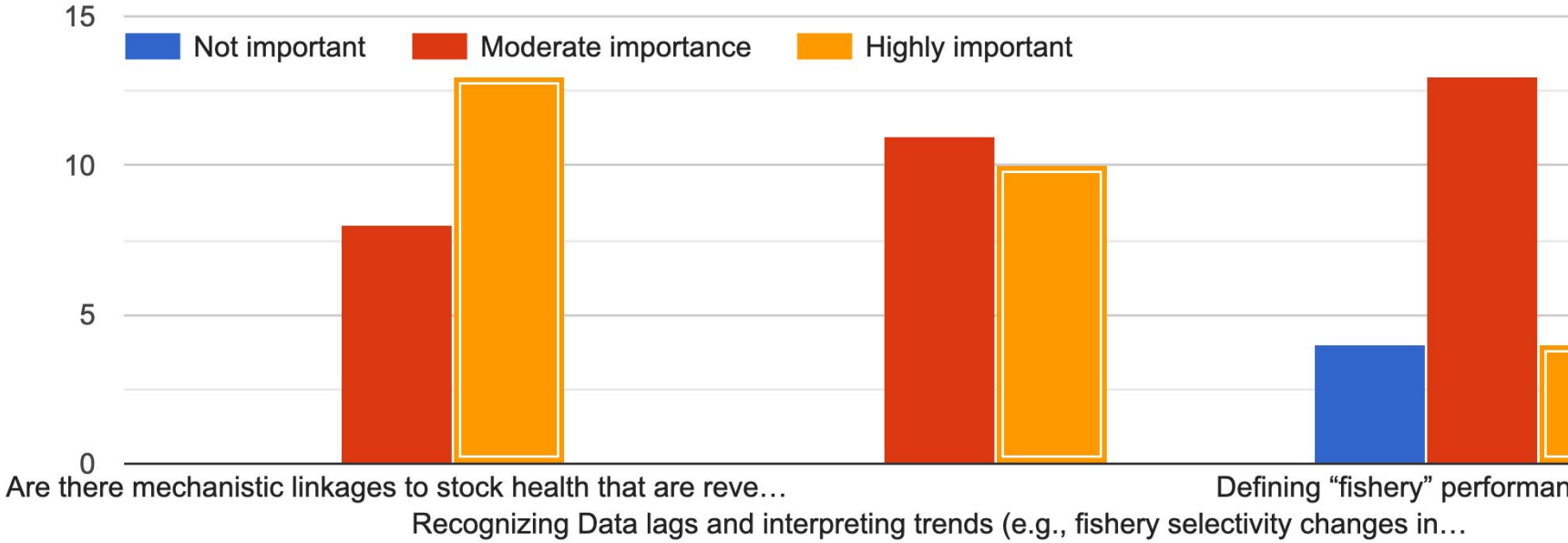
Discussion of tangible steps towards quantifying the importance of **external changes in fishery performance in stock assessments**



Comments from impromptu survey...

I think defining what "fishery" performance means for non-target stocks is one of the biggest questions we need to address.

There can be many reasons that fishery performance is low, but if the fishery really can't find the fish then that would seem to be a signal to research.

I think the first two are interrelated--to understand mechanics, you have to understand lags. I don't know what to say for the last one, but it's probably important for someone!

None of the above are listed in the current level descriptions or explanatory text for the risk table, so it is kind of hard to interpret their importance.

this isn't a clear overall question so was confusing.

... Bycatch management occurs in Alaska and is effective

Fishery performance background

“The SSC also requested that an additional column be added to the risk table to evaluate fishery performance and fishing behavior concerns, considering quantitative fishery metrics, local knowledge, and traditional knowledge for a broader set of observations. The SSC has previously cautioned against the use of economics considerations in recommending an ABC. Economics considerations are taken into account in the NPFMC system when setting the TAC, which must be set lower than or equal to the ABC. Therefore, fishery indicators should be restricted to those that provide information about stock, such as abundance trends and changes in phenology and spatial distribution. They should not be indicators of socioeconomic performance.”

Source: Martin W. Dorn & Stephani G. Zador (2020) A risk table to address concerns external to stock assessments when developing fisheries harvest recommendations, Ecosystem Health and Sustainability, 6:1, 1813634, DOI: 10.1080/20964129.2020.1813634

Session goals

1. Discuss fishery performance measures
2. Describe situations where they may provide valuable out-of-model insights into stock health,
3. Identify research needed to better identify the relationship between performance metrics and stock health, and
4. Note cases where fishery performance metrics may only be relevant for the bycatch stocks of species caught in a target fishery.

Are there mechanistic linkages to stock health revealed in fishery data?

- In GOA Pacific cod, fishing performance declined prior to heatwave impacts “assessed”
- Production
  - Fish condition (skinniness, recovery rate, gel strength)
  - Product mix--change may reflect changes in biology or markets (e.g. we observe more larger fish caught/fillets produced, but could also mean that there is a larger price premium for big fish)
  - Do changes in processor participation reflect stock health?
- CPUE and general effort measures in multispecies fisheries (flatfish)
  - Mgt and ice/temperature conditions affect fishery behavior and may not reflect changes in stock

- Fishery data may reflect movement that may affect survey design/data

Recognizing **data lags and potential impacts on assessment model trends**

- Near-term data unavailable in assessment
  - E.g., 2020 pollock fishery likely caught/selected younger fish than assumed
  - Weight-at-age influence
- Intermittent survey data (e.g., GOA cod...survey)
- Off-year assessments

How do we define “fishery” performance risk for bycatch stocks?

...and how would it be affected by changes in bycatch and incidental catch?

- Examples, sablefish bycatch in the pollock fishery evaluated in sablefish
- Should there be consideration of target fishery impacts on other stocks?
- How should PSC be considered within the target fishery ABC?
- In general, bycatch patterns have potential to reduce TAC of the target species and the ABC of the bycatch species, but not the target fishery ABC.
    - Are there some considerations where this is not the case?
        - For example, should the ABC be reduced in cases where the bycatch is of a species managed by another management body or the bycatch management changes are slow?