



# Winter Skate

*Leucoraja ocellata*

Priority 1 Species of Greatest Conservation Need (SGCN)

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

Order: Rays (*Rajiformes*)

Family: Skates (*Rajidae*)

Rays and Skates

## General comments:

Winter Skate is a bottom-dwelling cartilaginous fish found in the Northwest Atlantic from Newfoundland to North Carolina, with Maine representing the center of its range. It prefers sandy or gravelly substrates on the continental shelf and is managed under the jurisdiction of the Maine Department of Marine Resources. While still common in the Gulf of Maine, the species faces regional declines due to fishing pressure and bycatch in commercial trawl and gillnet fisheries.

## No Species Conservation Range Maps Available

## SGCN Priority Ranking - Designation Criteria:

|                                      |                                                                              |                         |                                     |
|--------------------------------------|------------------------------------------------------------------------------|-------------------------|-------------------------------------|
| Risk of Extirpation:                 | Maine Status:<br>None                                                        | Federal Status:<br>None | IUCN Red List Status:<br>Endangered |
| High Regional Conservation Priority: | Northeast Regional Synthesis (RSGCN):<br>Responsibility: High, Concern: High |                         |                                     |

## Habitat Associations:

Formation: Subtidal

Macrogroup: Subtidal Coarse Gravel Bottom

|                   |                                                         |
|-------------------|---------------------------------------------------------|
| ★ Primary Habitat | Habitat System: Coarse Gravel<br><i>adult, juvenile</i> |
|-------------------|---------------------------------------------------------|

Macrogroup: Subtidal Mud Bottom

|  |                                                       |
|--|-------------------------------------------------------|
|  | Habitat System: Unvegetated<br><i>adult, juvenile</i> |
|--|-------------------------------------------------------|

Macrogroup: Subtidal Sand Bottom

|                   |                                                       |
|-------------------|-------------------------------------------------------|
| ★ Primary Habitat | Habitat System: Unvegetated<br><i>adult, juvenile</i> |
|-------------------|-------------------------------------------------------|

## Threats

| Threat Priority Level based on Severity and Actionability |                            | Moderate Severity       | High Severity           |
|-----------------------------------------------------------|----------------------------|-------------------------|-------------------------|
|                                                           | Highly Actionable          | <div></div> Medium-High | <div></div> High        |
|                                                           | Moderately Actionable      | <div></div> Medium      | <div></div> Medium-High |
|                                                           | Actionable with Difficulty | <div></div> Low         | <div></div> Low         |

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## IUCN Level 1 Threat      Biological Resource Use

## IUCN Level 2 Threat: Fishing and Harvesting of Aquatic Resources

**Severity:** High Severity**Actionability:** Moderately Actionable

**Notes:** The winter skates (like other elasmobranchs) are highly vulnerable to exploitation because of their k-selective life histories (i.e. slow growth rates, late maturity, low fecundity). Currently, there is a directed (i.e. wing fishery) and indirect fishery (captured as bycatch within the multispecies trawl, bottom gillnet and scallop fishery) for this species. To ensure the winter skate population remains sustainable, it is important to continue to assess the impacts these fishing methods have on this species. Currently, discard mortality rates in the trawl fishery have been investigated for winter skates and were reported to be low. However this information should be obtained for other commercial fisheries, to determine what augmentations should be made to ensure a sustainable population

## IUCN Level 1 Threat      Pollution

## IUCN Level 2 Threat: Industrial and Military Effluents

**Severity:** Moderate Severity**Actionability:** Moderately Actionable

**Notes:** Many elasmobranch species use inshore coastal and estuarine habitats as a safe place for finding food, giving birth and growing up away from predators and competitors. This means that they are vulnerable to negative changes in their habitat. For example, sharks, skates and rays are very susceptible to pollution and environmental contamination. Pollution in the ocean has either filtered from land activities or has been directly deposited into the seas. As apex predators with slow growth, they accumulate all the pollutants and toxins in the environment and bioaccumulating all the toxins of their prey. Chemical pollution, in the form of mercury, DDT, organochlorines, etc., has been documented in several shark populations in close proximity to areas of human populations. This could become a significant threat as we learn more about movement patterns and habitat usages of skates

## IUCN Level 1 Threat      Climate Change and Severe Weather

## IUCN Level 2 Threat: Changes in Temperature Regimes

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

**Notes:** Shift in ocean temperatures will influence how a species moves and travels as well as their food sources; warmer surface waters also affect the distribution of essential nutrients

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## IUCN Level 1 Threat    Climate Change and Severe Weather

## IUCN Level 2 Threat: Habitat Shifting or Alteration

Severity: High Severity

Actionability: Actionable with Difficulty

**Notes:** 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 understand 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

## IUCN Level 1 Threat    Other Options

## IUCN Level 2 Threat: Lack of knowledge

Severity: High Severity

Actionability: Actionable with Difficulty

**Notes:** In general, there is a significant lack of updated/accurate life history information and movement data for this species (throughout their range and for various life stages). In order to effectively manage this species in the future, a thorough understanding of their basic biology and critical habitats are essential

## Species Level Conservation Actions:

*Only species specific conservation actions that address high (red) or medium-high (orange) priority threats are summarized here.*

| Conservation Action                           | Category | Biological Priority | Type |
|-----------------------------------------------|----------|---------------------|------|
| Update life history data across species range | Research | high                | new  |

## Threat(s) Addressed By This Conservation Action

 Fishing and Harvesting of Aquatic Resources

## Guild Level Conservation Actions:

This Species is currently not attributed to a guild.

## 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

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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*