[**Guidance Document Link**](https://docs.google.com/document/d/1PoesRTT3qjZ3tsyGHudGGBP0Zk9x3hUven-s0HitqLc/edit?usp=sharing) **for reviewers** [**Google Form Link**](https://forms.gle/YvAKMy4BjikDNWXH9) **for compliance** [**SAFE Guidelines Link**](https://docs.google.com/document/d/1HgvfSLblQeHAtEBUxvim2LgHfPuPoQIW8irBDjXTBUU/edit?usp=sharing) **for stock assessment authors**

**Note**: This checklist includes all *possible* SAFE report elements that might be included in a SAFE document. Not all elements are applicable to every species/stock and may depend on the data available and the assessment type. The google form will not include questions addressing each of these elements and focuses more on ensuring that required sections are present along with primary tables, figures, and results.

**Operational Full Assessment Compliance Checklist**

**General**

* Values in text match tables throughout document
* Checked for rounding errors
* Conclusions consistent with provided results (or discussion included)
* Checked for major typos or grammatical errors
* Tables and figures correctly labeled and ordered in text
* “Red flag comment”

**Title**

* Title and authorship
* Instructions for citation

**Executive Summary**

*Summary of Changes in Assessment Inputs*

* Changes (if any) in the input data
* Changes (if any) in the assessment methodology (**IMPORTANT**)

*Summary of Results*

* Brief summary of results (includes recommended ABC/ OFL, *B* & *F* values [if applicable])
* Text table of results following template in stock assessment guidelines by Tier (**IMPORTANT**)
* Description and/ or text table of area apportionments (if any)

*Responses to Comments*

* Responses to PT/ SSC comments on assessment in general
* Responses to PT/ SSC comments specific to this assessment

**Introduction**

* Scientific name
* Description of general biology and distribution
* Description of key life history characteristics
* Evidence of stock structure, if any

**Fishery and Management History**

* Description of fishery history
* Description of management measures/ unit(s) (including history)
  + Include time series table of catch, ABC, OFL, TAC, and management measures
* Description of current directed fishery
* Information on discards

**Data**

* Text table of data used in assessment with source, data, and years

*Fishery Data*

* Table of catch used in model (omitted if in “Fishery” section)
* Appendix table of removals from other sources
* Tables of catch at age/length (if applicable)
* Description of effort and CPUE

*Survey Data*

* Table of survey biomass estimates with sampling variability (or alternative survey biomass indices, e.g., VAST with documentation)
* Table of sample sizes for compositional data (if applicable)
* Survey numbers at age or length (electronic file) (if applicable)

*Other time series data*

* Table of other time series data (if applicable, e.g., fishing effort, biological data, predator abundance)

**Analytic Approach**

*General Model Structure*

* Description of overall modeling approach
* Reference to software used for standardized software
* Description of, or reference for, population dynamic representation (i.e., model equations)

*Description of Alternative Models*

* Description of base model with model number (e.g., Model yy.jx)
* Description of alternative models with options distinguished

**Results (create according to Tier level described below)**

**Age Structured Model Results (**For Tier 1-3)

* Provide text to interpret the tables and figures for this section including notable differences between previously SSC accepted model and alternative models
* Define biomass and recruitment units used, these should match Executive Summary and Harvest Projections sections
* Tables in this section include parameters, time-series, estimated numbers-at-age, input sample sizes
* Figures in this section include time-series, model fits to survey and fishery data, compositional and conditional age-at-length data and fits, selectivity curves, growth and maturity curves, recruitment deviations, stock-recruitment relationship (if applicable), likelihood profiles, retrospective biomass time-series (within model), retrospective biomass time-series (between model), phase-plane plot (including 2 years of projected F and B).

*Evaluation of Model(s) and Associated Uncertainty*

* Textual description of comparison between previously accepted model and alternative models with diagnostics and justification

*Sensitivity to Model Specification*

* Textual description of sensitivity runs (where applicable)

*Convergence Status and Criteria*

* Textual description of criteria used to determine convergence and report model performance

*Likelihood Profiles on Key Parameters*

* Summary text of likelihood profiling exercise, include conflicts among data sources and explanation

*Retrospective analysis (within model)*

* Summary text of the retrospective method and pattern

*Historical retrospectives (between models)*

* Summary text of comparison between current and historical biomass

**Results** (For Tier 4-6)

* List/ description of parameters estimated independently
* Provide text to interpret the tables and figures for this section including notable differences between previously SSC accepted model and alternative models
* Table of estimated biomass with uncertainty (or associated measures indicating stock status, e.g., maximum catch)
* Figure of estimated biomass with uncertainty

**Projections and Harvest Recommendations**

*Amendment 56 Reference Points*

* Provide parameters, stock size estimates, and biological reference points (or proxy) required by limit and target control rules

*Specification of OFL and Maximum Permissible ABC*

* Specification of *FOFL*, OFL, and maximum permissible *FABC* (Tiers 1-5) or maximum permissible ABC (Tier 6)
* For Tiers 4-5: include stock size estimates using random effects model, at least one measure of uncertainty for the biomass estimate used in the harvest control rule

*Standard Harvest Scenarios and Projection Methodology:* **(**For Tier 1-3)

* State and reference software used for projections
* List of standard harvest scenarios and description of projection methodology (see guidelines for text)
* Table of 13-year projected: catches, spawning biomass, and fishing mortality rates corresponding to the alternative harvest scenarios
* Include text on how current and two future year catches are estimated

*Risk Table and ABC Recommendation*

* Risk table template with evaluation and score of the four considerations
* Summary risk table with scores and explanation if this information supports recommendation to reduce from max ABC of scores

*Area Allocation of ABC (if applicable)*

* Discussion on biological evidence for a regional management approach, or what the data needs are
* Discussion on area apportionment methodology
* Table or values of ABC allocated to each area
* Include reference to stock structure template/ summary, if completed

*Status Determination*

* Statement if stock/ complex is being subjected to overfishing

Tier 1-3:

* Statement if stock/ complex is overfished
* Statement if stock is approaching a condition of being overfished

*Flimit*

* Tier 1-3: Report fishing mortality rate above which the stock is considered to be overfishing(based on the author recommended model) that would have produced a catch for last year equal to last year’s OFL. This is the reverse engineered *F*.
* Tier 4-5: Report fishing mortality rate above which the stock is considered to be overfishing. This is *M* for single stock assessment or the weighted average estimate of *M* for a complex stock assessment

**Ecosystem Considerations**

* Statement that an ESP (with link) is provided for the stock (if applicable, rest of section can be omitted)

*Ecosystem Effects on the Stock*

* Include where applicable prey availability/ abundance trends, predator population trends, changes in habitat quality

*Fishery Effects on the Ecosystem*

* Include where applicable fishery-specific contribution to bycatch, target catch, discards, EFH non-living substrate

**Data Gaps and Research Priorities**

* Describe research, data needs, and priority

**Other**

* ‘Acknowledgements’ section present
* Literature cited section: all references cited using same format
* If applicable, Auxiliary Files are all listed

**Tables “(Section)”**

* (Fishery) Total catch, ABC, OFL, TAC, and management measures
* (Data) Catch as used in model (if not same as above)
* (Appendix) Removals from sources other than official catch estimates
* (Data) Tier 1-3: Catch at age or length (if applicable)
* (Data) Survey biomass estimates with sample variability (or alternative indices)
* (Data) Tier 1-3: Survey sample sizes for compositional data
* (Data) Other time series data (if applicable)
* (Results) Tier 1-3: Parameters used for the base model, including purpose, fixed/estimated, and other statistical measures of uncertainty
* (Results) Tier 1-3: Time series with associated uncertainty confidence bounds of total biomass, spawning biomass/output, recruitment, and fishing mortality
* (Results) Tier 1-3: Estimated numbers at age (or submit electronically)
* (Results) Tier 1-3: Input sample sizes for all composition data by year, include adjustment weights
* (Results) Tier 4-6: Estimated biomass with uncertainty (or associated measures indicating stock status) (or catch table)
* (Proj and Harvest Recs) Tier 1-3: Projections 13-yr of catch, spawning biomass, and fishing mortality rates corresponding to alternative harvest scenarios

**Figures “(Section)”**

* (Results) Tier 1-3: Time series with associated uncertainty confidence bounds of: total biomass, spawning biomass/output, recruitment, and fishing mortality; **show previously accepted model**
* (Results) Tier 1-3 :Time-series of model fits to survey and fishery indices fit within the model. Include residual analysis (e.g., residual, obs vs. pred) where feasible
* (Results) Tier 1-3: Compositional and conditional age-at-length data and fits
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* (Results) Tier 1-3: Recruitment deviations with associated uncertainty
* (Results) Tier 1-3: Stock-recruitment relationship, if one is used
* (Results) Tier 1-3: Likelihood profile (where applicable)
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**Update Assessment Compliance Checklist**

**General**

* Values in text match tables throughout document
* Checked for rounding errors
* Conclusions consistent with provided results (or discussion included)
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**Executive Summary**

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* Changes (if any) in the input data

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* Brief summary of results (includes recommended ABC/ OFL, *B* & *F* values [if applicable])
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* Description and/ or text table of area apportionment (if any)

*Responses to Comments*

* Responses to PT/ SSC comments on assessment in general
* Responses to PT/ SSC comments specific to this assessment

**Introduction**

* Reference last full stock assessment for full description of general biology and life history
* Abbreviated text highlighting relevant information for making management decisions

**Fishery and Management History**

* Reference last full assessment for full description of fishery history; note any significant recent changes to the fishery
* Time series table of catch, ABC, OFL, and TAC and management measures
* Reference to last full assessment for description of discards with text on updated information

**Data**

* Text table of data used in assessment with source, data, and years

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* Table of catch used in model (omitted if in “Fishery” section)
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* Table of other time series data (if applicable, e.g., fishing effort, biological data, predator abundance)

**Analytic Approach**

*General Model Structure and Description of Base Model*

* Description of base model and reference to last full assessment
* Document of minor modeling changes to the last accepted model (if applicable)

**Results (create according to Tier level described below)**

**Age Structured Model Results** (For Tier 1-3)

* Provide text to interpret the tables and figures for this section including notable differences between previously SSC accepted model and alternative models
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* Summary text of the retrospective method and pattern

*Historical retrospectives (between models)*

* Summary text of comparison between current and historical biomass

**Results** (For Tier 4-6)

* List/ description of parameters estimated independently
* Provide text to interpret the tables and figures for this section including notable differences between previously SSC accepted model and alternative models
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* Tier 1-3: Report fishing mortality rate above which the stock is considered to be overfishing(based on the author recommended model) that would have produced a catch for last year equal to last year’s OFL. This is the reverse engineered *F*.
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**Ecosystem Considerations**

* Statement that an ESP (with link) is provided for the stock (if applicable, rest of section can be omitted)
* Reference to last full assessment for full description of the ecosystem considerations
* Abbreviated text highlighting ecosystem and fishery effects on ecosystem

**Data Gaps and Research Priorities**

* Describe research, data needs, and priority

**Other**

* ‘Acknowledgements’ section present
* Literature cited section: all references cited using same format
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* (Proj and Harvest Recs) Tier 1-3: Projections 13-yr of: catches, spawning biomass, and fishing mortality rates corresponding to the alternative harvest scenarios

**Figures “(Section)”**

* (Results) Tier 1-3: Time series with associated uncertainty confidence bounds of: total biomass, 1+, SB/ spawning output, stock depletion, and fishing mortality; **show previously accepted model**
* (Results) Tier 1-3 :Time-series of model fits to survey and fishery indices fit within the model. Include residual analysis (e.g., residual, obs vs. pred) were feasible
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* (Results) Tier 4-6: Time-series estimated biomass w/ uncertainty

**Harvest Projection Compliance Checklist**

**General**

* Values in text match tables throughout document
* Checked for rounding errors
* Conclusions consistent with provided results (or discussion included)
* Checked for major typos or grammatical errors
* Tables and figures correctly labeled and ordered in text
* “Red flag comment”

**Title**

* Title and authorship
* Citation

**Executive Summary**

* Short description of assessment cycle with reference (and link) to last full assessment and when the next full assessment will be conducted
* Short description of stock assessment, including tier, projection model, data sets used, and harvest projection

*Description of Updated Catch*

* List of changes in input catch data, if applicable
* Description of updated factors related to projection model (e.g., expansion factor or yield ratio)

*Summary of Results*

* Text table of harvest projection table following template
* ‘Fishery’ section included with text table of new catch with brief notable trend discussion
* ‘Survey’ section included with discussion of new survey estimates and/ or notable spatial/ temporal trends, if applicable
* ABC/ OFL recommendations
* Table with area apportionment (if applicable) with brief description of methodology

**Figures**

* Figure of new survey estimates with 95% CI, if applicable
* Figure of catch rate (Tier 1-3: catch/ total biomass; Tier 4-6: observed catch and biomass estimates)