Supplement Table 1. Sampling frequency per month.

	TP within inner archipelago												TP boundary outflowing												TP boundary inflowing											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
1968			1			2	2	2	1	4	1	1	2			4	5	6	6	4	5	7	3	3			1	2	2	2	2	2				
1969	2	1	1	1	1	2	3	2	3	3	1	1				2	6	7	8	7	9	8	5	2				1	3	3	2	2	2	3	1	
1970			1			2	2	2	2	2			3	4	6	2	8	7	10	8	8	8	6	5			1	1	2	2	3	2	1			
1971			1			2	2	2	1	3	1		2		1	3	4	7	5	5	6	3	4	6			1		2	1	2	2	1	2		
1972		1				1	3	2	2	4		1	1	1	1	3	6	5	7	7	6	6	5	4			1	2	3	2	2	2	2	2		2
1973		1				1	1	1	2	1			5	5	7	6	4	6	5	7	6	7	6	3				2	1	1	2	2	2			
1974		1	1	2	1	2	2	4	2	3	1			1	1	4	3	4	6	4	2	4	4					1	2	1	2	2	2	2		
1975			1	1	1	2	2	2	2					1	1	3	2	2	4	2	1	2							1		1	1		1	2	
1976			1		1	2	2	2	2	2	1			1	1	2	1	2	2	2	2						1	1	2	1	2	2	2	2		
1977				1	2	3	2	2	2	2			1	1	1	1	2	3	2	2	2	2	1	1	1	1	2	1	3	2	2	2	2	2	1	1
1978				1	1	3	2	2	2	2			1	1	1	1	2	2	2	2	2	2	1	1	1	1	1		2	2	2	2	2	2	1	1
1979				3	2	2	2	2	2			1	1	1	1		3	2	2	2	2	2	1	1	1	1	1		3	2	2	2	2	2	1	1
1980			1	2	2	2	2	2	2	1			1	1	1	1	2	2	2	2	2	2	1	1	1	1	1	1	2	2	2	2	2	2	1	1
1981			1	2	2	2	2	3	1				1	1	1	1	2	2	2	2	3	1	1	1	1	1	1	1	2	2	2	2	2	2	1	1
1982			1	2	3	2	2	2	2				1	1	3	4	6	8	5	4	7	6	5	6	1	1	1	1	2	3	2	2	2	2	1	1
1983		1		1	1	1	1	1	1	2	1		3	1		5	5	6	4	5	3	2	1			1		1	1	1	1	1	1	1		
1984		1		1	1	1	1	1	1	2	1		3	1		2	6	4	5	5	4	6	4	4		1		1	1	1	1	1	1	1		
1985		1		1		1	1	1	1	2	1				3	4	5	5	5	6	4	5	5	3		1			1	1	1	1	1			
1986		1		1	1	1	1	1	2		2		2	4	2	5	5	5	6	5	6	5	6	3		1		1	1	1	1	1	1		1	
1987		1		1	1	2	1		2	1	1		4	4	2	4	5	6	6	4	7	4	5			1		1	1	1	2			1	1	
1988		1		1	1	1	1	1		1	2			1		3	4	5	5	5	5	4	5	1		1		1	1	1	1	1	1		1	
1989		1		1	1	2	1	1	1	2	1		4	4	5	5	5	5	5	6	5	5	5	4		1		1	1	1	1	1	1		1	
1990		1		1	1	1	2	1	1	1	1		5	4	4	4	5	4	6	5	4	4	4	4		1		1	1	1	1	2		1		
1991				1	1	1	1	1	1	2	1		4	3	4	3	2	4	6	5	5	5	4	4		1		1	1	1	1	1	1	1		
1992		1		1		2	2	1	1		1		2	4	4	6	4	5	7	4	6	3	5	5		1			1	2		2			1	
1993		1		1		1	1	1	1	1	1		2	5	4	5		5	5	5	6	5	5	5		1		1		1	1	1	1	1	1	
1994		1		1		1	1	1	1	1	1		4	4	5	5	3	6	5	6	5	4	6	4		1		1		1	1	1	1	1	1	
1995		1		1	1		2		1	2			2	3	5	4	5	4	5	5	6	5	4			1		1	1		1	1	1	2		
1996		1		1		2	1	1	1	1				5	4	4	4	6	6	5	4	7	4			1		2	1	1				2		
1997		1		1		2	1		2	1				1	4	5	5	5	7	4	6	6	4	3		1		1	1		2		2	1		
1998		1		1	1	1	1	1	1				3	4	5	4	5	5	5	4	7	5	3	5		1		1	1	1	1		2	1		
1999		2		1	1		1	1	1	1	1		3	2	3	5	4	6	5	5	6	5	5	5		1		1	1		1	1	1	1	1	1
2000		1		1		1	2		1	2			2	5	5	5	5	5	5	6	5	6	5	4		1		1	1		1	1		1		2
2001		1		1	1		2		1	2			4	1	3	5	6	4	6	5	4	7	4	3		1		1	1		2			1		2
2002		1		1		2	1		2	1				1	3	5	5	6	5	4	5	7	4	3		1		1		2	1			1		2
2003				1		1	2		2	1						3	4	5	6	4	6	5	4	2				1		1	2		2	1		
2004		1		1	1	1		2	1	1				1		1	1	1		2	3	4	3	2		1		1	1	1		2	1	1		
2005	1			1	1		1	1	1	2				1		2	5	3	2	2	4	3	3	2		1		1	1		1	1	1	1	1	
2006			1	2	1	2	2	2	3	1				1		1	2	1	2	2	2	3	1			1		1	1		1	1	1	1	1	
2007		1		1	2	1	3	1	2	3	1			2		1	2	1	3	1	2	3	1			1		1	1		1	1	1	1		2
2008		1		2	1	1	3	1	3	2	1			1		2	1	1	3	1	3	2	1			1		1	1		2		2	1		
2009																																				
2010		1		2	1	2	2	1	3	2	1			1		2	1	2	2	1	3	2	1			1		1	1		2		2	1		
2011		1		1	1	2	2	2	2	2	2			1		1	1	2	2	2	2	2	2					1		1	1	1	1	1	1	1
2012		1		1	2	1	2	2	2	2	2			1		2	2	1	2	2	2	2	2			1		1	1		1	1	1	1	1	
2013		1		1	2	1	3	1	2	3	1			1		1	2	1	3	1	2	3	1			1		1	1		2			1		2
2014		1		1	2	1	2	2	2	3	1			1		1	2	1	2	2	2	3	1			1		1	1		1	1	1	1		2
2015		1		2	1	1	2	2	3	2	1			1		2	1	1	2	2	3	2	1			1		1	1	1		1	2	1		

Supplement Table 2. Linear regressions (y=Ax+B) used to correct total phosphorus (TP), dissolved inorganic P (DIP) and salinity (Sal) data from the central stations to represent the whole inner archipelago (n=52).

	R^2	A	B
TP 0-4 m	0,93	0,91	0,88
TP 4-10m	0,95	0,97	0,50
TP 10-20m	0,95	1,02	0,62
TP 20-57m	0,98	1,07	0,12
TP 0-57m	0,97	1,00	1,41
DIP 0-4m	0,92	0,85	0,23
DIP 4-10m	0,93	0,92	0,14
DIP 10-20m	0,96	0,96	1,36
DIP 20-57m	0,98	1,02	0,98
DIP 0-57m	0,96	0,92	0,77
Sal 0-4m	0,98	0,84	0,30
Sal 4-10m	0,98	0,85	0,46
Sal 10-20m	0,97	0,91	0,24
Sal 20-57m	0,98	0,92	0,37
Sal 0-57m	0,99	0,88	0,35

Supplement 3. Ten-year (1976-1985, 1986-1995, 1996-2005, 2006-2015 [2011 excluded]) model interpolated monthly means and changes of standing P stock in water (upper panels), P input and export with boundary model (second row panels), net P losses in upper water layers 0-20m and net P release in deep water (>20m) with mean model (third row panels), and deep-water oxygen consumption, minimum oxygen concentration and temperature (lower panels). Error bars show standard deviation among years.