wetlands	
	Ringed Emerald (<i>Somatochlora albicincta</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty this species is at the southern edge of its range in Maine, where it is vulnerable to impacts of climate change	
	Roaring Brook Mayfly (<i>Epeorus frisoni</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty potential impacts of climate change (e.g., increased water temperature, lack of snowmelt at high elevations, loss of high elevation habitat, etc)	
	Rusty-patched Bumble Bee (<i>Bombus affinis</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty potential impacts of climate change (e.g., impact on forage plant bloom phenology and nectar/pollen quality, increased temperatures, extreme weather, increased frequency and duration of flooding or drought, shifting Bombus distribution, changing/shifting plant communities, etc.)	
	Sedge Darner (<i>Aeshna juncea</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty Climate change; mostly boreal species near edge of range in northern fen habitats	
	Short-tailed Swallowtail (<i>Papilio brevicauda gaspeensis</i>)	2
	Severity: Moderate Severity Actionability: Moderately Actionable ecological succession is a threat for occurrences associated with beaver impoundments	
	Tomah Mayfly (<i>Siphonisca aerodromia</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty potential impacts of climate change (e.g., increased water temperature, lack of spring snowmelt to flood riparian sedge meadow, etc)	



SGCN and Habitat Threats

Level 2 Threat: Habitat Shifting or Alteration

Class	Insects (<i>Insecta</i>)	SGCN Priority
	Yellow Bumble Bee (<i>Bombus fervidus</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty potential impacts of climate change (e.g., impact on forage plant bloom phenology and nectar/pollen quality, increased temperatures, extreme weather, increased frequency and duration of flooding or drought, shifting Bombus distribution, changing/shifting plant communities, etc.)	
Class	Crustaceans (<i>Malacostraca</i>)	SGCN Priority
	Northern Shrimp (<i>Pandalus borealis</i>)	1
	Severity: High Severity Actionability: Actionable with Difficulty Northern shrimp are an arctic/sub-arctic species in the southernmost extent of their range in the Gulf of Maine, and have been highly sensitive to warming conditions. The likelihood of this impact is likely and may be occurring (high); certainty is high; and the spatial extent is pervasive (state-wide (coastal)).	
	Polar Lebbeid Shrimp (<i>Lebbeus polaris</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty 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.	
	Spiny Lebbeid Shrimp (<i>Lebbeus groenlandicus</i>)	2
	Severity: High Severity Actionability: Actionable with Difficulty 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.	
Class	Mammals (<i>Mammalia</i>)	SGCN Priority
	American Marten (<i>Martes americana</i>)	3
	Severity: Moderate Severity Actionability: Actionable with Difficulty Boreal forest habitat changes as a result of climate change.	
	Blue Whale (<i>Balaenoptera musculus</i>)	1
	Severity: High Severity Actionability: Actionable with Difficulty The major impacts from habitat shifting due to climate change would likely be a loss or relocation of foraging or breeding grounds due to changes in prey abundance and distribution or changes in habitat quality for breeding and rearing young.	



SGCN and Habitat Threats

Level 2 Threat: Habitat Shifting or Alteration

Class	Mammals (<i>Mammalia</i>)	SGCN Priority
	Canada Lynx (<i>Lynx canadensis</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Warming temperatures resulting in boreal forests moving northwards.	
	Finback Whale (<i>Balaenoptera physalus</i>)	1
	Severity: High Severity Actionability: Actionable with Difficulty	
	The major impact from habitat shifting due to climate change would likely be a loss or relocation of foraging or breeding grounds due to changes in prey abundance and distribution or changes in habitat quality for breeding and rearing young.	
	Gray Wolf (<i>Canis lupus</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Climate change may impact the habitats, distribution, and abundance of important prey species.	
	Harbor Porpoise (<i>Phocoena phocoena</i>)	3
	Severity: High Severity Actionability: Actionable with Difficulty	
	The major impact from habitat shifting due to climate change would likely be a loss or relocation of prey or breeding grounds.	
	Humpback Whale (<i>Megaptera novaeangliae</i>)	1
	Severity: High Severity Actionability: Actionable with Difficulty	
	The major impacts from habitat shifting due to climate change would likely be a loss or relocation of foraging or breeding grounds due to changes in prey abundance and distribution or changes in habitat quality for breeding and rearing young.	
	Moose (<i>Alces alces americanus</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Changing temperatures may be associated with winter tick populations and high overwinter mortality of moose calves. However, this relationship is poorly understood and requires additional investigation.	
	North Atlantic Right Whale (<i>Eubalaena glacialis</i>)	1
	Severity: High Severity Actionability: Actionable with Difficulty	
	The major impact from habitat shifting due to climate change would likely be a loss or relocation of prey or breeding grounds.	



SGCN and Habitat Threats

Level 2 Threat: Habitat Shifting or Alteration

Class Mammals (<i>Mammalia</i>)		SGCN Priority
Sei Whale (<i>Balaenoptera borealis</i>)		1
Severity: High Severity Actionability: Actionable with Difficulty The major impacts from habitat shifting due to climate change would likely be a loss or relocation of foraging or breeding grounds due to changes in prey abundance and distribution or changes in habitat quality for breeding and rearing young.		
Sperm Whale (<i>Physeter macrocephalus</i>)		1
Severity: High Severity Actionability: Actionable with Difficulty The major impacts from habitat shifting due to climate change would likely be a loss or relocation of foraging or breeding grounds due to changes in prey abundance and distribution or changes in habitat quality for breeding and rearing young.		
Class Horseshoe Crabs And Sea Scorpions (<i>Merostomata</i>)		SGCN Priority
Horseshoe Crab (<i>Limulus polyphemus</i>)		1
Severity: High Severity Actionability: Actionable with Difficulty Sea level rise will result in significant loss of mating, egg-laying, larval development, and forage habitat. Ocean acidification may result in decreased survivorship of larvae, and growth and feeding shown in other Arthropods (crustaceans). Likelihood is high and large scale. The ability to mitigate sea level rise and ocean acidification is low.		
Class Corals, Sea Pens, Sea Fans, Sea Anemones (<i>Octocorallia</i>)		SGCN Priority
Sea Strawberry (<i>Gersemia rubiformis</i>)		2
Severity: High Severity Actionability: Actionable with Difficulty Ocean acidification are unknown at this time but could result in decreased survivorship of larvae, and growth and feeding shown in other corals. The ability to mitigate ocean acidification is low.		
Class Brittle Stars (<i>Ophiuroidea</i>)		SGCN Priority
Northern Basket Starfish (<i>Gorgonocephalus arcticus</i>)		2
Severity: High Severity Actionability: Actionable with Difficulty Ocean acidification results in decreased survivorship of larvae, and growth and feeding by adult sea stars. Likelihood is high and large scale. The ability to mitigate ocean acidification is low.		
Class Reptiles (<i>Reptilia</i>)		SGCN Priority



SGCN and Habitat Threats

Level 2 Threat: Habitat Shifting or Alteration

Class Reptiles (<i>Reptilia</i>)		SGCN Priority
Blanding's Turtle (<i>Emydoidea blandingii</i>)		1
Severity: Moderate Severity	Actionability: Actionable with Difficulty	
Climate change for species occupying narrow latitudinal band may make some parts of range within state no longer suitable		
Green Seaturtle (<i>Chelonia mydas</i>)		1
Severity: High Severity	Actionability: Actionable with Difficulty	
The major impact from habitat shifting due to climate change would likely be a loss or relocation of prey and nesting beaches.		
Kemp's Ridley Seaturtle (<i>Lepidochelys kempii</i>)		1
Severity: High Severity	Actionability: Actionable with Difficulty	
The major impact from habitat shifting due to climate change would likely be a loss or relocation of prey and nesting beaches.		
Leatherback Seaturtle (<i>Dermochelys coriacea</i>)		1
Severity: High Severity	Actionability: Actionable with Difficulty	
The major impact from habitat shifting due to climate change would likely be a loss or relocation of prey and nesting beaches.		
Loggerhead Seaturtle (<i>Caretta caretta</i>)		1
Severity: High Severity	Actionability: Actionable with Difficulty	
The major impact from habitat shifting due to climate change would likely be a loss or relocation of prey and nesting beaches.		
Class Brachiopods (<i>Rhynchonellata</i>)		SGCN Priority
Lamp Shell (<i>Terebratulina septentrionalis</i>)		2
Severity: High Severity	Actionability: Actionable with Difficulty	
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.		
Class Eudicots (<i>Eudicots</i>)		SGCN Priority
Alpine Azalea (<i>Kalmia procumbens</i>)		1
Severity: Moderate Severity	Actionability: Actionable with Difficulty	
Alpine Bearberry (<i>Arctous alpina</i>)		1
Severity: Moderate Severity	Actionability: Actionable with Difficulty	



SGCN and Habitat Threats

Level 2 Threat: Habitat Shifting or Alteration

Class	Eudicots (<i>Eudicots</i>)	SGCN Priority
	Alpine Bistort (<i>Bistorta vivipara</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Alpine Blueberry (<i>Vaccinium boreale</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Alpine Cudweed (<i>Omalotheca supina</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Alpine Milk-vetch (<i>Astragalus alpinus</i> var. <i>brunetianus</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Alpine Speedwell (<i>Veronica wormsjoldii</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Alpine Willow-herb (<i>Epilobium anagallidifolium</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	American Sea-blite (<i>Suaeda calceoliformis</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Anticosti Aster (<i>Symphyotrichum anticostense</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Arctic Sandwort (<i>Minuartia rubella</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Arctic Willow (<i>Salix arctophila</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Barren-strawberry (<i>Geum fragarioides</i>)	1
	Severity: Moderate Severity Actionability: Highly Actionable	
	Bearberry Willow (<i>Salix uva-ursi</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Bird's-eye Primrose (<i>Primula laurentiana</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Blue-leaf Willow (<i>Salix myricoides</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	



SGCN and Habitat Threats

Level 2 Threat: Habitat Shifting or Alteration

Class	Eudicots (<i>Eudicots</i>)	SGCN Priority
	Boott's Rattlesnake Root (<i>Nabalus boottii</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Boundary Meadow-rue (<i>Thalictrum venulosum</i> var. <i>confine</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Canada Burnet (<i>Sanguisorba canadensis</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Common Butterwort (<i>Pinguicula vulgaris</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Cut-leaved Anemone (<i>Anemone multifida</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Cutler's Goldenrod (<i>Solidago leiocarpa</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Dwarf Glasswort (<i>Salicornia bigelovii</i>)	2
	Severity: High Severity Actionability: Actionable with Difficulty	
	Sea Level Rise	
	Dwarf White Birch (<i>Betula minor</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Dwarf Willow (<i>Salix herbacea</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Eaton's Bur-marigold (<i>Bidens eatonii</i>)	2
	Severity: High Severity Actionability: Actionable with Difficulty	
	Sea level rise	
	Furbish's Lousewort (<i>Pedicularis furbishiae</i>)	1
	Severity: Moderate Severity Actionability: Moderately Actionable	
	Gaspé Shadbush (<i>Amelanchier gaspensis</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Hairy Arnica (<i>Arnica lanceolata</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	



SGCN and Habitat Threats

Level 2 Threat: Habitat Shifting or Alteration

Class	Eudicots (<i>Eudicots</i>)	SGCN Priority
	Hairy Boneset (<i>Eupatorium pubescens</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Hairy Bush-clover (<i>Lespedeza hirta ssp. hirta</i>)	2
	Severity: Moderate Severity Actionability: Highly Actionable	
	Huron Tansy (<i>Tanacetum bipinnatum ssp. huronense</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Hyssop-leaved Fleabane (<i>Erigeron hyssopifolius</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Lapland Diapensia (<i>Diapensia lapponica</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Lapland Rosebay (<i>Rhododendron lapponicum</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Lilaeopsis (<i>Lilaeopsis chinensis</i>)	2
	Severity: High Severity Actionability: Actionable with Difficulty	
	Sea level rise	
	Long-leaved Bluet (<i>Houstonia longifolia var. longifolia</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Long's Bitter-cress (<i>Cardamine longii</i>)	1
	Severity: High Severity Actionability: Actionable with Difficulty	
	Sea level rise	
	Marsh Felwort (<i>Lomatogonium rotatum</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Marsh-elder (<i>Iva frutescens ssp. oraria</i>)	2
	Severity: High Severity Actionability: Actionable with Difficulty	
	Sea level rise	
	Missouri Rockcress (<i>Boechera missouriensis</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Moss Bell-heather (<i>Harrimanella hypnoides</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	



SGCN and Habitat Threats

Level 2 Threat: Habitat Shifting or Alteration

Class	Eudicots (<i>Eudicots</i>)	SGCN Priority
	Mountain Heath (<i>Phyllodoce caerulea</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Nantucket Shadbush (<i>Amelanchier nantucketensis</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	New England Violet (<i>Viola novae-angliae</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Northern Blazing Star (<i>Liatris novae-angliae</i>)	1
	Severity: Moderate Severity Actionability: Moderately Actionable	
	Northern Gentian (<i>Gentianella amarella ssp. acuta</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Northern Painted Cup (<i>Castilleja septentrionalis</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Oakes' Eyebright (<i>Euphrasia oakesii</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Purple Agalinis (<i>Agalinis purpurea</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Pygmyweed (<i>Crassula aquatica</i>)	2
	Severity: High Severity Actionability: Actionable with Difficulty	
	Sea level rise	
	Rattlesnake Hawkweed (<i>Hieracium venosum var. nudicaule</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Sandbar Willow (<i>Salix exigua ssp. interior</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Seneca Snakeroot (<i>Polygala senega</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Small Salt-marsh Aster (<i>Symphyotrichum subulatum</i>)	2
	Severity: High Severity Actionability: Actionable with Difficulty	
	sea level rise	



SGCN and Habitat Threats

Level 2 Threat: Habitat Shifting or Alteration

Class	Eudicots (<i>Eudicots</i>)	SGCN Priority
	St John Oxytrope (<i>Oxytropis campestris</i> var. <i>johannensis</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Star Saxifrage (<i>Micranthes foliolosa</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Summer Grape (<i>Vitis aestivalis</i> var. <i>bicolor</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Swamp Birch (<i>Betula pumila</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Tea-leaved Willow (<i>Salix planifolia</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Tundra Dwarf Birch (<i>Betula glandulosa</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Unicorn Root (<i>Aletris farinosa</i>)	2
	Severity: Moderate Severity Actionability: Highly Actionable	
	Upland Boneset (<i>Eupatorium sessilifolium</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Upright Bindweed (<i>Calystegia spithamea</i>)	1
	Severity: Moderate Severity Actionability: Highly Actionable	
	White-topped Aster (<i>Sericocarpus asteroides</i>)	2
	Severity: Moderate Severity Actionability: Moderately Actionable	
	Yellow Pond-lily (<i>Nuphar advena</i>)	2
	Severity: High Severity Actionability: Actionable with Difficulty	
	sea level rise	
Class	Clubmoss (<i>Lycopodiopsida</i>)	SGCN Priority
	Alaskan Clubmoss (<i>Diphasiastrum sitchense</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Alpine Clubmoss (<i>Huperzia selago</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	



SGCN and Habitat Threats

Level 2 Threat: Habitat Shifting or Alteration

Class	Clubmoss (<i>Lycopodiopsida</i>)	SGCN Priority
	Mountain Firmoss (<i>Huperzia appressa</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Southern Bog-clubmoss (<i>Lycopodiella appressa</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
Class	Monocots (<i>Magnoliopsida</i>)	SGCN Priority
	Gaspé Arrow-grass (<i>Triglochin gaspense</i>)	2
	Severity: High Severity Actionability: Actionable with Difficulty	
	Sea level rise	
Class	Monocots (<i>Monocots</i>)	SGCN Priority
	Alpine Sweet-grass (<i>Anthoxanthum monticola</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Arctic Red Fescue (<i>Festuca prolifera</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Auricled Twayblade (<i>Neottia auriculata</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Beaked Spikerush (<i>Eleocharis rostellata</i>)	1
	Severity: High Severity Actionability: Actionable with Difficulty	
	Sea level rise	
	Bicknell's Sedge (<i>Carex bicknellii</i>)	1
	Severity: Moderate Severity Actionability: Highly Actionable	
	Bigelow's Sedge (<i>Carex bigelowii</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Black Sedge (<i>Carex atratiformis</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Boreal Bentgrass (<i>Agrostis mertensii</i>)	2
	Severity: Moderate Severity Actionability: Moderately Actionable	
	Bulrush Sedge (<i>Carex scirpoidea</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	



SGCN and Habitat Threats

Level 2 Threat: Habitat Shifting or Alteration

Class	Monocots (<i>Monocots</i>)	SGCN Priority
	Canada Mountain-ricegrass (<i>Piptatherum canadense</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Capillary Sedge (<i>Carex capillaris</i>)	2
	Severity: Moderate Severity Actionability: Moderately Actionable	
	Cliff Muhly (<i>Muhlenbergia sobolifera</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Clothed Sedge (<i>Carex vestita</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Dawn-land Sedge (<i>Carex waponahkikensis</i>)	1
	Severity: Moderate Severity Actionability: Highly Actionable	
	Ebony Sedge (<i>Carex eburnea</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Garber's Sedge (<i>Carex garberi</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Giant Rattlesnake-plantain (<i>Goodyera oblongifolia</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Horned Beak-rush (<i>Rhynchospora capillacea</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Houghton's Flatsedge (<i>Cyperus houghtonii</i>)	2
	Severity: Moderate Severity Actionability: Highly Actionable	
	Indian Grass (<i>Sorghastrum nutans</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Livid Sedge (<i>Carex livida</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Longleaf Dropseed (<i>Sporobolus compositus</i> var. <i>drummondii</i>)	1
	Severity: High Severity Actionability: Actionable with Difficulty	
	Marsh Bulrush (<i>Bolboschoenus novae-angliae</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	



SGCN and Habitat Threats

Level 2 Threat: Habitat Shifting or Alteration

Class	Monocots (<i>Monocots</i>)	SGCN Priority
	Meadow Sedge (<i>Carex granularis</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Moor Rush (<i>Juncus stygius ssp. americanus</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Mountain Hairgrass (<i>Vahlodea atropurpurea</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Mountain Timothy (<i>Phleum alpinum</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Muhlenberg Sedge (<i>Carex muehlenbergii</i>)	2
	Severity: Moderate Severity Actionability: Highly Actionable	
	Neglected Reed-grass (<i>Calamagrostis stricta ssp. stricta</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Northern Sweet-grass (<i>Anthoxanthum hirtum</i>)	2
	Severity: High Severity Actionability: Moderately Actionable marsh migration	
	Northern Wood-rush (<i>Luzula confusa</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Orono Sedge (<i>Carex oronensis</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Parker's Pipewort (<i>Eriocaulon parkeri</i>)	2
	Severity: High Severity Actionability: Moderately Actionable Sea level rise	
	Pickering's Reed Bent-grass (<i>Calamagrostis pickeringii</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Red-root Flatsedge (<i>Cyperus erythrorhizos</i>)	2
	Severity: Moderate Severity Actionability: Actionable with Difficulty	
	Russett Sedge (<i>Carex saxatilis</i>)	1
	Severity: Moderate Severity Actionability: Actionable with Difficulty	



SGCN and Habitat Threats

Level 2 Threat: Habitat Shifting or Alteration

Class	Monocots (<i>Monocots</i>)	SGCN Priority
	Salt Marsh Sedge (<i>Carex vacillans</i>) Severity: High Severity vulnerable to sea level rise Actionability: Moderately Actionable	1
	Saltmarsh Bulrush (<i>Bolboschoenus robustus</i>) Severity: High Severity sea level rise Actionability: Actionable with Difficulty	2
	Shining Ladies'-tresses (<i>Spiranthes lucida</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty	2
	Slender Blue Flag (<i>Iris prismatica</i>) Severity: High Severity Sea level rise Actionability: Actionable with Difficulty	2
	Slender Rush (<i>Juncus subtilis</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty	1
	Slender Spikerush (<i>Eleocharis nitida</i>) Severity: Moderate Severity Actionability: Highly Actionable	2
	Spiked Wood-rush (<i>Luzula spicata</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty	1
	Swarthy Sedge (<i>Carex adusta</i>) Severity: Moderate Severity Actionability: Moderately Actionable	2
	Tidal Spikerush (<i>Eleocharis aestuum</i>) Severity: Moderate Severity sea level rise Actionability: Actionable with Difficulty	2
	Variable Sedge (<i>Carex polymorpha</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty	1
	Vasey Rush (<i>Juncus vaseyi</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty	1
	Wavy Bluegrass (<i>Poa laxa</i> ssp. <i>fernaldiana</i>) Severity: Moderate Severity Actionability: Actionable with Difficulty	1
Class	Fern (<i>Polypodiopsida</i>)	SGCN Priority



SGCN and Habitat Threats

Level 2 Threat: Habitat Shifting or Alteration

Class Fern (*Polypodiopsida*)

SGCN Priority

Blunt-lobed Woodsia (*Woodsia obtusa*)

1

Severity: Moderate Severity

Actionability: Actionable with Difficulty

Habitats Associated With This Threat:

Macrogroup Acadian-Northern Appalachian Forest

Acadian Low Elevation Spruce-Fir-Hardwood Forest

Effects of climate change are uncertain, but boreal and subalpine are likely among the most vulnerable of Maine's forest types

Acadian Sub-boreal Spruce Flat

Effects of climate change are uncertain, but boreal and subalpine are likely among the most vulnerable of Maine's forest types

Acadian-Appalachian Montane Spruce-Fir Forest

Effects of climate change are uncertain, but boreal and subalpine are likely among the most vulnerable of Maine's forest types

Acadian-Northern Appalachian Forest Macrogroup- Unknown Habitat System

Effects of CC are not clear on forests, but boreal and subalpine are likely among the most vulnerable of Maine's forest types

Acadian-Northern Appalachian Forest Macrogroup- Unknown Habitat System

Habitat shifting as a result of climate change; forestry adaptation may be possible

Laurentian-Acadian Northern Hardwood Forest

Habitat shifting as a result of climate change; forestry adaptation may be possible

Laurentian-Acadian Pine-Hemlock-Hardwood Forest

Habitat shifting as a result of climate change; forestry adaptation may be possible

Laurentian-Acadian Sub-boreal Dry-Mesic Pine-Black Spruce-Hardwood Forest

Effects of climate change are uncertain, but boreal and subalpine are likely among the most vulnerable of Maine's forest types

Macrogroup Central Hardwood Swamp Forest

Central Hardwood Swamp Forest Macrogroup - Unknown Habitat System

At least one coastal example of this type is likely to be inundated with saltwater following 1m of sea level rise.

Macrogroup Intertidal Sandy Shore

Sand Beach

Sea level rise can drown sandy shore habitats and the biological communities they support will be lost or displaced

Sand Flat

Sea level rise can drown sandy shore habitats and the biological communities they support will be lost or displaced. Sea level rise can also increase erosion risk.

Submerged Aquatic Vegetation

Sea level rise can drown sandy shore habitats and the biological communities they support will be lost or displaced



SGCN and Habitat Threats

Level 2 Threat: Habitat Shifting or Alteration

Macrogroup Intertidal Tidal Marsh (peat-forming)

Acadian Coastal Salt Marsh

Sea level rise may result in shift of salt marsh landward if undeveloped. What is uncertain is how much marsh will be lost/gained (degree of severity).

Coastal Plain Tidal Marsh

Sea level rise may result in shift of salt marsh landward if undeveloped. What is uncertain is how much marsh will be lost/gained (degree of severity).

Macrogroup North American Atlantic Coastal Beach & Rocky Shore

Northern Atlantic Coastal Plain Sandy Beach

Sea level rise may reduce area of beach

Macrogroup North American Atlantic Coastal Dune, Grassland & Rocky Headland

Northern Atlantic Coastal Plain Dune and Swale

Sea level rise may reduce area of beach

Macrogroup North American Boreal & Subboreal Alkaline Fen

Laurentian-Acadian Alkaline Fen

Northern peatlands listed as vulnerable in Whitman et al (2013)

Macrogroup North American Boreal & Subboreal Bog & Acidic Fen

Acadian Maritime Bog

peatland erosion from sea level change

Macrogroup North Atlantic Coastal Forest & Woodland

Northern Atlantic Coastal Plain Pitch Pine Barrens

Habitat shifting as a result of climate change; forestry adaptation may be possible

Macrogroup Ruderal Shrubland & Grassland

Ruderal Shrubland & Grassland Macrogroup - Unknown Habitat System

succession in the basence of management

Macrogroup Subtidal Bedrock Bottom

Bedrock

Chemical changes in water chemistry (e.g. ocean acidification) can affect biological communities and natural processes

Erect Epifauna

Chemical changes in water chemistry (e.g. ocean acidification) can affect biological communities and natural processes

Kelp Bed

Chemical changes in water chemistry (e.g. ocean acidification) can affect biological communities and natural processes

Macrogroup Subtidal Coarse Gravel Bottom

Coarse Gravel

Chemical changes in water chemistry (e.g. ocean acidification) can affect biological communities and natural processes



SGCN and Habitat Threats

Level 2 Threat: Habitat Shifting or Alteration

Macrogroup Subtidal Coarse Gravel Bottom

Erect Epifauna

Chemical changes in water chemistry (e.g. ocean acidification) can affect biological communities and natural processes

Kelp Bed

Chemical changes in water chemistry (e.g. ocean acidification) can affect biological communities and natural processes

Macrogroup Subtidal Mollusc Reefs

Gastropod Reef

Chemical changes in water chemistry (e.g. ocean acidification) can affect biological communities and natural processes

Mussel Reef

Chemical changes in water chemistry (e.g. ocean acidification) can affect biological communities and natural processes

Oyster Reef

Chemical changes in water chemistry (e.g. ocean acidification) can affect biological communities and natural processes

Macrogroup Subtidal Mud Bottom

Submerged Aquatic Vegetation

Chemical changes in water chemistry (e.g. ocean acidification) can affect biological communities and natural processes

Unvegetated

Chemical changes in water chemistry (e.g. ocean acidification, salinity) can affect biological communities and natural processes

Macrogroup Subtidal Pelagic (Water Column)

Confined Channel

Chemical changes in water chemistry (e.g. ocean acidification) can affect biological communities and natural processes

Nearshore

Chemical changes in water chemistry (e.g. ocean acidification) can affect biological communities and natural processes

Offshore

Chemical changes in water chemistry (e.g. ocean acidification) can affect biological communities and natural processes

Upwelling Zones

Chemical changes in water chemistry (e.g. ocean acidification) can affect biological communities and natural processes

Macrogroup Subtidal Sand Bottom

Submerged Aquatic Vegetation

Chemical changes in water chemistry (e.g. ocean acidification) can affect biological communities and natural processes

Unvegetated

Chemical changes in water chemistry (e.g. ocean acidification) can affect biological communities and natural processes



SGCN and Habitat Threats

Level 2 Threat: Habitat Shifting or Alteration

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 programs and priorities by state agencies and partners.