Introduction to MRIP Transition Planning and the Access Point Angler Intercept Survey

NOAA FISHERIES

Office of Science and Technology

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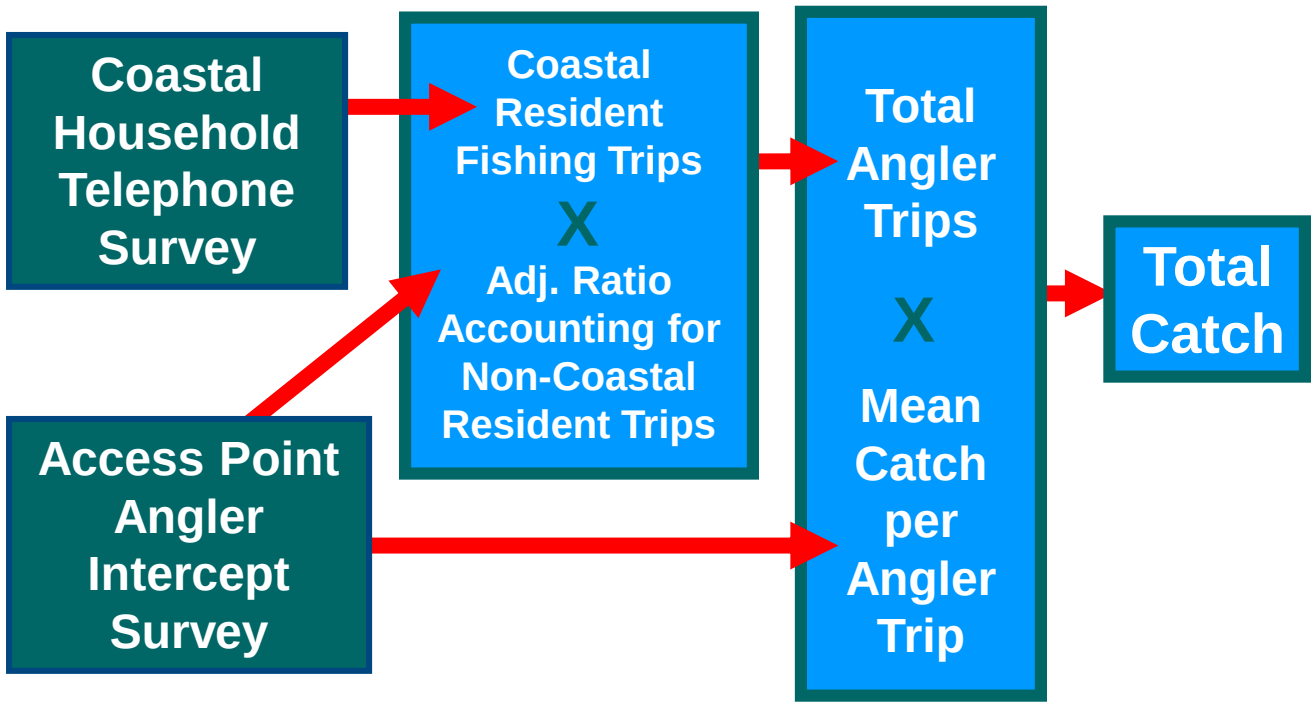
Marine Recreational Information Program

MRIP established in 2008 to develop improved data collection and information management program for monitoring of U.S. marine recreational fisheries

- Develop, test, and implement improved sampling and estimation methods that address criticisms of a 2006 National Research Council review.
- Comply with new direction from U.S. Congress in revised Magnuson-Stevens Act to implement NRC recommendations and deliver improved program.

Marine Recreational Fishery Statistics Survey

Original Complemented Telephone-Access Design



2006 National Academies Review

The MRFSS survey components [and other reviewed regional surveys] should be completely re-designed to improve the effectiveness and appropriateness of sampling and estimation procedures.

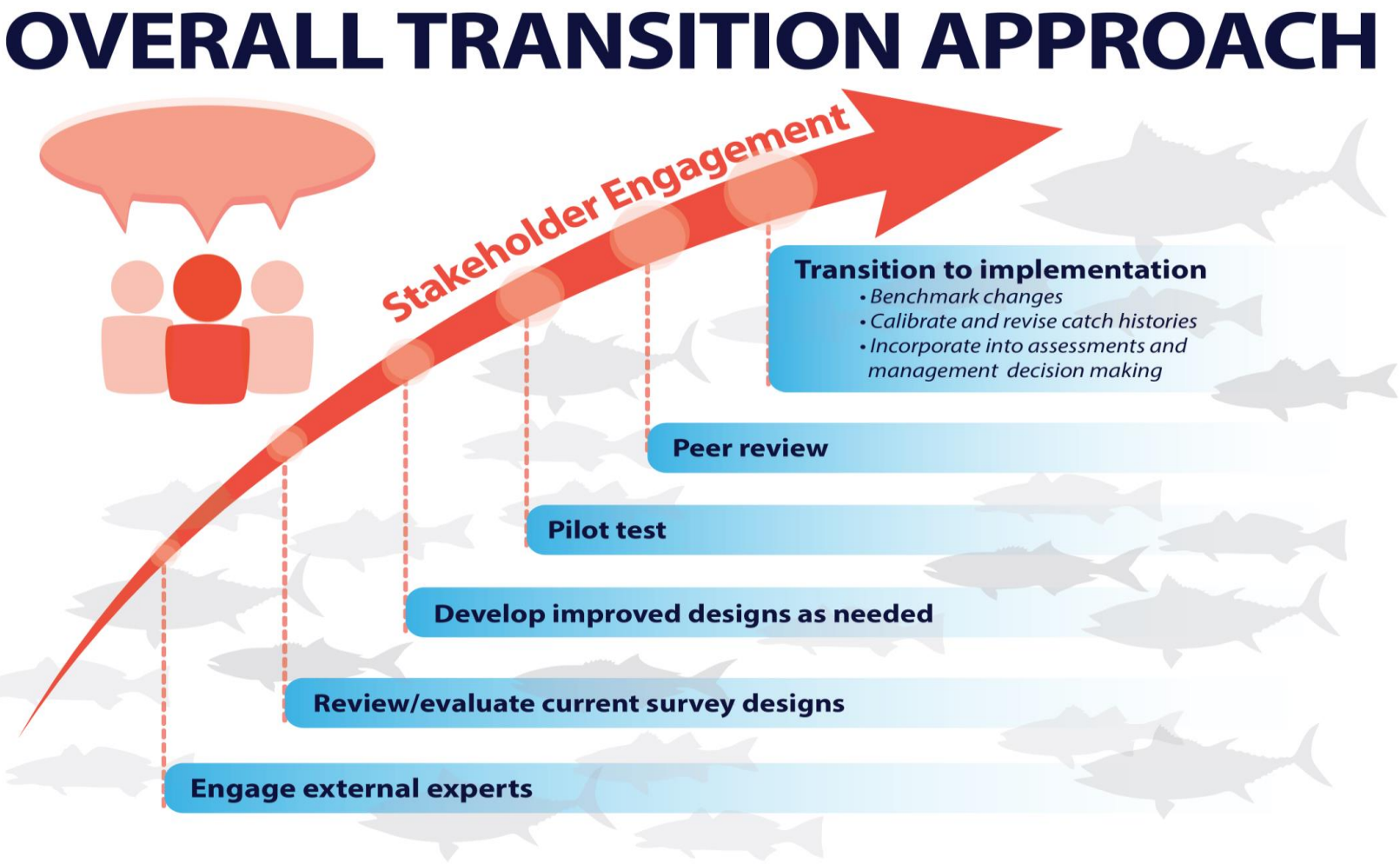
APAIS:

- The MRFSS estimation methods do not account for the complex sampling design of the APAIS.
- The APAIS sampling design allows flexibility to increase productivity, but ignores the possible impacts on estimation. Stricter adherence to formal probability sampling protocols is needed.
- Coverage of the APAIS is limited with respect to time of day and type of access (primarily public).

CHTS:

- The existing random digit dialing survey suffers from inefficiency due to low proportion of fishing households among the general population.
- Off-site surveys relying on telephone interviews are complicated by increasing use of cell phones.
- A comprehensive, universal sampling frame with national coverage should be established and used for future off-site surveys of fishing effort.

Marine Recreational Information Program



2017 National Academies Review

- MRIP has made “impressive progress … in providing more reliable catch data to fishery managers”.

- “The current methods used [in the re-designed APAIS] are a vast improvement…and reflect state-of-the-art methods in survey sampling.”

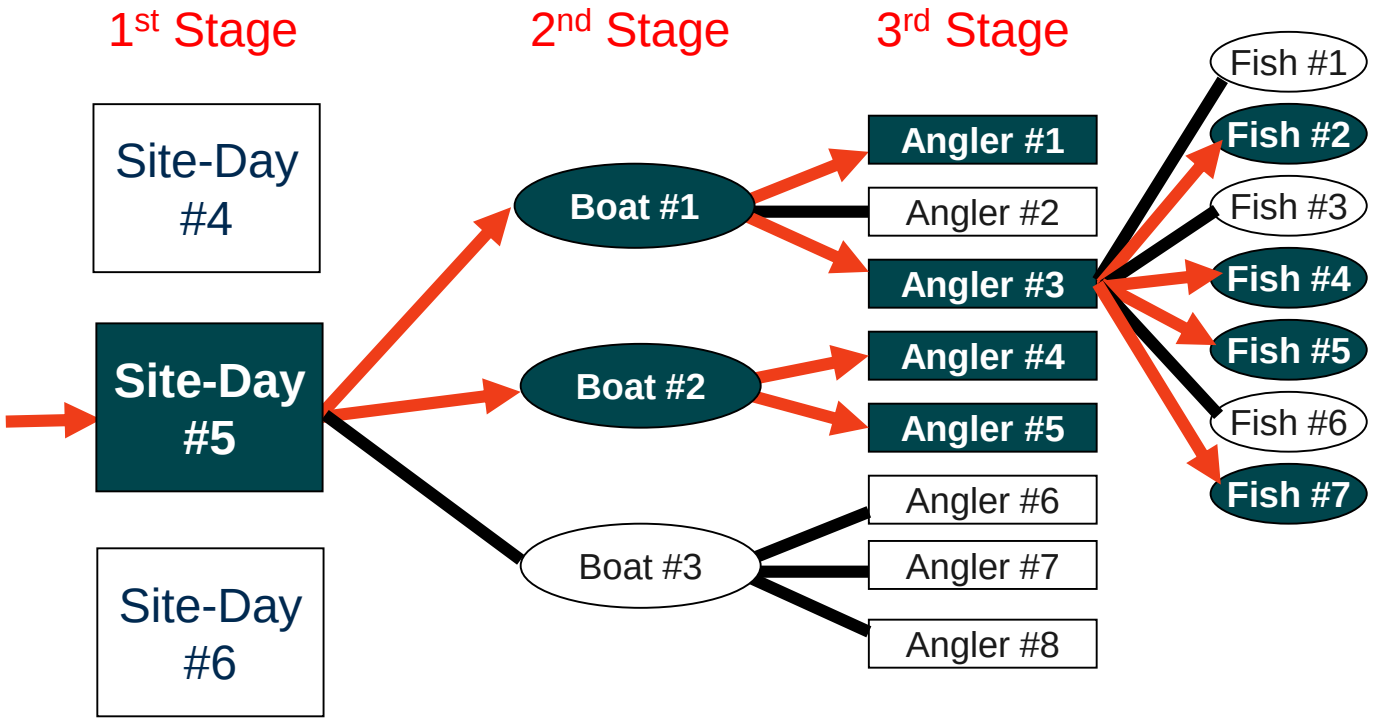
- “The methodologies [of the new Fishing Effort Survey], including the address-based sampling survey design, are major improvements from the original Coastal Household Telephone Survey that employed random-digit-dialing.”

What is the Access Point Angler Intercept Survey?

- On-site survey to collect angler catch data at fishing access points
- Interviewers intercept anglers who have finished a day of fishing
- Spatiotemporal sampling frame: matrix of fishing access points and time intervals
- Multi-stage cluster sampling

Multi-Stage Cluster Sampling

Private Boat Angler Fishing Trips

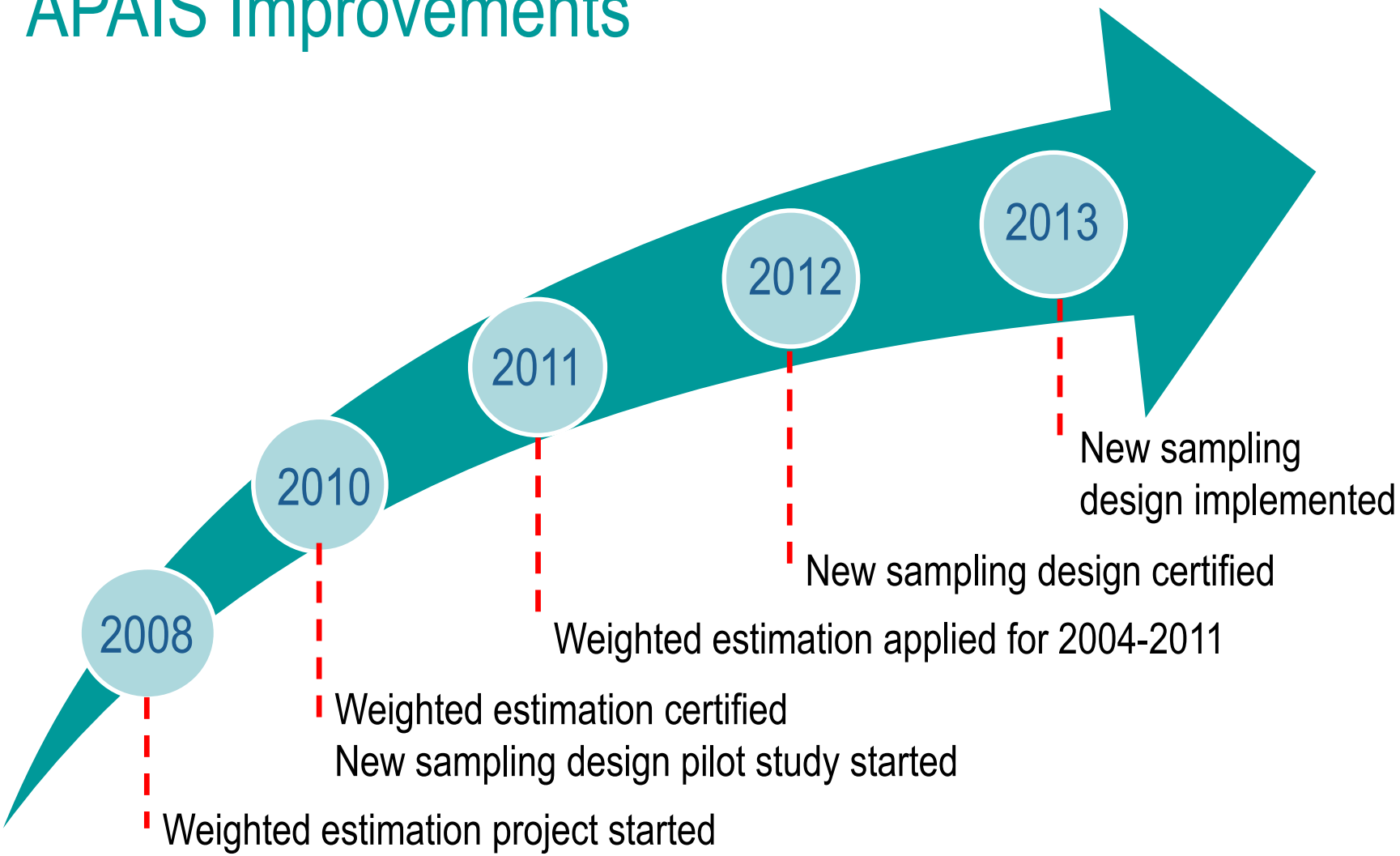


APAIS Improvements Needed

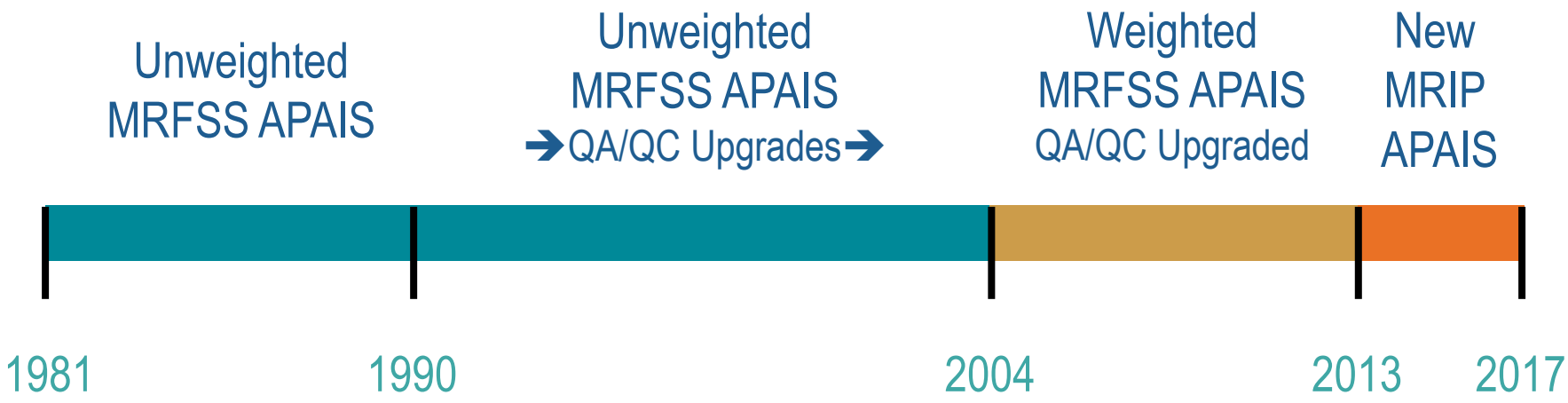
1. Weighted estimation method needed to account for complex sampling design
   - MRFSS estimation assumed simple random sampling
   - Point estimates and estimates of their variance should be design-unbiased

2. Sampling design should be changed to reduce potential for bias and facilitate weighted estimation
   - Formal probability sampling not used for selecting all sites
   - Sampling fractions not known for every stage of sampling
   - Sampling does not cover trips ending at all times of day

APAIS Improvements



Status of the APAIS Time Series



Transitioning to New Survey Designs

- Immediate implementation of any new survey design could cause a major disruption
  - Stock assessments and fisheries management rely on having a comparable time series of recreational catch statistics
  - Calibrations are needed to convert historical estimates based on legacy surveys into estimates compatible with those produced by any new surveys
  - We need numbers in the same “currency”
- Calibrations are needed to account for the following MRIP changes:
  - Coastal Household Telephone Survey ➔ Fishing Effort Survey
  - MRFSS APAIS ➔ New MRIP APAIS

APAIS Calibration Workshops

2012: Calibration Workshop #1

- Weighted estimation used to revise 2004-2012 estimates
- How to calibrate 1981-2003 estimates into same currency?
- Ratio calibration developed for application

2014: Calibration Workshop #2

- New sampling design implemented in 2013
- How to calibrate 2004-2012 weighted estimates into same currency?
- 3 methods proposed:
  - Simplest method recommended for use in short term
  - Evaluation of 3 methods recommended prior to selecting one for long term use

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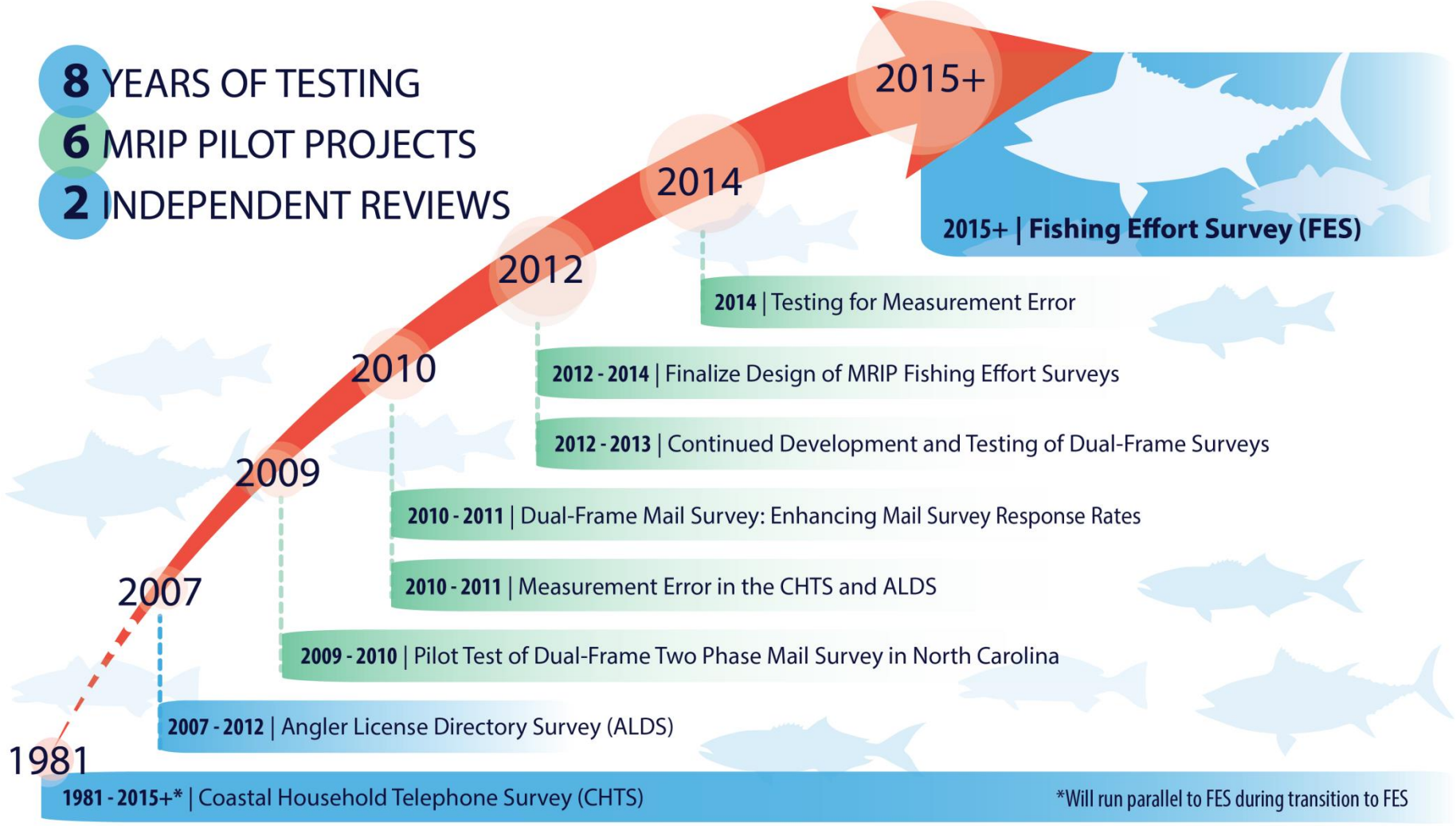
EVOLUTION OF THE EFFORT SURVEY

8 YEARS OF TESTING

6 MRIP PILOT PROJECTS

2 INDEPENDENT REVIEWS



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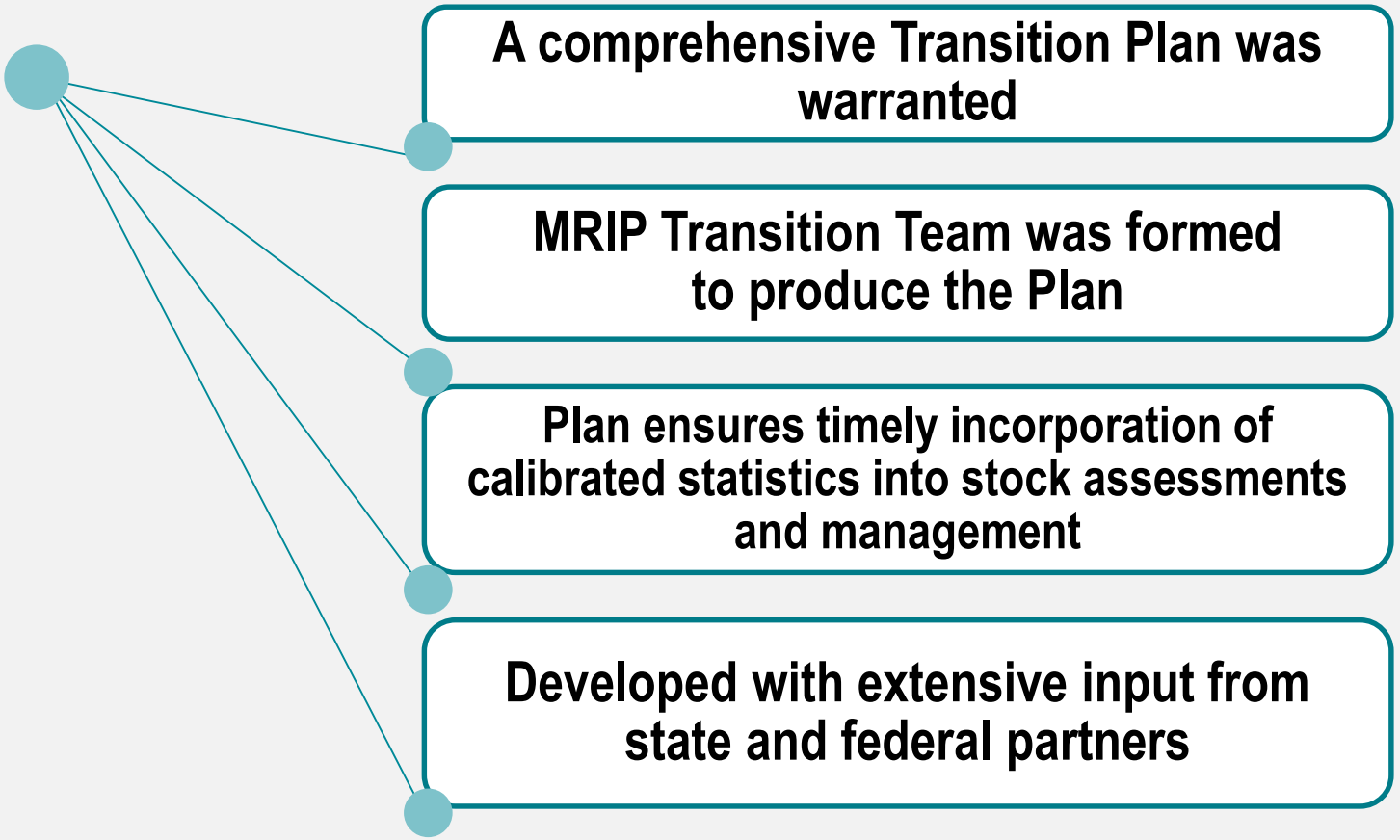
Transition Plan



Transition and Calibration Timeline

Step 1

2015-2017

- FES/CHTS Benchmarking
- Alternative APAIS calibration methods proposed for evaluation

Step 2

2016-2017

- FES calibration model developed
- FES calibration model peer reviewed
- APAIS calibration methods evaluated

Step 3

2018

- FES replaced CHTS
- APAIS calibration method selected
- APAIS calibration model peer review
- Re-estimation of historical catch and effort

Step 4

mid-2018

- Calibrated catch and effort time series available for use in stock assessments and management

- **Three-year transition period** from current phone survey estimates to new mail survey estimates
- **Phone survey estimates used for science and management** until the calibration models are developed, peer-reviewed, adopted and used to update stock assessments and annual catch limits

Questions?

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New Complemented Survey Designs