Tanner Crab Assessment 2022 Appendix E: Comparison Figures–All Models

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Figure 52: Fits to total catch size compositions in the TCF fishery. Preferred model is 22.03.



TCF: female, all maturity, all shell

Figure 53: Fits to total catch size compositions in the TCF fishery. Preferred model is 22.03.



Figure 54: Fits to total catch size compositions in the TCF fishery. Preferred model is 22.03.



TCF: female, all maturity, all shell

Figure 55: Fits to total catch size compositions in the TCF fishery. Preferred model is 22.03.



Figure 56: Fits to total catch size compositions in the SCF fishery. Preferred model is 22.03.



SCF: female, all maturity, all shell

Figure 57: Fits to total catch size compositions in the SCF fishery. Preferred model is 22.03.



Figure 58: Fits to total catch size compositions in the SCF fishery. Preferred model is 22.03.



SCF: female, all maturity, all shell

Figure 59: Fits to total catch size compositions in the SCF fishery. Preferred model is 22.03.



RKF: male, all maturity, all shell

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RKF: female, all maturity, all shell

Figure 61: Fits to total catch size compositions in the RKF fishery. Preferred model is 22.03.


RKF: male, all maturity, all shell

Figure 62: Fits to total catch size compositions in the RKF fishery. Preferred model is 22.03.



RKF: female, all maturity, all shell

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Figure 64: Pearson's residuals for fits to total catch size composition data in Model 22.01. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



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Figure 73: Pearson's residuals for fits to total catch size composition data in Model 22.10. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 74: Pearson's residuals for fits to total catch size composition data in Model 22.11. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 75: Pearson's residuals for fits to total catch size composition data in Model 22.11. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



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Figure 77: Pearson's residuals for fits to total catch size composition data in Model 22.03. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 78: Pearson's residuals for fits to total catch size composition data in Model 22.01. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 79: Pearson's residuals for fits to total catch size composition data in Model 22.01. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



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Figure 81: Pearson's residuals for fits to total catch size composition data in Model 22.09. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



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Figure 83: Pearson's residuals for fits to total catch size composition data in Model 22.07. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 84: Pearson's residuals for fits to total catch size composition data in Model 22.08. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 85: Pearson's residuals for fits to total catch size composition data in Model 22.08. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 86: Pearson's residuals for fits to total catch size composition data in Model 22.10. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 87: Pearson's residuals for fits to total catch size composition data in Model 22.10. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 88: Pearson's residuals for fits to total catch size composition data in Model 22.11. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 89: Pearson's residuals for fits to total catch size composition data in Model 22.11. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 90: Pearson's residuals for fits to total catch size composition data in Model 22.03. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 91: Pearson's residuals for fits to total catch size composition data in Model 22.03. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 92: Pearson's residuals for fits to total catch size composition data in Model 22.01. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 93: Pearson's residuals for fits to total catch size composition data in Model 22.01. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



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Figure 95: Pearson's residuals for fits to total catch size composition data in Model 22.09. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 96: Pearson's residuals for fits to total catch size composition data in Model 22.07. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 97: Pearson's residuals for fits to total catch size composition data in Model 22.07. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.


Figure 98: Pearson's residuals for fits to total catch size composition data in Model 22.08. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 99: Pearson's residuals for fits to total catch size composition data in Model 22.08. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 100: Pearson's residuals for fits to total catch size composition data in Model 22.10. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 101: Pearson's residuals for fits to total catch size composition data in Model 22.10. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 102: Pearson's residuals for fits to total catch size composition data in Model 22.11. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 103: Pearson's residuals for fits to total catch size composition data in Model 22.11. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 104: Pearson's residuals for fits to total catch size composition data in Model 22.03. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 105: Pearson's residuals for fits to total catch size composition data in Model 22.03. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



GF All: male, all maturity, all shell

Figure 106: Fits to total catch size compositions in the GF All fishery. Preferred model is 22.03.



GF All: female, all maturity, all shell

Figure 107: Fits to total catch size compositions in the GF All fishery. Preferred model is 22.03.



Figure 108: Pearson's residuals for fits to total catch size composition data from Model 22.01. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 109: Pearson's residuals for fits to total catch size composition data from Model 22.01. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 110: Pearson's residuals for fits to total catch size composition data from Model 22.07. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 111: Pearson's residuals for fits to total catch size composition data from Model 22.07. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 112: Pearson's residuals for fits to total catch size composition data from Model 22.08. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 113: Pearson's residuals for fits to total catch size composition data from Model 22.08. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 114: Pearson's residuals for fits to total catch size composition data from Model 22.09. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 115: Pearson's residuals for fits to total catch size composition data from Model 22.09. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 116: Pearson's residuals for fits to total catch size composition data from Model 22.10. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 117: Pearson's residuals for fits to total catch size composition data from Model 22.10. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 118: Pearson's residuals for fits to total catch size composition data from Model 22.11. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 119: Pearson's residuals for fits to total catch size composition data from Model 22.11. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 120: Pearson's residuals for fits to total catch size composition data from Model 22.03. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 121: Pearson's residuals for fits to total catch size composition data from Model 22.03. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



NMFS M: male, all maturity, all shell

Figure 122: Fits to survey size compositions in the NMFS M survey. Preferred model is 22.03.



Figure 123: Pearson's residuals for fits to survey size composition data in Model 22.01. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 124: Pearson's residuals for fits to survey size composition data in Model 22.07. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 125: Pearson's residuals for fits to survey size composition data in Model 22.08. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 126: Pearson's residuals for fits to survey size composition data in Model 22.09. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 127: Pearson's residuals for fits to survey size composition data in Model 22.10. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 128: Pearson's residuals for fits to survey size composition data in Model 22.11. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 129: Pearson's residuals for fits to survey size composition data in Model 22.03. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



NMFS F: female, immature, all shell

Figure 130: Fits to survey size compositions in the NMFS F survey. Preferred model is 22.03.



NMFS F: female, mature, all shell

Figure 131: Fits to survey size compositions in the NMFS F survey. Preferred model is 22.03.



Figure 132: Pearson's residuals for fits to survey size composition data in Model 22.01. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 133: Pearson's residuals for fits to survey size composition data in Model 22.07. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.

NMFS F


Figure 134: Pearson's residuals for fits to survey size composition data in Model 22.08. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 135: Pearson's residuals for fits to survey size composition data in Model 22.09. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 136: Pearson's residuals for fits to survey size composition data in Model 22.10. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 137: Pearson's residuals for fits to survey size composition data in Model 22.11. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 138: Pearson's residuals for fits to survey size composition data in Model 22.03. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



SBS BSFRF M: male, all maturity, all shell

Figure 139: Fits to survey size compositions in the SBS BSFRF M survey. Preferred model is 22.03.



Figure 140: Pearson's residuals for fits to survey size composition data for Model 22.01. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 141: Pearson's residuals for fits to survey size composition data for Model 22.07. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 142: Pearson's residuals for fits to survey size composition data for Model 22.08. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 143: Pearson's residuals for fits to survey size composition data for Model 22.09. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 144: Pearson's residuals for fits to survey size composition data for Model 22.10. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 145: Pearson's residuals for fits to survey size composition data for Model 22.11. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 146: Pearson's residuals for fits to survey size composition data for Model 22.03. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



SBS BSFRF F: female, immature, all shell

Figure 147: Fits to survey size compositions in the SBS BSFRF F survey. Preferred model is 22.03.

SBS BSFRF F: female, mature, all shell



Figure 148: Fits to survey size compositions in the SBS BSFRF F survey. Preferred model is 22.03.



Figure 149: Pearson's residuals for fits to survey size composition data for Model 22.01. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 150: Pearson's residuals for fits to survey size composition data for Model 22.07. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 151: Pearson's residuals for fits to survey size composition data for Model 22.08. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 152: Pearson's residuals for fits to survey size composition data for Model 22.09. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 153: Pearson's residuals for fits to survey size composition data for Model 22.10. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 154: Pearson's residuals for fits to survey size composition data for Model 22.11. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 155: Pearson's residuals for fits to survey size composition data for Model 22.03. Symbol areas reflect the size of each residual, extreme values (residuals larger than 4 in scale) are indicated with a red 'X' to facilitate identification. Preferred model is 22.03.



Figure 156: Fits to directed fishery mean size compositions. Upper plot: retained catch; center plot: total catch for scenarios 22.01; lower plot: total catch for 22.03. The total catch size compositions were normalized differently before fitting between 22.01 and 22.03. Model 22.03 is the preferred model.



Figure 157: Fits to mean bycatch size compositions from the snow crab fishery. Upper plot: total catch for scenarios 22.01; lower plot: total catch for 22.03. The total catch size compositions were normalized differently before fitting between 22.01 and 22.03. Model 22.03 is the preferred model.



Figure 158: Fits to mean bycatch size compositions from the BBRKC fishery. Upper plot: total catch for scenarios 22.01; lower plot: total catch for 22.03. The total catch size compositions were normalized differently before fitting between 22.01 and 22.03. Model 22.03 is the preferred model.



Figure 159: Fits to mean bycatch size compositions from the groundfish fisheries. The total catch size compositions were normalized similarly for all model scenarios. Model 22.03 is the preferred model.



Figure 160: Fits to mean survey size compositions from the NMFS EBS (left column) and BSFRF SBS (right column) surveys. The total catch size compositions were normalized similarly for all model scenarios. Model 22.03 is the preferred model.



Figure 161: Effective sample sizes compared with input sample sizes for retained catch data. Dotted lines are effective N's, solid lines are input sample sizes. Input sample sizes are constrained to a maximum of 200. Model 22.03 is the preferred model.



Figure 162: Effective sample sizes compared with input sample sizes for total catch data. from the TCF fishery.Dotted lines are effective N's, solid lines are input sample sizes. Input sample sizes are scaled to sum to 200 in each year across categories. Model 22.03 is the preferred model.



Figure 163: Effective sample sizes compared with input sample sizes for total catch data. from the SCF fishery.Dotted lines are effective N's, solid lines are input sample sizes. Input sample sizes are scaled to sum to 200 in each year across categories. Model 22.03 is the preferred model.



Figure 164: Effective sample sizes compared with input sample sizes for total catch data. from the RKF fishery.Dotted lines are effective N's, solid lines are input sample sizes. Input sample sizes are scaled to sum to 200 in each year across categories. Model 22.03 is the preferred model.



Figure 165: Effective sample sizes compared with input sample sizes for total catch data. from the GF All fishery.Dotted lines are effective N's, solid lines are input sample sizes. Input sample sizes are scaled to sum to 200 in each year across categories. Model 22.03 is the preferred model.



Figure 166: Effective sample sizes compared with input sample sizes for survey data. Dotted lines are effective N's, solid lines are input sample sizes. Input sample sizes are scaled to sum to 200 in each year across categories. Model 22.03 is the preferred model.



Figure 167: Retrospective analysis for candidate model 22.01. Upper plot: recruitment; lower plot: MMB. The value of Mohn's rho for each time series is given below the respective plot.



Figure 168: Retrospective analysis for candidate model 22.03. Upper plot: recruitment; lower plot: MMB. The value of Mohn's rho for each time series is given below the respective plot.



Figure 169: Retrospective analysis for candidate model 22.07. Upper plot: recruitment; lower plot: MMB. The value of Mohn's rho for each time series is given below the respective plot.


Figure 170: Retrospective analysis for candidate model 22.08. Upper plot: recruitment; lower plot: MMB. The value of Mohn's rho for each time series is given below the respective plot.



Figure 171: Retrospective analysis for candidate model 22.09. Upper plot: recruitment; lower plot: MMB. The value of Mohn's rho for each time series is given below the respective plot.



Figure 172: Retrospective analysis for candidate model 22.10. Upper plot: recruitment; lower plot: MMB. The value of Mohn's rho for each time series is given below the respective plot.



Figure 173: Retrospective analysis for candidate model 22.11. Upper plot: recruitment; lower plot: MMB. The value of Mohn's rho for each time series is given below the respective plot.