



# NOVA SCOTIA SPECIES SPOTLIGHT: SILVER HAKE (*Merluccius bilinearis*)

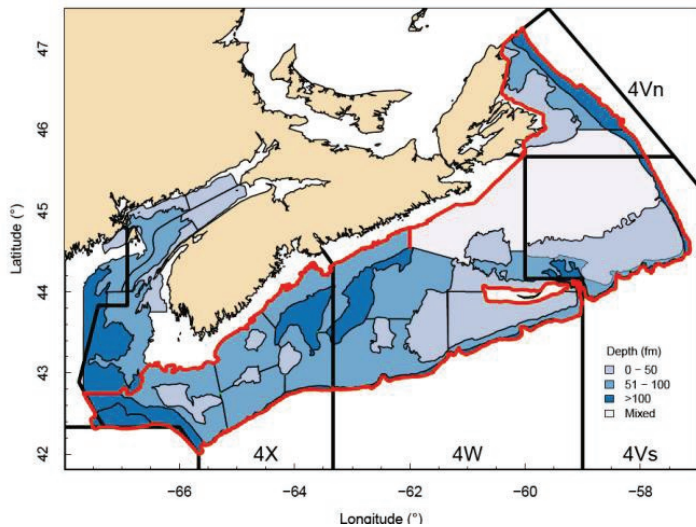
## FISHERY

A directed fishery for silver hake takes place in Northwest Atlantic Fisheries Organization (NAFO) areas 4VWX.

Silver hake is targeted by mobile gear, most often by otter trawl.

The total allowable catch (TAC) in 2022-2023 for 4VWX5 was 15,000 mt.

The total landed value of silver hake in 2021 was \$4.8M.



**Figure.** Silver hake fishing areas along the Scotian Shelf

## BIOLOGY

Silver hake is a demersal (bottom-dwelling) species, and a member of the Gadidae family, known as the codfishes. They prefer sandy, muddy, or gravel ocean bottoms.

Silver hake females can grow up to 75 cm in length, and weigh up to 5 lbs. They can live from 10 to 12 years of age. Males grow up to 34 cm in length and live up to 6 years.

Silver hake show seasonal and temporal migrations, moving inshore during the summer, and into deeper waters in the winter. They also move up the water column to feed at night, then return to the ocean bottom during the day. They are found most often at depths of 50 to 400 m, but have been observed as deep as 900 m.

Silver hake have been observed in water temperatures of 2 to 17 °C, but are found most often between 7 and 10 °C.

Silver hake prey on sand lance, shrimp, and krill, and are preyed on by monkfish, pollock, halibut and cod, as well as by grey seals.

## LIFE CYCLE

Silver hake reach sexual maturity by 2 to 3 years of age.

They spawn from July to September on the western Scotian Shelf around the Emerald, Western and Sable Island banks, and females can release batches of eggs up to 3 times in a single spawning season.

Eggs hatch after approximately 2 days, and larvae measure 2.6 to 3.5 mm long. After 2 months in the pelagic zone, larvae measure 17 to 20 mm in length and descend to the bottom as juveniles.

## MANAGEMENT AND CONSERVATION

The 4VWX unit is 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, size selectivity through gear modifications and restriction, bycatch limits, permitted and mandatory release of designated species, retention limits for fixed gear, marine protected areas, and fleet sector quota allocation.

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.



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## SEAFOOD LABELLING

	Terminology	Description
<b>Common Name</b>	<b>English:</b> Silver Hake, Whiting, Atlantic Whiting, Southwest Atlantic Hake, Hake <b>French:</b> Merlu de L'atlantique; Merlu; Merlu de L'atlantic Sud-ouest; Merlu Argenté	Accepted common name(s) for <i>Merluccius bilinearis</i>
<b>Production Method</b>	Wild	Harvested from the ocean
<b>Product Forms</b>	Round	Unprocessed
	Dressed	Eviscerated only
	Fillets	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
	Boneless	Has been boned, and no bones remain
<b>Process Description</b>	Fresh	Not previously frozen
	Refreshed/Previously Frozen	Thawed and sold fresh

## PROCESSING/HANDLING

### Process Yield

(Based on values for Pacific Hake in Crapo et al., 1993)

Dressed (Head-On): **70-85%**

Dressed (Head-Off): **56 – 71%**

Fillets (Skin-On): **43%**

Fillets (Skin-Off, PBI): **32%**

Fillets (Skin-Off, PBO): **27%**

Roe: **2 – 8%**

### Primary Products

Whole, Dressed, Fillets (Fresh)

### Secondary Products

Loins, steaks, canned

### Post-Harvest Primary Processing

Receiving » Chilling » Washing » Butchering (evisceration, heading, filleting, trimming) » Packaging » Storage » Transportation

### By-Products

Heads, Viscera, Frame





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## CHEMICAL COMPOSITION

	Proportion (g / 100 g)	
	Raw	Cooked
<b>Moisture</b>	80.30	74.70
<b>Protein</b>	18.30	23.50
<b>Fat</b>	1.31	1.69
<b>Carbohydrate</b>	0.00	0.00
<b>Ash</b>	1.30	1.46

USDA Nutritional Database ID, 15132 (Raw), 15133 (Cooked)

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

## STORAGE

Whole silver hake stored on ice keep in optimal condition for 2 days, remain in adequate condition for up to 6 days, and become unacceptable after 9 days.

Storage of whole silver hake in refrigerated sea water can extend period of optimal condition from 2 to 4 days, but storage beyond this time will accelerate spoilage due to growth of bacteria.

Frozen whole silver hake will keep in optimal condition for up to 6 months if stored at -30 °C, and in acceptable condition for up to 10 months. If stored at -20 °C, these changes may occur as early as 3 months.

## KEY FOOD SAFETY AND QUALITY CONCERNS

The flesh of silver hake is absent of parasites that commonly found in haddock or cod.

Silver hake contain a relatively high proportion of brown muscle on the skin-side of the flesh, which is high in fat and susceptible to oxidation during frozen storage.

Silver hake begin to spoil immediately upon landing on the deck of the vessel in a manner like haddock, pollock and cod. Tissue softening and microbial growth during iced storage, and toughing during frozen storage are primary mechanisms of deterioration.

Spoilage of silver hake occurs more rapidly than in pollock, haddock, or cod. Fishing trips durations should be limited to no more than 2 days to ensure the highest quality product is brought to market.

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