



**C-2 Groundfish Harvest Specs and Plan Team Report
October 2018 NPFMC**

ABC and TAC

- Recommend keeping ABC (stock assessment science and scientific uncertainty) distinct from TAC (socio-economic and cap related issues).
- Maintain a bright line.
- In the harvest specifications process, stock assessment authors/Plan Team/SSC recommend ABC.
- AP and Council recommend TAC.
- Plan Team members can identify socio-economic impacts of various ABC levels and identify socio-economic issues that could be considered in TAC-setting (but not making explicit TAC recommendations).

Max ABC and ABC “adjustments”

- Be mindful of the methods and layers in which uncertainty is already addressed in the current stock assessment process.
- Model specifications: parameters within models
- Model selection (by author and PT and SSC)
- Assignment in the Tier System (Tiers 1-6)
- Assignment within the Tier System (example: 3a or 3b)
- ABC recommendation process at Plan Team and SSC.

ABC and max ABC “adjustments”

- Factors appeared to be all downward adjustments. Consideration of offsetting upward mitigating factors (other survey information; shift in biomass distribution)
- Unusual environmental event has varied impact depending on the species and its life history (example: different response by sablefish and GOA p-cod)
- **Ecosystem climate report: Consistent pattern of** warm sea surface temperature (SST) **anomalies** in the Bering Sea throughout fall 2017 through spring 2018. A consistent pattern of anomalies - makes defining “unusual” a consistent problem.
- A cumulative “click” list of ABC reductions will result in a scenario where it is not a question of if the cup is half empty or half full, but that the cup may never be full.
- **Need to examine the link between the buffer that is applied and a reduction in the risk that prompted the reduction (i.e. what is the actual benefit).**

ABC and max ABC

- Suggested draft for ABC reductions based on risk concern within three general parameters (assessment; population dynamics; and ecosystem considerations). Risk ranges from normal to substantially increased concerns; to major concerns; and to extreme concern.
- ABC reduction for risk could range from 0%-30% from three suggested methods: via buffer; or changing tiers; or changing F40 harvest strategy (from F40 to a more conservative F60).
- Concur with Plan Team: Do not support approaches of changing existing tier system methodology or adjusting F40 harvest strategy for as risk “buffer”.

ABC and maxABC

- *“We think that a more flexible approach is needed to deal with the highly varied situations that could occur, some of which would be difficult to anticipate in advance. Therefore we recommend that the framework be regarded as providing a set of guidelines or defaults about how classify a certain situation and then identify an appropriate response. Deviating from the guidelines is possible if justification is provided, and may be necessary in novel situations.”*
- **Some of the rationales given in the past for reducing ABC – or not - have been “cover” for gut feeling judgments in reducing ABC – and that can be okay (i.e. need for flexibility).**

Ensemble Modeling

- Ensemble modeling: Go thoughtfully and slow – being mindful of the work load on stock assessment authors – particularly with stocks that are on an annual assessment cycle.
- Should not be an irreversible selection and lock management into an limited static range of models
- A good use of an ensemble model (at high levels of inclusion and complexity) would be to test current assessment methods and harvest control rules, which would help with:
 - supporting a simple model for management purposes by showing that it compares favorably with the ensemble and
 - improving transparency and alleviating review and model selection process at the Plan Team/SSC meetings

EBS P-cod

- Support the Plan Team approach in efforts to incorporate the NW strata and NBS into the stock assessment (while retaining the 1982-1986 EBS data).
- SEBS biomass is down **-21%** and abundance is down **-32%**.
- SEBS/NBS 2010 = **97%/3%**
- SEBS/NBS 2017 = **68%/32%**
- SEBS/NBS 2018 = **49%/51%**
- 2018 combined (NBS/SEBS) biomass is up **+19.2%** from 2017.
- 2018 combined (NBS/SEBS) abundance is down **-1.8%** from 2017.

Northern Bering Sea Survey

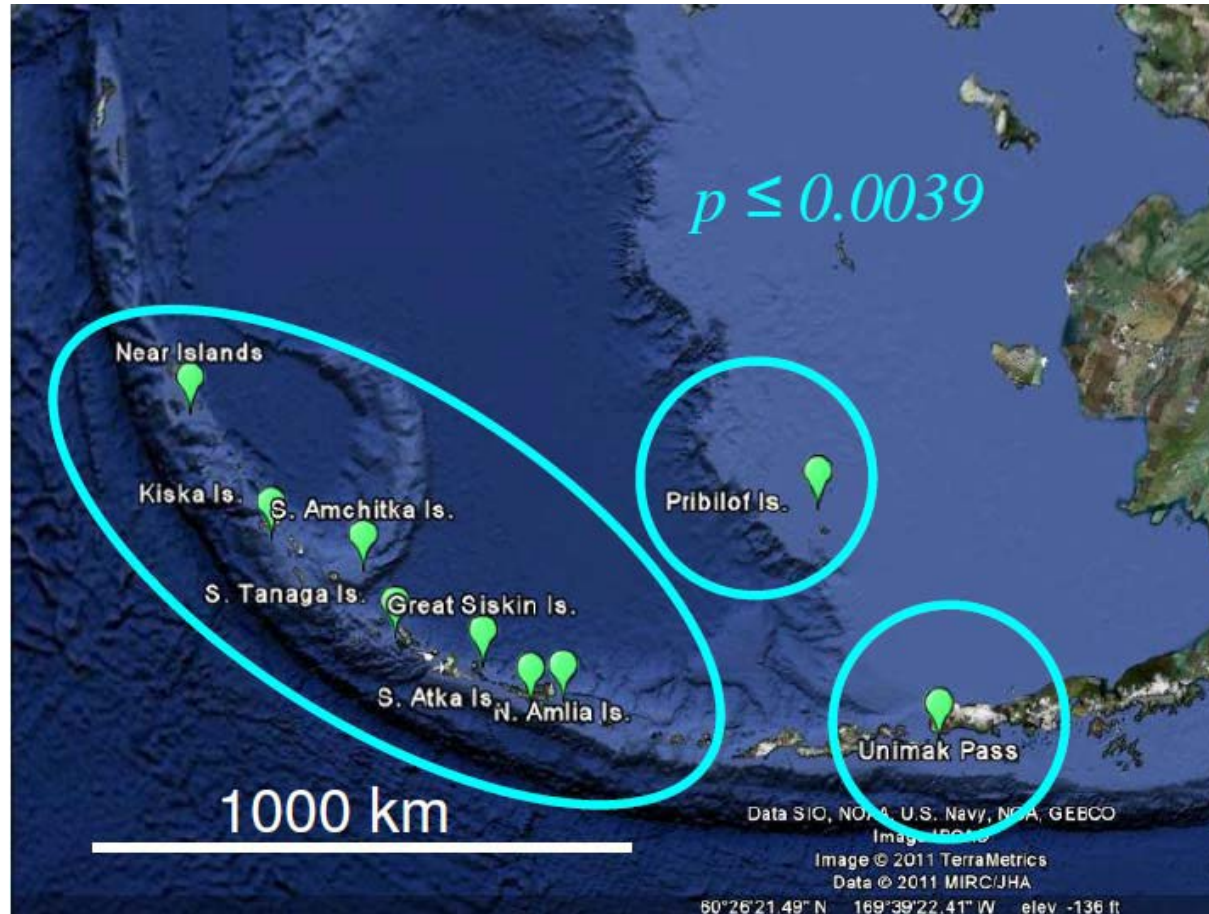
Support Plan Team Recommendation:

“Given recent and projected warm conditions and recent distributional trends, the Team recommends that the NBS survey extension is conducted again in 2019 (and future years as needed) in order to support assessment estimates of fish biomass.”

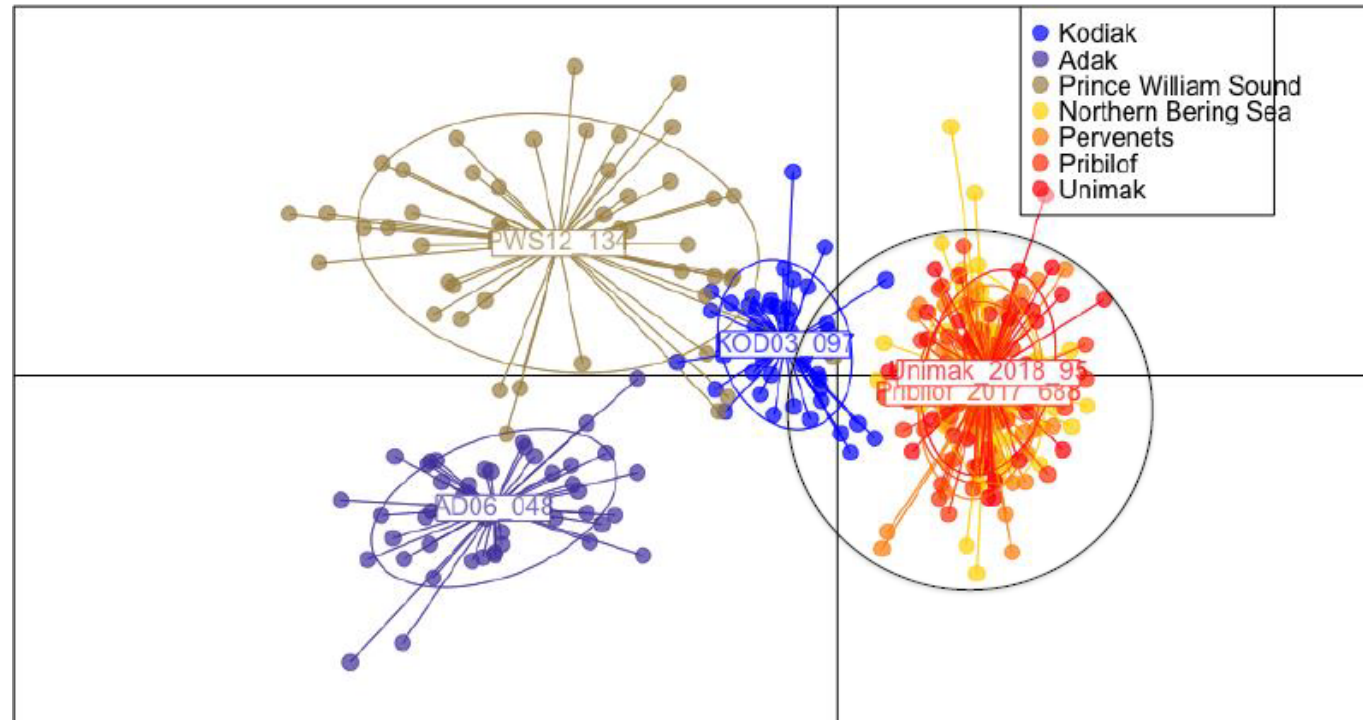
Questions?



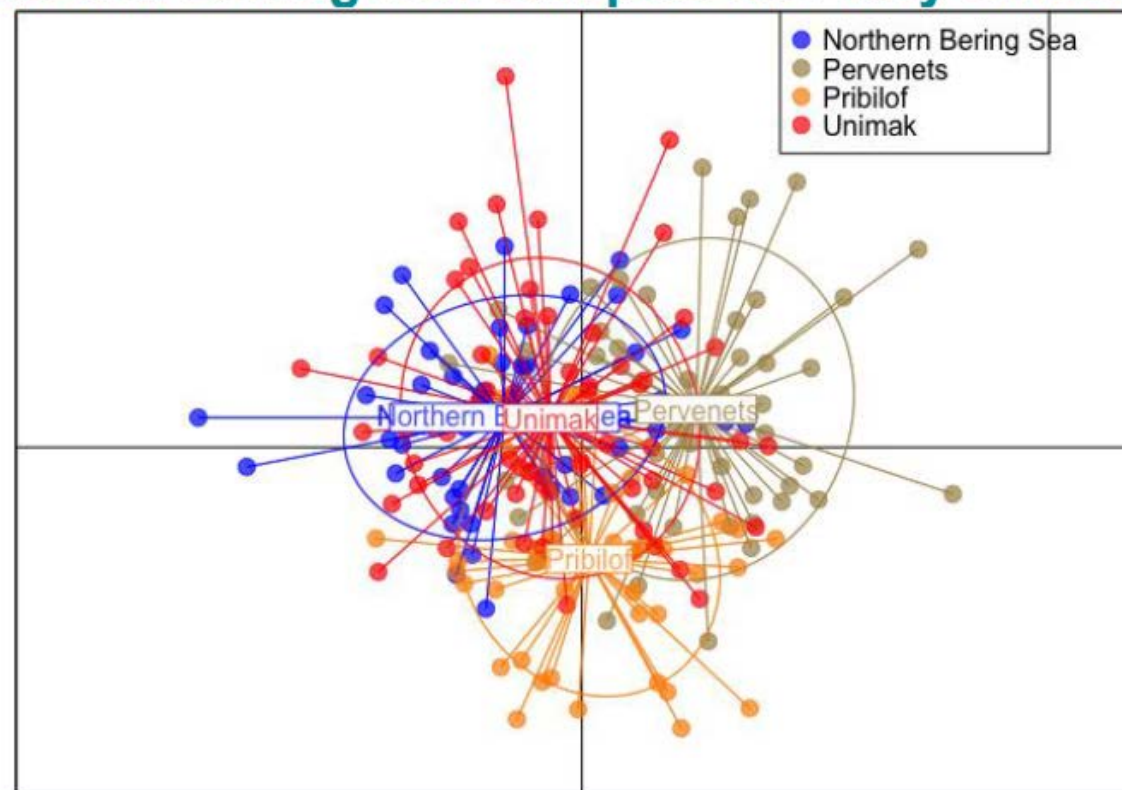
Spies 2011: P-cod landscape genetics



Eastern Bering Sea and Northern Bering Sea samples cluster together



Eastern Bering Sea samples are very similar.



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