

Supplementary Table S4. Comparison of output biomass (g C m^{-2}), production ($\text{g C m}^{-2} \text{ yr}^{-1}$), consumption ($\text{g C m}^{-2} \text{ yr}^{-1}$), and P/B (yr^{-1}) for aggregated compartments from the year 2000 – model compared to values from the literature. Shaded rows show result from this study. When comparing with earlier published values, it should be kept in mind that the area of the Barents Sea LME is 2.01 mill. km^2 compared to 1.4 mill km^2 in many earlier papers. Thus, for some higher trophic level groups, equal biomass in absolute terms will result in ca. 30 % lower values from our model. The values from Blanchard et al. (2002) are from 1995 which was a year with low capelin abundance.

Compartment	Biomass (g C m^{-2})	Production ($\text{g C m}^{-2} \text{ yr}^{-1}$)	Cons. ($\text{g C m}^{-2} \text{ yr}^{-1}$)	P/B (yr^{-1})	Sources
Polar Bear	0.00016	0.00002	0.0009	0.10	This study
	0.00010	0.00003			Sakshaug et al. (1994)
Whales	0.018	0.0007	0.12	0.04	This study
	0.040	0.0014	0.23	0.035	Sakshaug et al. (1994)
	0.05		0.10		Nakken (1998), assuming C/WW = 0.15 for B and 0.137 for consump.
			0.18		Bogstad et al. (2000), assuming C/WW = 0.137 for consumption
	0.041	0.0012	0.40	0.03	Blanchard et al. (2002), assuming C/WW = 0.15 for B and 0.137 for consumption
	0.034	0.0007	0.38	0.02	Berdnikov et al. (2019)
Seals	0.029	0.0037	0.15	0.13	This study
	0.007	0.0003	0.06	0.04	Sakshaug et al. (1994)
	0.13		0.10		Nakken (1998), assuming C/WW = 0.15 for B and 0.137 for consumption
			0.34		Bogstad et al. (2000), assuming C/WW = 0.137 for consumption
	0.041	0.0023	0.20	0.06	Blanchard et al. (2002), assuming C/WW = 0.37 for biomass and 0.137 for consumption
	0.016	0.0008	0.23	0.05	Berdnikov et al. (2019)
Birds	0.0007	0.00008	0.069	0.09	This study
	0.0010	0.00020	0.050	1.00	Sakshaug et al. (1994)
	0.0011	0.0011	0.09	1.0	Blanchard et al. (2002), assuming C/WW = 0.132 for B and 0.137 for consumption
	0.001	0.001	0.01	1.0	Berdnikov et al. (2019)
Compartment	Biomass (g C m^{-2})	Production ($\text{g C m}^{-2} \text{ yr}^{-1}$)	Cons. ($\text{g C m}^{-2} \text{ yr}^{-1}$)	P/B (yr^{-1})	Sources
Cod	0.10	0.08	0.40	0.79	This study

	0.30	0.10	0.35	0.30	Sakshaug et al. (1994)
	0.14		0.59		Nakken (1998), assuming C/WW = 0.101 for B and 0.137 for C
	0.15		0.48		Bogstad et al. (2000), for 1984-1999, assuming C/WW = 0.137 for consumption
	0.13	0.11	0.42	0.81	Blanchard et al. (2002), assuming C/WW = 0.101 for biomass and 0.137 for consumption
	0.14	0.11	0.92	0.80	Berdnikov et al. (2019)
Other demersal and benthic fish	0.33	0.20	1.22	0.59	This study
	0.30	0.17	1.05	0.56	Blanchard et al. (2002), assuming C/WW = 0.101 for biomass and 0.137 for consumption
	0.16	0.09	0.84	0.59	Berdnikov et al. (2019)
Planktivore & mesopelagic fish	0.90	0.88	5.11	0.98	This study
	0.40	0.2		0.50	Sakshaug et al. (1994), only capelin
	1.0-2.9				Nakken (1998), assuming C/WW = 0.137 for biomass
	0.82	0.89	5.39	1.08	Blanchard et al. (2002), assuming C/WW = 0.137 for biomass and 0.137 for consumption
	0.80	0.60	3.27	0.75	Berdnikov et al. (2019)
Carnivore zoopl. and inv. nekton	0.16	0.41	1.39	2.54	This study
	0.73	4.75	23.5	6.5	Blanchard et al. (2002), assuming C/WW = 0.085 for biomass and 0.137 for consumption
Other herb. Zoopl incl copepods	1.50	8.2	42.5	5.43	This study
	2.0	8.0		4.0	Sakshaug et al. (1994), only <i>Calanus</i>
		Ca. 5			Slagstad et al. (2011)
	1.3	4.2		3.3	Skaret et al. (2014), model, only <i>Calanus finmarchicus</i>
	4.1				Zooplankton + krill, Nakken (1998), assuming C/WW = 0.137
	2.21	19.8	33.0	9.0	Blanchard et al. (2002), assuming C/WW = 0.147 for biomass and 0.10 for consumption
	0.85	7.6	32.9	8.9	Berdnikov et al. (2019) (copepods)

Compartment	Biomass (g C m ⁻²)	Production (g C m ⁻² yr ⁻¹)	Cons. (g C m ⁻² yr ⁻¹)	P/B (yr ⁻¹)	Sources
Krill	1.09	2.72	18.5	2.5	This study
	1.0	1.5		1.5	Sakshaug et al. (1994)
	0.93	5.59	26.6	6.0	Berdnikov
Mikrozooplankton & HNAN	0.26	19.1	57.9	74.6	This study
	0.11	4.7	11.5		Berdnikov et al. (2019) (protozoans)
Shrimps	0.29	0.17	0.92	0.59	This study
	0.04	0.06	0.04	1.70	Blanchard et al. (2002), assuming C/WW = 0.147 for biomass and 0.10 for consumption
Compartment	Biomass (g C m ⁻²)	Production (g C m ⁻² yr ⁻¹)	Cons. (g C m ⁻² yr ⁻¹)	P/B (yr ⁻¹)	Sources
Predatory benthic invertebrates	0.38	0.23	1.20	0.61	This study
	0.73	0.29	1.56		Berdnikov et al. (2019)
Detritivorous benthic invertebr.	5.33	3.1	27.7	0.59	This study
	5.00			0.3	Based on Denisenko and Titov (2003)
			6-44		Klages et al. (2004) cited in Wassmann et al. (2006)
	3.92	6.75	51.0	1.72	Blanchard et al. (2002), assuming C/WW = 0.072 for biomass and 0.10 for consumption
	3.66	1.83	23.4	0.50	Berdnikov et al. (2019)
Benthic meiofauna & Foraminifera	0.11	0.60	10.5	5.58	This study
	1.03	19.6	46.3	19.0	Blanchard et al. (2002), assuming C/WW = 0.106 for biomass and 0.10 for consumption
Bacteria	0.8	16.1	40.2	21.2	This study
	0.4	80		200	Sakshaug et al. (1994)
	0.15	18.8	32.7	125	Berdnikov et al. (2019)
Phytoplankton	2.0	110		55.0	This study
	2.0	110		55.0	Sakshaug et al. (1994)
	2.0	110		55.0	Blanchard et al. (2002), assuming C/WW = 0.10

Compartment	Biomass (g C m ⁻²)	Production (g C m ⁻² yr ⁻¹)	Cons. (g C m ⁻² yr ⁻¹)	P/B (yr ⁻¹)	Sources
Ice algae	0.1	5.3		53.0	This study
		6			Sakshaug et al. (1994)
Macroalgae	0.34	0.20		0.63	This study

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