



**NOAA**  
**FISHERIES**

# Gulf of Alaska Northern Rockfish

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Lunsford



# Northern rockfish

## Model examinations:

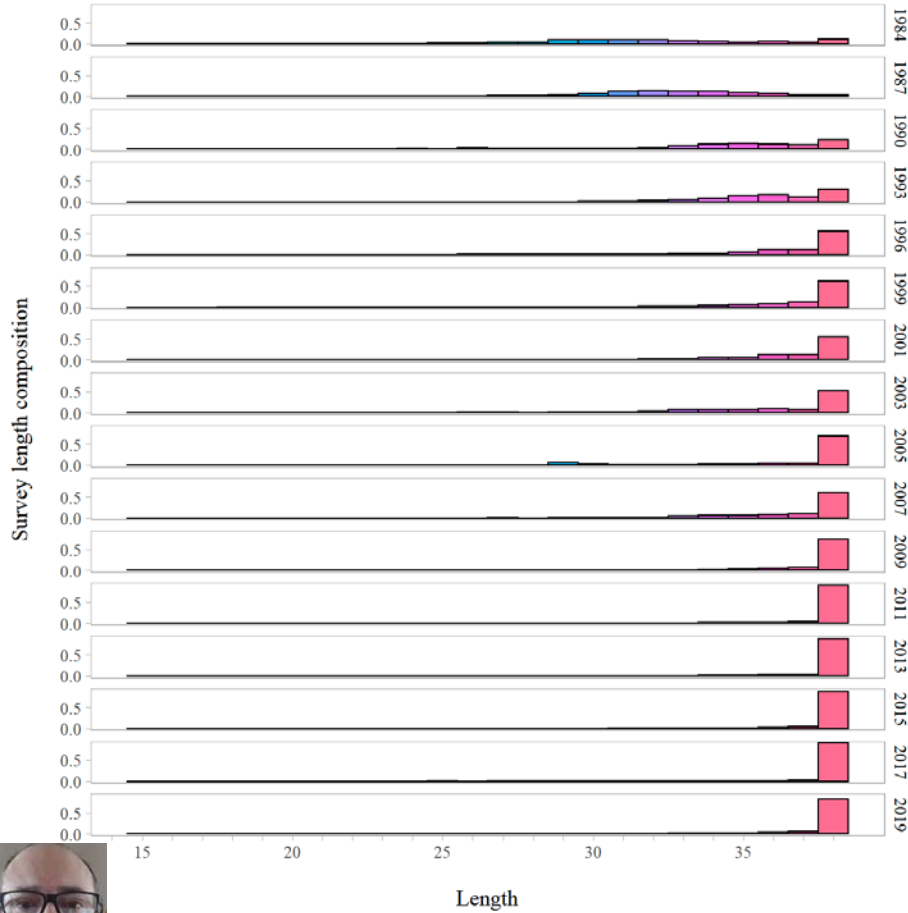
- Extended length plus group
- Francis reweighting
- Explore survey abundance weighting

Previously accepted model Model 18.2b(2020)

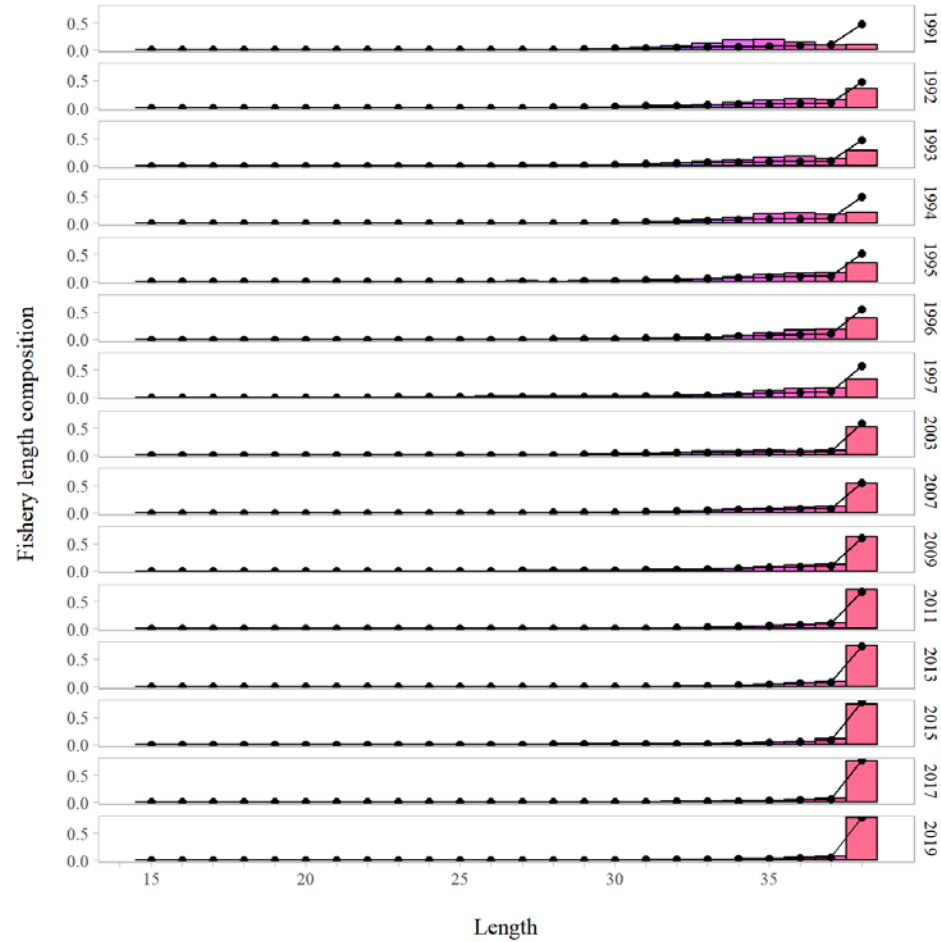


# Northern rockfish – length

## Survey

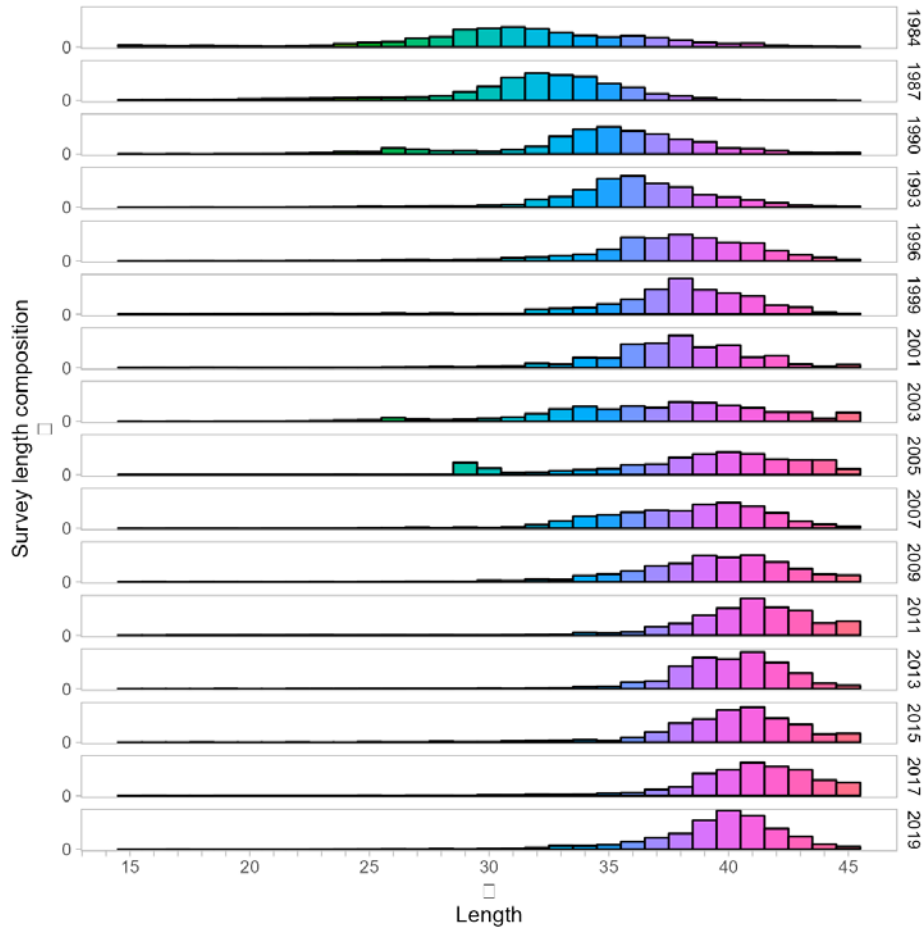


## Fishery

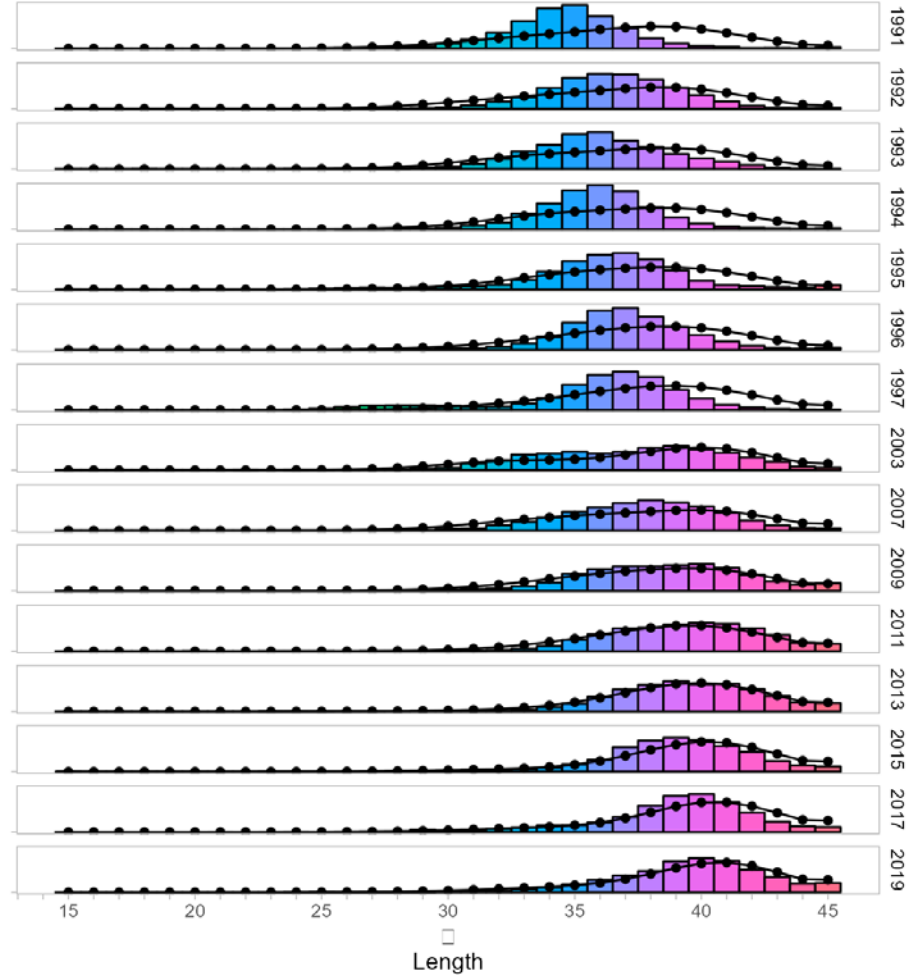


# Northern rockfish – length

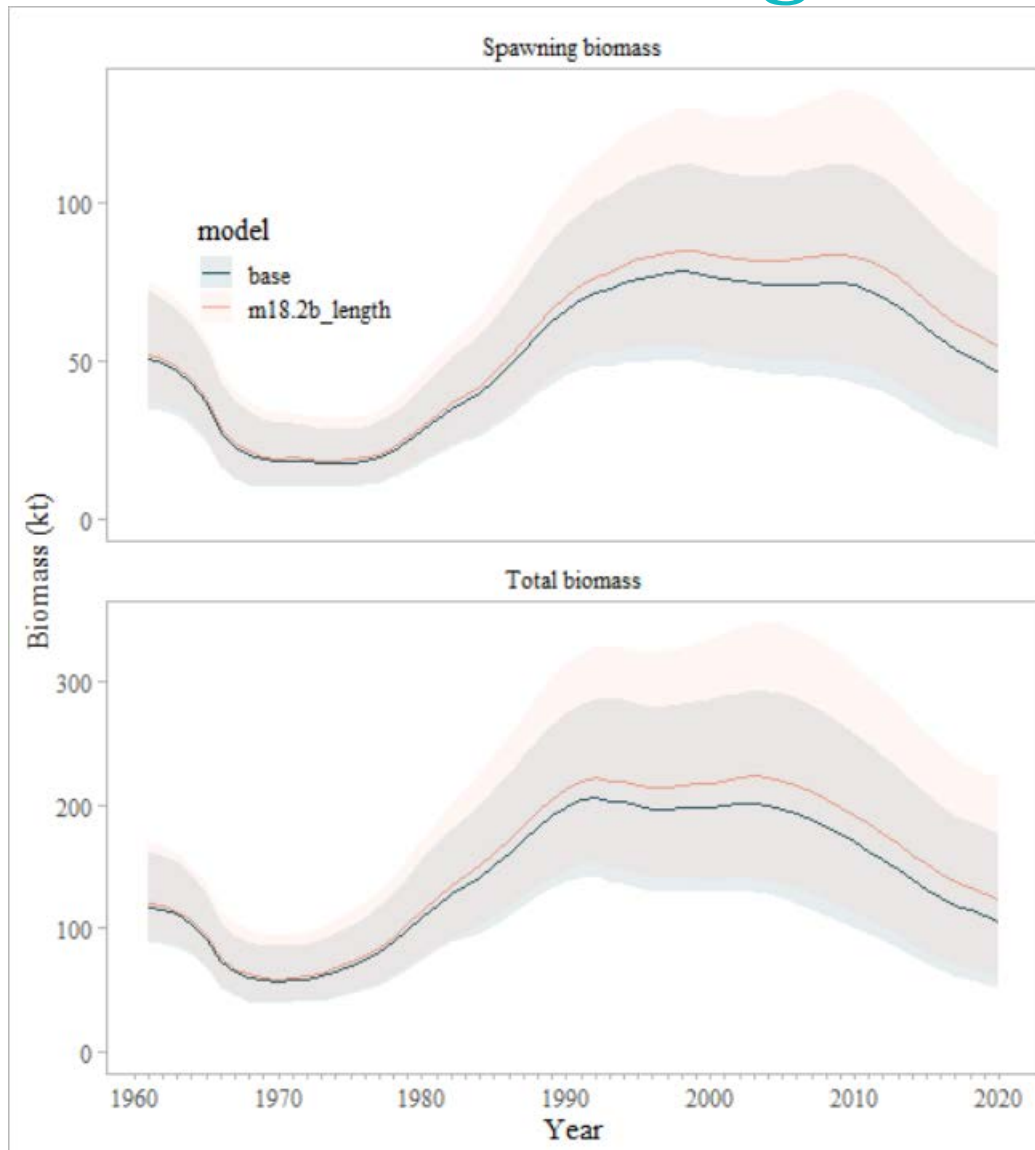
## Survey



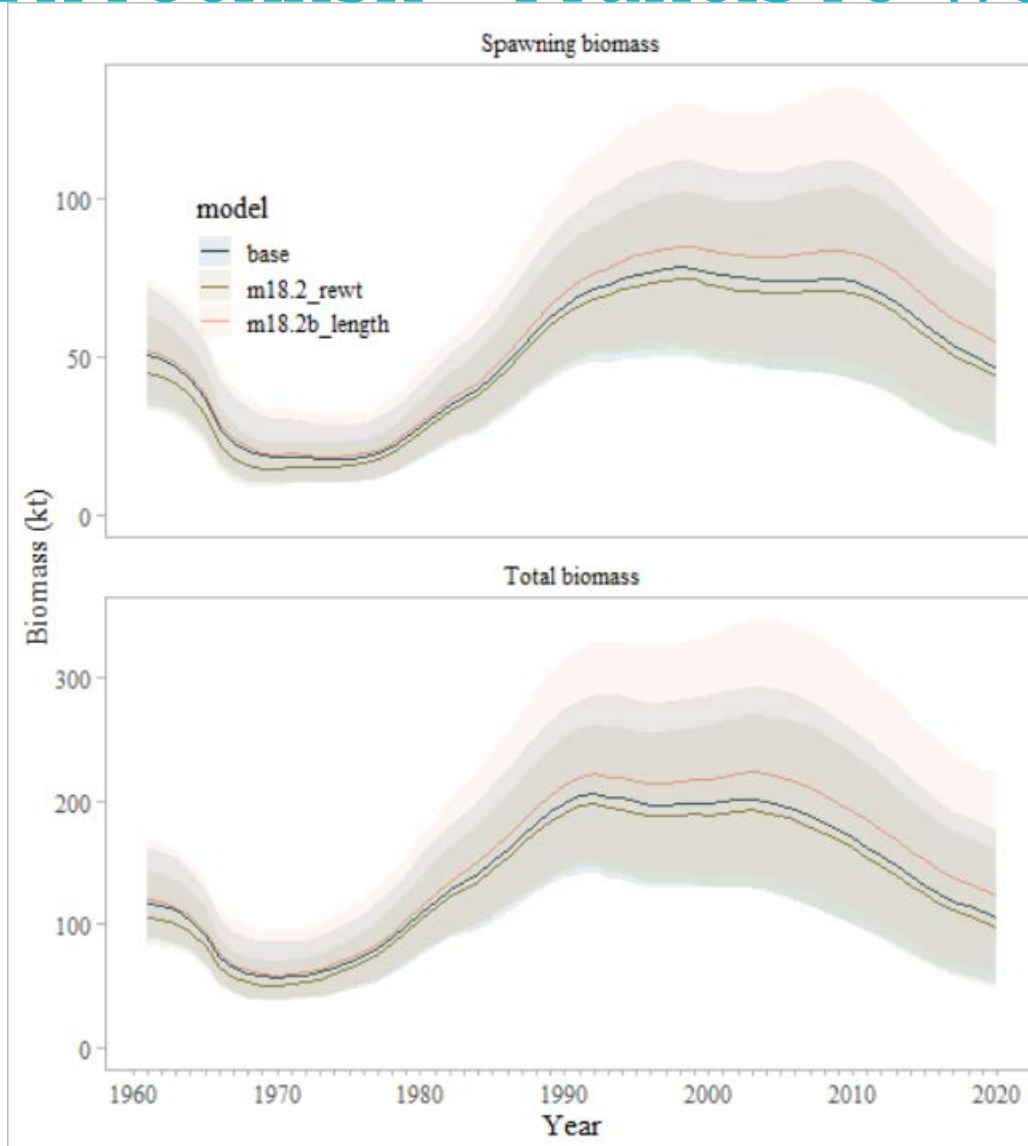
## Fishery



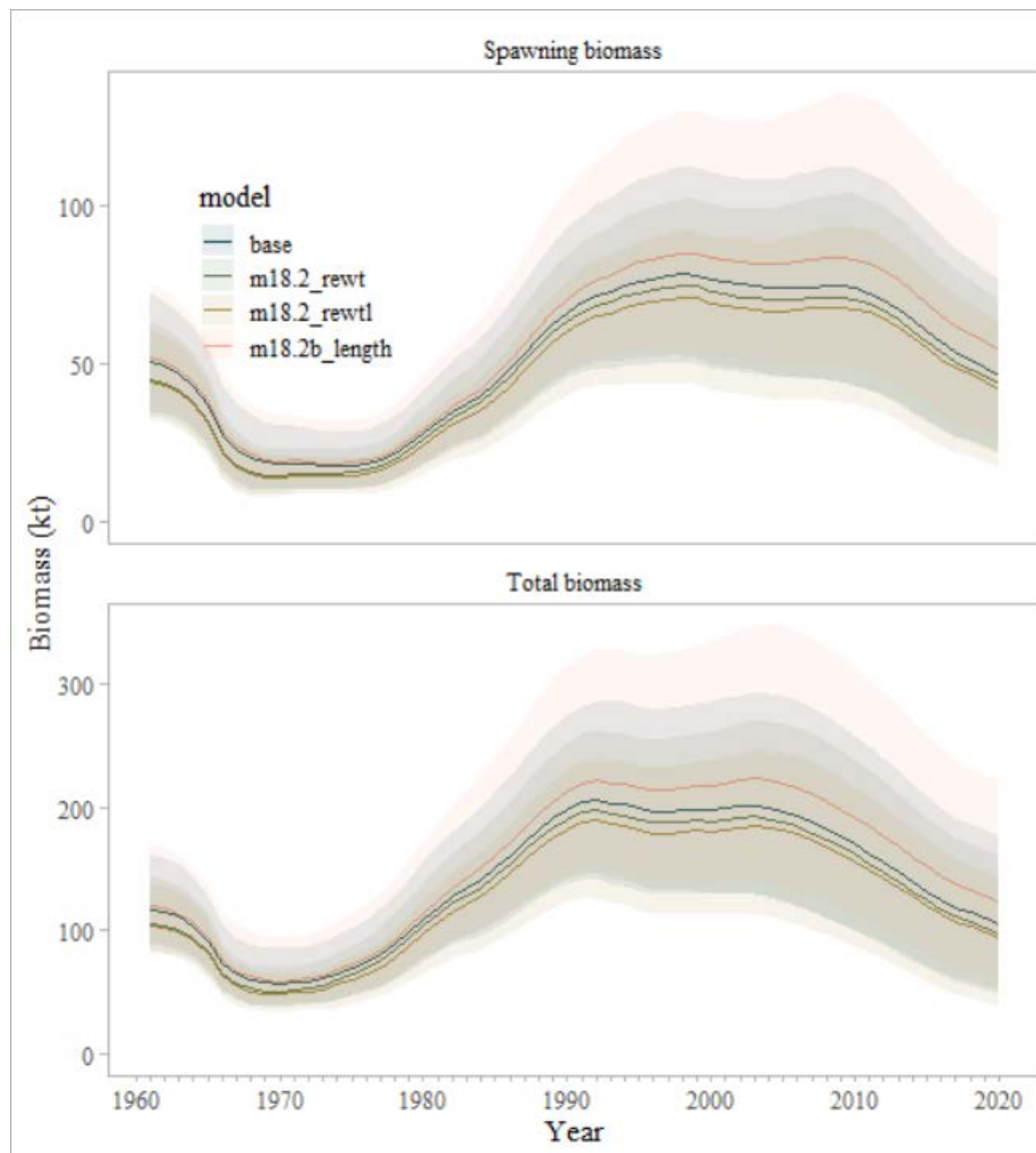
# Northern rockfish – length



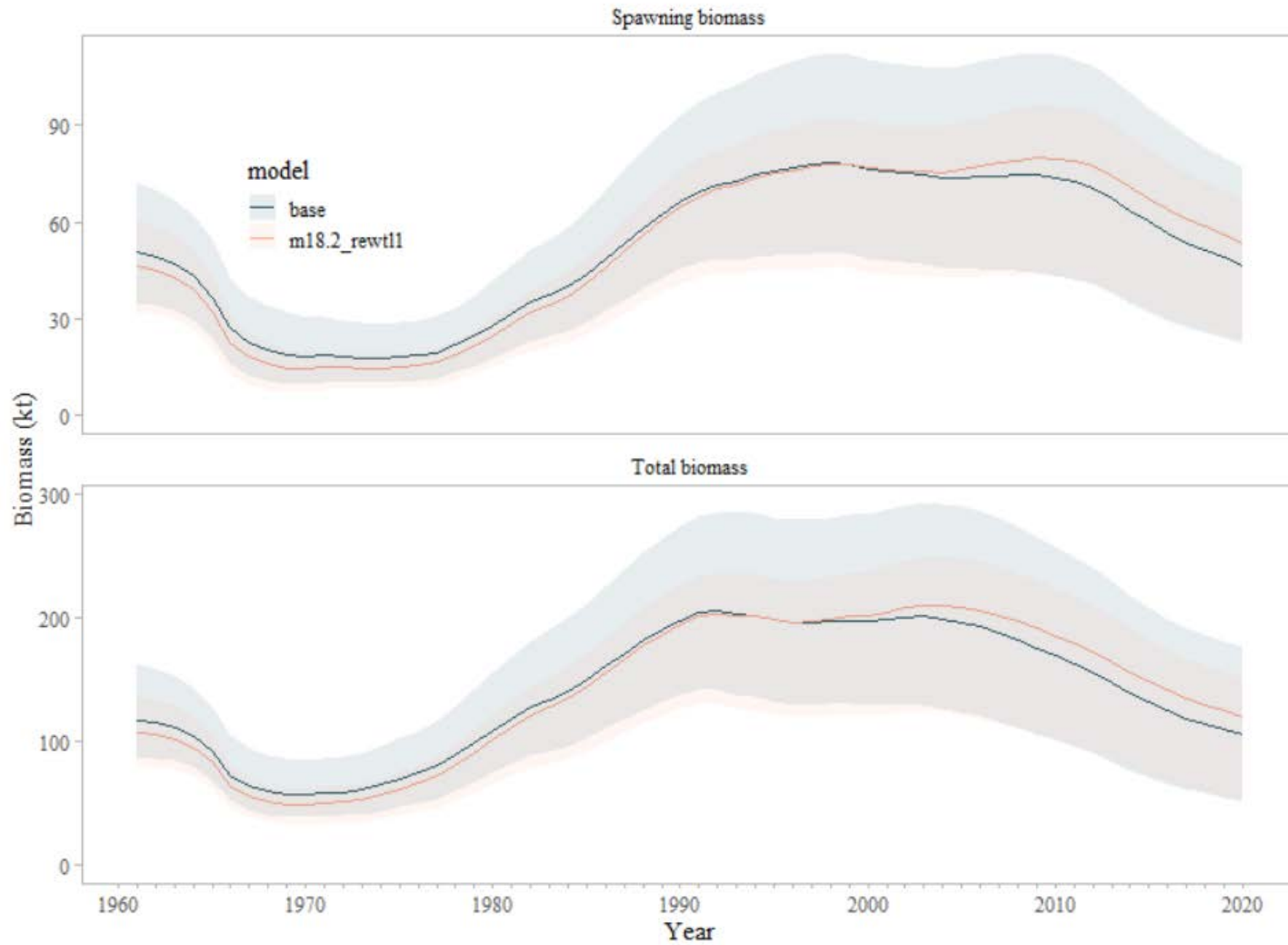
# Northern rockfish – Francis re-weighting



# Northern rockfish – Francis re-weighting/length

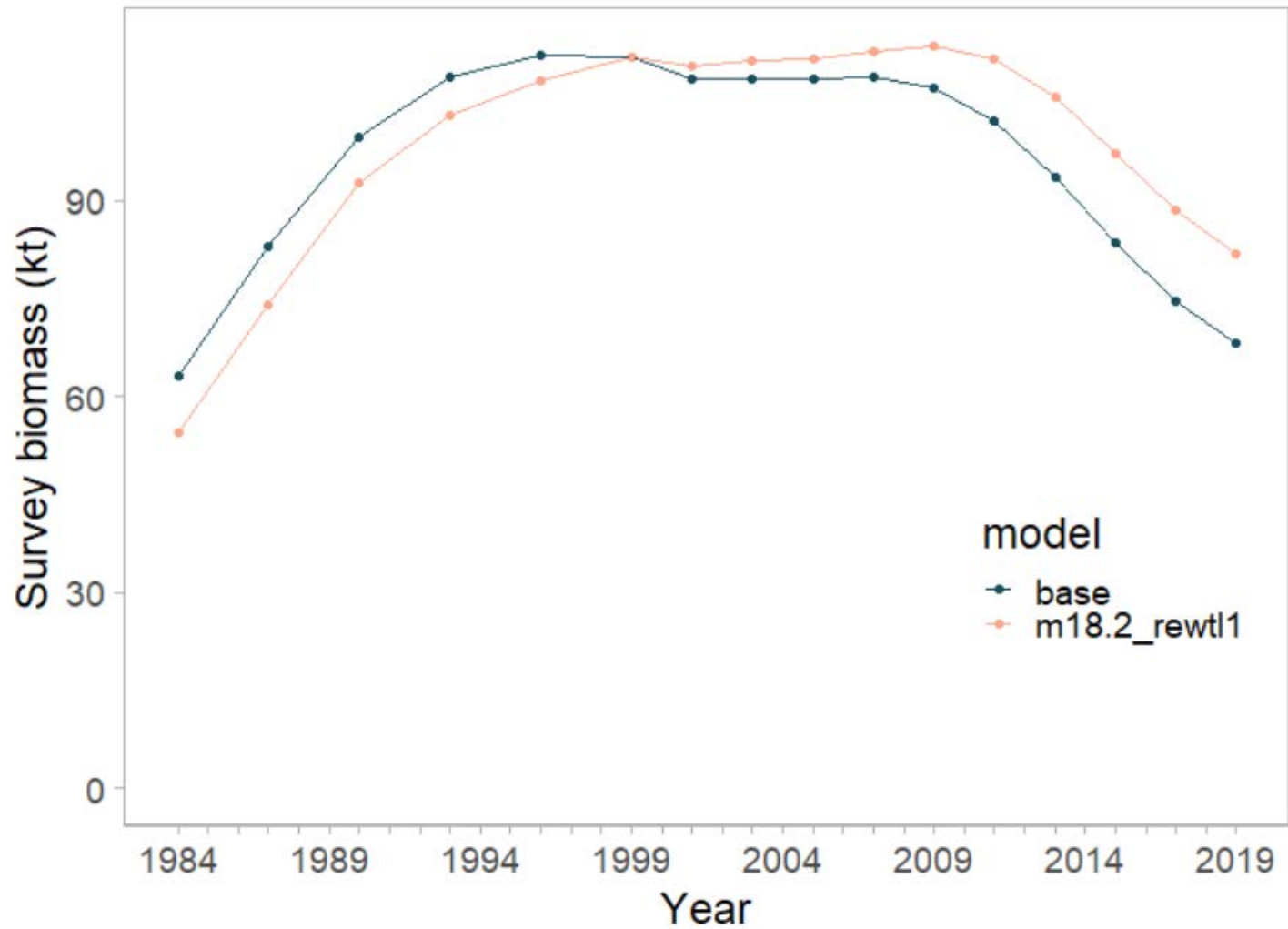


# Northern rockfish – Francis re-weighting/length – survey wt = 1





# Northern rockfish – Francis re-weighting/length – survey wt = 1



# Northern rockfish

	Base	Francis	Length	Francis length	Survey wt = 1
Parameters	181				
Likelihoods					
Data	164	323.9	186	342.3	366.8
Survey – age	68.7	122.6	70.9	120.5	125.3
Fishery – age	37.4	91.1	37.3	87.3	85.6
Fishery - length	46.2	98.4	66.4	123.2	116.0
Weights					
Survey – age	0.5	0.88	0.5	0.83	0.84
Fishery – age	0.5	1.27	0.5	1.25	1.25
Fishery - length	0.5	1.07	0.5	0.93	0.88



# Northern rockfish

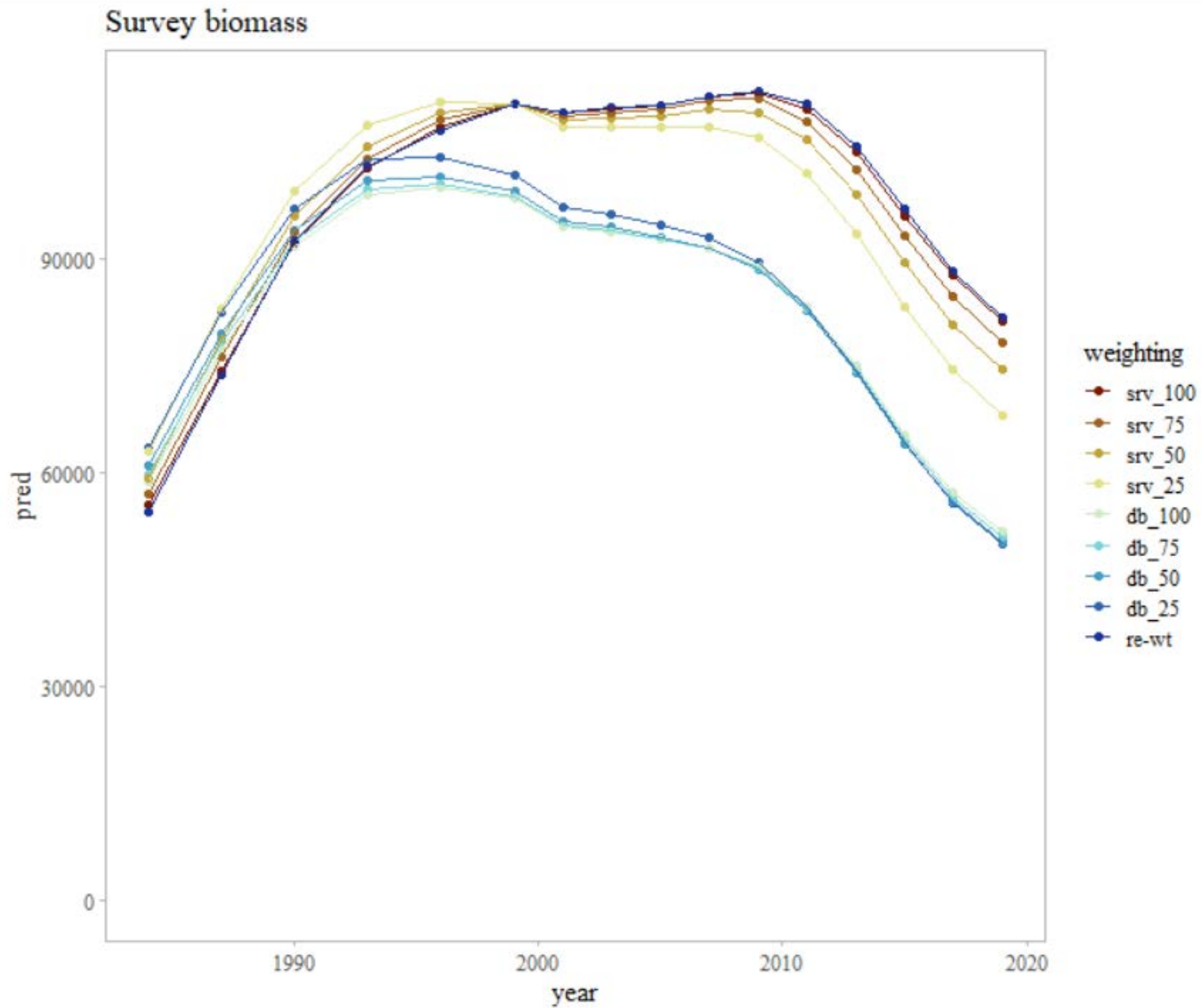
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- Extended length plus group
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- Explore survey abundance weighting

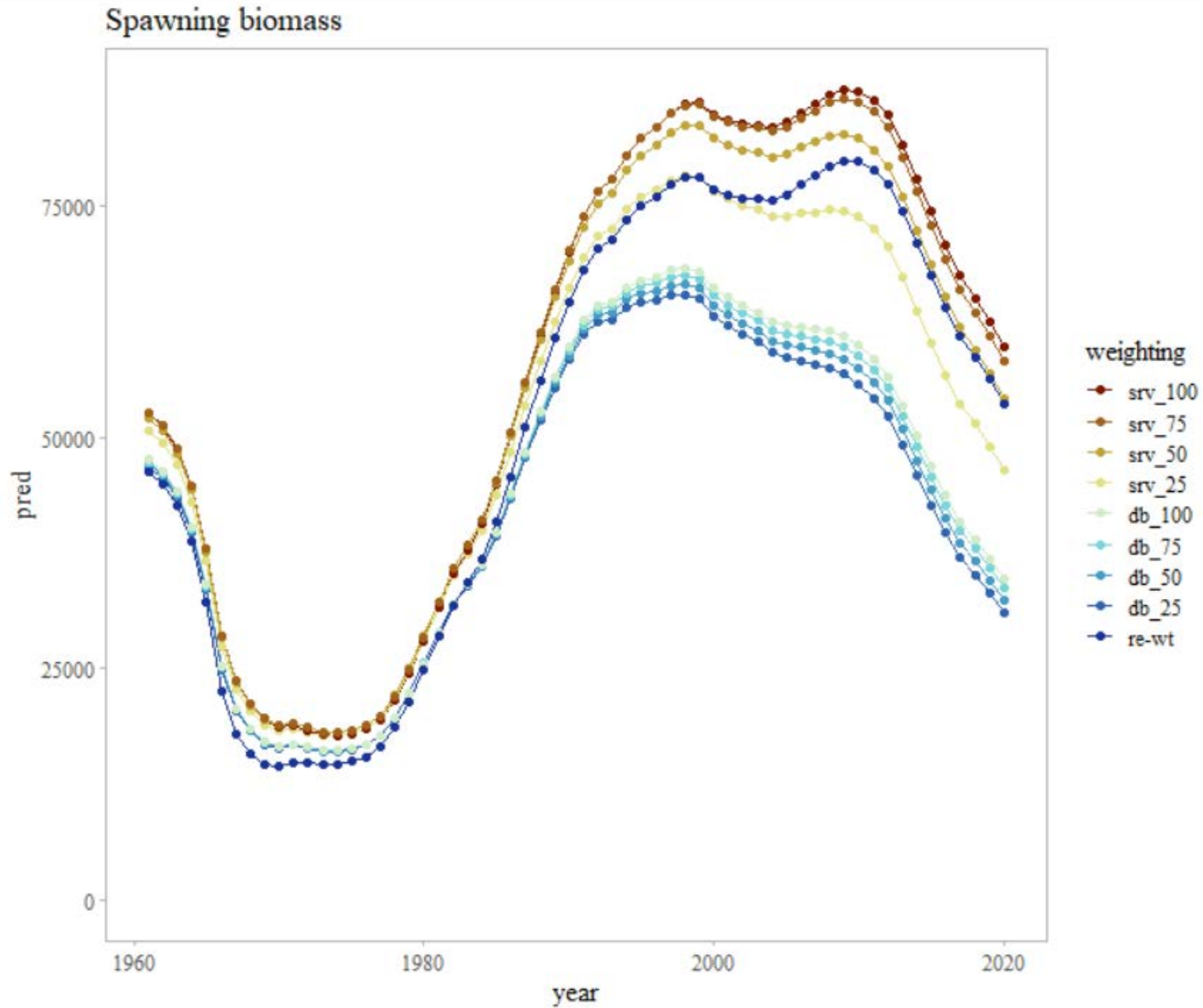
Previously accepted model Model 18.2b(2020)



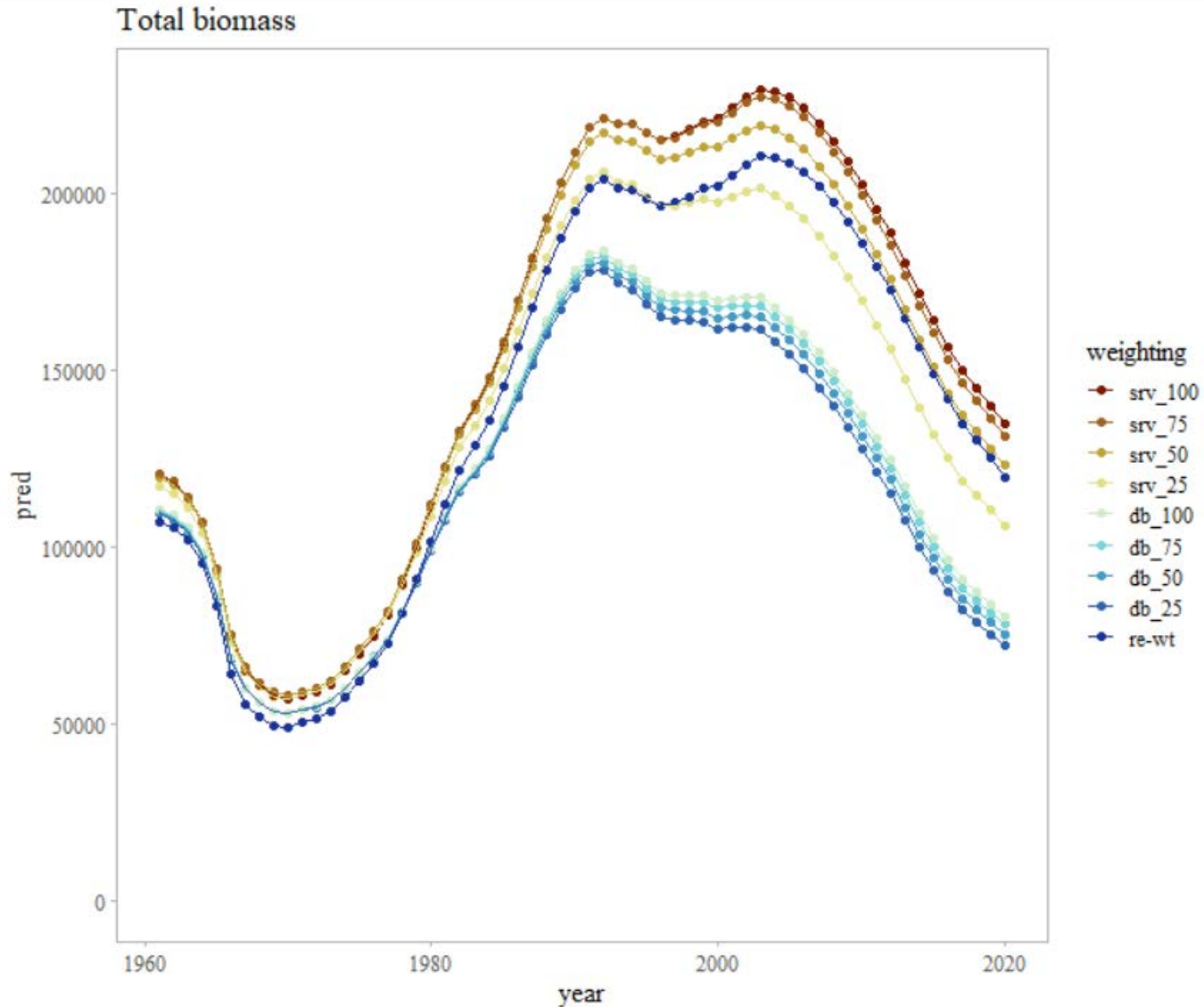
# Northern rockfish



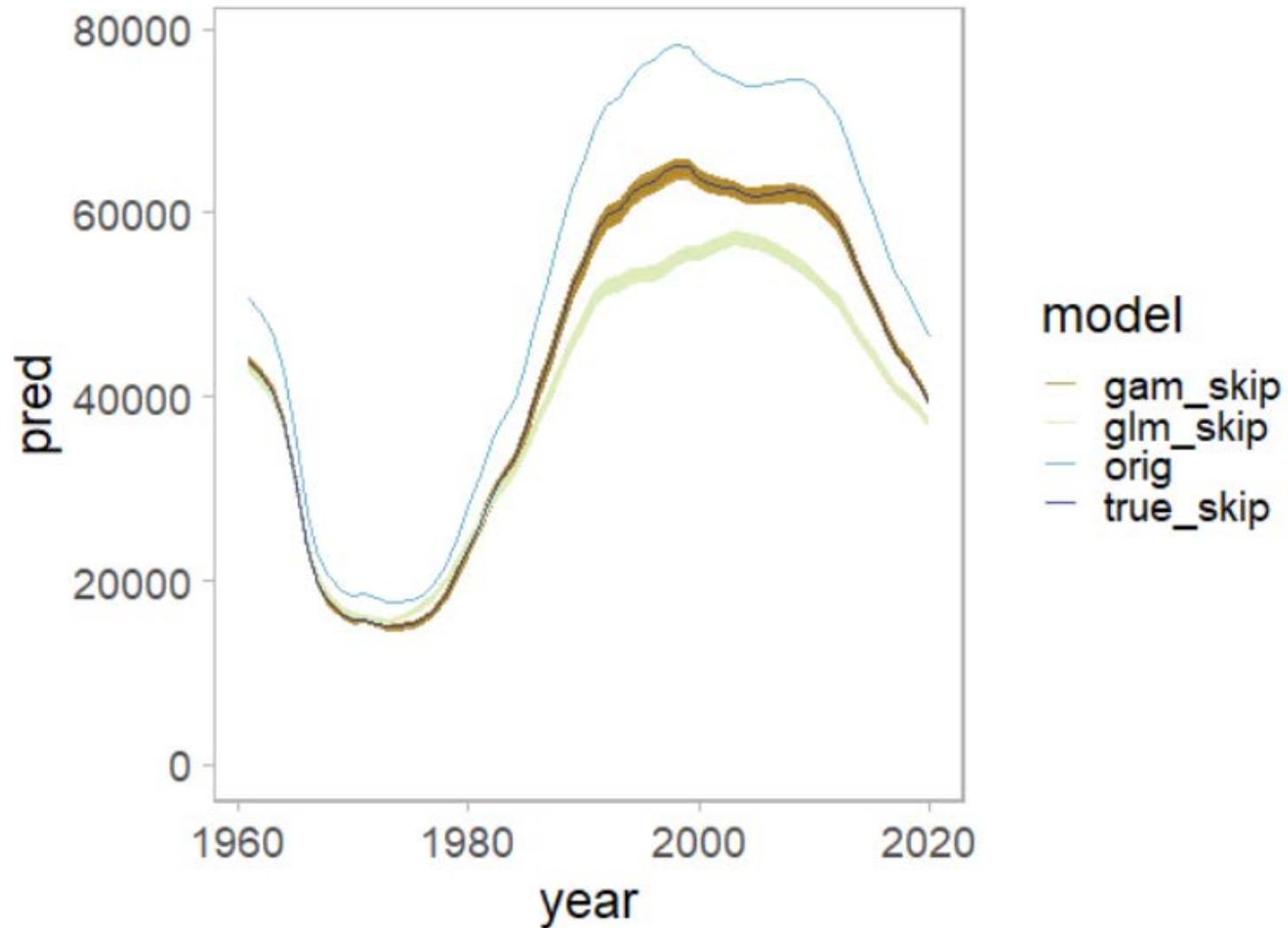
# Northern rockfish



# Northern rockfish



# Northern rockfish – skip spawning



# Questions?

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