

# Rockhopper Catch Efficiency Study Use in Stock Assessments

Each line below represents a specific assessment and how NTAP Catch Efficiency data was used in that assessment. Information is submitted annually by the lead assessment scientist.

ASSESSMENT YEAR	STOCK	Was the Rockhopper Catch Efficiency Study used?	How was it Used
2023	Longfin inshore squid	NO	Longfin squid were not part of the subject study. Regardless, the assessment uses a different method to compute survey-specific q estimates for "daytime" tows
2023	Spiny dogfish	NO	Spiny dogfish were not examined in the study
2023	Acadian redfish	NO	The study did not produce catchability estimates for redfish.
2023	Red hake - North	YES	Empirical approach used q from Catch Efficiency Research to expand survey to population estimate
2023	Skate complex	NO	No information available for skates
2023	Silver & Offshore hake - South	NO	Silver and offshore hake were not examined in this study.
2023	Red deepsea crab	NO	Survey does not reach the habitat of deep sea red crab
2023	Bluefish	NO	Not relevant
2023	Windowpane flounder - South	NO	Relative index used for the AIM model
2023	Windowpane flounder - North	YES	Empirical approach used q from Catch Efficiency Research to expand survey to population estimate
2023	Silver hake - North	NO	Silver hake was not one of the species examined in this study
2023	Scup	NO	N/A
2023	Atlantic mackerel	NO	Not relevant
2023	Summer flounder	YES	Average BIG sweep efficiency at length based on a) the 2015-2017 sweep studies (overall q = ~0.5), b) individual tow wingspreads, and c) annual total survey strata area. All three of these factors are used to raise the sweep efficiency and individual tow wingspread adjusted survey indices to absolute Swept Area Numbers (SWAN).
2023	Red hake - South	YES	Empirical approach used q from Catch Efficiency Research to expand survey to population estimate
2022	Winter flounder - Southern New England / Mid-Atlantic	YES	The model derived catchability estimate was directly compared with the experimental catchability estimate for use as a diagnostic. Averages of the NEFSC spring and fall survey values were calculated to account for inter-survey variation and also to provide an estimate that could be considered for the start of the calendar year.
2022	Atlantic halibut	NO	Halibut are caught too infrequently (insufficient sample size)
2022	Atlantic wolffish	NO	Wolffish was not one of the species examined in this study
2022	Striped bass	NO	No NEFSC survey info in this assessment
2022	Ocean pout	NO	Ocean pout was not one of the species examined in this study
2022	Pollock	NO	Experimental catchability estimates are not available for pollock.
2022	Monkfish - South	YES	Empirical approach used q from Catch Efficiency Research to expand survey to population estimate
2022	Haddock - Gulf of Maine	NO	Not appropriate for ground fish.
2022	Atlantic herring	NO	Herring was not a focal species of the study
2022	Witch flounder	YES	Experimental catchability estimates were directly incorporated into the assessment model. Estimates of population biomass used revised catchability coefficients that varied by year; the revised catchability coefficients had a minor impact on catch advice. Experimental catchability estimates were directly incorporated into the biomass estimate, Empirical approach used q from Catch Efficiency Research to expand survey to population estimate
2022	Winter flounder - Gulf of Maine	YES	Experimental catchability estimates were directly incorporated into the biomass estimate, Empirical approach used q from Catch Efficiency Research to expand survey to population estimate, 30+ cm biomass is estimated from survey area swept expansions which rely on the efficiency (q) estimated from the catch efficiency research.
2022	Monkfish - North	YES	Empirical approach used q from Catch Efficiency Research to expand survey to population estimate
2022	Butterfish	NO	Butterfish was not one of the species examined in this study
2022	Spiny dogfish	NO	Not considered - experiments were not designed for spiny dogs
2022	Haddock - Georges Bank	NO	Experimental catchability estimates were not used because not enough of the species were caught to provide a comparison between the gear types and produce an estimate of catchability.
2022	Winter flounder - Georges Bank	NO	The efficiency estimate from the study was not used because the size range of winter flounder sampled during the studies was not representative of the size range of the GB winter flounder stock; the sampled fish were too small.
2022	Yellowtail flounder Georges Bank	YES	Empirical approach uses q from Sweep Efficiency Research to expand survey to population estimate
2021	Georges Bank Cod	NO	NA
2021	Gulf of Maine Cod	NO	NA
2021	Golden Tilefish	NO	NA
2021	Scup	NO	NA
2021	Summer Flounder	YES	Average BIG sweep efficiency at length based on the 2015-2017 sweep studies (overall q = ~0.5), b) individual tow wingspreads, and c) annual total survey strata area. All three of these factors are used to raise the sweep efficiency and individual tow wingspread adjusted survey indices to absolute Swept Area Numbers (SWAN).
2021	Atlantic Mackerel	NO	NA
2021	Black Sea Bass	NO	NA
2021	Bluefish	NO	NA
2020	Eastern Georges Bank (TRAC) Haddock	NO	Not applicable
2020	Georges Bank (TRAC) Yellowtail Flounder	YES	Empirical approach uses q from Sweep Efficiency Research to expand survey to population estimate
2020	Gulf of Maine/Georges Bank Atlantic wolffish	NO	NA
2020	Gulf of Maine/Georges Bank Acadian redfish	NO	NA
2020	Northwestern Atlantic Coast Atlantic halibut	NO	NA
2020	Northwestern Atlantic Coast Ocean pout	NO	NA
2020	Red hake Gulf of Maine/Northern Georges Bank	YES	Sweep Efficiency Research catch efficiency directly incorporated into the biomass estimate
2020	Red hake Southern Georges Bank/Mid-Atlantic	YES	Sweep Efficiency Research catch efficiency directly incorporated into the biomass estimate
2020	Eastern Georges Bank (TRAC) Atlantic Cod	NO	Not applicable
2020	Southern New England/Mid-Atlantic Windowpane flounder	YES	Sweep Efficiency Research catchability estimates were used to calculate a survey swept area biomass and calculate exploitation rates. The primary AIM assessment provides only relative indices of abundance and fishing mortality, and so catchability estimates would not have affected those results.
2020	Windowpane flounder Gulf of Maine/Georges Bank	YES	Sweep Efficiency Research catch efficiency directly incorporated into the biomass estimate
2020	Winter flounder Georges Bank	NO	The length composition from the Sweep Efficiency Research does not reflect the length composition of the Georges Bank stock (i.e., the studies included few fish > 38 cm total length)
2020	Winter flounder - Gulf of Maine	YES	Sweep Efficiency Research catch efficiency directly incorporated into the 30+cm biomass estimates
2020	Winter flounder Southern New England/Mid-Atlantic	YES	The swept area biomass indices derived from the Sweep Efficiency Research were used as a check on the age-structured assessment results.
2019	Georges Bank Cod	NO	NA
2019	Georges Bank Haddock	NO	NA
2019	Gulf of Maine Cod	NO	NA
2019	Gulf of Maine Haddock	NO	NA
2019	Gulf of Maine/Georges Bank Windowpane	YES	Catchability was central to Plan B; but Plan A was accepted
2019	Halibut	NO	No estimate available; too few fish
2019	Pollock	NO	NA
2019	Southern New England/Mid-Atlantic Windowpane	YES	Catchability was central to Plan B; but Plan A (AIM model) worked well
2019	Southern New England/Mid-Atlantic Yellowtail Flounder	YES	Experimental catchability-corrected, swept area biomass was directly incorporated into the analytical assessment as the biomass data stream in a series of sensitivity runs. But not in the accepted base model
2019	American Plaice	YES	Model's derived catchability estimate was directly compared with the experimental estimate for use as a diagnostic
2019	Cape Cod /Gulf of Maine Yellowtail Flounder	YES	Catchability estimate was directly compared with the experimental estimate for use as a diagnostic
2019	White Hake	NO	NA
2019	Winter flounder - Georges Bank	NO	The efficiency estimate from the study was not used because the size range of winter flounder sampled during the studies was not representative of the size range of the GB winter flounder stock; the sampled fish were too small.
2019	Witch Flounder	YES	Catch efficiency Directly incorporated into the biomass estimate

You can view the paper that describes the methods used to estimate relative catch efficiency and its uncertainty, for rockhopper and chainsweep gears for the NEFSC bottom trawl survey as well as how calibrated swept area numbers at length and biomass are estimated, "[Estimation of survey efficiency and biomass for commercially important species from industry-based paired gear experiments.](#)" Timothy J. Miller, David E. Richardson, Philip J. Politis, Christopher D. Roebuck, John P. Manderson, Michael H. Martin, Andrew W. Jones

**For a Glossary of Terms visit:**  
 NOAA Fisheries [Glossary](#) (71 pgs.)  
 NEFMC [Glossary of Fisheries Management and Science Terms](#) (16 pgs.)  
 Stock SMART [Data Dictionary](#), (11 pgs.)