



NOVA SCOTIA SPECIES SPOTLIGHT: REDFISH (*Sebastes spp.*)

FISHERY

There are four species of redfish in the Northwest Atlantic, but two species, the Acadian redfish (*Sebastes fasciatus*) and Deepwater redfish (*Sebastes mentella*), are the most abundant.

Directed fisheries for redfish are divided into units. Unit 1 in the Gulf of St. Lawrence and Laurentian Channel is open from January to May, Unit 2 in the Laurentian Channel and Eastern Scotian Shelf is open from June to December, and Unit 3 on the Scotian Shelf is open year round.

Redfish is targeted by the mobile fleet using bottom otter trawl gear.

The total allowable catch (TAC) for the 2022-23 season was 4,500 t in unit 1, 8,500 t in unit 2, and 8000 t in unit 3.

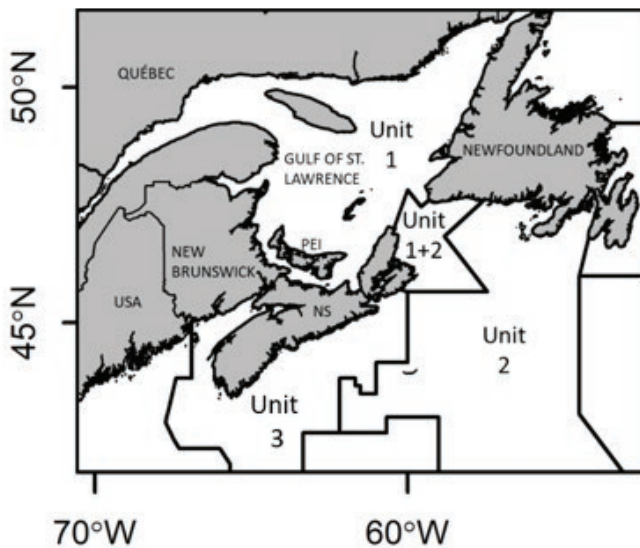


Figure. Redfish fishing areas

BIOLOGY

Redfish grow up 60 cm in length, and live to 40 to 75 years of age.

Redfish are semi-pelagic (living part of their life on the ocean bottom, and in the water column above). They occupy depths ranging from 100 to 1000 m, and prefer rocky habitats along continental slopes and within deep channels, in waters from 3 to 8 °C in temperature. Deepwater redfish occupy lower depths than the Acadian redfish.

There are 14 recognized redfish stocks throughout Units 1, 2 and 3. Acadian redfish in Unit 3 are genetically distinct from Acadian redfish in Unit 1 and 2.

Redfish feed on amphipods, copepods, and euphausiids, and transition to fish as they increase in size.

LIFE CYCLE

Redfish are late maturing, where 50% of an age-class reach sexual maturity from 7 to 10 years of age.

Redfish mate from September to December, and females are ovoviviparous, meaning fertilization and hatching occurs internally, and they release live larvae from April to July.

Larvae are found in surface and pelagic waters and move to the ocean bottom once they reach 15 to 20 cm in length.

Redfish reach commercial size from 7 to 9 years, and females grow faster than males after 10 years of age.

MANAGEMENT AND CONSERVATION

Redfish units are managed by Fisheries and Oceans Canada. The TAC is set annually based on the outcomes of research surveys, and is evaluated against stock reference points established using the precautionary approach to fisheries management.

General management strategies focus on areas of fishery productivity, impact on biodiversity and habitat, access for traditional culture and sustenance, and overall prosperity.

Management tactics include setting an annual TAC, gear restrictions, seasonal area closures, small fish closures, bycatch limits, permitted and mandatory release of designated species, and fleet quota shares, among others.

Compliance with management objectives include inspections by fishery officers, observer coverage on vessel, dockside monitoring programs, vessel monitoring systems, hail in/out requirements, and maintaining logbooks.

Populations of *Sebastes mentella* in unit 1 and 2 are designated endangered and populations *Sebastes fasciatus* in unit 3 are designated threatened based on the 2021 assessment by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).

All units are actively participating in Fishery Improvement Projects.



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SEAFOOD LABELLING

	Terminology	Description
Common Name	<p>English: Redfish; Rosefish, Acadian Redfish; Beaked Redfish; Atlantic Rosefish; Rosefish; Atlantic Ocean Perch; Ocean Perch</p> <p>French: Sébaste; Sébaste Atlantique; Sébaste Acadien; Perche Rose; Perche Rose Atlantique; Poisson Rouge;</p>	Accepted common name(s) for <i>S. mentella</i> , <i>S. fasciatus</i>
Production Method	Wild	Harvested from the ocean
Product Forms	Round	Unprocessed
	Dressed	Eviscerated only
	Headed & Gutted (H&G)	Head removed, eviscerated
	Filletlets	Strips of flesh cut parallel to the central bone of the fish
	PBI/PBO	Pin Bone In/Out
	Boned	Has gone through a boning process, but bones may remain
Process Description	Boneless	Has been boned, and any remaining bones are removed
	Fresh	Not previously frozen
	Refreshed/Previously Frozen	Thawed and sold fresh
	Single Frozen/Twice Frozen	Refers to number of times the product has been frozen in its production

PROCESSING/HANDLING

Process Yields

Dressed (Head-On): **85 – 91%**

Dressed (Head-Off); **48 – 62%**

Fillet (Skin-On): **25 – 35%**

Fillet (Skin-Off): **21 – 30%**

Primary Products

Whole, Dressed, H&G, Fillets

Post-Harvest Primary Processing Flow

Receiving » Washing » De-scaling » Butchering (eviscerating, de-heading, filleting, trimming) » Packaging » Freezing » Storage » Transportation

By-Products

Heads, Viscera, Frames

CHEMICAL COMPOSITION

	Proportion (g / 100 g)	
	Raw	Cooked
Moisture	83.10	74.2
Protein	15.30	18.5
Fat	1.54	1.87
Carbohydrate	0.00	0.00
Ash	1.20	1.60

USDA Nutritional Database: 15057 (Raw), 15058 (Cooked)

Redfish is considered a lean fish. Fat storage occurs primarily in the liver.



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STORAGE

Whole redfish stored on ice and kept at 4 °C will spoil after 16 to 19 days of storage. Storage at 0.5 °C will extend shelf life to nearly 22 days.

When whole fish are stored on ice for 2 days, then filleted and frozen to -23 °C, frozen fillets remain acceptable for up to 2 years. In contrast, whole fish stored on ice for 12 days, then filleted and frozen to -23 °C fillets remain acceptable for less than 1 year. Whole fish stored on ice for 4 days, then filleted and frozen, but exposed to frozen storage temperature fluctuations from -12 to -23 °C, spoil after only 10 months.

KEY FOOD SAFETY AND QUALITY CONCERNS

The flesh of redfish may contain parasitic nematodes, such as *Anisakis simplex*, that originate from the krill in their diet.

A bright colouration of redfish skin is highly desirable. Colour loss is associated with oxidation of the pigments in the skin, as well as fat oxidation and protein denaturation. Methods to preserve redfish colour are intended to control these deteriorative mechanisms. A combination of improved temperature management and food additives including sodium erythorbate, ascorbic acid (Vitamin C), and tocopherols (Vitamin E) have been evaluated, and rely on early application to be effective.

Scale loss may be considered undesirable, and is indicative of rough handling both onboard wet fish boats, as well as within plants.

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