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Comparison of different squid simulations

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# COMPARISON OF DIFFERENT SQUID SIMULATIONS

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## SUMMARY

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This report was developed in rmarkdown to compare results of different cases of Humboldt Squid Stock simulations. It collects the output files of “Run HSquid\_Rmd.R” script. The parameters by cases are shown in tables and the main variables (recruitments, biomass, fishing selectivity, catches, etc.) are shown in graphs.

## INTRODUCTION

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The ‘HSquid\_Html.rmd’ rmarkdown script was developed to simulate Humboldt Squid Stock dynamics using an input parameter file named HSquid\_Par.csv.

The ‘Run HSquid\_Rmd.R’ R script was written to conduct different simulation by means of run ‘HSquid\_Html.rmd’ with different input parameters and to save parameters and main results in csv format file and graphs in png format files.

Therefore, it was necessary to write a rmarkdown script to report on the different simulations outputs (‘Run Squid Rmd.R’).

## METHODS

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No calculations were done in this script. The figures and tables are read from the current folder.

The individual, population and fishery parameters are shown in tables 1 to 3.

## RESULTS

**Table 1. Individual Parameters by case.**

Case	a_expo	b_expo	a	b	lm50	lmrange
1	309.11	0.0029	2.31e-05	3.077	80	10
2	309.11	0.0029	2.31e-05	3.077	80	10
3	309.11	0.0029	2.31e-05	3.077	80	10

**Table 2. Season Recruitment Parameters by case.**

Case	RSeason	SdSeason
1	1	0
2	3	0
3	3	0

**Table 3. Population Parameters by case.**

Case	M_Annual	M_bin	M_cv	SB0	SRModel	h	prev.rsigma	rsigma
1	1.5	0.125	0	1e+07	1	0.9	0.0	0.0
2	1.5	0.125	0	1e+07	1	0.9	0.0	0.0
3	1.5	0.125	0	1e+07	1	0.9	0.1	0.1

**Table 4. Fishery Parameters by case.**

Case	Fref1	as1	bs1	cs1	Fref2	as2	bs2	cs2
1	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
2	0.1	0.15	0.4	0.15	0.1	0.15	0.8	0.15
3	0.2	0.15	0.5	0.15	0.1	0.15	0.9	0.15

Figure 1. N at first Month by case.

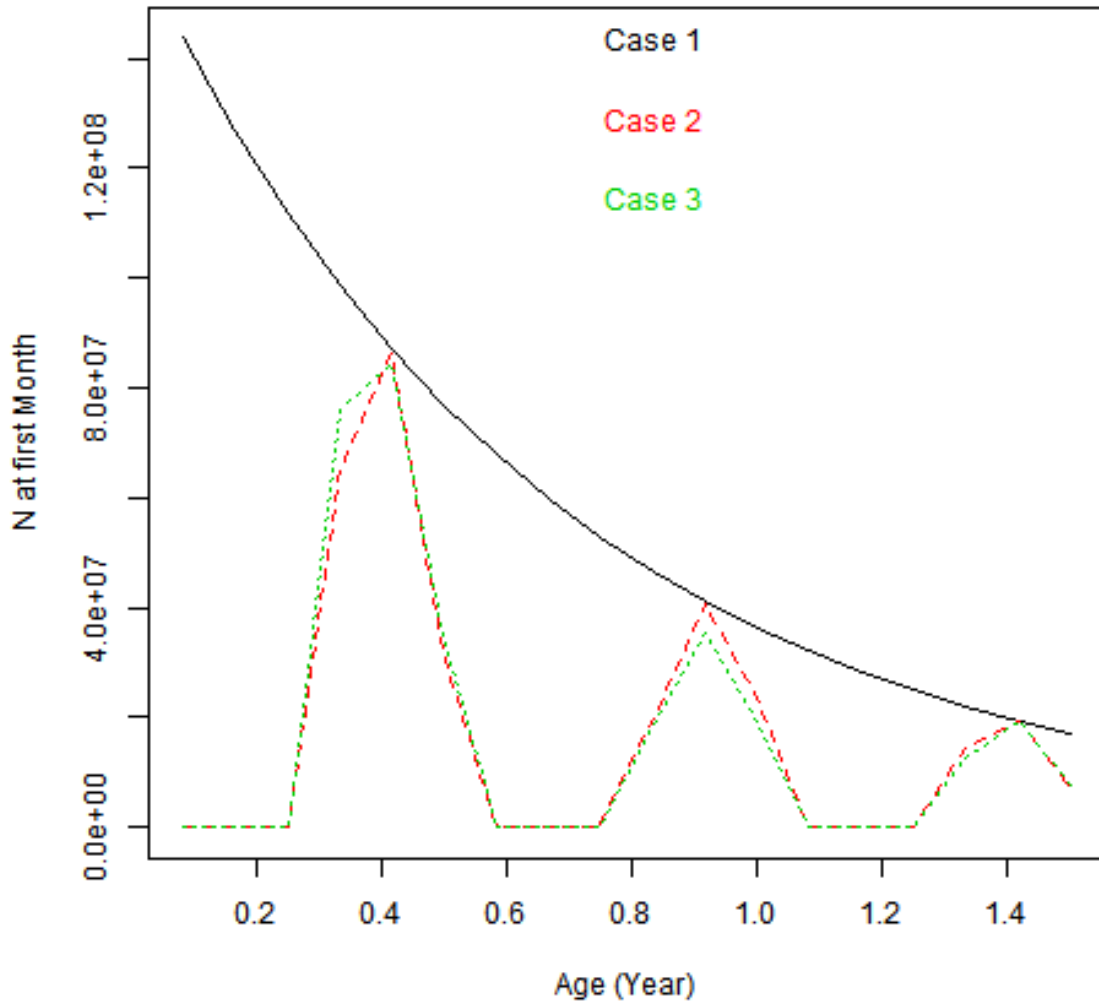
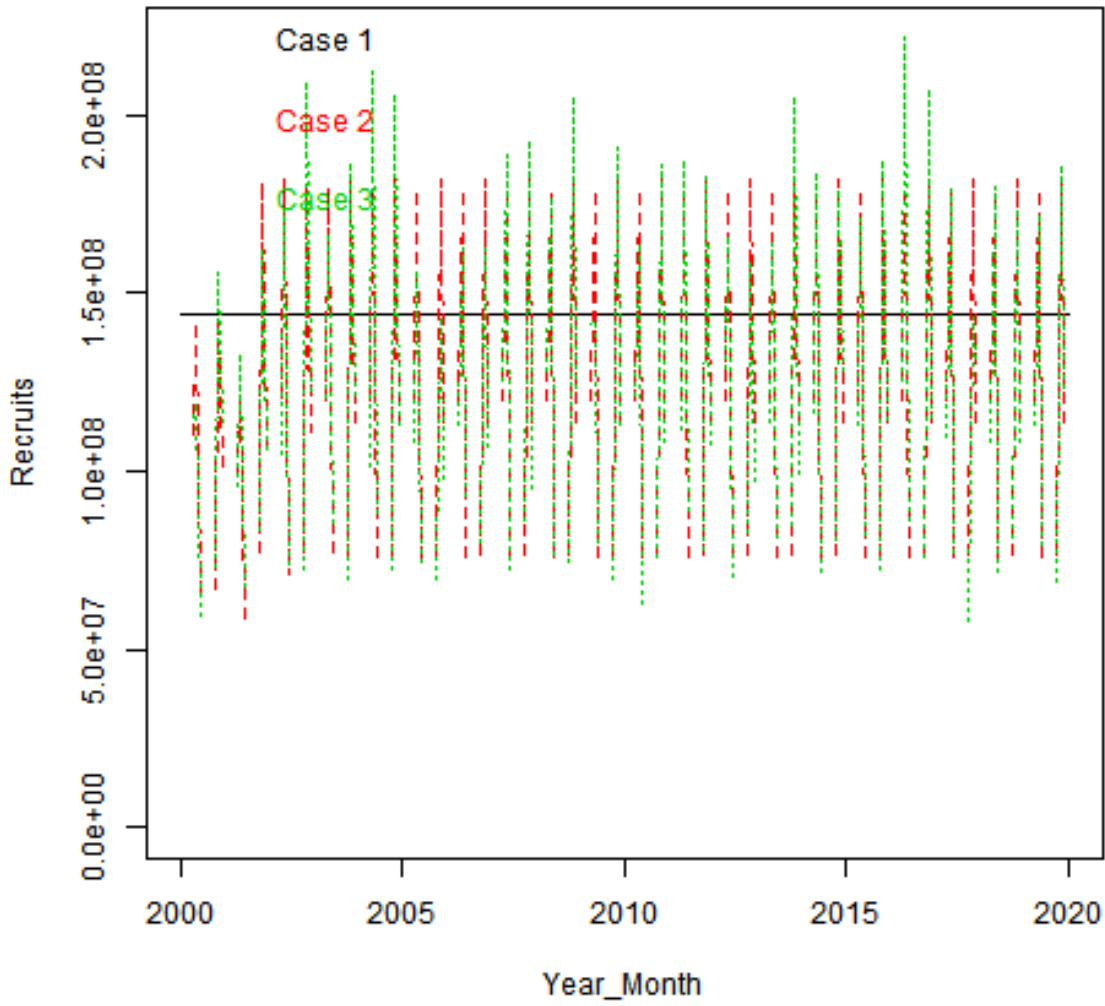


Figure 2. Recruitment by case.



**Figure 3. Whole Biomass by case.**

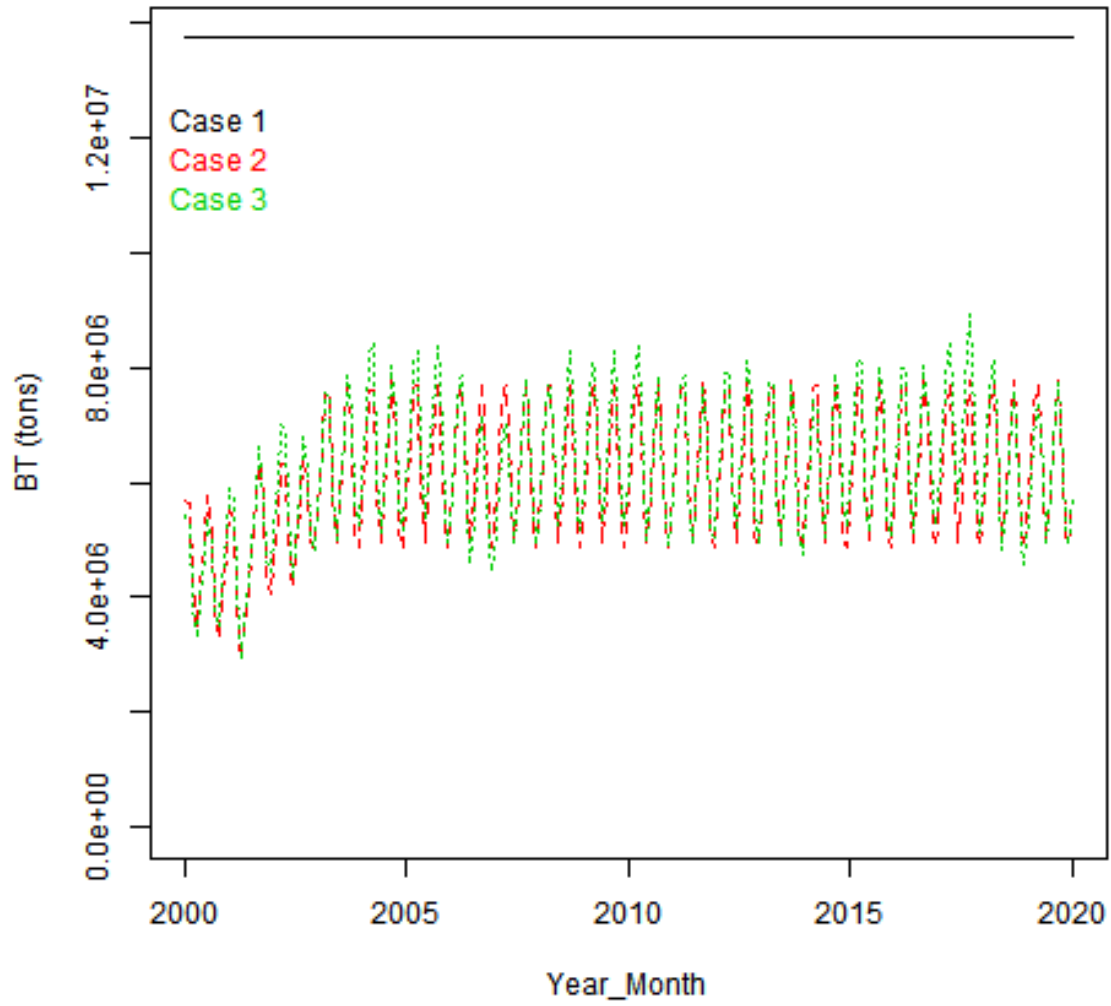


Figure 4. Spawning Biomass by case.

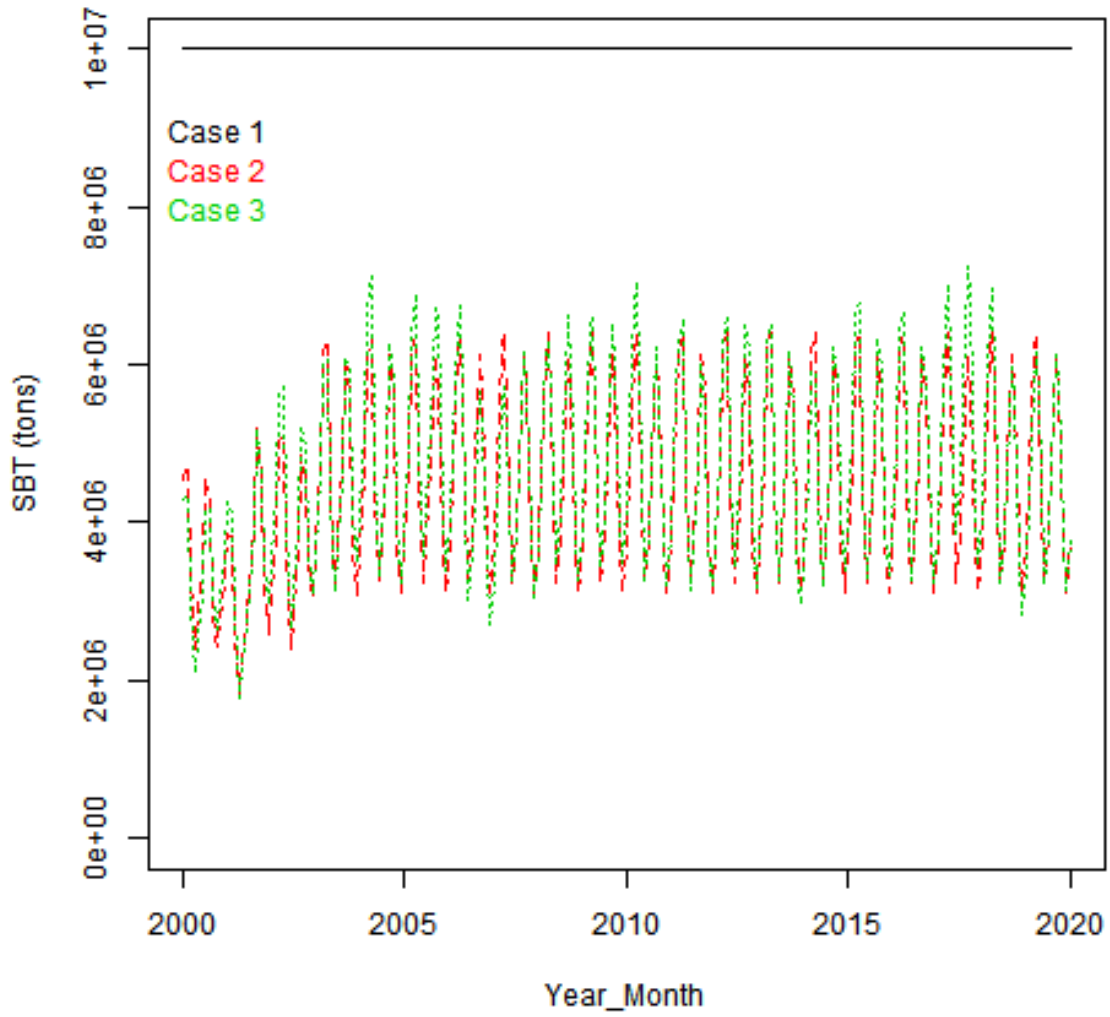
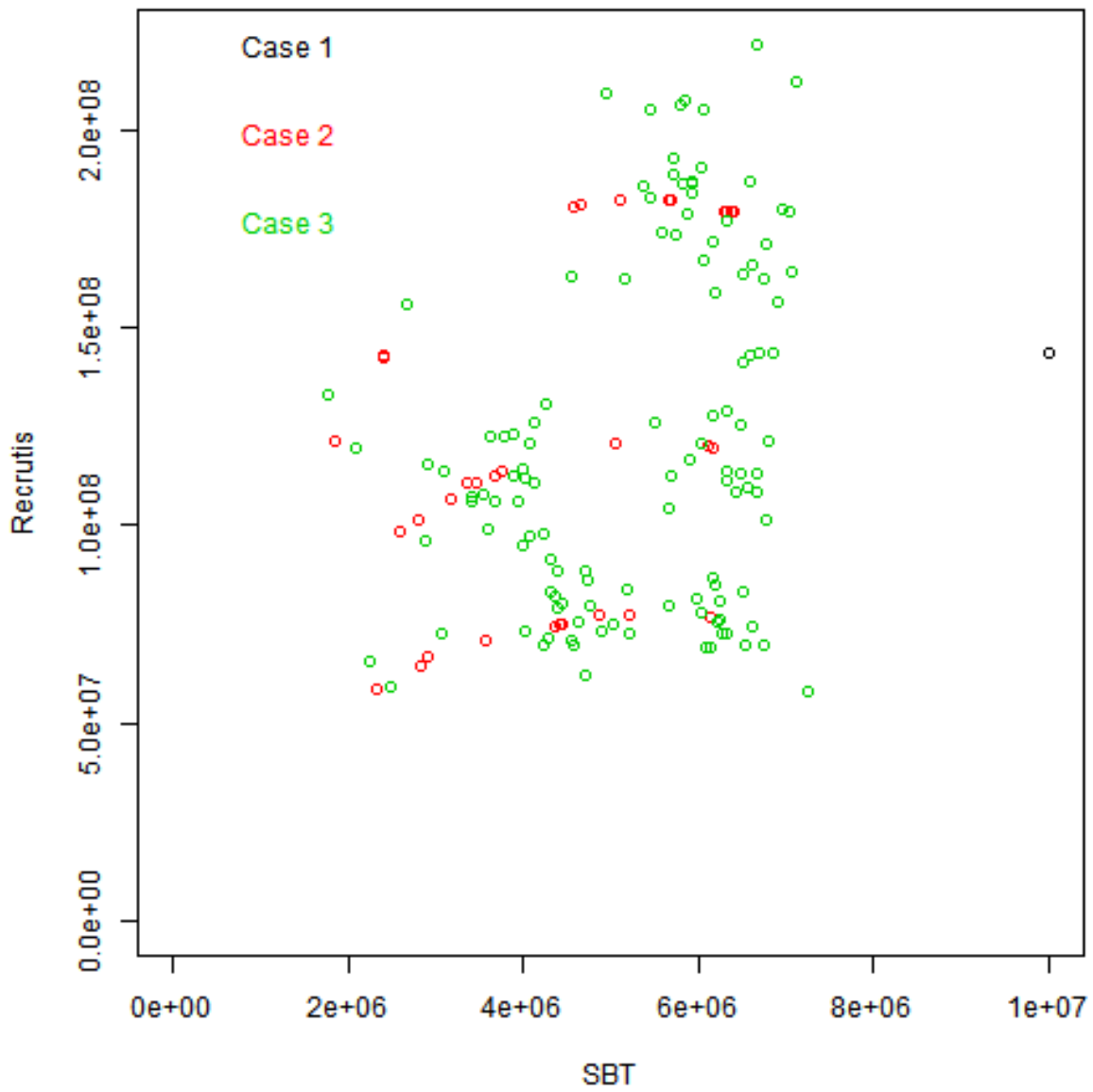




Figure 5. Stock versus Recruitment by case.



**Figure 6. Fleet 1 Selectivity by case.**

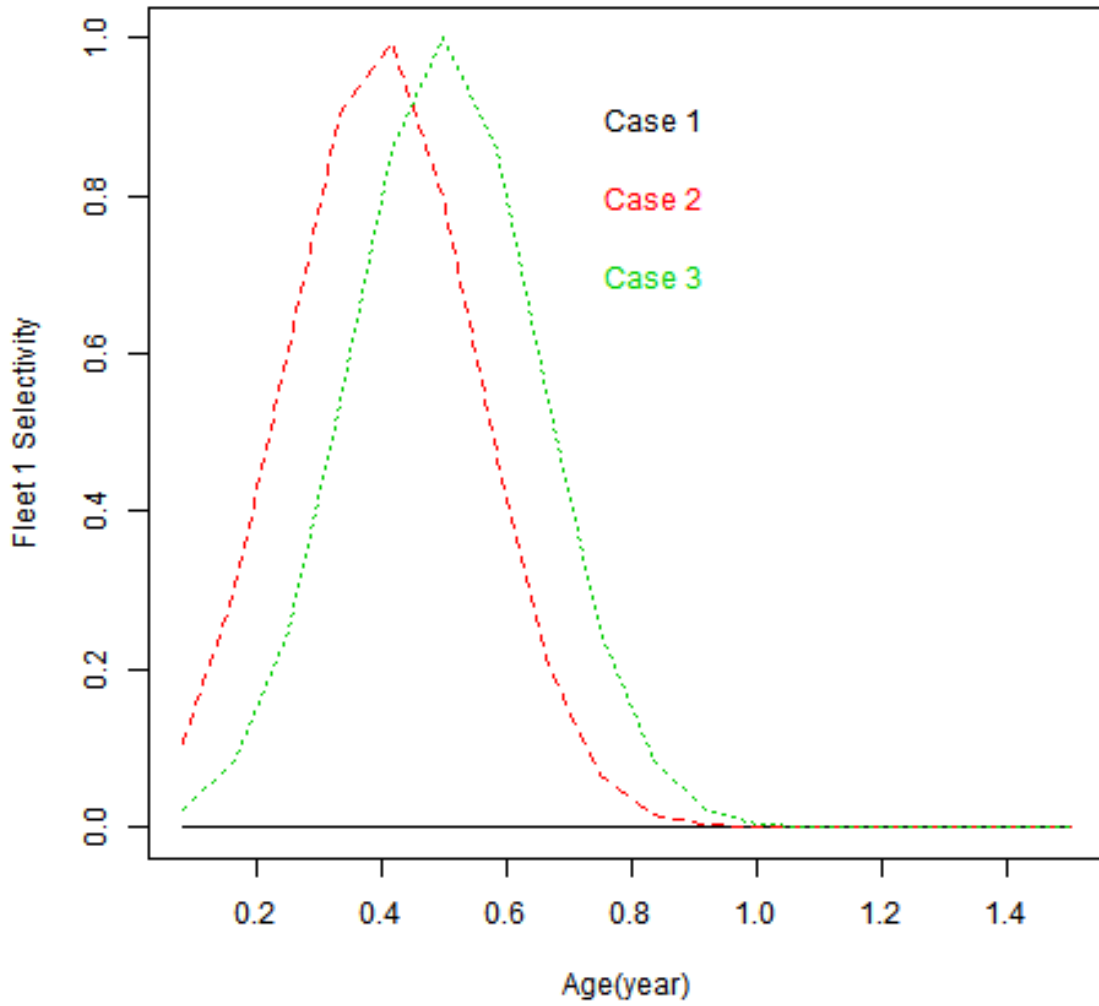
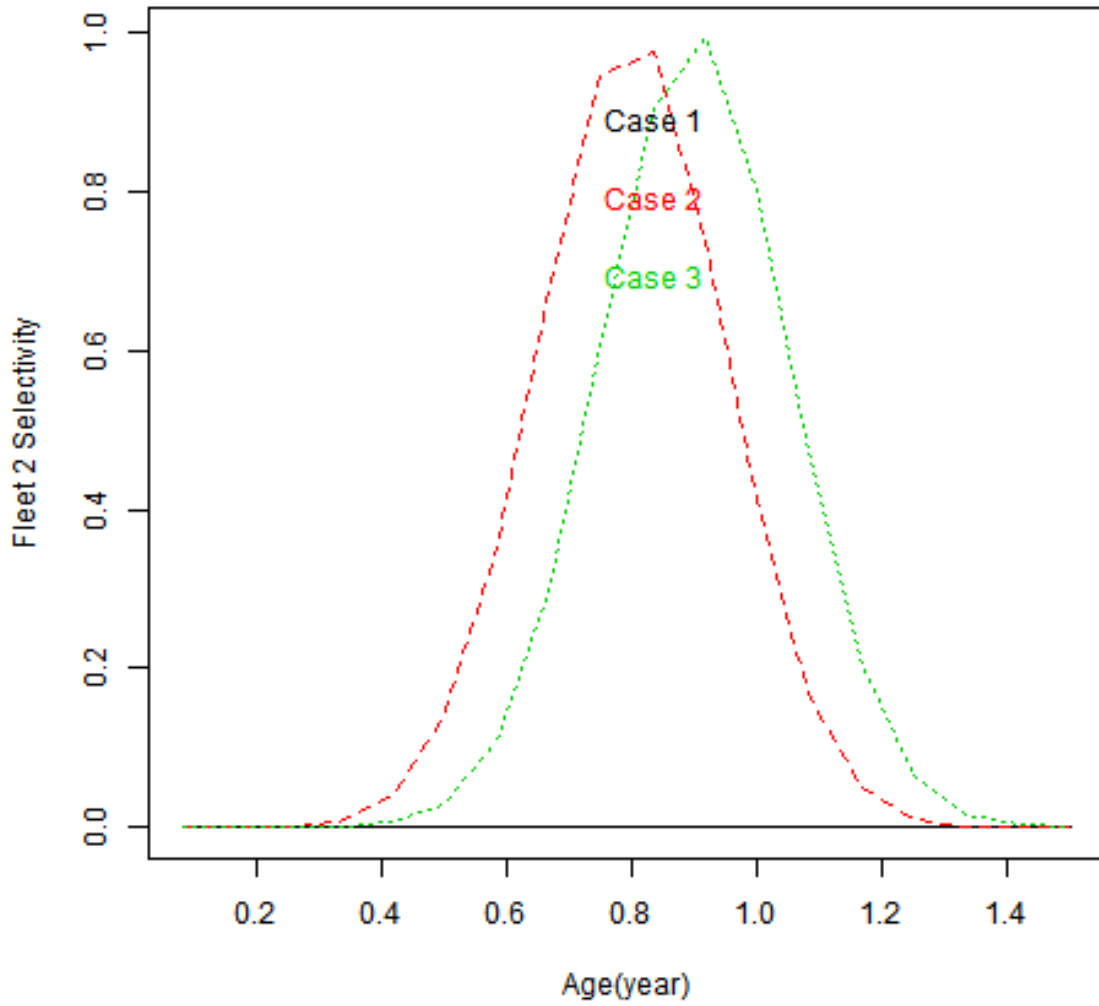


Figure 7. Fleet 2 Selectivity by case.



**Figure 8. Fleet 1 Catch (tons) by case.**

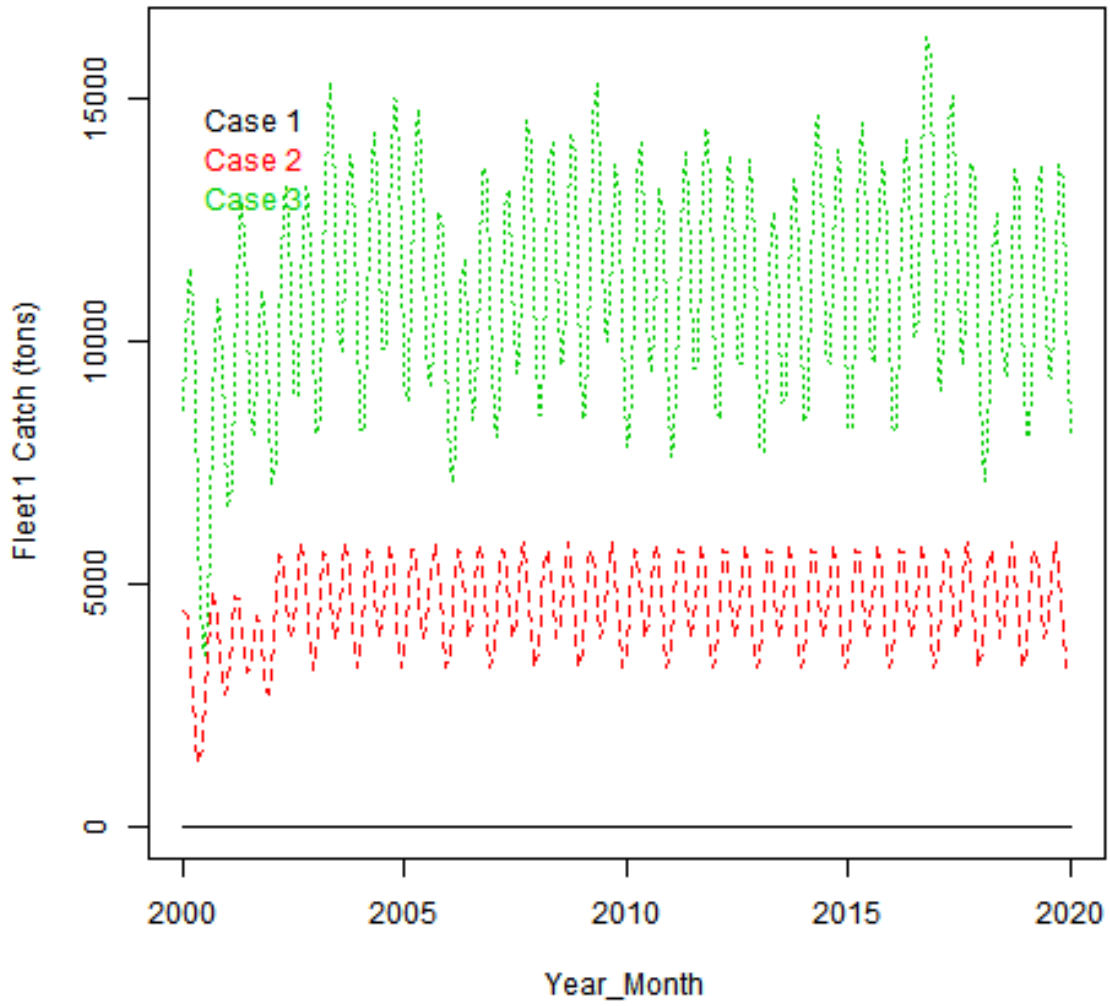


Figure 9. Fleet 2 Catch (tons) by case.

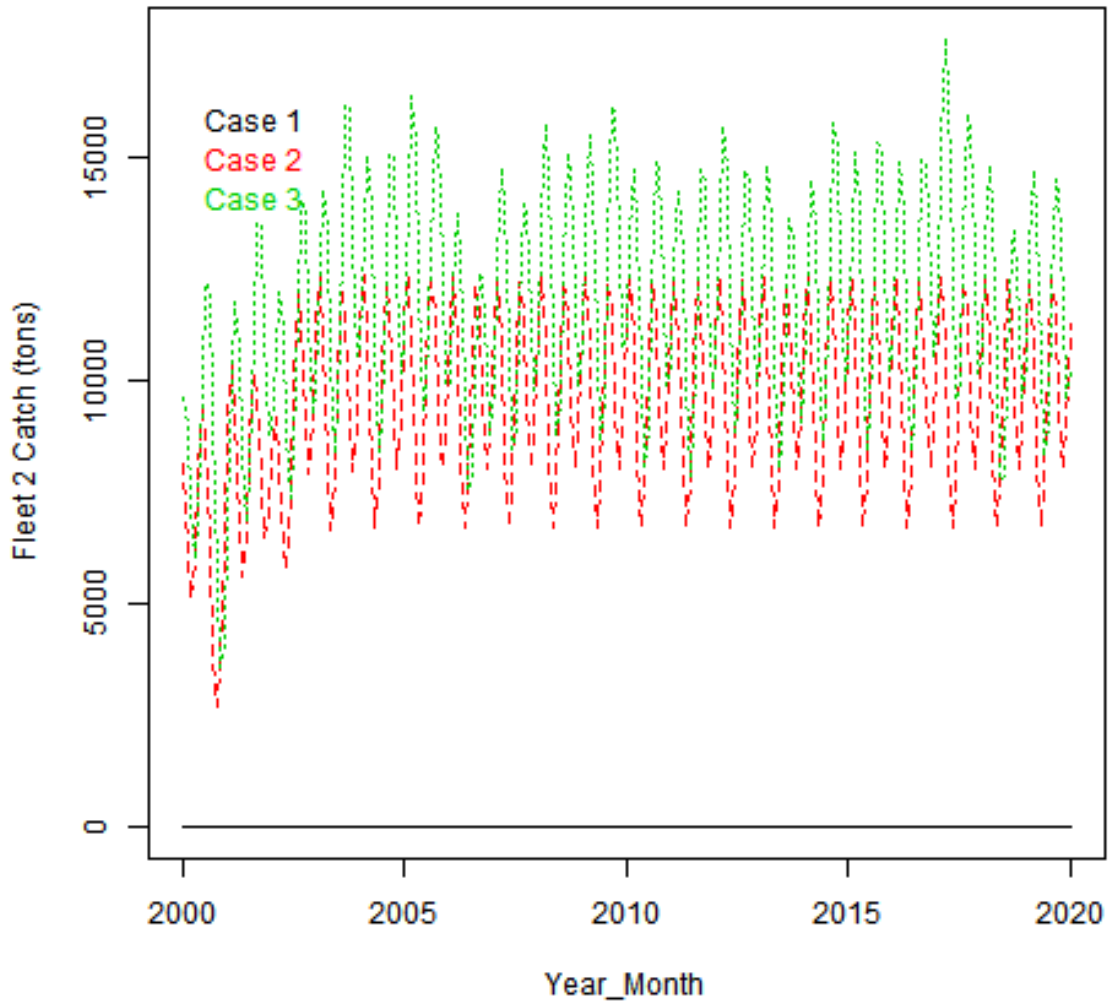


Figure 8. Whole Catch (tons) by case.

