

Should we continue to work in the “Best Assessment” paradigm?

James Ianelli

Alaska Fisheries Science Center

NMFS/NOAA

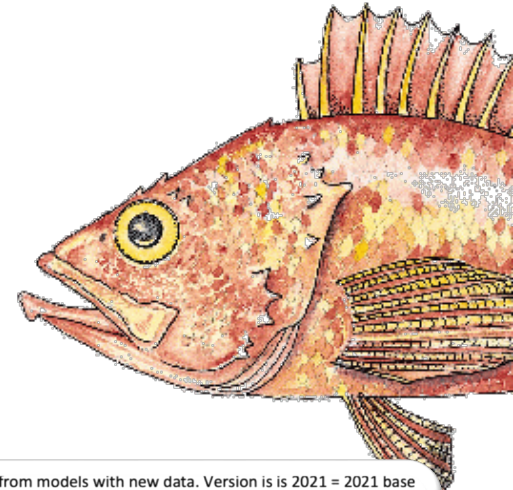
Alternate title...

Why does groundfish management in Alaska seem to be working?

Problems with the “best assessment” approach

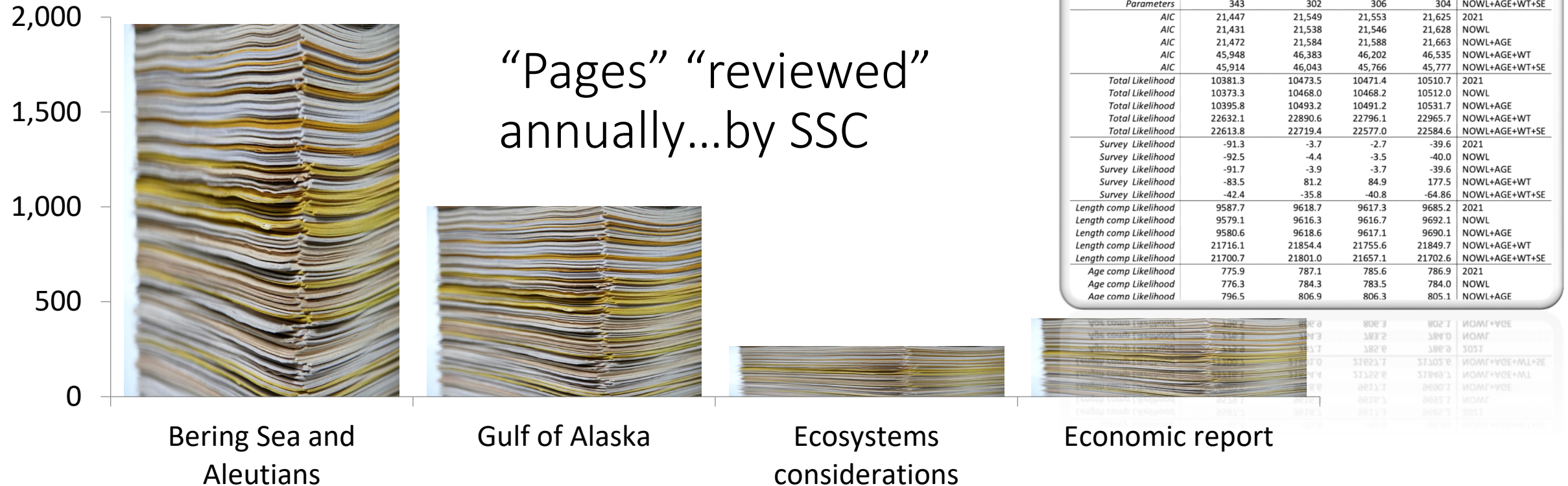
- 🐟 Risk that the best assessment is wrong (and consistently wrong!)
- 🐟 Instability
 - Advice changes due to next “best” assessment
- 🐟 Inability to estimate future risks
- 🐟 Too dependent on absolute estimates of stock size
 - 🐟 Procedures that respond to trends may be more robust to uncertainties
- 🐟 Assessment overload for review bodies

Issues about our assessments...



Extracted from Dec 2022 SSC Minutes:

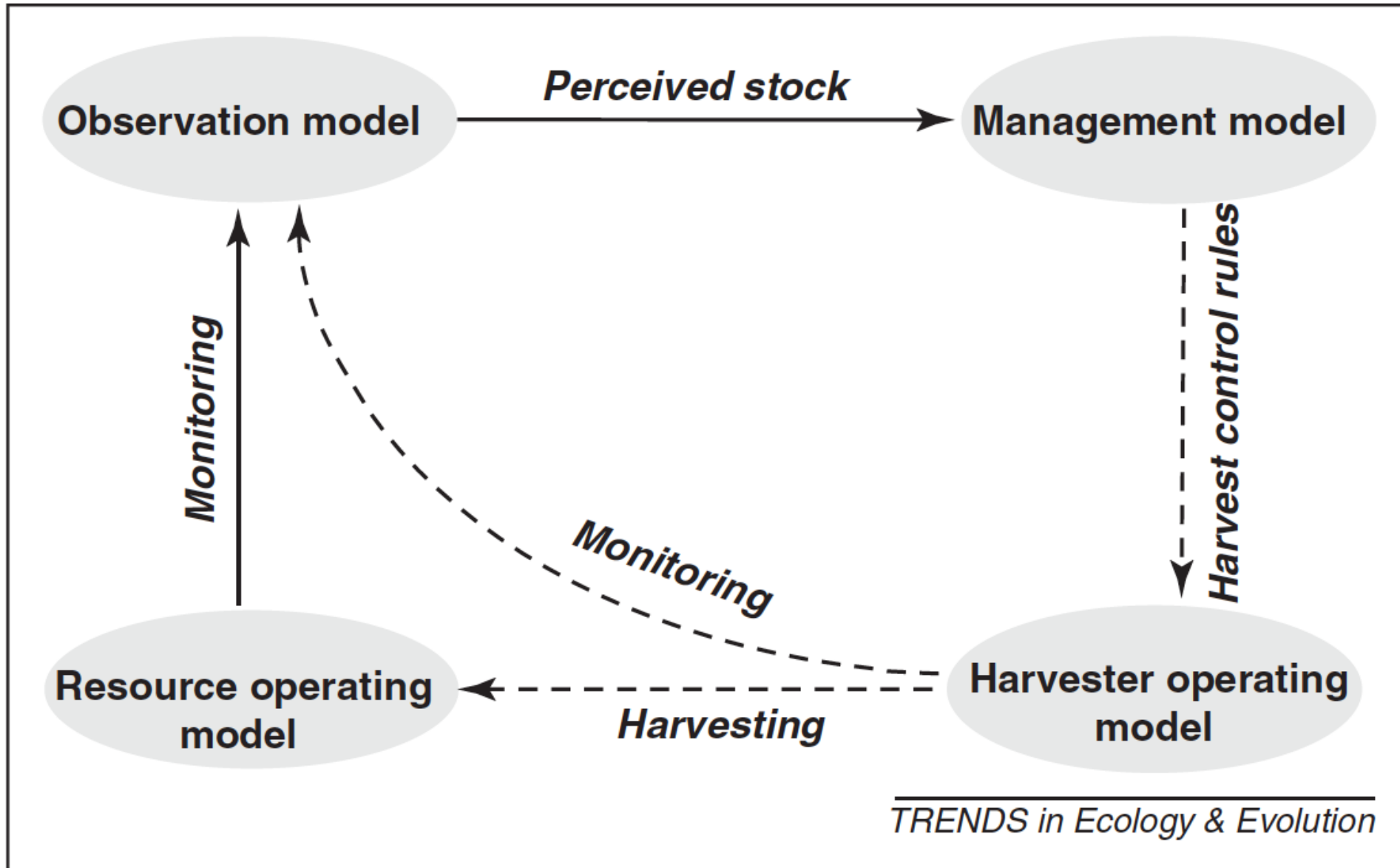
“concern about the overly complicated nature of the current model ensemble and the need for reevaluation of model weighting”



Benefits of management procedures / MSEs

- 🐟 Better use of well conditioned fully specified models including those of ecosystem/ensembles
- 🐟 Increase **transparency, predictability**
- 🐟 **Efficiency gains in review process**
- 🐟 Designed to **comply** with management goals including precaution

Management strategy evaluation framework



Source: Bunnfeld et al. 2011

Management procedures

- Rules for setting catch limits

<https://harveststrategies.org>



AKA MSE

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Food for Thought



When to conduct, and when not to conduct, management strategy evaluations

J. F. III Walter^{1,*}, C. D. Peterson ¹, K. Marshall ², J. J. Deroba³, S. Gaichas ³, B. C. Williams ⁴,
S. Stohs⁵, D. Tommasi^{5,6} and R. Ahrens⁷

¹NOAA Fisheries, Southeast Fisheries Science Center, 75 Virginia Beach Drive, Miami, FL 33149, USA

²NOAA Fisheries, Northwest Fisheries Science Center, 2725 Montlake Boulevard East, Seattle, WA 98112, USA

³NOAA Fisheries, Northeast Fisheries Science Center, 166 Water Street, Woods Hole, MA 02543, USA

⁴NOAA Fisheries, Alaska Fisheries Science Center, ABL, 17109 Pt Lena Loop Road, Juneau, AK 99801, USA

⁵NOAA Fisheries, Southwest Fisheries Science Center, 8901 La Jolla Shores Drive, La Jolla, CA 92037, USA

⁶Institute of Marine Sciences, University of California Santa Cruz, 1156 High Street Santa Cruz, CA 95064, USA

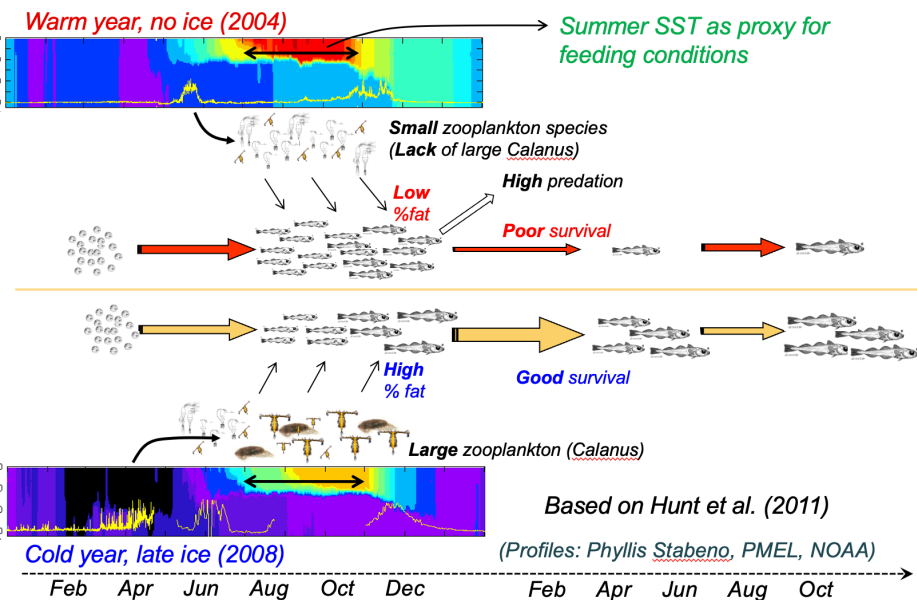
⁷NOAA Fisheries, Pacific Islands Fisheries Science Center, 1845 Wasp Boulevard, Honolulu, HI 96818, USA

* Corresponding author: tel: +(1) 305 608 5883; e-mail: john.f.walter@noaa.gov.

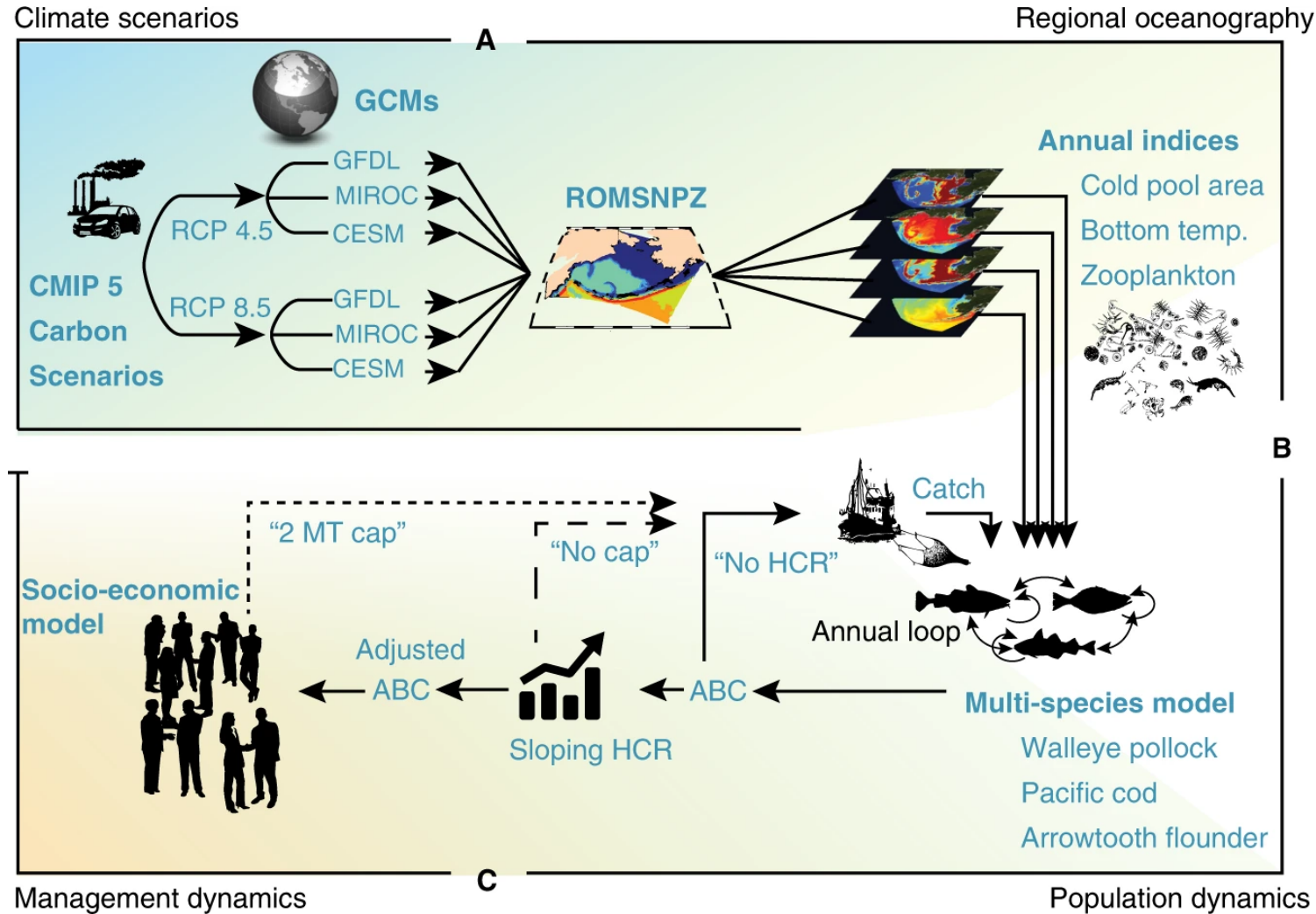
Moving from research models to plausible operating models



Lots of developments



Typically based on ensembles

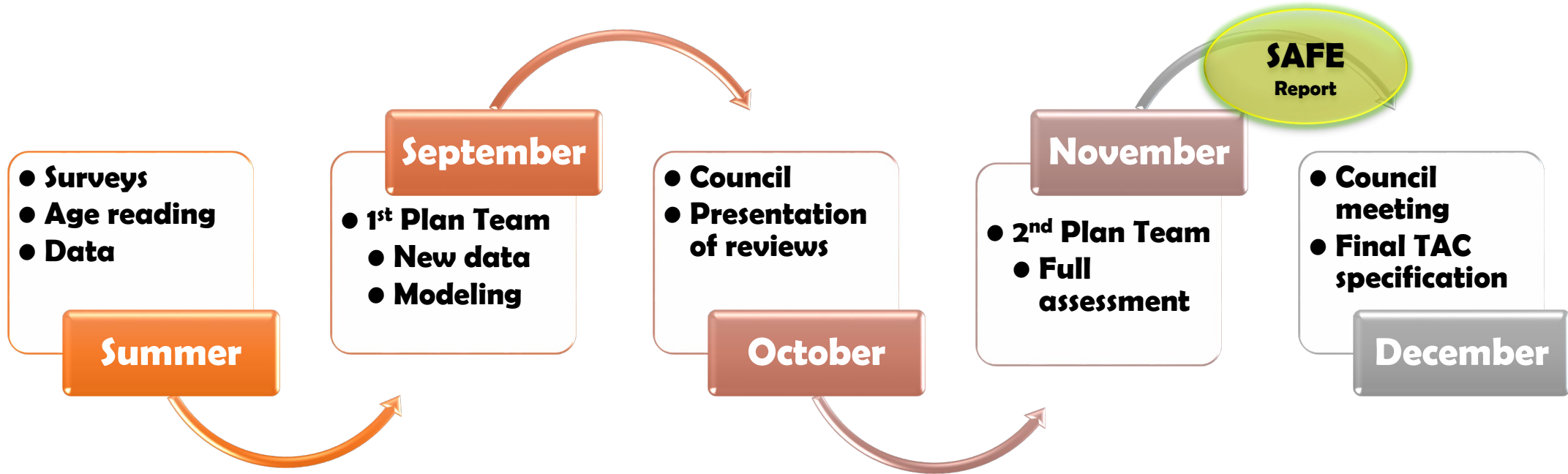


Tested management procedure (against plausible operating models)

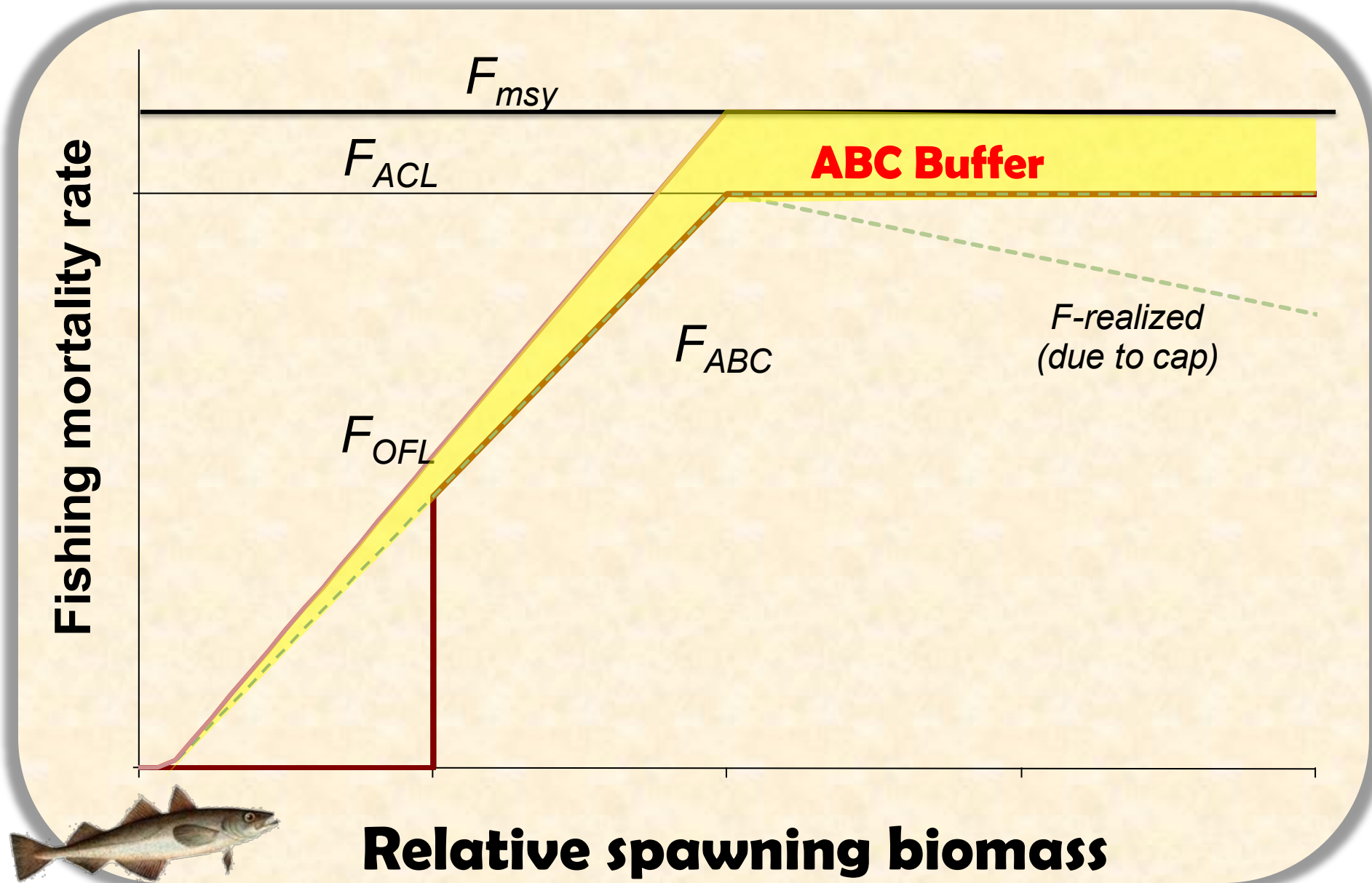
Empirical and responsive to data, (e.g., CPUE or survey estimate):

$$\text{TAC}_{t+1} = \begin{array}{|l|l} \text{Last} & \\ \text{year's} & \\ \text{TAC} & \end{array} \times \text{New data influence relative to some target}$$

What we do annually for groundfish in Alaska



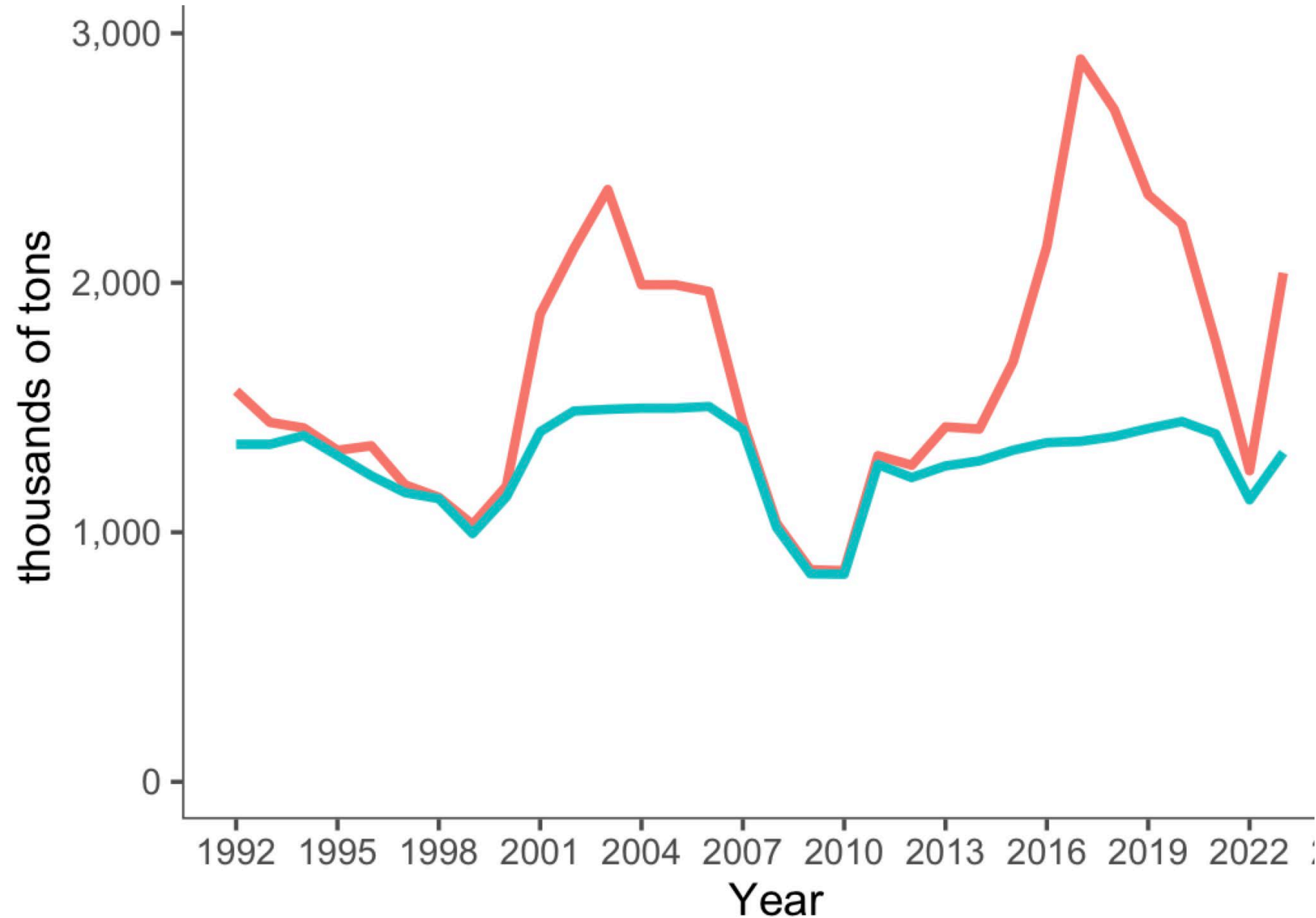
Our current process



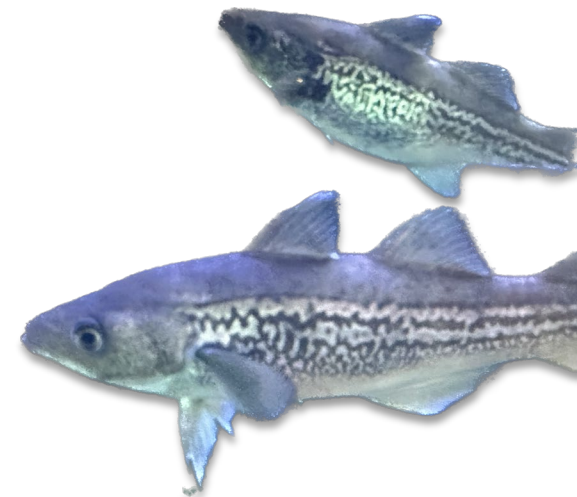
Moderating effect of the Optimum Yield

Upper limit of the sum of groundfish TACs in the Bering Sea and Aleutian Islands is 2,000,000 t

EBS pollock history: ABCs and TACs

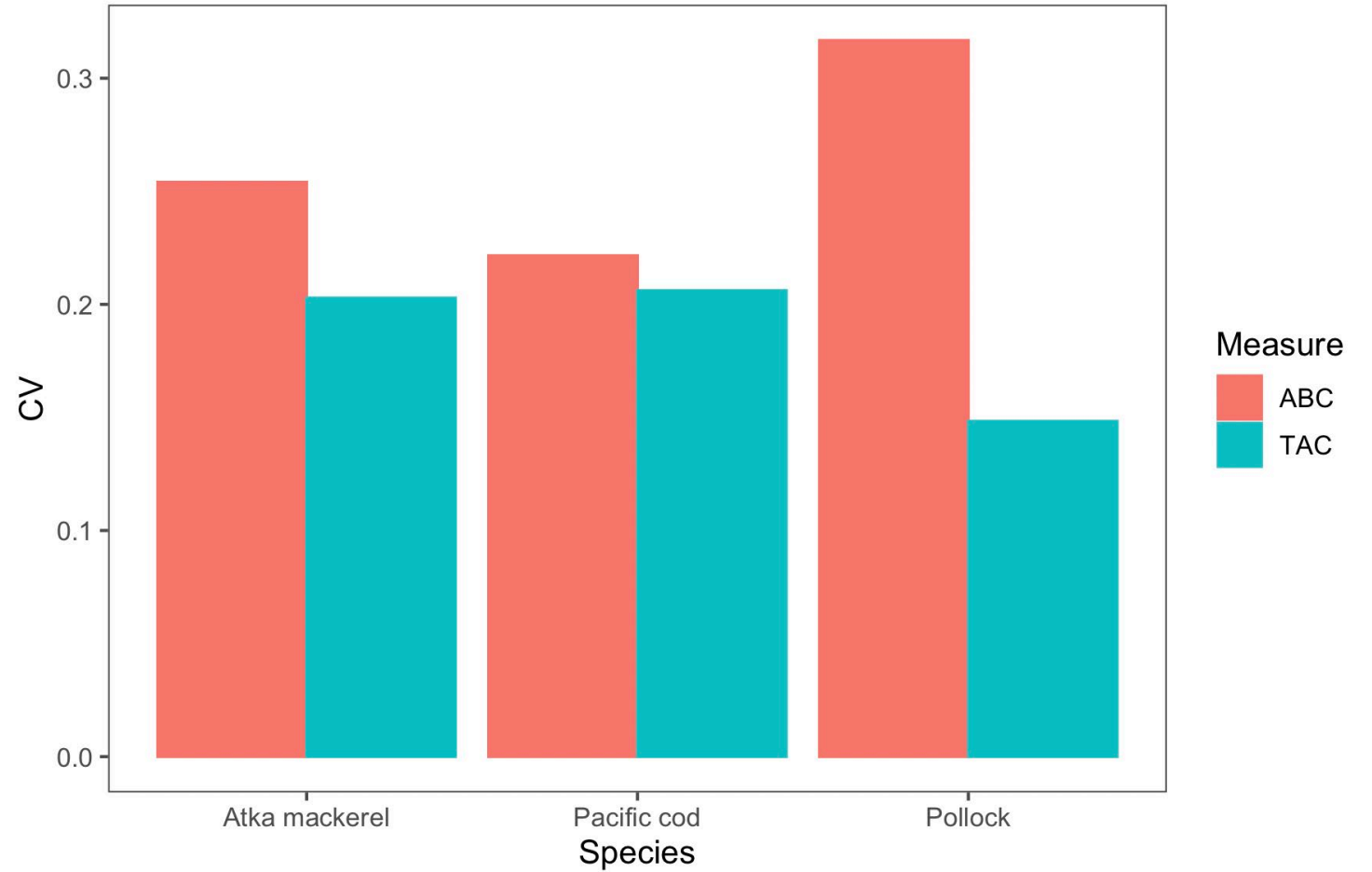


| | Mean (t) | CV |
|-----|-----------|-----|
| ABC | 1,727,839 | 32% |
| TAC | 1,291,989 | 15% |



ABC / TAC variability

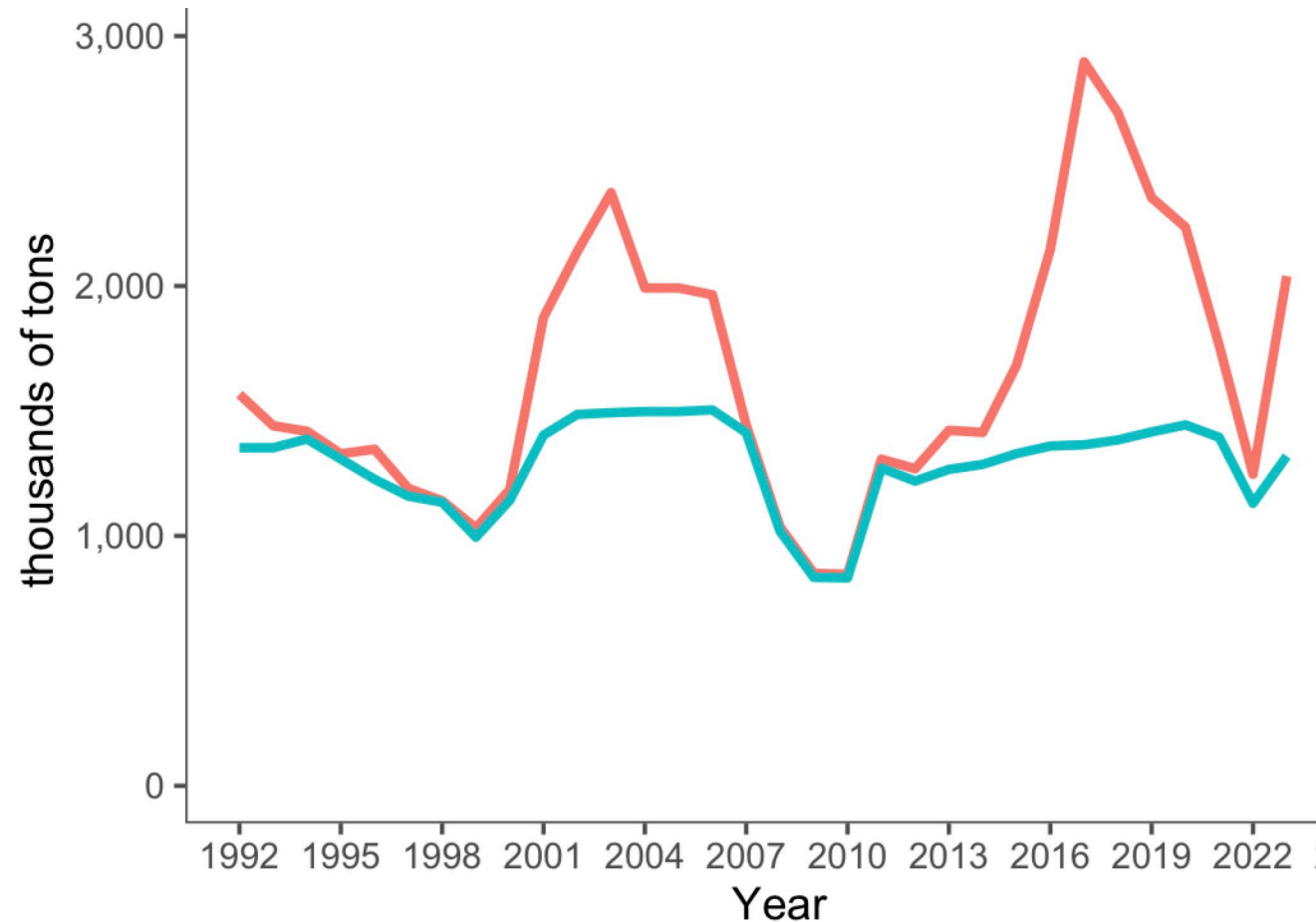
- Since 2001



Shortcut MSE?

“Normally” trade-offs and decisions made in the selection of a management procedure then on auto-pilot specs

A revised system would need that continued flexibility at the Council level



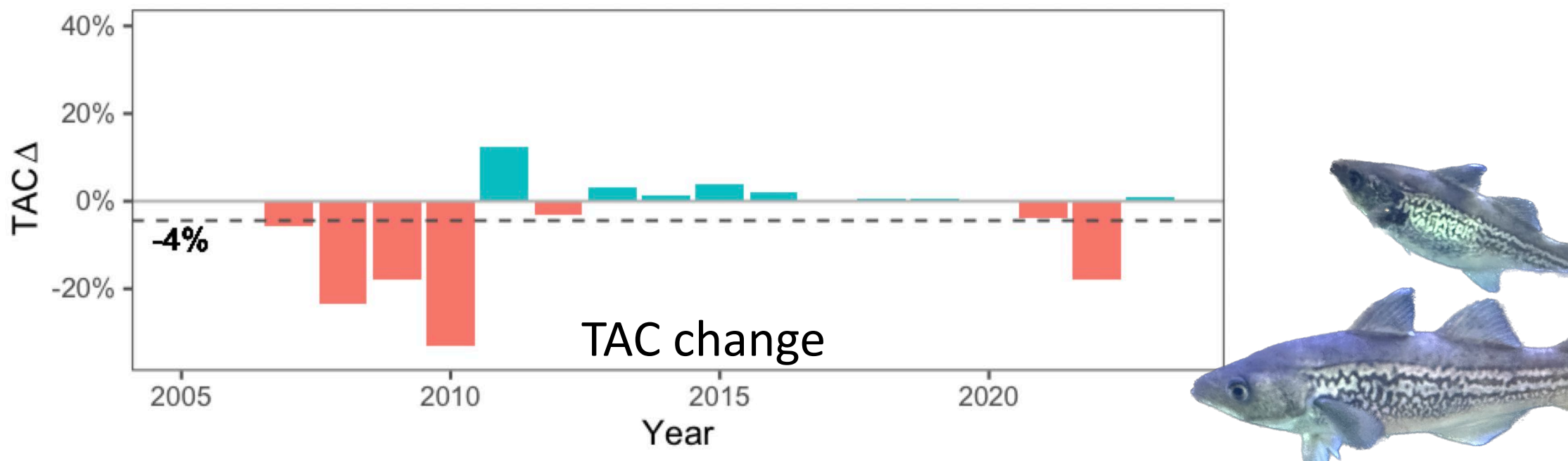
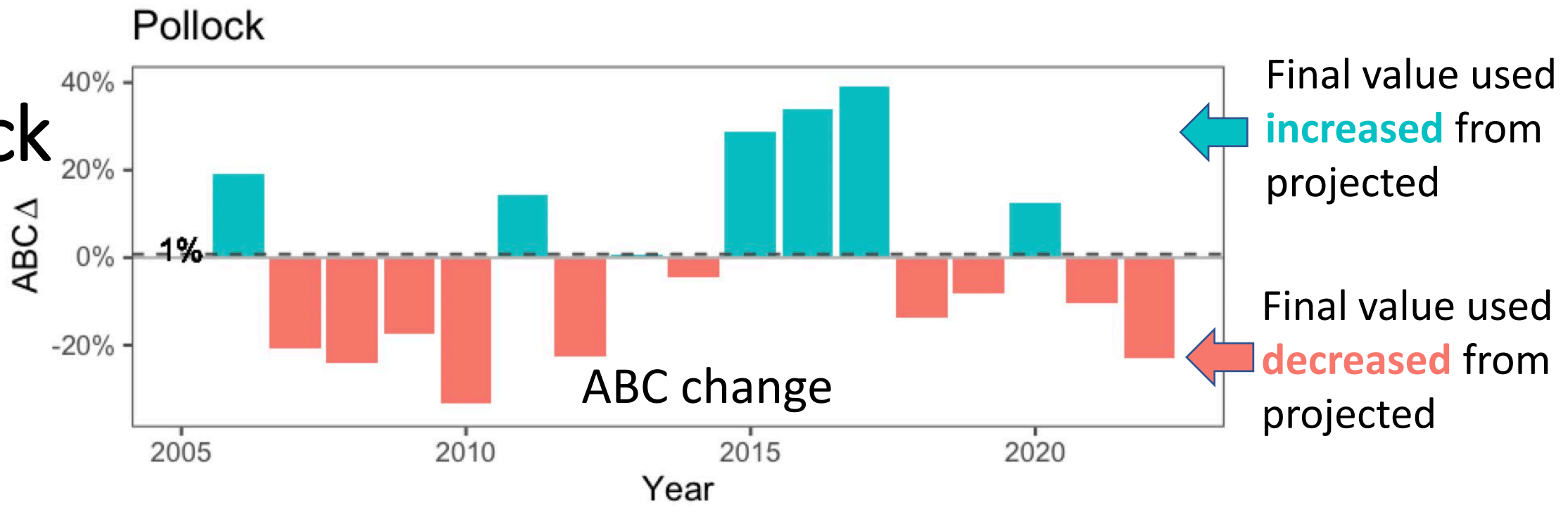
Our process...other communication issues

Catch specification (ABC/OFL/TAC) for next year **and the year after**

- I.e., in last year (2022) we provide ABCs for **2023 AND 2024**

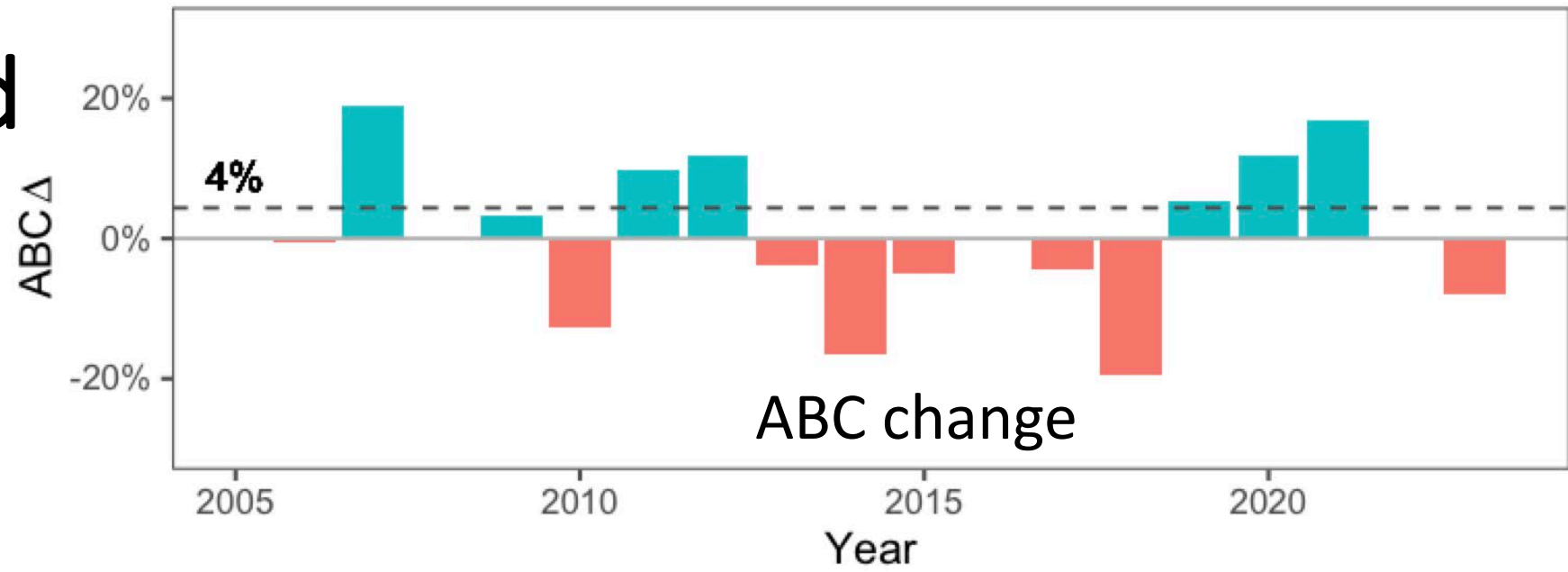
How variable is the difference between projected and final?

Pollock



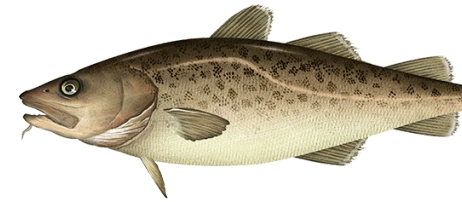
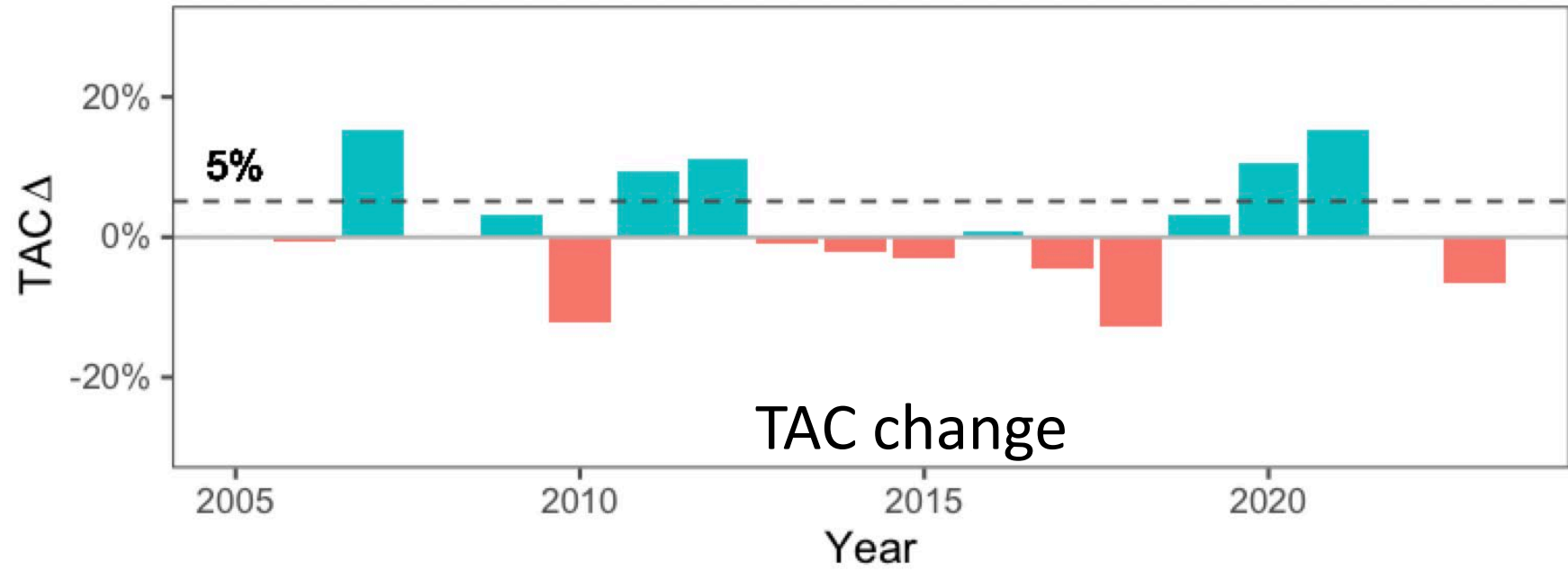
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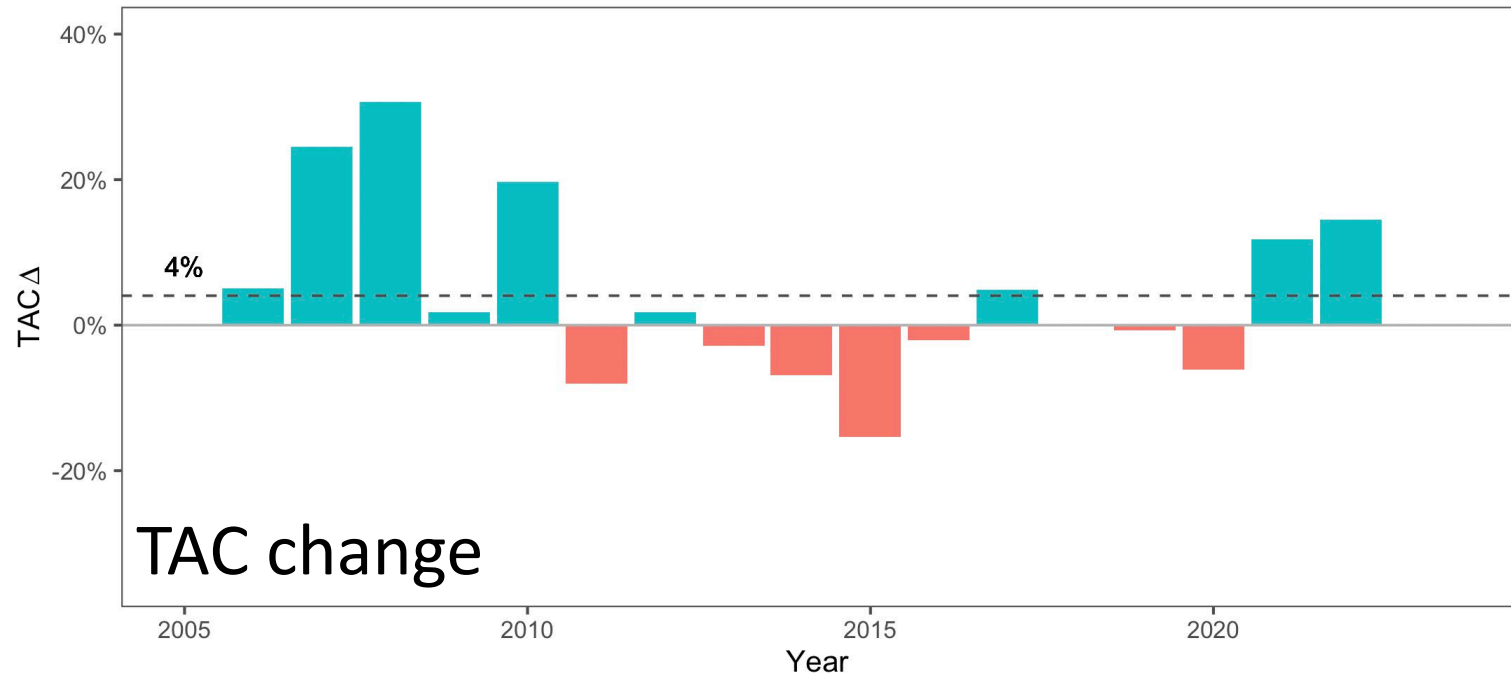
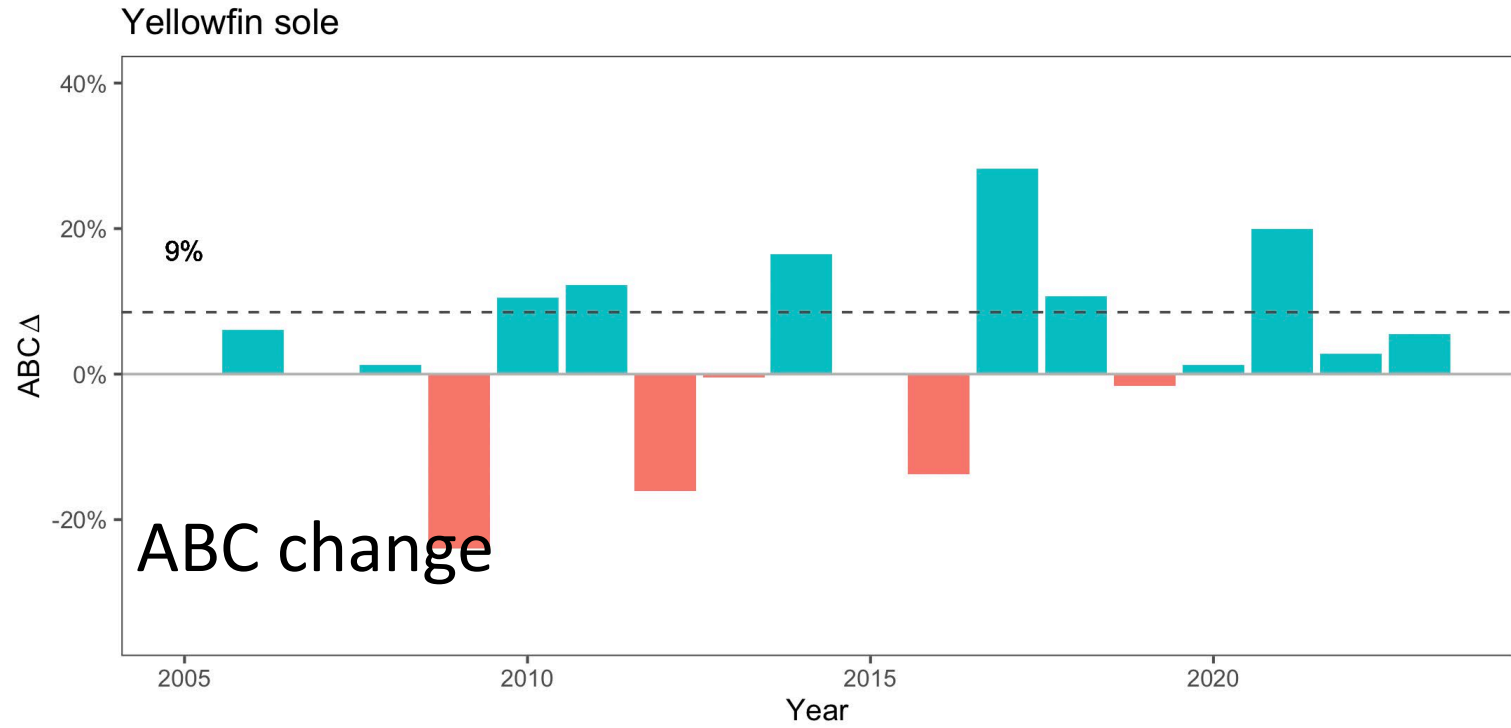
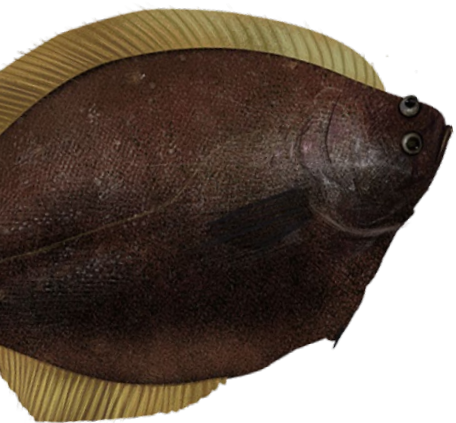


Final value used **increased** from projected

Final value used **decreased** from projected



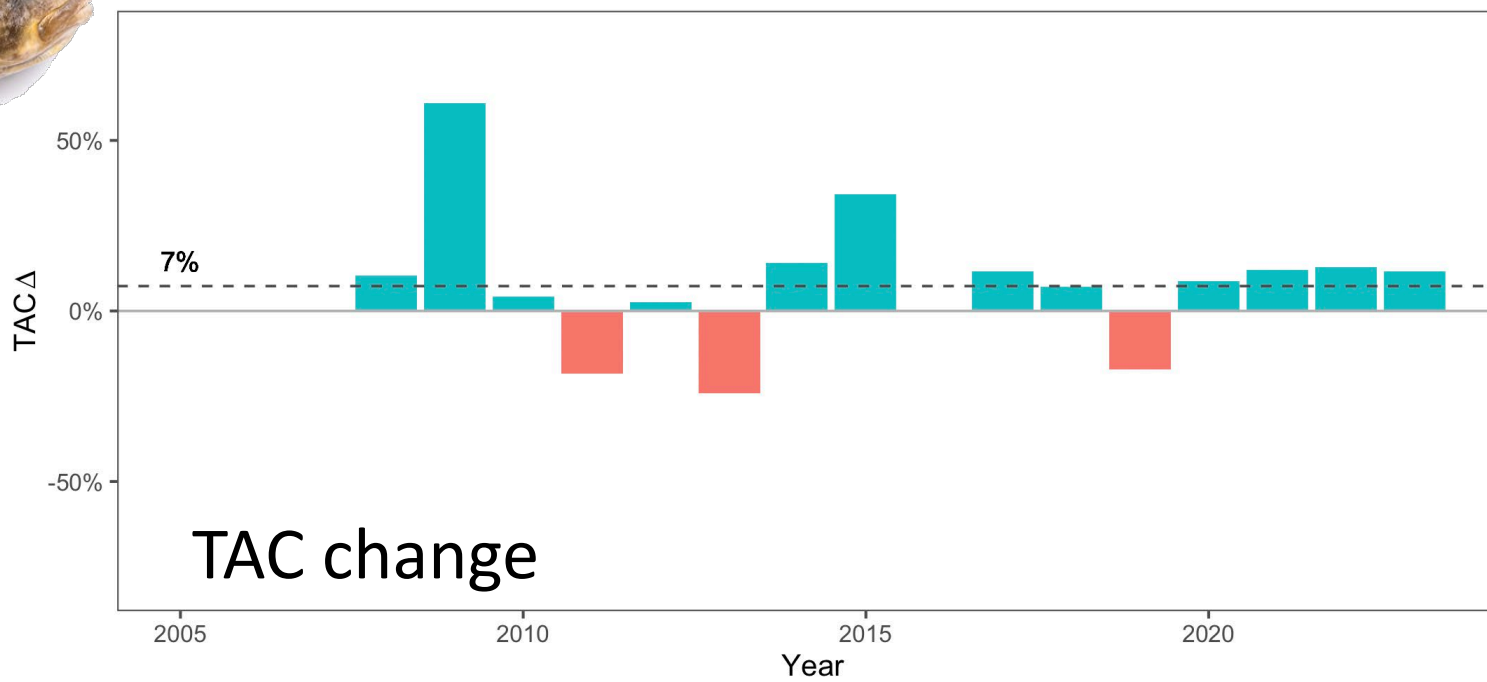
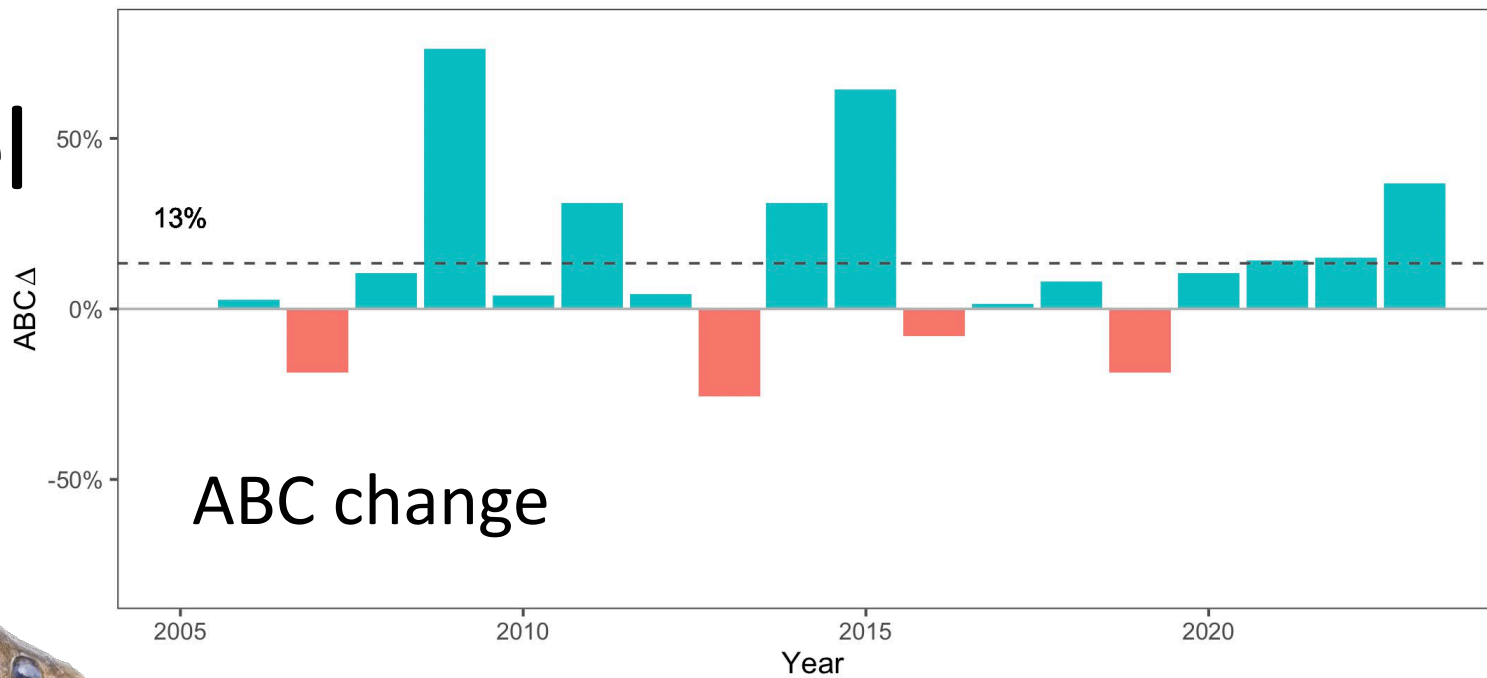
Yellowfin sole

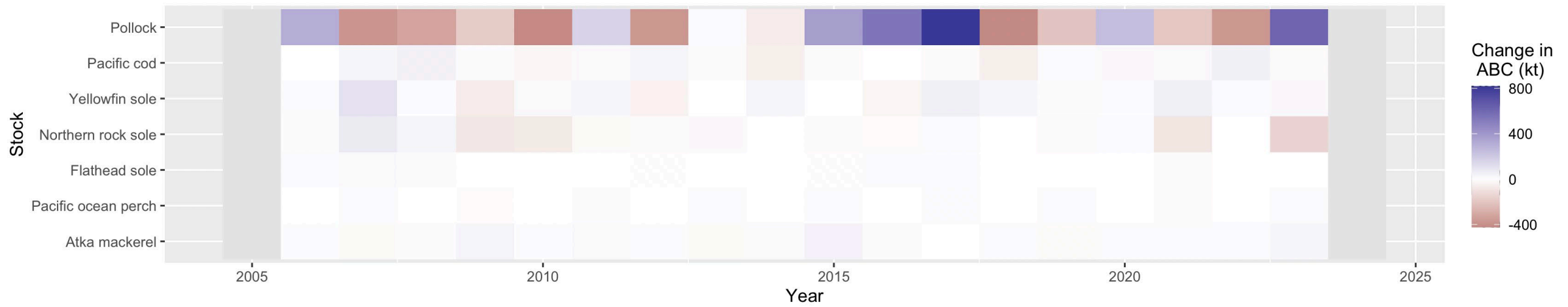


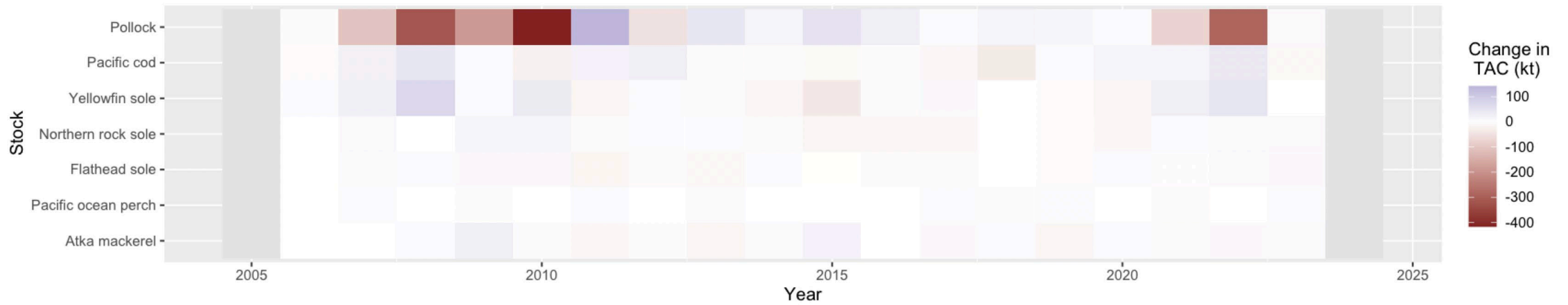
Atka mackerel

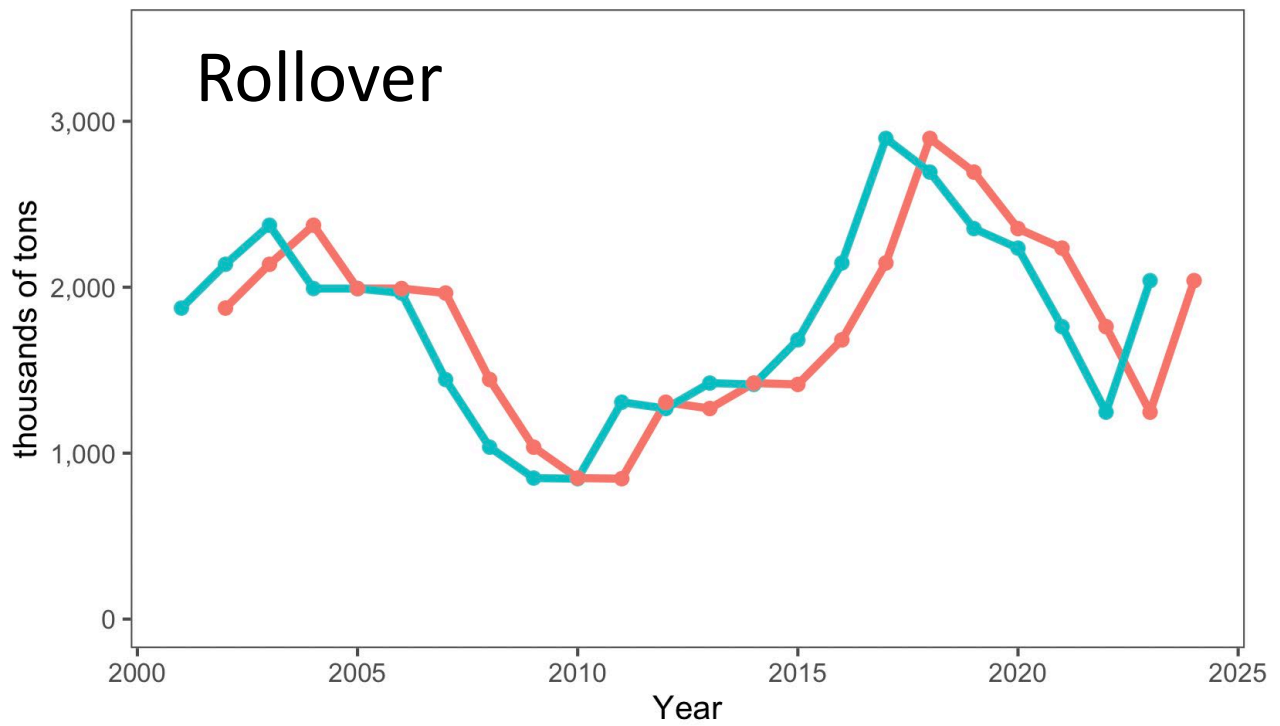
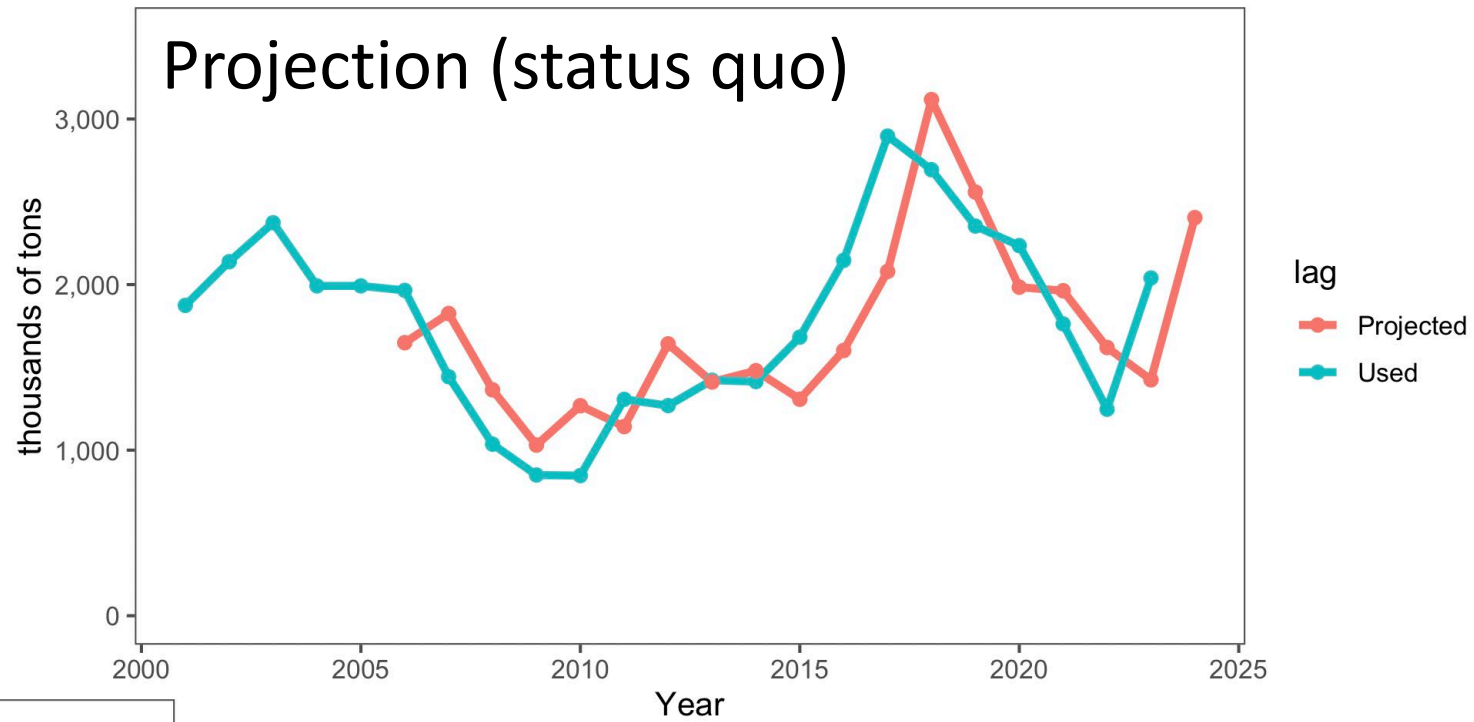


Atka mackerel









Conclusion

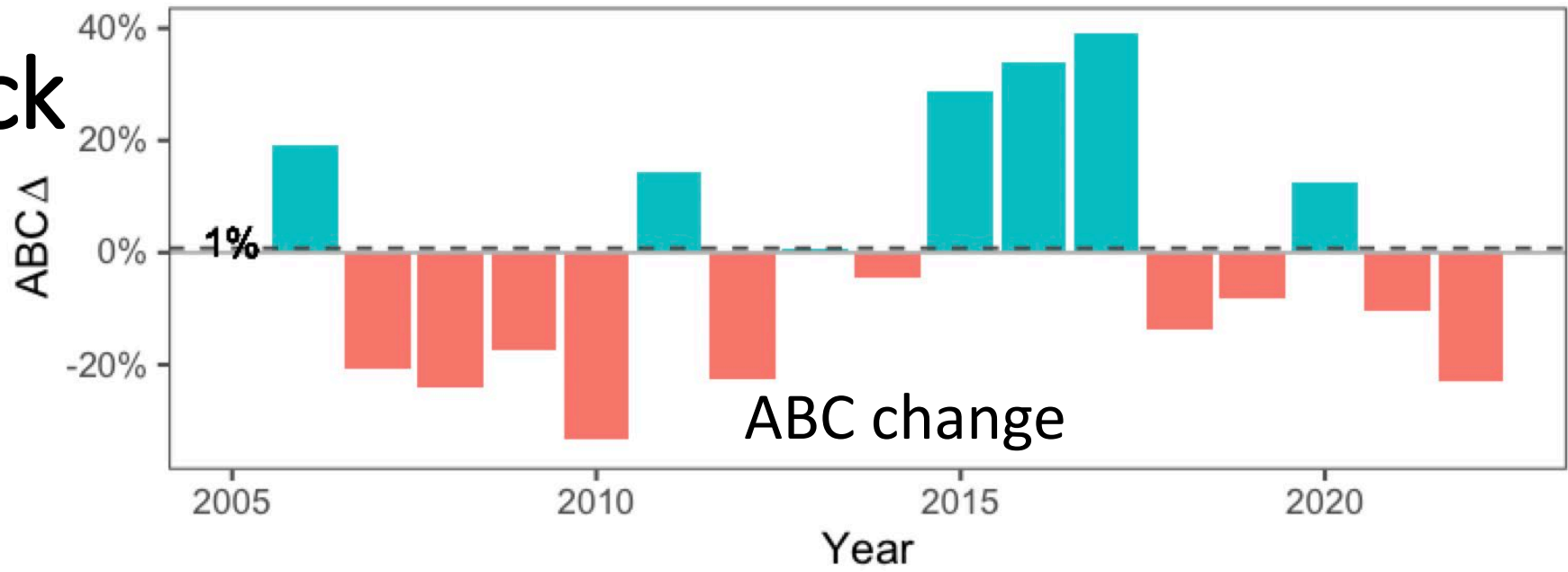
- Complex models (ACLIM, Ensembles) should be embraced and evaluated
 - But in the context of testing simpler data-driven catch specification approaches
- Current methods of informing public and stakeholders could be improved
 - TAC vs ABCs

Thanks!

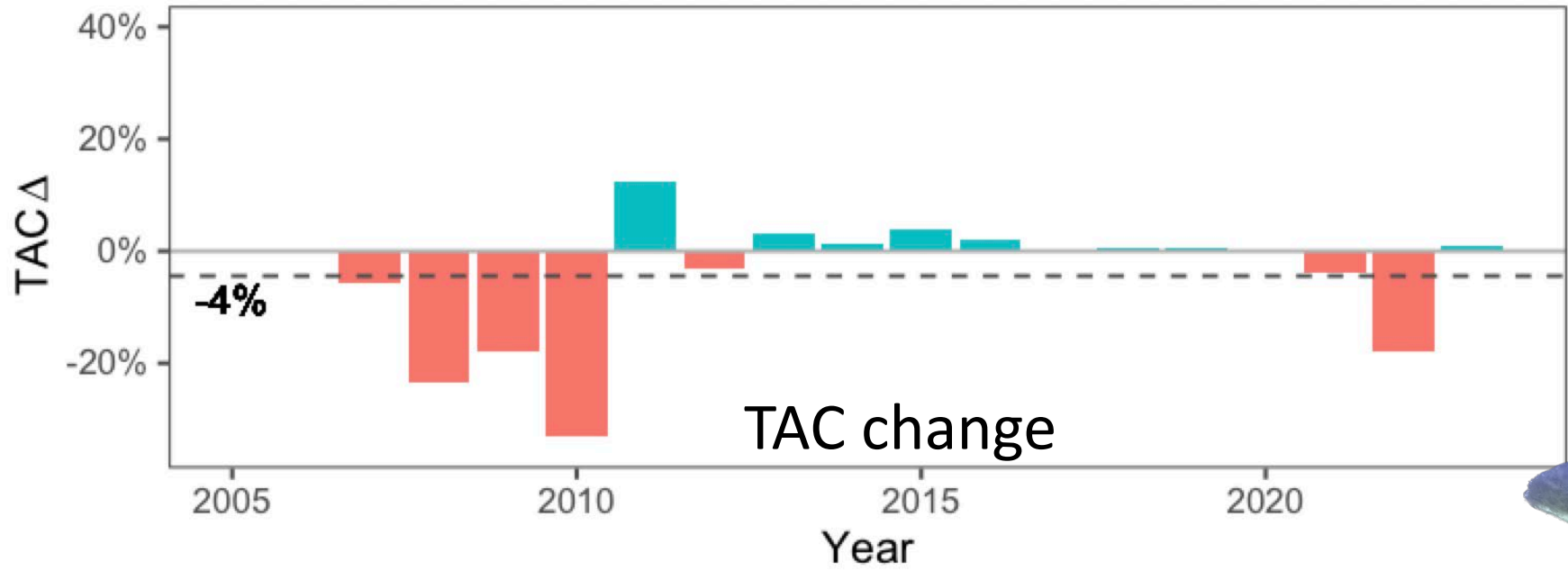


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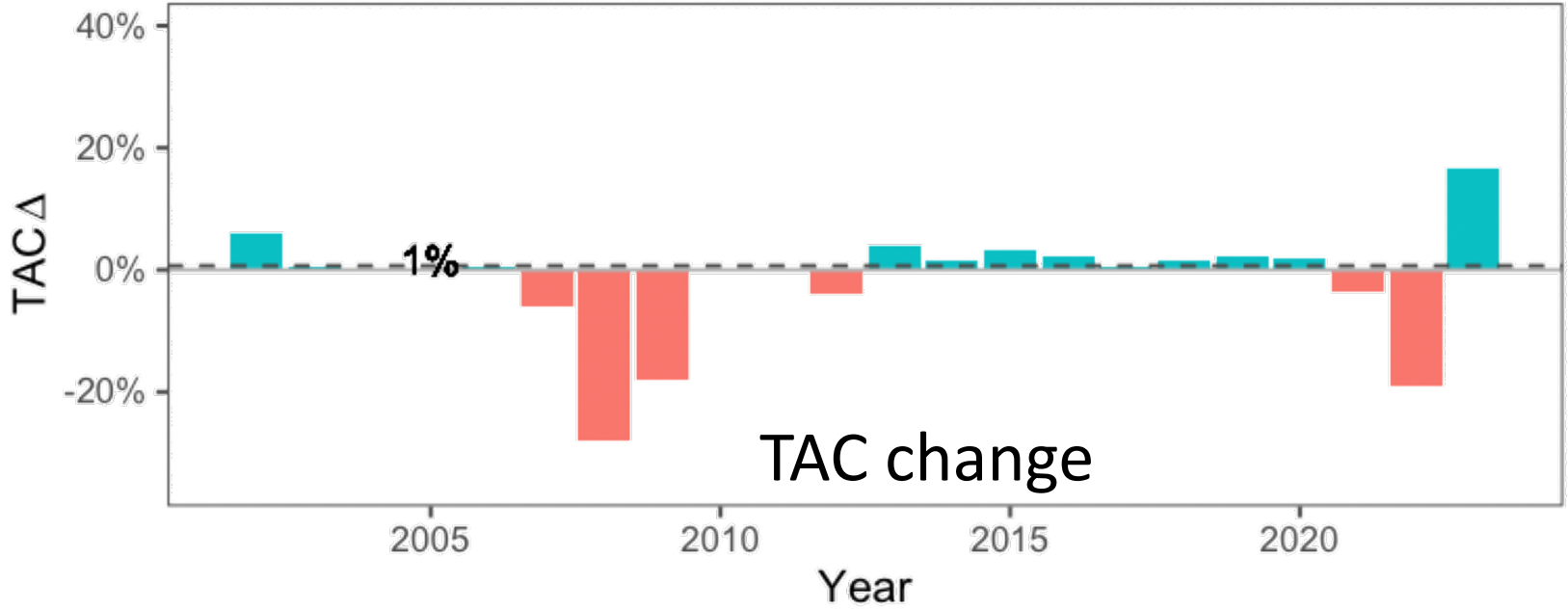
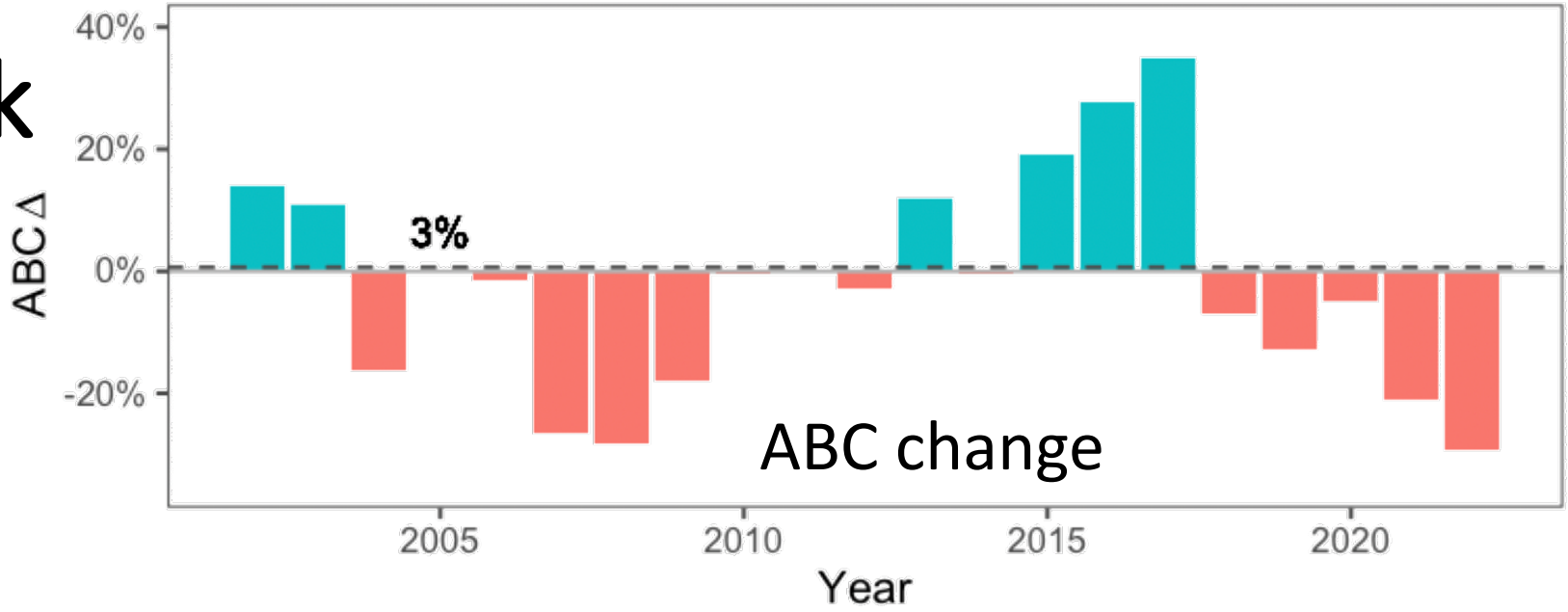
Pollock



Status quo projection



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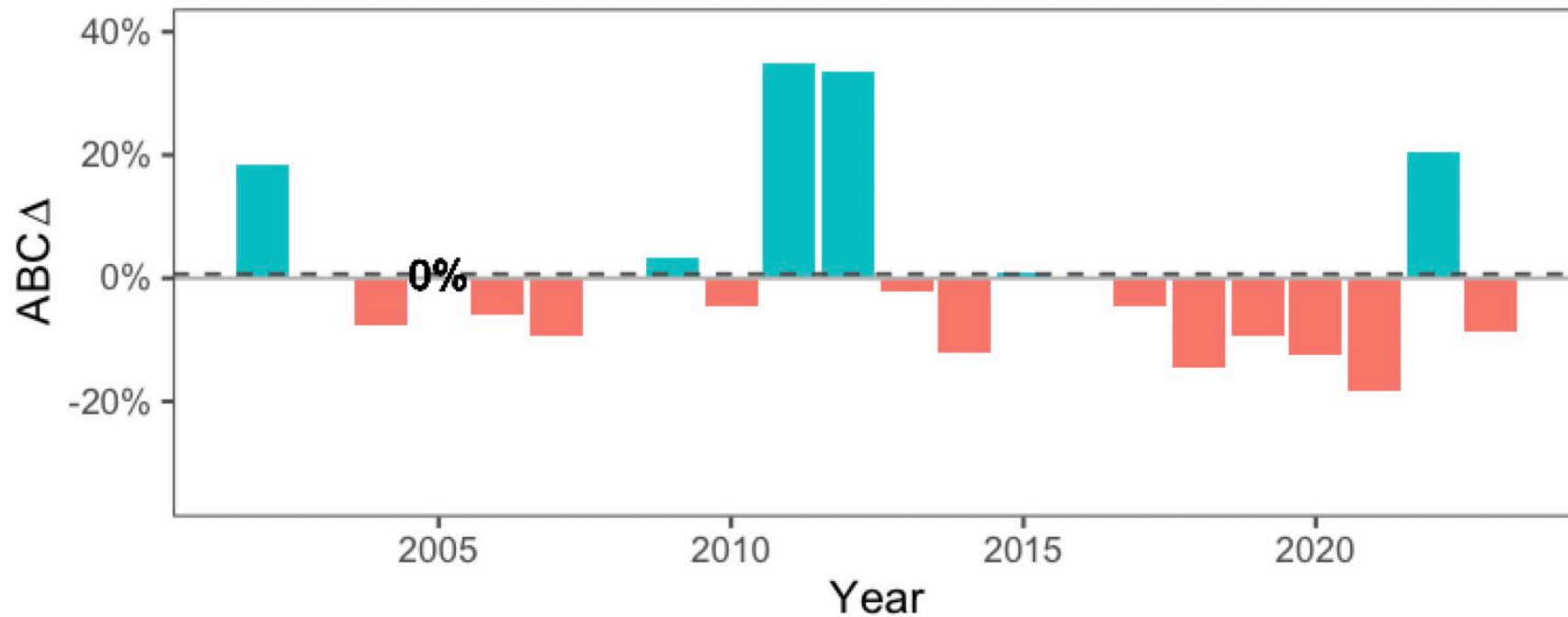


Rollover
previous
year



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Rollover
previous
year



Status
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projection

