

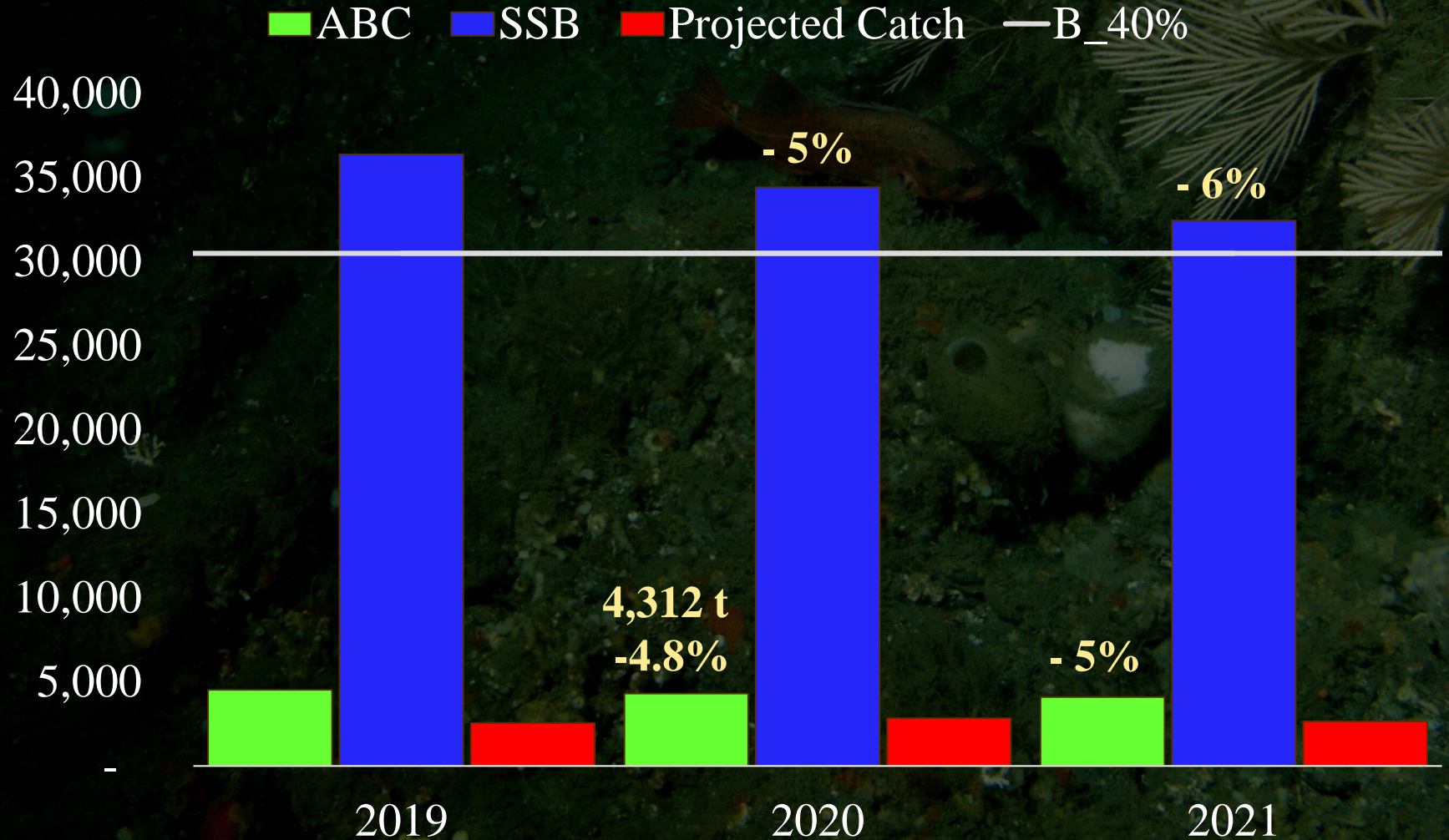
# Northern rockfish



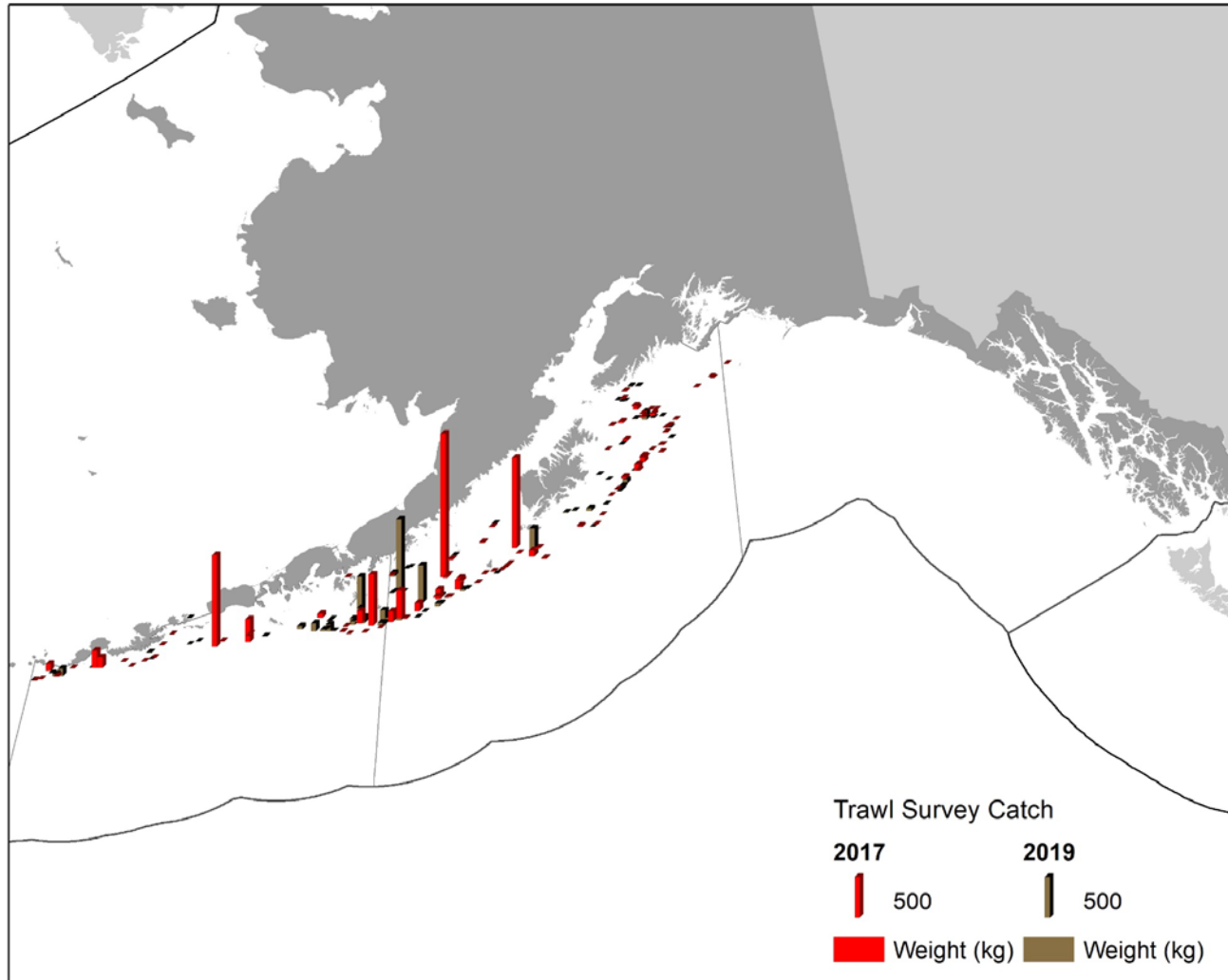
- Tier 3a species
  - Only update catches in the projection model (partial assessment year)
- Catch Update:
  - Updated 2018 catch (3,219 t predicted last year, 2,354 t realized),
  - Estimated 2019 catch (2,561 t) substantially **below** 2019 ABC (4,529 t)
- Recommended 2020 ABC: **4,312 t**
  - 4.8% smaller than last year's ABC of **4,529 t**
- Recommended 2020 OFL: **5,143 t**



# Northern rockfish



# Northern rockfish: 2019 Survey





# Northern rockfish: Apportionment

	Western	Central	Eastern	Total
2019 ABC	1,190	3,338		4,528
2020 ABC	1,133	3,178	1*	4,312
2019 OFL				5,402
2020 OFL				5,143



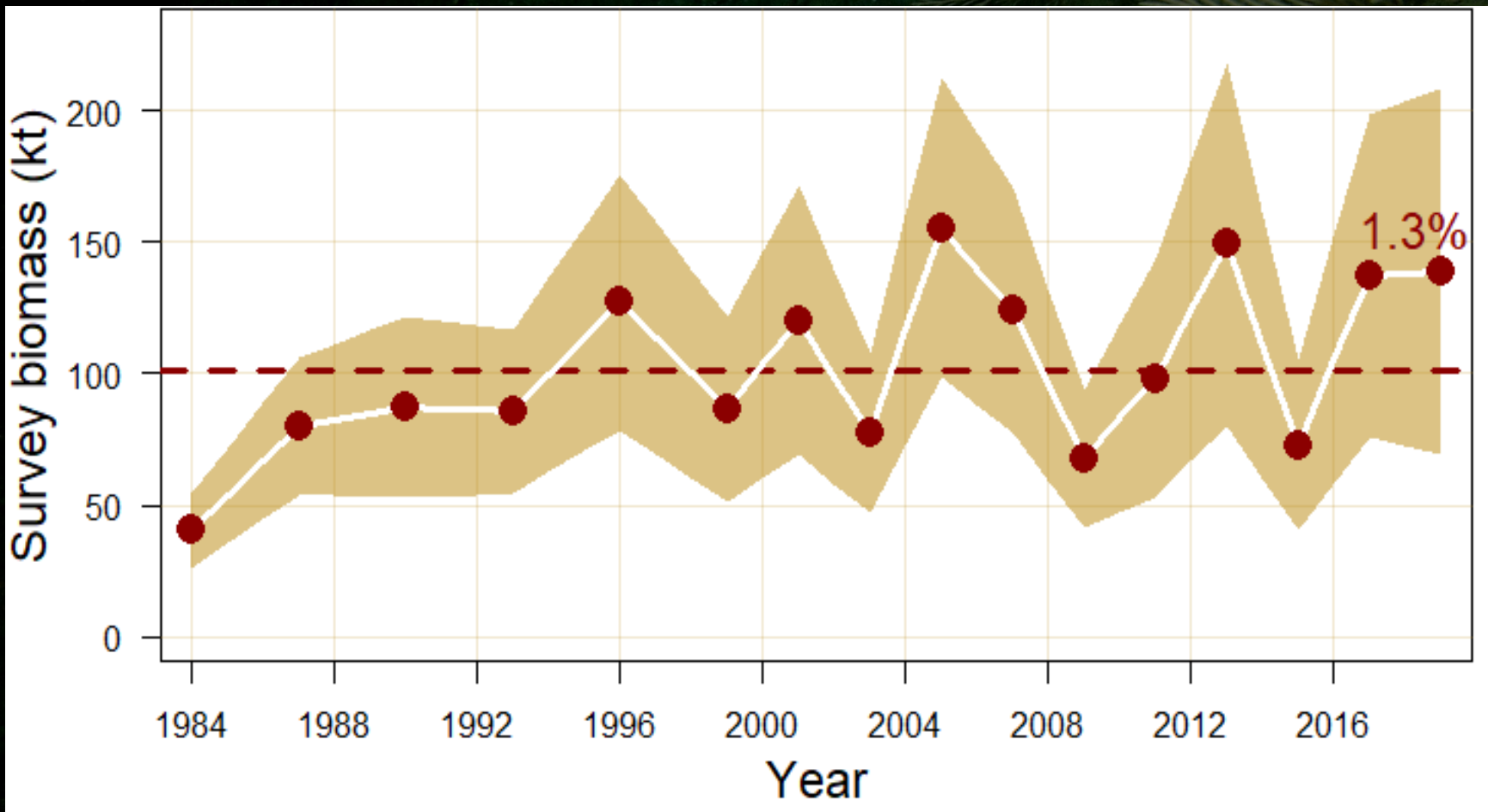
# Northern rockfish: Summary

- ABC projected to decrease through 2021
- Full assessment will be conducted in 2021
  - Things to look at include comp data weighting (estimating ESS), exploring covariance matrix from VAST in likelihood



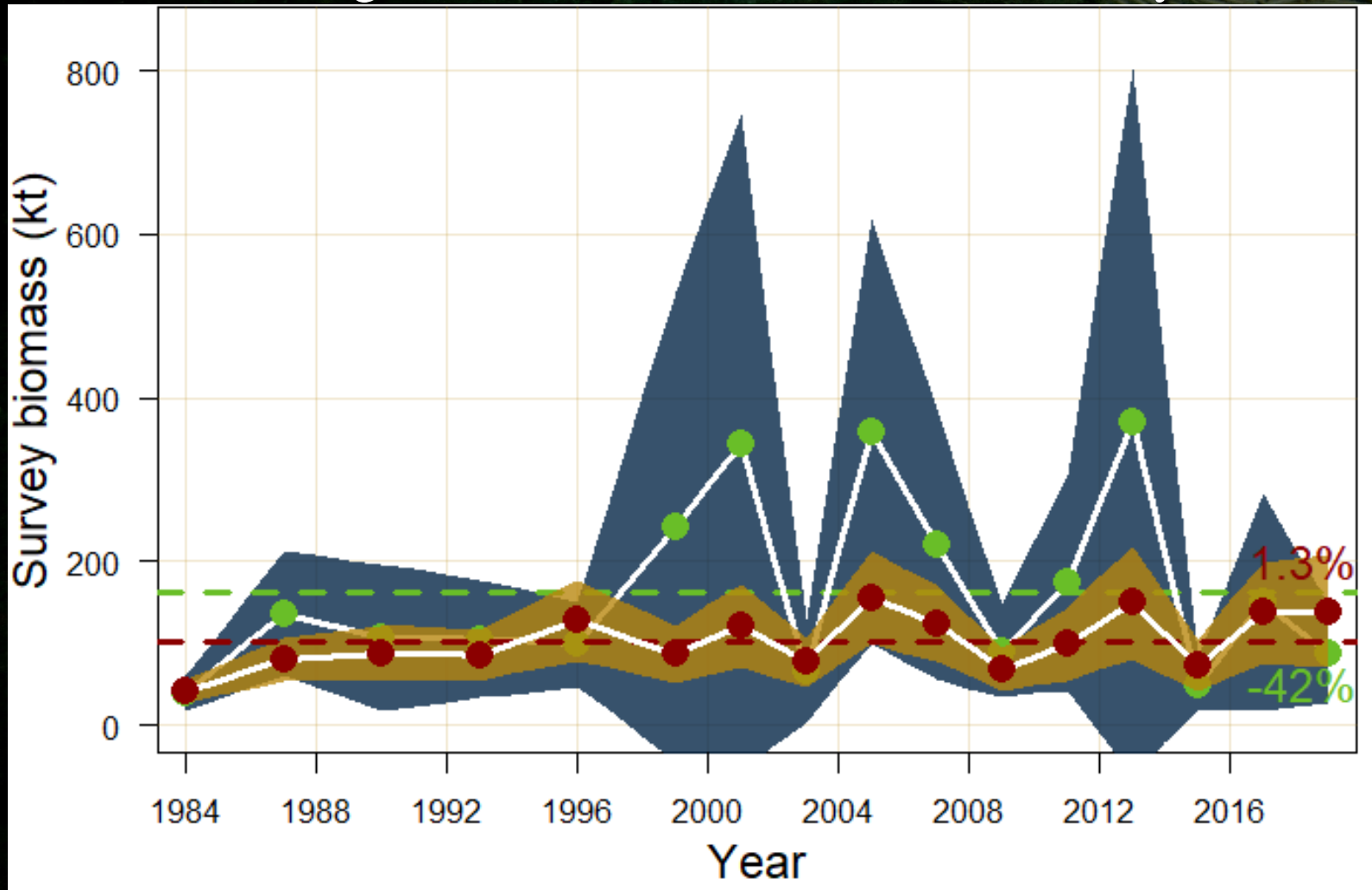
# Northern rockfish: Survey

- Model-based GOA Bottom Trawl Survey Biomass Estimate



# Northern rockfish: Survey

- Model- vs design-based GOA Bottom Trawl Survey Biomass



# Northern rockfish: Catch/Biom.

