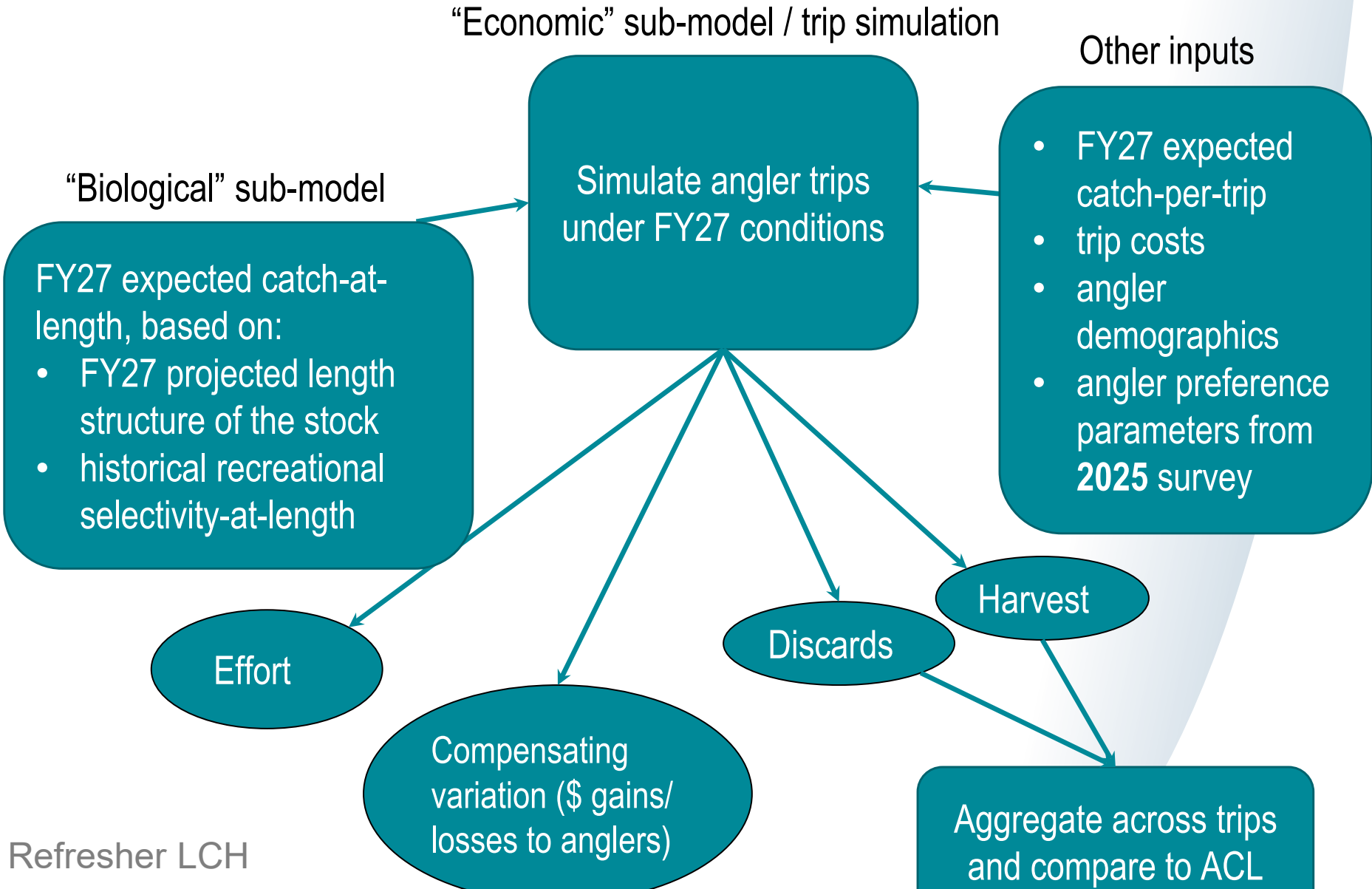
NEFSC management support for WGOM cod and GOM haddock

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NEFSC
Nov 12th, 2026

Outline of presentation

- Refresher on the Recreational Demand model
- Data Dashboard
- Hands on with the Web application
- Model updates

Recreation demand model overview

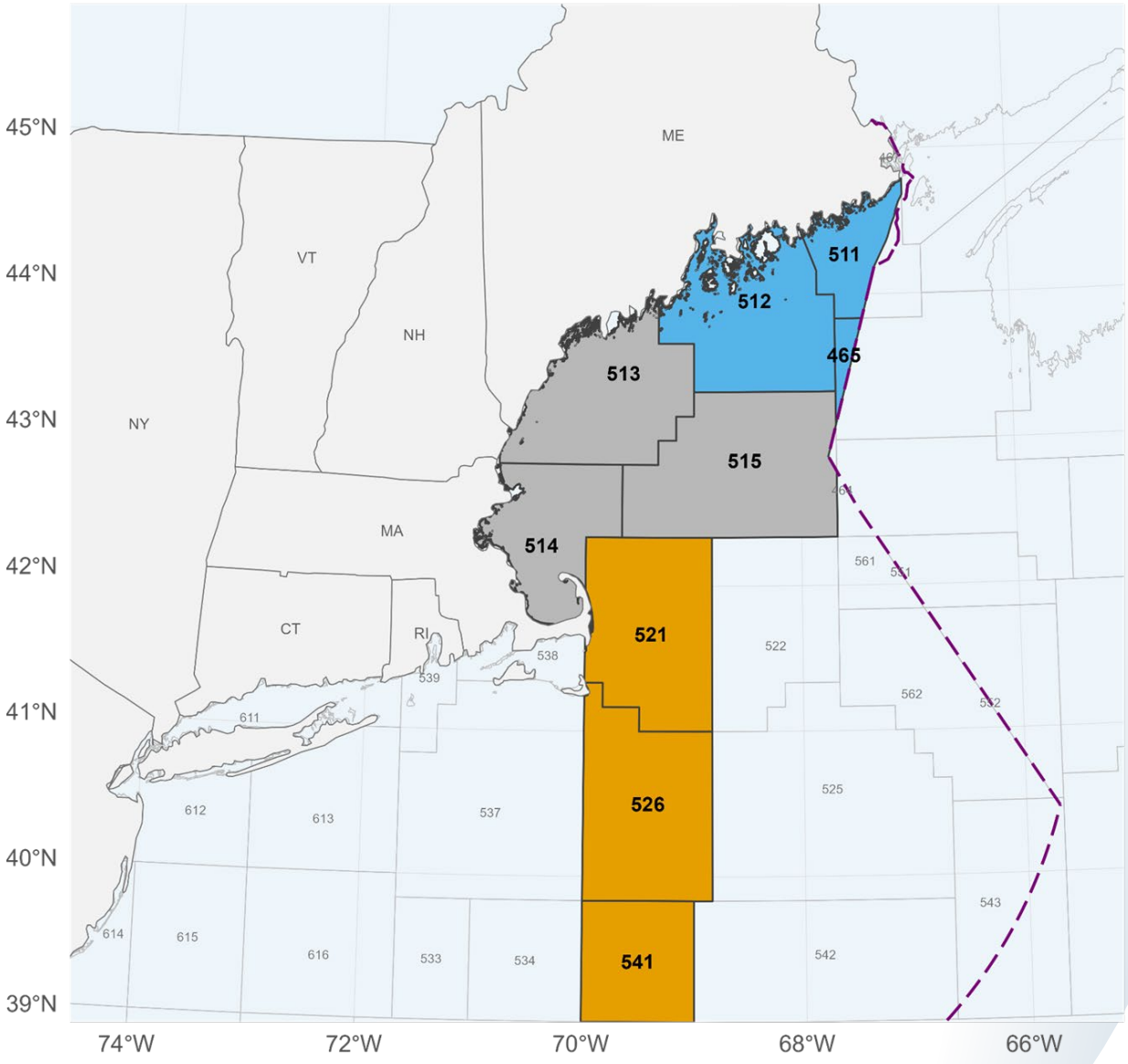


Trip simulation

- Simulates angler trips using historical data relationships
- Trips evaluated under FY27 projected stock length-structure and regulations
- Policies evaluated 101 times to reflect sampling uncertainty in input data:
  - catch-per-trip, directed trips, trip costs (MRIP)
  - catch-at-length adjusted by 2027 projected numbers-at-ages (MRIP & stock assessment)
  - angler demographics (MRIP & angler survey)
  - angler preference parameters from 2025 discrete choice experiment survey - how important to anglers is keeping versus releasing cod and haddock?
- Model produces a distribution of results

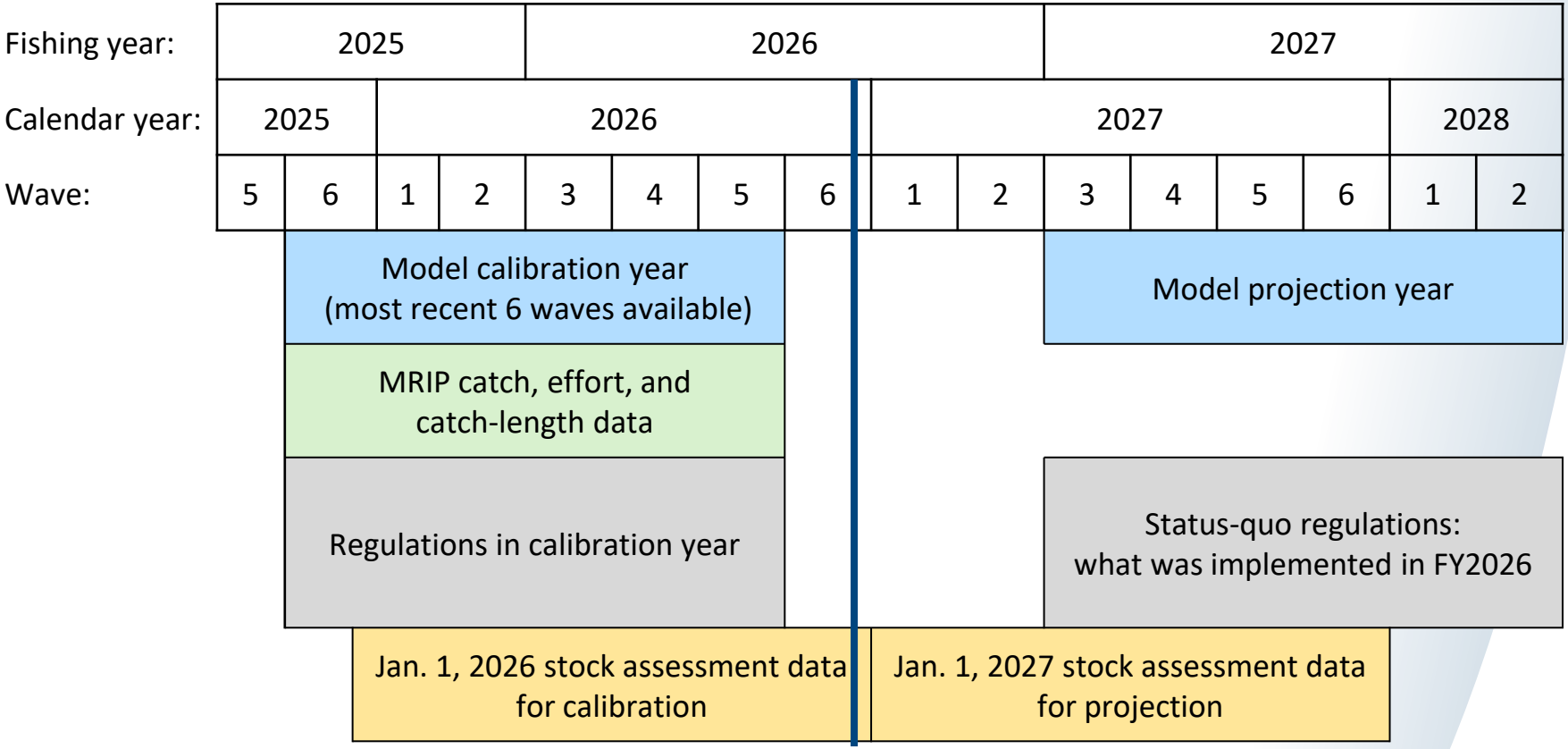
Cod and haddock stocks/NMFS statistical areas

DST uses cod and haddock catch/effort data from fishing sites associated with all shaded areas



LCH

Planned Process for 2026



MRIP data: the 2018 method, consistent with the two stock assessments.

ML

Data Dashboard

Recreational DST Data Dashboard

Purpose: Increase stakeholder understanding of the data used in the RecDST.

What to expect:

- A one-stop shop for RecDST data (**not** everything about recreational fishing) that will help answer questions about model outcomes/fishery status
- Intuitive figures, tables, and documentation

TP

Hands on with Web Application

- Walk through on Fisheries Connect
- **rec-tools-northeast.fisheries.noaa.gov**
- office hours

KB

Hands on with Web Application - Economic Metric

- Projected overall economic gains/losses to anglers relative to last 12 months of fishing measured by Compensating Variation (CV)

  - Monetary change in anglers' fishing-related well-being between fishing under (a) current regulations and stock conditions and (b) proposed regulations and projected stock conditions

  - Negative CV indicates that under (b), money could theoretically be taken away from anglers while still leaving them as well off as they were under current conditions

Model updates

- Supplemental modeling to better represent effort swings when new seasons open or current seasons close

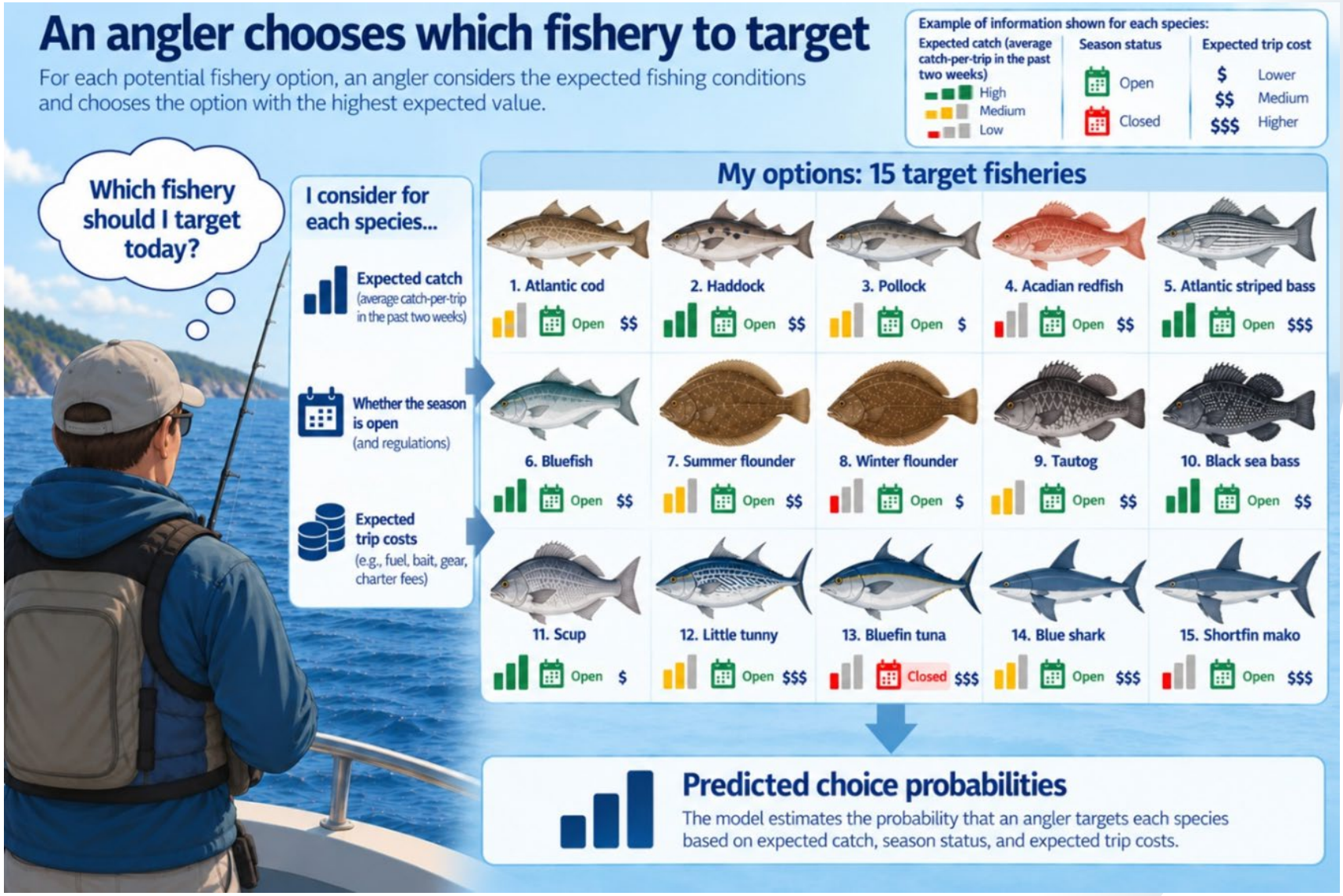
Model update - effort re-distribution across fisheries

- Current RDM method
  - Simulates baseline-year and counterfactual trips based on historical and projected fishery data and proposed regulations
  - Within-fishery changes in effort: for trips that actually targeted or caught cod/haddock last year, how much more or less likely are they to occur when regulations change?
  - Assumes the number of baseline trips is fixed at last year's levels
    - Potentially unrealistic as changes in seasons may attract trips from, or redirect trips to, other species

Model update - effort re-distribution across fisheries

- Supplemental model:
  - Estimates effects of opening or closing season on anglers' choice of target species
  - Quantifies substitution among target species, or "across-fishery" changes in effort
  - Predicts how baseline-year trips will be redistributed across fisheries next year, conditional on when seasons are open
  - Use predictions to adjust the number of baseline-year trips simulated by RDM

Angler decision process



Modeling framework

- Angler assumed to choose a target species among 15 most popular species
- Factors that influence target decision:
  - availability: average catch-per-trip during the previous 14 days
  - predicted trip cost (2017 and 2022 NOAA angler expenditure survey data)
  - whether the fishery is open for a given species
  - for cod and haddock, additional interaction effects between month and open season
  - state, mode, and month controls

Estimation

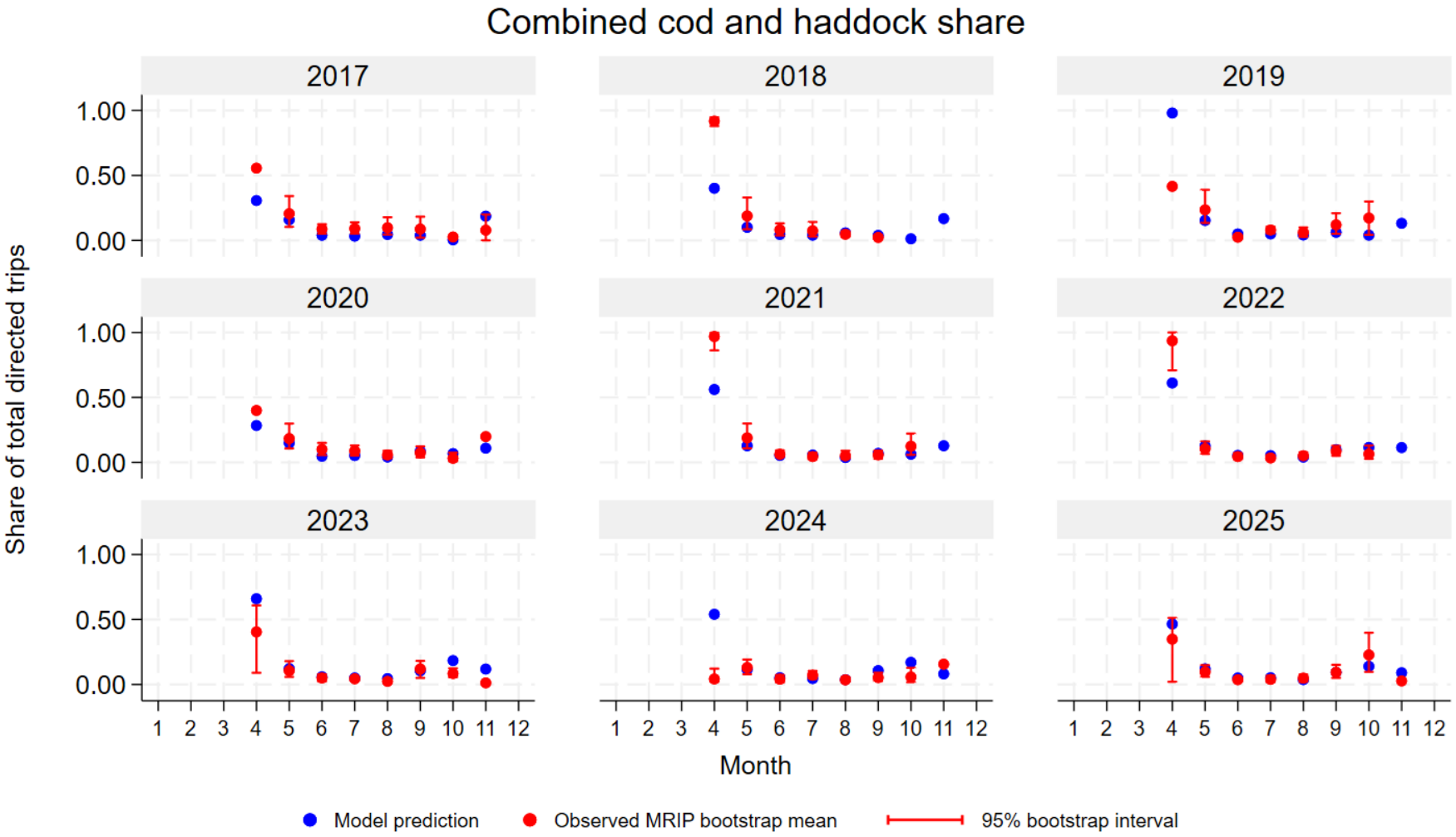
- 2010-2025 MRIP intercept data from fishing sites linked to GoM stat areas and in which primary target was indicated (~70,000 observations)
- Alternative-specific conditional logit
- MRIP intercept weights
- Standard errors clustered by PSU

Out-of-sample validation testing

- For each forecast year 2017-2025:
  - estimate model through year y →
  - update y+1 regulations →
  - predict y+1 target shares

- Catch, costs, and other attributes held at year-y levels

Validation results – combined cod and haddock target shares



Model application examples

- Counterfactual setup
  - Baseline: 2025 regulations (cod open Sept./Oct., haddock open all year except March)
  - Counterfactual #1: baseline + cod also open in May
  - Counterfactual #2: baseline + haddock closed in October
- All other variables fixed at 2025 levels
- Model estimated on all the data (2010-2025)

Counterfactual #1: predicted effects of opening cod in May

trip classification	**May** trips baseline (MRIP estimate 2025)	**May** predicted trips - cod open	difference in trips	% difference in trips
targeted/primarily caught cod or haddock	12,937	26,203	13,266	102%

Counterfactual #2: predicted effects of closing haddock in Oct.

trip classification	**October** trips baseline (MRIP estimate 2025)	**October** predicted trips - haddock closed	difference in trips	% difference in trips
targeted/primarily caught cod or haddock	22,650	17,272	-5,377	-24%

Status and timeline

- Working to integrate into DST pipeline
- Model will operate in the background of the DST web app – no additional output displayed (for now)
- Only operationalized when proposed season differs from last 12 months (new days opened or current days closed)

From our team: Thanks!

- **Users**
- Fisheries
  - NMFS HQ: Tara Scott, Rita Curtis, Sabrina Lovell
  - MRIP staff - Lucas Johansen, Katherine Papacostas, John Foster
  - NEFSC - Paul Nitschke, Scott Steinback, Charles Perretti, Abel Woldetensaye
  - NOAA and NMFS OCIOs - Biruk Eyesus, Rachel Baxter, Joe Dickerson, Navin Ramnarain, Jin Tran
  - GARFO - Liz Sullivan, Spencer Talmage
- Council Staff
  - Robin Frede and Mark Grant
- Azure
  - Haitham Shahin, Eldon Gormsen