

SKB TR-10-03

The marine ecosystems at Forsmark and Laxemar-Simpevarp

SR-Site Biosphere

In the earlier distributed report, there are errors that have now been corrected. The corrected page 212 is enclosed. The changed text is marked with a vertical line in the page margin. An updated pdf version of the report, dated 2011-10, can be found at www.skb.se/publications.

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Table 6-7. Basic characteristics for five basins in Forsmark marine model area.

	Basin 116	Basin 126	Basin 134	Basin 121	Basin 120
Marine basin area (m ²)	13,534,000	5,440,400	586,400	3,692,400	729,200
Mean depth (m)	9	7	2	6	2
Max. depth (m)	19	16	6	13	12
Volume (m ³)	128,153,311	40,604,153	1,052,611	20,313,960	1,815,453
Total catchment area (m ²)	14,101,600	7,232,000	1,957,600	13,983,600	10,336,400
Runoff (m ³ year ⁻¹)	19,222,997	6,090,623	157,892	3,047,094	272,318
Advective outflow (m ³)	52,142,360,552	22,217,768,523	1,017,417	8,073,976,047	26,125,590
Advective inflow (m ³)	52,082,246,480	22,194,479,015	862,217	8,058,725,774	24,685,617

Basin specific food webs – carbon, nitrogen and phosphorus

Food webs illustrating the C, N, P pools and fluxes in the marine ecosystem in Basin 134 are presented in Figure 6-60, 6-61 and 6-62. Food webs for the four other basins are presented in Appendix 8.

Pools and fluxes of carbon in the marine ecosystem food web in Basin 134 are similar to those for the average food web for the whole area, although some differences occur. The largest fluxes are the biotic fluxes, with NPP being the largest followed by consumption by benthic bacteria and of herbivores by benthic carnivores. The abiotic fluxes are generally smaller than the biotic fluxes in Basin 134. Burial is larger than the small net advective outflow and larger than burial on average for the whole marine area. In comparison with the whole marine area, macrophytes account for a larger portion of the NPP flux, consumption by birds is larger and consumption by herbivores and zooplankton is smaller.

The pools and fluxes of nitrogen in the marine ecosystem food web in Basin 134 are somewhat different than the average nitrogen pools and fluxes in the whole marine area in Forsmark. In comparison with the other pools in Basin 134, macrophytes, DIN and PON are larger than the average for the whole marine area. There is a positive net advective influx of nitrogen into the basin in contrast to

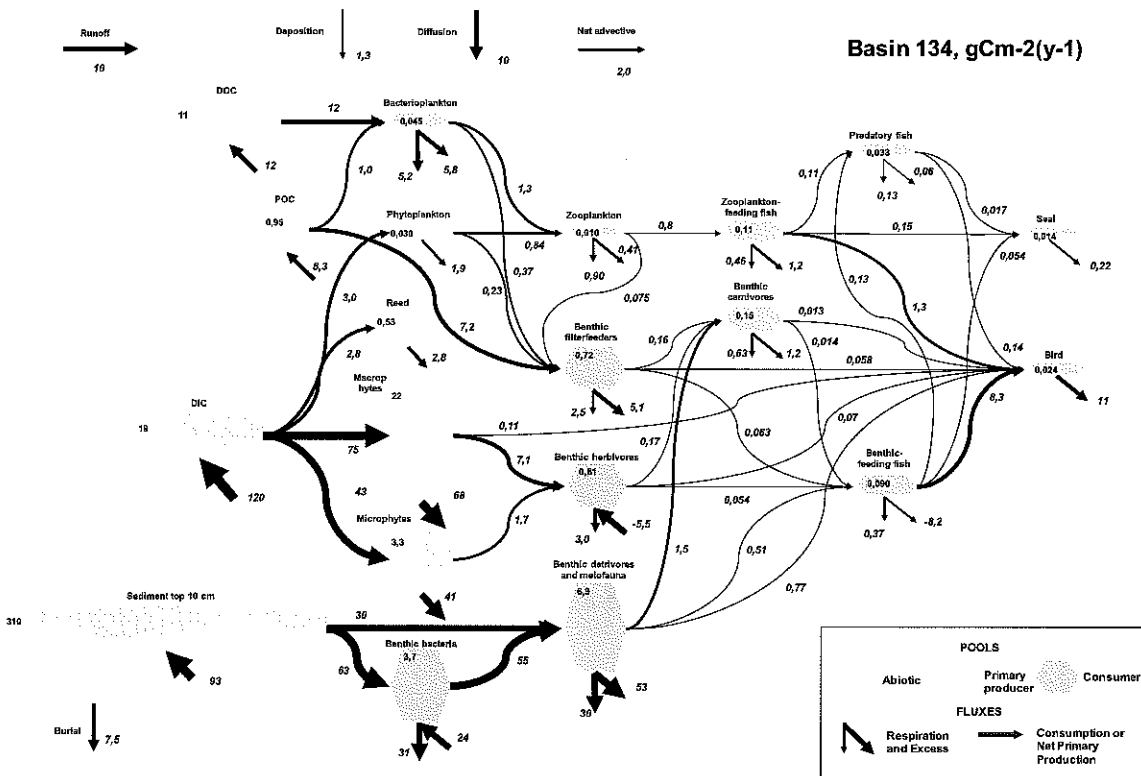


Figure 6-60. Food web based on pools and fluxes of carbon in Basin 134 in Forsmark. Boxes and arrows designate relative size of pools and fluxes.