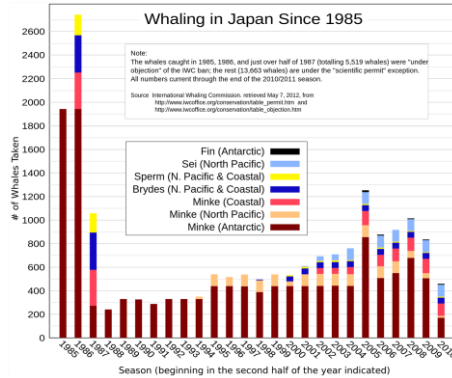
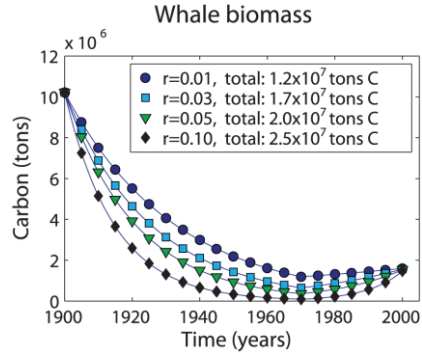
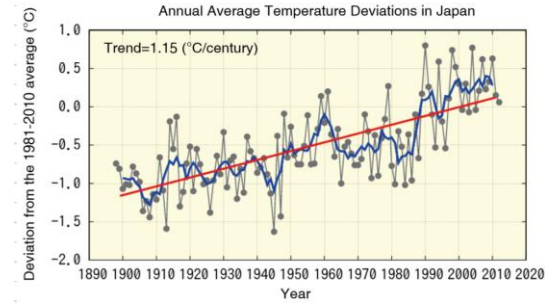


# Japan

## Driver: Whaling in Japan



## Impact: Average temperature increases



Species	Abundance		Biomass (tons)		Gross Flux (tons C ind <sup>-1</sup> yr <sup>-1</sup> )	Export (tons C/yr)	
	Pre-whaling	2001	Pre-whaling	2001		Pre-whaling	2001
Blue	340,280	4,727	35,730,693	496,353	0.424	72,172	1,003
Fin	762,400	109,600	43,339,848	6,230,387	0.223	85,180	12,245
Humpback	231,700	42,070	6,151,172	1,116,874	0.103	11,890	2,159
Sei/Byrd's	392,300	181,490	6,566,730	3,017,572	0.424	12,037	5,540
Minke	637,000	506,900	5,060,496	4,099,570	0.018	8,525	6,906
Gray	24,600	15,936	674,466	436,922	0.105	1,287	834
Right	84,100	9,239	3,074,915	337,802	0.137	1,156	127
Bowhead	89,000	9,450	2,420,141	256,970	0.051	455	48
Total	2,561,380	879,412	103,018,460	15,992,451		192,702	28,862
Change	-1,681,968		-87,026,010			-163,840	

An age-structured model was built for each species group and was used to estimate the stable age distribution and then the average mass of a whale in the populations. The average mass was multiplied by the abundances to estimate the pre-whaling and modern biomass. The age-structured models were then used to estimate the biomass (expressed as tons of carbon yr<sup>-1</sup> ind<sup>-1</sup>) of carcasses of each species produced per individual in the species, termed the gross flux. Multiplying by the abundance values by the gross flux and dividing by 2 gives an estimate of the flux (tons carbon yr<sup>-1</sup>) exported from the euphotic zone by each species. doi:10.1371/journal.pone.0012444.t001

