



COMPARISON OF DIFFERENT SQUID SIMULATIONS

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SUMMARY

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

The ‘SQUIDSIM.rmd’ rmarkdown script was developed to simulate Humboldt Squid Stock dynamics using an input parameter file named HSquid_Par.csv.

The ‘SQUIDSIM_RunCases_Purl.R’ R script was written to conduct different simulation by means of run ‘SQUIDSIM.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 (‘SQUIDSIM_RunCases_Purl.R’).

METHODS

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.

Cas e	M_Annua l	M_bin	M_c v	SB0	SRMode l	h	prev.rsigma	rsigma
1	2.63	0.2191667	0.00	1.5e+07	1	0.7	0.0	0.00
2	2.63	0.2191667	0.15	1.5e+07	1	0.7	0.2	0.20
3	2.63	0.2191667	0.15	1.5e+07	1	0.7	0.0	0.15

Table 4. Fishery Parameters by case.

Case	Fref1	as1	bs1	cs1	Fref2	as2	bs2	cs2	Fref3	as3	bs3	cs3
1	0.0	0.15	0.7	0.15	0.0	0.15	1	0.1	0.00	0.2	1.5	0.3
2	0.1	0.15	0.6	0.15	0.2	0.15	1	0.1	0.15	0.3	1.5	0.2
3	0.2	0.15	0.7	0.15	0.3	0.15	1	0.1	0.20	0.2	1.5	0.3

Figure 1. N at first Month by case.

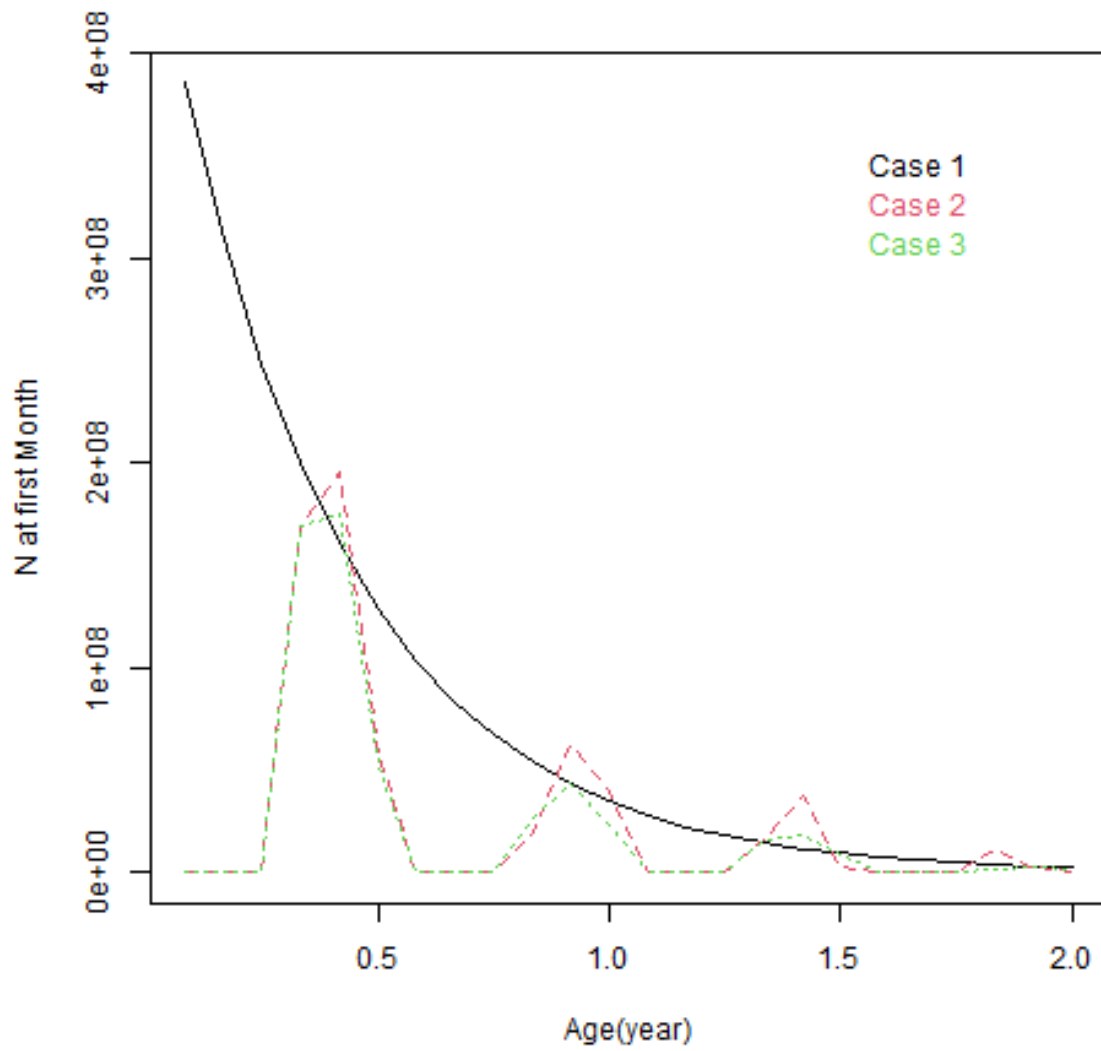


Figure 2. Recruitment by case.

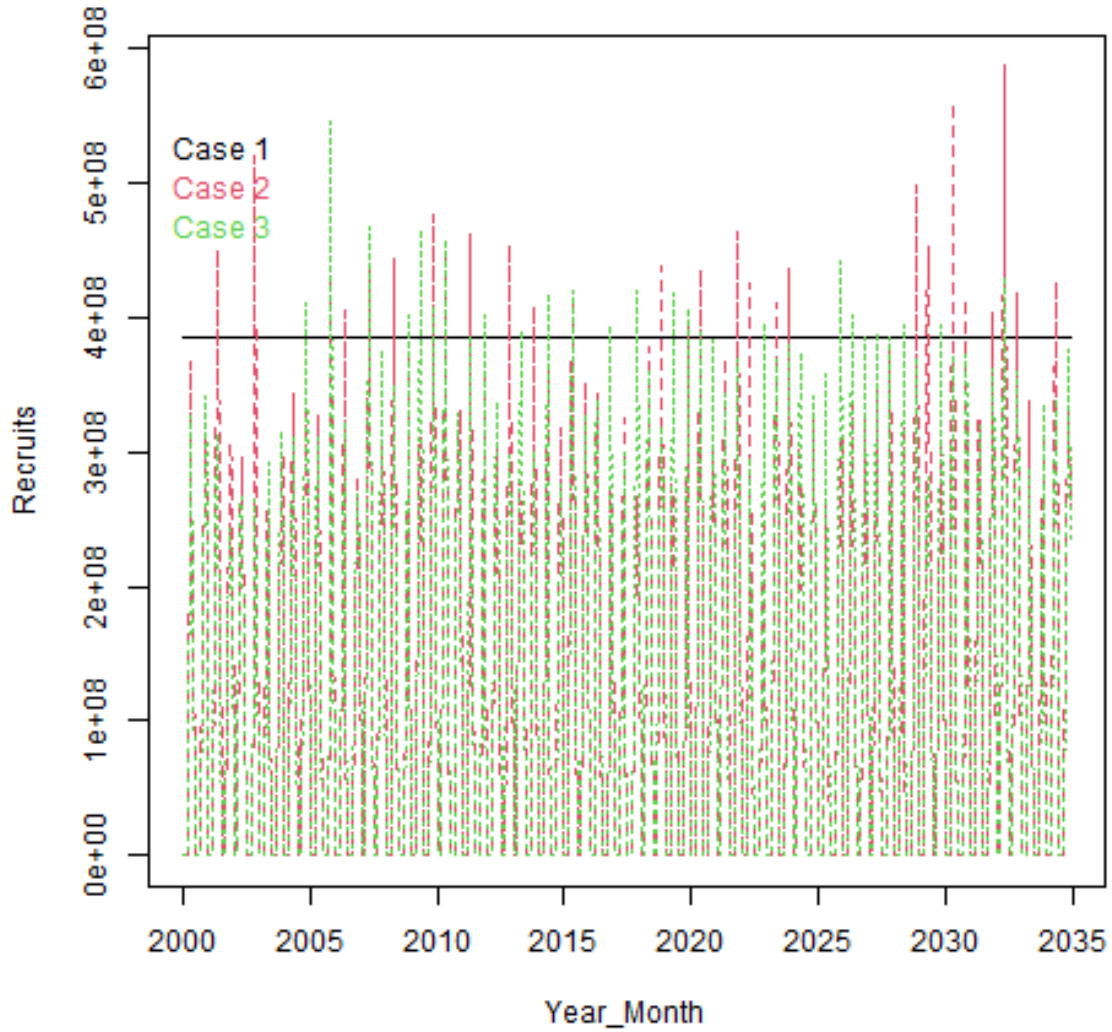


Figure 3. Stock versus Recruitment by case.

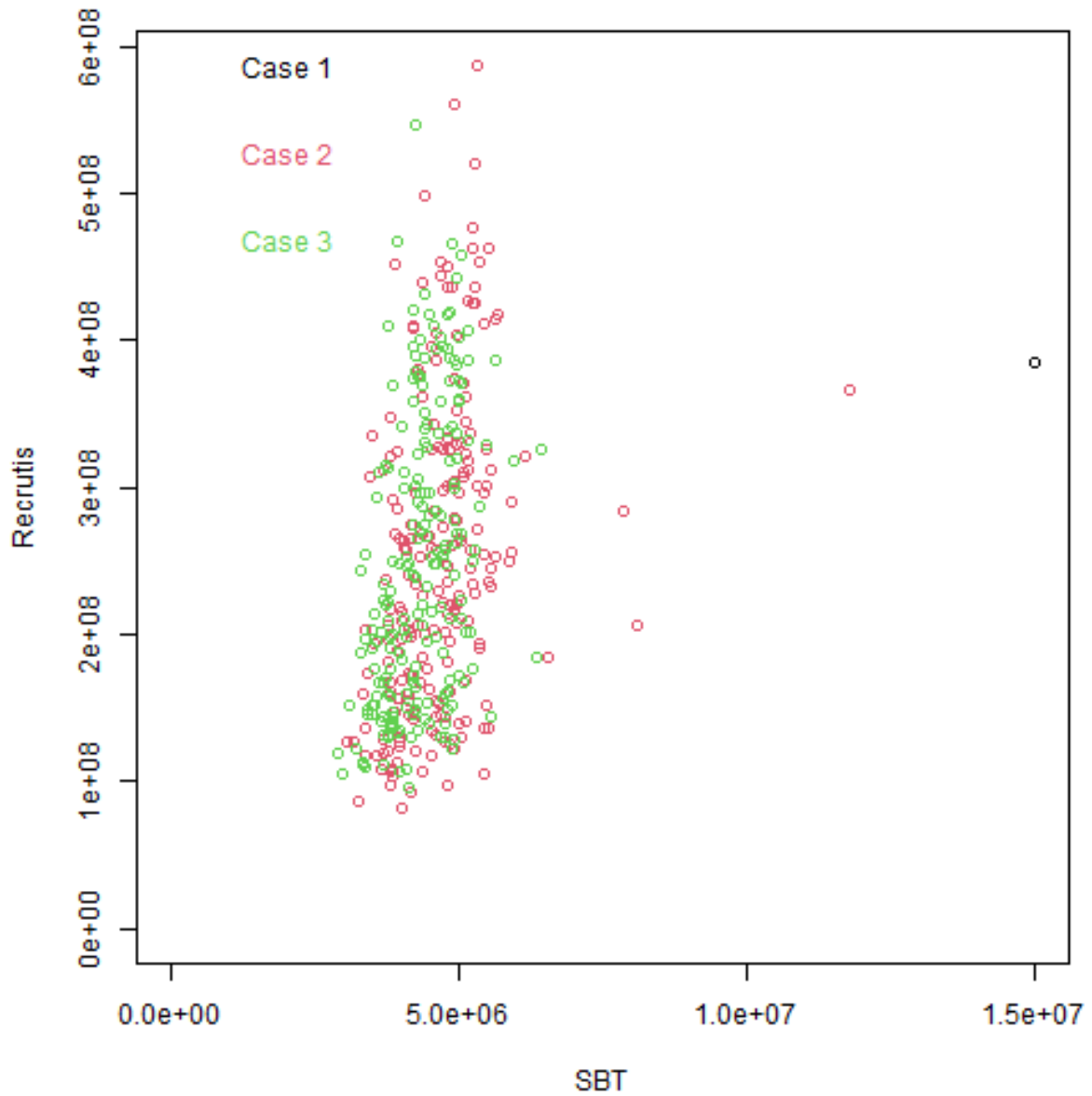


Figure 4. Whole Biomass by case.

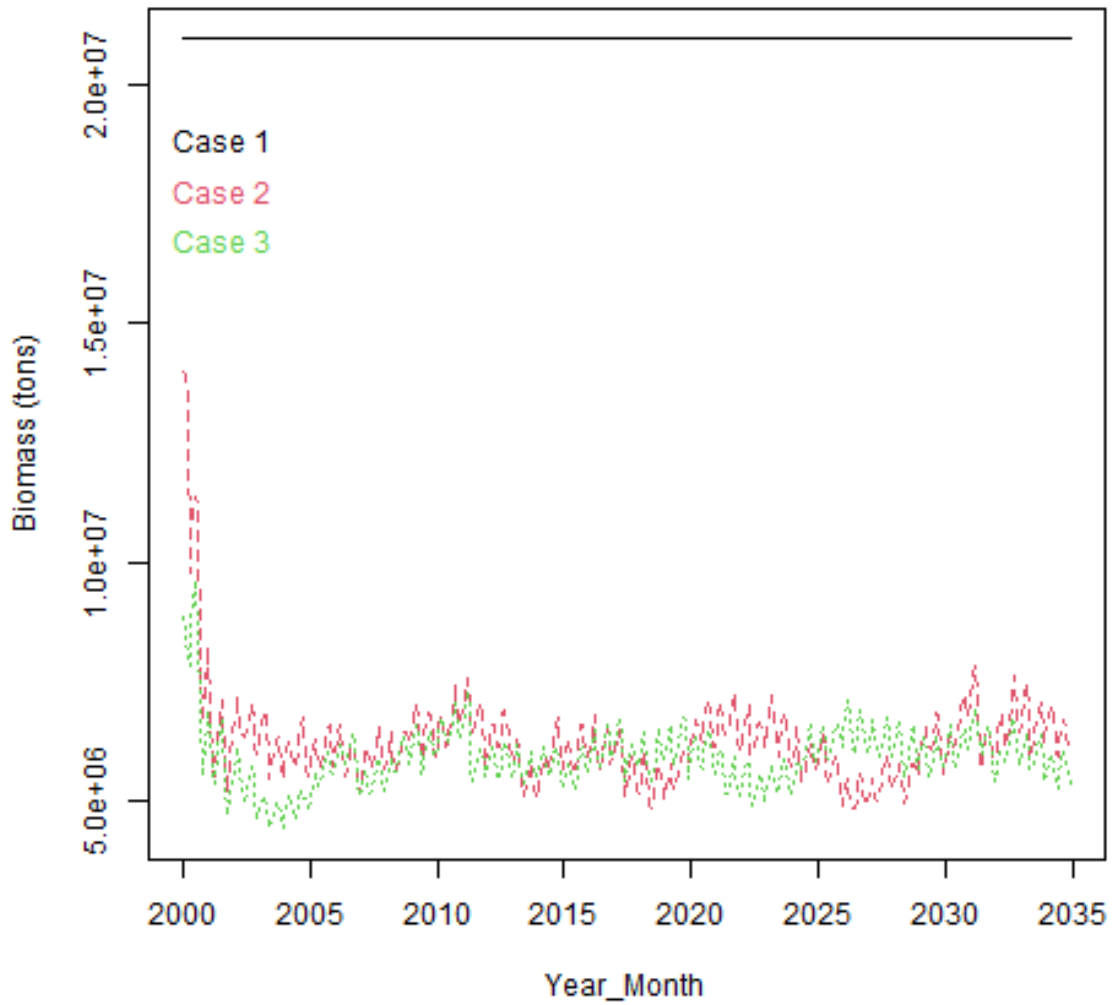


Figure 5. Spawning Biomass by case.

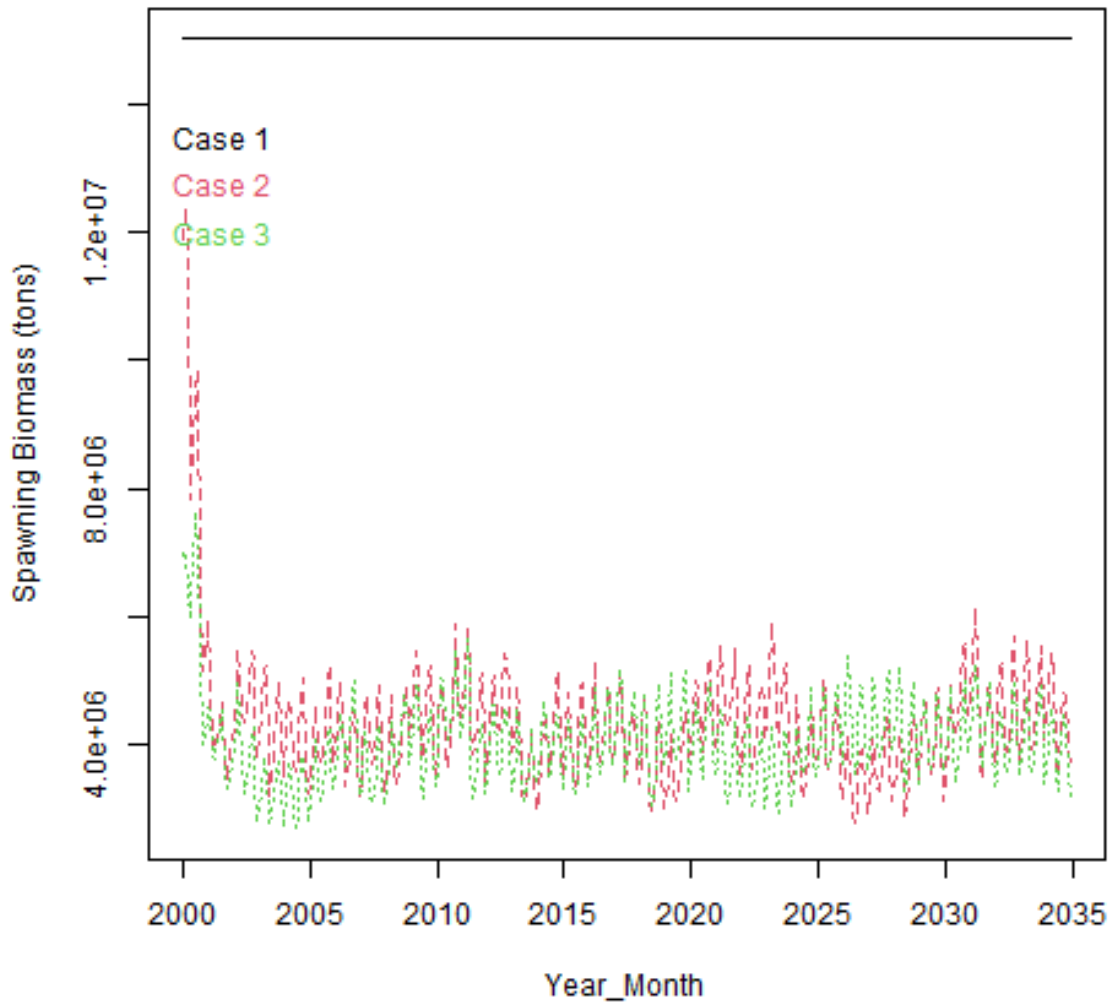


Figure 6. Fleet 1 Selectivity by case.

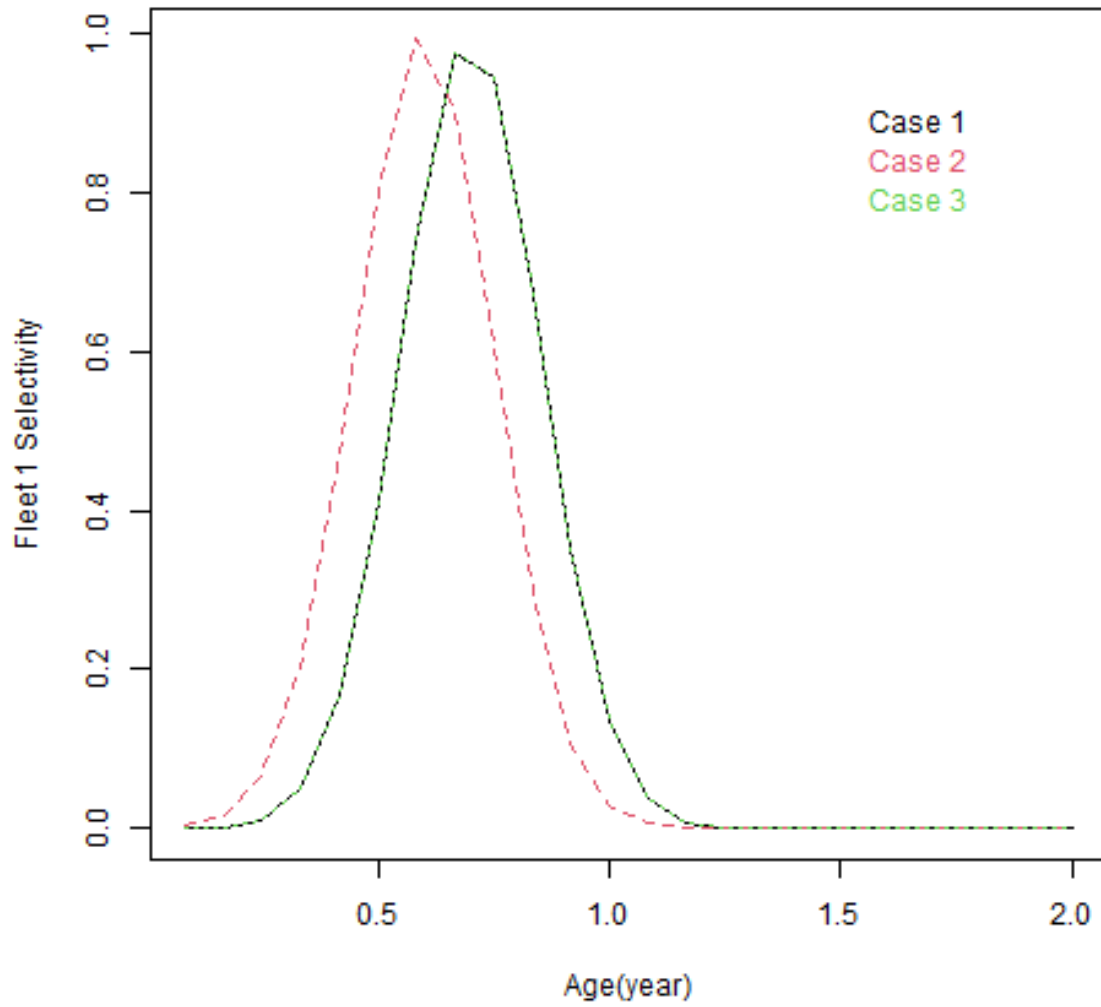


Figure 7. Fleet 2 Selectivity by case.

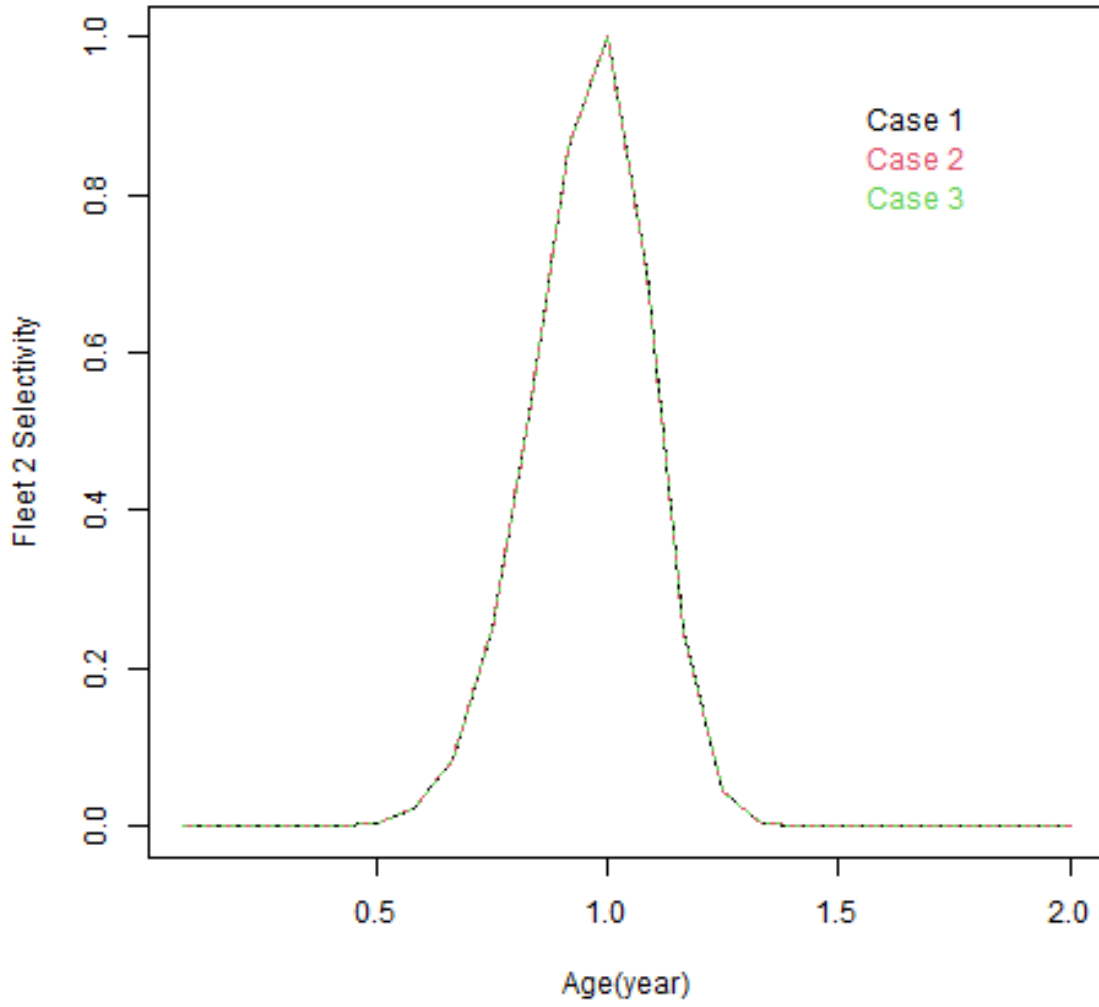


Figure 8. Fleet 3 Selectivity by case.

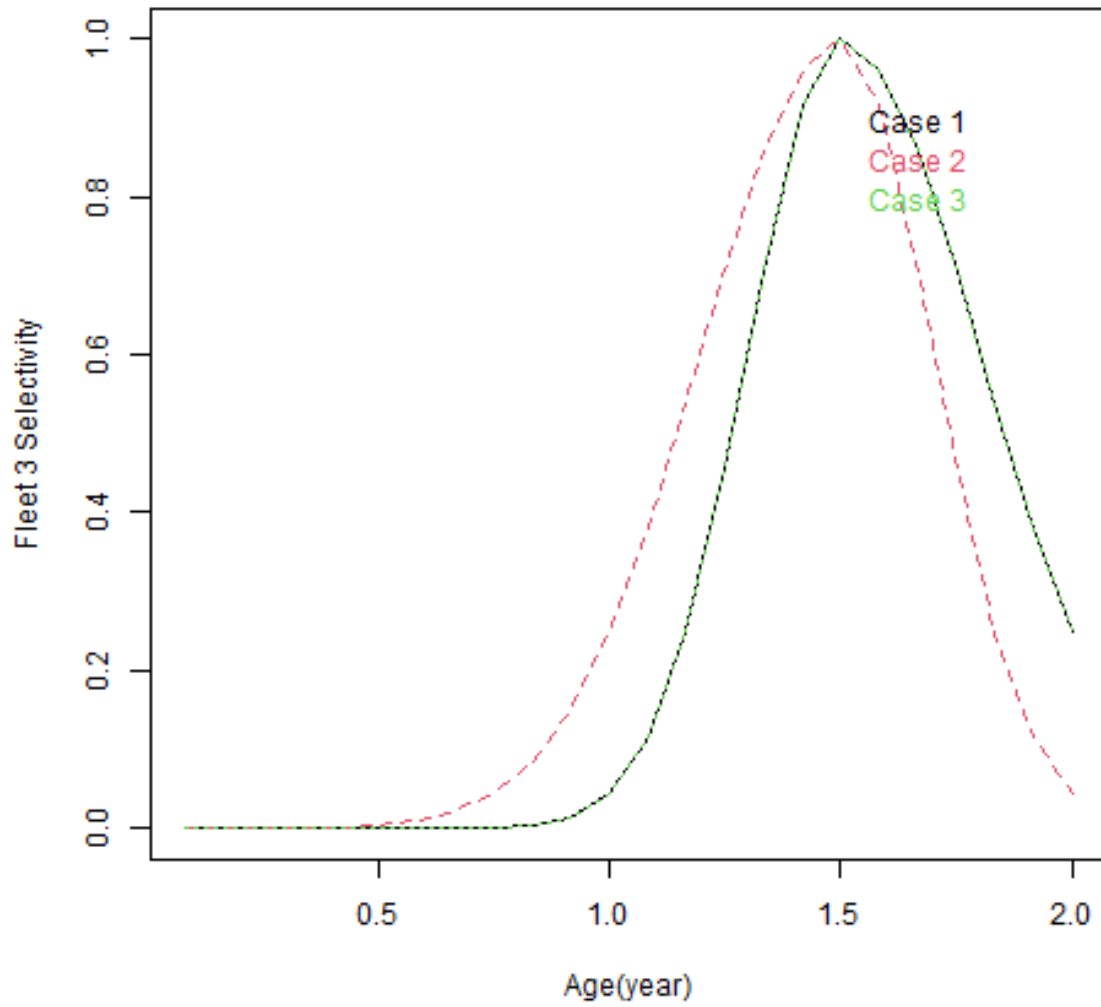


Figure 9. Fleet 1 Catch (tons) by case.

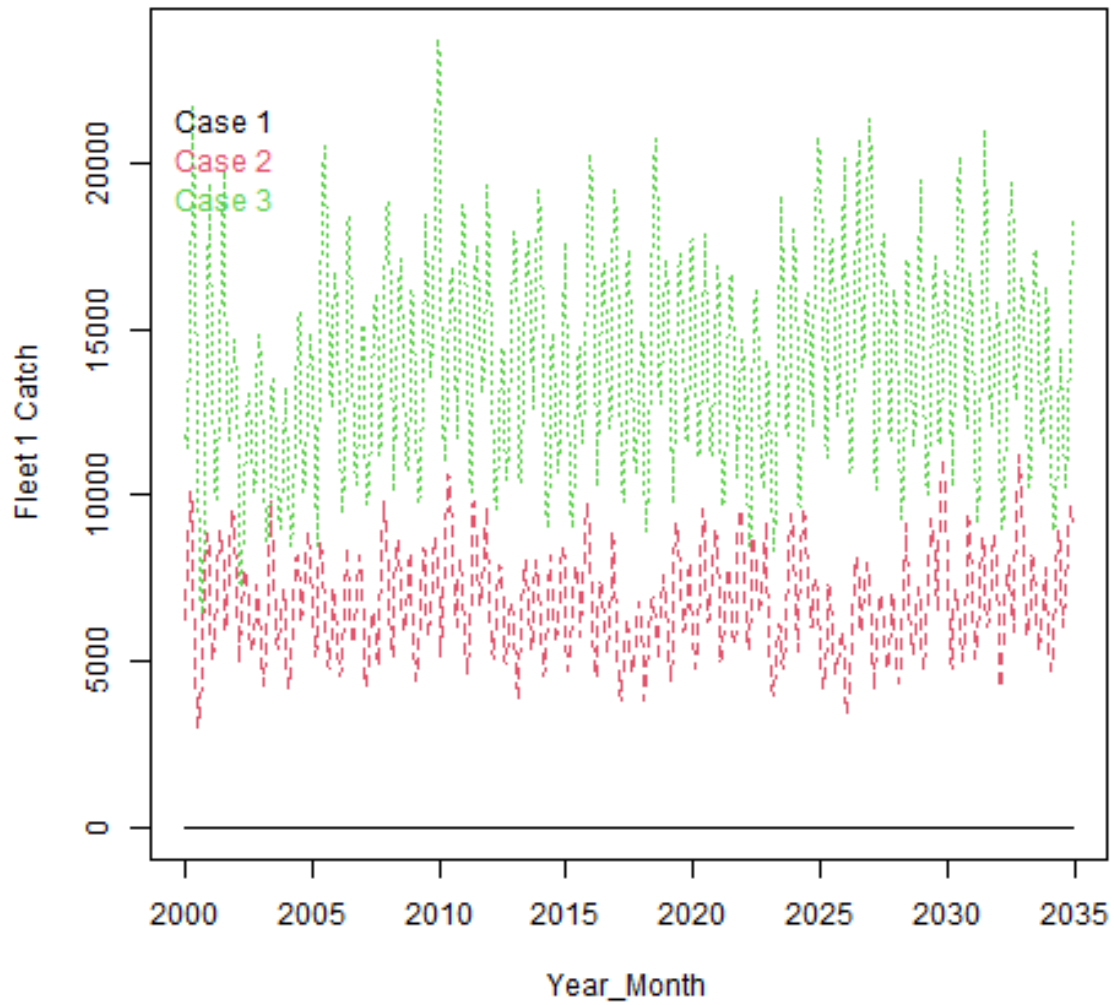


Figure 10. Fleet 1 Catch (tons) by year and case.

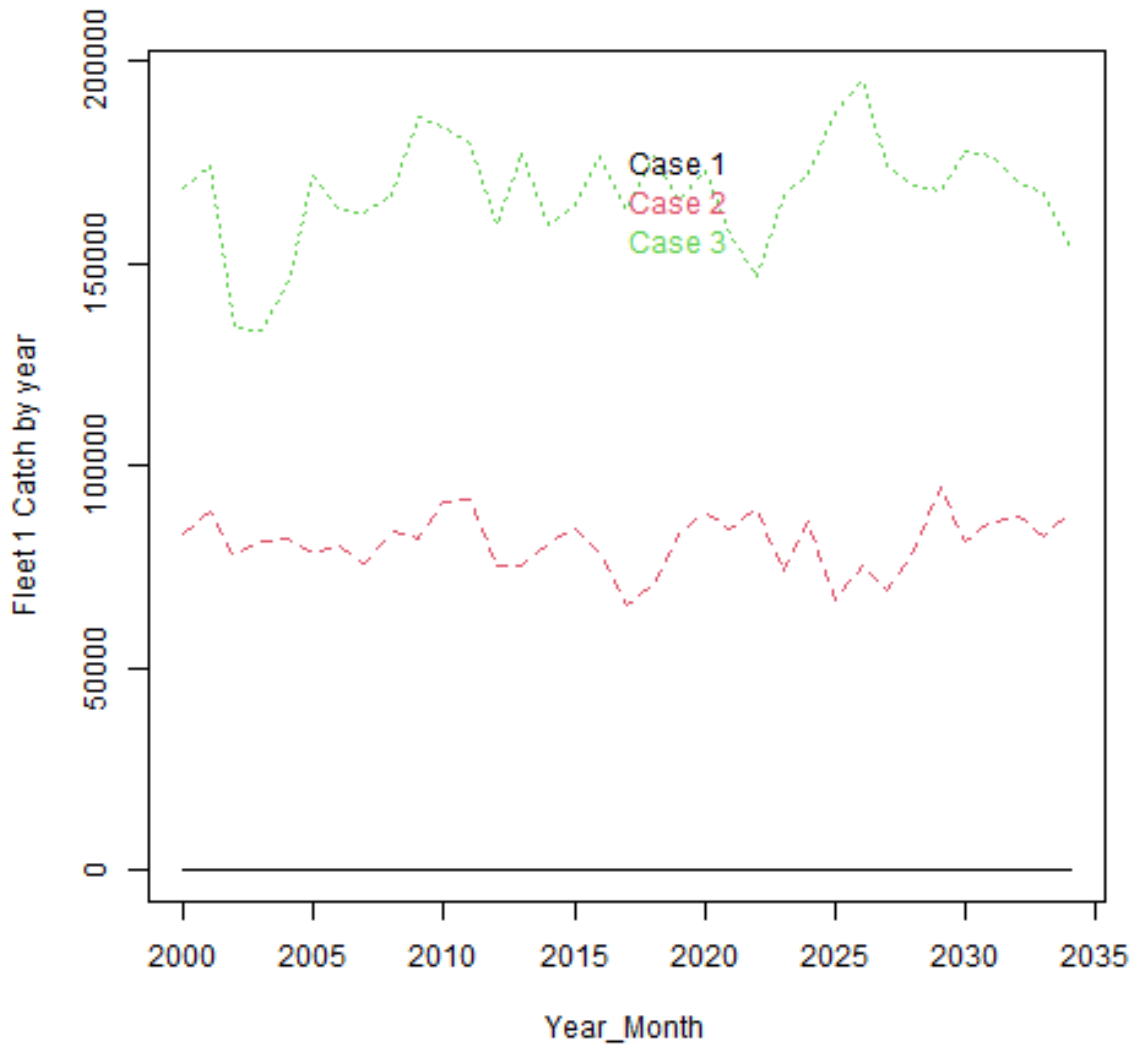


Figure 11. Fleet 2 Catch (tons) by case.

Figure 12. Fleet 2 Catch (tons) by year and case.

Figure 13. Fleet 3 Catch (tons) by case.

Figure 14. Fleet 3 Catch (tons) by year and case.



Figure 15. Whole Catch (tons) by case.

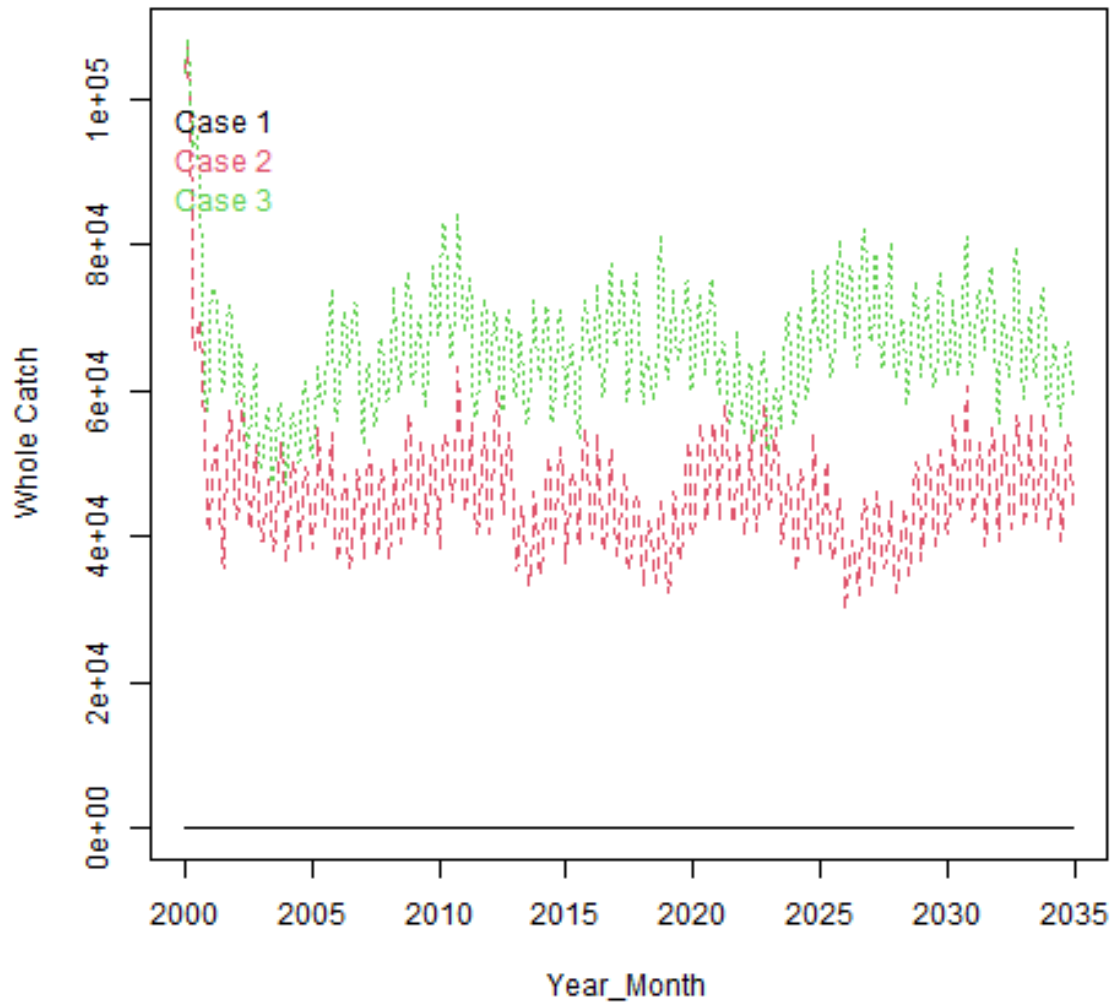


Figure 16. Fleet 3 Catch (tons) by year and case.

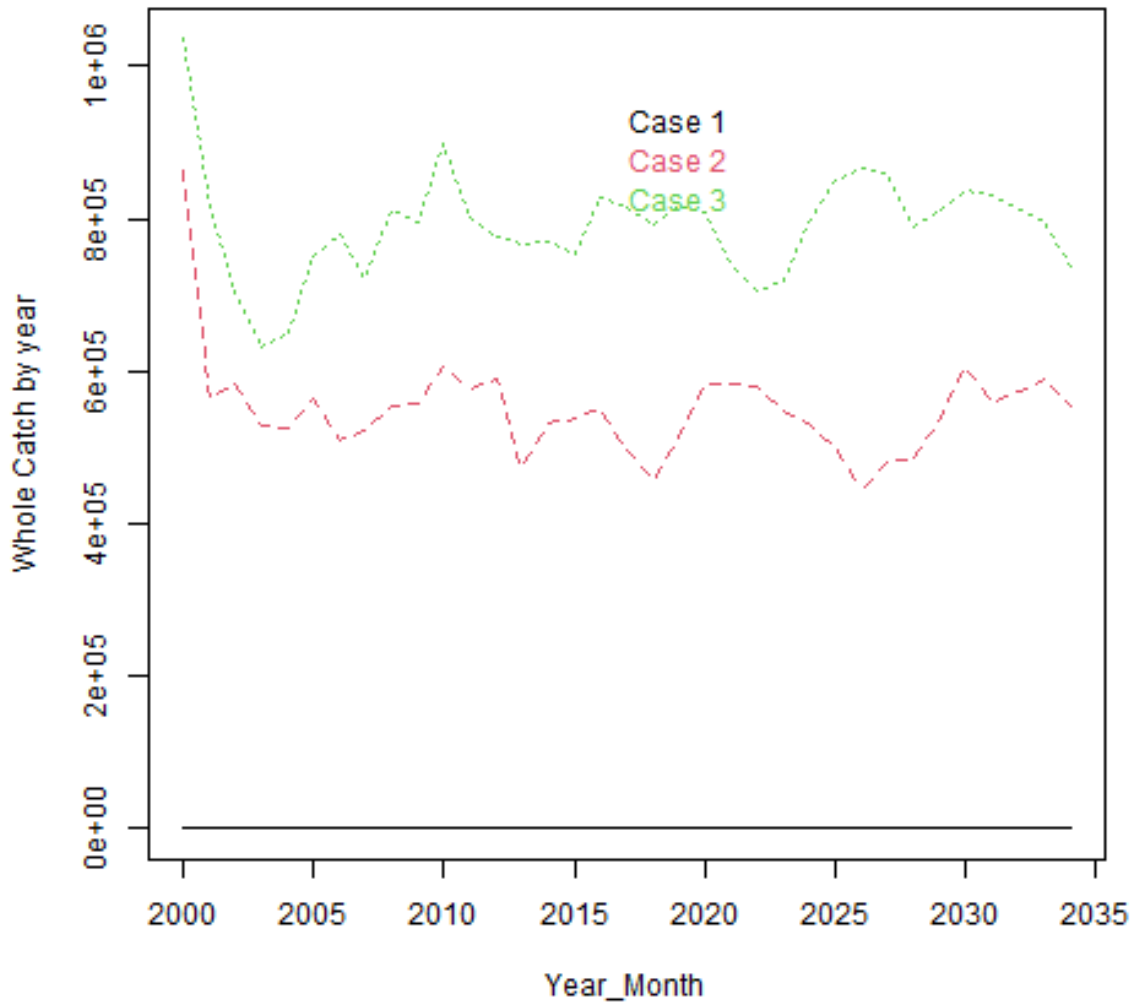


Figure 17. Fleet 1 CPUE by case.

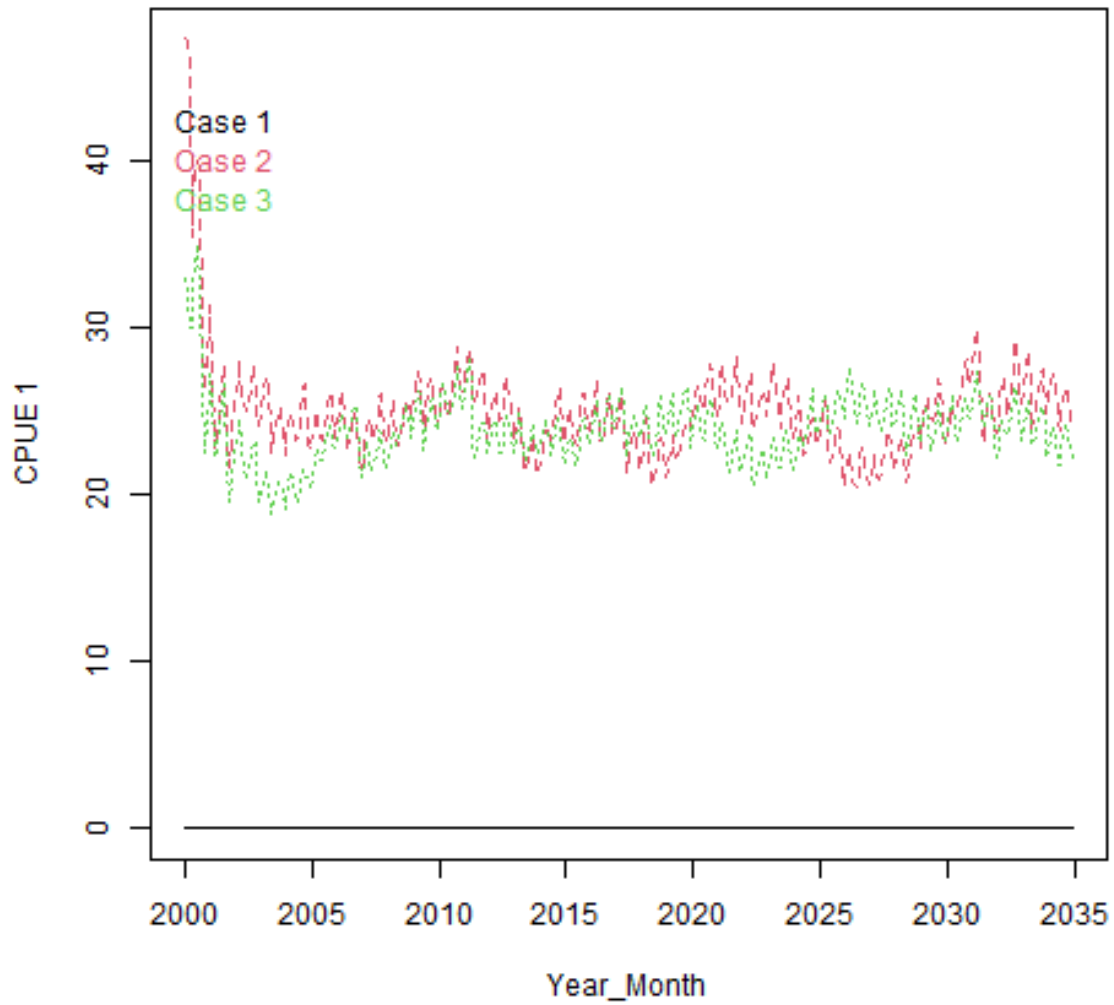


Figure 18. Fleet 2 CPUE by case.

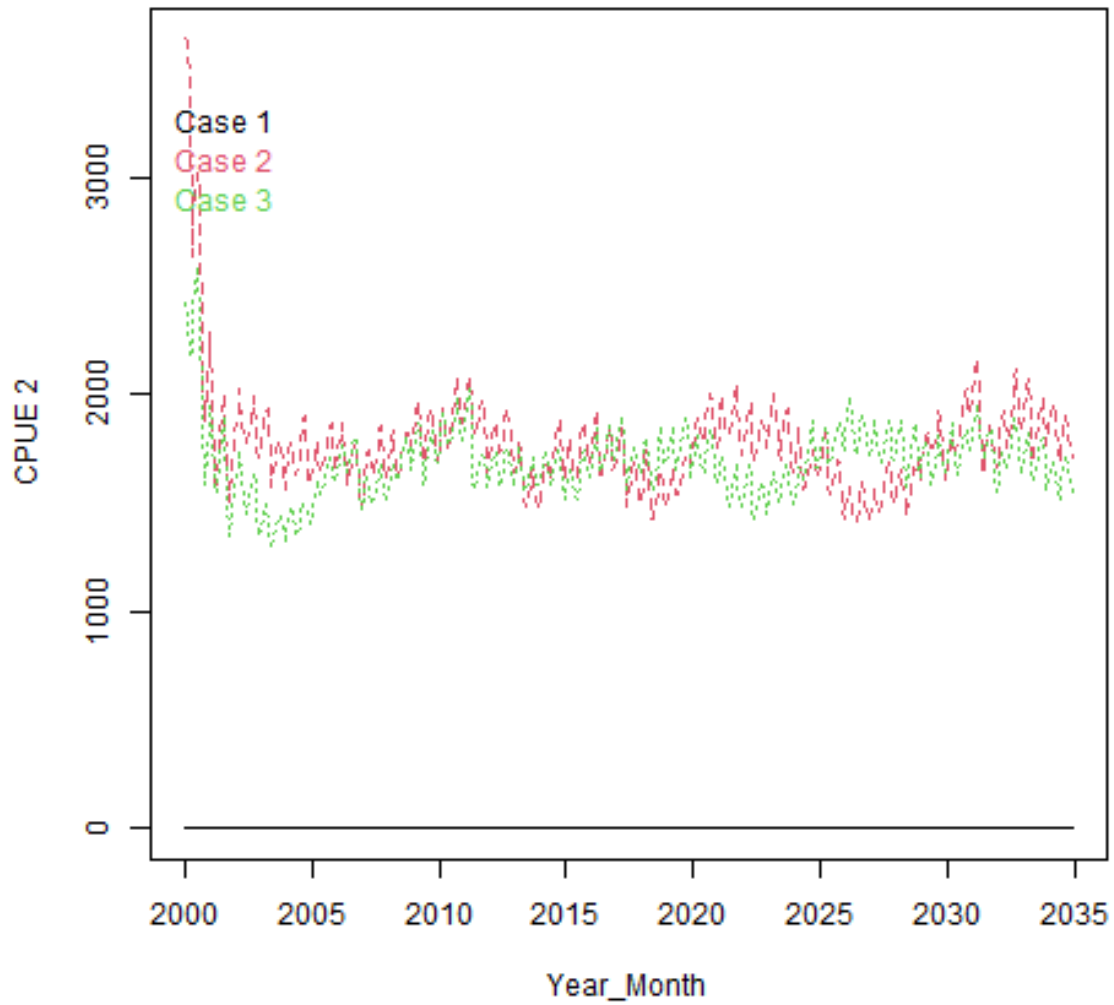


Figure 19. Fleet 3 CPUE by case.

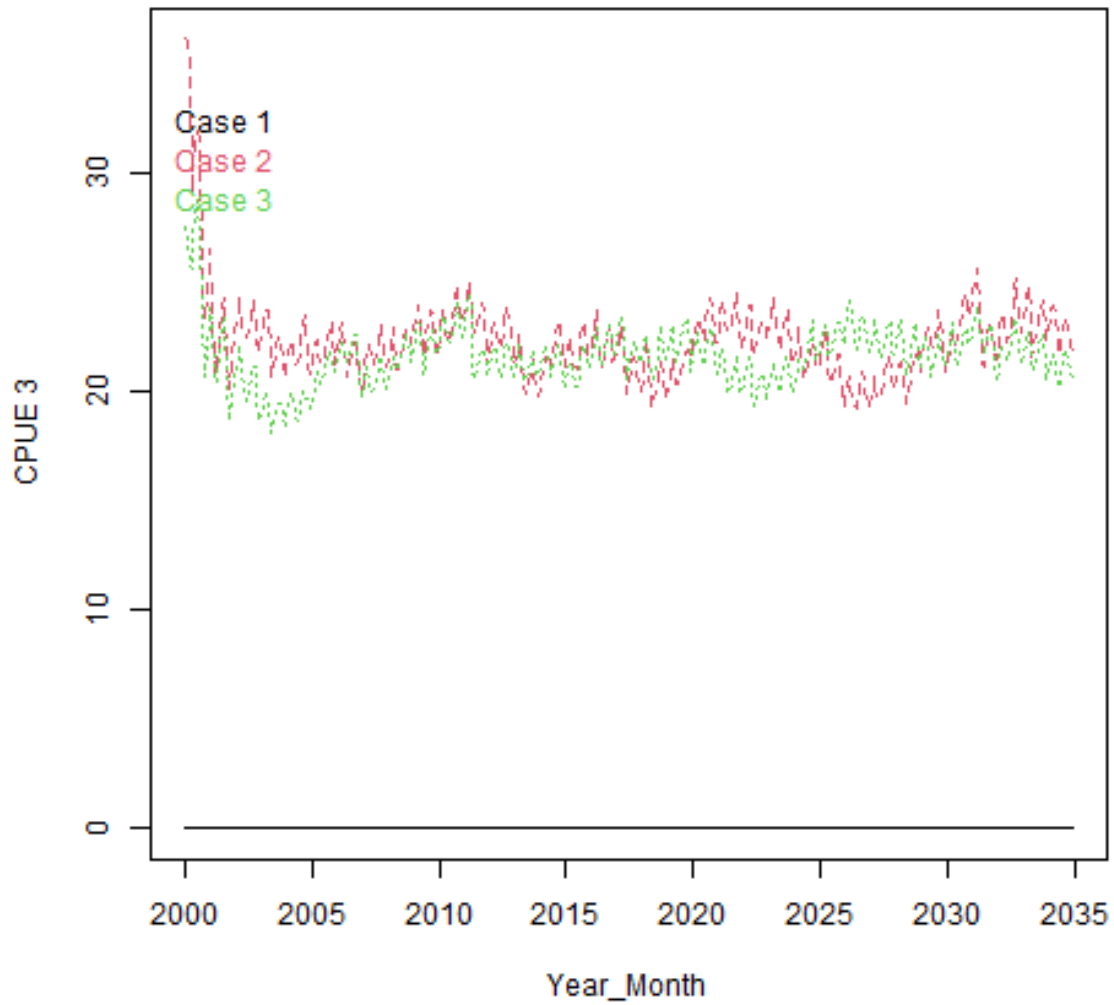


Figure 20. Acoustic 1 Selectivity by case.

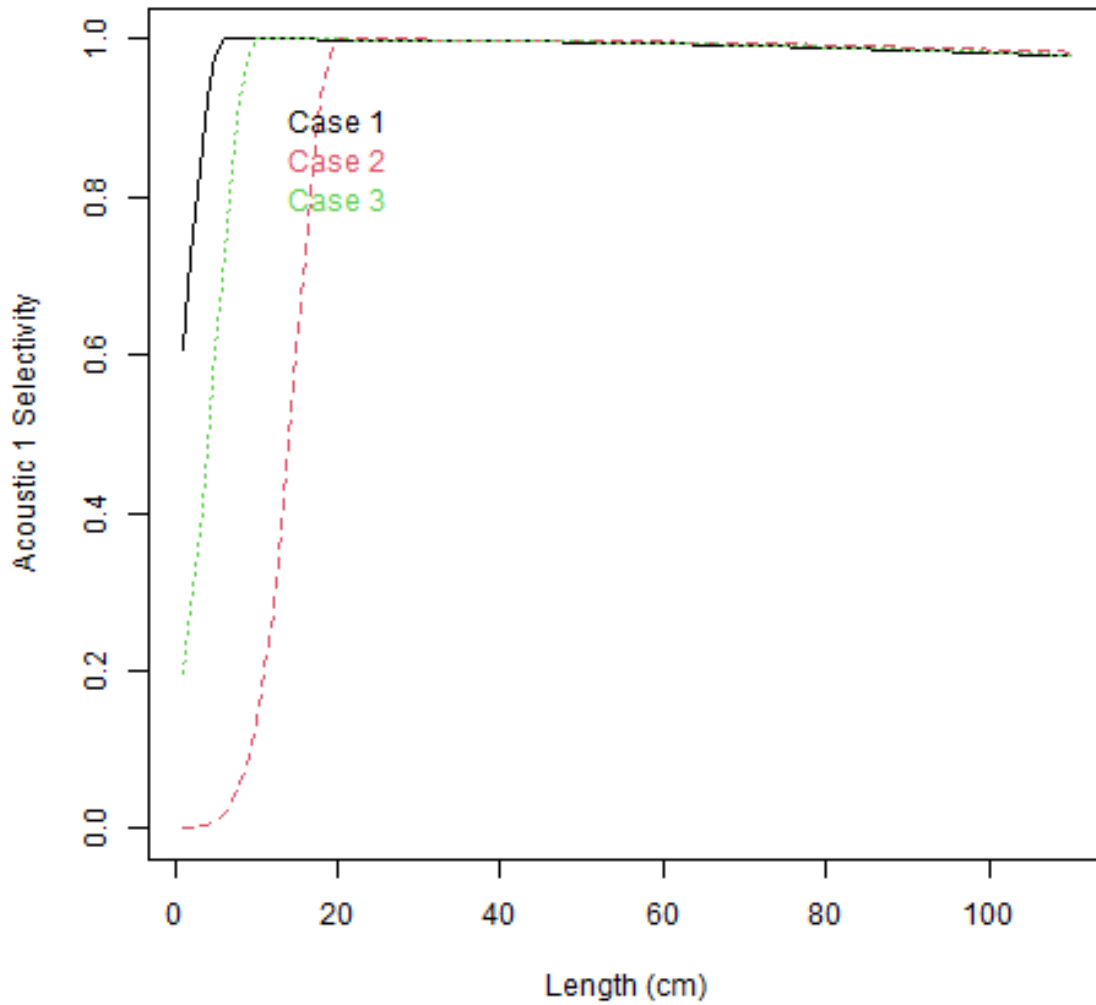


Figure 21. Acoustic 2 Selectivity by case.

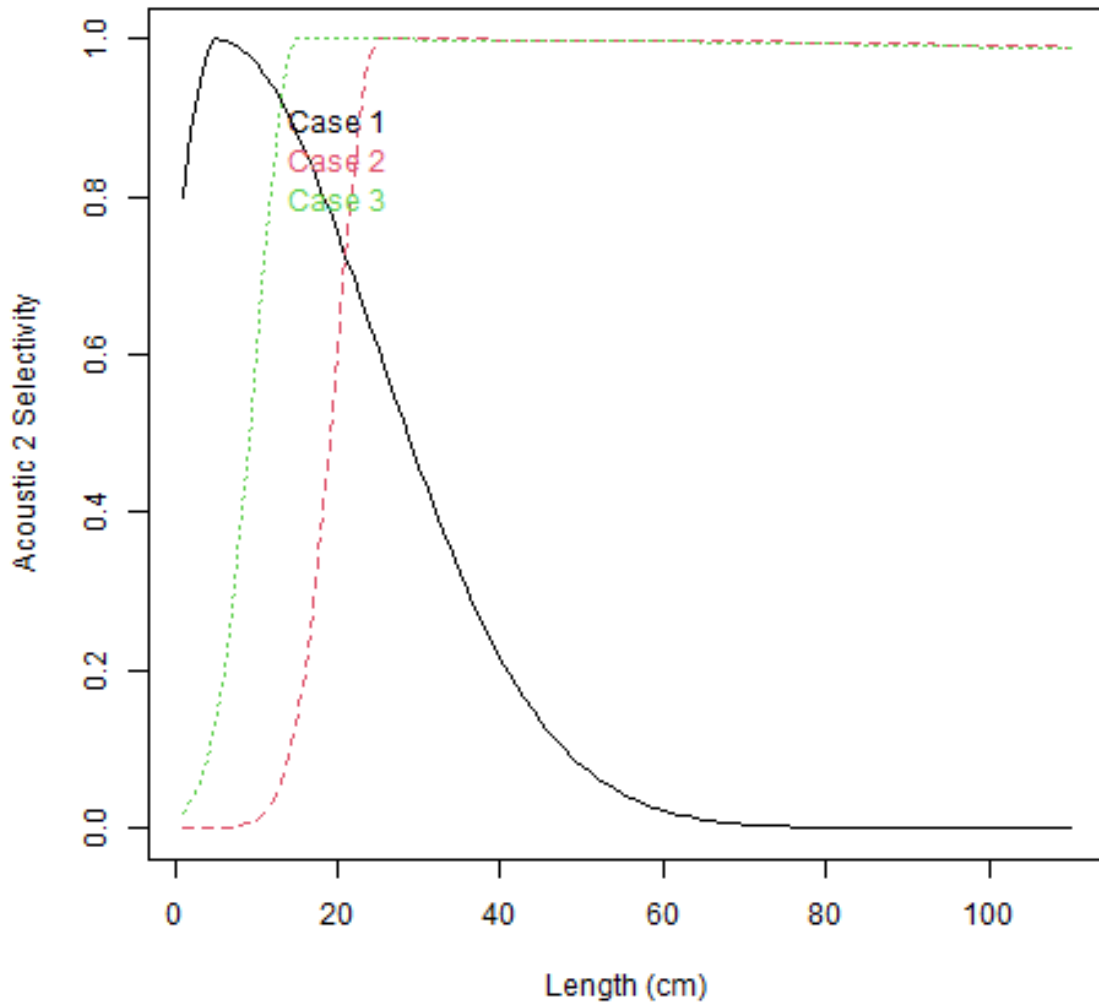


Figure 22. Acoustic Biomass 1 by case.

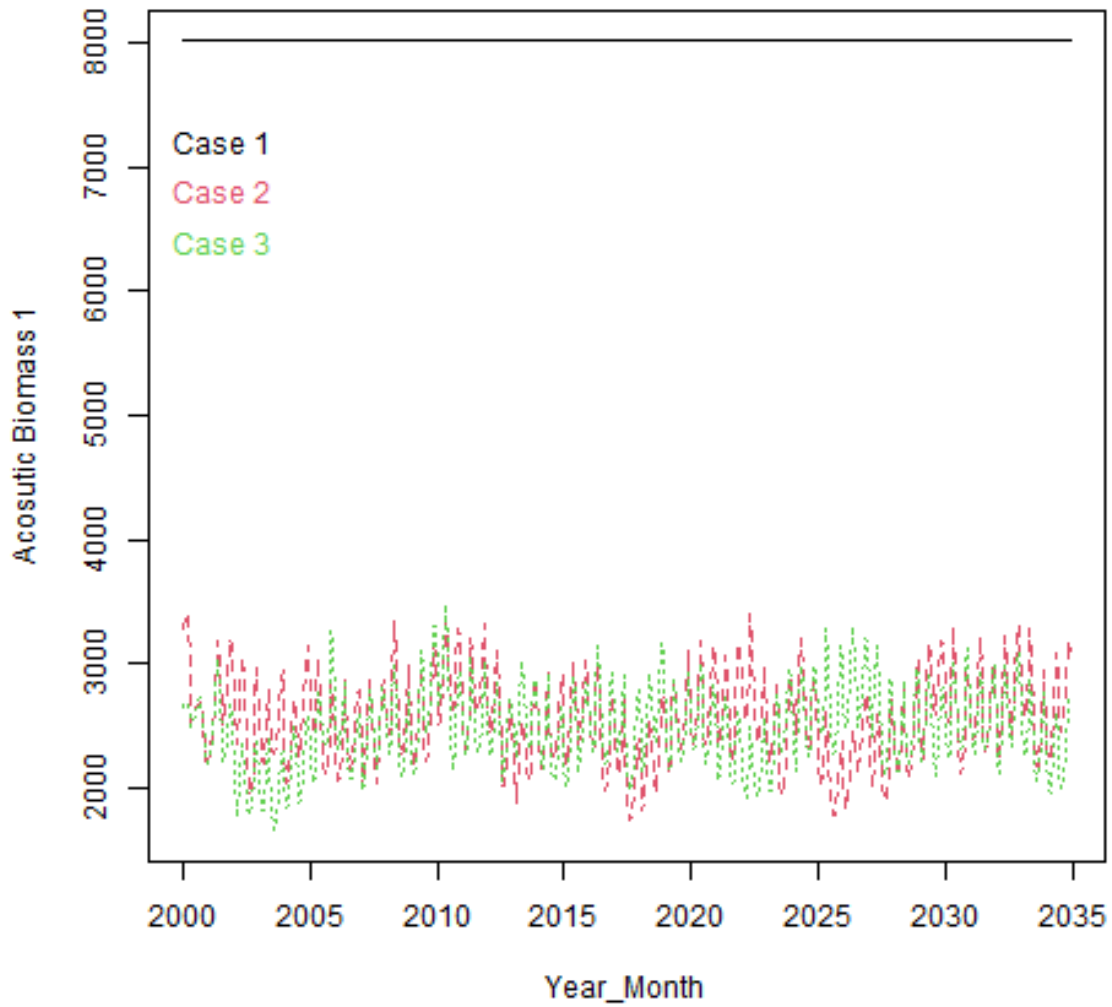


Figure 23. Acoustic Biomass 1 by case.

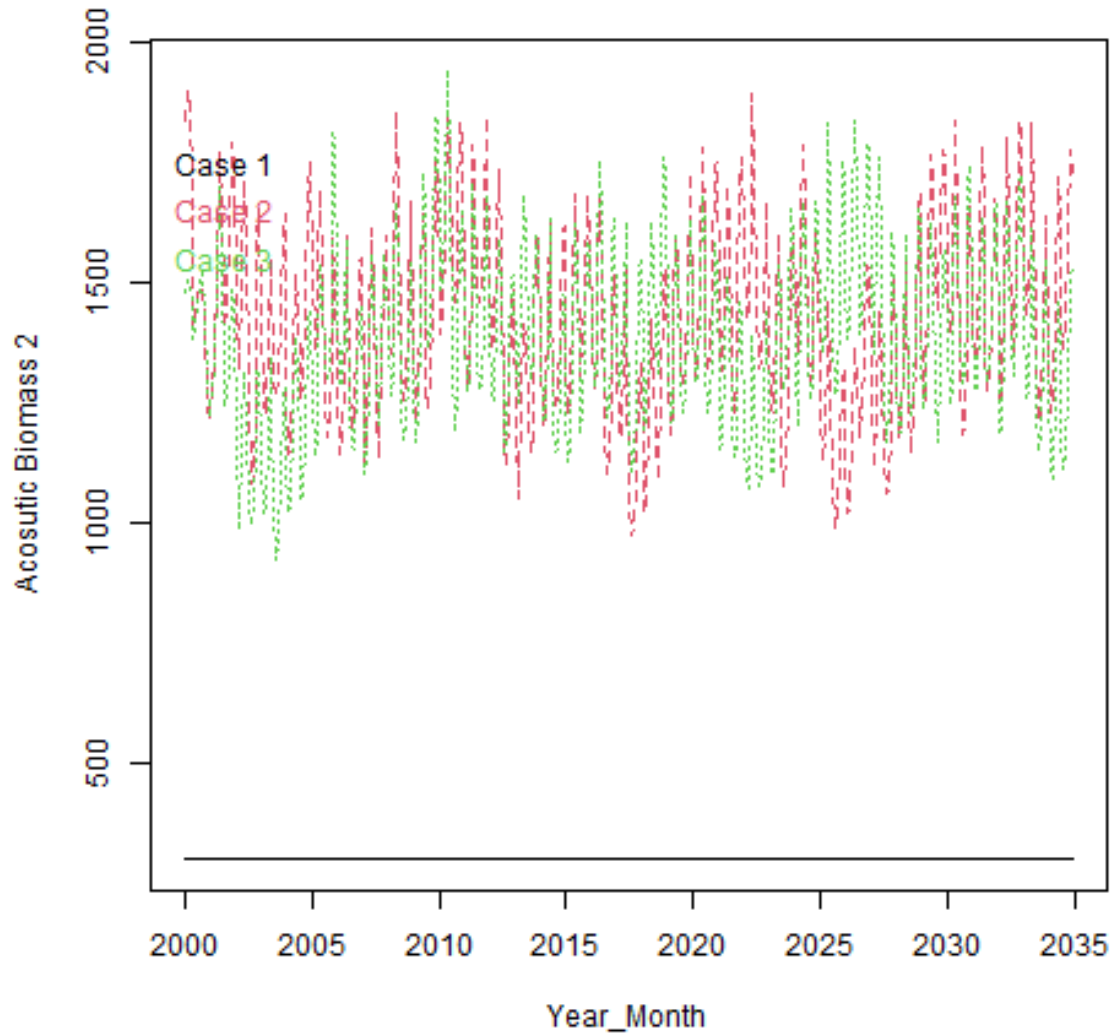


Figure 24. Fleet 1 Mean weight by case.

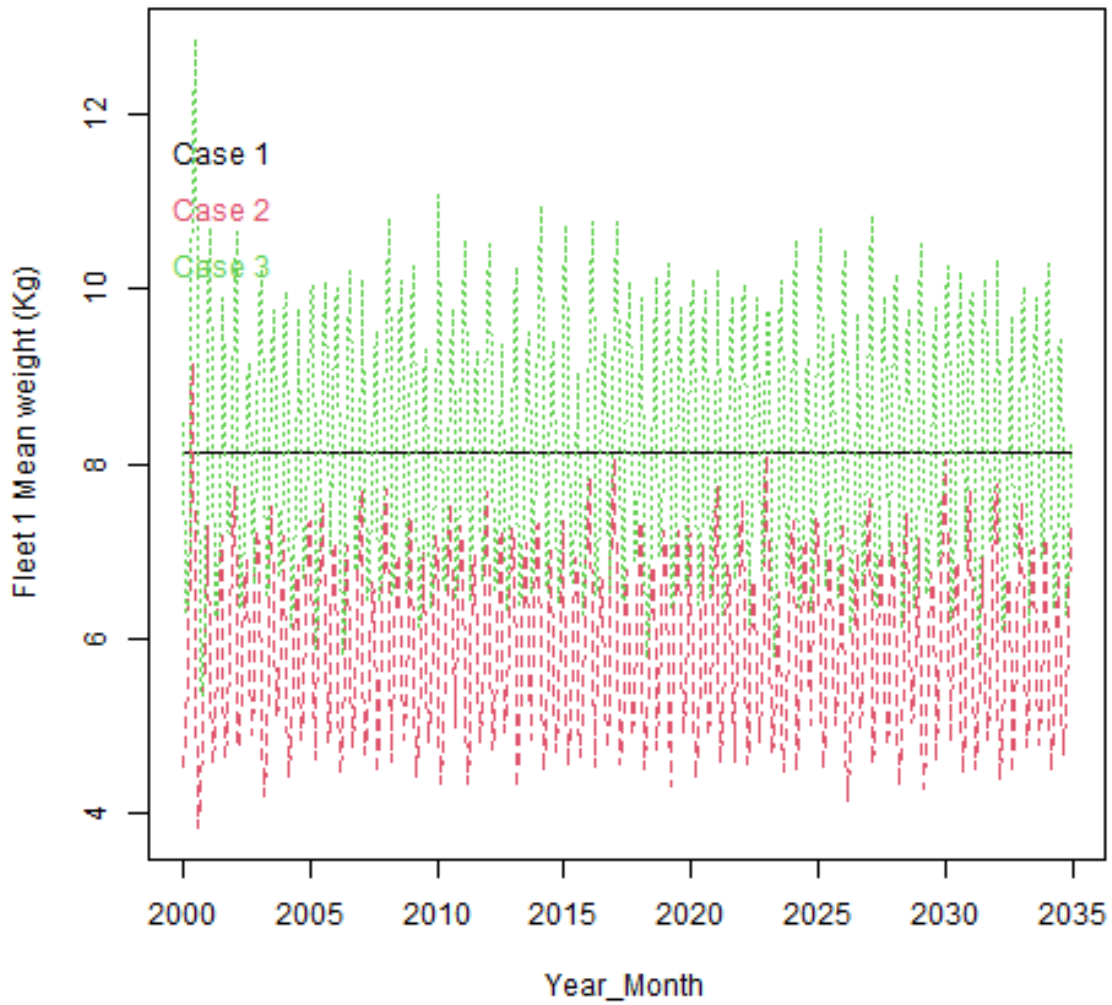


Figure 25. Fleet 2 Mean weight by case.

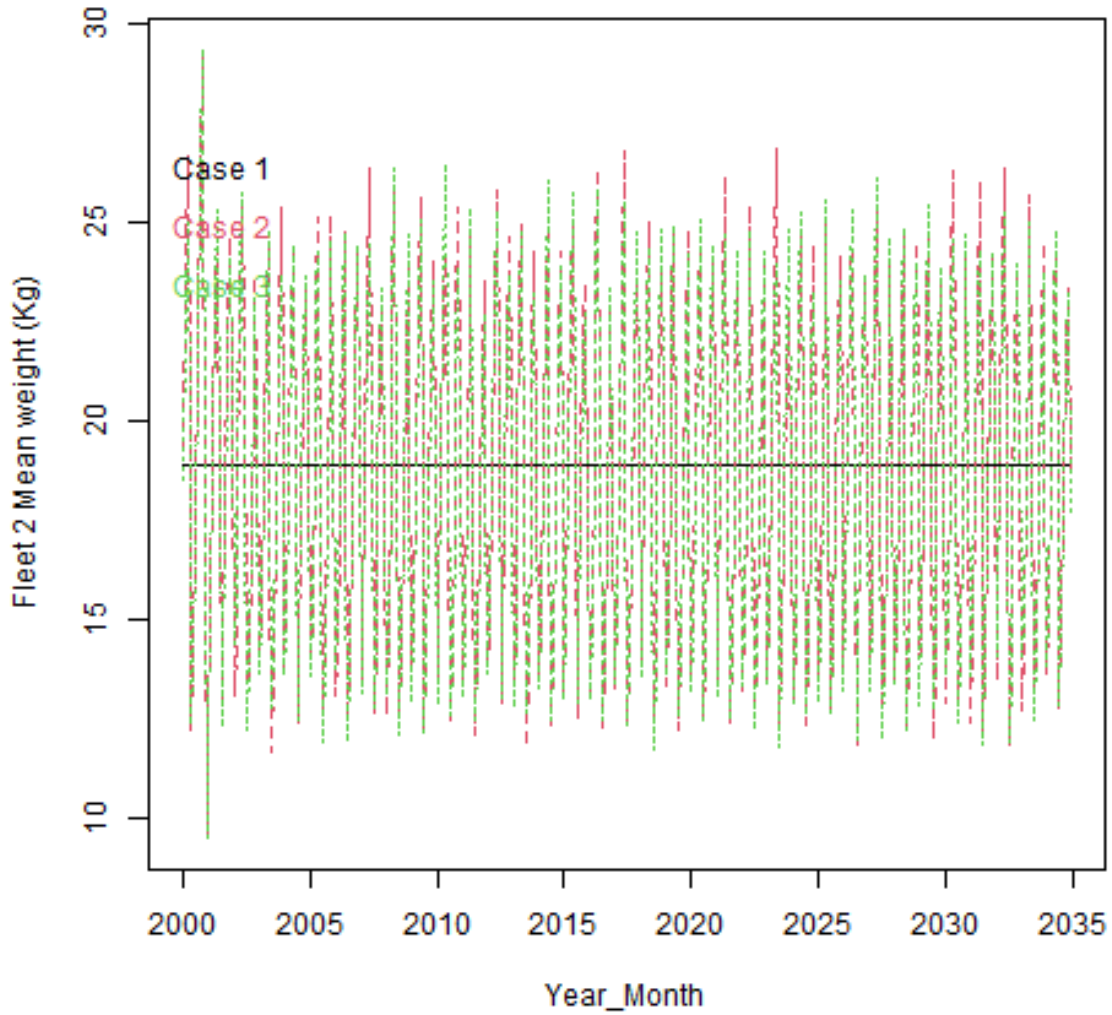


Figure 26. Fleet 3 Mean weight by case.

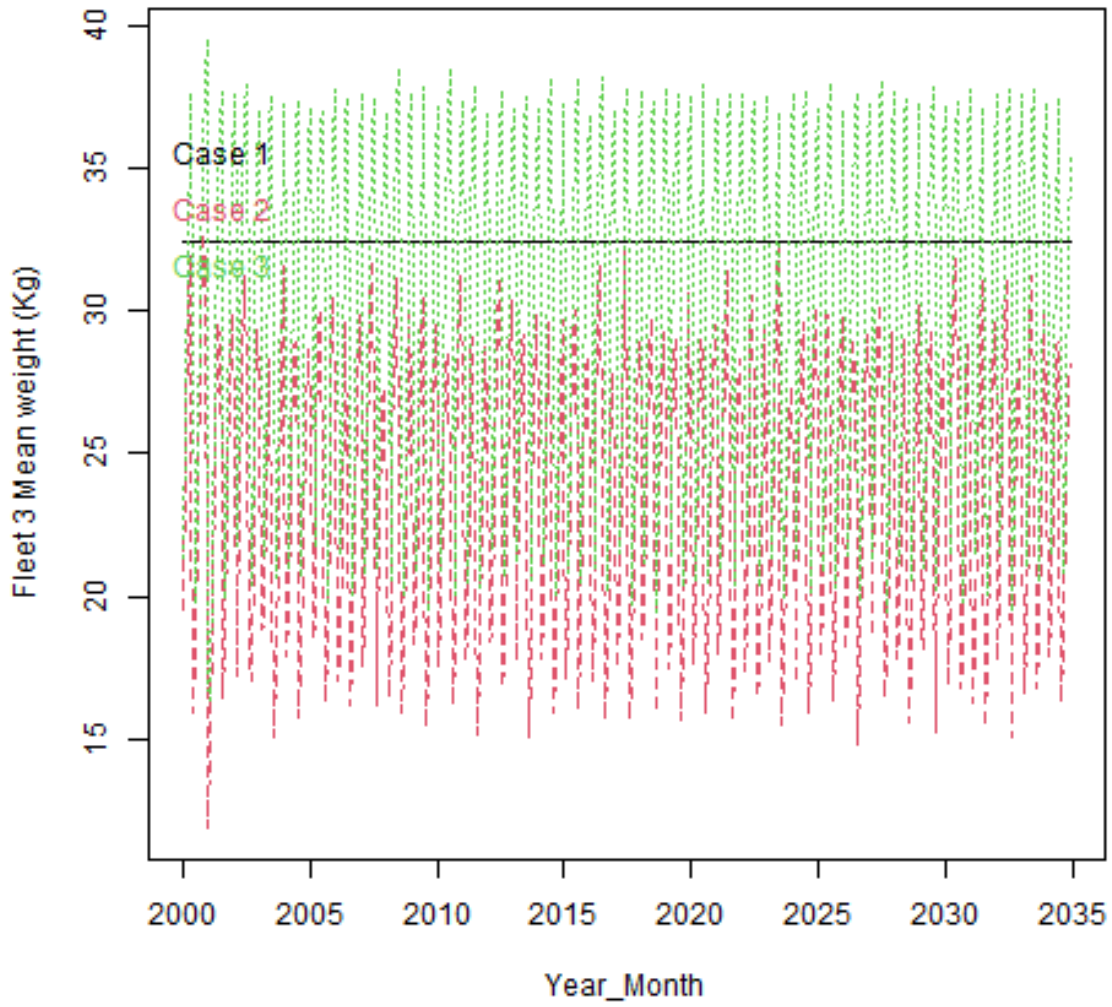


Figure 27. Acoustic 1 Mean weight by case.

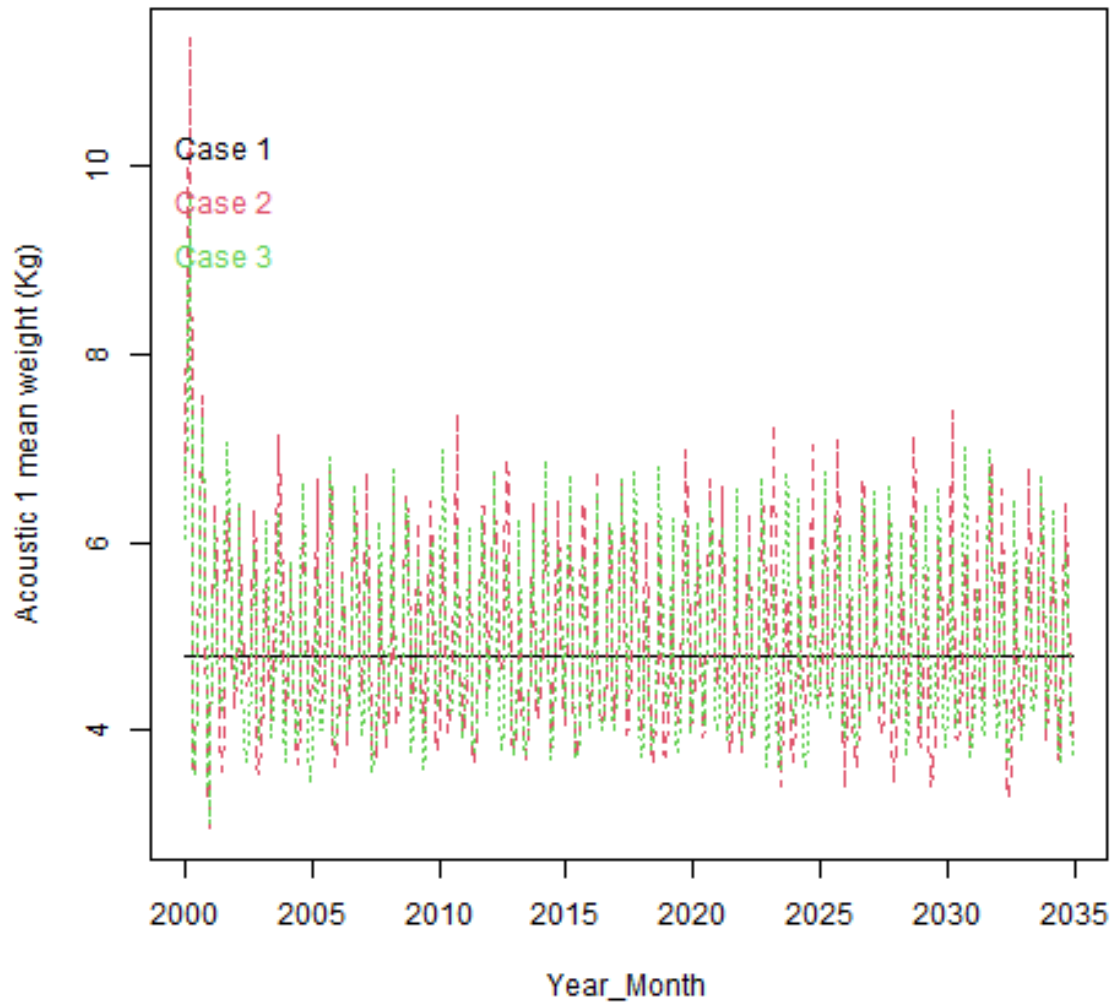


Figure 28. Acoustic 2 Mean weight by case.

