Amendment 25 (Revised)

to the

Northeast Multispecies Fishery Management Plan

Appendix V

Risk Policy Matrices for Atlantic Cod Stocks

FMP	**NORTHEAST MULTISPECIES (GROUNDFISH)**
STOCK(S)	**Eastern Gulf of Maine Cod**
LAST ASSESSMENT	**Management Track, June 2024**

Assessment Model, Terminal Year	Description of Assessment Model	Overfishing?/ Overfished?	In Rebuilding Program?	OFL	ABC/ABC CR	ACL	ACT
WHAM	State-space Assessment Model	No/Yes	N/A for new stock	N/A for new stock	N/A for new stock	N/A for new stock	N/A for groundfish
				MSY/OY	**AMs**	**Discards**	**State Waters**
Iconic New England species. Multispecies groundfish fishery with commercial and recreational catches. A recently established stock unit to reflect new understanding of cod stock structure. Most recent management track assessment for the new stock identifies that it is overfished and overfishing is not occurring. Uncertainties in the assessment include the lack of inclusion of the discard estimates from lobster pots, and lack of biological data of fishery landings. This is the first management track assessment for this stock.				N/A for new stock	Accountability measures can be triggered if overages occur under certain conditions for components with sub-ACLs.	N/A for new stock	N/A for new stock

Availability of Biological and Assessment Data	*Updated data since last assessment:* survey (NEFSC fall survey, NEFSC spring survey, ME/NH Inshore Bottom Trawl fall and spring survey, Eastern Gulf of Maine Sentinel Survey, and Age-0 index from the fall ME/NH Inshore Bottom Trawl survey) and fisheries (commercial and recreational catches) data
Recent Performance Against Harvest Control Rule	N/A for new stock
Current Management Program	Multispecies groundfish fishery with commercial and recreational components. Amendment 25 aims to add the new stock to the fishery management plan and Framework 69 will establish status determination criteria and set specifications for the new stock. The Total ACL is divided between several sub-ACLs and sub-components. The commercial sub-ACL is further divided between the sector sub-ACL and the common pool sub-ACL. The majority of commercial permits participate in sectors, fishing under quotas. The common pool operates under days-at-sea, with trip limits and trimester TACs controlling catch. State waters and the other sub-component would round out the final components of the total ACL. Landings and discards from all fisheries count against the applicable sub-ACL and total ACL, which are monitored throughout the year. Accountability measures can be triggered if overages occur under certain conditions for components with sub-ACLs.
Variability in Catch/Revenues?	N/A for the new stock
Data - Vessels, Permits, Dealers, Processors, Employment	FY2022: 802 commercial groundfish permitted vessels, with 562 reporting landings. 62 dealers reported buying groundfish. 78 dealers reported buying any species on groundfish trips.
% Food, % Recreational	The commercial (sector and common pool) sub-ACLs are equal to 95% of the remaining ABC after the state waters and other sub-components are subtracted from the total ABC. Under Framework 69 there is no recreational sub-ACL.
Fishing Communities	*Commercial* - The top 5 ports based on the Groundfish-Specific Commercial Engagement Indicator (2004-2022) are Gloucester, MA; New Bedford, MA; Boston, MA; Narragansett/Point Judith, RI; and Portland, ME. For EGOM cod specifically, the top ports by average commercial cod landings over fishing years 2019-2023 included Port Clyde, ME and Gloucester, MA making up 20.8% and 19.8% of cod landed at these ports respectively. Other ports that landed cod make up the remaining 59.3% of average cod landed, but could consist of one or more ports that makes of less than 10% of the landings or ports with greater than 10% of the landings but cannot be shown due to data confidentiality. *Recreational* - When expanding out to the top 20 communities in recreational engagement in the Northeast (all recreational fishing) Recreational Engagement Indicators (2009-2020), New England communities include: Newburyport, MA and Barnstable, MA. Other ports of interest with relatively high engagement (i.e., ranking somewhere outside the top 20) in the last five years include Gloucester, MA, Waterford, CT, East Lyme/Niantic, CT, and Old Saybrook, CT.
Other Economic/Social Factors	ACE lease prices are not yet available for this new stock. However, in over fishing years 2019-2023, the average landed amount of cod within the EGOM broadstock area was 2,259 pounds generating an average revenue of $7,090. This made up only 0.4% of the revenue landed by species in the EGOM broadstock area; the main generators of revenue in the area were haddock, white hake, non-groundfish species, and pollock.
Major Sources of Scientific Uncertainty	From the 2024 Management Track Assessment: lack of inclusion of cod dead discards from EGOM lobster pots, lack of biological data in recent years for commercial and recreational landings, lack of survey data therby being treated as missing within the WHAM model.
Major Sources of Management Uncertainty	Atlantic Cod Management Transition Plan. Phase 2 of the Atlantic Cod Transition Plan will consider if the management units need to align with the stock boundaries. The default management uncertainty buffer of 5% is applied to the commercial fishery.
How is the probability of overfishing addressed?	Not yet applicable for this new stock
What is the consequence of overfishing?	Reduction in biomass, yield, and net economic benefits over long-term.
How are expected net benefits to the Nation currently measured/evaluated?	Yield (mt and $)
Interactions with Other Fisheries/Stocks, Bycatch Issues	Cod is frequently caught with other abundant groundfish stocks (e.g., haddock and pollock) in the multi-species fishery. The low catch limit on cod can lead to reduce catches of other stocks.

FMP	**NORTHEAST MULTISPECIES (GROUNDFISH)**
STOCK(S)	**Eastern Gulf of Maine Cod**
LAST ASSESSMENT	**Management Track, June 2024**

Ecosystem Considerations: Trophic Interactions	Cod are generalists and transition from pelagic prey during their early life stages to benthic prey in their later life stages. Specifically larval and pelagic juveniles feed on mainly copepods, mysid shrimp, and hermit crab larvae, while benthic juvenile cod will feed primarily on crustaceans. Small adults will feed on smaller fish like sand lance and silver hake, with prey size increasing as a function of adult size.
Ecosystem Considerations: Habitat	EGOM cod comprises a stock area that was previously part of the GOM cod stock unit. GOM cod habitat vulnerability was assessed in Omnibus Habitat Amendment 2. The current spatial distribution of the stock is considerably less than its historical range within the Gulf of Maine. The EGOM stock area includes the Eastern Maine and the Jeffreys Bank Habitat Management Areas which are closed year-round to bottom-tending mobile gears.
Ecosystem Considerations: Climate	Atlantic cod is considered moderately vulnerable to climate change (high climate exposure risk and moderate biological sensitivity) and are projected to b e negatively affected by climate change due to reduced recruitment and suitable habitat. Temperature specificially has an important role in recruitment, growth, and survival.
Other Important Considerations/Notes	Phase 1 of the Atlantic Cod Transition Plan is ongoing and aims to establish Amendment 25 and Framework 69 for implementation by May 1, 2025. Phase 2 is scheduled to occur beyond FY2025.

FMP	**NORTHEAST MULTISPECIES (GROUNDFISH)**
STOCK(S)	**Western Gulf of Maine Cod**
LAST ASSESSMENT	**Management Track, June 2024**

Assessment Model, Terminal Year	Description of Assessment Model	Overfishing?/ Overfished?	In Rebuilding Program?	OFL	ABC/ABC CR	ACL	ACT
WHAM	State-space Assessment Model	Yes/Yes	N/A for new stock	N/A for new stock	N/A for new stock	N/A for new stock	N/A for groundfish

	MSY/OY	AMs	Discards	State Waters
Iconic New England species. Multispecies groundfish fishery with commercial and recreational catches. A recently established stock unit to reflect new understanding of cod stock structure. Most recent management track assessment for the new stock identifies that it is overfished and overfishing is occurring. Uncertainties in the assessment include inclusion of the 2023 spring BLLS survey data, and limited data differentiating the spring and winter spawners within the stock. This is the first management track assessment for this stock.	N/A for new stock	Accountability measures can be triggered if overages occur under certain conditions for components with sub-ACLs.	N/A for new stock	N/A for new stock

Availability of Biological and Assessment Data	*Updated data since last assessment:* survey indices (NEFSC fall survey and spring survey with Albatross and Bigelow time series treated seperately, MADMF spring survey, ME/NH spring survey, spring Bottom Longline Survey (BLLS), fall BLLS and spring Industry Based Survey (IBS); data from the spring BLLS excluded the 2023 terminal year value) and fisheries (commercial and recreational catches) data
Recent Performance Against Harvest Control Rule	N/A for new stock
Current Management Program	Multispecies groundfish fishery with commercial and recreational components. Amendment 25 aims to add the new stock to the fishery management plan and Framework 69 will establish status determination criteria and set specifications for the new stock. The Total ACL is divided between several sub-ACLs and sub-components. The commercial sub-ACL is further divided between the sector sub-ACL and the common pool sub-ACL. The majority of commercial permits participate in sectors, fishing under quotas. The common pool operates under days-at-sea, with trip limits and trimester TACs controlling catch. The recreational fishery (private and for-hire) also has a sub-ACL. The recreational fishery is managed with bag limits, seasons, and fish size restrictions. State waters and the other sub-component would round out the final components of the total ACL. Decisions under the Transition Plan and FW69 regarding the recreational sub-ACLs include whether to allocate them based on the Northern area of the stock, or the total WGOM area. Landings and discards from all fisheries count against the applicable sub-ACL and total ACL, which are monitored throughout the year. Accountability measures can be triggered if overages occur under certain conditions for components with sub-ACLs.
Variability in Catch/Revenues?	N/A for the new stock
Data - Vessels, Permits, Dealers, Processors, Employment	FY2022: 802 commercial groundfish permitted vessels, with 562 reporting landings. 62 dealers reported buying groundfish. 78 dealers reported buying any species on groundfish trips.
% Food, % Recreational	A portion of the ABC will be allocated to the commercial and recreational fisheries. The recreational fishery sub-ACL will be determined as either 37.5% of each years ABC for the northern portion only of the stock unit area reduced by a management uncertainty buffer, or as a percentage of each years ABC for the entire WGOM stock area reduced by a management uncertainty buffer. The commercial groundfish fishery ACLs (sectors and common pool) is reduced by commercial state waters and other commercial fisheries sub-components and management uncertainty buffers.
Fishing Communities	*Commercial* - The top 5 ports based on the Groundfish-Specific Commercial Engagement Indicator (2004-2022) are Gloucester, MA; New Bedford, MA; Boston, MA; Narragansett/Point Judith, RI; and Portland, ME. For WGOM cod specifically, the top ports by average commercial cod landings over fishing years 2019-2023 included ports in Gloucester, New Bedford, and Boston, MA making up 38.2%, 26.8%, and 19.0% of cod landed at these ports respectively. *Recreational* - When expanding out to the top 20 communities in recreational engagement in the Northeast (all recreational fishing) Recreational Engagement Indicators (2009-2020), New England communities include: Newburyport, MA and Barnstable, MA. Other ports of interest with relatively high engagement (i.e., ranking somewhere outside the top 20) in the last five years include Gloucester, MA, Waterford, CT, East Lyme/Niantic, CT, and Old Saybrook, CT.
Other Economic/Social Factors	ACE lease prices are not yet available for this new stock. However, in over fishing years 2019-2023, the average landed amount of cod within the WGOM broadstock area was 853,661 pounds generating an average revenue of $2,200,952. This made up only 4.4% of the revenue landed by species in the WGOM broadstock area; the main generators of revenue in the area were non-groundfish species, haddock, pollock, and redfish.
Major Sources of Scientific Uncertainty	From 2024 Management Track Assessment: Sensitivity of estimates of SSB and F to the inclusion of the spring 2023 BLLS index; limited data between the WGOM winter spawners and WGOM spring spawners which were combined in the research track and management track assesments; overly optimistic projections from the research track model
Major Sources of Management Uncertainty	Atlantic Cod Management Transition Plan. Phase 2 of the Atlantic Cod Management Transition Plan will consider if the management units need to align with the stock boundaries. The default management uncertainty buffer of 5% is applied to the commercial fishery. A management uncertainty buffer of 7% is used for the recreational fishery. Decisions under the Transition Plan and FW69 regarding the commercial sub-ACLs include whether and how to portion them out based on the Northern and Southern areas of the stock unit, in order to allocated based on existing GOM and GB Potential Sector Contributions (PSCs) respectively.
How is the probability of overfishing addressed?	Not yet applicable for this new stock
What is the consequence of overfishing?	Reduction in biomass, yield, and net economic benefits over long-term.

FMP	**NORTHEAST MULTISPECIES (GROUNDFISH)**
STOCK(S)	**Western Gulf of Maine Cod**
LAST ASSESSMENT	**Management Track, June 2024**

How are expected net benefits to the Nation currently measured/evaluated?	Yield (mt and $)
Interactions with Other Fisheries/Stocks, Bycatch Issues	Cod is frequently caught with other abundant groundfish stocks (e.g., haddock and pollock) in the multi-species fishery. The low catch limit on cod can lead to reduce catches of other stocks.
Ecosystem Considerations: Trophic Interactions	Cod are generalists and transition from pelagic prey during their early life stages to benthic prey in their later life stages. Specifically larval and pelagic juveniles feed on mainly copepods, mysid shrimp, and hermit crab larvae, while benthic juvenile cod will feed primarily on crustaceans. Small adults will feed on smaller fish like sand lance and silver hake, with prey size increasing as a function of adult size. Fishermen have noted that the two groups of cod typically have different diets, with cod on Stellwagen Bank feeding primarily on sand lance, while those on Jeffreys Ledge mainly feed on herring and shrimp. There has been a decline in many cod predators (Atlantic halibut, large hakes, large cod) but it is unclear if the declines in predators are due to the decline in cod.
Ecosystem Considerations: Habitat	WGOM stock comprises a stock area that was previously part of the GOM cod and GB cod stock units. GOM cod habitat vulnerability was assessed in Omnibus Habitat Amendment 2. The current spatial distribution of the stock is considerably less than its historical range within the Gulf of Maine. Year-round and seasonal closures are in place in the GOM including the WGOM habitat / groundfish closure areas and the Cashes Ledge habitat/groundfish closure areas to protect cod and increase successful cod spawning. The WGOM stock area also includes the Great South Channel Habitat Management Area, which is closed year-round to bottom-tending mobile gear.
Ecosystem Considerations: Climate	Atlantic cod is considered moderately vulnerable to climate change (high climate exposure risk and moderate biological sensitivity) and are projected to be negatively affected by climate change due to reduced recruitment and suitable habitat. Temperature specificially has an important role in recruitment, growth, and survival.
Other Important Considerations/Notes	Phase 1 of the Atlantic Cod Transition Plan is ongoing and aims to establish Amendment 25 and Framework 69 for implementation by May 1, 2025. Phase 2 is scheduled to occur beyond FY2025.

FMP	**NORTHEAST MULTISPECIES (GROUNDFISH)**
STOCK(S)	**Georges Bank Cod**
LAST ASSESSMENT	**Management Track, June 2024**

Assessment Model, Terminal Year	Description of Assessment Model	Overfishing?/ Overfished?	In Rebuilding Program?	OFL	ABC/ABC CR	ACL	ACT
WHAM	State-space Assessment Model	No/Yes	N/A	N/A for the new GB cod stock	N/A for the new GB cod stock	N/A for the new GB cod stock	N/A for groundfish
				MSY/OY	**AMs**	**Discards**	**State Waters**
Iconic New England species. Multispecies groundfish fishery with commercial catches. Recently underwent changes to the stock unit to reflect new understanding of cod stock structure. Most recent management track assessment for the new stock identifies that it is overfished and overfishing is not occurring. Uncertainties in the assessment result from recruitment, insufficient port sampling, gaps in survey. This is the first management track assessment for this stock. Co-caught with other abundant species, such as haddock and pollock. Transboundary EGB cod managment unit co-managed by the U.S. and Canada.				N/A for the new GB cod stock	Commercial: In-season closures, reactive lb-lb payback Recreational: Stricter management measures in following years	N/A for the new GB cod stock	0 mt for the new GB cod stock

Availability of Biological and Assessment Data	*Used in Assessment:* US landings and discards, Canadian landings, Canadian discards from scallop and groundfish vessels, bottom trawl surveys (NMFS Spring, NMFS fall), and Canadian DFO spring survey
Recent Performance Against Harvest Control Rule	N/A for the new GB cod stock
Current Management Program	Multispecies groundfish fishery with commercial component. Amendment 25 aims to add the new stock to the fishery management plan and Framework 69 will establish status determination criteria and set specifications for the new stock. The total ABC would be reduced by the amount of the Canadian quota and an estimate of catch expected from non-groundfish commerical fisheries. Components of the fishery that receive an allocation have a sub-ACL set by reducing their portion of the ABC to account for management uncertainty and are subject to accountability measures (AMs) if they exceed their respective catch limit during the fishing year. The amount allocated to the commercial fishery would be divided between the sector sub-ACL and the common pool sub-ACL. The majority of commercial permits participate in sectors, fishing under quotas. The common pool operates under days-at-sea, with trip limits and trimester TACs controlling catch. The other sub-component would round out the final component of the total ACL. Landings and discards from all fisheries count against the applicable sub-ACL and total ACL, which are monitored throughout the year. Accountability measures can be triggered if overages occur under certain conditions for components with sub-ACLs. Eastern GB cod is jointly managed with Canada under the United States/Canada Resource Sharing Understanding. Each year, the Transboundary Management Guidance Committee (TMGC) recommends a shared quota for Eastern GB cod based on the most recent stock information and the TMGC's harvest strategy. The shared quotas are allocated between the United States and Canada based on a formula that considers historical catch (10-percent weighting) and the current resource distribution (90-percent weighting).
Variablity in Catch/Revenues?	N/A for the new stock
Data - Vessels, Permits, Dealers, Processors, Employment	FY2022: 802 commercial groundfish permitted vessels, with 562 reporting landings. 62 dealers reported buying groundfish. 78 dealers reported buying any species on groundfish trips.
% Food, % Recreational	The commercial (sector and common pool) sub-ACLs are equal to 95% of the remaining ABC after the other sub-components are subtracted from the total US ABC. There is no recreational sub-ACL.
Fishing Communities	*Commercial* - The top 5 ports based on the Groundfish-Specific Commercial Engagement Indicator (2004-2022) are Gloucester, MA; New Bedford, MA; Boston, MA; Narragansett/Point Judith, RI; and Portland, ME. For GB cod specifically, the top ports by average commercial cod landings over fishing years 2019-2023 included New Bedford, MA and Gloucester, MA making up 76.2% and 12.9% of cod landed at these ports respectively.
Other Economic/Social Factors	ACE lease prices are not yet available for this new stock. However, over fishing years 2019-2023, the average landed amount of cod within the GB broadstock area was 271,753 pounds generating an average revenue of $617,725. This made up only 4.4% of the revenue landed by species in the GB broadstock area; the main generators of revenue in the area were haddock, non-groundfish species, winter flounder, and pollock.
Major Sources of Scientific Uncertainty	From the 2024 Management Track assessment: recruitment, insufficient port sampling, gaps in survey, and age truncation in the NEFSC fall index terminal years.
Major Sources of Management Uncertainty	Atlantic Cod Management Transition Plan. Phase 2 of the Atlantic Cod Management Transition Plan will consider if the management units need to align with the stock boundaries. The default management uncertainty buffer of 5% is applied to the commercial fishery. Addtionally uncertainties exist around the current timing of the Canadian DFO assessment occurring annually while the US GB cod assessment occurs every two years.
How is the probability of overfishing addressed?	Not yet applicable for this new stock
What is the consequence of overfishing?	Reduction in biomass, yield, and net economic benefits over long-term. Any US fishery overage of the EGB cod U.S. TAC is subtracted from the following year's U.S. TAC
How are expected net benefits to the Nation currently measured/evaluated?	Yield (mt and $)

FMP	**NORTHEAST MULTISPECIES (GROUNDFISH)**
STOCK(S)	**Georges Bank Cod**
LAST ASSESSMENT	**Management Track, June 2024**

Interactions with Other Fisheries/Stocks, Bycatch Issues	The TMGC recommends TACs for the U.S./Canada shared resources for GB cod (and haddock and yellowtail flounder). Cod is frequently caught with other abundant groundfish stocks (e.g., haddock and pollock) in the multi-species fishery. The low catch limit on cod can lead to reduced catches of other stocks.
Ecosystem Considerations: Trophic Interactions	Cod are generalists. The GB cod diet has changed over the last three decades, reflecting changes in the relative abundance of different prey. There has been a decline in many cod predators (Atlantic halibut, large hakes, large cod) but it is unclear if the declines in predators are due to the decline in cod.
Ecosystem Considerations: Habitat	GB cod stock unit has been revised under the new stock structure. GB cod habitat vulnerability was assessed in Omnibus Habitat Amendment 2. The range of GB cod has contracted over time, and their current center of distribution has moved north. Closures in place in the GB area include the GB Dedicated Habitat Research Area, Closed Area II Habitat and Groundfish Closures, and two Seasonal Spawning Closures (CAI and CAII).
Ecosystem Considerations: Climate	Atlantic cod is considered moderately vulnerable to climate change (high climate exposure risk and moderate biological sensitivity) and are projected to be negatively affected by climate change due to reduced recruitment and suitable habitat. Temperature specificially has an important role in recruitment, growth, and survival.
Other Important Considerations/Notes	Phase 1 of the Atlantic Cod Management Transition Plan is ongoing and aims to establish Amendment 25 and Framework 69 for implementation by May 1, 2025. Phase 2 is scheduled to occur beyond FY2025. Changes to the US/CA transboundary management process effective this year such that the joint assessment (TRAC) no longer occurs. In its place, a spatial apportionment method will be applied to the domestic full GB cod assessment to determine advice in the Eastern GB management area.

FMP	**NORTHEAST MULTISPECIES (GROUNDFISH)**
STOCK(S)	**Southern New England Cod**
LAST ASSESSMENT	**Management Track, June 2024**

Assessment Model, Terminal Year	Description of Assessment Model	Overfishing?/ Overfished?	In Rebuilding Program?	OFL	ABC/ABC CR	ACL	ACT
WHAM	State-space Assessment Model	Yes/Yes	N/A for new stock	N/A for new stock	N/A for new stock	N/A for new stock	N/A for groundfish
				MSY/OY	**AMs**	**Discards**	**State Waters**
Iconic New England species. Multispecies groundfish fishery with commercial and recreational catches. A recently established stock unit to reflect new understanding of cod stock structure. Most recent management track assessment for the new stock identifies that it is overfished and overfishing is occurring. Uncertainties in the assessment include the lack of biological samples, and indices that track relative abundance. This is the first management track assessment for this stock.				N/A for new stock	Accountability measures can be triggered if overages occur under certain conditions for components with sub-ACLs.	N/A for new stock	N/A for new stock

Availability of Biological and Assessment Data	*Updated data since last assessment:* two indices of abundance (NEFSC spring survey and a recreational catch per unit effort time series from party/charter fleet) and fisheries (commercial and recreational catches) data
Recent Performance Against Harvest Control Rule	N/A for new stock
Current Management Program	Multispecies groundfish fishery with commercial and recreational components. Amendment 25 aims to add the new stock to the fishery management plan and Framework 69 will establish status determination criteria and set specifications for the new stock. The Total ACL is divided between several sub-ACLs and sub-components. The commercial sub-ACL is further divided between the sector sub-ACL and the common pool sub-ACL. The majority of commercial permits participate in sectors, fishing under quotas. The common pool operates under days-at-sea, with trip limits and trimester TACs controlling catch. A decision to be made under the Transition Plan and FW69 includes if the recreational fishery would receive a catch target or a sub-ACL. State waters and the other sub-component in either case would round out the final components of the total ACL. Landings and discards from all fisheries count against the applicable sub-ACL and total ACL, which are monitored throughout the year. Accountability measures can be triggered if overages occur under certain conditions for components with sub-ACLs.
Variability in Catch/Revenues?	N/A for new stock
Data - Vessels, Permits, Dealers, Processors, Employment	FY2022: 802 commercial groundfish permitted vessels, with 562 reporting landings. 62 dealers reported buying groundfish. 78 dealers reported buying any species on groundfish trips.
% Food, % Recreational	There would either be a recreational catch target or a recreational fishery sub-ACL as a percentage of each years ABC reduced by a management uncertainty buffer. The remainder of the ABC would be allocated to the commercial fisheries.
Fishing Communities	*Commercial* - The top 5 ports based on the Groundfish-Specific Commercial Engagement Indicator (2004-2022) are Gloucester, MA; New Bedford, MA; Boston, MA; Narragansett/Point Judith, RI; and Portland, ME. For SNE cod specifically, the top ports by average commercial cod landings over fishing years 2019-2023 included Point Judith, RI and Montauk, NY making up 48.0% and 29.1% of cod landed at these ports respectively. *Recreational* - When expanding out to the top 20 communities in recreational engagement in the Northeast (all recreational fishing) Recreational Engagement Indicators (2009-2020), New England communities include: Newburyport, MA and Barnstable, MA. Other ports of interest with relatively high engagement (i.e., ranking somewhere outside the top 20) in the last five years include Gloucester, MA, Waterford, CT, East Lyme/Niantic, CT, and Old Saybrook, CT.
Other Economic/Social Factors	The vast majority of catches are from the recreational fishery (average 93% over CY2019-2023). For the commercial fishery, ACE lease prices are not yet available for this new stock. However, in over fishing years 2019-2023, the average landed amount of cod was 6,324 pounds generating an average revenue of $16,923. This made up only 0.5% of the revenue landed by species in the SNE broadstock area; the main generators of revenue in the area were non-groundfish species, and winter flounder.
Major Sources of Scientific Uncertainty	From the 2024 Management Track Assessment: lack of biological samples and indices that track abundance.
Major Sources of Management Uncertainty	Phase 2 of the Atlantic Cod Transition Plan will consider if the management units need to align with the stock boundaries. The default management uncertainty buffer of 5% is applied to the commercial fishery. A management uncertainty buffer of 7% is used for the recreational fishery should a recreational sub-ACL be established.
How is the probability of overfishing addressed?	Not yet applicable for this new stock
What is the consequence of overfishing?	Reduction in biomass, yield, and net economic benefits over long-term.
How are expected net benefits to the Nation currently measured/evaluated?	Yield (mt and $)

FMP	**NORTHEAST MULTISPECIES (GROUNDFISH)**
STOCK(S)	**Southern New England Cod**
LAST ASSESSMENT	**Management Track, June 2024**

Interactions with Other Fisheries/Stocks, Bycatch Issues	Cod is frequently caught with other abundant groundfish stocks (e.g., haddock and pollock) in the multi-species fishery. The low catch limit on cod can lead to reduce catches of other stocks.
Ecosystem Considerations: Trophic Interactions	Cod are generalists and transition from pelagic prey during their early life stages to benthic prey in their later life stages. Specifically larval and pelagic juveniles feed on mainly copepods, mysid shrimp, and hermit crab larvae, while benthic juvenile cod will feed primarily on crustaceans. Small adults will feed on smaller fish like sand lance and silver hake, with prey size increasing as a function of adult size.
Ecosystem Considerations: Habitat	SNE cod comprises a stock area that was previously part of the GB cod stock unit. GB cod habitat vulnerability was assessed in Omnibus Habitat Amendment 2. The range of GB cod has contracted over time, and their current center of distribution has moved north. There are no closures in the SNE area. There is the Southern New England Habitat Area of Particular Concern (HAPC) which includes the area around Cox Ledge.
Ecosystem Considerations: Climate	Atlantic cod is considered moderately vulnerable to climate change (high climate exposure risk and moderate biological sensitivity) and are projected to b e negatively affected by climate change due to reduced recruitment and suitable habitat. Temperature specificially has an important role in recruitment, growth, and survival.
Other Important Considerations/Notes	Phase 1 of the Atlantic Cod Transition Plan is ongoing and aims to establish Amendment 25 and Framework 69 for implementation by May 1, 2025. Phase 2 is scheduled to occur beyond FY2025.

FMP NORTHEAST MULTISPECIES (GROUNDFISH)
STOCK(S) Georges Bank Yellowtail Flounder
LAST ASSESSMENT Management Track, July 2024

Assessment Model, Terminal Year	Description of Assessment Model	Overfishing?/ Overfished?	In Rebuilding Program?	OFL	ABC/ABC CR	ACL	ACT
Empirical, 2024	Averages estimates of biomass from the bottom trawl surveys and applies exploitation rate	Unknown/Yes	Yes 2006-2032	Unknown	2024 ABC (US/CA TAC) 168 mt; US ABC/TAC 71 mt, CA TAC 97 mt	68 mt (US) in FY 2024	N/A for groundfish
				MSY/OY	**AMs**	**Discards**	**State Waters**
Low survey values, stock biomass, and fishery catches, poor productivity. Transboundary stock co-managed by the U.S. and Canada. This is the first U.S. Management Track Assessment of this stock in response to the dissolution of the TRAC Assessment process, which updates the Limiter approach. Stock is currently undergoing a research track assessment (along with all yellowtail flounder stocks) to develop an analytical method.				Unknown	In season closures and lb-lb payback for commercial groundfish vessels; gear requirements for Atlantic sea scallop fishery; gear requirements for small-mesh fisheries	8 mt (US) in FY2022	0 mt

Availability of Biological and Assessment Data	*Updated data since last assessment:* surveys (2023 NMFS fall, 2024 NMFS spring survey and DFO spring 2024 survey) and fisheries (U.S. and Canadian commercial catches) data
Recent Performance Against Harvest Control Rule	Percent of US ACL caught: 8.3% in FY2020, 39.3% in FY2021, 7.1% in FY2022
Current Management Program	The Total ACL is divided between several sub-ACLs. The commercial sub-ACL is further divided between the sector sub-ACL and the common pool sub-ACL. The majority of commercial permits participate in sectors, fishing under quotas. The common pool operates under days-at-sea, with trip limits and trimester TACs controlling catch. The Atlantic sea scallop fishery and small-mesh fisheries receive sub-ACLs for GB yellowtail flounder. Landings and discards from all fisheries count against the applicable sub-ACL, which are monitored throughout the year. If an overage occurs in the Atlantic sea scallop or small-mesh fisheries, an accountability measure is triggered for a subsequent fishing year. The scallop fishery cannot possess GB yellowtail flounder. GB yellowtail flounder is jointly managed with Canada under the United States/Canada Resource Sharing Understanding. Each year, the Transboundary Management Guidance Committee (TMGC) and Steering Committee (SC) recommends a shared quota for GB yellowtail flounder based on the most recent stock information and the TMGC's harvest strategy. The shared quotas are allocated between the United States and Canada based on a formula that considers historical catch (10-percent weighting) and the current resource distribution (90-percent weighting).
Variability in Catch/Revenues?	***Commercial Groundfish Revenue for GB yellowtail flounder (2022$):*** <$0.1 million in FY2020; <$0.1 million in FY2021; <$0.1 million in FY2022; <$0.1 million 5-year average ***GB yellowtail flounder ex-vessel price/lb (2022$/lb):*** $1.51/lb in FY2020; $1.53/lb in FY2021; $1.73/lb in FY2022; $1.89/lb 5-year average ***Total groundfish landings:*** 50.96 million pounds in FY2020; 37.04 million pounds in FY2021; 33.47 million pounds in FY2022 ***GB yellowtail flounder total catch (landings + discards):*** 9.7 mt in FY2020, 30.7 mt in FY2021, 8.4 mt in FY2022 ***GB yellowtail flounder commerical groundfish fishery catch:*** 6.4 mt in FY2020, 0.8 mt in FY2021, 0.5 mt in FY2022 ***GB yellowtail flounder scallop fishery catch:*** 1.5 mt in FY2020, 29.1 mt in FY2021, 7.8 mt in FY2022 ***GB yellowtail flounder small mesh fishery catch:*** 1.8 mt in FY2020, 0.8 mt in FY2021, 0.1 mt in FY2022
Data - Vessels, Permits, Dealers, Processors, Employment	FY2022: 802 commercial groundfish permitted vessels, with 562 reporting landings. 62 dealers reported buying groundfish. 78 dealers reported buying any species on groundfish trips.
% Food, % Recreational	82% of the US ABC is allocated to the commercial groundfish fishery.
Fishing Communities	Commercial - The top 5 ports based on the Groundfish-Specific Commercial Engagement Indicator (2004-2022) are Gloucester, MA; New Bedford, MA; Boston, MA; Narragansett, RI; and Portland, ME.
Other Economic/Social Factors	*ACE lease prices modeled using a hedonic price model from inter-sector leases for FY2018-2022:* In recent years, inter-sector ACE lease trades for GB yellowtail flounder are not associated with prices greater than $0.00.
Major Sources of Scientific Uncertainty	Lack of an analytic assessment model and low catches in the fishery-independent surveys make estimates in growth difficult
Major Sources of Management Uncertainty	Management uncertainty buffers are set at 3% for commercial groundfish fishery and Atlantic sea scallops and at 7% for small-mesh fisheries.
How is the probability of overfishing addressed?	Because a stock assessment model framework is lacking, no historical estimates of biomass, fishing mortality rate, or recruitment can be calculated. Status determination relative to reference points is not possible because reference points cannot be defined. In the absence of an assessment model, an empirical approach based on survey catches indicates stock condition is poor, given a declining trend in survey biomass. 2024 stock assessment results for GB yellowtail flounder continue to indicate low stock biomass and poor productivity. Recent catches remain well below the quota. NMFS determined that the stock status for GB yellowtail flounder is overfished, with overfishing unknown.
What is the consequence of overfishing?	Reduction in biomass, yield, and net economic benefits over long-term. Quota overages in the sector or common pool fisheries trigger accountability measures within season or in subsequent fishing years or fishing trimesters (common pool only). The measures are designed to correct the problems that caused the quota to be exceeded. For the Atlantic sea scallop fishery and small-mesh fisheries, an overage can lead to gear-restrictions in the GB yellowtail flounder stock area in a year following the overage. Any US fishery overage of the U.S. TAC is subtracted from the following year's U.S. TAC.
How are expected net benefits to the Nation currently measured/evaluated?	Yield (mt and $)
Interactions with Other Fisheries/Stocks, Bycatch Issues	The Atlantic sea scallop fishery and small-mesh fisheries each receive a sub-ACL of GB yellowtail flounder (16% and 2% of the US ABC, respectively).

FMP	**NORTHEAST MULTISPECIES (GROUNDFISH)**
STOCK(S)	**Georges Bank Yellowtail Flounder**
LAST ASSESSMENT	**Management Track, July 2024**

Ecosystem Considerations: Trophic Interactions	Amphipods and polychaetes are the main prey of yellowtail flounder, with occasional consumption of other benthic invertebrates and small fish (Johnson et al., 1999; Klein-MacPhee, 2002). Predators include Spiny Dogfish, Atlantic Cod, several skate species, and several other benthic piscivores (Johnson et al., 1999; Klein-MacPhee, 2002) NOAA/NEFSC Northeast Vulnerability Assessment
Ecosystem Considerations: Habitat	Closures in place in the GB area include the GB Dedicated Habitat Research Area, Closed Area II, and and two Seasonal Spawning Closures (CAI and CAII).
Ecosystem Considerations: Climate	Yellowtail flounder is considered to have a low vulnerability to climate change (high climate exposure risk and low biological sensitivity), yet high distributional vulnerability driven by temperature. "The effect of climate change on Yellowtail Flounder on the Northeast U.S. Shelf is very likely to be negative (>95% certainty in expert scores). Recruitment of the southern stock has decreased and this has been linked to warming. The species has also shifted northward in recent years as temperatures have warmed. Decreasing productivity and northward shifts will lead to negative consequences for Yellowtail Flounder in the coming years." NOAA/NEFSC Northeast Vulnerability Assessment
Other Important Considerations/Notes	Use of the GB Yellowtail Flounder Limiter approach to develop catch advice. The result of the Limiter in 2024 produces catch advice of 200 mt. The Limiter approach was designed to have three independent surveys serve as the basis for average biomass for a year. This is the first assessment since 2019 that all three surveys were available. The NEFSC survey biomass estimates are adjusted for length based catchability and day/night effects (Miller et al 2021). These adjustments are not available for the DFO survey. Changes to the US/CA transboundary management process effective this year such that the joint assessment (TRAC) no longer occurs. In its place, GB yellowtail flounder will be assessed only by the US. A Research Track Stock Assessment for all three yellowtail flounder stocks is presently underway.

FMP NORTHEAST MULTISPECIES (GROUNDFISH)
STOCK(S) Witch Flounder
LAST ASSESSMENT 2024 Fall Management Track Assessment

Assessment Model, Terminal Year	Description of Assessment Model	Overfishing?/ Overfished?	In Rebuilding Program?	OFL	ABC/ABC CR	ACL	ACT
Empirical area swept, 2023	Averages estimates of biomass from the bottom trawl surveys and applies exploitation rate	Unknown/Yes	Yes 2019-2043	Unknown in FY2024	1,256 mt in FY2024	1,196 mt in FY2024	N/A for groundfish

	MSY/OY	AMs	Discards	State Waters
Overfished and unknown if overfishing is occurring. The stock shows signs of improvement but remains in poor condition relative to historical levels. Catch data continues to be a major source of uncertainty due to a criminal misreporting case in the past along with the inability to incorporate age struture data into the assessment and track cohorts through time. Seasonal catchability coefficients have been used in the three most recent assessments, and further work tuning an ASAP model is ongoing in an effort to transition to an age-based assessment in a future research track assessment.	MSY = N/A	Inseason closures and lb-lb for commercial groundfish fishery	65.8 mt in FY2022	6.2 mt in FY2022

Availability of Biological and Assessment Data	*Updated data since last assessment:* survey (2023 NEFSC fall survey and 2024 NEFSC spring survey - no surveys in 2020, and spring 2023 survey is treated as missing) and fisheries (commercial catches, and 2022 and 2023 discard estimates) data
Recent Performance Against Harvest Control Rule	Percent of total ACL caught: 87.3% in FY2019, 66.8% in FY2020, 63.1% in FY2021, and 60% in FY2022
Current Management Program	The Total ACL is divided between several sub-ACLs and sub-components. The commercial sub-ACL is further divided between the sector sub-ACL and the common pool sub-ACL. The majority of commercial permits participate in sectors, fishing under quotas. The common pool operates under days-at-sea, with trip limits and trimester TACs controlling catch. State waters and the other sub-component round out the final components of the total ACL. Landings and discards from all fisheries count against the applicable sub-ACL and total ACL, which are monitored throughout the year. Accountability measures can be triggered if overages occur under certain conditions for components with sub-ACLs.
Variability in Catch/Revenues?	*Commercial Groundfish Revenue for witch flounder (2022$):* $3.2 million in FY2019, $3.4 million in FY2020, $3.2 million in FY2021, and $2.6 million in FY2022; $3.1 million 5-year average *Witch flounder ex-vessel price/lb (2022$/lb):* $2.02/lb in FY2019, $1.79/lb in FY2020, $1.73/lb in FY2021 and $1.55/lb in FY2022; $1.80/lb 5-year average *Total groundfish landings: 42.82 million pounds in FY2019, 50.96 million pounds in FY2020, 37.04 million pounds in FY2021, 33.47 million pounds in FY 2022* *Witch flounder catch (landings + discards):* 827.3 mt in FY2019, 944.9 mt in FY2020, 892.0 mt in FY2021, and 847.8 mt in FY2022
Data - Vessels, Permits, Dealers, Processors, Employment	FY2022: 802 commercial groundfish permitted vessels, with 562 reporting landings. 62 dealers reported buying groundfish. 78 dealers reported buying any species on groundfish trips.
% Food, % Recreational	96% of the total ACL was allocated to the commercial groundfish fishery in FY2024. There is no recreational sub-ACL.
Fishing Communities	*Commercial* - The top 5 ports based on the Groundfish-Specific Commercial Engagement Indicator (2004-2022) are Gloucester, MA; New Bedford, MA; Boston, MA; Narragansett/Point Judith, RI; and Portland, ME.
Other Economic/Social Factors	*ACE lease prices modeled using a hedonic price model from inter-sector leases for FY2019-2023:* Declining trend in estimated ACE lease prices between FY2019-2022, beginning around $.50 - $.60 per pound for 2019 fishing year and further declining between FY2020-2022. However, lease prices increased to between $0.10 and $0.15 during the 2023 fishing year, driven by high utilization rates.
Major Sources of Scientific Uncertainty	No analytical model or biomass reference points. From the 2024 Management Track Assessment: Uncertainty in the catch has increased due to criminal convictions in a case involving catch misreporting. Uncertainty in the catch creates additional uncertainty surrounding the exploitation rate estimate. Since 2019, the average survey biomass has declined despite catches being below the catch advice from the 2019 assessment. Although not directly impacting the empirical approach assessment, the low commercial landings sampling in recent years impacts the ability to estimate numbers of fish landed at age and to track cohorts through time.
Major Sources of Management Uncertainty	The default management uncertainty buffer of 5% is applied to the commercial groundfish fishery. Uncertainty in the catch in recent years due to catch misreporting from a criminal case in the past.
How is the probability of overfishing addressed?	Witch flounder overfishing status is unknown. Because an analytical assessment model framework is lacking, no historical estimates of biomass, fishing mortality rate, or recruitment can be calculated. Status determination relative to reference points is not possible because reference points cannot be defined. In the absence of an assessment model, the area-swept empirical approach indicates that stock conditon remains poor. Fishery landings and survey catch by age shows a slight expansion of the age structure but overall the number of older fish in the population remains low. NEFSC relative indices of abundance and biomass remain below their time series average. The assessments acknowledges the decline in exploitable biomass from 2020 to 2022 and a subsequent increase in 2023 and 2024. NMFS determined that the stock status for witch flounder will remain overfished, with overfishing unknown. At the last assessment in 2019 the SSC recommended a constant ABC for the specification setting period based on the average exploitation rate from 2007 – 2015 and recent three-year average exploitable biomass.
What is the consequence of overfishing?	Reduction in biomass, yield, and net economic benefits over long-term.
How are expected net benefits to the Nation currently measured/evaluated?	Yield (mt and $)
Interactions with Other Fisheries/Stocks, Bycatch Issues	No sub-ACLs outside Sector and Common pool commercial sub-ACLs. Other catches in the State and Other sub-components.
Ecosystem Considerations: Trophic Interactions	Polychaetes are by far the most important food source of witch flounder (from the 1973-2005 NEFSC food habits data). The close association with soft substrate may be the result of their preference for polychaete prey.
Ecosystem Considerations: Habitat	Witch flounder are very closely tied to mud/silt, muddy-sand, and clay substrate and rarely occur on any other bottom type. Witch flounder spawn from March to November, with peak spawning occurring in summer. The general trend is for spawning to occur progressively later from south to north. In the Gulf of Maine-Georges Bank region, spawning occurs from April to November, and peaks from May to August. Spawning occurs in dense aggregations that are associated with areas of cold water.
Ecosystem Considerations: Climate	Witch flounder are considered highly vulnerable to climate change (high climate exposure risk and high biological sensitivity).
Other Important Considerations/Notes	The empirical approach does not incorporate age structure information. Consideration of incoming recruitment is critical for catch advice that supports stock rebuilding. Based on the surveys, there is no sign of a strong incoming year class.

FMP NORTHEAST MULTISPECIES (GROUNDFISH)
STOCK(S) Georges Bank Haddock
LAST ASSESSMENT 2024 Fall Management Track Assessment

Assessment Model, Terminal Year	Description of Assessment Model	Overfishing?/ Overfished?	In Rebuilding Program?	OFL	ABC/ABC CR	ACL	ACT
WHAM, 2023	State Space Model	No/No	No	17,768 mt in FY2024	Total ABC 13,958 mt and US ABC 7,058 mt in FY2024	6,571 mt in FY2024	N/A for groundfish

	MSY/OY	AMs	Discards	State Waters
Multispecies groundfish fishery, frequently caught with less abundant species like cod. Surges in stock abundance and quotas are driven by strong year classes, creating a boom and bust cycle. The current assessment shows the stock leaving the boom phase with the largest year class from 2013 no longer contributing to biomass or catch. Turning off lognormal adjustment in the model results in a large difference in scale. Transboundary EGB haddock managment unit co-managed by the U.S. and Canada.	MSY = 5,766 mt	Inseason closures and lb-lb for commercial groundfish fishery; lb-lb payback for midwater trawl fishery	99.6 mt in FY2023	0.0 mt in FY2023

Availability of Biological and Assessment Data	*Updated data since last assessment:* survey (NEFSC spring and fall survey - no surveys in 2020 and 2023 spring survey treated as missing; DFO survey (with some years missing due to incomplete coverage) and fisheries (commercial catches - US and Canadian) data
Recent Performance Against Harvest Control Rule	Percent of total ACL caught: 9.6% in FY2019, 5.2% in FY2020, 4.0% in FY2021, 3.1% in FY2022, and 24.6% in FY2023
Current Management Program	For GB haddock, the total ABC is reduced by the amount of the Canadian quota for the Eastern GB management unit. The Total ACL is divided between several sub-ACLs and sub-components. The commercial sub-ACL is further divided between the sector sub-ACL and the common pool sub-ACL. The majority of commercial permits particpate in sectors, fishing under quotas. The common pool operates under days-at-sea, with trip limits and trimester TACs controlling catch. The herring mid-water trawl fleet receives a sub-ACL. State waters and the other sub-components round out the final components of the total ACL. Landings and discards from all fisheries count against the applicable sub-ACL and total ACL, which are monitored throughout the year. Accountability measures can be triggered if overages occur under certain conditions for components with sub-ACLs. Eastern GB haddock is jointly managed with Canada under the United States/Canada Resource Sharing Understanding. Each year, the Transboundary Management Guidance Committee (TMGC) and Steering Committee (SC) recommends a shared quota for Eastern GB haddock based on the most recent stock information and the TMGC's harvest strategy. The shared quotas are allocated between the United States and Canada based on a formula that considers historical catch (10-percent weighting) and the current resource distribution (90-percent weighting).
Variablity in Catch/Revenues?	*Commercial Groundfish Revenue for EGB haddock (2022$):* $1.4 million in FY2019, $1.1 million in FY2020, $1.3 million in FY2021, $0.6 million in FY 2022, $1.1 million 5-year average; *WGB haddock (2022$):* $10.3 million in FY2019, $14.0 million in FY2020, $7.9 million in FY2021, $7.2 million in FY 2022, $9.7 million 5-year average *EGB haddock ex-vessel price/lb (2022$/lb):* $1.08/lb in FY2019, $1.09/lb in FY2020; $1.51/lb in FY2021, $1.27/lb in FY2022, $1.18/lb 5-year average; *WGB haddock (2022$/lb):* $1.21/lb in FY2019, $1.23/lb in FY2020; $1.56/lb in FY2021, $1.81/lb in FY2022, $1.31/lb 5-year average *Total groundfish landings:* 42.82 million pounds in FY2019, 50.96 million pounds in FY2020, 37.04 million pounds in FY2021, 33.47 million pounds in FY 2022 *Total GB haddock catch (landings + discards):* 5,323.4 mt in FY2019, 6,513.3 mt in FY2020, 3,119.7 mt in FY2021, and 2,358.1 mt in FY2022 WGB haddock makes up the majority of catches.
Data - Vessels, Permits, Dealers, Processors, Employment	FY2022: 802 commercial groundfish permitted vessels, with 562 reporting landings. 62 dealers reported buying groundfish. 78 dealers reported buying any species on groundfish trips.
% Food, % Recreational	95% of the US ABC is allocated to the commericial groundfish fishery. The commercial groundfish fishery ACLs (sectors and common pool) is reduced by other commercial fisheries sub-components and management uncertainty buffers. There is no recreational sub-ACL.
Fishing Communities	*Commercial* - The top 5 ports based on the Groundfish-Specific Commercial Engagement Indicator (2004-2022) are Gloucester, MA; New Bedford, MA; Boston, MA; Narragansett/Point Judith, RI; and Portland, ME.
Other Economic/Social Factors	*ACE lease prices modeled using a hedonic price model from inter-sector leases for FY2019-2023:* ACE lease prices have been $0, which is logical given the low utilization rate.
Major Sources of Scientific Uncertainty	Sources of uncertainty include dynamics in the plus group, future recruitment, and future assumptions. The 2013 year class is no longer a main contributer to catch or biomass, while the 2020 year class accounts for 47% of the SSB.
Major Sources of Management Uncertainty	The default management uncertainty buffer of 5% is applied to the commercial fishery. A management uncertainty buffer of 7% is used for the herring mid-water trawl fishery.
How is the probability of overfishing addressed?	In FY2023-2025, catch advice was set consistent with the groundfish control rule and was based on 75%FMSY. In October 2024, the TMGC met and agreed upon a recommended shared TAC of 7,410 mt that is below the proposed OFL and therefore under a 50% probability of overfishing.
What is the consequence of overfishing?	Reduction in biomass, yield, and net economic benefits over long-term.
How are expected net benefits to the Nation currently measured/evaluated?	Yield (mt and $)
Interactions with Other Fisheries/Stocks, Bycatch Issues	The herring midwater trawl fleet receives a sub-ACL of 1-2% (currently 2%) of the US ABC for GB haddock. Haddock is frequently caught with less abundant groundfish species like cod.
Ecosystem Considerations: Trophic Interactions	Haddock have a varied diet consisting of polychaetes, crustaceans, mollusks, echinoderms, and fish. Fish are more important for larger individuals.
Ecosystem Considerations: Habitat	Haddock are found in moderate depths in Georges Bank. Haddock prefer gravel, pebbles, clay, broken shells, and smooth hard sand, particularly smooth areas between rocky patches (Klein-MacPhee 2002). These habitat types are common on Georges Bank, and less prevalent in the Gulf of Maine, which helps explain the increased abundance of haddock on Georges Bank (Brodziak 2005). Haddock do not make extensive migrations, but prefer deeper waters in the winter and tend to move shoreward in summer. Closures in place in the GB area include the GB Dedicated Habitat Research Area, Closed Area II, and a seasonal closure area.
Ecosystem Considerations: Climate	Haddock are considered to have low vulnerability to climate change (high climate exposure risk and low biological sensitivity).
Other Important Considerations/Notes	The assessment continues to predict weights at age for catch and SSB from a Gaussian Markov Random Field (GMRF) model based on the research track Peer Review Panel. The GMRF weights at age predict a slight increase in SSB in 2024-2027. The current assessment estimates the stock has left a boom phase and is heading for a bust cycle. Without bias correction, reported model estimates are medians rather than means. Because of the large estimates of process error, particularly for recruitment, there is a large difference in scale. Additionally, without bias correction in the assessment, the misalignment between the domestic stock unit and the transboundary Eastern Georges Bank management unit is another point of uncertainty in the scale of the estimated population and catch advice.

FMP NORTHEAST MULTISPECIES (GROUNDFISH)
STOCK(S) Gulf of Maine Haddock
LAST ASSESSMENT 2024 Fall Management Track Assessment

Assessment Model, Terminal Year	Description of Assessment Model	Overfishing?/ Overfished?	In Rebuilding Program?	OFL	ABC/ABC CR	ACL	ACT
WHAM, 2023	State Space Model	No/No	No	2,651 mt in FY2024	2,406 mt in FY2024	2,194 mt in FY2024	N/A for groundfish

	MSY/OY	AMs	Discards	State Waters
Multispecies groundfish fishery with commercial and recreational components. This is the first management track assessment since the transition from ASAP to WHAM in the 2023 State-space Research Track assessment. Past assessments noted declining biomass and substantial increases in F; strong year classes from 2020 and 2021 and increased growth rates in recent cohorts have stabilized the downward projectory. Major uncertainties surround the survivability of these strong year classes and the recent projections of SSB and F.	MSY = 2,045 mt	Inseason closures and lb-lb for commercial groundfish fishery; stricter management measures in following years for recreational fishery; lb-lb payback for midwater trawl fishery	202.1 mt in FY2023	1.7 mt in FY2023

Availability of Biological and Assessment Data	*Updated data since last assessment:* survey (spring and fall bottom longline survey; NEFSC spring and fall bottom trawl survey - no surveys in 2020 and 2023 spring survey treated as missing) and fisheries (commercial and recreational catches) data
Recent Performance Against Harvest Control Rule	Percent of total ACL caught: 5.2% in FY2019, 28.6% in FY2020, 27.7% in FY2021, 30.9% in FY2022, and 73.5% in FY2023.
Current Management Program	The Total ACL is divided between several sub-ACLs and sub-components. The commercial sub-ACL is further divided between the sector sub-ACL and the common pool sub-ACL. The majority of commercial permits particpate in sectors, fishing under quotas. The common pool operates under days-at-sea, with trip limits and trimester TACs controlling catch. The recreational fishery (private and for-hire) also has a sub-ACL. The recreational fishery is managed with bag limits, seasons, and fish size restrictions. The herring mid-water trawl fleet receives a sub-ACL. State waters and the other sub-component round out the final components of the total ACL. Landings and discards from all fisheries count against the applicable sub-ACL and total ACL, which are monitored throughout the year. Accountability measures can be triggered if overages occur under certain conditions for components with sub-ACLs.
Variablity in Catch/Revenues?	*Commercial Groundfish Revenue for GOM haddock (2022$):* $9.3 million in FY2019, $10.7 million in FY2020, $11.5 million in FY2021, $8.7 million in FY2022; $9.5 million 5-year average *GOM haddock ex-vessel price/lb (2022$/lb):* $1.39/lb in FY2019, $1.38/lb in FY2020; $1.75/lb in FY2021, $1.62/lb in FY2022; $1.49/lb 5-year average *Total groundfish landings:* 42.82 million pounds in FY2019, 50.96 million pounds in FY2020, 37.04 million pounds in FY2021, 33.47 million pounds in FY 2022 *GOM haddock catch (landings + discards):* 4,152.3 mt in FY2019, 5,320.5 mt in FY2020,4,392.1 mt in FY2021, and 3,354.4 mt in FY2022
Data - Vessels, Permits, Dealers, Processors, Employment	FY2022: 802 commercial groundfish permitted vessels, with 562 reporting landings. 62 dealers reported buying groundfish. 78 dealers reported buying any species on groundfish trips.
% Food, % Recreational	The recreational fishery sub-ACL = 33.9% of each years ABC reduced by a management uncertainty buffer. 66.1% of the ABC is allocated to the commercial fisheries. The commercial groundfish fishery ACLs (sectors and common pool) is reduced by commercial state waters and other commercial fisheries sub-components and management uncertainty buffers.
Fishing Communities	*Commercial* - The top 5 ports based on the Groundfish-Specific Commercial Engagement Indicator (2004-2022) are Gloucester, MA; New Bedford, MA; Boston, MA; Narragansett/Point Judith, RI; and Portland, ME. *Recreational* - When expanding out to the top 20 communities in recreational engagement in the Northeast (all recreational fishing) Recreational Engagement Indicators (2009-2020), New England communities include: Newburyport, MA and Barnstable, MA. Other ports of interest with relatively high engagement (i.e., ranking somewhere outside the top 20) in the last five years include Gloucester, MA, Waterford, CT, East Lyme/Niantic, CT, and Old Saybrook, CT.
Other Economic/Social Factors	*ACE lease prices modeled using a hedonic price model from inter-sector leases for FY2019-2023:* ACE lease prices for GOM haddock had been $0 until FY2023 when they rose dramatically to $0.50 - $1.00/lb, in response to the decline in ACL.
Major Sources of Scientific Uncertainty	Two sources of uncertainty include the survivability of the 2020 and 2021 year classes and whether they will be able to contribute to the population biomass in the short-term, and overly optimistic SSB projections causing projections of F to be biased low.
Major Sources of Management Uncertainty	The default management uncertainty buffer of 5% is applied to the commercial fishery. A management uncertainty buffer of 7% is used for the recreational fishery and for the herring mid-water trawl fishery.
How is the probability of overfishing addressed?	FY2023-2025 catch advice was set consistent with the groundfish control rule and was based on 75%FMSY.
What is the consequence of overfishing?	Reduction in biomass, yield, and net economic benefits over long-term.
How are expected net benefits to the Nation currently measured/evaluated?	Yield (mt and $)
Interactions with Other Fisheries/Stocks, Bycatch Issues	The herring midwater trawl fleet receives a sub-ACL of GOM haddock that is 1% of the ABC. Haddock is frequently caught with less abundant groundfish species like cod.
Ecosystem Considerations: Trophic Interactions	Haddock have a varied diet consisting of polychaetes, crustaceans, mollusks, echinoderms, and fish. Fish are more important for larger individuals.
Ecosystem Considerations: Habitat	Haddock are found in relatively shallow inshore waters in the Gulf of Maine. Haddock prefer gravel, pebbles, clay, broken shells, and smooth hard sand, particularly smooth areas between rocky patches (Klein-MacPhee 2002). These habitat types are common on Georges Bank, and less prevalent in the Gulf of Maine, which helps explain the increased abundance of haddock on Georges Bank (Brodziak 2005). Haddock do not make extensive migrations, but prefer deeper waters in the winter and tend to move shoreward in summer. Closures in place in the GOM area include year round closures (Western GOM and Cashes Ledge) and seasonal closure areas desgined to protect spawning cod.
Ecosystem Considerations: Climate	Haddock are considered to have low vulnerability to climate change (high climate exposure risk and low biological sensitivity).
Other Important Considerations/Notes	The WHAM model resulted in increases to historical SSB though recent estimates are similar between the two models. The new assessment model includes the Bottom Longline Survey as an index of abundance. The strong year classes from 2020 and 2021 have stabilized the stock and growth rates of recent chorts have increased. An alternative age-composition likelihood was tested but not adopted due to diagnostic issues.

FMP NORTHEAST MULTISPECIES (GROUNDFISH)
STOCK(S) American Plaice
LAST ASSESSMENT 2024 Fall Management Track Assessment

Assessment Model, Terminal Year	Description of Assessment Model	Overfishing?/ Overfished?	In Rebuilding Program?	OFL	ABC/ABC CR	ACL	ACT
WHAM, 2023	State Space Model	No/No	No, rebuilt in 2019.	7,091 mt in FY2024	5,520 mt in FY2024	5,192 mt in FY2024	N/A for groundfish
A large source of uncertainty remains in the fishery age compositions and weight-at-age estimates from 2018-2023 due to the exclusion of the data from the model as a consequence of inadvertent groupings of data, increased bias towards the small market category, and lack of time to re-estimate landings-at-age and -length. Increased port sampling would improve data processing for commercial catch age composition.				**MSY/OY**	**AMs**	**Discards**	**State Waters**
				MSY: 5,090 mt	Inseason closures and lb-lb for commercial groundfish fishery	81.4 mt in FY2023	4.6 mt in FY2023

Availability of Biological and Assessment Data	*Updated data since last assessment* : survey indices (NMFS spring and fall - no 2020 surveys and 2023 spring treated as missing) and commercial landings and discards.
Recent Performance Against Harvest Control Rule	Percent of total ACL caught: 56.8% in FY2019, 21% in FY2020, 25.9% in FY2021, 33.6% in FY2022, and 26.2% in FY2023.
Current Management Program	The Total ACL is divided between several sub-ACLs and sub-components. The commercial sub-ACL is further divided between the sector sub-ACL and the common pool sub-ACL. The majority of commercial permits particpate in sectors, fishing under quotas. The common pool operates under days-at-sea, with trip limits and trimester TACs controlling catch. State waters and the other sub-component round out the final components of the total ACL. Landings and discards from all fisheries count against the applicable sub-ACL or sub-component, which are monitored throughout the year. If an overage occurs, an accountability measure can be triggered under certain conditions.
Variablity in Catch/Revenues?	*Commercial Groundfish Revenue for American plaice (2022$):* $3.5 million in FY2019, $2.3 million in FY2020, $2.7 million in FY2021, $2.6 million in FY2022; $3.3 million 5-year average *American plaice ex-vessel price/lb ((2022$/lb):* $2.00/lb in FY2019, $1.89/lb in FY2020; $1.88/lb in FY2021, $1.43/lb in FY2022; $1.97/lb 5-year average *Total groundfish landings:* 42.82 million pounds in FY2019, 50.96 million pounds in FY2020, 37.04 million pounds in FY2021, 33.47 million pounds in FY 2022 *American plaice catch (landings + discards):* 870.9 mt in FY2019, 629.3 mt in FY2020, 709.8 mt in FY2021, and 902.8 mt in FY2022 Catch of plaice is relatively consistent throughout the year (little to no seasonality to catch).
Data - Vessels, Permits, Dealers, Processors, Employment	FY2022: 802 commercial groundfish permitted vessels, with 562 reporting landings. 62 dealers reported buying groundfish. 78 dealers reported buying any species on groundfish trips.
% Food, % Recreational	95% of the total ACL is allocated to the commercial groundfish fishery. There is no recreational sub-ACL.
Fishing Communities	*Commercial* - The top 5 ports based on the Groundfish-Specific Commercial Engagement Indicator (2004-2022) are Gloucester, MA; New Bedford, MA; Boston, MA; Narragansett/Point Judith, RI; and Portland, ME.
Other Economic/Social Factors	*ACE lease prices modeled using a hedonic price model from inter-sector leases for FY2019-2023:* Exploitation of the stock has been low in recent years and catch is below the sub-ACL. Trends in ACE lease prices have followed utilization trends.
Major Sources of Scientific Uncertainty	Fishery age compositions and weight-at-age estimates from 2018-2023 are the largest source of uncertainty , which are excluded from the model. The 2022 management assessment identified declining weight-at-age trends in its terminal years. This assessment concluded that the declining trends were due to inadvertent inclusion of the electronic monitoring maximum retention data with the portside sampling program for estimating the small/peewee market category, and biasing the category towards smaller fish which were heavily sampled in the maximum retention program compounded by reduced portside sampling during this period.
Major Sources of Management Uncertainty	The default management uncertainty buffer of 5% is applied to the commerical groundfish fishery.
How is the probability of overfishing addressed?	FY2023-2025 catch advice was set consistent with the groundfish control rule and was based on 75%FMSY.
What is the consequence of overfishing?	Reduction in biomass, yield, and net economic benefits over long-term.
How are expected net benefits to the Nation currently measured/evaluated?	Yield (mt and $)
Interactions with Other Fisheries/Stocks, Bycatch Issues	No sub-ACLs. A research recommendation made by the 2022 research track working group was to include GOM scallop fishery discards as that fishery expands.
Ecosystem Considerations: Trophic Interactions	Juvenile place eat small shrimps, crustaceas, and polycheates. Adult American plaice are opportunistic predators on small bottom-dwelling organisms such as echinoderms (brittle stars), bivalves, polychaetes, and small crustaceans. Atlantic cod are the dominant predator of plaice <35 cm. Adult plaice are preyed upon by larger predatory fish and Greenland shark, monkfish, spiny dogfish, and grey seals.
Ecosystem Considerations: Habitat	Juvenile and adult American plaice are mostly sedentary on soft bottom substrate, but make short migrations for food and spawning.
Ecosystem Considerations: Climate	American plaice are considered to have low vulnerability to climate change (low biological sensitivity, high climate exposure). Warming may decrease productivity and cause reductions in available habitat.
Other Important Considerations/Notes	American plaice are managed as a single stock in the Gulf of Maine and Georges Bank regions. The spring and fall survey time series were updated to incorporate tow-specific area swept measurements and commercial discards for 2022 and 2023 were available through the Catch Accounting and Monitoring system (CAMS), a first for this management track assessment. A lognormal adjustment for biological reference points was implemented to align their settings with guidance for setting process and observation error adjustments. This adjustment increased F slightly, and decreased reference points for SSB and yield, but overall had little impact on model fit, diagnostics, and results. Investigations into age-specific fall distributions of plaice could improve the assessment as noted by the fit to the Bigelow fall survey age composition indicating potential age-varying interactions with the survey gear.

FMP NORTHEAST MULTISPECIES (GROUNDFISH)
STOCK(S) Pollock
LAST ASSESSMENT 2024 Fall Management Track Assessment

Assessment Model, Terminal Year	Description of Assessment Model	Overfishing?/ Overfished?	In Rebuilding Program?	OFL	ABC/ABC CR	ACL	ACT
ASAP, 2023	Statistical Age-Structured Model. Two models: (1) dome-shaped and (2) flat-topped survey selectivity	No/No	No	12,208 mt in FY2024	13,940 mt in FY2024	12,184 mt in FY2024	N/A for groundfish

	MSY/OY	AMs	Discards	State Waters
One of the greatest sources of uncertainty in the pollock assessment is selectivity. The base model indicates a large cryptic biomass that neither the surveys or fishery can confirm, and projections differ depending on the assumed selectivity shape especially at older ages. For example, increasing the assessment plus age group under the dome-shaped selectivity assumption increased the variability in population estimates.	base model: 10,370 mt flat sel sensitivity: 8,531 mt	In-season closures and lb-lb for commercial groundfish fishery	856.1 mt in FY2023	540.0 mt in FY2023

Availability of Biological and Assessment Data	*Updated data since last assessment:* commercial and recreational fishery catch data, survey indices of abundance (NEFSC spring and fall survey - no 2020 surveys and 2023 spring survey was excluded due to lack of coverage)
Recent Performance Against Harvest Control Rule	Percent of total ACL caught: 9.3% in FY2019, 21.5% in FY2020, 20.3% in FY 2021 , 35.4% in FY2022, and 32.5% in FY2023.
Current Management Program	The Total ACL is divided between several sub-ACLs and sub-components. The commercial sub-ACL is further divided between the sector sub-ACL and the common pool sub-ACL. The majority of commercial permits particpate in sectors, fishing under quotas. The common pool operates under days-at-sea, with trip limits and trimester TACs controlling catch. State waters and the other sub-component round out the final components of the total ACL. Pollock is targeted by recreational anglers but there is no recreatonal ACL for pollock. Landings and discards from all fisheries count against the applicable sub-ACL or sub-component, which are monitored throughout the year. If an overage occurs, an accountability measure can be triggered under certain conditions.
Variablity in Catch/Revenues?	Commercial Groundfish Revenue for pollock (2022$): $6.3 million in FY2019, $9.4 million in FY2020, $9.3 million in FY2021, $8.4 million in FY2022; $7.9 million 5-year average Pollock ex-vessel price/lb (2022$/lb): $1.07/lb in FY2019, $1.26/lb in FY2020; $1.60/lb in FY2021, $1.22/lb in FY2022; $1.21/lb 5-year average Total groundfish landings: 42.82 million pounds in FY2019, 50.96 million pounds in FY2020, 37.04 million pounds in FY2021, 33.47 million pounds in FY 2022 Pollock catch (landings + discards): 3,569.6 mt in FY2019, 5,626.6 mt in FY2020, 4,272.9 mt in FY2021, and 5,684.1 mt in FY2022 A relatively equivalent amount of pollock is caught during each quarter of the fishing year (no seasonality to catch).
Data - Vessels, Permits, Dealers, Processors, Employment	FY2022: 802 commercial groundfish permitted vessels, with 562 reporting landings. 62 dealers reported buying groundfish. 78 dealers reported buying any species on groundfish trips.
% Food, % Recreational	95% of the total ACL is allocated to the commercial groundfish fishery. There is no recreational sub-ACL.
Fishing Communities	*Commercial* - The top 5 ports based on the Groundfish-Specific Commercial Engagement Indicator (2004-2022) are Gloucester, MA; New Bedford, MA; Boston, MA; Narragansett/Point Judith, RI; and Portland, ME. *Recreational* - When expanding out to the top 20 communities in recreational engagement in the Northeast (all recreational fishing) Recreational Engagement Indicators (2009-2020), New England communities include: Newburyport, MA and Barnstable, MA. Other ports of interest with relatively high engagement (i.e., ranking somewhere outside the top 20) in the last five years include Gloucester, MA, Waterford, CT, East Lyme/Niantic, CT, and Old Saybrook, CT.
Other Economic/Social Factors	*ACE lease prices modeled using a hedonic price model from inter-sector leases for FY2019-2023:* Utilization by the commercial groundfish fishery has been similar over time. ACE lease prices for pollock have been close to zero, which is logical given the recent low utilization rate.
Major Sources of Scientific Uncertainty	A better understanding of survey selectivity would improve the pollock assessment.
Major Sources of Management Uncertainty	A base model (dome-shaped survey selectivity) is used for providing management advice and a flat sel sensitivity model (flat-topped survey selectivity) is used to demonstraight the sensitivity of assessment results to survey selectivity assumptions. The dome-shaped survey and fishery selectivity curves imples the existence of a large cryptic biomass, but assuming flat-topped selectivity leads to lower SSB estimates and higher F estimates. Projection results differ based on the selectivity used.
How is the probability of overfishing addressed?	Pollock is not undergoing overfishing and is not in a rebuilding plan. FY2023-2025 catch advice was set consistent with the groundfish control rule and was based on 75%FMSY.
What is the consequence of overfishing?	Quota overages in the sector or common pool fisheries trigger accountability measures within season or in subsequent fishing years or fishing trimesters (common pool only).
How are expected net benefits to the Nation currently measured/evaluated?	Yield (mt and $)
Interactions with Other Fisheries/Stocks, Bycatch Issues	There are no sub-ACLs of pollock in non-groundfish fisheries. An extremely limited amount of pollock (<0.5 mt) is caught in non-groundfish fisheries.
Ecosystem Considerations: Trophic Interactions	A variety of fish eat juvenile pollock. Spiny dogfish, monkfish, and other pollock prey on adults.
Ecosystem Considerations: Habitat	Atlantic pollock are found in the Northwest Atlantic Ocean and are most common on the western Scotian Shelf and in the Gulf of Maine. Small juveniles (harbor pollock) migrate inshore and inhabit rocky subtital and intertidal zones. Pollock undergo a series of inshore-offshore migrations linked to temperature until around year 2, then move offshore and remain offshore through the adult stage.
Ecosystem Considerations: Climate	Pollock are considred to be moderately vulnerable to climate change (high climate exposure risk, moderate biological sensitivity).
Other Important Considerations/Notes	The combined commercial and rec fleets into a single fleet from the previous management track assessment was carried through and updated in this assessment. Four potentially new changes were explored in response to the 2022 peer review panel: increasing the assessment plus age group, evaluating the fishery selectivity time blocks, splitting the Albatross and Bigelow bottom trawl survey time series, and evaluating the inclusion of the spring and fall bottom longline survey. Splitting the bottom trawl survey time series improved fits to survey data and survey catchability estimates. Six fishery slectivity blocks were included in the assessment to align with past management actions and resulted in a better AIC score without sacrificing model convergence or retrospective pattern. The plus age group remains at age 9 after exploration, and the bottom longline survey was ultimately excluded from the model due to low sample sizes.

FMP	**NORTHEAST MULTISPECIES (GROUNDFISH)**
STOCK(S)	**Atlantic Halibut**
LAST ASSESSMENT	**2024 Fall Management Track Assessment**

Assessment Model, Terminal Year	Description of Assessment Model	Overfishing? Overfished?	In Rebuilding Program?	OFL	ABC/ABC CR	ACL	ACT
First Second Derivative, 2023	Index-based	Unknown/Yes	Yes, by 2055	Unknown	124 mt in FY2024 / U.S. ABC 78 mt in FY2024	58 mt in FY2024	N/A

	MSY/OY	AMs	Discards	State Waters
Long-lived, slow-growing, flatfish species. Inclusion of Canadian landings. Questions around stock structure.	N/A	If ACL and buffer for an unallocated stock is exceeded, groundfish vessels (common pool & sector) are subject to an area closure/ gear restriction in a future year and no possession.	16.5 mt in FY2023	14.0 mt in FY2023

Availability of Biological and Assessment Data	*Updated data since last assessment:* commericial fishery catch data, commercial and NEFSC Fall survey indices of abundance (Fall survey 2018 & 2019 treated as NA, fall 2020 value calculated based on average of 2019 and 2020), Canadian landings
Recent Performance Against Harvest Control Rule	Percent of total ACL caught: 102.9% in FY2019, 64.6% in FY2020, 56.3% in FY2021, 46.2% in FY2022, and 64.8% in FY2023.
Current Management Program	The expected Canadian catch is reduced from the total ABC to determine a US ABC. *Federal* - 1 legal-sized fish per trip. If ACL and buffer for an unallocated stock is exceeded, groundfish vessels (common pool & sector) are subject to an area closure/ gear restriction in a future year and no possession for federally permitted vessels. *State of Maine* - fish tag program and seasonal restrictions.
Catch, Revenues, and Variability	*Commercial groundfish revenue from Atlantic halibut (2022$)* : $0.4 million in FY2019, $0.4 million in FY2020, $0.4 million in FY2021, $0.3 million in FY2022; $0.4 million 5-year average *Atlantic halibut ex-vessel price/lb (2022$/lb):* $7.38/lb in FY2019, $6.79/lb in FY2020; $7.86/lb in FY2021, $7.49/lb in FY2022; $7.49/lb 5-year average *Total groundfish landings:* 42.82 million pounds in FY2019, 50.96 million pounds in FY2020, 37.04 million pounds in FY2021, 33.47 million pounds in FY 2022 *Atlantic halibut catch (landings + discards):* 102.9 mt in FY2019, 65.8 mt in FY2020, 54.6 mt in FY2021, and 44.9 mt in FY2022
Data - Vessels, Permits, Dealers, Processors, Employment	FY2022: 802 commercial groundfish permitted vessels, with 562 reporting landings. 62 dealers reported buying groundfish. 78 dealers reported buying any species on groundfish trips.
% Food, % Recreational	93% of the ACL is for commercial fisheries. No recreational sub-ACL.
Fishing Communities	*Commercial* - The top 5 ports based on the Groundfish-Specific Commercial Engagement Indicator (2004-2022) are Gloucester, MA; New Bedford, MA; Boston, MA; Narragansett/Point Judith, RI; and Portland, ME.
Other Economic/Social Factors	Utilization by the commercial groundfish fishery has been similar across the fishing year. Halibut is a non-allocated stock.
Major Sources of Scientific Uncertainty	Fall 2018 and 2019 treated as NA in the model, fall 2020 survey missing but imputed with the average of indices from 2019 and 2021.
Major Sources of Management Uncertainty	7% management uncertainty buffer applied. Canadian catch has decreased since 2020, but still remains higher than US catch.
How is the probability of overfishing addressed?	The OFL is unknown. AMs can be triggered if catch limits are exceeded. Catch advice was set using an ABC that was held constant through FY2023 and 2025, consistent with the groundfish control rule.
What is the consequence of overfishing?	Reduction in stock biomass over the long-term.
How are expected net benefits to the Nation currently measured/evaluated?	Yield (mt and $)
Interactions with Other Fisheries/Stocks, Bycatch Issues	Incidentally caught in the commercial groundfish fishery. Only around 50% of the ACL was utilized in 2022.
Ecosystem Considerations: Trophic Interactions	Diet changes ontogenetically; fish <30 cm eat mainly invertebrates such as annelids and crustaceans (Cargnelli et al., 1999; Klein-MacPhee, 2002). The ratio of invertebrates to bony fish declines until halibut >80 cm eat fish almost exclusively (Cargnelli et al., 1999; Klein-MacPhee, 2002). Greenland Shark, seals, monkfish (Goosefish), and spiny dogfish are common predators of halibut (Cargnelli et al., 1999; Klein-MacPhee, 2002).
Ecosystem Considerations: Habitat	They prefer sand, gravel, or clay substrates at depths up to 1000 m (Miller et al. 1991; Scott & Scott 1988). Along the coastal Gulf of Maine, halibut move to deeper water in winter and shallower water in summer (Collette & Klein-MacPhee 2002).
Ecosystem Considerations: Climate	Halibut are considered to be highly vulnerable to climate change (high climate exposure risk, high biological sensitivity). Nye et al. (2009) found Atlantic Halibut distributions shifting northward in recent years.
Other Important Considerations/Notes	The 2024 assessment explored treatments of zero values from Fall 2018 and 2019 bottom trawl survey resulted in retaining values as NA in the model. Scenarios exploring including Canadian discards in the model concluded that there was minimal impact on the projected catch advice.