

CCGOM

Homework: ToR4-6

Larry Alade

To do List

- Summarize diagnostics for Age-specific M - DONE
- Upload one pager summary of model development and Selection - COMPLETED BUT PENDING
- Upload latest CCGOM ToR 4-6 presentation - PENDING
- Upload this presentation - PENDING

New uploaded Files names:

- One Pager = “CCGOM_model_selection_summary.pdf”
- CCGOM ToR 4-6 presentation = “CCGOM ToR 456 Final_v2.pdf”
- Age specific M presentation = “CCGOM_Const vs Age Spec M Homework.pdf”
- Candidate Model 452 Diagnostic = “Diagnostic_452.pdf”
- Candidate Model 452 Results = “Results_452.pdf”
- Sensitivity Model 452g Diagnostic = “Diagnostic_452f.pdf”
- Sensitivity Model 452g Results = “Results_452f.pdf”

Diagnostic Criteria (m452 vs m452g)

- Compare diagnostics
 - First and second order convergence.
 - Residuals
 - Retrospective Mohn's Rho
 - Jitter Analysis
 - Self-Test
 - Convergence and AIC
- Compare BRP's
- Compare Projections

BATTLE OF THE CANDIDATE MODELS

M452

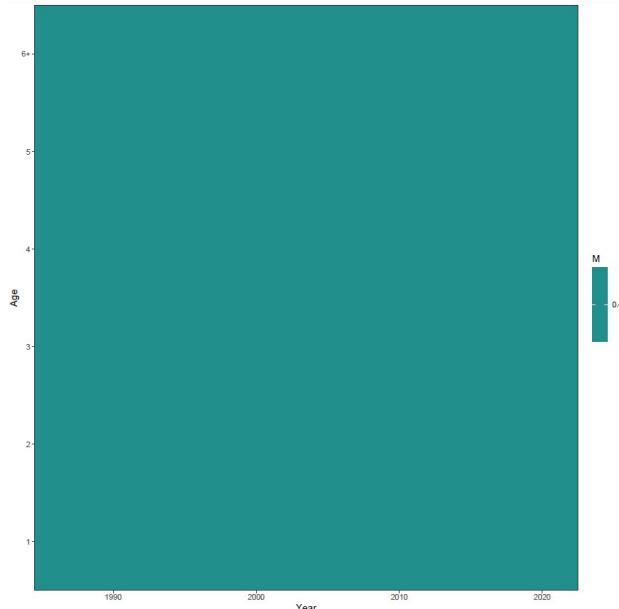
- Single Fleet
- 6 Survey Indices (NEFSC Fall/Spring [AIB/BIG]; MADMF Fall Only, MENH Fall Only)
- Rec = Random about Mean
- Selectivity
 - Fleet = Logistic (RE:none)
 - Survey indices = Logistic (RE: None)
- Age Comp
 - Fleet = Logistic normal-miss0
 - Indices = Logistic normal-ar1-miss0
- NAA: ar1_a
- **M= Constant**

m452g

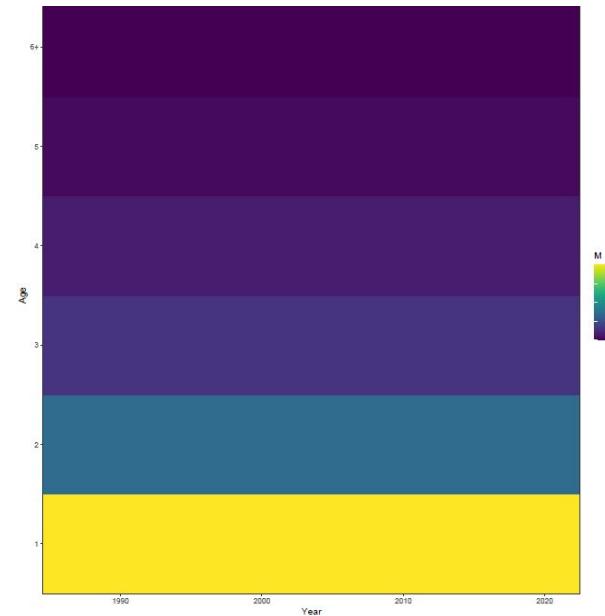
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- Age Comp
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- NAA: ar1_a
- **M= Age-Specific**

Natural Mortality

m452



m452g



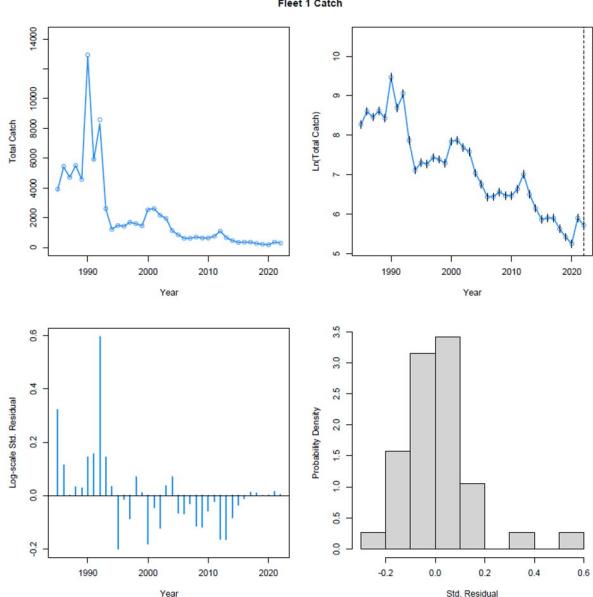
Model Convergence and AIC

Models	Conv.	PdHess	dAIC	AIC	rho_R	rho_SSB	rho_Fbar
Run452	TRUE	TRUE	0	-1982.2	0.17	-0.0635	0.0544
Run452g	TRUE	TRUE	11.6	-1970.6	0.1543	-0.0605	0.0585

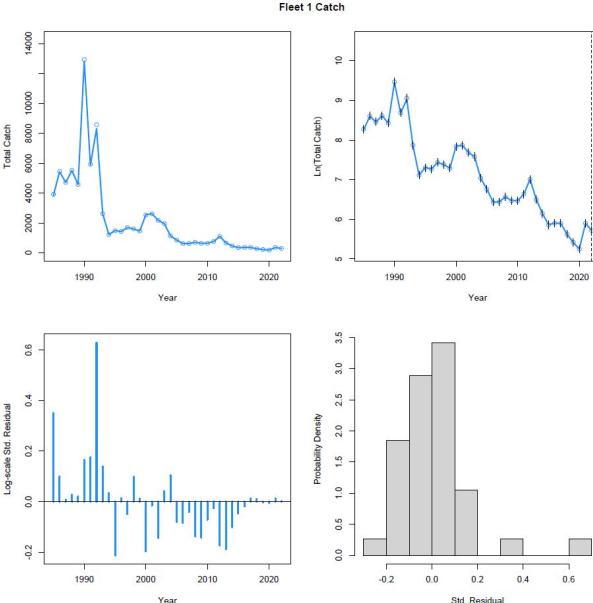
Standard Residuals

Commercial Fleet

m452

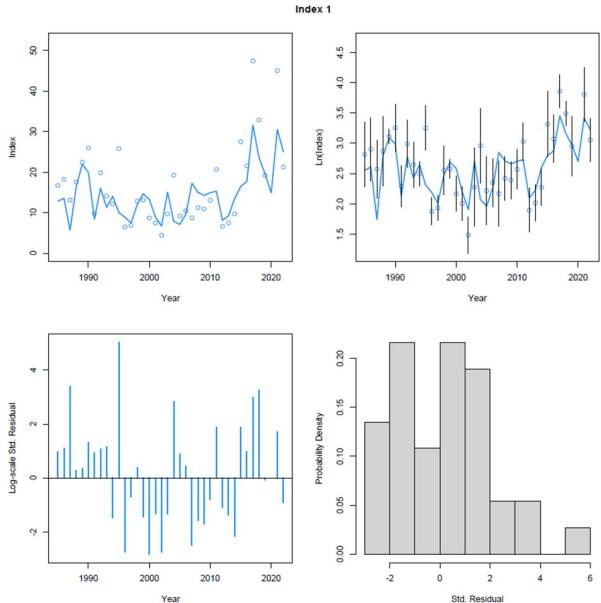


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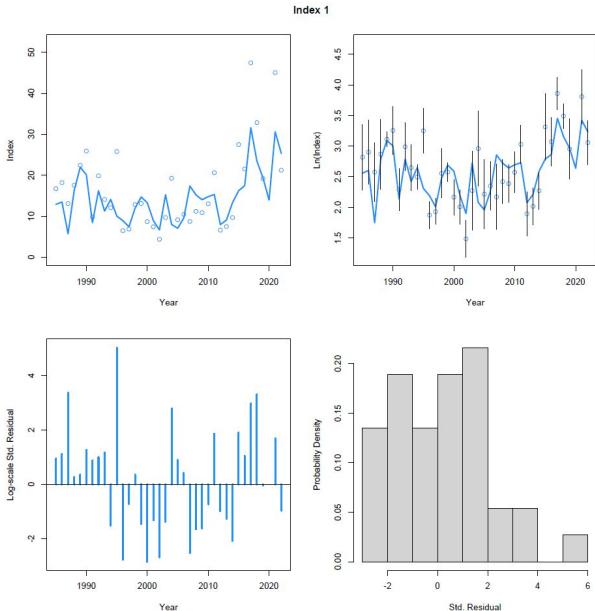


MADMF_Fall

m452

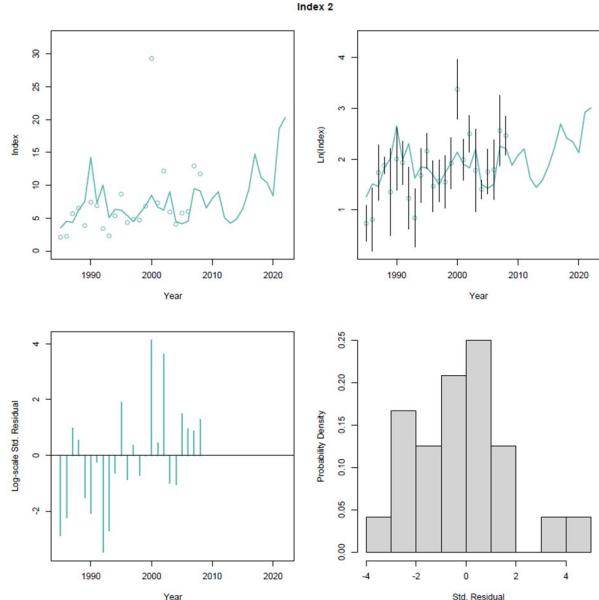


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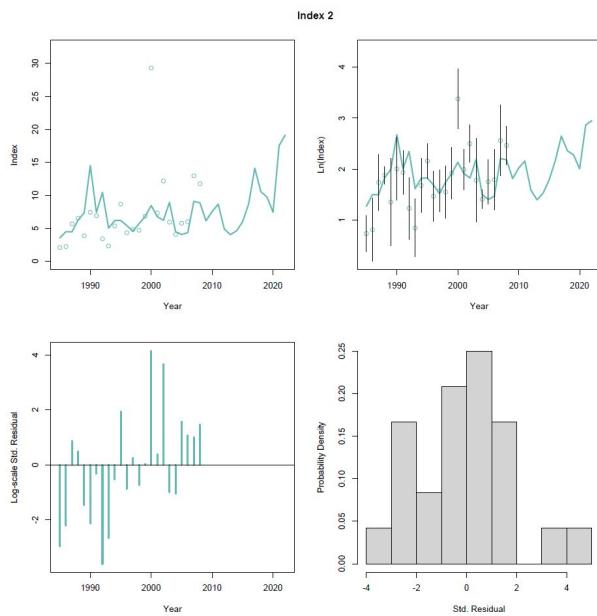


NEFSC_Spring_Albatross

m452

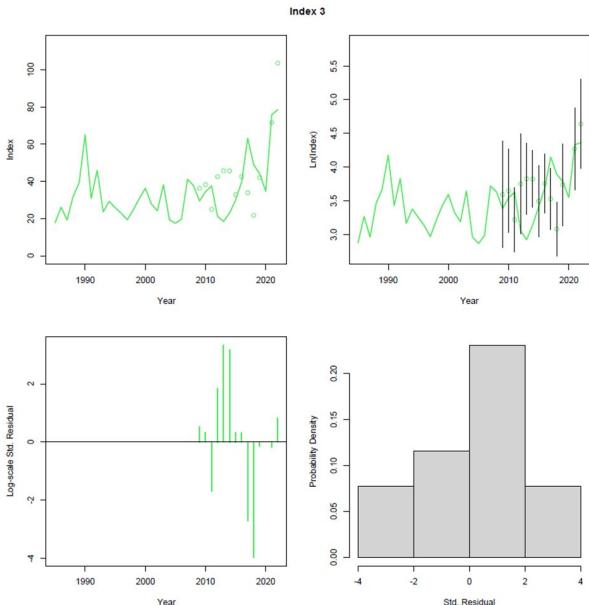


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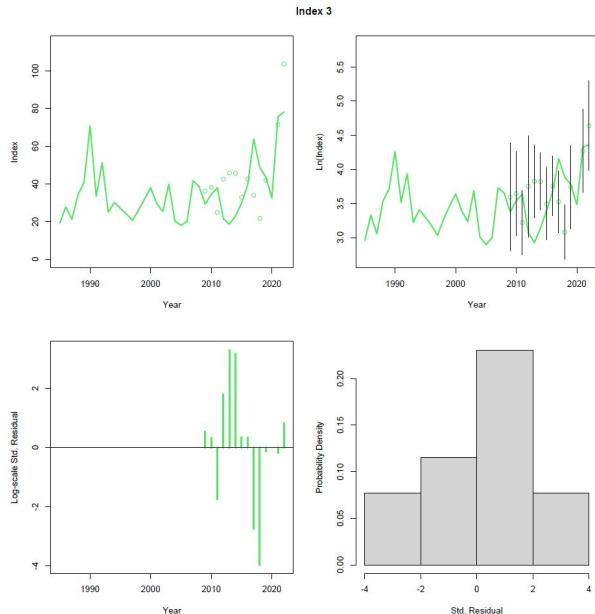


NEFSC_Spring_Bigelow

m452

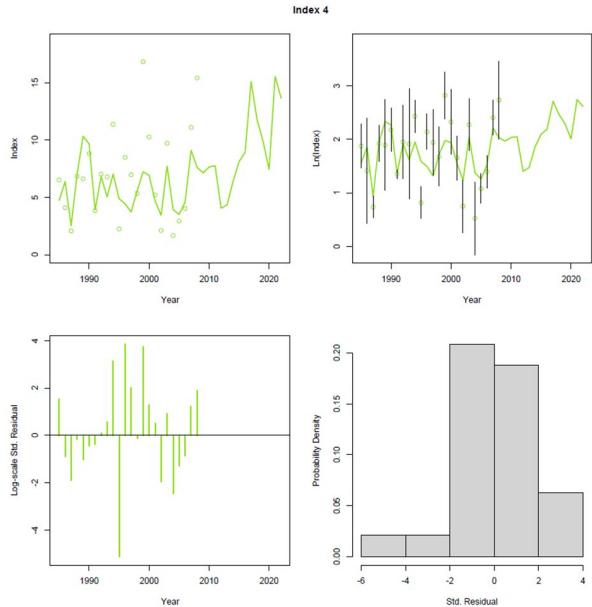


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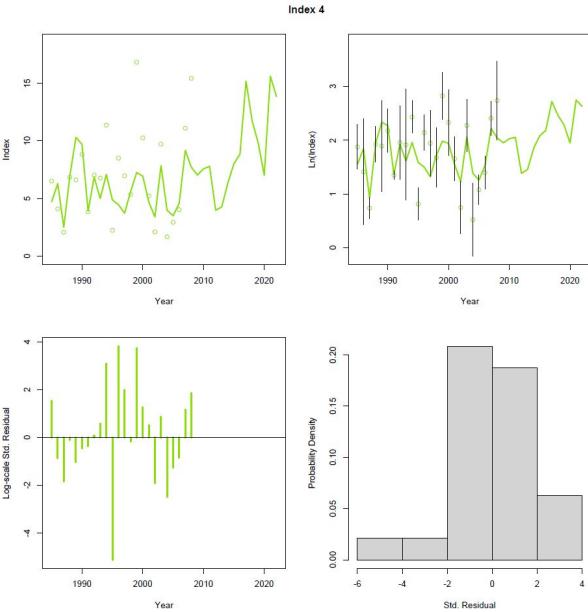


NEFSC_Fall_Albatross

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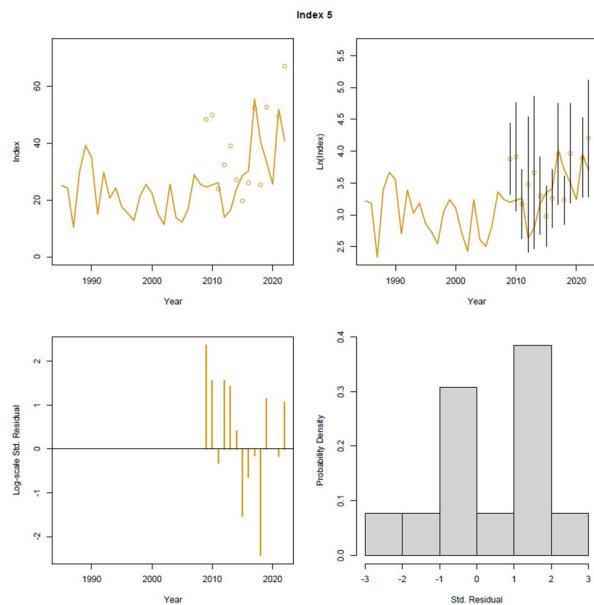


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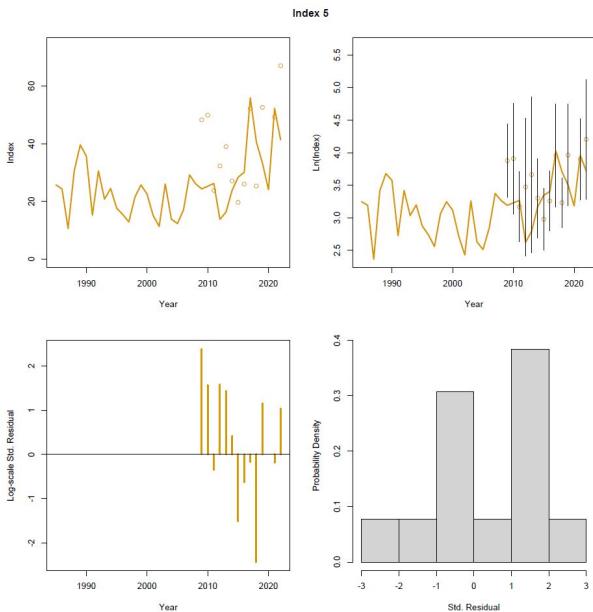


NEFSC_Fall_Bigelow

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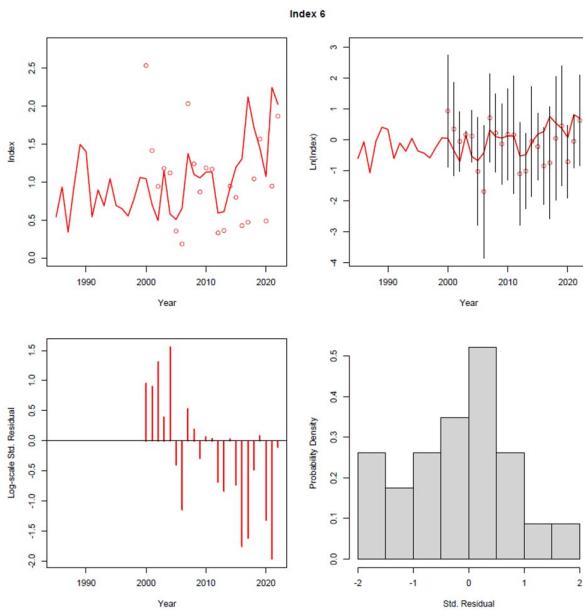


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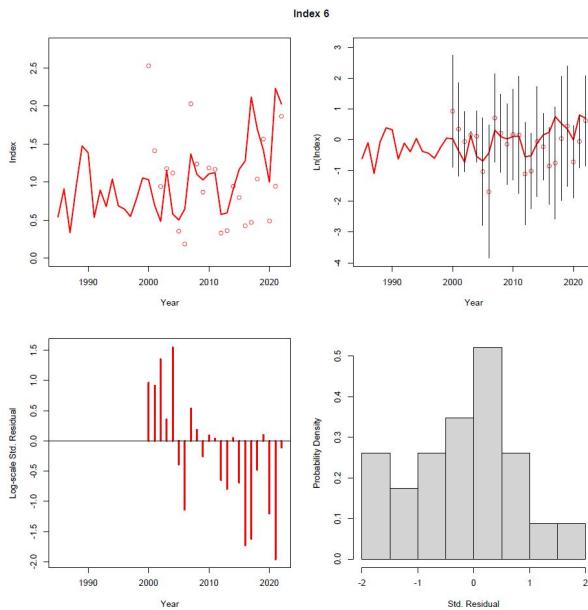


MENH_Fall

m452



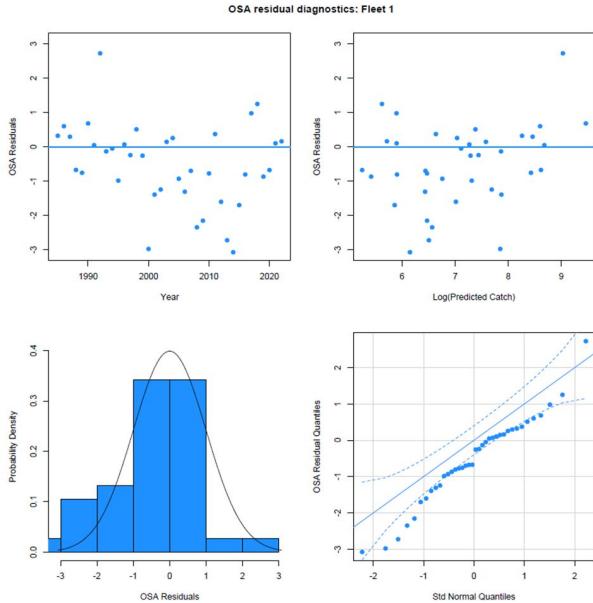
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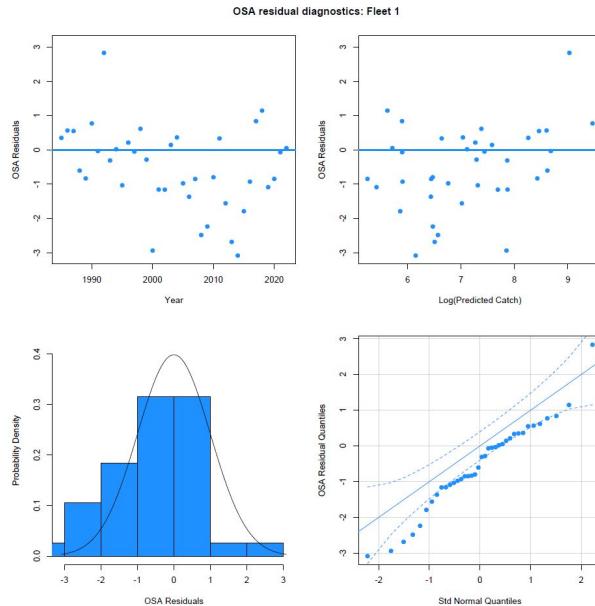
Aggregate OSA Residuals

Commercial Fleet

m452

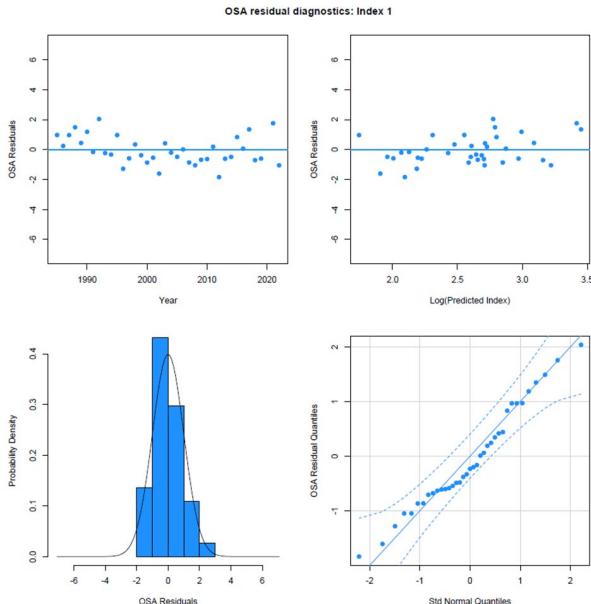


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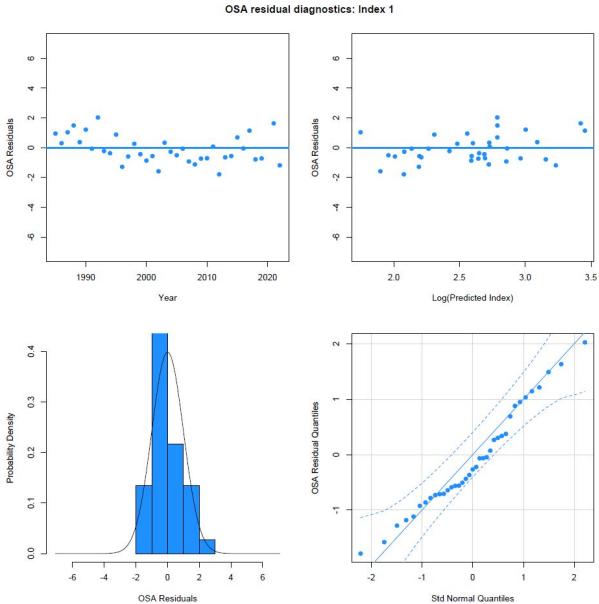


MADMF_Fall

m452

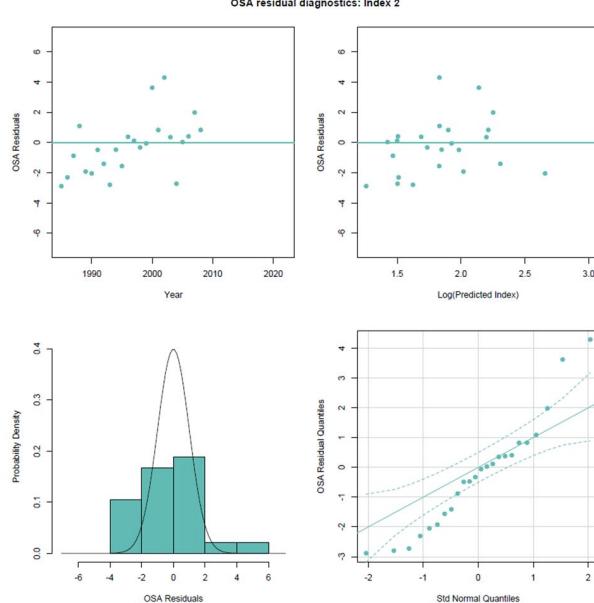


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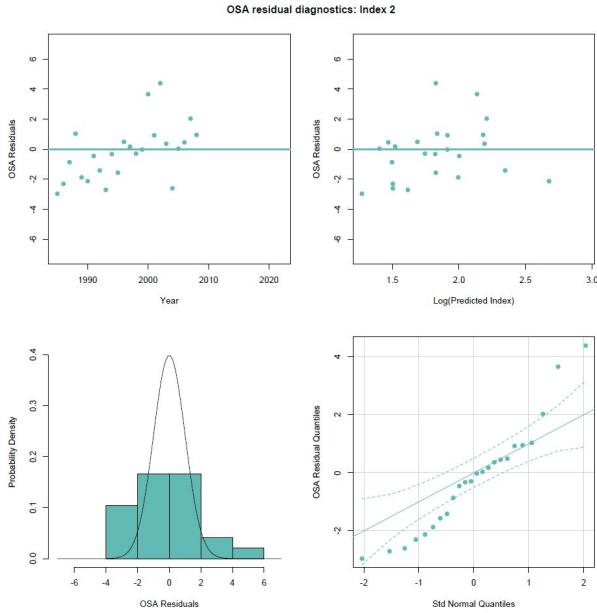


NEFSC_Spring_Albatross

m452

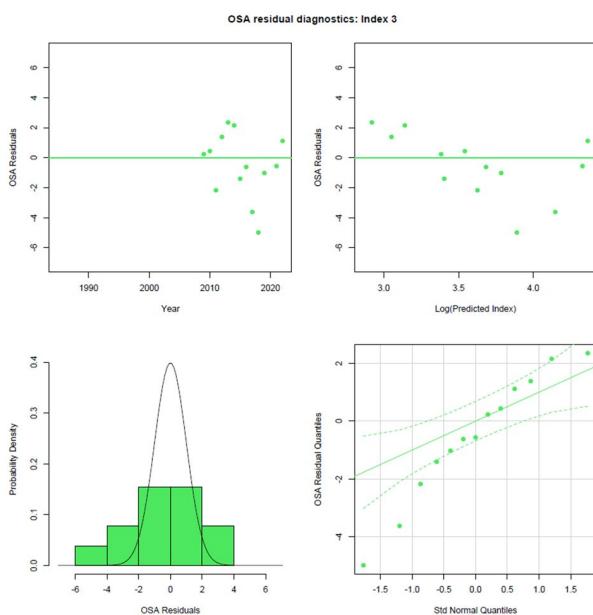


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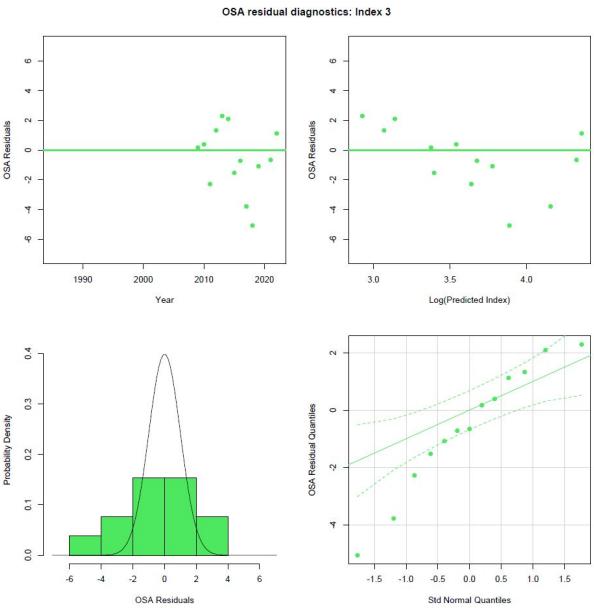


NEFSC_Spring_Bigelow

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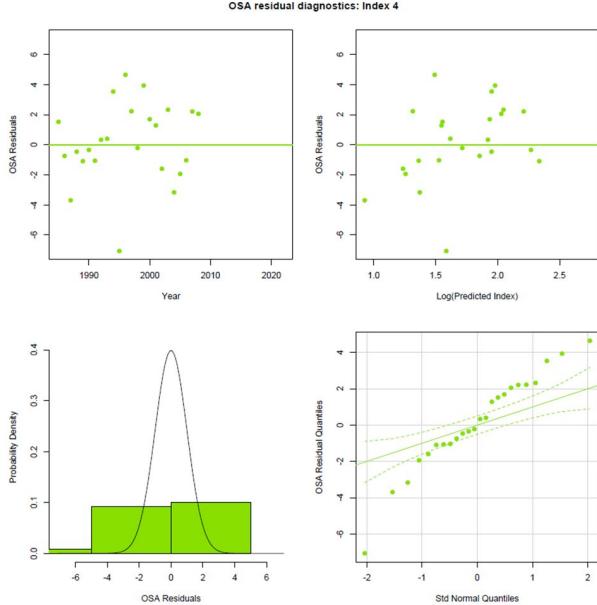


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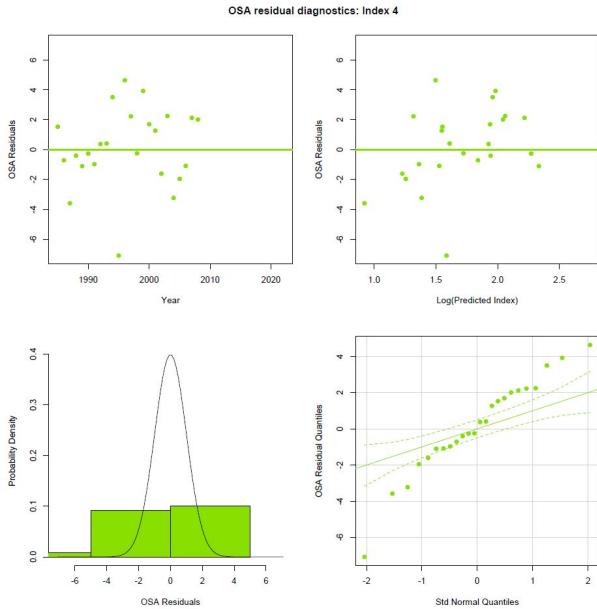


NEFSC_Fall_Albatross

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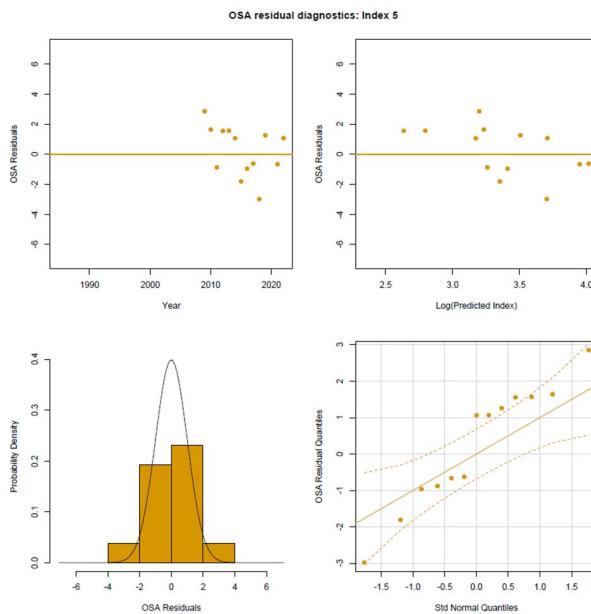


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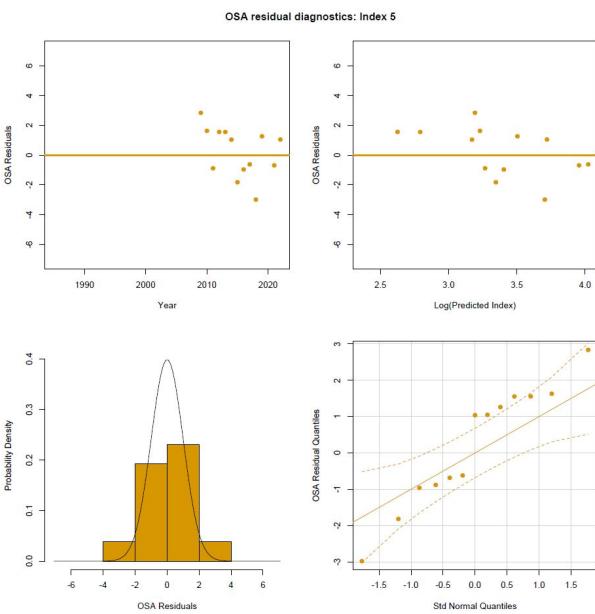


NEFSC_Fall_Bigelow

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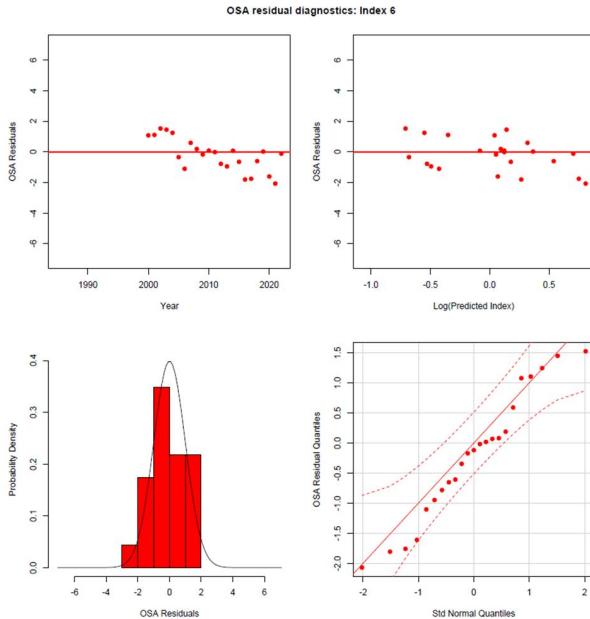


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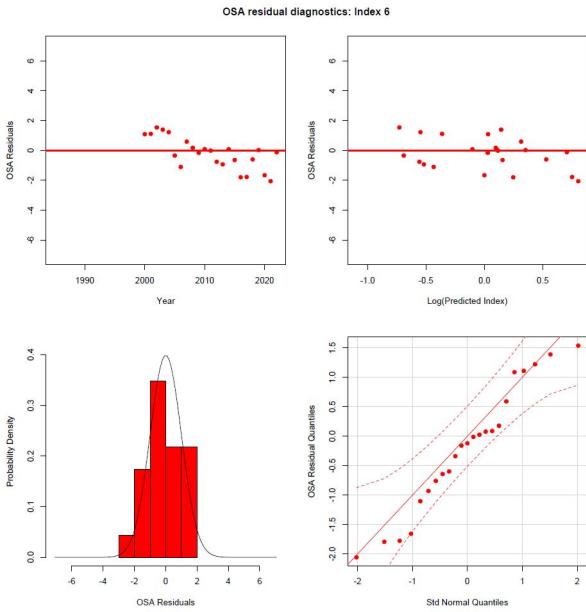


MENH_Fall

m452



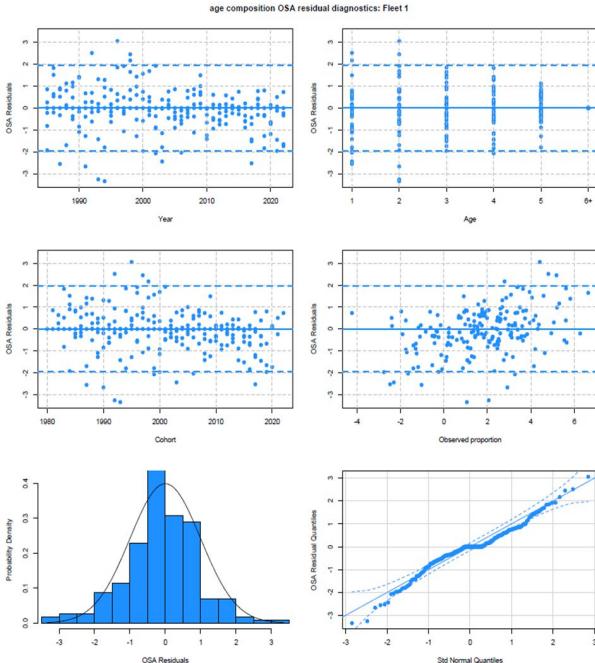
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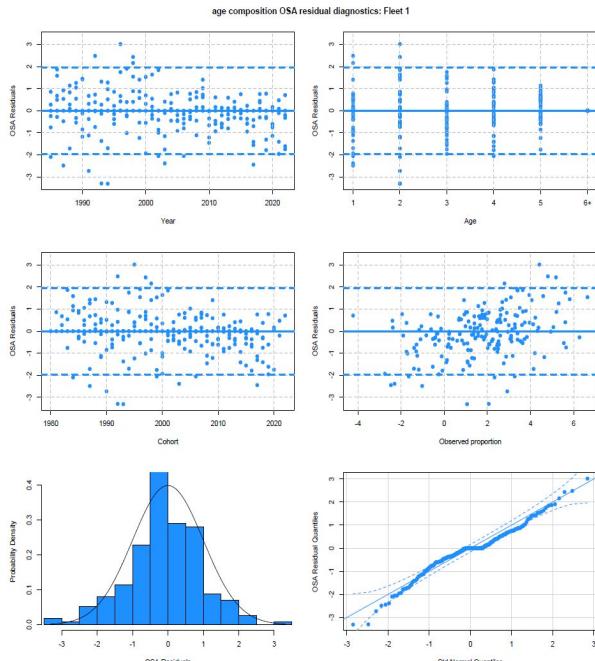
Age Comp OSA Residuals

Commercial Fleet

m452

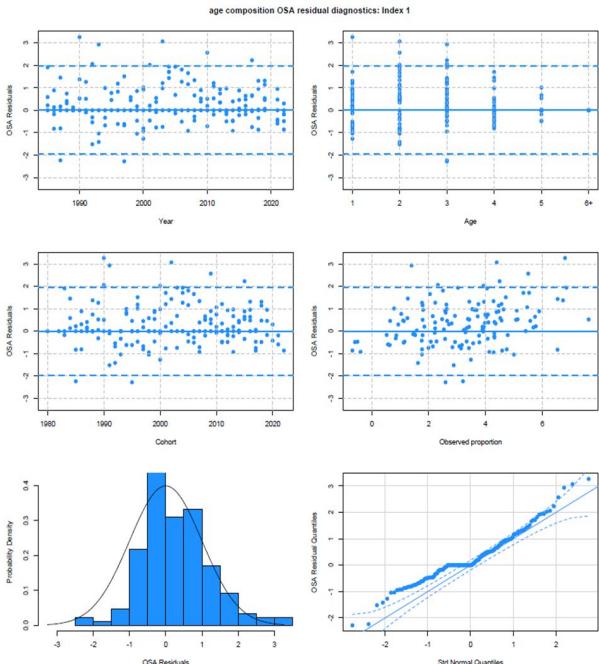


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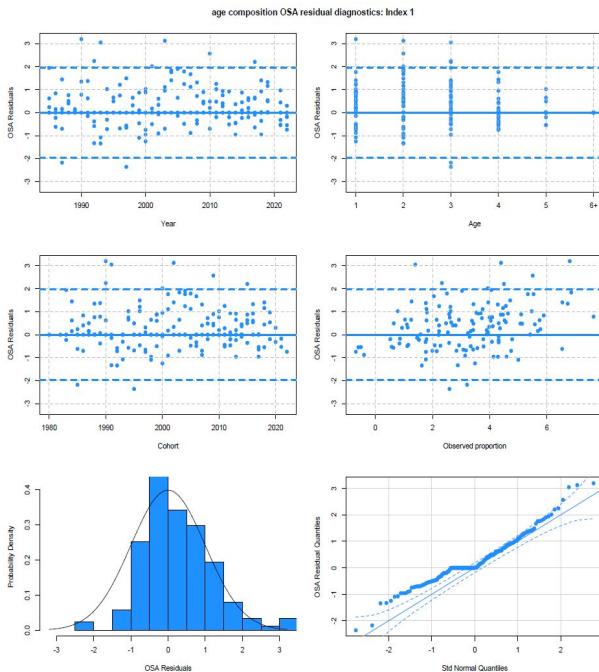


MADMF_Fall

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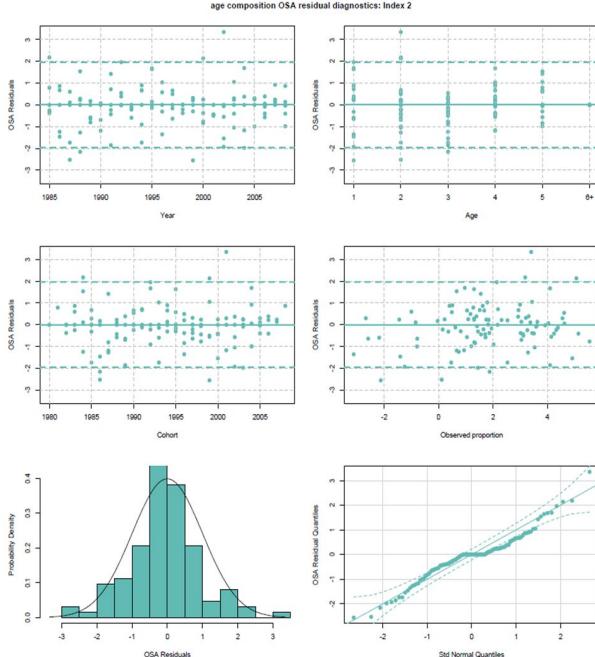


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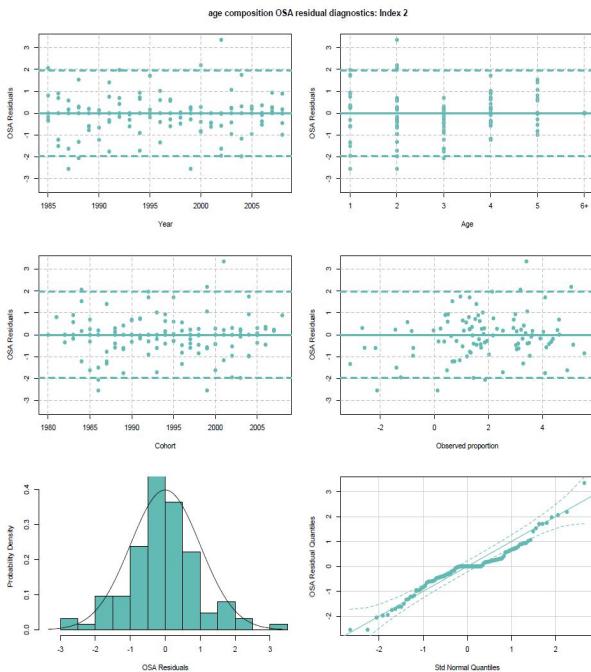


NEFSC_Spring_Albatross

m452

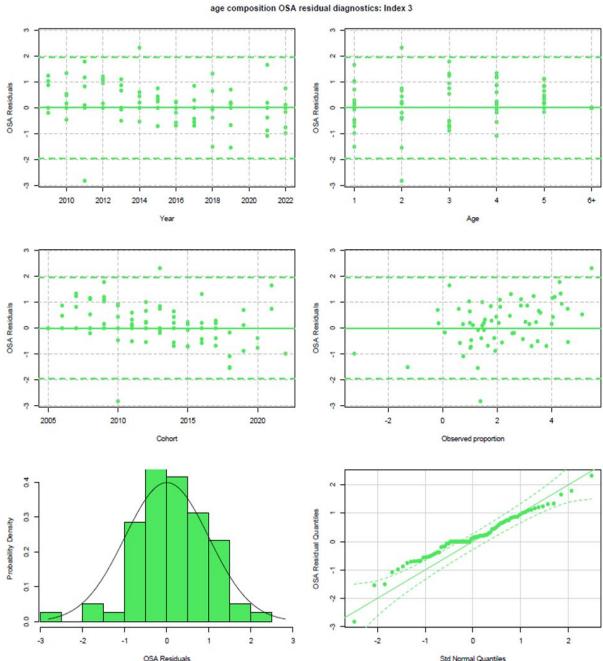


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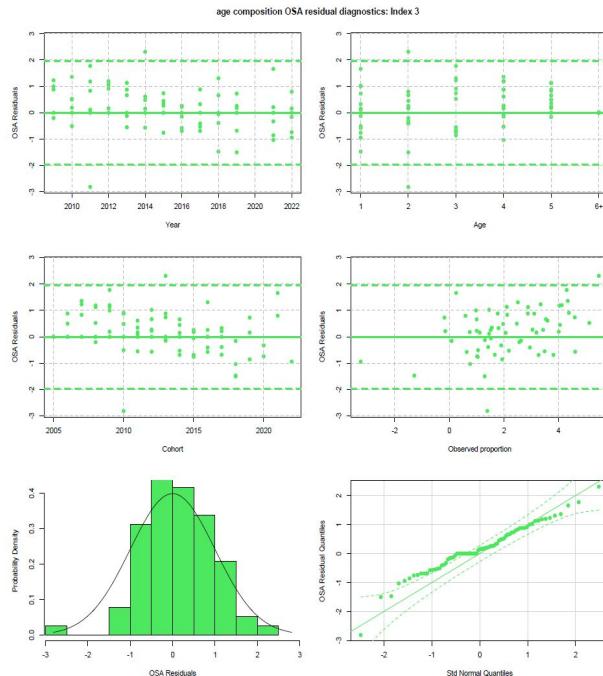


NEFSC_Spring_Bigelow

m452

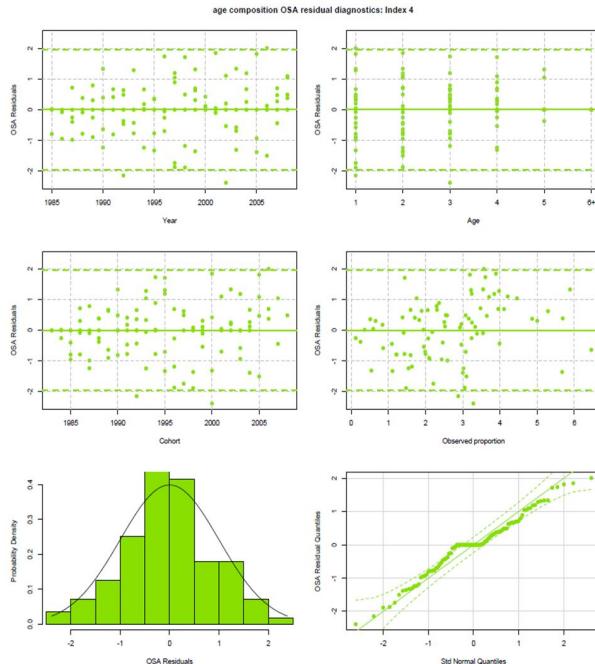


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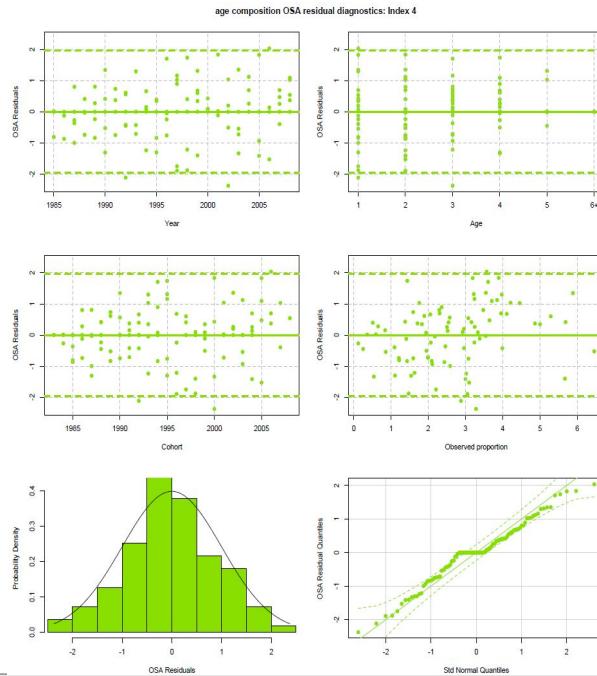


NEFSC_Fall_Albatross

m452

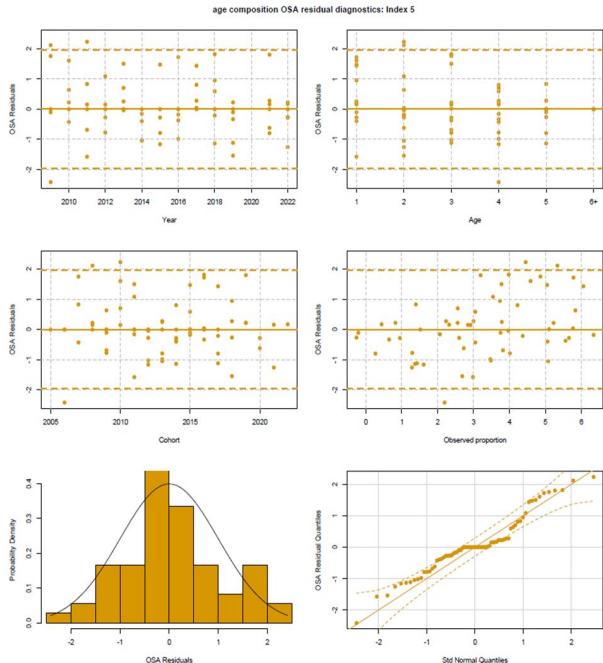


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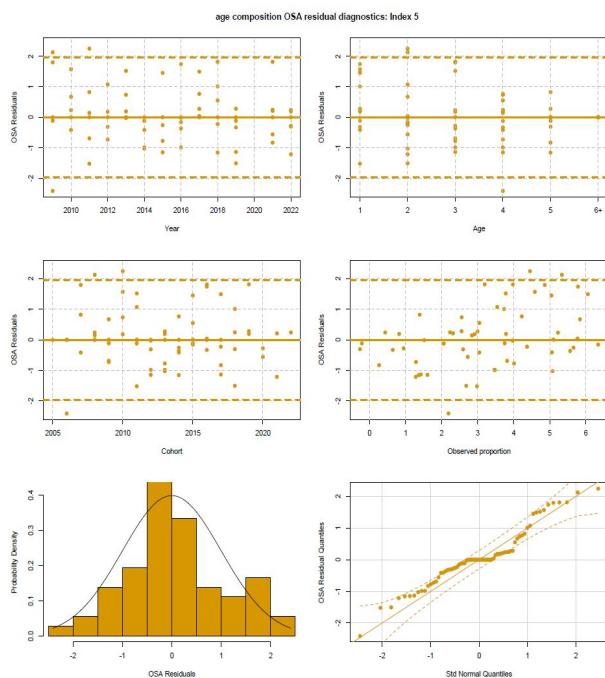


NEFSC_Fall_Bigelow

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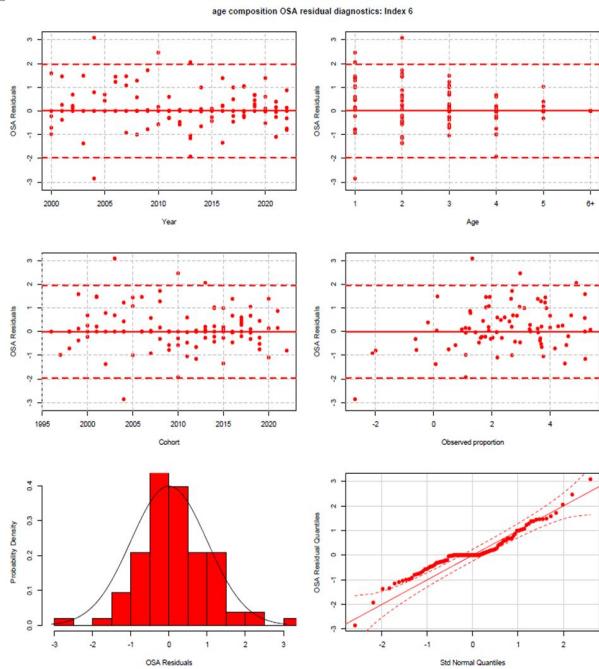


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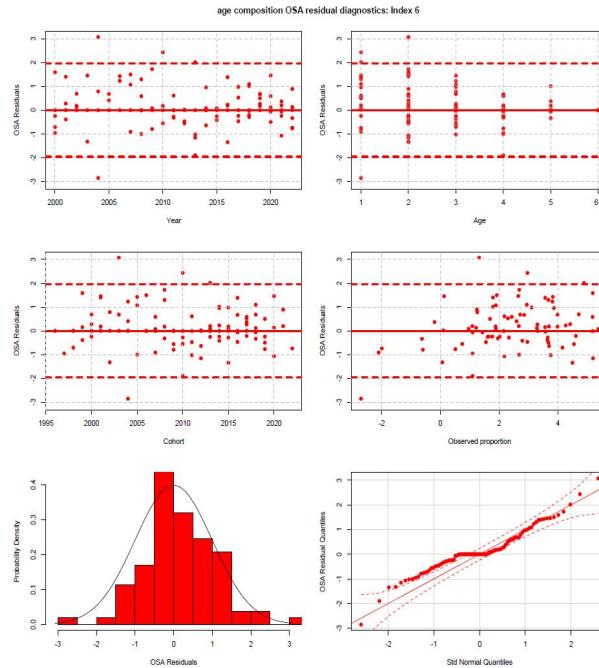


MENH_Fall

m452



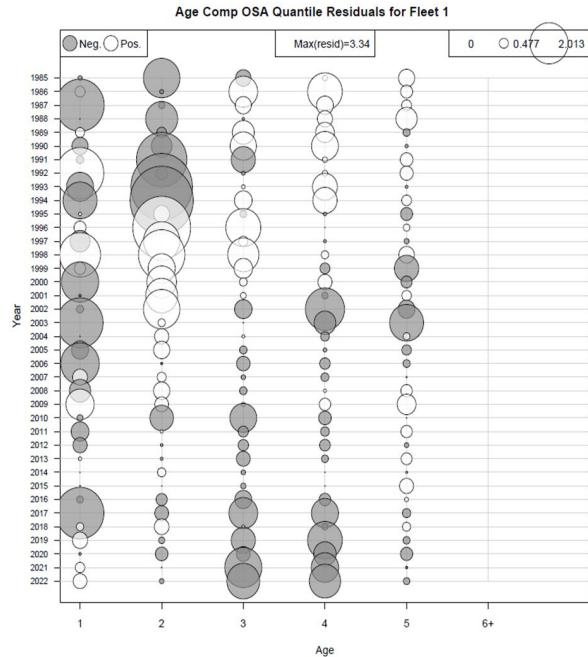
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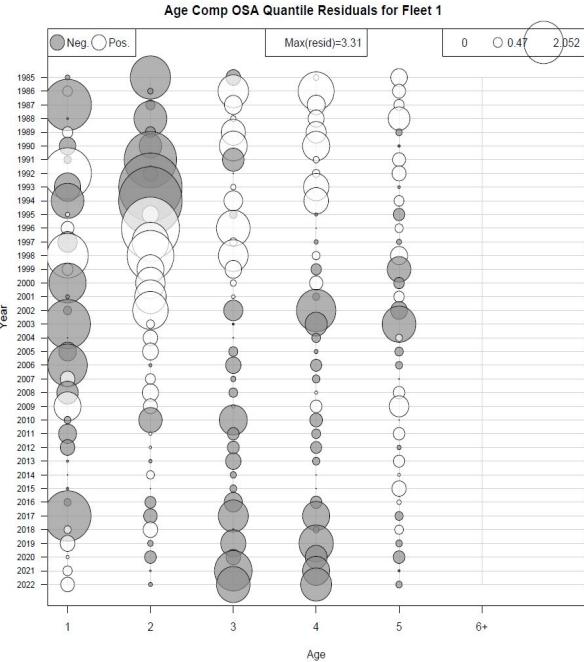
Age Comp OSA Residuals 2

Commercial Fleet

m452

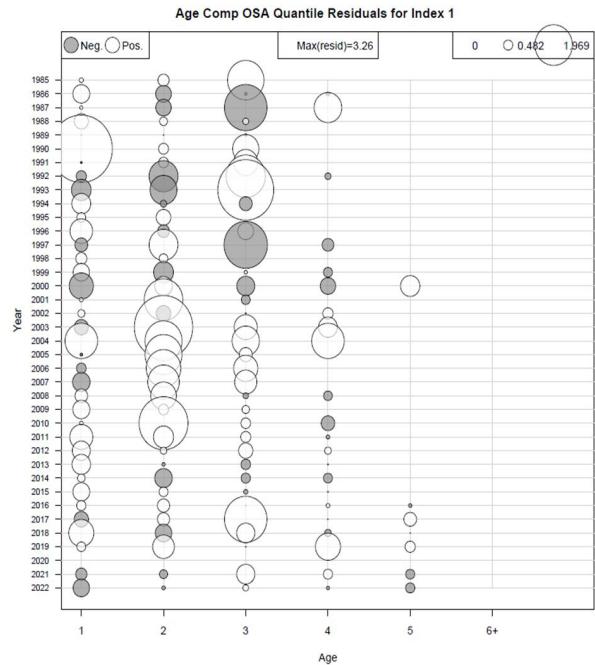


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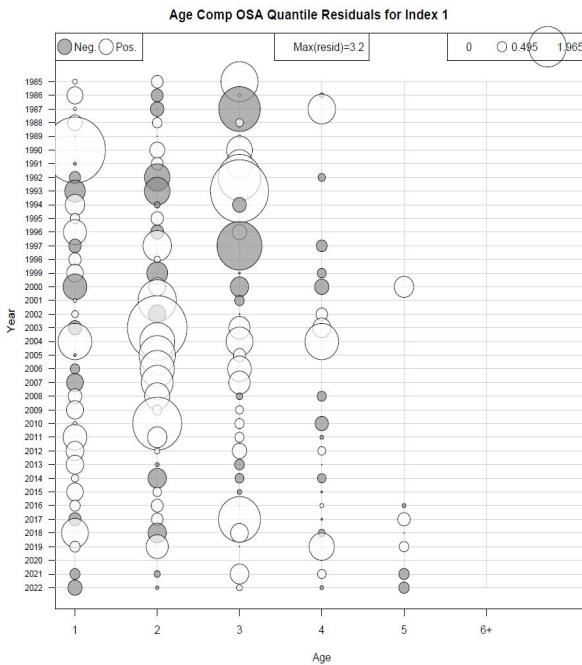


MADMF_Fall

m452

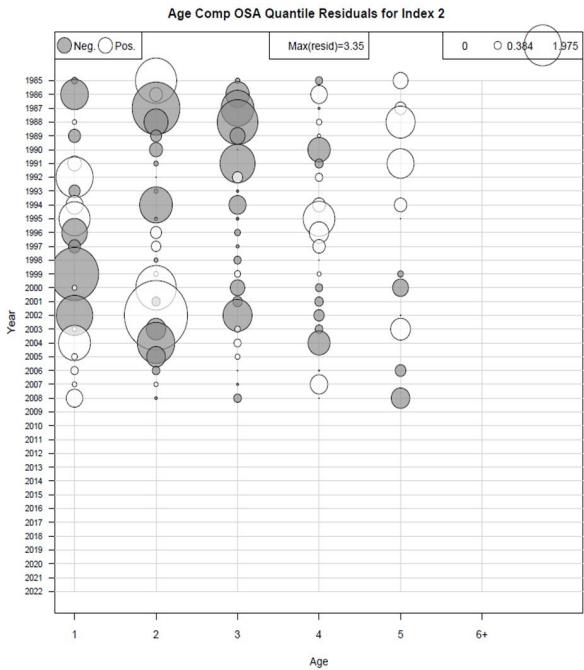


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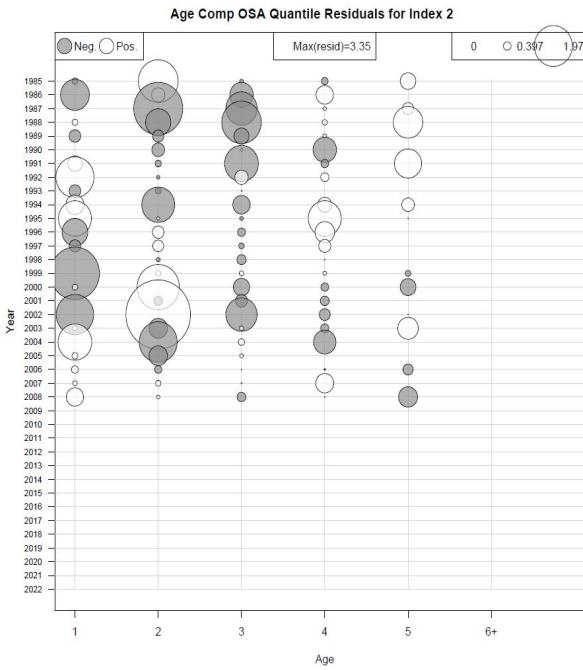


NEFSC_Spring_Albatross

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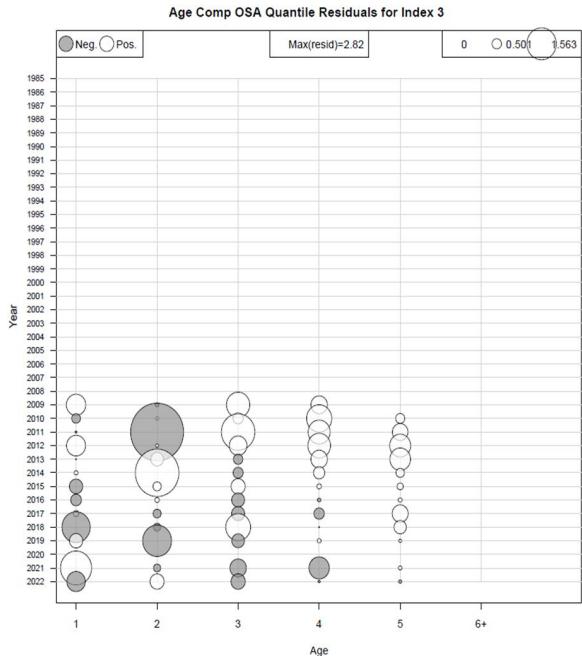


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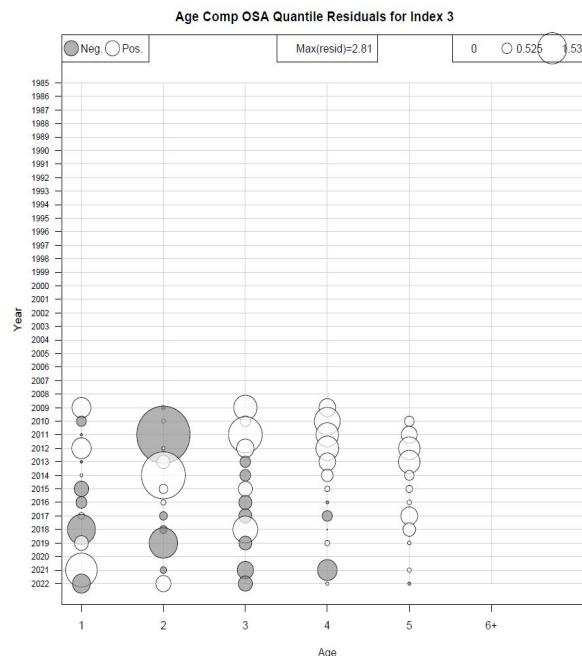


NEFSC_Spring_Bigelow

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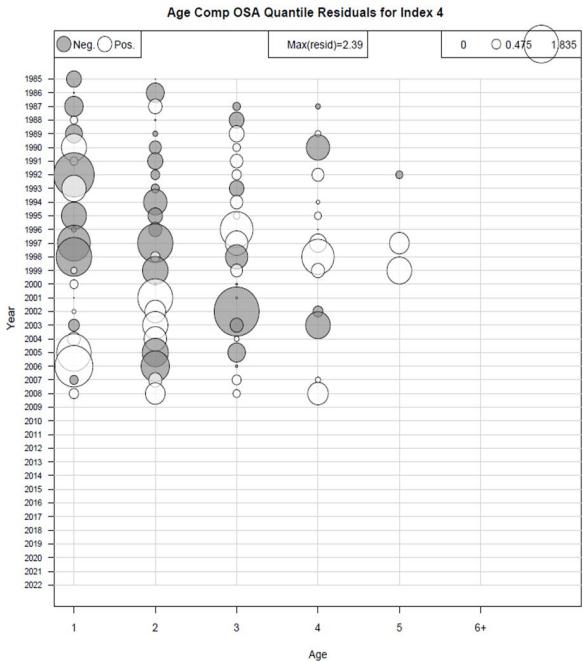


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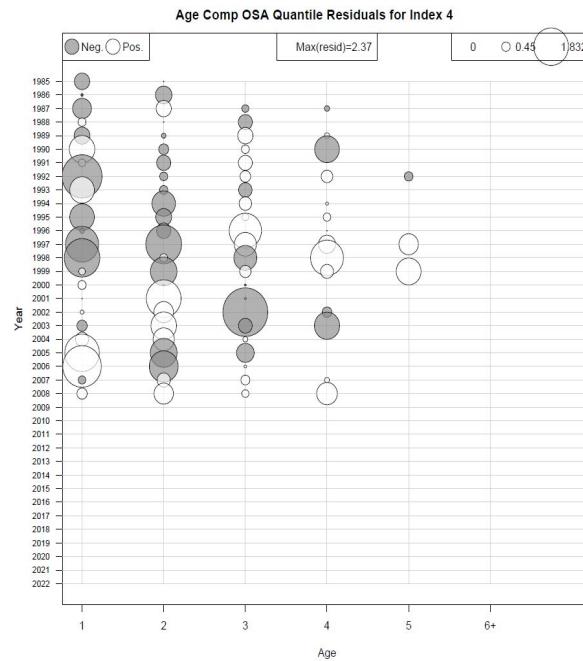


NEFSC_Fall_Albatross

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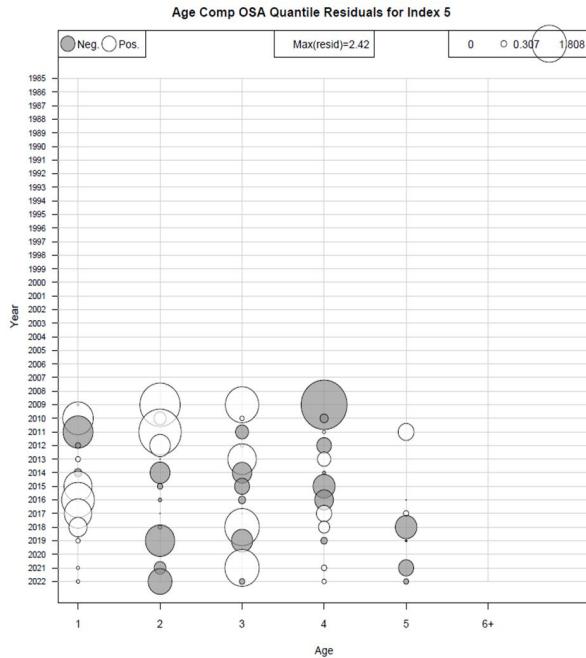


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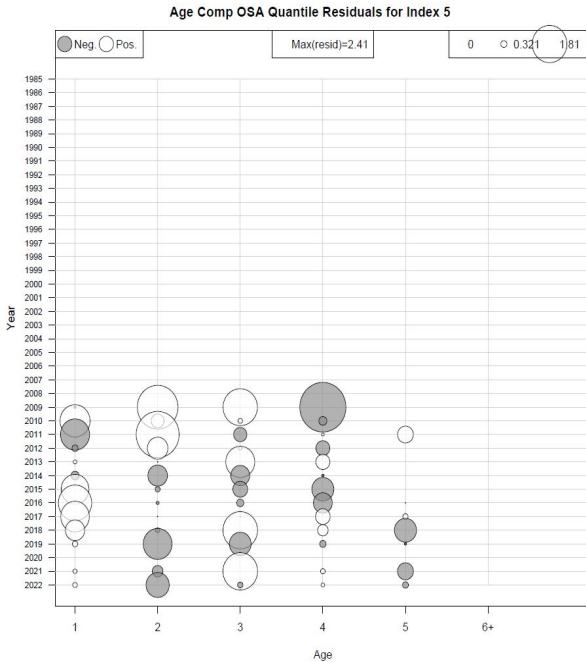


NEFSC_Fall_Bigelow

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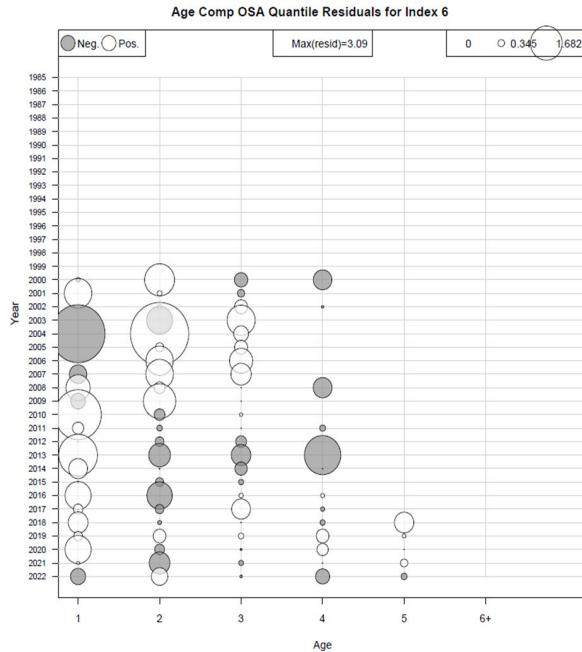


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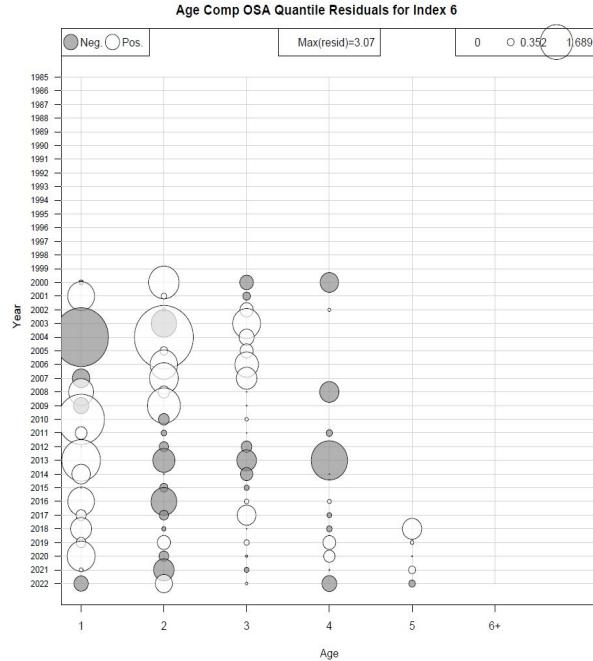


MENH_Fall

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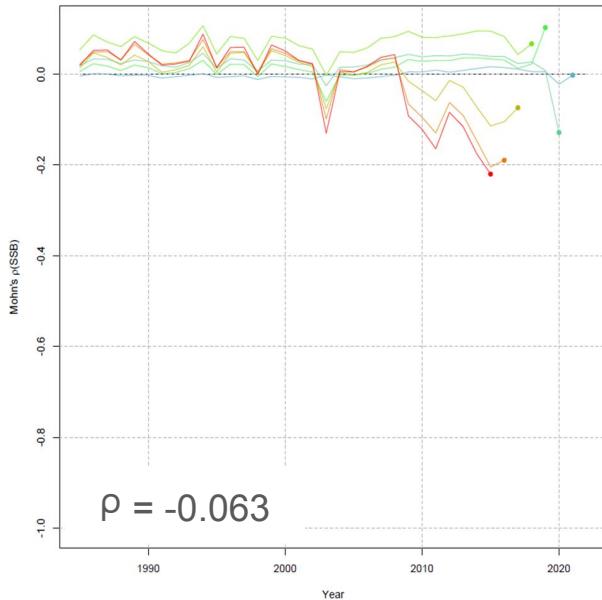
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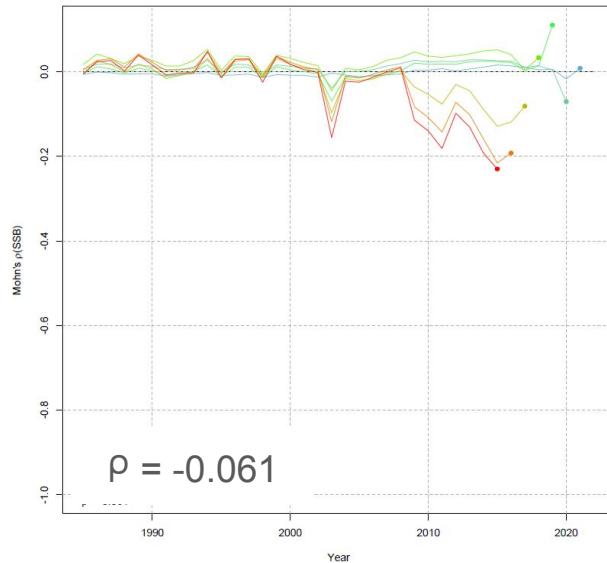
Retrospective Mohn's Rho

SSB

m452

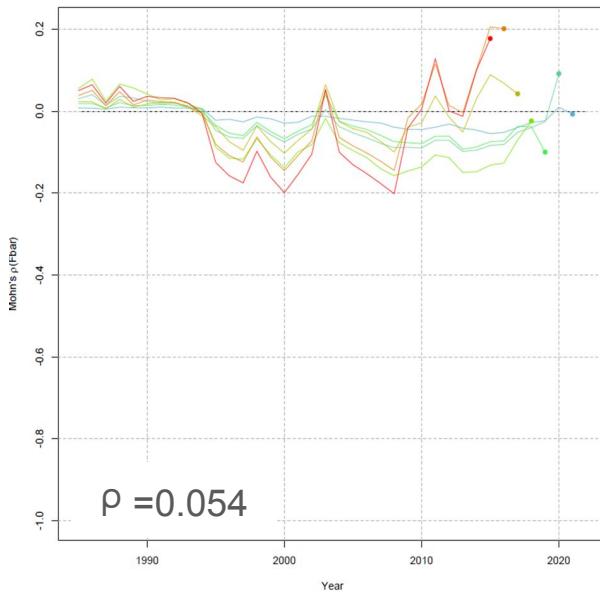


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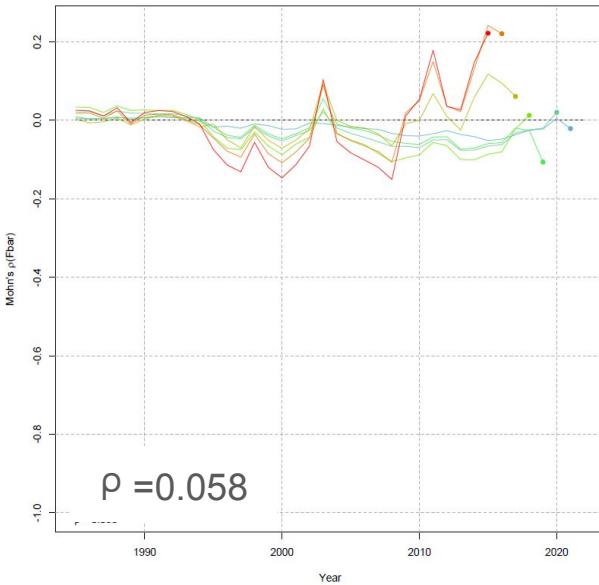


Fishing Mortality

m452



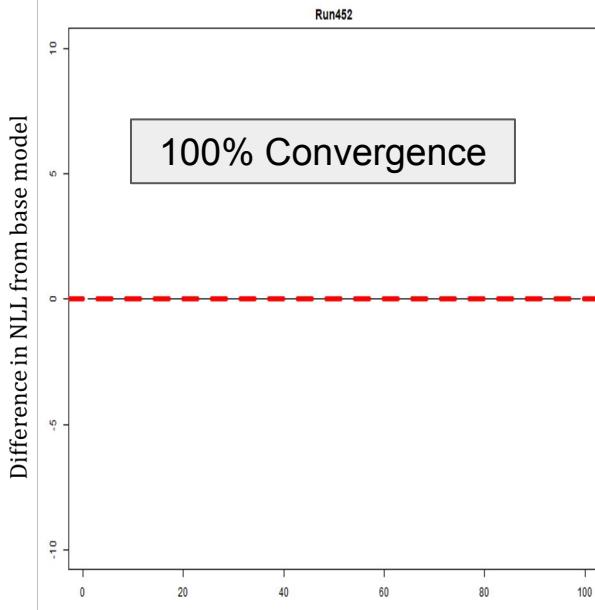
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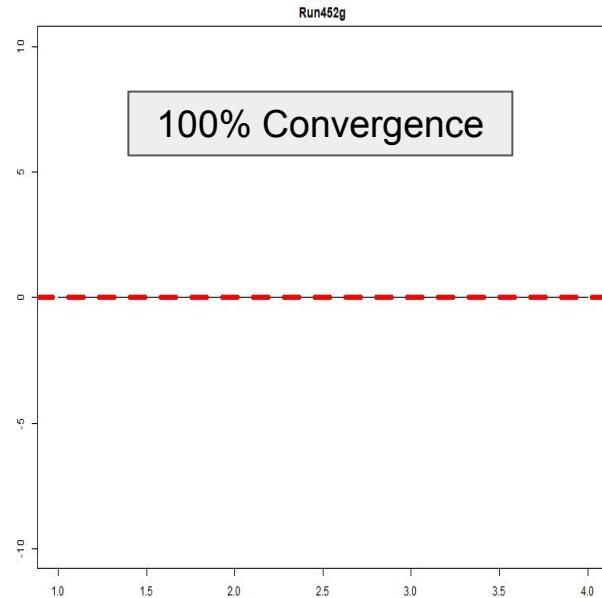
Jitter Analyses and Self Test

Jitter

m452

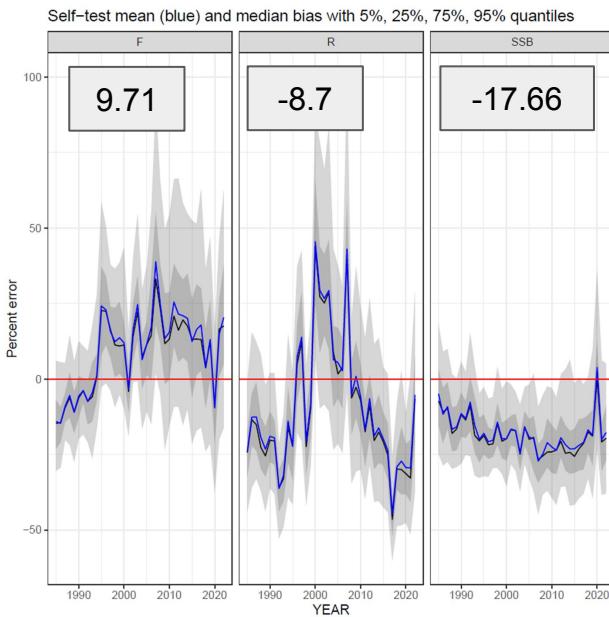


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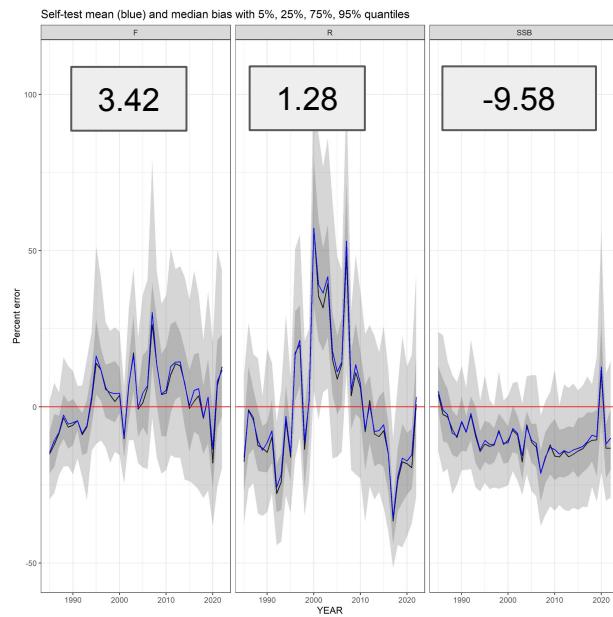


Self-Test

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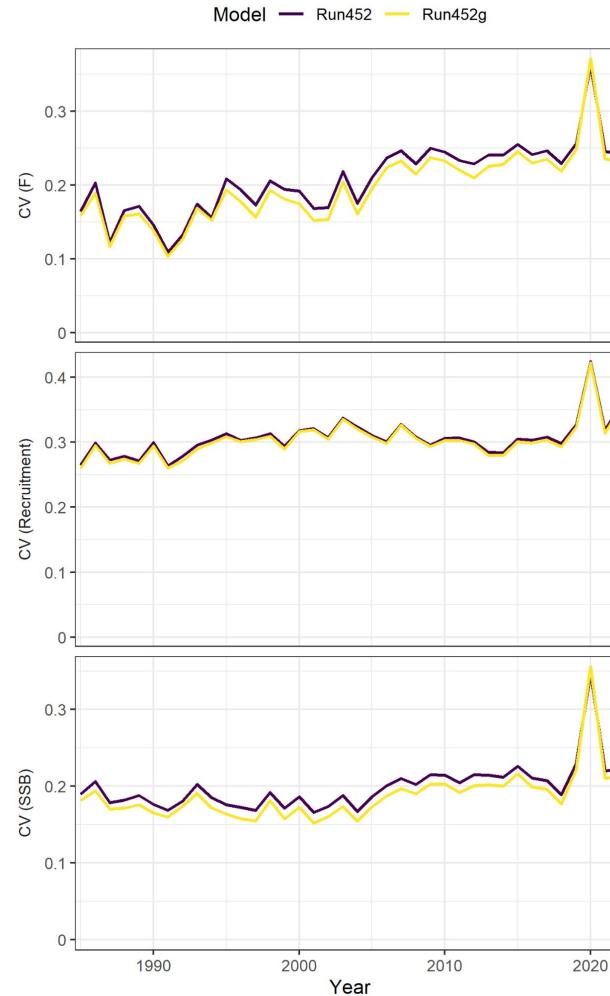


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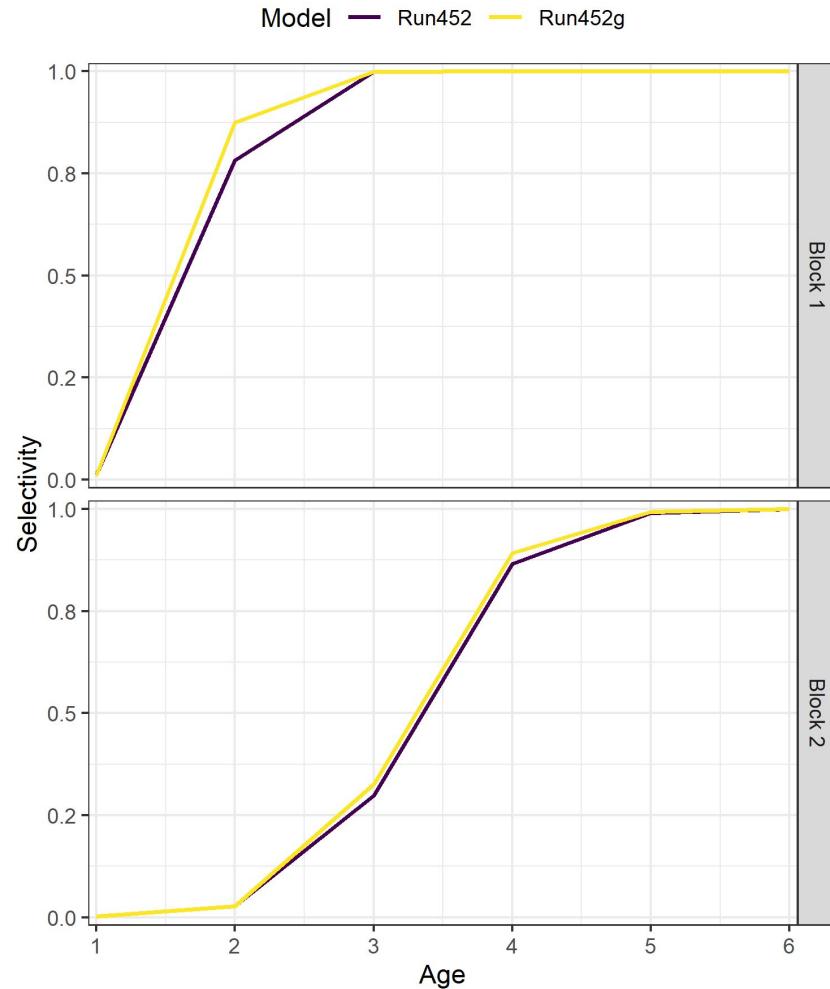


Results

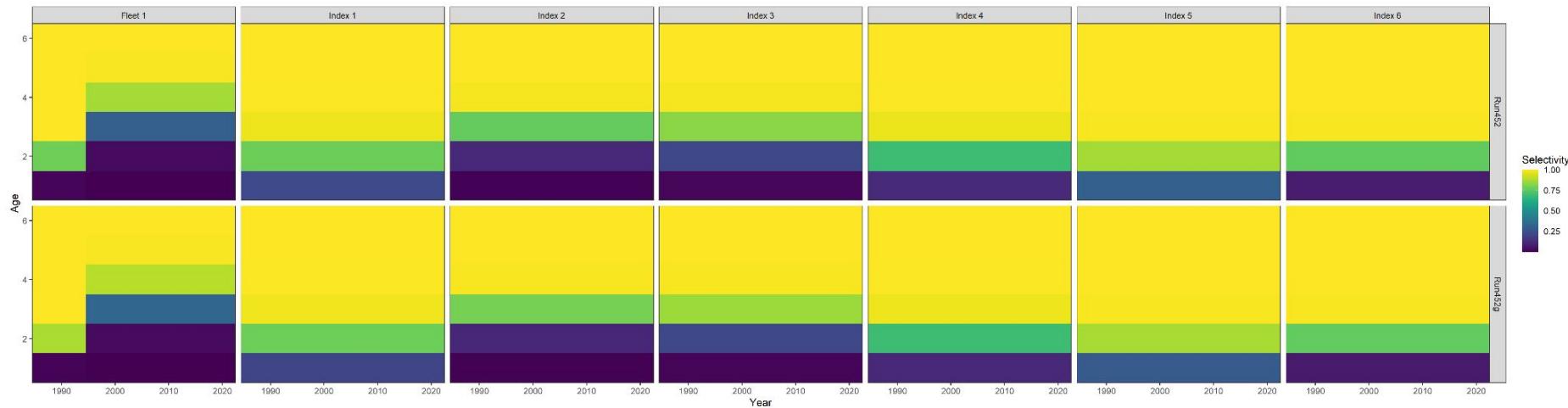
Estimated CV's for F, Rec and SSB



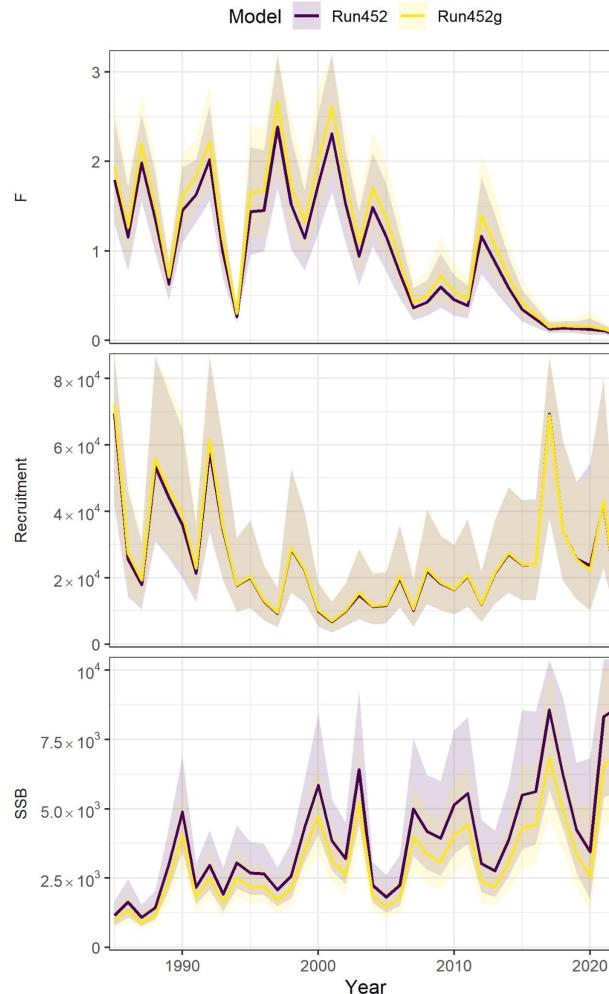
Fleet Selectivity



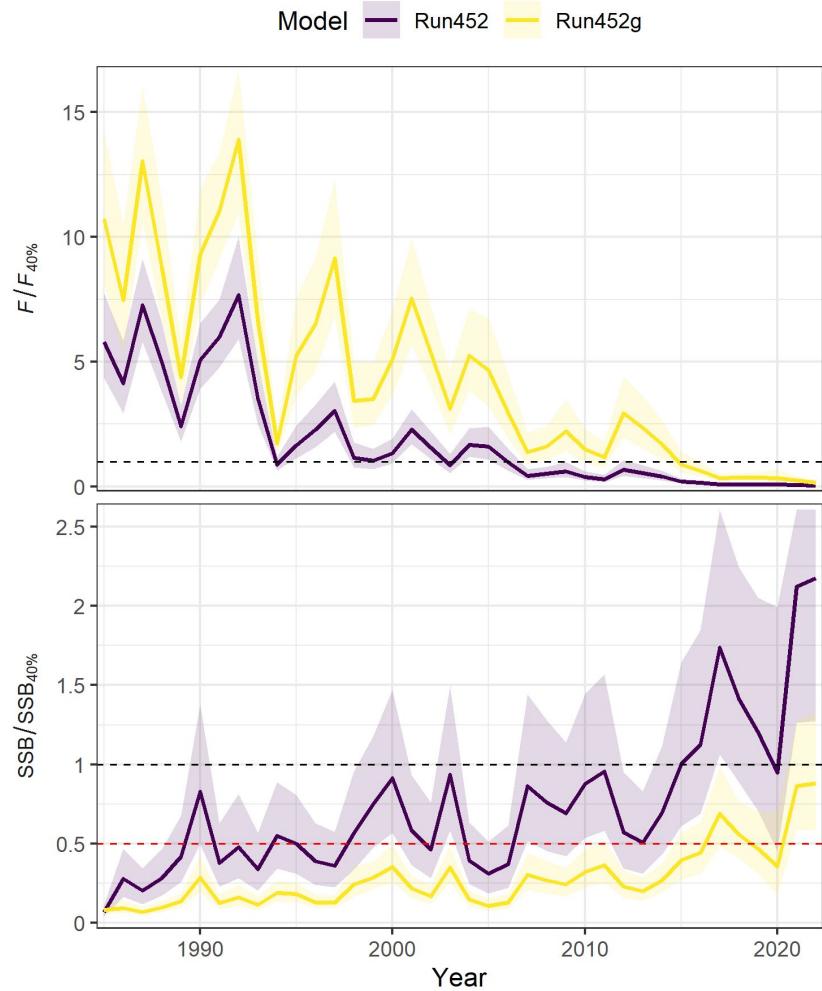
Survey Selectivity



F, Rec and SSB



F/F40% & SSB/SSB40%



BRP's

Biological Reference Points

m452

F_{40%}	SSB_{40%}	MSY Proxy
1.64 (1.27-1.88)	4,870 mt (2,463-6,948 mt)	1,998 mt (1,263-3,572 mt)

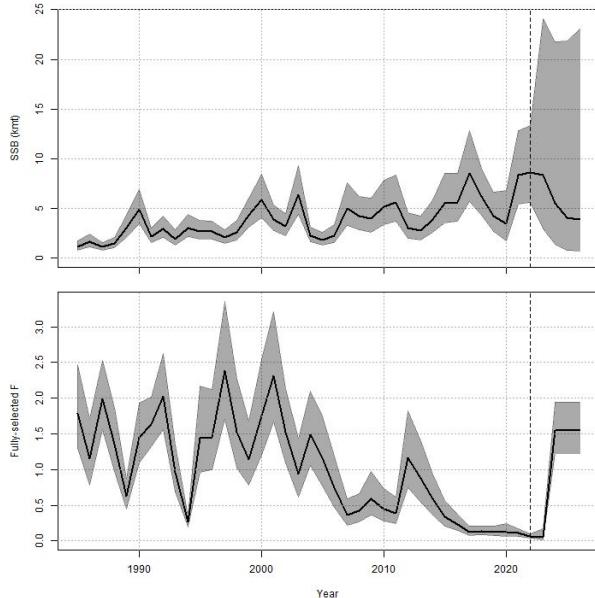
m452g

F_{40%}	SSB_{40%}	MSY Proxy
0.498 (0.43-0.51)	7,725 mt (5,274-11,360 mt)	2,115 mt (1,440-3,107 mt)

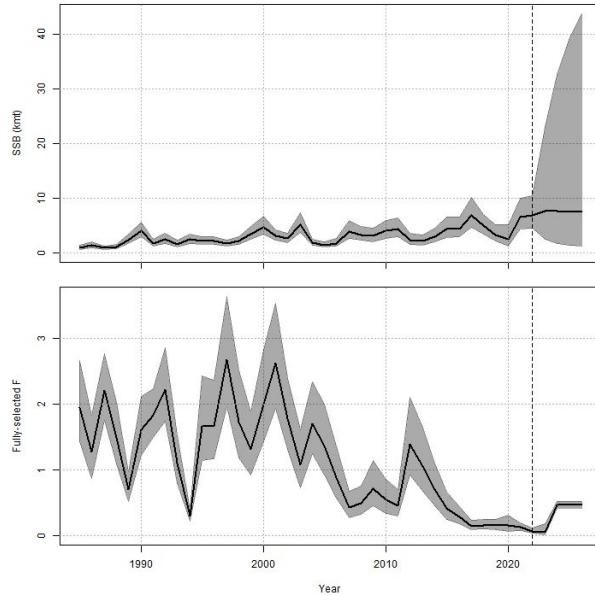
Projections

Projections

m452



m452g



Summary

- Diagnostics
 - Similar between model Constant and Age-specific M formulation
- Results
 - Similar between both candidate model
- BRP's and Projections
 - Biggest implications on Reference points and near term projections.