2026 Tanner Crab CIE Review

William Stockhausen

AFSC

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NOAA FISHERIES

Overview:
Center for Independent Experts Review

Review Details

- When: 9-11 June 2026
- Where: AFSC, Seattle WA
- Chair: Cody Szuwalski (AFSC)
- Reviewers:
  - Dr. Larry Jacobson, Indep. Consultant
  - Dr. Martin Cryer, Indep. Consultant
  - Dr. Yong Chen, SMAS, SUNY Stony Brook
- Presenters
  - W. Stockhausen
  - C. Szuwalski
  - T. Jackson
  - M. Litzow

Terms of Reference Topics

- 1: Transition to GMACS
- 2: Side-by-Side Selectivity Analysis and Use
- 3: Federal Tier 3 Reference Points
- 4: Two-area Model
- 5: Hybrid *Chionoecetes*

Reviews

- follow links in reviewer names
- see CPT Meeting eAgenda

- Repository: https://github.com/noaa-afsc/TannerCrab_2026CIEReview

TOR 1: Transition to GMACS

- Comment on the pros and cons of transitioning the assessment to GMACS?
- Are there any concerns with GMACS that would preclude its adoption?
- If so, how may they be addressed?

  - all reviewers: recommend transitioning to GMACS eventually
    - offers improved transparency, standardization, maintainability
    - no concerns with eventual adoption

  - two reviewers: no real reasons not to transition to GMACS immediately
    - TCSAM02/GMACS equivalence substantially demonstrated

  - one reviewer: GMACS not yet ready to replace TCSAM02
    - TCSAM02/GMACS equivalence for given parameters good but insufficient
    - need objective transition criteria including
      - same OFL for same parameters
      - convergence to “same” parameter estimates
      - compare retrospective patterns, likelihood profiles
    - maintain parallel operation of TCSAM02 and GMACS in meantime

TOR 2: Side-by-side selectivity

- Are the methods presented for estimating NMFS selectivity in the SBS experiments scientifically sound?
- Are the resulting changs in population scale when incorporating SBS data into the assessment defensible and appropriate for providing management advice?
- If not, what alternatives might you suggest to provide management advice based on assessment results that incorporate the SBS data?

- short answer: yes, but might consider alternative approaches
  - consider using parametric curves
  - incorporate results as informative priors

- assumption of absolute efficiency of nephrops trawl gear needs more evidence
  - depletion experiments

- estimated selectivity curves seem biologically plausible, as do fully-selected catchability estimates

TOR 5: Hybrid *Chionoecetes*

- How should hybrids be treated in the assessment?
- How should hybrids be treated for reference points and HCRs?
- What additional data streams might be helpful to better inform answers?

- all reviewers: no immediate need to be accounted for in assessment
  - critical biological information missing (fertility, growth, mortality, recruitment dynamics)

- not clear if hybrids are environmentally important (or unimportant)
  - may indicate broader ecosystem changes, altered species interactions

- no current sustainability risk if hybrids are excluded from assessment
- if management of hybrids is desired, it should be done in the snow crab fishery

- should be viewed as a strategic uncertainty possibly requiring substantial future research

TOR 4: Two-area model

- Under what circumstances would you recommend a two-area assessment model?
- Under what circumstances would you NOT recommend a two-area assessment model?
- What data could be gathered or analyses conducted to address the above?

  - all reviewers: a two-area model for Tanner crab is not immediately necessary
    - Stock is probably a metapopulation, not separate stocks or well-mixed
    - NMFS trawl survey provides spatial data that can be used to inform management at finer spatial scales
    - ADFG already uses spatial management

  - one reviewer: developing a spatial operating model and conducting an MSE to address whether existing spatial structure and likely future changes materially affect management performance should be high priority

TOR 3: Reference points

- Considering terminal molt and fishery selectivity, are F35%-based reference points appropriate for Tanner crab?
- If not, what might be more appropriate alternatives?
- Is morphometrically-mature male biomass the appropriate metric for the HCR?

    - short answer: current F35%-based reference points are inappropriate for the stock
        - only large males are harvested, females are essentially unfished
        - F35% does not approximate F_{MSY} for this stock

    - suggestions:
        - try to understand what drives Tanner crab productivity
        - develop a more empirical, simulation-based approach to a target reference point
            - see New Zealand rock lobster fishery (de Lestang et al. 2024)
            - set OFL based on median catch level and relative changes in survey biomass
        - given large fluctuations in abundance, it would be prudent to include females in limit reference points
        - review what led some “stocks to crash” while others others persisted

    - need to better understand factors that determine productivity, but MMB reflects current understanding