**Barriers:**

1. Challenges with estimating catch:

-Baitfish/unaccounted catch

1. Natural Mortality -Estimating and Interpreting

-M can be really high, especially when F is relatively low

-Predators need food it’s nature

-Limiting TAC is one of the only controllable levers (also minimum size/ mesh sizes)

-When stock is low…

1. Quality of Survey data

-accuracy of q

1. LRPs

-A beast, an art more than a science

-Bounded by policy

1. Changes in growth dynamics (i.e. size-at-age, age/size-at-maturation…ect)
2. Assumptions about Recruitment to drive projection

**Bridges:**

1)Improve reporting

Phone surveys

2) -Better integrating a balance of top-down and bottom-up processes in interpretation of M

-MSVPA could be a bridge (ICES)

-Estimating M within assessment models (4TVn Herring and Pacific Herring)

-Multipronged (various methods to quantify i.e. SIA, Stomach Contents and DNA) estimate of relative consumptions

-Natural mortality based on proxies of environment (how much are dying during important periods), trying to get at change in M instead of absolute M.

3) Improving that quality through creative methods.

-Moving with a precautionary (conservative) approach

-Taking estimates as a minimal estimates

-Good effort measures High resolution data to improve depletion estimates

-Time varying q

-Use predators as samples (i.e. index of biomass)

4) Explore alternative methods to define LRP beyond BMSY,

-EAFM approaches, Brecover.

-objective view at multiple methods (Feasible, Plausible and Reliable) and choosing the most ‘valid’

5) Directed research to understand why we are seeing changes in growth dynamics

-understand the data , partition the data then work towards mechanistic understanding

6) Frequently revisit assumptions surrounding recruitment each assessment using a directed framework.

-Maye move away from SRR or use time-varying SSR or environment-recruit relationships…