

# Survey modernization.

## When things change, surveys need to adapt.

Call for stakeholders engagement.

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# Talk overview:

1. Why we are doing surveys and why change is difficult?
2. Why survey modernization is necessary?
3. What does it take to change survey?
4. Planning the future AFSC surveys. Why do we need to start now?
5. Necessary steps to design new survey and transition from old to new time series.
6. Call for stakeholders engagement.

# “The Future of fisheries-independent surveys - progress in design, technology, estimation and management”

## **Fisheries of the future**

**Looking 30 years ahead, the authors foresee fishing fleets and fish being brought together by a central computing and forecasting office. Supplied with information from a network of buoys and remote-controlled submersibles, this office would keep a constant watch on schools of fish and on the physical conditions at sea**

**by Dayton L. Alverson**

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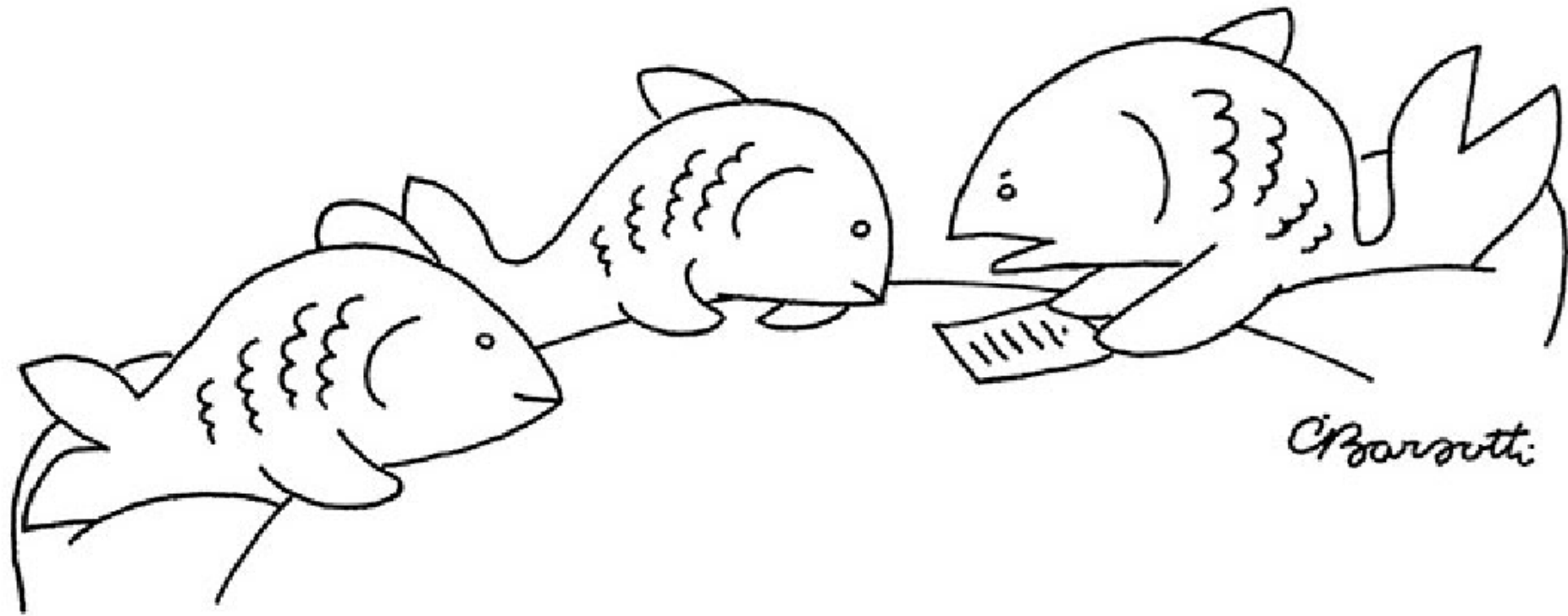
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# 1. Why we are doing surveys and why change is difficult?

- Foundational to modern fisheries management, and fisheries and ecosystem research.
- The primary role of surveys is to provide **consistent** time series of data for use in stock and ecosystem assessments. **Consistent** survey data are the irreplaceable for forecasting and research on ecosystem change.
- **Standardization (doing the same thing over and over) is a key to assure consistency, but when change is inevitable it presents threat to standardization.**
- So, what do we do?

## 2. Why survey modernization is necessary?



"OCEANS ARE RISING, LANDMASS IS SHRINKING ~  
SO FAR SO GOOD."

# Standardization vs. change

- Changes are happening despite our wishes leading to conclusion - consistency through standardization is still important, but it can hinder the progress.
- The challenges to standardization are common and difficult to overcome:

new survey technologies



changes in ecosystems,  
expansion of stocks into new  
areas



survey gear becoming  
obsolete



- loss of traditional sampling  
ability: MPAs, wind farms, etc;



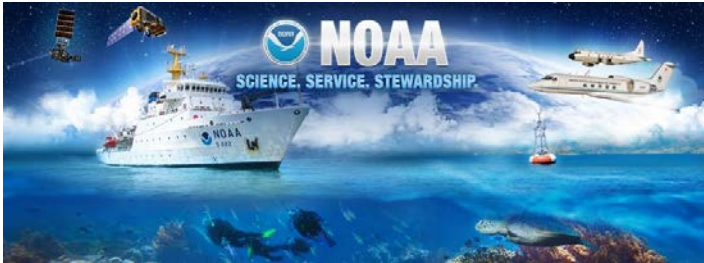
changes in survey  
objectives





# More challenges

economy, politics and social considerations



new statistical methods, AI  
**Machine Learning Vs. Statistics**



need to support subsistence and local communities



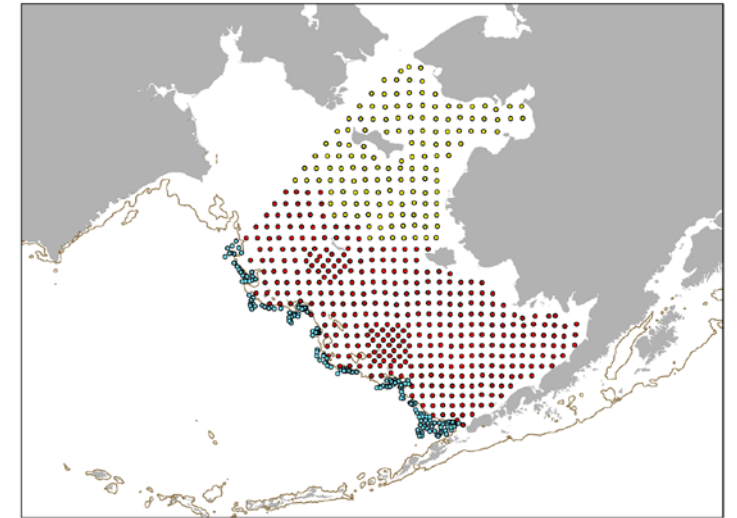
need for new data types, e.g. EBFM, EFH, climate change forecasting, etc





# Bering sea

- Need to adapt surveys to the new reality:
  - Design one survey for all 3 BS regions (EBS, NBS, Slope)
  - Increase survey efficiency, optimize effort allocation,
  - Design flexible survey that will be responsive to assessment data needs and adaptable to new technologies
- Need to redesign gear and change sampling methods
  - Gear is becoming obsolete (doors, floats, nylon mesh, bridles, etc)
  - Improve fishing methods (e.g. use autotrawl)
  - Need to decrease towing time from 30 to 15 min to reduce catch volume and number of tows with split catch.



# 3. What does it take to change survey?

1. Money, time, and people (it may take few years).
2. Good planning
3. Knowledge.
4. **Engagement from stakeholders.**
5. Testing, a lot.
6. Transition period.

# 4. Why do we need to start now?

1. NOAA Fisheries mission: the stewardship of the nation's ocean resources and their habitat.
2. AFSC priorities: 1. Foster healthy and sustainable marine resources; 5. Improve organizational excellence
3. Assure continuity of management advice in face of changes in ecosystem, technologies, and methods.
4. It will take a while, so the sooner we start the better.
5. We have the expertise (NOAA and stakeholders, we can do it together).

5. Necessary steps to design new survey and transition from old to new time series.

# Project components and timeline

- I. Establishment of the AFSC working group to coordinate all the EBS survey modernization activities (October 2023 ; Stan Kotwicki)
- II. Projects, projects 1-4 can be done in parallel, projects 5-6 can be completed only after 1-4 are done:
  1. Sampling design – area, frequency, sampling density (work started in 2023; Lewis Barnett)
  2. Determining 15min vs 30min catchability/selectivity correction factors (work started, more data collections needed; no lead)
  3. Combining slope/shelf data and determine calibration factors between current slope and shelf gears (work started in 2023; no lead)
  - 4. Survey bottom trawl gear and fishing methods redesign (workshop with stakeholders planned for October 2023; Shawn Russel, Nicole Charriere)**
  5. New survey gear calibration (no start date yet, no lead)
  6. Survey time series calibration, transition design, and transition implementation (no start date yet, no lead)

# Milestones (with tentative completion year – depending on funding, personnel, and vessel time)

Establishing AFSC working group on EBS survey modernization (October 2023)

Projects:

1. New Bering sea survey design proposed and agreed upon (2026)
2. 15min vs 30min catchability/selectivity correction factors derived (2026)
3. Calibration factors derived for slope/shelf surveys (2025)
4. New bottom trawl gear designed and built (2025)
5. New survey gear calibration (2026)
6. Survey time series calibration (2026), transition design (2026), and transition implementation (2027)

# 6. Call for stakeholders engagement.

Interested in participating in initial meeting of Survey Modernization Working Group? Or in contributing to any of the projects presented?

**Call for public and industry engagement in all projects, but especially in project (4) on survey bottom trawl gear and fishing methods redesign. Initial workshop is planned in late October. If interested please email:**

**Workshop coordinator: Nancy Roberson [nancy.roberson@noaa.gov](mailto:nancy.roberson@noaa.gov)**

**For specific questions about the project you can contact:**

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# 6. Stakeholders workshop

Depending on interest we will have 1 – 6 separate workshops with stakeholders on each component project.

In the email expressing interest please provide: your name, affiliation, and project component you are interested in. We will contact all interested parties with the date, time, venue and agenda for each workshop once we have an idea about the interest in participation.

For internal AFSCs interest in projects and workshops, please contact your supervisor.

We need to manage change to minimize consequences and maximize benefits



Change is inevitable.  
Growth is optional.

John C. Maxwell

# Thanks!

- Call for papers on “Future of fisheries independent surveys”:  
<https://static.primary.prod.gcms.the-infra.com/static/site/icesjms/document/Future%20of%20fisheries-independent%20surveys%20call%20for%20papers.pdf?node=cb01bc3abc67b5616252>