

Indicator Units	Status In 2024	Implications	Time Series
Commercial landings (millions of lbs.)	Near long term (1996-2024) average	Environmental dynamics vary between locations/timing of the summer and winter squid fisheries. An increase in landings since 2020 but decrease in number of vessels could indicate targeted trips in specific times of year and fishers targeting other species when longfin are not available.	
Number of commercial vessels (# of federally-permitted vessels landing over 1lb of longfin squid)	Below long term (1996-2024) average	Number of commercial vessels has been steadily decreasing since around 2000 consistent with decreasing fleet diversity and continued risk to fishery resilience [7]. Permit requalification in 2019 and a decrease in the post-closure trip limit for trimester 2 may cap participation, although these actions were designed to accommodate recent fishing trends and activity.	
Commercial revenue (millions, inflation adjusted to 2024 USD)	Below long term (1996-2024) average	Average longfin ex-vessel prices in 2024 increased slightly from 2023 (+10%), but commercial revenue has decreased from 2023, driven by the overall decrease in landings by 23% [7].	
Western Gulf Stream Index (shift in the western part of the Gulf Stream North wall: mean position: >0 = more northerly, <0 = more southerly)	Above long term (1996-2024) average	Since the mid-1990s, north and westward shifts in the Gulf Stream have resulted in an increase in warm core rings and deep water, high salinity heat waves. The position of the Gulf Stream influences seasonal temperature and water mass mixing dynamics that affect longfin squid habitat suitability, temperature-dependent growth, and prey availability (https://noaa-edab.github.io/catalog/gsi.html).	
Bottom temperature in MAB and SNE(°C)	Above long term (1996-2024) average (Fall); near long term (1996-2024) average (Spring)	Inshore temperature thresholds (around 14°C) initiate migration of squid from offshore overwintering habitats. Longfin squid seasonal distribution and growth rates are likely temperature dependent, avoiding water <8°C. Stronger and/or more persistent Mid-Atlantic Cold Pool conditions (not shown) may limit habitat availability (https://noaa-edab.github.io/catalog/cold_pool.html).	

* [7] = Longfin Squid Fishery Information Document

Data Gaps/Uncertainty

- Bottom temperature data comes from GLORYS [8], a modeled re-analysis product that incorporates insitu data.
- The Gulf Stream Index indicator is a yearly value and may not be indicative of changes in oceanographic processes on a smaller time scale.
- Aging uncertainty creates uncertainty around life history processes, spawning location and timing, and natural mortality.
- While survey data in the 1970s and 80s indicate larval squid south of Cape Hatteras in the winter months that are transported north into the Mid-Atlantic Bight, there is a lack of definitive data to prove this hypothesis.
- Effects of cannibalism on the population are unknown at this time.

We welcome your observations! Please contact northeast.ecosystem.highlights@noaa.gov with any on-the-water insights or changes observed in the black sea bass fishery and nefsc.esc.leads@noaa.gov with questions or comments on the information presented in this report.

The code used to create this report can be viewed online: github.com/NEFSC/READ-EDAB-longfinESP