Day 3 – Reporting

Jacob

Ricker curve vs BH? Why?

-broke out lit review and looked at life-stages to come up with a mechanistic understanding of these stages.

**Bait Removals**

-Removals in the SGSL.

-All landings not accounted for, bait removals add into the total removals so there is some underestimate in that removals.

-3 gillnets with 50 fathoms.

-Hail-in must occur with landings estimate.

-Maximum Herring permitted 907 kg/ lbs.

-Potential for 4,475 folks can go out and try to catch 907 kg.

-97,381 t of lobster – 21,000 t of bait.

-5658 kg – bait. 11% (>50%), 17% (50%).

-4 x underreporting for herring, 2x for mackerel.

-Problems? - #active fisheres 1.8% active and only 50% licences.

-Blitz area probably was known to the worst?

-Proposal to make phone or online surveys mandatory for condition of licence renewal.

**Training the next generation of Fisheries Scientists**

MUN-MI

STREAMS:

-Fisheries Science

Fisheries assessment

-4 courses MSC thesis. Sci Communctions course, Ecology, management and practice in NAF(O).

-FISH 6004 Overview of sTatistical stock assessment

-FISH 6005 Advanced Statistical Stock Assessment

“Original” research may not be conducive to stock assessment efforts.

-Intro to stock assessment – how it used to be done.

Status of program? – dormant. No faculty recruiting stock assessment MSC students.

-Small pool of potential students, usually International students no FISH or Aquaculture background.

-Why? – Only 1 faculty member really interested in Stock Assessment.

My Take – Conflict with MSC thesis and course requirements? Either Biology or Quantitative background not both.

The setup- Get funding for projects, not teaching.

-MSC students outcome – Can take 2-3 years to get a program, usually takes Noel 1 month… so is it worth it ? **How many stay in stock assessment?**

-1 Year post program?

New SA masters concept. Head of School of Fisheires.

-Online and course-based master’s program. 9 semesters. 1 course of a per sesmeter.

**10 ideas**

1. Marine Fisheries Ecology
2. Intro to Stock Assessment
3. Fisheries management strategies
4. Statistical concept for stock assessments
5. Fitting custom TMB models
6. Computational Statistical Statistials
7. Mixed effects and state-space models.
8. Analysis of fisheries surveys
9. -State space integrated stock assessment models

Etc.

How to exact

-A good idea:

Melissa an Owen. – Applied Stock Assessment.

Another idea . – National Centre for training and research. (could do a Canadian Rivers Institute approach).

Annual training workshops. – is it effective? (Was for me).

**Critique of Small Pelagic Stock Assessment**

Additional Ideas Noel – Day 1

Main focus is on the lack of a stock recruitment relationship.

-Common to have high variability in S-R.

-Because there is a delay between a 0+ and your next age group, there is a lot of death and variability due this.

-Of interest,why do you get good recruitment at low SSB.

Evidence of stock recruitment regimes. Not to look at the absolute value of SSB. Phase of high or low may not be low. Sometimes folks look at recruits per spawner…. RPS should decline as SSB increases.

Tang et al. 2021. Is a good example.

-What if density D is “local” instead of global. So if all the SSB is an small area, might expect in a less recruitment than if the SSB is spread over multiple spawning sites.

-Reduction of spawning sites can help your understanding in changes in S-R potential.

-modified stock recruimrent model that accounts for Area occupied.

-Recruitment drivers are often ephemeral.

Recommendations – ther eare problems with defining regimes based on just absolute recruitment or RPS. Keen hidden-Markov models for time-varying productivity.

-Look at components not aggregations.

Albertsen et al. 2018.

**Stephane Gauthier Perpsectives:**

1. Problem with detectability and availability (i.e. “q” for acoustics). E.g. spawning aggregations, issues with shallow water or area covered.
2. It is difficult to detect or know changes in distributions or timing.
3. Density dependent effect on distributions – behavior might change so might change outcome of survey. (“hyperdepletion”) type issue.
4. Inshore vs offshore, mixing or day/night differences.
5. Predator Response Herring -> Seal -> Shark. Anecdotes.
6. Challenges with surveying at large scale.
7. Species ID. If you know it’s only one species… more or less…
8. If if identifieid , TS correct?
9. How to improve monitoring . generally the more sources of info the better (videos, camera, zooplankton, habitat).
10. How you report uncertainty in your survey… how it feeds into the SA.
11. Changes in Equipment – changes in how the data is collected and capacity. Not always comparing to apples to apples. Changes in personnel.
12. Need to move ecosystem approach to both monitoring and stock assessment where possible and practical.