



**NOAA
FISHERIES**

MRIP Overview and Update

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NEFMC Recreational Advisory Panel
Meeting

August 2, 2016

Overview

- MRIP estimation
- Data sources
- Recent and upcoming program changes

MRIP Estimation

- Total Catch = Mean catch per angler-trip
X Total angler-trips
 - Mean catch per angler-trip (APAIS)
 - Total angler-trips (CHTS,FHS,APAIS)
- Standard MRIP estimation domains
 - Spatial: sub-region, state, area fished
 - Temporal: year, 2-month wave (Jan/Feb,...,Nov/Dec)
 - Mode of fishing (PR,SH,CH,HB)
 - Species
 - Catch disposition

MRIP Estimation

- Preliminary estimates
 - 45 days after end of 2-month wave
 - CH/HB effort estimates from FHS, no VTR data
- Final estimates
 - By April 15th of following year
 - Incorporate data corrections from QA/QC procedures
 - CH effort estimates include FHS and VTR data

Data Sources

- Access Point Angler Intercept Survey (APAIS)
- Coastal Household Telephone Survey (CHTS)
- For-Hire Survey (FHS)
- GARFO Vessel Trip Report (VTR) program

AP AIS

- Intercept survey of completed angler-trips at fishing access sites
- Complex design: stratified multi-stage cluster design with probability proportional to size sample selection
- Sample frame is list of site cluster-day-time interval sample units
- MRIP estimation components
 - Catch-per-angler trip
 - Effort survey coverage adjustments for both CHTS and FHS

CHTS

- Random-Digit-Dial (RDD) household telephone survey
- Sample frame is residential landline telephone numbers in coastal counties stratified by county
- Sampling conducted at end of each 2-month wave
- MRIP estimation components:
 - Effort (angler-trips) for private boat (PR) and shore (SH) modes

FHS

- List-frame telephone survey
- Sample frame is list of known for-hire vessels
- Separate strata for charter boats and headboats
- Sampling conducted weekly
- MRIP estimation components:
 - Effort (angler-trips) for charter (CH) and headboat (HB) modes

VTR

- Attempted census of trips taken by federally permitted vessels (charter and headboats)
- New England and mid-Atlantic regions
- Monthly reporting (primarily)
- Incorporated into MRIP final estimation:
 - Effort (angler-trips) for CH and HB modes

Program Changes

- APAIS 2013 design changes
- MRIP weighted estimation methodology
- APAIS 2016 ACCSP/State conduct
- Fishing Effort Survey (FES)

APAIS 2013 Design Changes

- National Research Council (2006) identified issues in MRFSS Intercept design
 - Coverage gaps
 - Deviations from probability sampling
- MRIP pilot project developed and tested improved design in North Carolina (2010)
- New APAIS implemented coast-wide in 2013

APAIS 2013 Design Changes

- APAIS addressed NRC criticisms
 - Improved temporal coverage – not just peak activity sampling
 - Replaced alternative site sample with predefined site clusters
 - Eliminated sampler discretion allowing for fully design-based sample weights (unbiased estimation)
- Initial declines in interviewing productivity
 - Numerous adjustments made in 2013-2014
- Productivity increased except for charter boat mode in several mid-Atlantic and New England states (NY, CT, VA)
 - Low CH productivity in NY contributed to 2015 outlier estimates for BSB and bluefish
 - Ongoing work with ACCSP and State partners to address productivity issues

MRIP Weighted Estimation

- Replaced MRFSS unweighted estimation
 - MRFSS estimation assumed simple random sampling
 - Ignored complex design of MRFSS intercept survey
 - Created potential for bias
 - A primary criticism from National Research Council (2006)
- MRIP weighted estimation accounts for sample selection probabilities at each stage of sampling (site cluster, angler-trips within site cluster, fish within angler-trip)
- Use of sample weights required for unbiased estimation – standard practice for survey estimation

MRIP Weighted Estimation

- Used to revise catch and effort estimates from 2004-2012 (required some modeling of sample weight components)
- Since 2013 (APAIS design change), weighted estimation fully design-based (no modeled components)

MRIP Weighted Estimation

- In 2016, method updated to account for cases of small sample sizes at the year-state-mode level
- Catch estimates revised for 12 cases:
 - CT-Charter: 2013,2014,2015
 - VA-Charter: 2013,2014,2015
 - NY-Charter: 2014,2015
 - ME-Charter: 2013
 - NH-Charter: 2013
 - RI-Charter: 2013
 - NJ-Charter: 2013
- Only annual estimates will be available
- Revised estimates will be available by August 15 from MRIP website

APAIS 2016 ACCSP/State Conduct

- 2016 first year all Atlantic states conducting APAIS with coordination through ACCSP
- Important potential benefits
 - Improved cooperation
 - Data quality
 - Greater flexibility in responding to changing needs
- Temporary delays in MRIP estimate production from technical issues in transition to ACCSP data coordination

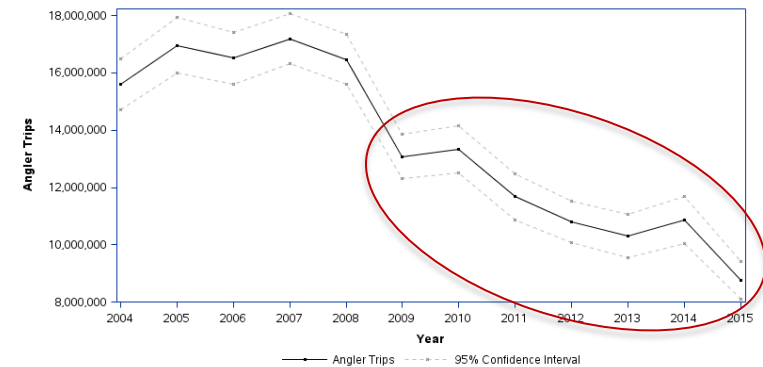
Fishing Effort Survey (FES)

- FES mail survey developed to replace CHTS for PR and SH effort estimates
- FES uses list of all residential addresses maintained by USPS and addresses from the National Saltwater Angler Registry
- FES coverage not affected by increasing proportions of wireless only households, a serious issue for CHTS
- FES response rates much higher than CHTS (40% vs 10%)

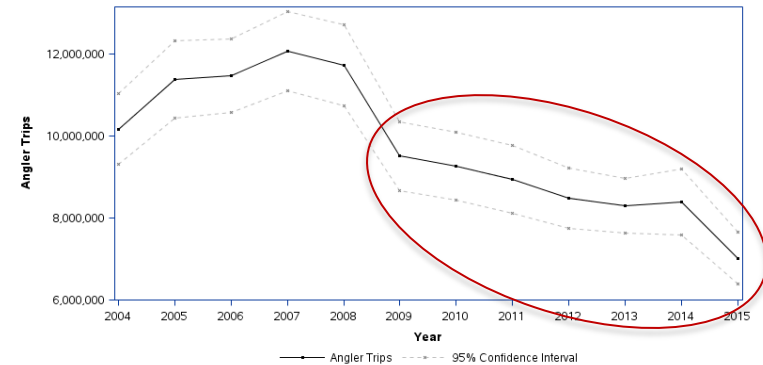
Fishing Effort Survey (FES)

- New England + Mid-Atlantic MRIP Effort Estimates by Mode
- PR and SH estimates from CHTS
- CH from estimates from FHS

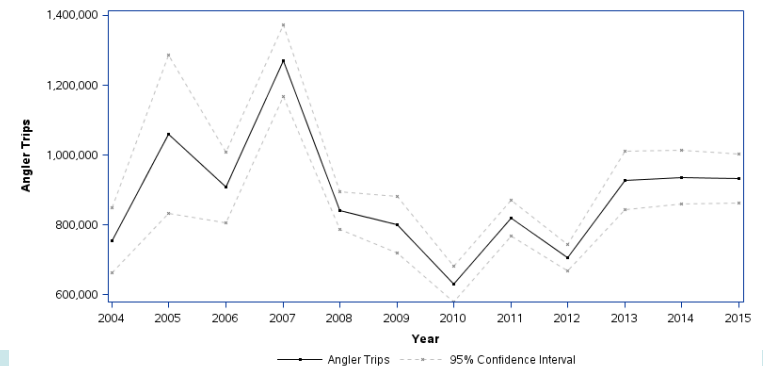
PR



SH

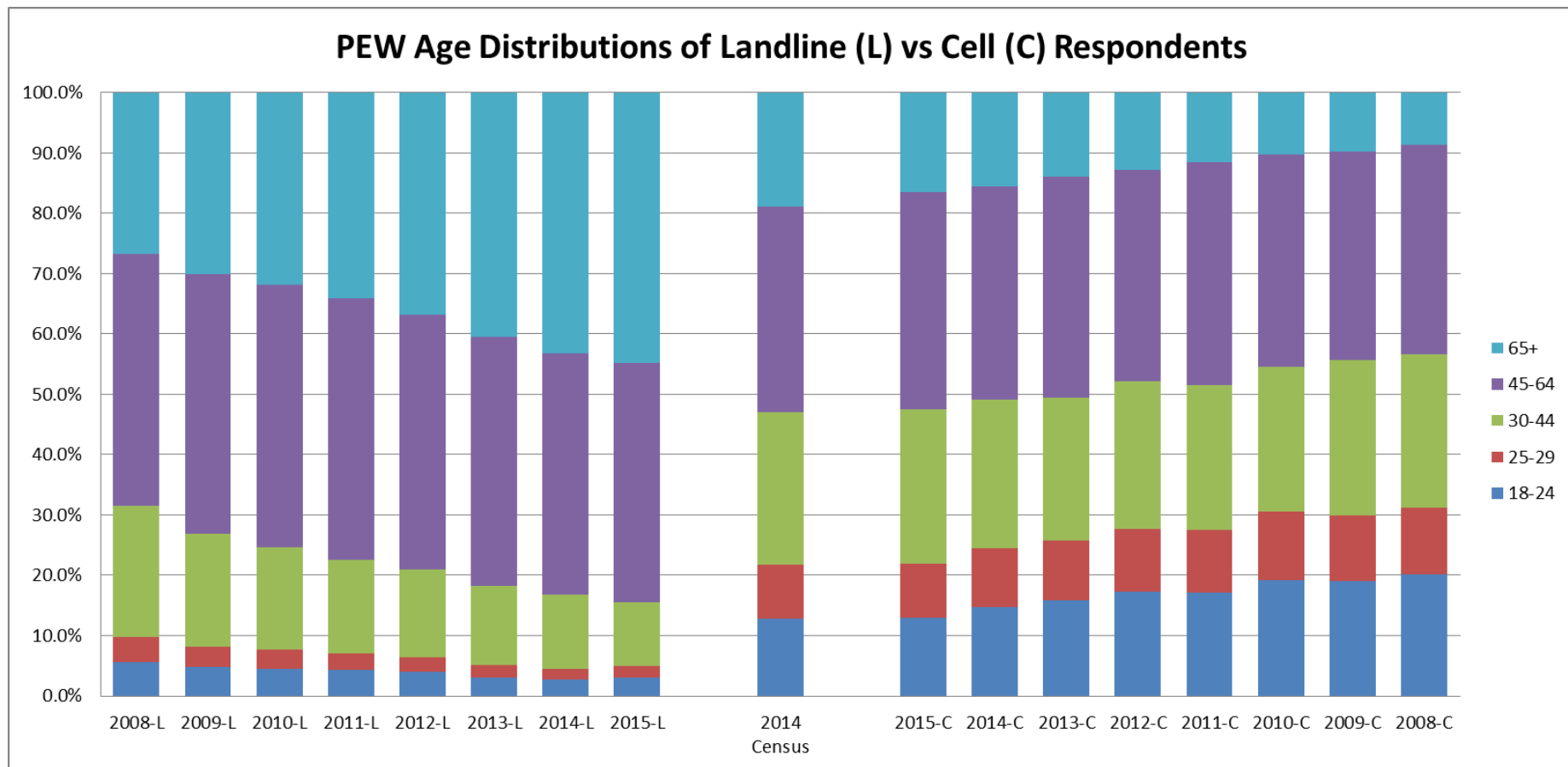


CH



Fishing Effort Survey (FES)

- Changing demographics of US population with landline telephones
(Data sources: Pew Research Center, US Census Bureau)



Fishing Effort Survey (FES)

- US population that can be reached by landline disproportionately older than full US population
- Differences between landline and full population increasing as more people drop landline telephone service
- Fishing activity (much) lower in oldest age groups

Fishing Effort Survey (FES)

- FES and CHTS being conducted side-by-side for 3-year benchmark period (in progress)
- Calibration model in development with statisticians from Colorado State University
- Calibrate full time series of catch and effort estimates from CHTS to FES
- Target transition from CHTS to FES in 2017



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