

2018 Sablefish survey summary and harvest advice for 2019

2018-12-17

DISCLAIMER: The data summarized in this document is subject to review and may change. For the purposes of providing preliminary harvest advice for 2019 this document assumes that landed catch in 2018 will be 2,470 t (to be updated in early 2019).

British Columbia

- The annual trap based Sablefish survey consists of an offshore stratified random survey (5 spatial strata and 3 depth strata) and an inlet survey (4 inlets) in fixed locations (5 per inlet) (Figure 1).
- In 2018, 91 offshore sets (Table 1), and 20 inlet sets, were completed.
- The stratified mean survey abundance in 2018 was 38 kg/trap, which is up 33% from 2017 and 64% from the 2016-2017 average (Figures 2-5).
- Sablefish CPUE in the inlets was at or near time series highs, with the highest CPUE (~ 50 kg/trap) in Finlayson Channel and Portland Inlet (Figures 6-7).

Alaska

- Alaskan longline and trawl survey CPUE has increased in recent years (Figure 8) resulting in the federal assessment predicting large increases in spawning biomass over the next 10 years (Figure 9). However, spawning biomass is currently estimated to be low ($< 35\%B_{MSY}$), and rebuilding spawning biomass is a priority, and so no change in Alaskan Sablefish TAC in federal waters has been recommended for 2019.

British Columbia harvest advice for 2019

- The current Sablefish Management Procedure consists of fitting a surplus production model to total Sablefish landings from all B.C. fisheries and three CPUE indices of abundance: commercial trap fishery CPUE (1979-2009), standardized trap survey CPUE (1991-2009), and stratified random trap survey (2003-present).
- Management Procedure predicted biomass for 2019 is 37235 t (Figure 10), which is greater than $60\%B_{MSY}$ (Figure 11).
- Under the current Management Procedure the maximum target harvest rate for 2019 is 7.9% and the recommended TAC for 2019 is 2942t (18% increase from 2018)

Table 1: Number of offshore survey sets completed in 2018, by spatial (columns) and depth (rows) strata.

	S1	S2	S3	S4	S5
Shallow (RD1)	6	6	8	6	6
Middle (RD2)	8	7	6	6	7
Deep (RD3)	5	5	5	5	5

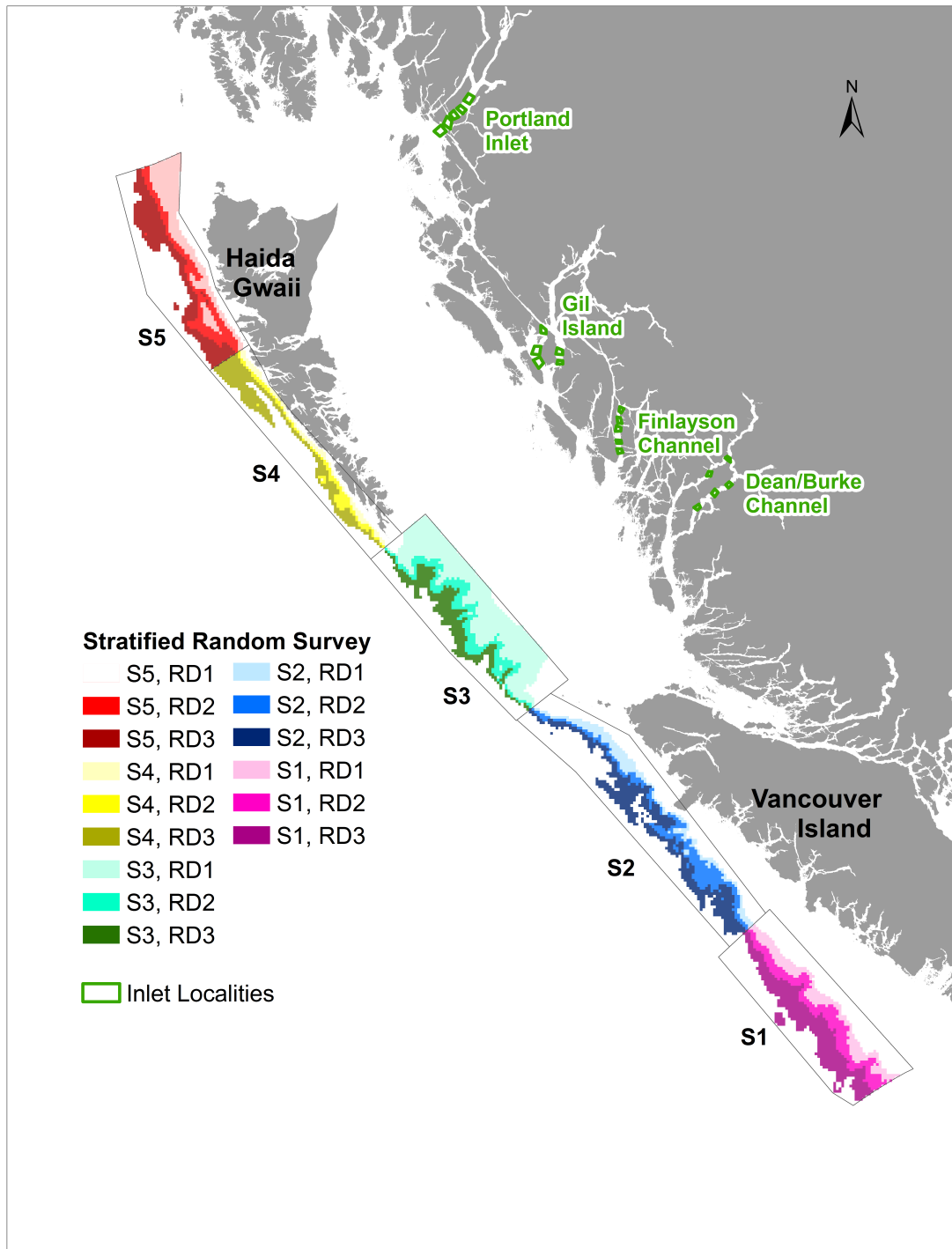


Figure 1. Stratified random survey strata and inlet survey locations.

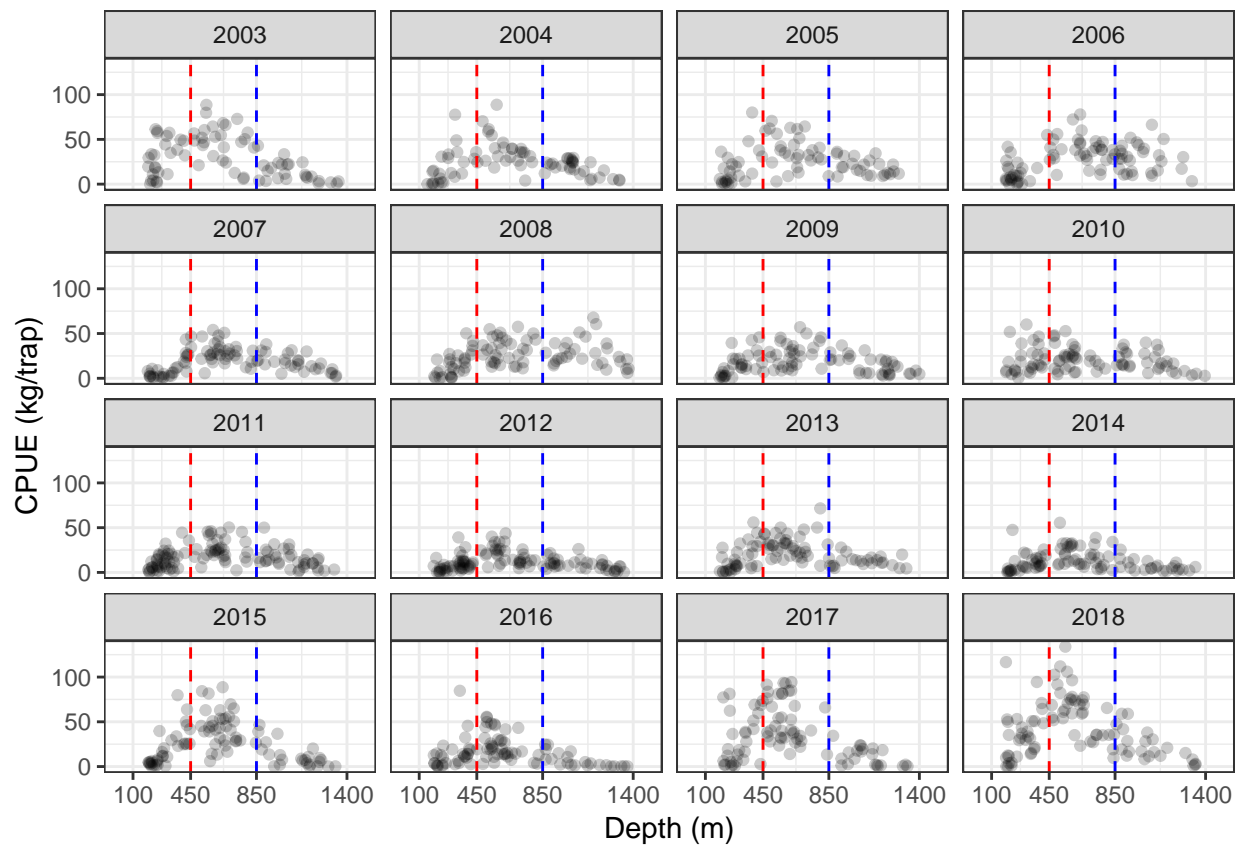


Figure 2. Sablefish catch per unit effort (CPUE) by depth and year. Dashed lines delineate depth strata (shallow = 100-450m, mid = 450-850m, deep = 850-1400m).

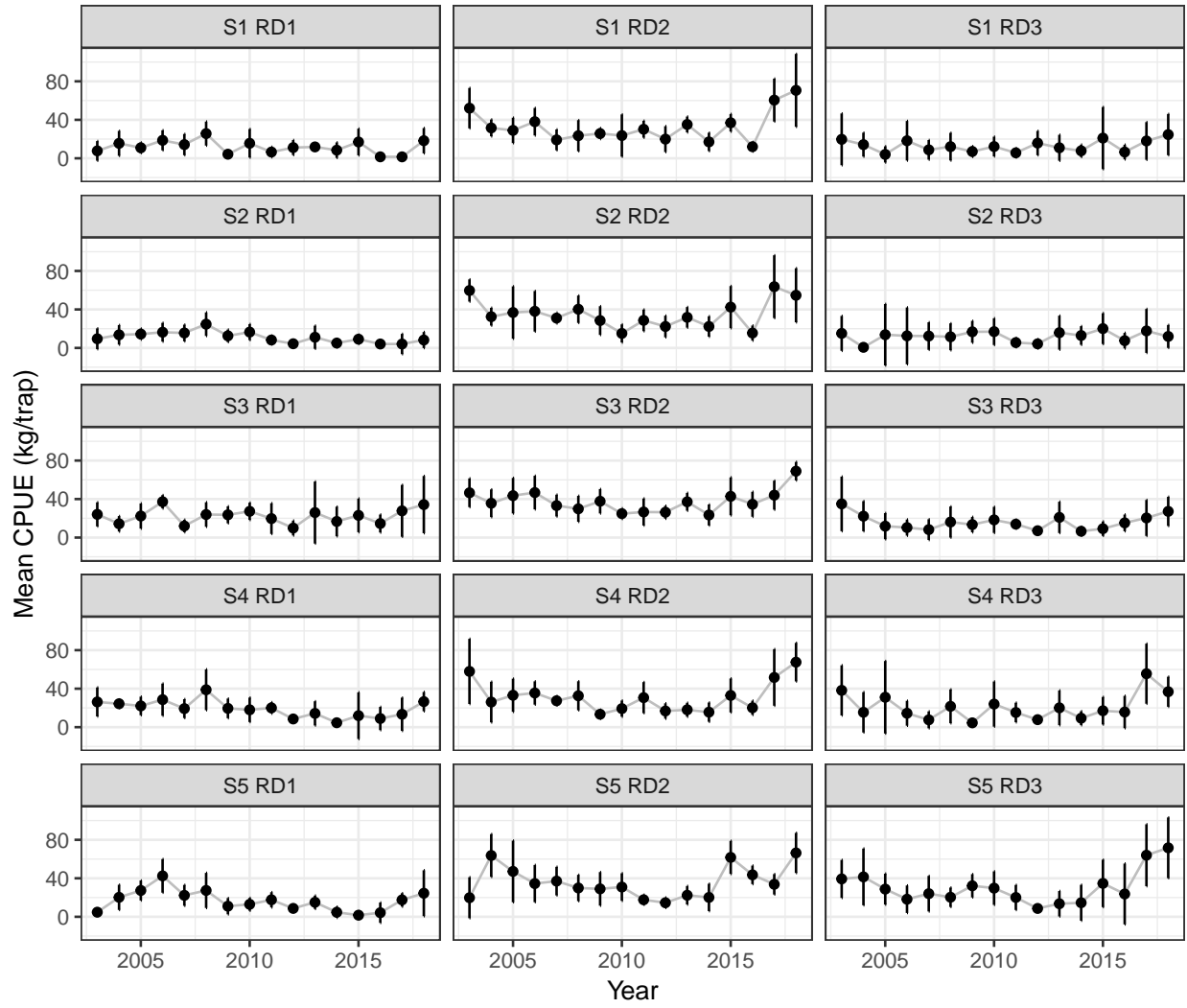


Figure 3. Average Sablefish catch per unit effort (CPUE; mean \pm 95% CIs) by survey strata over time. Panels run shallow to deep (left to right) and south to north (top to bottom).

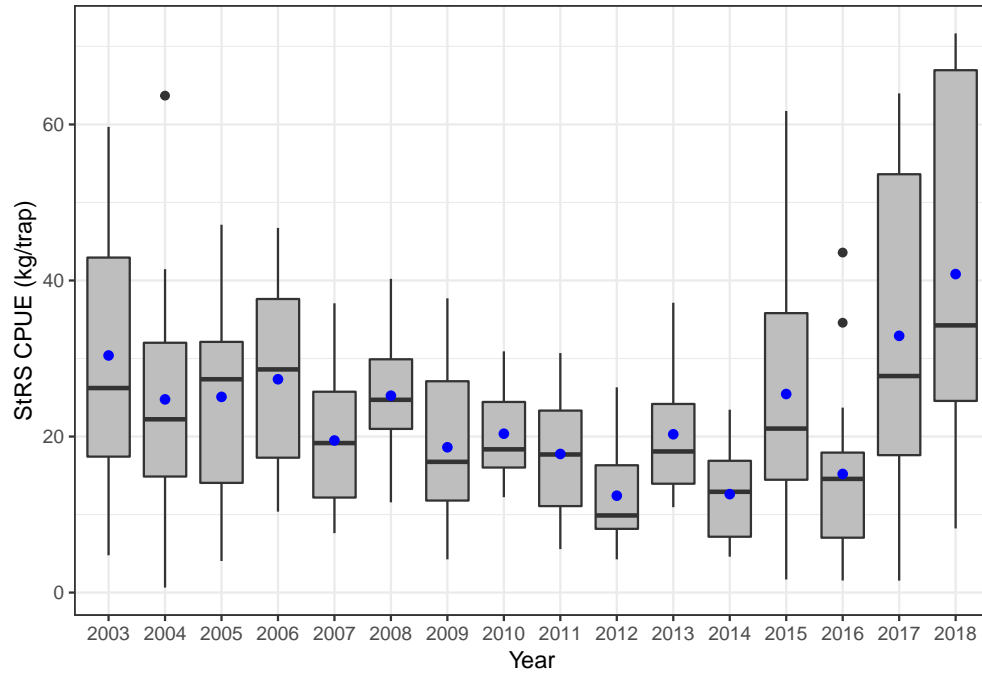


Figure 4. Sablefish catch per unit effort (CPUE) by offshore survey strata over time. Horizontal line is median and blue dots are arithmetic mean.

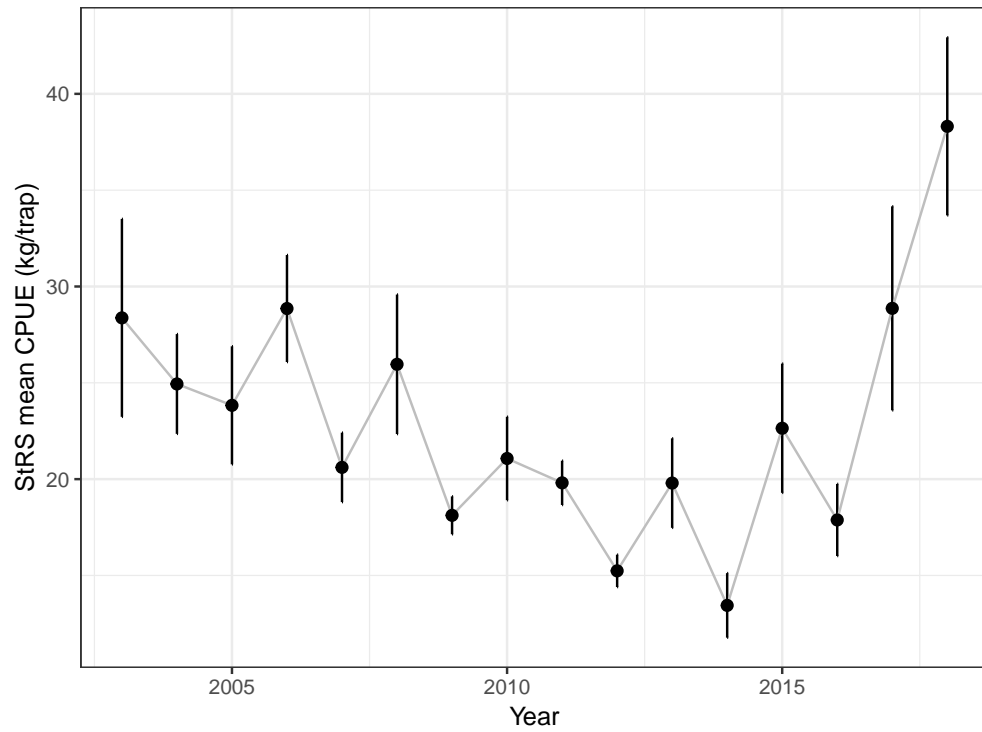


Figure 5. Sablefish biomass (stratified mean \pm variance) over time.

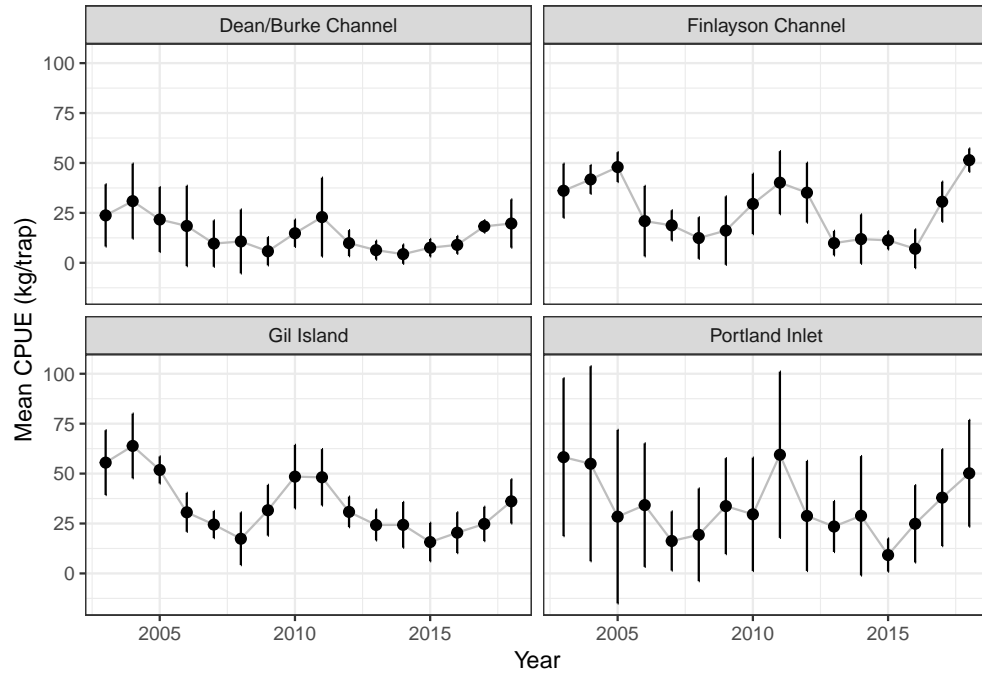


Figure 6. Sablefish catch per unit effort (CPUE; mean \pm 95% CIs) by inlet over time.

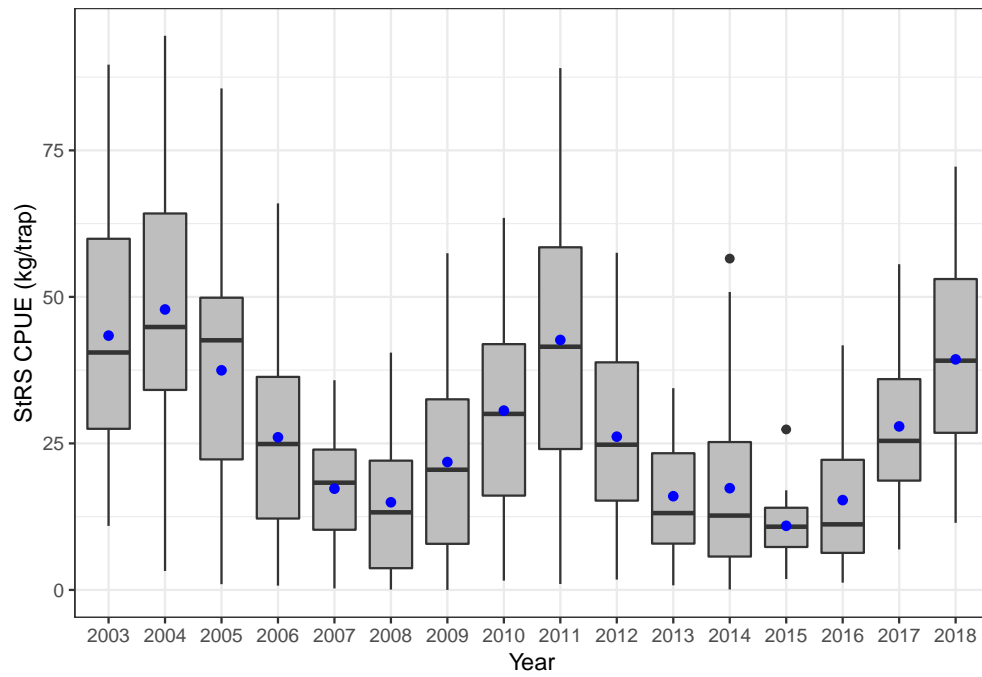


Figure 7. Sablefish catch per unit effort (CPUE) across all inlets over time. Horizontal line is median and blue dots are arithmetic mean.

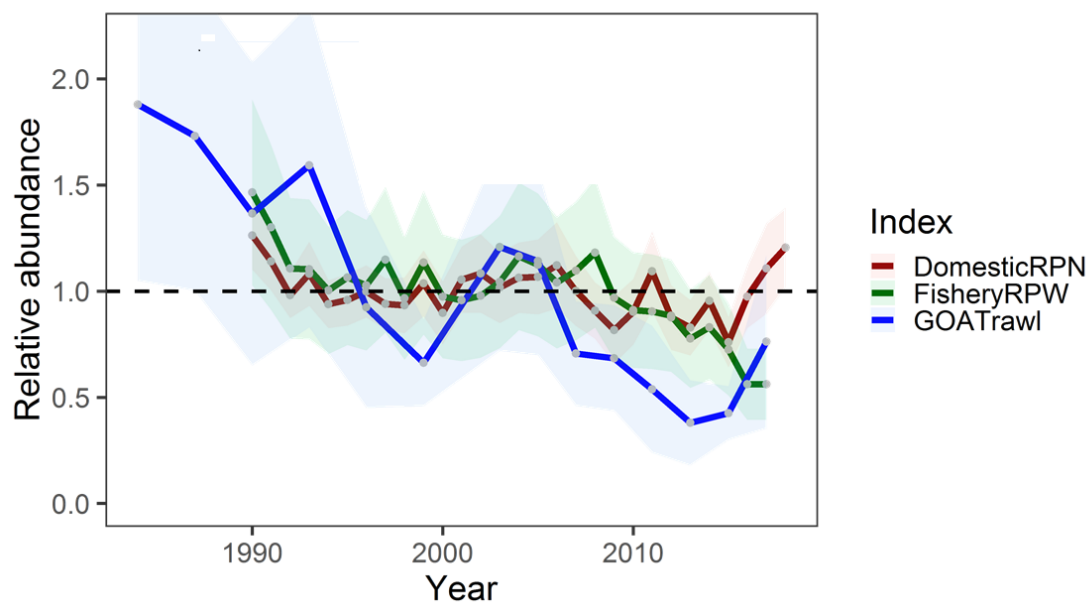


Figure 8. Alaskan Sablefish longline (DomesticRPN) and trawl (GOATrawl) survey indices as well as fishery catch (FisheryRPW). Figure courtesy NOAA Alaska Fishery Science Center.

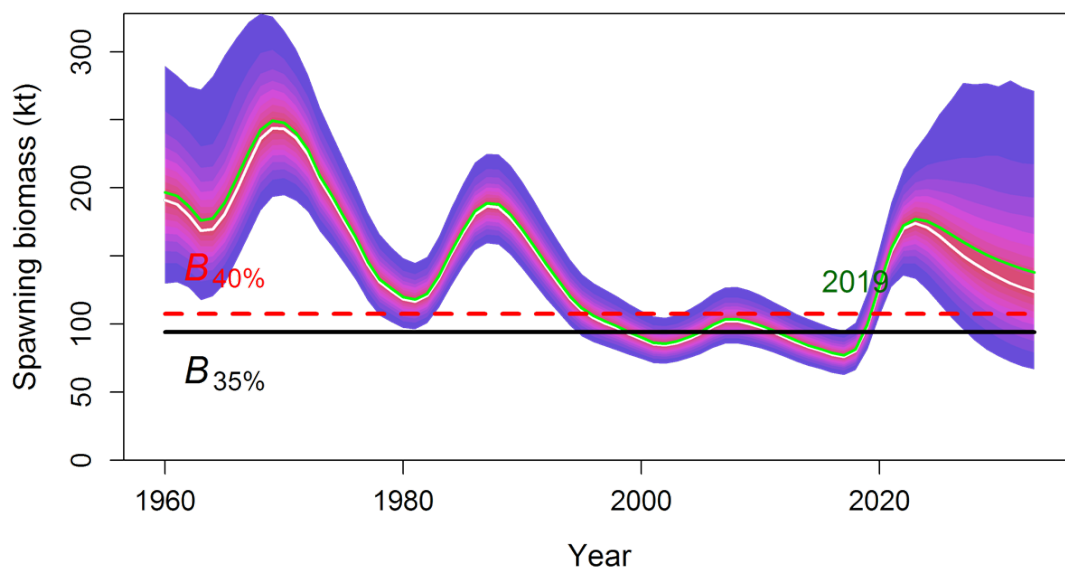


Figure 9. Predicted Alaskan Sablefish spawning biomass. Figure courtesy NOAA Alaska Fishery Science Center.

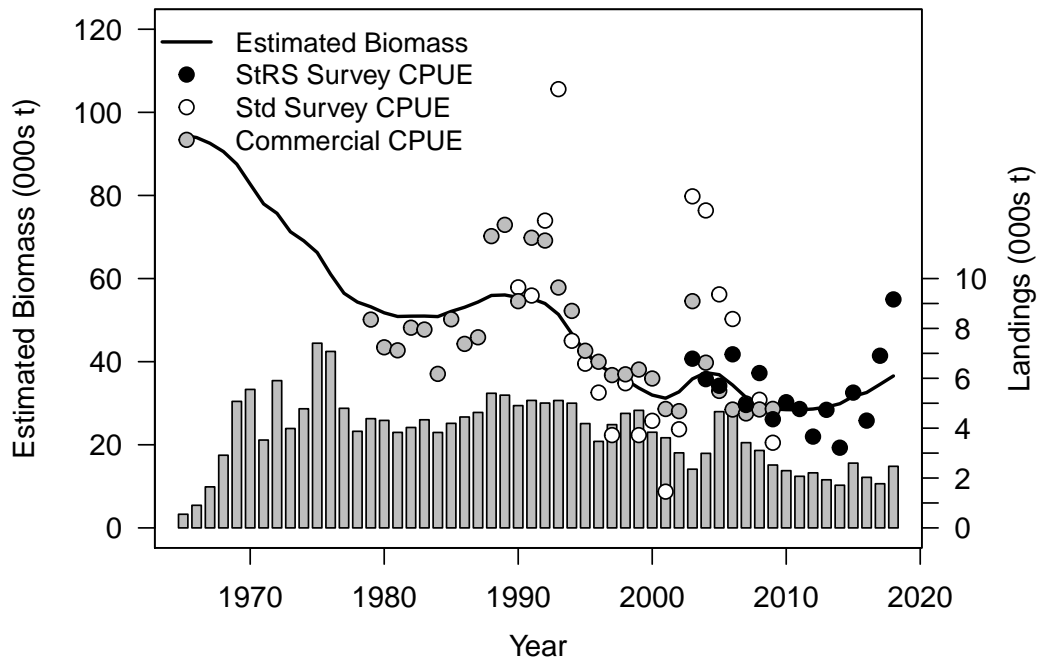


Figure 10. Total British Columbia Sablefish landings, CPUE indices and Management Procedure estimated Sablefish biomass.

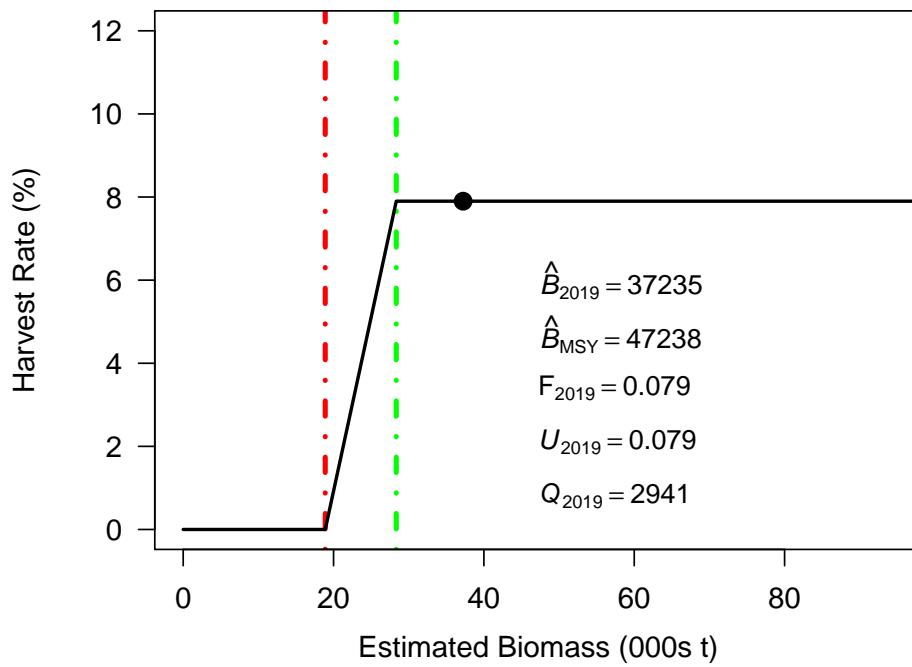


Figure 11. Predicted 2019 Sablefish biomass (black point; \hat{B}) and corresponding maximum harvest rate under the current Management Procedure's harvest control rule. Dashed green and red lines denote 40% and 60% \hat{B}_{MSY} , respectively.