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Colophon

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Preface

This report constitutes a follow-up to the International Evaluation of the Scientific and Legal Basis for Nitrogen Reduction in the 3rd Danish River Basin Management Plan (RBMP3), which was finalised in October 2023. Two of the issues identified by the international evaluation panel included 1) the use of Chl-a target values in open intercalibrated water bodies and 2) the applicability of eelgrass depth limit in shallow water bodies leading to alternative methods for estimating Maximum Allowable nutrient Inputs (MAI) to Danish coastal waters. In addition, the methods for estimating riverine nutrient inputs to coastal waters have been revised, resulting in updated data for nitrogen loadings. In this report we assess the implications of updates for the MAI estimations and revise the MAI estimations used for the RBMP3 taking into account the scientific updates and alternative solutions resulting from the international evaluation.

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Content

1. Introduction

Between 2016 and 2020, collaborative efforts by Aarhus University (AU), Technical University of Denmark (DTU), and DHI A/S (DHI) resulted in the development of models and methodologies used for determining the maximum nitrogen inputs allowing Danish coastal waters to achieve "good ecological status" (GES), as mandated by the Water Framework Directive (WFD). These models and methods subsequently constituted the pivotal foundation for the 3rd Danish River Basin Management Plan (RBMP3) for coastal waters, scheduled for implementation between 2021 and 2027.

As part of the political agreement "The Agriculture Package," adopted in October 2021, it was decided to conduct an international evaluation of the models and methods underpinning the RBMP3. This evaluation, involving foreign research institutions, sought to scrutinize assumptions, prerequisites, or choices that could impact the calculation of remaining nitrogen effort within the legal and scientific framework of the WFD. The outcomes of this evaluation, completed in October 2023 (Hermann et al., 2023), hold potential significance for the revisit of The Agricultural Package scheduled for 2024.

One of the key issues identified by the panel was a divergence between the Chl-a good-moderate (G/M) boundary values used in the RBMP3 and the intercalibrated Chl-a G/M boundary values in the open waters of the Western Baltic Sea. More specifically, the panel states that "*…G/M boundaries for the intercalibrated water bodies in the Baltic realm have been lowered significantly compared to the Commission approved intercalibration results*" and the panel recommends "…*to ensure that the comparability with the intercalibrated standards is not affected*…". The panel acknowledges the improved scientific background for the updated G/M boundaries but highlights the discrepancies with the intercalibrated values, hence they suggest to apply intercalibrated values until a potential new intercalibration has been carried out.

The issue with chl-a targets in open intercalibrated water bodies have been addressed in the report "Adjustment of chlorophyll-a targets in open intercalibrated water bodies" (Timmermann et al., 2024) where alternative solutions were identified including a solution where Chl-a a targets for a selection of open coastal waters were refitted to the intercalibrated Chl-a-targets from the latest EU commission decision (EU Comm 2018) on intercalibration where used for water bodies where intercalibrated Chl-a target values exist.

Also, during the international evaluation, stakeholders pinpointed the fact that the G/M boundary for eelgrass depth limit in few shallow water bodies is deeper than the maximum water depth. Altogether, 11 water bodies are shallower than the eelgrass depth limit at G/M boundary, and 17 water bodies are shallower than the reference depth limit. Although the International evaluation panel acknowledge the scientific reasoning for the use of eelgrass depth limit in shallow waters, the Panel believes that in specific situations this creates unnecessary complications and in practice changes the Maximum Allowable Input of Nitrogen (N-MAI) in only a few very shallow water bodies, why they suggest using G/M boundary depth limits for rooted angio-sperms that are truncated at the maximum water depth, both in the environmental status assessment and in the model calculations of N-MAI. The issue with the eelgrass indicator in shallow water bodies

was addressed in the report “Applicability of the WFD indicator “Angiosperm depth limit” in shallow water bodies” (Christensen et al., 2024)

The aim of this report is to:

1) Assess to what extend updates to the scientific basis for the RBMP3 will affect the N-MAI to Danish coastal waters. This specifically include assessment of the results from projects on 'Adjustment of environmental targets for chlorophyll-a in open intercalibrated coastal waters' and 'Follow-up on recommendations regarding the use of the indicator for rooted benthic plants in shallow coastal waters’ as well as the updated results on nitrogen loadings to Danish coastal waters.
2) Estimate updated N-MAIs based on the assessment results from 1) to be used for a revisit of the RBMP3.

2. Assessing suggested updates on N-MAIs

2.1 Updated nitrogen loadings

The methods for calculating nutrient loadings (N and P) for Danish coastal waters have recently been updated by Aarhus University resulting in revised N load estimates as well as revised P and freshwater (Q) estimates compared to RBMP3. Although the total N-load from all Danish catchments are almost similar in the updated version compared to the estimated load used for RBMP3 (RBMP3-load), there are significant differences for some individual water body catchments. The total N-load from all DK catchments amount to 58,537 tons N/year in the updated version whereas the Danish load used in RBMP3 was 58,100 tons N/year – a difference of less than 1%. For the individual water body catchments, differences between the updated load and RBMP3-load of up to 50% were observed, however, for most water bodies (within the 20 and 80 percentile), N-load changed between -11% (20% percentile) and 8% (80%percentile).

The changes in N-load estimates have direct consequences for the N-MAI calculations mainly as N-MAI is calculated as a percentage reduction requirement relative to the current N load. We have noted that the Panel has raised concerns about the appropriateness of making continuous updates to nutrient input data during the later stages of the project phase.

"*The Panel advises to incorporate all new scientific insights and close scrutiny of data into updates of the plans in later phases, but to do that in an ordered way. Building consensus on the quality and consistency of the data bases underlying such new calculations is an important prerequisite that should receive sufficient attention before any revision of calculations and conclusions are prepared in such a next phase. Once the database is established, it should remain fixed for the duration of the RBMP-phase any new insights being accumulated into a next revision*" (Hermann et al 2023).

We want to emphasize that we have taken this feedback seriously and are committed to adhering to the panel's recommendations in the future as this approach will increase robustness and help avoid continuous adjustments that could muddy the communication of the results and the main conclusions of the RBMP advisory work.

2.2 Revised Chl-a targets in open intercalibrated water bodies

The Chlorophyll-a targets established as part of RBMP3 is based on revised calculations of water body specific reference values (Timmermann et al. 2024) in combination with intercalibrated EQR G-M boundaries stated in the EU Commission decision (EU comm 2018). The models and methods used to establish chlorophyll-a reference conditions for RBMP3 have been improved significantly and the resulting reference conditions now consider the characteristics of each water body.

Due to the redefining of reference conditions from RBMP2 to RBMP3 inconsistencies between RBMP3 Chl-a boundaries and intercalibrated Chl-a boundaries in NEA8b and BC6 (intercalibration with Sweden) have emerged. For BC8, no inconsistencies between RBMP3 and the latest intercalibration decision have been detected as only EQR boundaries and not Chl-a boundaries are included in the EU Commission decision (EU Comm 2018).

Although the international panel acknowledges the improved scientific foundation of Chl-a boundaries (Hermann et al., p18) the panel recommends aligning G/M boundary values for Chl-a in open water bodies to the intercalibrated values as much as possible (Hermann et al.,2023 p. 18).

As described in Timmermann et al., 2024, we recommend the following approach:

1) Use the Chl-a reference and G-M boundaries from RBMP3 as these are estimated based on improved models and methods using intercalibrated EQR values
2) Initiate a re-intercalibration process with Sweden (NEA8b, BC6) and Germany (BC8) to establish an improved and updated common basis for determining reference conditions, EQR boundaries and Chl-a boundaries for the common water body types
3) As a temporary solution to accommodate the recommendation from the international panel, it is suggested to use EQR boundaries and Chl-a boundaries from the EU intercalibration decision (EU Comm 2018) for open coastal water bodies that were part of the intercalibration with Sweden (NEA8b, BC6, se fig. 3.1) and maintain the EQR intercalibrated with Germany for BC8. This implies revision of Chl-a G-M boundaries in 12 open water bodies. As the intercalibrated G-M boundary values are higher than the updated values used in RBMP3, this revision results in similar or higher MAIs compared to RBMP3.

In the present report MAIs will be calculated for two scenarios using either 1) RBMP3 Chl-a G-M boundaries values or 2) Revised (increased) Chl-a G-M boundary values for 12 water bodies whereas G-M values for the remaining water bodies is as in RBMP3. Both scenarios will be using updated nutrient loadings.

2.3 Rooted vegetation in shallow water bodies

The international evaluation panel has highlighted an issue with the existing indicator for the biological quality element “eelgrass and other angiosperms” in shallow water bodies. The problem is that eelgrass and other angiosperms are currently assessed on the light-limited depth distribution which is not fully applicable in the shallowest water bodies. The indicator cannot be classified when the light-limited depth distribution exceeds the maximum water depth. This may prevent status classification in the highest classes for the biological quality element in a few water bodies (not currently relevant for any of the shallow water bodies). In Christensen et al (2024) it is recommended maintaining the existing depth limits in the status assessment, including shallow areas, because the reference condition used to set boundary thresholds is an indirect expression of the water clarity in a reference state.

It is recommended that a new angiosperm indicator for shallow areas is developed for future river basin management plans (Christensen et al., 2024). For the revised RBMP3 it is recommended to use the supporting element “water clarity” to classify environmental status and calculate N-MAIs. This practice will not affect N-MAIs compared to RBMP3.

3. Re-calculating N-MAIs

3.1 The current RBMP3 and assumptions regarding "other countries"

As part of the scientific model developments behind RBMP3 a number of management scenarios were carried out to assess the sensitivity to a wide range of assumptions targeting N- and P-reductions in neighboring countries.

The various scenarios are described in Erichsen et al. (2020a) and relates to assumptions regarding land-based nutrient inputs from other countries and nutrient inputs from the atmosphere and covers preconditions for the Danish land-based N-MAI calculations. The preconditions are grouped into three management scenarios and one scenario related to the interpretation of the Water Framework Directive (WFD-scenario). The current RBMP3 is based on a combination of scenario 2d (updated nutrient reduction targets from Baltic Sea Action Plan) and 2e-30% (additional 30% reduction in P to the Wadden Sea), which is among the scenarios resulting in the highest N-MAI for Danish catchments (Erichsen et al, 2021a). The suite of scenarios behind RBMP3 are briefly described below.

3.1.1 Management Scenario 1 – Regional Treaties and RBMP 2015-2021

Management scenario 1 assumes that all national and international adopted treaties related to nutrient management, including RBMP 2015-2021, have been implemented. This corresponds to:

- Full implementation of the Baltic Sea Action Plan (BSAP) (HELCOM) and similar reduction targets in the North Sea (OSPAR)
- Implementation of RBMP 2015-2021 in all relevant EU countries
- Full implementation of the NEC-directive with respect to atmospheric N-deposition.

3.1.2 Management Scenario 2 - Land-based Nutrient Scenarios

The second group of scenarios encompasses alternative assumptions regarding land-based loadings from neighboring countries that are not based on adopted treaties. The assumptions include:

For the five sub-scenarios (a-e) described below, the atmospheric deposition is kept as described in management scenario 1, i.e. full implementation of the NEC-directive concerning atmospheric N-deposition.

a. Neighboring countries are assumed to have had the same percentage of nutrient reduction as Denmark when Danish land-based N-MAIs are reached. The reduction percentage is relative to the basis period 1997-2001
b. Neighboring countries are assumed to have the same area-specific anthropogenic loadings (kg/ha) as Denmark when Danish N-MAIs are reached
c. Loadings from neighboring countries are unchanged compared to the present-day loadings (2014-2018)
d. Danish land-based N-MAIs assuming updated BSAP targets. A new set of targets is being developed in HELCOM and will be adopted by the end of 2021.

e. Additional Wadden Sea P-reductions (20% or 30% additional TP-reductions to the Wadden Sea)

3.1.3 Management Scenario 3 - Atmospheric N Scenarios

The third group of scenarios encompasses assumptions for the atmospheric N-depositions originating from emissions in Denmark and surrounding countries. These assumptions are:

a. Danish land-based N-MAIs correspond to 2027 NEC-prognosis. Both Danish and international N-depositions are based on the prognosis of the NEC-implementation instead of the full implementation.

b. Danish land-based N-MAIs assuming synergy impacts from climate actions. As Denmark and other countries work to minimise climate changes, some synergies are expected to impact N-depositions as well.

For the above two sub-scenarios, the land-based nutrient loadings will be kept as described in management scenario 1, i.e. adopted treaties (BSAP and RBMP 2015-2021) have been implemented (see Erichsen *et al.* (2020a) for details).

3.1.4 WFD-Scenarios

In addition to the overall management scenarios three WFD-scenarios were carried out to test the implications of increasing the likelihood of achieving GES. These WFD-scenarios encompass:

a. Increasing the likelihood of achieving GES by changing the indicator target values from the good-moderate boundary to a target value between good and high status.

b. One-out-all-out principles. This approach will use average model results per indicator but include the lowest MAI between the two indicators.

c. MAI calculations are performed without taking the system contribution into account.

3.1.5 RBMP3 scenario

Based on the above-described management scenarios, the Danish Environmental Protection Agency (DEPA) combined scenarios to develop the N-MAIs to be implemented as the final RBMP3. Hence, the N-MAIs were developed as a combination between scenario 2d and 2e (30% additional TP-reductions to the Wadden Sea), described above.

The distributions of reductions applied for neighboring countries are shown in Figure 3.1, whereas the reductions applied are included in Table 3.1

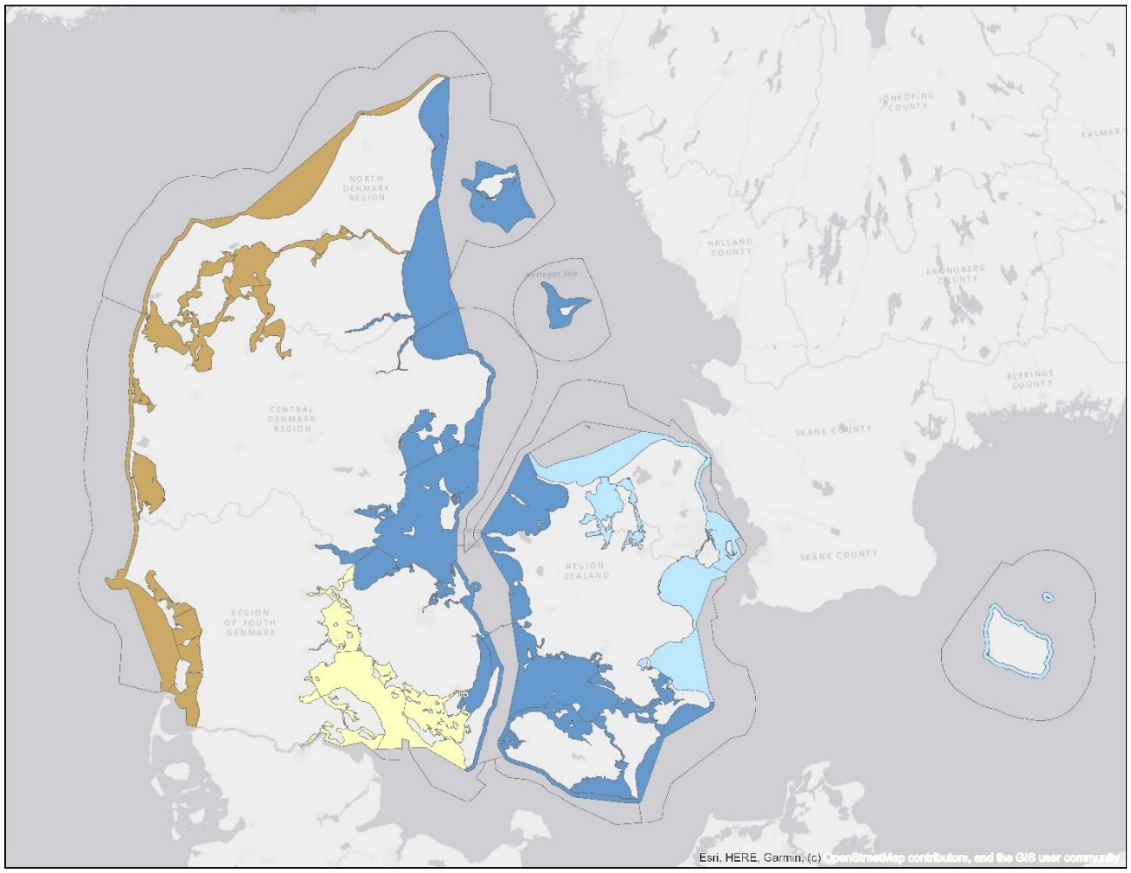

Figure 3.1. Distribution of reductions applied in the different management scenarios.

Nutrient reductions resulting from the German implementation of the RBMP (2015-2021) to the North Sea and Baltic Sea are applied in water bodies marked with brown and yellow, respectively. Nutrient reductions resulting from the implementation of the BSAP to the Baltic Proper (BAP) and Danish Straits (DS) are applied to water bodies marked in light blue. In dark blue areas, BSAP reductions to BAP and DS are applied after taking into account the effect of transport processes accounted for by the HELCOM (2020) allocation scheme.

Table 3.1. Overview of input data used to construct management scenario 2e (30% P-reductions) for reductions of non-Danish nutrient loadings. These input data represent assumed reductions of non-Danish nutrient loadings corresponding to Management scenario 2e. Acronyms used are: Baltic Sea Action Plan (BSAP), Danish Straits (DS), Baltic Proper (BAP), River Basin Management Plan (RBMP) and National Emission reduction Commitments (NEC).

Danish water areas affected	N load reduction in management scenario 2e. Reductions are in % of current (2014-2018) load	P load reduction aplied in management scenario 2e. Reductions are in % of current (2014-2018) load	Adopted treaties
Western Baltic Sea (light blue area, Fig. 3.1)	12%	27%	Effect of BSAP to DS and BAP.
Great Belt and Kattegat (dark blue area, Fig. 3.1)	35%	27%	Effect of BSAP and German RBMP, using HELCOM allocation scheme
Southern Little Belt (yellow area, , Fig. 3.1)	44%	27%	Effect of German RBMP (2015-2021)
North Sea water bodies and Limfjorden (brown area, , Fig. 3.1)	31%	30%	Effect of German RBMP (2015-2021)
Atmospheric deposition, all Danish water bodies	16%	0%	NEC directive

3.2 Updating nitrogen loadings

Since the developments of methods and models behind RBMP3 – and hence, the methods and models being internationally evaluated – AU has released a new method/model for estimating the annual land-based N- and P-loads from Danish catchments.

Hence, this influences the background data behind the model developments and has implications on the status N- and P-loads as well as the N-MAIs estimated based on the developed models (mechanistic and statistical models). However, updates of the loadings are assumed not to impact the model sensitivity to changes in N-loads, why the model estimated slopes used to calculate MAIs remain unchanged. As the water body status assessment is based on measured data, we maintain model sensitivity (dose-response) to both N- and P-reductions and estimate the updated N-MAIs by applying the already estimated needs for reductions as described in e.g., Erichsen et al. (2020b).

The status loads and N-MAIs will therefore differ from the absolute values reported in e.g., Erichsen et al. (2020b), but the need for reduction (in % reductions) remains unchanged.

3.3 Changing Chl-a target values in open intercalibrated water bodies

As described in Timmermann et al., 2024 the update in Chl-a targets to match the intercalibrated values between Denmark and Germany, as suggested by the international panel of experts, relates to 8 NEA8b water bodies, 4 BC6 water bodies and 7 NEA1/26c water bodies, see Figure 3.2.

In addition, a number of BC8 areas are shown in Figure 3.2, but here the intercalibration alone relates to the EQR values, which were used in e.g., Erichsen et al. (2020a-c), why no changes in G/M nominal boundary values nor EQR values are implemented in this report. The intercalibrated Chl-a target values in the various GIG regions are included in Table 3.2.

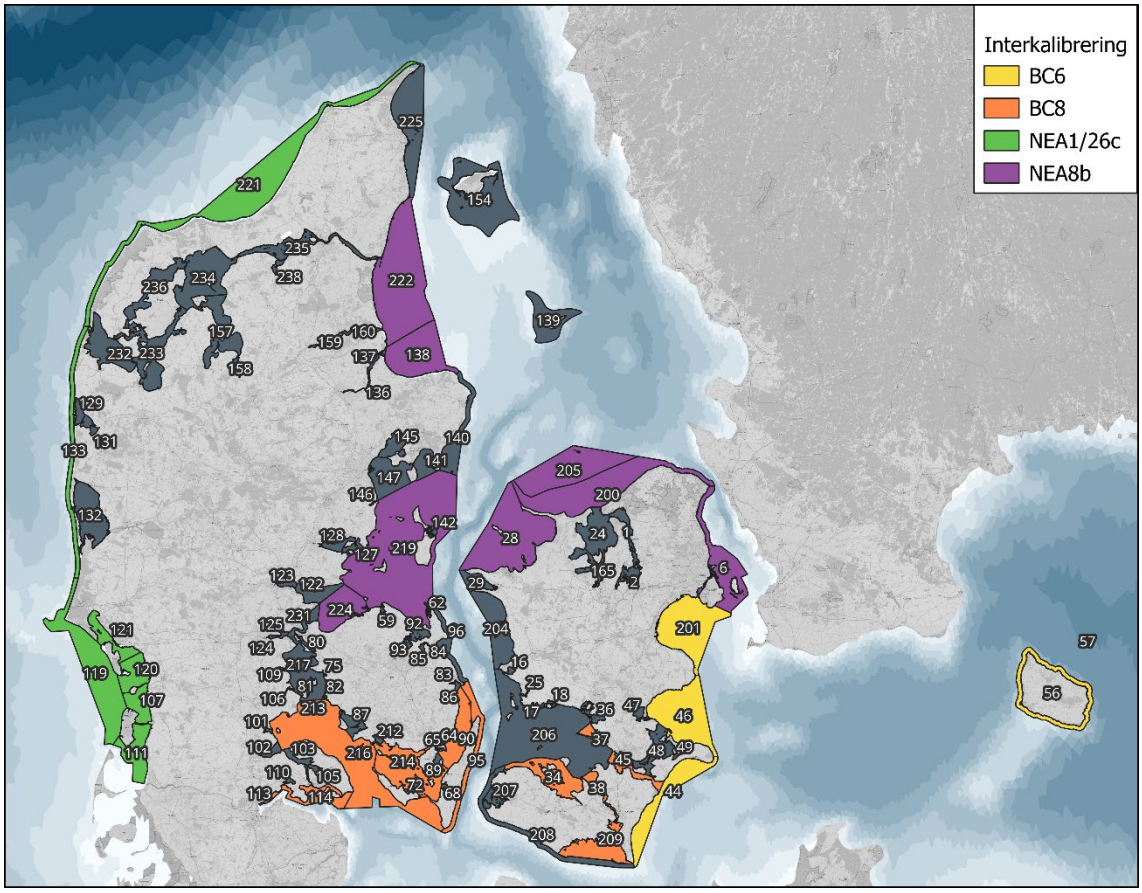

Figure 3.2. Intercalibrated waters between Denmark and Sweden (BC6 and NEA8b) and between Denmark and Germany (BC8 and NEA1/26c).

Table 3.2. Intercalibrated Chl-a G/M boundary values (EU Comm 2018).

GIG	G/M boundary value
BC6	1.72 µg/l
BC8	No intercalibrated Chl-a boundaries
NEA1/26C	7.5 µg/l
NEA8b	1.58 µg/l
NEA8b – The Sound	1.63 µg/l

3.4 Updated N-MAI scenarios

3.4.1 Scenario 1: Updated TN loads to Danish catchments

Based on the combined RBMP3 scenario 2d and 2e described in section 3.1.5 (implementation of the updated Baltic Sea Action Plan, German nutrient reductions according to RBMP 2015-2021, reductions in atmospheric N deposition according to the NEC directive and 30% additional P reduction for the Wadden Sea) the different reduction requirements and corresponding MAIs are calculated using the updated nitrogen loadings (version 2023) as status N load (2014-2018) for each water body catchment.

The different reduction requirements (%-wise and in actual tons) based on the different indicators and different models are included in Appendix A, whereas the aggregated MAIs are reported in Table 3.3.

Table 3.3. Scenario 1 results showing the Maximum Allowable Nitrogen Inputs (N-MAIs) for Danish water bodies given the implementation of the updated Baltic Sea Action Plan, German nutrient reductions according to WFD and reductions in atmospheric N deposition according to the NEC directive. The N-MAIs are calculated using updated (version 2023) nitrogen loadings as status N load (2014-2018) for each catchment and the same environmental indicator target values as in RBMP3. The table shows N-MAIs in tons N per year, where 'main' denote main-catchment and 'sub' denote sub-catchments being part of a main-catchment. The table show status loads as well as N-MAIs calculated for 5 different phosphorus reduction scenarios designated P0, P10, P20, P30 and P50, where phosphorus loadings from Danish catchments are reduced by 0%, 10%, 20%, 30% and 50%, respectively. The column 'aggregated' denotes sub-catchments included in specific MAIs.

			TN status Load v2023 [tons N/year]		N-MAI, P0 [tons N/year]		N-MAI, P10 [tons N/year]		N-MAI, P020 [tons N/year]		N-MAI, P30 [tons N/year]		N-MAI, P50 [tons N/year]	
WB no	WB name	Aggrega-tion	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub
1	Roskilde-Fjordydre	1,2		853		613		615		617		619		623
2	Roskilde-Fjordindre	2		434		425		426		427		428		430
6	NordligeOere-sund	6	1149		1149		1149		1149		1149		1149	
16	KorsoerNor	16		32		24		24		25		25		26
17	BasnaesNor	17		70		52		52		52		52		52
18	Holstein-borgNor	18		26		26		26		26		26		26
24	Isefjordydre	24,165		1079		688		688		688		688		688
25	Skaelskoer-FjordogNor	25		40		33		34		34		35		37
28	SejeroeBugt	28	198		198		198		198		198		198	
29	Kalundborg-Fjord	29	84		48		50		53		57		64	
34	Smaalandsfar-vandetsyd	34	543		543		543		543		543		543	
35	Kar-rebaekFjord	35		1268		1003		1033		1061		1088		1140
36	DybsoeFjord	36		59		59		59		59		59		59
37	AvnoeFjord	37		234		182		185		187		189		194

			TN status Load v2023 [tons N/year]		N-MAI, P0 [tons N/year]		N-MAI, P10 [tons N/year]		N-MAI, P020 [tons N/year]		N-MAI, P30 [tons N/year]		N-MAI, P50 [tons N/year]	
WB no	WB name	Aggrega-tion	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub
38	Guldborgsund	38	374		374		374		374		374		374	
44	HjelmBugt	44	87		87		87		87		87		87	
45	Groensund	45	298		224		224		224		224		224	
46	FakseBugt	46,47	589		509		512		516		520		528	
47	PraestoeFjord	47		232		151		155		159		163		171
48	StegeBugt	48,49	298		287		288		288		288		288	
49	StegeNor	49		29		18		19		19		19		19
56	Oestersoeen-Bornholm	56	939		561		561		561		561		561	
57	Oester-soeenChristi-ansoe	57	4		2		2		2		2		2	
59	NaeraaStrand	59		93		22		24		33		41		60
62	Lillestrand	62		9		5		5		5		5		6
68	LindelseNor	68		41		41		41		41		41		41
72	Kloeven	72		28		28		28		28		28		28
74	Bredningen	74		130		45		50		56		61		73
80	GamborgFjord	80		83		76		76		76		76		76
82	AborgMin-deNor	82		140		34		34		34		36		62
83	Holcken-havnFjord	83		284		100		108		119		130		153
84	Kerteminde-Fjord	84,85		43		35		35		35		35		35
85	KertingeNor	85		21		18		19		19		19		19
86	NyborgFjord	83,86		305		121		129		140		151		174
87	HelnaesBugt	87		186		127		127		127		127		127

			TN status Load v2023 [tons N/year]		N-MAI, P0 [tons N/year]		N-MAI, P10 [tons N/year]		N-MAI, P020 [tons N/year]		N-MAI, P30 [tons N/year]		N-MAI, P50 [tons N/year]	
WB no	WB name	Aggrega-tion	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub
89	Lunkebugten	89		18		12		12		12		12		12
90	Langelands-sund	83,86,89,90	737		546		554		565		577		600	
92	Odense-Fjordydre	92,93		1282		798		813		830		847		881
93	OdenseFjord-SedenStrand	93		1220		736		752		768		785		819
95	StorebaeltSV	95	141		91		91		91		91		91	
96	StorebaeltNV	96, 84, 85	199		118		118		118		118		118	
101	GennerBugt	101		42		21		21		21		21		21
102	AabenraaFjord	102		126		69		69		69		69		69
103	AlsFjord	103,104,105		290		181		181		181		181		181
104	AlsSund	104		65		65		65		65		65		65
105	Augustenborg-Fjord	105		85		85		85		85		85		85
106	Haderslev-Fjord	106		200		119		120		120		121		122
107	JuvreDyb	107		366		171		188		206		225		265
108	AvnoeVig	108		58		27		30		32		34		40
109	HejlsmindeNor	109		165		113		125		131		137		147
110	NyboelNor	110		74		55		57		58		60		63
111	ListerDyb	111		2059		1500		1575		1653		1733		1900
113	Flensborg-Fjordindre	113		43		25		25		25		25		25

			TN status Load v2023 [tons N/year]		N-MAI, P0 [tons N/year]		N-MAI, P10 [tons N/year]		N-MAI, P020 [tons N/year]		N-MAI, P30 [tons N/year]		N-MAI, P50 [tons N/year]	
WB no	WB name	Aggrega-tion	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub
114	Flensborg-Fjordydre	110,113,114		242		204		206		207		209		212
119	Vesterha-vetsyd	119, 107, 111, 121, 120	8746		4014		4014		4014		4014		4541	
120	Knudedyb	120		3074		841		841		967		1370		1957
121	Graadyb	121		3042		1539		1840		2170		2533		3042
122	VejleFjordydre	122,123		994		724		728		731		735		743
123	VejleFjordin-dre	123		579		517		525		532		536		543
124	Kolding-Fjordindre	124		503		229		241		257		274		315
125	Kolding-Fjordydre	124,125		547		273		285		300		317		359
127	Horsens-Fjordydre	127,128		836		477		480		483		485		491
128	Horsens-Fjordindre	128		785		429		432		435		438		443
129	Nis-sumFjordYdre	129,131,130		2301		1001		1045		1116		1248		1551
130	NissumFjord-mellem	130,131		1937		637		681		752		884		1187
131	NissumFjord-FelstedKog	131		1783		1222		1222		1266		1357		1590
132	Ringkoebing-Fjord	132		5045		2580		2708		2835		3313		4692

			TN status Load v2023 [tons N/year]		N-MAI, P0 [tons N/year]		N-MAI, P10 [tons N/year]		N-MAI, P020 [tons N/year]		N-MAI, P30 [tons N/year]		N-MAI, P50 [tons N/year]	
WB no	WB name	Aggrega-tion	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub
133	Vesterhavet-nord	133,129,130,131, 132	7423		3658		3830		4028		4638		6320	
136	Randers Fjord, indre	136		2980		2229		2229		2299		2391		2573
137	Randers Fjord, ydre	136,137		3122		2168		2267		2366		2463		2657
138	HevringBugt	138, 137, 136	3251		2296		2396		2494		2592		2785	
139	Anholt	139	7		7		7		7		7		7	
140	DjurslandOest	140	649		514		514		514		514		514	
141	EbeltoftVig	141	14		14		14		14		14		14	
142	StavnsFjord	142		4		3		3		3		3		3
144	KnebelVig	144		16		13		13		13		13		13
145	KaloeVig	144,145		222		219		219		219		219		219
146	Norsminde-Fjord	146		143		95		101		109		116		132
147	AarhusBugtog-BegtrupVig	144,145,147	703		697		700		700		700		700	
154	KattegatLae-soe	154	55		55		55		55		55		55	
157	BjoernholmsBugtRiisgaardeBredningSkiveFjordogLovnsBredning	157,158		3651		1321		1435		1545		1650		1946
158	HjarbaekFjord	158		1852		555		631		708		786		947
159	Mariager-Fjordindre	159		491		136		155		174		193		230

			TN status Load v2023 [tons N/year]		N-MAI, P0 [tons N/year]		N-MAI, P10 [tons N/year]		N-MAI, P020 [tons N/year]		N-MAI, P30 [tons N/year]		N-MAI, P50 [tons N/year]	
WB no	WB name	Aggrega-tion	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub
160	Mariager-Fjordydre	159,160		962		607		626		645		664		701
165	Isefjordindre	165		975		584		584		584		584		584
200	Kattegat-Nordsjaelland	1,2,24,165, 200	2155		1396		1396		1396		1396		1396	
201	KoegeBugt	201	1179		1034		1047		1056		1066		1084	
204	Jammerland-BugtogMus-holmBugt	204	1381		965		966		968		969		972	
206	Smaalandsfar-vandetaabne-del	16,17,18,2 5,35,36,37, 206	2017		1668		1701		1733		1764		1823	
207	NakskovFjord	207		359		314		316		318		320		324
208	Femerbaelt	207,208,20 9	1337		1105		1107		1110		1112		1116	
209	Roedsandog-Bredningen	209		410		250		250		250		250		250
212	FaaborgFjord	212		22		16		16		16		16		16
214	Detsydfynske-Oehav	68,72,212, 214	532		288		289		290		290		292	
216	Lillebaeltsyd	87,101,102 ,103,104,1 05,110,113 ,114,216	1332		898		898		898		898		898	

			TN status Load v2023 [tons N/year]		N-MAI, P0 [tons N/year]		N-MAI, P10 [tons N/year]		N-MAI, P020 [tons N/year]		N-MAI, P30 [tons N/year]		N-MAI, P50 [tons N/year]	
WB no	WB name	Aggrega-tion	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub
217	LillebaeltBred-ningen	74,82,106, 108,109,21 7	914		467		467		467		467		467	
219	Aarhus-BugtsydSam-soeogNordli-geBaelthav	59,62,92,9 3,127,128, 142,146,21 9	2694		1632		1656		1681		1681		1681	
221	Skagerrak	221	1409		1409		1409		1409		1409		1409	
222	KattegatAal-borgBugt	222,159,16 0	2034		1679		1699		1718		1736		1774	
224	NordligeLille-baelt	122,123,22 4	1398		962		962		962		962		962	
225	NordligeKatte-gatAalbaek-Bugt	225	715		715		715		715		715		715	
231	LillebaeltSna-evringen	231,124,12 5,80	800		266		285		304		323		360	
232	NissumBred-ning	232	911		545		562		578		595		630	
233	KaasBred-ningogVenoe-Bugt	232,233		2075		1361		1479		1598		1718		1794
234	Loegstoer-Bredning	157,158,23 4, 233, 236		6752		2893		3009		3125		3241		3472

			TN status Load v2023 [tons N/year]		N-MAI, P0 [tons N/year]		N-MAI, P10 [tons N/year]		N-MAI, P020 [tons N/year]		N-MAI, P30 [tons N/year]		N-MAI, P50 [tons N/year]	
WB no	**WB name**	**Aggrega-tion**	**Main**	**Sub**	**Main**	**Sub**	**Main**	**Sub**	**Main**	**Sub**	**Main**	**Sub**	**Main**	**Sub**
235	NibeBred-ningogLange-rak	157, 158, 233, 234, 235, 236, 238	11242		6857		6980		7142		7304		7734	
236	ThistedBred-ning	236		1150		396		407		417		431		458
238	HalkaerBred-ning	238		639		114		120		167		213		412
Sum			58537		37878		38419		39021		40009		43075	

3.4.2 Scenario 2: Updated loads and Chl-a targets in 12 water bodies

Scenario 2 is also based on the combined RBMP3 scenario 2d and 2e described in section 3.1.5 and on updated nitrogen loadings (version 2023), which are used to calculate status N load (2014-2018) for each water body catchment. In order to align with the recommendation from the international evaluation panel, the chlorophyll-a target values are not based on RBMP3 targets but have been revised in 12 open water bodies in order to align with the intercalibration results for Chlorophyll-a (EU comm 2018). Table 3.3 shows the resulting N-MAIs from scenario 2.

Table 3.4. Scenario 2 results showing the Maximum Allowable Nitrogen Inputs (N-MAIs) for Danish water bodies given the implementation of the updated Baltic Sea Action Plan, German nutrient reductions according to WFD and reductions in atmospheric N deposition according to the NEC directive. The N-MAIs are calculated using updated (version 2023) nitrogen loadings as status N load for each catchment. Environmental indicator target values are as in RBMP3 except for Chlorophyll-a target values for 12 water bodies in BC6 and NEA8b which have been increased from their water body specific boundary value to the intercalibrated type specific value. Water. The table shows N-MAIs in tons N per year, where 'main' denote main-catchment and 'sub' denote sub-catchments being part of a main-catchment. The table show status loads as well as N-MAIs calculated for 5 different phosphorus reduction scenarios designated P0, P10, P20, P30 and P50, where phosphorus loadings from Danish catchments are reduced by 0%, 10%, 20%, 30% and 50%, respectively. The column 'aggregated' denotes sub-catchments included in specific MAIs.

			TN status Load v2023 [tons N/year]		N-MAI, P0 [tons N/year]		N-MAI, P10 [tons N/year]		N-MAI, P020 [tons N/year]		N-MAI, P30 [tons N/year]		N-MAI, P50 [tons N/year]	
WB no	WB name	Aggrega-tion	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub
1	Roskilde-Fjordydre	1,2		853		613		615		617		619		623
2	Roskilde-Fjordindre	2		434		425		426		427		428		430
6	NordligeOere-sund	6	1149		1149		1149		1149		1149		1149	
16	KorsoerNor	16		32		24		24		25		25		26
17	BasnaesNor	17		70		52		52		52		52		52
18	Holstein-borgNor	18		26		26		26		26		26		26
24	Isefjordydre	24,165		1079		688		688		688		688		688
25	Skaelskoer-FjordogNor	25		40		33		34		34		35		37
28	SejeroeBugt	28	198		198		198		198		198		198	
29	Kalundborg-Fjord	29	84		48		50		53		57		64	
34	Smaalandsfar-vandetsyd	34	543		543		543		543		543		543	
35	Kar-rebaekFjord	35		1268		1003		1033		1061		1088		1140
36	DybsoeFjord	36		59		59		59		59		59		59
37	AvnoeFjord	37		234		182		185		187		189		194

			TN status Load v2023 [tons N/year]		N-MAI, P0 [tons N/year]		N-MAI, P10 [tons N/year]		N-MAI, P020 [tons N/year]		N-MAI, P30 [tons N/year]		N-MAI, P50 [tons N/year]	
WB no	WB name	Aggrega-tion	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub
38	Guldborgsund	38	374		374		374		374		374		374	
44	HjelmBugt	44	87		87		87		87		87		87	
45	Groensund	45	298		224		224		224		224		224	
46	FakseBugt	46,47	589		509		512		516		520		528	
47	PraestoeFjord	47		232		151		155		159		163		171
48	StegeBugt	48,49	298		287		288		288		288		288	
49	StegeNor	49		29		18		19		19		19		19
56	Oestersoeen-Bornholm	56	939		939		939		939		939		939	
57	Oester-soeenChristi-ansoe	57	4		4		4		4		4		4	
59	NaeraaStrand	59		93		22		24		33		41		60
62	Lillestrand	62		9		5		5		5		5		6
68	LindelseNor	68		41		41		41		41		41		41
72	Kloeven	72		28		28		28		28		28		28
74	Bredningen	74		130		45		50		56		61		73
80	GamborgFjord	80		83		76		76		76		76		76
82	AborgMin-deNor	82		140		34		34		34		36		62
83	Holcken-havnFjord	83		284		100		108		119		130		153
84	Kerteminde-Fjord	84,85		43		35		35		35		35		35
85	KertingeNor	85		21		18		19		19		19		19
86	NyborgFjord	83,86		305		121		129		140		151		174
87	HelnaesBugt	87		186		127		127		127		127		127

			TN status Load v2023 [tons N/year]		N-MAI, P0 [tons N/year]		N-MAI, P10 [tons N/year]		N-MAI, P020 [tons N/year]		N-MAI, P30 [tons N/year]		N-MAI, P50 [tons N/year]	
WB no	WB name	Aggrega-tion	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub
89	Lunkebugten	89		18		12		12		12		12		12
90	Langelands-sund	83,86,89,90	737		546		554		565		577		600	
92	Odense-Fjordydre	92,93		1282		798		813		830		847		881
93	OdenseFjord-SedenStrand	93		1220		736		752		768		785		819
95	StorebaeltSV	95	141		91		91		91		91		91	
96	StorebaeltNV	96, 84, 85	199		118		118		118		118		118	
101	GennerBugt	101		42		21		21		21		21		21
102	AabenraaFjord	102		126		69		69		69		69		69
103	AlsFjord	103,104,105		290		181		181		181		181		181
104	AlsSund	104		65		65		65		65		65		65
105	Augustenborg-Fjord	105		85		85		85		85		85		85
106	Haderslev-Fjord	106		200		119		120		120		121		122
107	JuvreDyb	107		366		171		188		206		225		265
108	AvnoeVig	108		58		27		30		32		34		40
109	HejlsmindeNor	109		165		113		125		131		137		147
110	NyboelNor	110		74		55		57		58		60		63
111	ListerDyb	111		2059		1500		1575		1653		1733		1900
113	Flensborg-Fjordindre	113		43		25		25		25		25		25

			TN status Load v2023 [tons N/year]		N-MAI, P0 [tons N/year]		N-MAI, P10 [tons N/year]		N-MAI, P020 [tons N/year]		N-MAI, P30 [tons N/year]		N-MAI, P50 [tons N/year]	
WB no	WB name	Aggrega-tion	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub
114	Flensborg-Fjordydre	110,113,114		242		204		206		207		209		212
119	Vesterha-vetsyd	119, 107, 111, 121, 120	8746		4014		4014		4014		4014		4541	
120	Knudedyb	120		3074		841		841		967		1370		1957
121	Graadyb	121		3042		1539		1840		2170		2533		3042
122	VejleFjordydre	122,123		994		724		728		731		735		743
123	VejleFjordin-dre	123		579		517		525		532		536		543
124	Kolding-Fjordindre	124		503		229		241		257		274		315
125	Kolding-Fjordydre	124,125		547		273		285		300		317		359
127	Horsens-Fjordydre	127,128		836		477		480		483		485		491
128	Horsens-Fjordindre	128		785		429		432		435		438		443
129	Nis-sumFjordYdre	129,131,130		2301		1001		1045		1116		1248		1551
130	NissumFjord-mellem	130,131		1937		637		681		752		884		1187
131	NissumFjord-FelstedKog	131		1783		1222		1222		1266		1357		1590
132	Ringkoebing-Fjord	132		5045		2580		2708		2835		3313		4692

			TN status Load v2023 [tons N/year]		N-MAI, P0 [tons N/year]		N-MAI, P10 [tons N/year]		N-MAI, P020 [tons N/year]		N-MAI, P30 [tons N/year]		N-MAI, P50 [tons N/year]	
WB no	WB name	Aggrega-tion	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub
133	Vesterhavet-nord	133,129,130,131, 132	7423		3658		3830		4028		4638		6320	
136	Randers Fjord, indre	136		2980		2229		2229		2299		2391		2573
137	Randers Fjord, ydre	136,137		3122		2168		2267		2366		2463		2657
138	HevringBugt	138, 137, 136	3251		2296		2396		2494		2592		2785	
139	Anholt	139	7		7		7		7		7		7	
140	DjurslandOest	140	649		514		514		514		514		514	
141	EbeltoftVig	141	14		14		14		14		14		14	
142	StavnsFjord	142		4		3		3		3		3		3
144	KnebelVig	144		16		13		13		13		13		13
145	KaloeVig	144,145		222		219		219		219		219		219
146	Norsminde-Fjord	146		143		95		101		109		116		132
147	AarhusBugtog-BegtrupVig	144,145,147	703		697		700		700		700		700	
154	KattegatLae-soe	154	55		55		55		55		55		55	
157	BjoernholmsBugtRiisgaardeBredningSkiveFjordogLovnsBredning	157,158		3651		1321		1435		1545		1650		1946
158	HjarbaekFjord	158		1852		555		631		708		786		947
159	Mariager-Fjordindre	159		491		136		155		174		193		230

			TN status Load v2023 [tons N/year]		N-MAI, P0 [tons N/year]		N-MAI, P10 [tons N/year]		N-MAI, P020 [tons N/year]		N-MAI, P30 [tons N/year]		N-MAI, P50 [tons N/year]	
WB no	WB name	Aggrega-tion	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub
160	Mariager-Fjordydre	159,160		962		607		626		645		664		701
165	Isefjordindre	165		975		584		584		584		584		584
200	Kattegat-Nordsjaelland	1,2,24,165,200	2155		1396		1396		1396		1396		1396	
201	KoegeBugt	201	1179		1179		1179		1179		1179		1179	
204	Jammerland-BugtogMus-holmBugt	204	1381		965		966		968		969		972	
206	Smaalandsfar-vandetaabne-del	16,17,18,25,35,36,37,206	2017		1668		1701		1733		1764		1823	
207	NakskovFjord	207		359		314		316		318		320		324
208	Femerbaelt	207,208,209	1337		1105		1107		1110		1112		1116	
209	Roedsandog-Bredningen	209		410		250		250		250		250		250
212	FaaborgFjord	212		22		16		16		16		16		16
214	Detsydfynske-Oehav	68,72,212,214	532		288		289		290		290		292	
216	Lillebaeltsyd	87,101,102,103,104,105,110,113,114,216	1332		898		898		898		898		898	

			TN status Load v2023 [tons N/year]		N-MAI, P0 [tons N/year]		N-MAI, P10 [tons N/year]		N-MAI, P020 [tons N/year]		N-MAI, P30 [tons N/year]		N-MAI, P50 [tons N/year]	
WB no	WB name	Aggrega-tion	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub	Main	Sub
217	LillebaeltBred-ningen	74,82,106, 108,109,21 7	914		467		467		467		467		467	
219	Aarhus-BugtsydSam-soeogNordli-geBaelthav	59,62,92,9 3,127,128, 142,146,21 9	2694		1632		1656		1681		1681		1681	
221	Skagerrak	221	1409		1409		1409		1409		1409		1409	
222	KattegatAal-borgBugt	222,159,16 0	2034		1679		1699		1718		1736		1774	
224	NordligeLille-baelt	122,123,22 4	1398		1102		1102		1102		1102		1102	
225	NordligeKatte-gatAalbaek-Bugt	225	715		715		715		715		715		715	
231	LillebaeltSna-evringen	231,124,12 5,80	800		266		285		304		323		360	
232	NissumBred-ning	232	911		545		562		578		595		630	
233	KaasBred-ningogVenoe-Bugt	232,233		2075		1361		1479		1598		1718		1794
234	Loegstoer-Bredning	157,158,23 4, 233, 236		6752		2893		3009		3125		3241		3472

			TN status Load v2023 [tons N/year]		N-MAI, P0 [tons N/year]		N-MAI, P10 [tons N/year]		N-MAI, P020 [tons N/year]		N-MAI, P30 [tons N/year]		N-MAI, P50 [tons N/year]	
WB no	**WB name**	**Aggrega-tion**	**Main**	**Sub**	**Main**	**Sub**	**Main**	**Sub**	**Main**	**Sub**	**Main**	**Sub**	**Main**	**Sub**
235	NibeBred-ningogLange-rak	157, 158, 233, 234, 235, 236, 238	11242		6857		6980		7142		7304		7734	
236	ThistedBred-ning	236		1150		396		407		417		431		458
238	HalkaerBred-ning	238		639		114		120		167		213		412
Sum			58537		38544		39071		39664		40642		43690	

3.5 Closing remarks

The estimated Maximum Allowable Nitrogen Input (N-MAI) to Danish water bodies presented in this report is based on the preconditions that the updated BSAP, the RBMP 2015-2021, additional Wadden Sea P-reductions (30%) and the NEC directive will be fully implemented. These treaties have been adopted, but are not fully implemented yet.

N-MAI calculated in scenario 1 is based on chlorophyll-a targets calculated using the best available models and methods, and take into account the characteristics of each water body. This contrasts with M-MAIs from scenario 2 which, for 12 water bodies, are based on chlorophyll-a targes estimated using older models dating back to an intercalibration process following the RBMP2. As a consequence, N-MAIs from scenario 1 are considered to be more scientifically sound compared to scenario 2 results as the target setting in scenario 1 is more precise, coherent and scientifically consistent.

If the preconditions are fulfilled, and the N-MAI for Danish water bodies is reached by the end of 2027, all Danish water bodies will most likely not have reached Good Ecological Status (GES) as defined in the WFD. This is because:

- The N-MAI estimation is based on the depth of light as a proxy for the indicator eelgrass depth limit. Hence, even if light has reached the target value, recovery of eelgrass after light improvements may take years to decades. In addition, other factors, such as sediment suitability, lack of seedlings, etc., may delay or prevent eelgrass recovery.
- With the given preconditions, one or both of the indicators (chlorophyll-a and light) may not reach the target value despite reductions from Danish catchments. In these situations, the reduction requirement for that indicator is cut off/truncated at the reference loading. A cut-off at reference loading indicates that due to the scenario and associated preconditions, a specific N-MAI for that water body that ensures GES cannot be obtained, and administrative choices have to be made, like applying an average reduction from neighbouring water bodies, reductions to down-stream water bodies or a general N-MAI (kg/ha) for those water bodies. However, the implication is that GES for both indicators cannot be expected in these water bodies, even if N-MAI is obtained.
- The method is not based on the one-out-all-out principle as required in the WFD, but on an average of two indicators. Hence, it is expected that both indicators will be as close to the target value as possible, but one will theoretically be above and one below the target value.
- In both scenarios, we are using the boundary between good and moderate status as the target value for each of the indicators. Due to uncertainties, there is a 50% chance that the indicator value will end in good status and a 50% chance that the indicator value will end in moderate status, if N-MAI for that indicator is reached, assuming the measured indicator follows a symmetrical distribution.
- As some ecosystems respond with significant time-lags to changes in loadings, it will take years before the full environmental effects of nutrient reductions can be observed. Hence, reaching MAI will provide the conditions for obtaining GES but the achievement of GES will likely be delayed

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Appendix A: Scenario 1 results

Table A-1. Scenario 1, P0: Water body-specific MAIs based on the two individual indicators chlorophyll-a (Chl-a) and light penetration depth (light) estimated from statistical models (STAT) or mechanistic models (MEK), respectively.

The table shows both the individual calculations as well as the averaged water specific MAIs (without any aggregation) and the corresponding need for reduction in %. Danish P 0%

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
1	Roskilde Fjord,ydre	1,2	853			735	490		613	613	28
2	Roskilde Fjord, indre	2	434	434		434	396	434	415	425	2
6	Nordlige Øresund	6	1,149			1,149	1,149		1,149	1,149	0
16	Korsør Nor	16	32			32	16		24	24	25
17	Basnæs Nor	17	70			70	34		52	52	26
18	Holsteinborg Nor	18	26			26	26		26	26	0
24	Isefjord, ydre	24,165	1,079	600	804	685	849	702	767	734	32
25	Skælskør Fjord og Nor	25	40			32	33		33	33	17
28	Sejerø Bugt	28	198			198	198		198	198	0
29	Kalundborg Fjord	29	84	13	50	46	84	32	65	48	42
34	Smålandsfarvandet, syd	34	543			543	543		543	543	0
35	Karrebæk Fjord	35	1,268			1,268	738		1,003	1,003	21
36	Dybsø Fjord	36	59			59	59		59	59	0
37	Avnø Fjord	37	234			234	131		182	182	22
38	Guldborgsund	38	374			374	374		374	374	0
44	Hjelm Bugt	44	87			87	87		87	87	0
45	Grønsund	45	298			298	146		222	222	26

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
46	Fakse Bugt	46,47	589			577	589		583	583	1
47	Præstø Fjord	47	232			161	141		151	151	35
48	Stege Bugt	48,49	298			298	298		298	298	0
49	Stege Nor	49	29			22	15		18	18	36
56	Østersøen, Bornholm	56	939			184	939		561	561	40
57	Østersøen, Christiansø	57	4			0.1	4		2	2	49
59	Nærå Strand	59	93			22	22		22	22	76
62	Lillestrand	62	9			7	4		5	5	41
68	Lindelse Nor	68	41			41	41		41	41	0
72	Kløven	72	28			28	28		28	28	0
74	Bredningen	74	130			48	42		45	45	65
80	Gamborg Fjord	80	83			69	83		76	76	8
82	Aborg Minde Nor	82	140			34	34		34	34	76
83	Holckenhavn Fjord	83	284			81	118		100	100	65
84	Kerteminde Fjord	84,85	43			27	43		35	35	19
85	Kertinge Nor	85	21	20		21	12	20	16	18	13
86	Nyborg Fjord	83,86	305			152	274		213	213	30
87	Helnæs Bugt	87	186			67	186		127	127	32
89	Lunkebugten	89	18			5	18		12	12	36
90	Langelandssund	83,86,89,90	737			558	737		648	648	12
92	Odense Fjord, ydre	92,93	1,282	810	1,164	930	1,062	987	996	992	23
93	Odense Fjord, Seden Strand	93	1,220		667	1,220	390	667	805	736	40

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
95	Storebælt SV	95	141			41	141		91	91	36
96	Storebælt NV	96, 84, 85	199			38	199		118	118	41
101	Genner Bugt	101	42			13	30		21	21	49
102	Åbenrå Fjord	102	126	59		59	101	59	80	69	45
103	Als Fjord	103,104,105	290			72	290		181	181	38
104	Als Sund	104	65			65	65		65	65	0
105	Augustenborg Fjord	105	85	85		85	85	85	85	85	0
106	Haderslev Fjord	106	200			104	134		119	119	40
107	Juvre Dyb	107	366			171			171	171	53
108	Avnø Vig	108	58			31	23		27	27	52
109	Hejlsminde Nor	109	165			152	74		113	113	32
110	Nybøl Nor	110	74			49	61		55	55	26
111	Lister Dyb	111	2,059			1,500			1,500	1,500	27
113	Flensborg Fjord, indre	113	43	19		19	43	19	31	25	42
114	Flensborg Fjord, ydre	110,113,114	242	242		242	242	242	242	242	0
119	Vesterhavet, syd	119, 107, 111, 121, 120	8,746			4,014			4,014	4,014	54
120	Knudedyb	120	3,074	841		841		841	841	841	73
121	Grådyb	121	3,042			1,539			1,539	1,539	49
122	Vejle Fjord, ydre	122,123	994			493	994		743	743	25
123	Vejle Fjord, indre	123	579	552	468	550	499	510	524	517	11
124	Kolding Fjord, indre	124	503	188		251	289	188	270	229	54

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
125	Kolding Fjord, ydre	124,125	547			255	415		335	335	39
127	Horsens Fjord, ydre	127,128	836			510	450		480	480	43
128	Horsens Fjord, indre	128	785			408	451		429	429	45
129	Nissum Fjord, Ydre	129,131,130	2,301			1,297	974		1,136	1,136	51
130	Nissum Fjord, mellem	130,131	1,937			837	436		637	637	67
131	Nissum Fjord, Felsted Kog	131	1,783	1,783		662	662	1,783	662	1,222	31
132	Ringkøbing Fjord	132	5,045		1,679	5,045	1,917	1,679	3,481	2,580	49
133	Vesterhavet, nord	133,129,130,131, 132	7,423			7,423			7,423	7,423	0
136	Randers Fjord, indre	136	2,980	2,980	1,477	2,980	1,477	2,229	2,229	2,229	25
137	Randers Fjord, ydre	136,137	3,122	3,122	1,213	3,122	1,213	2,168	2,168	2,168	31
138	Hevring Bugt	138, 137, 136	3,251			3,251	3,251		3,251	3,251	0
139	Anholt	139	7			7	7		7	7	0
140	Djursland Øst	140	649			378	649		514	514	21
141	Ebeltoft Vig	141	14			14	14		14	14	0
142	Stavns Fjord	142	4			4	3		3	3	20
144	Knebel Vig	144	16			10	16		13	13	19
145	Kalø Vig	144,145	222	222	222	222	222	222	222	222	0
146	Norsminde Fjord	146	143			143	47		95	95	34
147	Århus Bugt og Begtrup Vig	144,145,147	703	689	703	692	703	696	698	697	1
154	Kattegat Læsø	154	55			55	55		55	55	0

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
157	Bjørnholms Bugt, Riisgårde Bredning, Skive Fjord og Lovns Bredning	157,158	3,651			1,018	1,623		1,321	1,321	64
158	Hjarbæk Fjord	158	1,852			440	670		555	555	70
159	Mariager Fjord, indre	159	491			80	192		136	136	72
160	Mariager Fjord, ydre	159,160	962			783	516		649	649	32
165	Isefjord, indre	165	975	439		482	975	439	729	584	40
200	Kattegat Nordsjælland	1,2,24,165,200	2,155			2,155	637		1,396	1,396	35
201	Køge Bugt	201	1,179	897		1,162	1,179	897	1,170	1,034	12
204	Jammerland Bugt og Musholm Bugt	204	1,381			1,381	549		965	965	30
206	Smålandsfarvandet, åbne del	16,17,18,25,35,36,37,206	2,017			2,017	1,657		1,837	1,837	9
207	Nakskov Fjord	207	359			349	279		314	314	12
208	Femerbælt	207,208,209	1,337			874	1,337		1,105	1,105	17
209	Rødsand og Bredningen	209	410			222	279		250	250	39
212	Fåborg Fjord	212	22			10	22		16	16	27
214	Det sydfynske Øhav	68,72,212,214	532	171	384	171	427	278	299	288	46
216	Lillebælt, syd	87,101,102,103,104,105,110,113,114,216	1,332			463	1,332		898	898	33

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
217	Lillebælt Bredningen	74,82,106,108,109,217	914	286	286	383	914	286	648	467	49
219	Århus Bugt, syd, Samsø og Nordlige Bælthav	59,62,92,93,127,128,142,146,219	2,694			668	2,694		1,681	1,681	38
221	Skagerrak	221	1,409			1,409			1,409	1,409	0
222	Kattegat Ålborg Bugt	222,159,160	2,034			2,034	2,034		2,034	2,034	0
224	Nordlige Lillebælt	122,123,224	1,398			525	1,398		962	962	31
225	Nordlige Kattegat ÅlbækBugt	225	715			715	715		715	715	0
231	Lillebælt Snævringen	231,124,125,80	800			189	145		167	167	79
232	Nissum Bredning	232	911	313	660	297	911	486	604	545	40
233	Kaas Bredning og Venø Bugt	232,233	2,075			1,661	1,060		1,361	1,361	34
234	Løgstør Bredning	157,158,234, 233, 236	6,752			1,838	3,948		2,893	2,893	57
235	Nibe Bredning og Langerak	157, 158, 233, 234, 235, 236, 238	11,242		10,084	3,190	10,200	10,084	6,695	8,390	25
236	Thisted Bredning	236	1,150			269	524		396	396	66
238	Halkær Bredning	238	639			114	114		114	114	82

Table A-2. Scenario 1, P10: Water body-specific MAIs based on the two individual indicators chlorophyll-a (Chl-a) and light penetration depth (light) estimated from statistical models (STAT) or mechanistic models (MEK), respectively.

The table shows both the individual calculations as well as the averaged water specific MAIs and the corresponding need for reduction in %. Danish P 10%

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
1	Roskilde Fjord,ydre	1,2	853			735	494		615	615	28
2	Roskilde Fjord, indre	2	434	434		434	400	434	417	426	2
6	Nordlige Øresund	6	1,149			1,149	1,149		1,149	1,149	0
16	Korsør Nor	16	32			32	17		24	24	24
17	Basnæs Nor	17	70			70	34		52	52	26
18	Holsteinborg Nor	18	26			26	26		26	26	0
24	Isefjord, ydre	24,165	1,079	625	823	685	850	724	767	746	31
25	Skælskør Fjord og Nor	25	40			33	34		34	34	15
28	Sejerø Bugt	28	198			198	198		198	198	0
29	Kalundborg Fjord	29	84	13	57	46	84	35	65	50	40
34	Smålandsfarvandet, syd	34	543			543	543		543	543	0
35	Karrebæk Fjord	35	1,268			1,268	797		1,033	1,033	19
36	Dybsø Fjord	36	59			59	59		59	59	0
37	Avnø Fjord	37	234			234	136		185	185	21
38	Guldborgsund	38	374			374	374		374	374	0
44	Hjelm Bugt	44	87			87	87		87	87	0
45	Grønsund	45	298			298	146		222	222	26
46	Fakse Bugt	46,47	589			579	589		584	584	1
47	Præstø Fjord	47	232			164	146		155	155	33
48	Stege Bugt	48,49	298			298	298		298	298	0

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
49	Stege Nor	49	29			22	15		19	19	35
56	Østersøen, Bornholm	56	939			184	939		561	561	40
57	Østersøen, Christiansø	57	4			0	4		2	2	49
59	Nærå Strand	59	93			26	23		24	24	74
62	Lillestrand	62	9			7	4		5	5	40
68	Lindelse Nor	68	41			41	41		41	41	0
72	Kløven	72	28			28	28		28	28	0
74	Bredningen	74	130			51	49		50	50	61
80	Gamborg Fjord	80	83			69	83		76	76	8
82	Aborg Minde Nor	82	140			34	34		34	34	76
83	Holckenhavn Fjord	83	284			86	130		108	108	62
84	Kerteminde Fjord	84,85	43			27	43		35	35	19
85	Kertinge Nor	85	21	21		21	13	21	17	19	11
86	Nyborg Fjord	83,86	305			156	278		217	217	29
87	Helnæs Bugt	87	186			67	186		127	127	32
89	Lunkebugten	89	18			5	18		12	12	36
90	Langelandssund	83,86,89,90	737			558	737		648	648	12
92	Odense Fjord, ydre	92,93	1,282	810	1,164	939	1,095	987	1,017	1,002	22
93	Odense Fjord, Seden Strand	93	1,220		667	1,220	453	667	836	752	38
95	Storebælt SV	95	141			41	141		91	91	36
96	Storebælt NV	96, 84, 85	199			38	199		118	118	41
101	Genner Bugt	101	42			13	30		21	21	49

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
102	Åbenrå Fjord	102	126	59		59	101	59	80	69	45
103	Als Fjord	103,104,105	290			72	290		181	181	38
104	Als Sund	104	65			65	65		65	65	0
105	Augustenborg Fjord	105	85	85		85	85	85	85	85	0
106	Haderslev Fjord	106	200			104	135		120	120	40
107	Juvre Dyb	107	366			188			188	188	49
108	Avnø Vig	108	58			33	26		30	30	49
109	Hejlsminde Nor	109	165			165	85		125	125	24
110	Nybøl Nor	110	74			51	63		57	57	24
111	Lister Dyb	111	2,059			1,575			1,575	1,575	23
113	Flensborg Fjord, indre	113	43	19		19	43	19	31	25	42
114	Flensborg Fjord, ydre	110,113,114	242	242		242	242	242	242	242	0
119	Vesterhavet, syd	119, 107, 111, 121, 120	8,746			4,014			4,014	4,014	54
120	Knudedyb	120	3,074	841		841		841	841	841	73
121	Grådyb	121	3,042			1,840			1,840	1,840	40
122	Vejle Fjord, ydre	122,123	994			500	994		747	747	25
123	Vejle Fjord, indre	123	579	567	482	551	500	524	525	525	9
124	Kolding Fjord, indre	124	503	204		256	300	204	278	241	52
125	Kolding Fjord, ydre	124,125	547			261	422		341	341	38
127	Horsens Fjord, ydre	127,128	836			518	455		487	487	42
128	Horsens Fjord, indre	128	785			410	455		432	432	45

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
129	Nissum Fjord, Ydre	129,131,130	2,301			1,380	1,056		1,218	1,218	47
130	Nissum Fjord, mellem	130,131	1,937			925	436		681	681	65
131	Nissum Fjord, Felsted Kog	131	1,783	1,783		662	662	1,783	662	1,222	31
132	Ringkøbing Fjord	132	5,045		1,679	5,045	2,429	1,679	3,737	2,708	46
133	Vesterhavet, nord	133,129,130,131, 132	7,423			7,423			7,423	7,423	0
136	Randers Fjord, indre	136	2,980	2,980	1,477	2,980	1,477	2,229	2,229	2,229	25
137	Randers Fjord, ydre	136,137	3,122	3,122	1,412	3,122	1,412	2,267	2,267	2,267	27
138	Hevring Bugt	138, 137, 136	3,251			3,251	3,251		3,251	3,251	0
139	Anholt	139	7			7	7		7	7	0
140	Djursland Øst	140	649			378	649		514	514	21
141	Ebeltoft Vig	141	14			14	14		14	14	0
142	Stavns Fjord	142	4			4	3		3	3	20
144	Knebel Vig	144	16			10	16		13	13	19
145	Kalø Vig	144,145	222	222	222	222	222	222	222	222	0
146	Norsminde Fjord	146	143			143	59		101	101	29
147	Århus Bugt og Begtrup Vig	144,145,147	703	703	703	692	703	703	698	700	0
154	Kattegat Læsø	154	55			55	55		55	55	0
157	Bjørnholms Bugt, Riisgårde Bredning, Skive Fjord og Lovns Bredning	157,158	3,651			1,018	1,852		1,435	1,435	61
158	Hjarbæk Fjord	158	1,852			480	781		631	631	66

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
159	Mariager Fjord, indre	159	491			84	225		155	155	68
160	Mariager Fjord, ydre	159,160	962			822	597		710	710	26
165	Isefjord, indre	165	975	439		482	975	439	729	584	40
200	Kattegat Nordsjælland	1,2,24,165,200	2,155			2,155	637		1,396	1,396	35
201	Køge Bugt	201	1,179	915		1,179	1,179	915	1,179	1,047	11
204	Jammerland Bugt og Musholm Bugt	204	1,381			1,381	552		966	966	30
206	Smålandsfarvandet, åbne del	16,17,18,25,35,36,37,206	2,017			2,017	1,657		1,837	1,837	9
207	Nakskov Fjord	207	359			351	281		316	316	12
208	Femerbælt	207,208,209	1,337			878	1,337		1,107	1,107	17
209	Rødsand og Bredningen	209	410			222	279		250	250	39
212	Fåborg Fjord	212	22			10	22		16	16	27
214	Det sydfynske Øhav	68,72,212,214	532	171	387	171	427	279	299	289	46
216	Lillebælt, syd	87,101,102,103,104,105,110,113,114,216	1,332			463	1,332		898	898	33
217	Lillebælt Bredningen	74,82,106,108,109,217	914	286	286	383	914	286	648	467	49
219	Århus Bugt, syd, Samsø og Nordlige Bælthav	59,62,92,93,127,128,142,146,219	2,694			668	2,694		1,681	1,681	38

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
221	Skagerrak	221	1,409			1,409			1,409	1,409	0
222	Kattegat Ålborg Bugt	222,159,160	2,034			2,034	2,034		2,034	2,034	0
224	Nordlige Lillebælt	122,123,224	1,398			525	1,398		962	962	31
225	Nordlige Kattegat ÅlbækBugt	225	715			715	715		715	715	0
231	Lillebælt Snævringen	231,124,125,80	800			189	145		167	167	79
232	Nissum Bredning	232	911	343	695	297	911	519	604	562	38
233	Kaas Bredning og Venø Bugt	232,233	2,075			1,729	1,228		1,479	1,479	29
234	Løgstør Bredning	157,158,234, 233, 236	6,752			1,838	4,181		3,009	3,009	55
235	Nibe Bredning og Langerak	157, 158, 233, 234, 235, 236, 238	11,242		10,301	3,795	10,877	10,301	7,336	8,819	22
236	Thisted Bredning	236	1,150			269	545		407	407	65
238	Halkær Bredning	238	639			114	127		120	120	81

Table A-3. Scenario 1. P20: Water body-specific MAIs based on the two individual indicators chlorophyll-a (Chl-a) and light penetration depth (light) estimated from statistical models (STAT) or mechanistic models (MEK), respectively.

The table shows both the individual calculations as well as the averaged water specific MAIs and the corresponding need for reduction in %. Danish P 20%

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
1	Roskilde Fjord,ydre	1,2	853			735	499		617	617	28
2	Roskilde Fjord, indre	2	434	434		434	404	434	419	427	2
6	Nordlige Øresund	6	1,149			1,149	1,149		1,149	1,149	0
16	Korsør Nor	16	32			32	18		25	25	22
17	Basnæs Nor	17	70			70	34		52	52	25
18	Holsteinborg Nor	18	26			26	26		26	26	0
24	Isefjord, ydre	24,165	1,079	651	841	685	850	746	768	757	30
25	Skælskør Fjord og Nor	25	40			33	35		34	34	13
28	Sejerø Bugt	28	198			198	198		198	198	0
29	Kalundborg Fjord	29	84	19	64	46	84	41	65	53	36
34	Smålandsfarvandet, syd	34	543			543	543		543	543	0
35	Karrebæk Fjord	35	1,268			1,268	854		1,061	1,061	16
36	Dybsø Fjord	36	59			59	59		59	59	0
37	Avnø Fjord	37	234			234	140		187	187	20
38	Guldborgsund	38	374			374	374		374	374	0
44	Hjelm Bugt	44	87			87	87		87	87	0
45	Grønsund	45	298			298	146		222	222	26
46	Fakse Bugt	46,47	589			581	589		585	585	1
47	Præstø Fjord	47	232			167	151		159	159	32
48	Stege Bugt	48,49	298			298	298		298	298	0

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
49	Stege Nor	49	29			22	15		19	19	35
56	Østersøen, Bornholm	56	939			184	939		561	561	40
57	Østersøen, Christiansø	57	4			0.1	4		2	2	49
59	Nærå Strand	59	93			31	34		33	33	65
62	Lillestrand	62	9			7	4		5	5	40
68	Lindelse Nor	68	41			41	41		41	41	0
72	Kløven	72	28			28	28		28	28	0
74	Bredningen	74	130			55	56		56	56	57
80	Gamborg Fjord	80	83			69	83		76	76	8
82	Aborg Minde Nor	82	140			34	34		34	34	76
83	Holckenhavn Fjord	83	284			96	141		119	119	58
84	Kerteminde Fjord	84,85	43			27	43		35	35	19
85	Kertinge Nor	85	21	21		21	13	21	17	19	10
86	Nyborg Fjord	83,86	305			161	282		222	222	27
87	Helnæs Bugt	87	186			67	186		127	127	32
89	Lunkebugten	89	18			5	18		12	12	36
90	Langelandssund	83,86,89,90	737			558	737		648	648	12
92	Odense Fjord, ydre	92,93	1,282	810	1,164	949	1,128	987	1,038	1,013	21
93	Odense Fjord, Seden Strand	93	1,220		667	1,220	520	667	870	768	37
95	Storebælt SV	95	141			41	141		91	91	36
96	Storebælt NV	96, 84, 85	199			38	199		118	118	41
101	Genner Bugt	101	42			13	30		21	21	49

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
102	Åbenrå Fjord	102	126	59		59	101	59	80	69	45
103	Als Fjord	103,104,105	290			72	290		181	181	38
104	Als Sund	104	65			65	65		65	65	0
105	Augustenborg Fjord	105	85	85		85	85	85	85	85	0
106	Haderslev Fjord	106	200			104	136		120	120	40
107	Juvre Dyb	107	366			206			206	206	44
108	Avnø Vig	108	58			35	29		32	32	45
109	Hejlsminde Nor	109	165			165	97		131	131	21
110	Nybøl Nor	110	74			52	64		58	58	22
111	Lister Dyb	111	2,059			1,653			1,653	1,653	20
113	Flensborg Fjord, indre	113	43	19		19	43	19	31	25	42
114	Flensborg Fjord, ydre	110,113,114	242	242		242	242	242	242	242	0
119	Vesterhavet, syd	119, 107, 111, 121, 120	8,746			4,014			4,014	4,014	54
120	Knudedyb	120	3,074	1,093		841		1,093	841	967	69
121	Grådyb	121	3,042			2,170			2,170	2,170	29
122	Vejle Fjord, ydre	122,123	994			508	994		751	751	24
123	Vejle Fjord, indre	123	579	579	496	552	500	537	526	532	8
124	Kolding Fjord, indre	124	503	227		261	311	227	286	257	49
125	Kolding Fjord, ydre	124,125	547			267	429		348	348	36
127	Horsens Fjord, ydre	127,128	836			527	458		493	493	41
128	Horsens Fjord, indre	128	785			411	459		435	435	45

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
129	Nissum Fjord, Ydre	129,131,130	2,301			1,494	1,137		1,315	1,315	43
130	Nissum Fjord, mellem	130,131	1,937			1,067	436		752	752	61
131	Nissum Fjord, Felsted Kog	131	1,783	1,783		662	836	1,783	749	1,266	29
132	Ringkøbing Fjord	132	5,045		1,679	5,045	2,937	1,679	3,991	2,835	44
133	Vesterhavet, nord	133,129,130,131, 132	7,423			7,423			7,423	7,423	0
136	Randers Fjord, indre	136	2,980	2,980	1,618	2,980	1,618	2,299	2,299	2,299	23
137	Randers Fjord, ydre	136,137	3,122	3,122	1,610	3,122	1,610	2,366	2,366	2,366	24
138	Hevring Bugt	138, 137, 136	3,251			3,251	3,251		3,251	3,251	0
139	Anholt	139	7			7	7		7	7	0
140	Djursland Øst	140	649			378	649		514	514	21
141	Ebeltoft Vig	141	14			14	14		14	14	0
142	Stavns Fjord	142	4			4	3		3	3	19
144	Knebel Vig	144	16			10	16		13	13	19
145	Kalø Vig	144,145	222	222	222	222	222	222	222	222	0
146	Norsminde Fjord	146	143			143	75		109	109	24
147	Århus Bugt og Begtrup Vig	144,145,147	703	703	703	692	703	703	698	700	0
154	Kattegat Læsø	154	55			55	55		55	55	0
157	Bjørnholms Bugt, Riisgårde Bredning, Skive Fjord og Lovns Bredning	157,158	3,651			1,018	2,071		1,545	1,545	58
158	Hjarbæk Fjord	158	1,852			525	890		708	708	62

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
159	Mariager Fjord, indre	159	491			89	258		174	174	65
160	Mariager Fjord, ydre	159,160	962			869	671		770	770	20
165	Isefjord, indre	165	975	439		482	975	439	729	584	40
200	Kattegat Nordsjælland	1,2,24,165,200	2,155			2,155	637		1,396	1,396	35
201	Køge Bugt	201	1,179	934		1,179	1,179	934	1,179	1,056	10
204	Jammerland Bugt og Musholm Bugt	204	1,381			1,381	555		968	968	30
206	Smålandsfarvandet, åbne del	16,17,18,25,35,36,37,206	2,017			2,017	1,657		1,837	1,837	9
207	Nakskov Fjord	207	359			352	284		318	318	11
208	Femerbælt	207,208,209	1,337			883	1,337		1,110	1,110	17
209	Rødsand og Bredningen	209	410			222	279		250	250	39
212	Fåborg Fjord	212	22			10	22		16	16	27
214	Det sydfynske Øhav	68,72,212,214	532	171	390	171	427	281	299	290	46
216	Lillebælt, syd	87,101,102,103,104,105,110,113,114,216	1,332			463	1,332		898	898	33
217	Lillebælt Bredningen	74,82,106,108,109,217	914	286	286	383	914	286	648	467	49
219	Århus Bugt, syd, Samsø og Nordlige Bælthav	59,62,92,93,127,128,142,146,219	2,694			668	2,694		1,681	1,681	38

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
221	Skagerrak	221	1,409			1,409			1,409	1,409	0
222	Kattegat Ålborg Bugt	222,159,160	2,034			2,034	2,034		2,034	2,034	0
224	Nordlige Lillebælt	122,123,224	1,398			525	1,398		962	962	31
225	Nordlige Kattegat ÅlbækBugt	225	715			715	715		715	715	0
231	Lillebælt Snævringen	231,124,125,80	800			189	145		167	167	79
232	Nissum Bredning	232	911	374	731	297	911	552	604	578	37
233	Kaas Bredning og Venø Bugt	232,233	2,075			1,800	1,396		1,598	1,598	23
234	Løgstør Bredning	157,158,234, 233, 236	6,752			1,838	4,413		3,125	3,125	54
235	Nibe Bredning og Langerak	157, 158, 233, 234, 235, 236, 238	11,242		10,516	4,436	11,242	10,516	7,839	9,178	18
236	Thisted Bredning	236	1,150			269	565		417	417	64
238	Halkær Bredning	238	639			114	219		167	167	74

Table A-4. Scenario 1, P30: Water body-specific MAIs based on the two individual indicators chlorophyll-a (Chl-a) and light penetration depth (light) estimated from statistical models (STAT) or mechanistic models (MEK), respectively.

The table shows both the individual calculations as well as the averaged water specific MAIs and the corresponding need for reduction in %. Danish P 30%

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
1	Roskilde Fjord,ydre	1,2	853			735	503		619	619	27
2	Roskilde Fjord, indre	2	434	434		434	409	434	421	428	1
6	Nordlige Øresund	6	1,149			1,149	1,149		1,149	1,149	0
16	Korsør Nor	16	32			32	19		25	25	21
17	Basnæs Nor	17	70			70	35		52	52	25
18	Holsteinborg Nor	18	26			26	26		26	26	0
24	Isefjord, ydre	24,165	1,079	678	860	685	851	769	768	769	29
25	Skælskør Fjord og Nor	25	40			33	37		35	35	11
28	Sejerø Bugt	28	198			198	198		198	198	0
29	Kalundborg Fjord	29	84	28	70	46	84	49	65	57	32
34	Smålandsfarvandet, syd	34	543			543	543		543	543	0
35	Karrebæk Fjord	35	1,268			1,268	908		1,088	1,088	14
36	Dybsø Fjord	36	59			59	59		59	59	0
37	Avnø Fjord	37	234			234	145		189	189	19
38	Guldborgsund	38	374			374	374		374	374	0
44	Hjelm Bugt	44	87			87	87		87	87	0
45	Grønsund	45	298			298	146		222	222	26
46	Fakse Bugt	46,47	589			582	589		586	586	1
47	Præstø Fjord	47	232			170	156		163	163	30
48	Stege Bugt	48,49	298			298	298		298	298	0

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
49	Stege Nor	49	29			22	16		19	19	34
56	Østersøen, Bornholm	56	939			184	939		561	561	40
57	Østersøen, Christiansø	57	4			0.1	4		2	2	49
59	Nærå Strand	59	93			37	45		41	41	55
62	Lillestrand	62	9			7	4		5	5	39
68	Lindelse Nor	68	41			41	41		41	41	0
72	Kløven	72	28			28	28		28	28	0
74	Bredningen	74	130			60	63		61	61	53
80	Gamborg Fjord	80	83			69	83		76	76	8
82	Aborg Minde Nor	82	140			39	34		36	36	74
83	Holckenhavn Fjord	83	284			108	152		130	130	54
84	Kerteminde Fjord	84,85	43			27	43		35	35	19
85	Kertinge Nor	85	21	21		21	14	21	17	19	9
86	Nyborg Fjord	83,86	305			166	286		226	226	26
87	Helnæs Bugt	87	186			67	186		127	127	32
89	Lunkebugten	89	18			5	18		12	12	36
90	Langelandssund	83,86,89,90	737			558	737		648	648	12
92	Odense Fjord, ydre	92,93	1,282	810	1,164	958	1,161	987	1,060	1,023	20
93	Odense Fjord, Seden Strand	93	1,220		667	1,220	587	667	904	785	36
95	Storebælt SV	95	141			41	141		91	91	36
96	Storebælt NV	96, 84, 85	199			38	199		118	118	41
101	Genner Bugt	101	42			13	30		21	21	49

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
102	Åbenrå Fjord	102	126	59		59	101	59	80	69	45
103	Als Fjord	103,104,105	290			72	290		181	181	38
104	Als Sund	104	65			65	65		65	65	0
105	Augustenborg Fjord	105	85	85		85	85	85	85	85	0
106	Haderslev Fjord	106	200			104	137		121	121	40
107	Juvre Dyb	107	366			225			225	225	39
108	Avnø Vig	108	58			38	31		34	34	40
109	Hejlsminde Nor	109	165			165	108		137	137	17
110	Nybøl Nor	110	74			53	66		60	60	20
111	Lister Dyb	111	2,059			1,733			1,733	1,733	16
113	Flensborg Fjord, indre	113	43	19		19	43	19	31	25	42
114	Flensborg Fjord, ydre	110,113,114	242	242		242	242	242	242	242	0
119	Vesterhavet, syd	119, 107, 111, 121, 120	8,746			4,014			4,014	4,014	54
120	Knudedyb	120	3,074	1,899		841		1,899	841	1,370	55
121	Grådyb	121	3,042			2,533			2,533	2,533	17
122	Vejle Fjord, ydre	122,123	994			517	994		755	755	24
123	Vejle Fjord, indre	123	579	579	510	553	501	544	527	536	7
124	Kolding Fjord, indre	124	503	253		266	322	253	294	274	46
125	Kolding Fjord, ydre	124,125	547			273	436		355	355	35
127	Horsens Fjord, ydre	127,128	836			537	463		500	500	40
128	Horsens Fjord, indre	128	785			413	462		438	438	44

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
129	Nissum Fjord, Ydre	129,131,130	2,301			1,660	1,217		1,439	1,439	37
130	Nissum Fjord, mellem	130,131	1,937			1,332	436		884	884	54
131	Nissum Fjord, Felsted Kog	131	1,783	1,783		835	1,026	1,783	930	1,357	24
132	Ringkøbing Fjord	132	5,045		2,381	5,045	3,443	2,381	4,244	3,313	34
133	Vesterhavet, nord	133,129,130,131, 132	7,423			7,423			7,423	7,423	0
136	Randers Fjord, indre	136	2,980	2,980	1,802	2,980	1,802	2,391	2,391	2,391	20
137	Randers Fjord, ydre	136,137	3,122	3,122	1,804	3,122	1,804	2,463	2,463	2,463	21
138	Hevring Bugt	138, 137, 136	3,251			3,251	3,251		3,251	3,251	0
139	Anholt	139	7			7	7		7	7	0
140	Djursland Øst	140	649			378	649		514	514	21
141	Ebeltoft Vig	141	14			14	14		14	14	0
142	Stavns Fjord	142	4			4	3		3	3	19
144	Knebel Vig	144	16			10	16		13	13	19
145	Kalø Vig	144,145	222	222	222	222	222	222	222	222	0
146	Norsminde Fjord	146	143			143	90		116	116	18
147	Århus Bugt og Begtrup Vig	144,145,147	703	703	703	692	703	703	698	700	0
154	Kattegat Læsø	154	55			55	55		55	55	0
157	Bjørnholms Bugt, Riisgårde Bredning, Skive Fjord og Lovns Bredning	157,158	3,651			1,018	2,282		1,650	1,650	55
158	Hjarbæk Fjord	158	1,852			573	998		786	786	58

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
159	Mariager Fjord, indre	159	491			95	290		193	193	61
160	Mariager Fjord, ydre	159,160	962			926	740		833	833	13
165	Isefjord, indre	165	975	439		482	975	439	729	584	40
200	Kattegat Nordsjælland	1,2,24,165,200	2,155			2,155	637		1,396	1,396	35
201	Køge Bugt	201	1,179	952		1,179	1,179	952	1,179	1,066	10
204	Jammerland Bugt og Musholm Bugt	204	1,381			1,381	558		969	969	30
206	Smålandsfarvandet, åbne del	16,17,18,25,35,36,37,206	2,017			2,017	1,657		1,837	1,837	9
207	Nakskov Fjord	207	359			354	286		320	320	11
208	Femerbælt	207,208,209	1,337			887	1,337		1,112	1,112	17
209	Rødsand og Bredningen	209	410			222	279		250	250	39
212	Fåborg Fjord	212	22			10	22		16	16	27
214	Det sydfynske Øhav	68,72,212,214	532	171	393	171	427	282	299	290	45
216	Lillebælt, syd	87,101,102,103,104,105,110,113,114,216	1,332			463	1,332		898	898	33
217	Lillebælt Bredningen	74,82,106,108,109,217	914	286	286	383	914	286	648	467	49
219	Århus Bugt, syd, Samsø og Nordlige Bælthav	59,62,92,93,127,128,142,146,219	2,694			668	2,694		1,681	1,681	38

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
221	Skagerrak	221	1,409			1,409			1,409	1,409	0
222	Kattegat Ålborg Bugt	222,159,160	2,034			2,034	2,034		2,034	2,034	0
224	Nordlige Lillebælt	122,123,224	1,398			525	1,398		962	962	31
225	Nordlige Kattegat ÅlbækBugt	225	715			715	715		715	715	0
231	Lillebælt Snævringen	231,124,125,80	800			189	145		167	167	79
232	Nissum Bredning	232	911	406	766	297	911	586	604	595	35
233	Kaas Bredning og Venø Bugt	232,233	2,075			1,872	1,563		1,718	1,718	17
234	Løgstør Bredning	157,158,234, 233, 236	6,752			1,838	4,645		3,241	3,241	52
235	Nibe Bredning og Langerak	157, 158, 233, 234, 235, 236, 238	11,242		10,730	5,118	11,242	10,730	8,180	9,455	16
236	Thisted Bredning	236	1,150			275	586		431	431	63
238	Halkær Bredning	238	639			114	311		213	213	67

Table A 5. Scenario 1, P50: Water body-specific MAIs based on the two individual indicators chlorophyll-a (Chl-a) and light penetration depth (light) estimated from statistical models (STAT) or mechanistic models (MEK), respectively.

The table shows both the individual calculations as well as the averaged water specific MAIs and the corresponding need for reduction in %. Danish P 50%

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
1	Roskilde Fjord,ydre	1,2	853			735	511		623	623	27
2	Roskilde Fjord, indre	2	434	434		434	417	434	426	430	1
6	Nordlige Øresund	6	1,149			1,149	1,149		1,149	1,149	0
16	Korsør Nor	16	32			32	20		26	26	19
17	Basnæs Nor	17	70			70	35		52	52	25
18	Holsteinborg Nor	18	26			26	26		26	26	0
24	Isefjord, ydre	24,165	1,079	732	897	685	853	815	769	792	27
25	Skælskør Fjord og Nor	25	40			34	39		37	37	8
28	Sejerø Bugt	28	198			198	198		198	198	0
29	Kalundborg Fjord	29	84	45	83	46	84	64	65	64	23
34	Smålandsfarvandet, syd	34	543			543	543		543	543	0
35	Karrebæk Fjord	35	1,268			1,268	1,011		1,140	1,140	10
36	Dybsø Fjord	36	59			59	59		59	59	0
37	Avnø Fjord	37	234			234	155		194	194	17
38	Guldborgsund	38	374			374	374		374	374	0
44	Hjelm Bugt	44	87			87	87		87	87	0
45	Grønsund	45	298			298	146		222	222	26
46	Fakse Bugt	46,47	589			586	589		588	588	0
47	Præstø Fjord	47	232			176	165		171	171	26
48	Stege Bugt	48,49	298			298	298		298	298	0

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
49	Stege Nor	49	29			23	16		19	19	33
56	Østersøen, Bornholm	56	939			184	939		561	561	40
57	Østersøen, Christiansø	57	4			0.1	4		2	2	49
59	Nærå Strand	59	93			53	68		60	60	35
62	Lillestrand	62	9			7	5		6	6	38
68	Lindelse Nor	68	41			41	41		41	41	0
72	Kløven	72	28			28	28		28	28	0
74	Bredningen	74	130			69	77		73	73	44
80	Gamborg Fjord	80	83			69	83		76	76	8
82	Aborg Minde Nor	82	140			64	60		62	62	56
83	Holckenhavn Fjord	83	284			132	174		153	153	46
84	Kerteminde Fjord	84,85	43			27	43		35	35	19
85	Kertinge Nor	85	21	21		21	14	21	18	19	8
86	Nyborg Fjord	83,86	305			176	293		235	235	23
87	Helnæs Bugt	87	186			67	186		127	127	32
89	Lunkebugten	89	18			5	18		12	12	36
90	Langelandssund	83,86,89,90	737			558	737		648	648	12
92	Odense Fjord, ydre	92,93	1,282	810	1,164	977	1,225	987	1,101	1,044	19
93	Odense Fjord, Seden Strand	93	1,220		667	1,220	721	667	970	819	33
95	Storebælt SV	95	141			41	141		91	91	36
96	Storebælt NV	96, 84, 85	199			38	199		118	118	41
101	Genner Bugt	101	42			13	30		21	21	49

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
102	Åbenrå Fjord	102	126	59		59	101	59	80	69	45
103	Als Fjord	103,104,105	290			72	290		181	181	38
104	Als Sund	104	65			65	65		65	65	0
105	Augustenborg Fjord	105	85	85		85	85	85	85	85	0
106	Haderslev Fjord	106	200			104	139		122	122	39
107	Juvre Dyb	107	366			265			265	265	28
108	Avnø Vig	108	58			43	37		40	40	31
109	Hejlsminde Nor	109	165			165	129		147	147	11
110	Nybøl Nor	110	74			57	69		63	63	16
111	Lister Dyb	111	2,059			1,900			1,900	1,900	8
113	Flensborg Fjord, indre	113	43	19		19	43	19	31	25	42
114	Flensborg Fjord, ydre	110,113,114	242	242		242	242	242	242	242	0
119	Vesterhavet, syd	119, 107, 111, 121, 120	8,746			4,541			4,541	4,541	48
120	Knudedyb	120	3,074	3,074		841		3,074	841	1,957	36
121	Grådyb	121	3,042			3,042			3,042	3,042	0
122	Vejle Fjord, ydre	122,123	994			533	994		763	763	23
123	Vejle Fjord, indre	123	579	579	538	555	502	558	529	543	6
124	Kolding Fjord, indre	124	503	321		277	343	321	310	315	37
125	Kolding Fjord, ydre	124,125	547			286	450		368	368	33
127	Horsens Fjord, ydre	127,128	836			555	469		512	512	39
128	Horsens Fjord, indre	128	785			417	470		443	443	44

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
129	Nissum Fjord, Ydre	129,131,130	2,301			2,301	1,375		1,838	1,838	20
130	Nissum Fjord, mellem	130,131	1,937			1,937	436		1,187	1,187	39
131	Nissum Fjord, Felsted Kog	131	1,783	1,783		0	1,396	1,783	698	1,241	30
132	Ringkøbing Fjord	132	5,045		4,638	5,045	4,447	4,638	4,746	4,692	7
133	Vesterhavet, nord	133,129,130,131, 132	7,423			7,423			7,423	7,423	0
136	Randers Fjord, indre	136	2,980	2,980	2,166	2,980	2,166	2,573	2,573	2,573	14
137	Randers Fjord, ydre	136,137	3,122	3,122	2,191	3,122	2,191	2,657	2,657	2,657	15
138	Hevring Bugt	138, 137, 136	3,251			3,251	3,251		3,251	3,251	0
139	Anholt	139	7			7	7		7	7	0
140	Djursland Øst	140	649			378	649		514	514	21
141	Ebeltoft Vig	141	14			14	14		14	14	0
142	Stavns Fjord	142	4			4	3		3	3	18
144	Knebel Vig	144	16			10	16		13	13	19
145	Kalø Vig	144,145	222	222	222	222	222	222	222	222	0
146	Norsminde Fjord	146	143			143	121		132	132	8
147	Århus Bugt og Begtrup Vig	144,145,147	703	703	703	692	703	703	698	700	0
154	Kattegat Læsø	154	55			55	55		55	55	0
157	Bjørnholms Bugt, Riisgårde Bredning, Skive Fjord og Lovns Bredning	157,158	3,651			1,214	2,678		1,946	1,946	47
158	Hjarbæk Fjord	158	1,852			688	1,207		947	947	49

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
159	Mariager Fjord, indre	159	491			109	351		230	230	53
160	Mariager Fjord, ydre	159,160	962			962	865		913	913	5
165	Isefjord, indre	165	975	439		482	975	439	729	584	40
200	Kattegat Nordsjælland	1,2,24,165,200	2,155			2,155	637		1,396	1,396	35
201	Køge Bugt	201	1,179	990		1,179	1,179	990	1,179	1,084	8
204	Jammerland Bugt og Musholm Bugt	204	1,381			1,381	564		972	972	30
206	Smålandsfarvandet, åbne del	16,17,18,25,35,36,37,206	2,017			2,017	1,657		1,837	1,837	9
207	Nakskov Fjord	207	359			357	291		324	324	10
208	Femerbælt	207,208,209	1,337			896	1,337		1,116	1,116	16
209	Rødsand og Bredningen	209	410			222	279		250	250	39
212	Fåborg Fjord	212	22			10	22		16	16	27
214	Det sydfynske Øhav	68,72,212,214	532	171	399	171	427	285	299	292	45
216	Lillebælt, syd	87,101,102,103,104,105,110,113,114,216	1,332			463	1,332		898	898	33
217	Lillebælt Bredningen	74,82,106,108,109,217	914	286	286	383	914	286	648	467	49
219	Århus Bugt, syd, Samsø og Nordlige Bælthav	59,62,92,93,127,128,142,146,219	2,694			668	2,694		1,681	1,681	38

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
221	Skagerrak	221	1,409			1,409			1,409	1,409	0
222	Kattegat Ålborg Bugt	222,159,160	2,034			2,034	2,034		2,034	2,034	0
224	Nordlige Lillebælt	122,123,224	1,398			525	1,398		962	962	31
225	Nordlige Kattegat ÅlbækBugt	225	715			715	715		715	715	0
231	Lillebælt Snævringen	231,124,125,80	800			189	145		167	167	79
232	Nissum Bredning	232	911	476	836	297	911	656	604	630	31
233	Kaas Bredning og Venø Bugt	232,233	2,075			2,027	1,898		1,962	1,962	5
234	Løgstør Bredning	157,158,234, 233, 236	6,752			1,838	5,106		3,472	3,472	49
235	Nibe Bredning og Langerak	157, 158, 233, 234, 235, 236, 238	11,242		11,153	6,620	11,242	11,153	8,931	10,042	11
236	Thisted Bredning	236	1,150			289	626		458	458	60
238	Halkær Bredning	238	639			330	494		412	412	36

Appendix B: Scenario 2 results

Table B-1. Scenario 2, P0: Water body-specific MAIs based on the two individual indicators chlorophyll-a (Chl-a) and light penetration depth (light) estimated from statistical models (STAT) or mechanistic models (MEK), respectively.

The table shows both the individual calculations as well as the averaged water specific MAIs (without any aggregation) and the corresponding need for reduction in %. Danish P 0%

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
1	Roskilde Fjord,ydre	1,2	853			735	490		613	613	28
2	Roskilde Fjord, indre	2	434	434		434	396	434	415	425	2
6	Nordlige Øresund	6	1,149			1,149	1,149		1,149	1,149	0
16	Korsør Nor	16	32			32	16		24	24	25
17	Basnæs Nor	17	70			70	34		52	52	26
18	Holsteinborg Nor	18	26			26	26		26	26	0
24	Isefjord, ydre	24,165	1,079	600	804	685	849	702	767	734	32
25	Skælskør Fjord og Nor	25	40			32	33		33	33	17
28	Sejerø Bugt	28	198			198	198		198	198	0
29	Kalundborg Fjord	29	84	13	50	46	84	32	65	48	42
34	Smålandsfarvandet, syd	34	543			543	543		543	543	0
35	Karrebæk Fjord	35	1,268			1,268	738		1,003	1,003	21
36	Dybsø Fjord	36	59			59	59		59	59	0
37	Avnø Fjord	37	234			234	131		182	182	22
38	Guldborgsund	38	374			374	374		374	374	0
44	Hjelm Bugt	44	87			87	87		87	87	0
45	Grønsund	45	298			298	146		222	222	26

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
46	Fakse Bugt	46,47	589			589	589		589	589	0
47	Præstø Fjord	47	232			161	141		151	151	35
48	Stege Bugt	48,49	298			298	298		298	298	0
49	Stege Nor	49	29			22	15		18	18	36
56	Østersøen, Bornholm	56	939			939	939		939	939	0
57	Østersøen, Christiansø	57	4			4	4		4	4	0
59	Nærå Strand	59	93			22	22		22	22	76
62	Lillestrand	62	9			7	4		5	5	41
68	Lindelse Nor	68	41			41	41		41	41	0
72	Kløven	72	28			28	28		28	28	0
74	Bredningen	74	130			48	42		45	45	65
80	Gamborg Fjord	80	83			69	83		76	76	8
82	Aborg Minde Nor	82	140			34	34		34	34	76
83	Holckenhavn Fjord	83	284			81	118		100	100	65
84	Kerteminde Fjord	84,85	43			27	43		35	35	19
85	Kertinge Nor	85	21	20		21	12	20	16	18	13
86	Nyborg Fjord	83,86	305			152	274		213	213	30
87	Helnæs Bugt	87	186			67	186		127	127	32
89	Lunkebugten	89	18			5	18		12	12	36
90	Langelandssund	83,86,89,90	737			558	737		648	648	12
92	Odense Fjord, ydre	92,93	1,282	810	1,164	930	1,062	987	996	992	23
93	Odense Fjord, Seden Strand	93	1,220		667	1,220	390	667	805	736	40

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
95	Storebælt SV	95	141			41	141		91	91	36
96	Storebælt NV	96, 84, 85	199			38	199		118	118	41
101	Genner Bugt	101	42			13	30		21	21	49
102	Åbenrå Fjord	102	126	59		59	101	59	80	69	45
103	Als Fjord	103,104,105	290			72	290		181	181	38
104	Als Sund	104	65			65	65		65	65	0
105	Augustenborg Fjord	105	85	85		85	85	85	85	85	0
106	Haderslev Fjord	106	200			104	134		119	119	40
107	Juvre Dyb	107	366			171			171	171	53
108	Avnø Vig	108	58			31	23		27	27	52
109	Hejlsminde Nor	109	165			152	74		113	113	32
110	Nybøl Nor	110	74			49	61		55	55	26
111	Lister Dyb	111	2,059			1,500			1,500	1,500	27
113	Flensborg Fjord, indre	113	43	19		19	43	19	31	25	42
114	Flensborg Fjord, ydre	110,113,114	242	242		242	242	242	242	242	0
119	Vesterhavet, syd	119, 107, 111, 121, 120	8,746			4,014			4,014	4,014	54
120	Knudedyb	120	3,074	841		841		841	841	841	73
121	Grådyb	121	3,042			1,539			1,539	1,539	49
122	Vejle Fjord, ydre	122,123	994			493	994		743	743	25
123	Vejle Fjord, indre	123	579	552	468	550	499	510	524	517	11
124	Kolding Fjord, indre	124	503	188		251	289	188	270	229	54

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
125	Kolding Fjord, ydre	124,125	547			255	415		335	335	39
127	Horsens Fjord, ydre	127,128	836			510	450		480	480	43
128	Horsens Fjord, indre	128	785			408	451		429	429	45
129	Nissum Fjord, Ydre	129,131,130	2,301			1,297	974		1,136	1,136	51
130	Nissum Fjord, mellem	130,131	1,937			837	436		637	637	67
131	Nissum Fjord, Felsted Kog	131	1,783	1,783		662	662	1,783	662	1,222	31
132	Ringkøbing Fjord	132	5,045		1,679	5,045	1,917	1,679	3,481	2,580	49
133	Vesterhavet, nord	133,129,130,131, 132	7,423			7,423			7,423	7,423	0
136	Randers Fjord, indre	136	2,980	2,980	1,477	2,980	1,477	2,229	2,229	2,229	25
137	Randers Fjord, ydre	136,137	3,122	3,122	1,213	3,122	1,213	2,168	2,168	2,168	31
138	Hevring Bugt	138, 137, 136	3,251			3,251	3,251		3,251	3,251	0
139	Anholt	139	7			7	7		7	7	0
140	Djursland Øst	140	649			378	649		514	514	21
141	Ebeltoft Vig	141	14			14	14		14	14	0
142	Stavns Fjord	142	4			4	3		3	3	20
144	Knebel Vig	144	16			10	16		13	13	19
145	Kalø Vig	144,145	222	222	222	222	222	222	222	222	0
146	Norsminde Fjord	146	143			143	47		95	95	34
147	Århus Bugt og Begtrup Vig	144,145,147	703	689	703	692	703	696	698	697	1
154	Kattegat Læsø	154	55			55	55		55	55	0

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
157	Bjørnholms Bugt, Riisgårde Bredning, Skive Fjord og Lovns Bredning	157,158	3,651			1,018	1,623		1,321	1,321	64
158	Hjarbæk Fjord	158	1,852			440	670		555	555	70
159	Mariager Fjord, indre	159	491			80	192		136	136	72
160	Mariager Fjord, ydre	159,160	962			783	516		649	649	32
165	Isefjord, indre	165	975	439		482	975	439	729	584	40
200	Kattegat Nordsjælland	1,2,24,165,200	2,155			2,155	637		1,396	1,396	35
201	Køge Bugt	201	1,179	1,179		1,179	1,179	1,179	1,179	1,179	0
204	Jammerland Bugt og Musholm Bugt	204	1,381			1,381	549		965	965	30
206	Smålandsfarvandet, åbne del	16,17,18,25,35,36,37,206	2,017			2,017	1,657		1,837	1,837	9
207	Nakskov Fjord	207	359			349	279		314	314	12
208	Femerbælt	207,208,209	1,337			874	1,337		1,105	1,105	17
209	Rødsand og Bredningen	209	410			222	279		250	250	39
212	Fåborg Fjord	212	22			10	22		16	16	27
214	Det sydfynske Øhav	68,72,212,214	532	171	384	171	427	278	299	288	46
216	Lillebælt, syd	87,101,102,103,104,105,110,113,114,216	1,332			463	1,332		898	898	33

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
217	Lillebælt Bredningen	74,82,106,108,109,217	914	286	286	383	914	286	648	467	49
219	Århus Bugt, syd, Samsø og Nordlige Bælthav	59,62,92,93,127,128,142,146,219	2,694			668	2,694		1,681	1,681	38
221	Skagerrak	221	1,409			1,409			1,409	1,409	0
222	Kattegat Ålborg Bugt	222,159,160	2,034			2,034	2,034		2,034	2,034	0
224	Nordlige Lillebælt	122,123,224	1,398			806	1,398		1,102	1,102	21
225	Nordlige Kattegat ÅlbækBugt	225	715			715	715		715	715	0
231	Lillebælt Snævringen	231,124,125,80	800			189	145		167	167	79
232	Nissum Bredning	232	911	313	660	297	911	486	604	545	40
233	Kaas Bredning og Venø Bugt	232,233	2,075			1,661	1,060		1,361	1,361	34
234	Løgstør Bredning	157,158,234, 233, 236	6,752			1,838	3,948		2,893	2,893	57
235	Nibe Bredning og Langerak	157, 158, 233, 234, 235, 236, 238	11,242		10,084	3,190	10,200	10,084	6,695	8,390	25
236	Thisted Bredning	236	1,150			269	524		396	396	66
238	Halkær Bredning	238	639			114	114		114	114	82

Table B-2. Scenario 2, P10: Water body-specific MAIs based on the two individual indicators chlorophyll-a (Chl-a) and light penetration depth (light) estimated from statistical models (STAT) or mechanistic models (MEK), respectively.

The table shows both the individual calculations as well as the averaged water specific MAIs and the corresponding need for reduction in %. Danish P 10%

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
1	Roskilde Fjord,ydre	1,2	853			735	494		615	615	28
2	Roskilde Fjord, indre	2	434	434		434	400	434	417	426	2
6	Nordlige Øresund	6	1,149			1,149	1,149		1,149	1,149	0
16	Korsør Nor	16	32			32	17		24	24	24
17	Basnæs Nor	17	70			70	34		52	52	26
18	Holsteinborg Nor	18	26			26	26		26	26	0
24	Isefjord, ydre	24,165	1,079	625	823	685	850	724	767	746	31
25	Skælskør Fjord og Nor	25	40			33	34		34	34	15
28	Sejerø Bugt	28	198			198	198		198	198	0
29	Kalundborg Fjord	29	84	13	57	46	84	35	65	50	40
34	Smålandsfarvandet, syd	34	543			543	543		543	543	0
35	Karrebæk Fjord	35	1,268			1,268	797		1,033	1,033	19
36	Dybsø Fjord	36	59			59	59		59	59	0
37	Avnø Fjord	37	234			234	136		185	185	21
38	Guldborgsund	38	374			374	374		374	374	0
44	Hjelm Bugt	44	87			87	87		87	87	0
45	Grønsund	45	298			298	146		222	222	26
46	Fakse Bugt	46,47	589			589	589		589	589	0
47	Præstø Fjord	47	232			164	146		155	155	33
48	Stege Bugt	48,49	298			298	298		298	298	0

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
49	Stege Nor	49	29			22	15		19	19	35
56	Østersøen, Bornholm	56	939			939	939		939	939	0
57	Østersøen, Christiansø	57	4			4	4		4	4	0
59	Nærå Strand	59	93			26	23		24	24	74
62	Lillestrand	62	9			7	4		5	5	40
68	Lindelse Nor	68	41			41	41		41	41	0
72	Kløven	72	28			28	28		28	28	0
74	Bredningen	74	130			51	49		50	50	61
80	Gamborg Fjord	80	83			69	83		76	76	8
82	Aborg Minde Nor	82	140			34	34		34	34	76
83	Holckenhavn Fjord	83	284			86	130		108	108	62
84	Kerteminde Fjord	84,85	43			27	43		35	35	19
85	Kertinge Nor	85	21	21		21	13	21	17	19	11
86	Nyborg Fjord	83,86	305			156	278		217	217	29
87	Helnæs Bugt	87	186			67	186		127	127	32
89	Lunkebugten	89	18			5	18		12	12	36
90	Langelandssund	83,86,89,90	737			558	737		648	648	12
92	Odense Fjord, ydre	92,93	1,282	810	1,164	939	1,095	987	1,017	1,002	22
93	Odense Fjord, Seden Strand	93	1,220		667	1,220	453	667	836	752	38
95	Storebælt SV	95	141			41	141		91	91	36
96	Storebælt NV	96, 84, 85	199			38	199		118	118	41
101	Genner Bugt	101	42			13	30		21	21	49

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
102	Åbenrå Fjord	102	126	59		59	101	59	80	69	45
103	Als Fjord	103,104,105	290			72	290		181	181	38
104	Als Sund	104	65			65	65		65	65	0
105	Augustenborg Fjord	105	85	85		85	85	85	85	85	0
106	Haderslev Fjord	106	200			104	135		120	120	40
107	Juvre Dyb	107	366			188			188	188	49
108	Avnø Vig	108	58			33	26		30	30	49
109	Hejlsminde Nor	109	165			165	85		125	125	24
110	Nybøl Nor	110	74			51	63		57	57	24
111	Lister Dyb	111	2,059			1,575			1,575	1,575	23
113	Flensborg Fjord, indre	113	43	19		19	43	19	31	25	42
114	Flensborg Fjord, ydre	110,113,114	242	242		242	242	242	242	242	0
119	Vesterhavet, syd	119, 107, 111, 121, 120	8,746			4,014			4,014	4,014	54
120	Knudedyb	120	3,074	841		841		841	841	841	73
121	Grådyb	121	3,042			1,840			1,840	1,840	40
122	Vejle Fjord, ydre	122,123	994			500	994		747	747	25
123	Vejle Fjord, indre	123	579	567	482	551	500	524	525	525	9
124	Kolding Fjord, indre	124	503	204		256	300	204	278	241	52
125	Kolding Fjord, ydre	124,125	547			261	422		341	341	38
127	Horsens Fjord, ydre	127,128	836			518	455		487	487	42
128	Horsens Fjord, indre	128	785			410	455		432	432	45

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
129	Nissum Fjord, Ydre	129,131,130	2,301			1,380	1,056		1,218	1,218	47
130	Nissum Fjord, mellem	130,131	1,937			925	436		681	681	65
131	Nissum Fjord, Felsted Kog	131	1,783	1,783		662	662	1,783	662	1,222	31
132	Ringkøbing Fjord	132	5,045		1,679	5,045	2,429	1,679	3,737	2,708	46
133	Vesterhavet, nord	133,129,130,131, 132	7,423			7,423			7,423	7,423	0
136	Randers Fjord, indre	136	2,980	2,980	1,477	2,980	1,477	2,229	2,229	2,229	25
137	Randers Fjord, ydre	136,137	3,122	3,122	1,412	3,122	1,412	2,267	2,267	2,267	27
138	Hevring Bugt	138, 137, 136	3,251			3,251	3,251		3,251	3,251	0
139	Anholt	139	7			7	7		7	7	0
140	Djursland Øst	140	649			378	649		514	514	21
141	Ebeltoft Vig	141	14			14	14		14	14	0
142	Stavns Fjord	142	4			4	3		3	3	20
144	Knebel Vig	144	16			10	16		13	13	19
145	Kalø Vig	144,145	222	222	222	222	222	222	222	222	0
146	Norsminde Fjord	146	143			143	59		101	101	29
147	Århus Bugt og Begtrup Vig	144,145,147	703	703	703	692	703	703	698	700	0
154	Kattegat Læsø	154	55			55	55		55	55	0
157	Bjørnholms Bugt, Riisgårde Bredning, Skive Fjord og Lovns Bredning	157,158	3,651			1,018	1,852		1,435	1,435	61
158	Hjarbæk Fjord	158	1,852			480	781		631	631	66

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
159	Mariager Fjord, indre	159	491			84	225		155	155	68
160	Mariager Fjord, ydre	159,160	962			822	597		710	710	26
165	Isefjord, indre	165	975	439		482	975	439	729	584	40
200	Kattegat Nordsjælland	1,2,24,165,200	2,155			2,155	637		1,396	1,396	35
201	Køge Bugt	201	1,179	1,179		1,179	1,179	1,179	1,179	1,179	0
204	Jammerland Bugt og Musholm Bugt	204	1,381			1,381	552		966	966	30
206	Smålandsfarvandet, åbne del	16,17,18,25,35,36,37,206	2,017			2,017	1,657		1,837	1,837	9
207	Nakskov Fjord	207	359			351	281		316	316	12
208	Femerbælt	207,208,209	1,337			878	1,337		1,107	1,107	17
209	Rødsand og Bredningen	209	410			222	279		250	250	39
212	Fåborg Fjord	212	22			10	22		16	16	27
214	Det sydfynske Øhav	68,72,212,214	532	171	387	171	427	279	299	289	46
216	Lillebælt, syd	87,101,102,103,104,105,110,113,114,216	1,332			463	1,332		898	898	33
217	Lillebælt Bredningen	74,82,106,108,109,217	914	286	286	383	914	286	648	467	49
219	Århus Bugt, syd, Samsø og Nordlige Bælthav	59,62,92,93,127,128,142,146,219	2,694			668	2,694		1,681	1,681	38

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
221	Skagerrak	221	1,409			1,409			1,409	1,409	0
222	Kattegat Ålborg Bugt	222,159,160	2,034			2,034	2,034		2,034	2,034	0
224	Nordlige Lillebælt	122,123,224	1,398			806	1,398		1,102	1,102	21
225	Nordlige Kattegat ÅlbækBugt	225	715			715	715		715	715	0
231	Lillebælt Snævringen	231,124,125,80	800			189	145		167	167	79
232	Nissum Bredning	232	911	343	695	297	911	519	604	562	38
233	Kaas Bredning og Venø Bugt	232,233	2,075			1,729	1,228		1,479	1,479	29
234	Løgstør Bredning	157,158,234, 233, 236	6,752			1,838	4,181		3,009	3,009	55
235	Nibe Bredning og Langerak	157, 158, 233, 234, 235, 236, 238	11,242		10,301	3,795	10,877	10,301	7,336	8,819	22
236	Thisted Bredning	236	1,150			269	545		407	407	65
238	Halkær Bredning	238	639			114	127		120	120	81

Table B-3. Scenario 2, P20: Water body-specific MAIs based on the two individual indicators chlorophyll-a (Chl-a) and light penetration depth (light) estimated from statistical models (STAT) or mechanistic models (MEK), respectively.

The table shows both the individual calculations as well as the averaged water specific MAIs and the corresponding need for reduction in %. Danish P 20%

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
1	Roskilde Fjord,ydre	1,2	853			735	499		617	617	28
2	Roskilde Fjord, indre	2	434	434		434	404	434	419	427	2
6	Nordlige Øresund	6	1,149			1,149	1,149		1,149	1,149	0
16	Korsør Nor	16	32			32	18		25	25	22
17	Basnæs Nor	17	70			70	34		52	52	25
18	Holsteinborg Nor	18	26			26	26		26	26	0
24	Isefjord, ydre	24,165	1,079	651	841	685	850	746	768	757	30
25	Skælskør Fjord og Nor	25	40			33	35		34	34	13
28	Sejerø Bugt	28	198			198	198		198	198	0
29	Kalundborg Fjord	29	84	19	64	46	84	41	65	53	36
34	Smålandsfarvandet, syd	34	543			543	543		543	543	0
35	Karrebæk Fjord	35	1,268			1,268	854		1,061	1,061	16
36	Dybsø Fjord	36	59			59	59		59	59	0
37	Avnø Fjord	37	234			234	140		187	187	20
38	Guldborgsund	38	374			374	374		374	374	0
44	Hjelm Bugt	44	87			87	87		87	87	0
45	Grønsund	45	298			298	146		222	222	26
46	Fakse Bugt	46,47	589			589	589		589	589	0
47	Præstø Fjord	47	232			167	151		159	159	32
48	Stege Bugt	48,49	298			298	298		298	298	0

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
49	Stege Nor	49	29			22	15		19	19	35
56	Østersøen, Bornholm	56	939			939	939		939	939	0
57	Østersøen, Christiansø	57	4			4	4		4	4	0
59	Nærå Strand	59	93			31	34		33	33	65
62	Lillestrand	62	9			7	4		5	5	40
68	Lindelse Nor	68	41			41	41		41	41	0
72	Kløven	72	28			28	28		28	28	0
74	Bredningen	74	130			55	56		56	56	57
80	Gamborg Fjord	80	83			69	83		76	76	8
82	Aborg Minde Nor	82	140			34	34		34	34	76
83	Holckenhavn Fjord	83	284			96	141		119	119	58
84	Kerteminde Fjord	84,85	43			27	43		35	35	19
85	Kertinge Nor	85	21	21		21	13	21	17	19	10
86	Nyborg Fjord	83,86	305			161	282		222	222	27
87	Helnæs Bugt	87	186			67	186		127	127	32
89	Lunkebugten	89	18			5	18		12	12	36
90	Langelandssund	83,86,89,90	737			558	737		648	648	12
92	Odense Fjord, ydre	92,93	1,282	810	1,164	949	1,128	987	1,038	1,013	21
93	Odense Fjord, Seden Strand	93	1,220		667	1,220	520	667	870	768	37
95	Storebælt SV	95	141			41	141		91	91	36
96	Storebælt NV	96, 84, 85	199			38	199		118	118	41
101	Genner Bugt	101	42			13	30		21	21	49

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
102	Åbenrå Fjord	102	126	59		59	101	59	80	69	45
103	Als Fjord	103,104,105	290			72	290		181	181	38
104	Als Sund	104	65			65	65		65	65	0
105	Augustenborg Fjord	105	85	85		85	85	85	85	85	0
106	Haderslev Fjord	106	200			104	136		120	120	40
107	Juvre Dyb	107	366			206			206	206	44
108	Avnø Vig	108	58			35	29		32	32	45
109	Hejlsminde Nor	109	165			165	97		131	131	21
110	Nybøl Nor	110	74			52	64		58	58	22
111	Lister Dyb	111	2,059			1,653			1,653	1,653	20
113	Flensborg Fjord, indre	113	43	19		19	43	19	31	25	42
114	Flensborg Fjord, ydre	110,113,114	242	242		242	242	242	242	242	0
119	Vesterhavet, syd	119, 107, 111, 121, 120	8,746			4,014			4,014	4,014	54
120	Knudedyb	120	3,074	1,093		841		1,093	841	967	69
121	Grådyb	121	3,042			2,170			2,170	2,170	29
122	Vejle Fjord, ydre	122,123	994			508	994		751	751	24
123	Vejle Fjord, indre	123	579	579	496	552	500	537	526	532	8
124	Kolding Fjord, indre	124	503	227		261	311	227	286	257	49
125	Kolding Fjord, ydre	124,125	547			267	429		348	348	36
127	Horsens Fjord, ydre	127,128	836			527	458		493	493	41
128	Horsens Fjord, indre	128	785			411	459		435	435	45

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
129	Nissum Fjord, Ydre	129,131,130	2,301			1,494	1,137		1,315	1,315	43
130	Nissum Fjord, mellem	130,131	1,937			1,067	436		752	752	61
131	Nissum Fjord, Felsted Kog	131	1,783	1,783		662	836	1,783	749	1,266	29
132	Ringkøbing Fjord	132	5,045		1,679	5,045	2,937	1,679	3,991	2,835	44
133	Vesterhavet, nord	133,129,130,131, 132	7,423			7,423			7,423	7,423	0
136	Randers Fjord, indre	136	2,980	2,980	1,618	2,980	1,618	2,299	2,299	2,299	23
137	Randers Fjord, ydre	136,137	3,122	3,122	1,610	3,122	1,610	2,366	2,366	2,366	24
138	Hevring Bugt	138, 137, 136	3,251			3,251	3,251		3,251	3,251	0
139	Anholt	139	7			7	7		7	7	0
140	Djursland Øst	140	649			378	649		514	514	21
141	Ebeltoft Vig	141	14			14	14		14	14	0
142	Stavns Fjord	142	4			4	3		3	3	19
144	Knebel Vig	144	16			10	16		13	13	19
145	Kalø Vig	144,145	222	222	222	222	222	222	222	222	0
146	Norsminde Fjord	146	143			143	75		109	109	24
147	Århus Bugt og Begtrup Vig	144,145,147	703	703	703	692	703	703	698	700	0
154	Kattegat Læsø	154	55			55	55		55	55	0
157	Bjørnholms Bugt, Riisgårde Bredning, Skive Fjord og Lovns Bredning	157,158	3,651			1,018	2,071		1,545	1,545	58
158	Hjarbæk Fjord	158	1,852			525	890		708	708	62

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
159	Mariager Fjord, indre	159	491			89	258		174	174	65
160	Mariager Fjord, ydre	159,160	962			869	671		770	770	20
165	Isefjord, indre	165	975	439		482	975	439	729	584	40
200	Kattegat Nordsjælland	1,2,24,165,200	2,155			2,155	637		1,396	1,396	35
201	Køge Bugt	201	1,179	1,179		1,179	1,179	1,179	1,179	1,179	0
204	Jammerland Bugt og Musholm Bugt	204	1,381			1,381	555		968	968	30
206	Smålandsfarvandet, åbne del	16,17,18,25,35,36,37,206	2,017			2,017	1,657		1,837	1,837	9
207	Nakskov Fjord	207	359			352	284		318	318	11
208	Femerbælt	207,208,209	1,337			883	1,337		1,110	1,110	17
209	Rødsand og Bredningen	209	410			222	279		250	250	39
212	Fåborg Fjord	212	22			10	22		16	16	27
214	Det sydfynske Øhav	68,72,212,214	532	171	390	171	427	281	299	290	46
216	Lillebælt, syd	87,101,102,103,104,105,110,113,114,216	1,332			463	1,332		898	898	33
217	Lillebælt Bredningen	74,82,106,108,109,217	914	286	286	383	914	286	648	467	49
219	Århus Bugt, syd, Samsø og Nordlige Bælthav	59,62,92,93,127,128,142,146,219	2,694			668	2,694		1,681	1,681	38

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
221	Skagerrak	221	1,409			1,409			1,409	1,409	0
222	Kattegat Ålborg Bugt	222,159,160	2,034			2,034	2,034		2,034	2,034	0
224	Nordlige Lillebælt	122,123,224	1,398			806	1,398		1,102	1,102	21
225	Nordlige Kattegat ÅlbækBugt	225	715			715	715		715	715	0
231	Lillebælt Snævringen	231,124,125,80	800			189	145		167	167	79
232	Nissum Bredning	232	911	374	731	297	911	552	604	578	37
233	Kaas Bredning og Venø Bugt	232,233	2,075			1,800	1,396		1,598	1,598	23
234	Løgstør Bredning	157,158,234, 233, 236	6,752			1,838	4,413		3,125	3,125	54
235	Nibe Bredning og Langerak	157, 158, 233, 234, 235, 236, 238	11,242		10,516	4,436	11,242	10,516	7,839	9,178	18
236	Thisted Bredning	236	1,150			269	565		417	417	64
238	Halkær Bredning	238	639			114	219		167	167	74

Table B-4. Scenario 2, P30: Water body-specific MAIs based on the two individual indicators chlorophyll-a (Chl-a) and light penetration depth (light) estimated from statistical models (STAT) or mechanistic models (MEK), respectively.

The table shows both the individual calculations as well as the averaged water specific MAIs and the corresponding need for reduction in %. Danish P 30%

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
1	Roskilde Fjord,ydre	1,2	853			735	503		619	619	27
2	Roskilde Fjord, indre	2	434	434		434	409	434	421	428	1
6	Nordlige Øresund	6	1,149			1,149	1,149		1,149	1,149	0
16	Korsør Nor	16	32			32	19		25	25	21
17	Basnæs Nor	17	70			70	35		52	52	25
18	Holsteinborg Nor	18	26			26	26		26	26	0
24	Isefjord, ydre	24,165	1,079	678	860	685	851	769	768	769	29
25	Skælskør Fjord og Nor	25	40			33	37		35	35	11
28	Sejerø Bugt	28	198			198	198		198	198	0
29	Kalundborg Fjord	29	84	28	70	46	84	49	65	57	32
34	Smålandsfarvandet, syd	34	543			543	543		543	543	0
35	Karrebæk Fjord	35	1,268			1,268	908		1,088	1,088	14
36	Dybsø Fjord	36	59			59	59		59	59	0
37	Avnø Fjord	37	234			234	145		189	189	19
38	Guldborgsund	38	374			374	374		374	374	0
44	Hjelm Bugt	44	87			87	87		87	87	0
45	Grønsund	45	298			298	146		222	222	26
46	Fakse Bugt	46,47	589			589	589		589	589	0
47	Præstø Fjord	47	232			170	156		163	163	30
48	Stege Bugt	48,49	298			298	298		298	298	0

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
49	Stege Nor	49	29			22	16		19	19	34
56	Østersøen, Bornholm	56	939			939	939		939	939	0
57	Østersøen, Christiansø	57	4			4	4		4	4	0
59	Nærå Strand	59	93			37	45		41	41	55
62	Lillestrand	62	9			7	4		5	5	39
68	Lindelse Nor	68	41			41	41		41	41	0
72	Kløven	72	28			28	28		28	28	0
74	Bredningen	74	130			60	63		61	61	53
80	Gamborg Fjord	80	83			69	83		76	76	8
82	Aborg Minde Nor	82	140			39	34		36	36	74
83	Holckenhavn Fjord	83	284			108	152		130	130	54
84	Kerteminde Fjord	84,85	43			27	43		35	35	19
85	Kertinge Nor	85	21	21		21	14	21	17	19	9
86	Nyborg Fjord	83,86	305			166	286		226	226	26
87	Helnæs Bugt	87	186			67	186		127	127	32
89	Lunkebugten	89	18			5	18		12	12	36
90	Langelandssund	83,86,89,90	737			558	737		648	648	12
92	Odense Fjord, ydre	92,93	1,282	810	1,164	958	1,161	987	1,060	1,023	20
93	Odense Fjord, Seden Strand	93	1,220		667	1,220	587	667	904	785	36
95	Storebælt SV	95	141			41	141		91	91	36
96	Storebælt NV	96, 84, 85	199			38	199		118	118	41
101	Genner Bugt	101	42			13	30		21	21	49

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
102	Åbenrå Fjord	102	126	59		59	101	59	80	69	45
103	Als Fjord	103,104,105	290			72	290		181	181	38
104	Als Sund	104	65			65	65		65	65	0
105	Augustenborg Fjord	105	85	85		85	85	85	85	85	0
106	Haderslev Fjord	106	200			104	137		121	121	40
107	Juvre Dyb	107	366			225			225	225	39
108	Avnø Vig	108	58			38	31		34	34	40
109	Hejlsminde Nor	109	165			165	108		137	137	17
110	Nybøl Nor	110	74			53	66		60	60	20
111	Lister Dyb	111	2,059			1,733			1,733	1,733	16
113	Flensborg Fjord, indre	113	43	19		19	43	19	31	25	42
114	Flensborg Fjord, ydre	110,113,114	242	242		242	242	242	242	242	0
119	Vesterhavet, syd	119, 107, 111, 121, 120	8,746			4,014			4,014	4,014	54
120	Knudedyb	120	3,074	1,899		841		1,899	841	1,370	55
121	Grådyb	121	3,042			2,533			2,533	2,533	17
122	Vejle Fjord, ydre	122,123	994			517	994		755	755	24
123	Vejle Fjord, indre	123	579	579	510	553	501	544	527	536	7
124	Kolding Fjord, indre	124	503	253		266	322	253	294	274	46
125	Kolding Fjord, ydre	124,125	547			273	436		355	355	35
127	Horsens Fjord, ydre	127,128	836			537	463		500	500	40
128	Horsens Fjord, indre	128	785			413	462		438	438	44

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
129	Nissum Fjord, Ydre	129,131,130	2,301			1,660	1,217		1,439	1,439	37
130	Nissum Fjord, mellem	130,131	1,937			1,332	436		884	884	54
131	Nissum Fjord, Felsted Kog	131	1,783	1,783		835	1,026	1,783	930	1,357	24
132	Ringkøbing Fjord	132	5,045		2,381	5,045	3,443	2,381	4,244	3,313	34
133	Vesterhavet, nord	133,129,130,131, 132	7,423			7,423			7,423	7,423	0
136	Randers Fjord, indre	136	2,980	2,980	1,802	2,980	1,802	2,391	2,391	2,391	20
137	Randers Fjord, ydre	136,137	3,122	3,122	1,804	3,122	1,804	2,463	2,463	2,463	21
138	Hevring Bugt	138, 137, 136	3,251			3,251	3,251		3,251	3,251	0
139	Anholt	139	7			7	7		7	7	0
140	Djursland Øst	140	649			378	649		514	514	21
141	Ebeltoft Vig	141	14			14	14		14	14	0
142	Stavns Fjord	142	4			4	3		3	3	19
144	Knebel Vig	144	16			10	16		13	13	19
145	Kalø Vig	144,145	222	222	222	222	222	222	222	222	0
146	Norsminde Fjord	146	143			143	90		116	116	18
147	Århus Bugt og Begtrup Vig	144,145,147	703	703	703	692	703	703	698	700	0
154	Kattegat Læsø	154	55			55	55		55	55	0
157	Bjørnholms Bugt, Riisgårde Bredning, Skive Fjord og Lovns Bredning	157,158	3,651			1,018	2,282		1,650	1,650	55
158	Hjarbæk Fjord	158	1,852			573	998		786	786	58

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
159	Mariager Fjord, indre	159	491			95	290		193	193	61
160	Mariager Fjord, ydre	159,160	962			926	740		833	833	13
165	Isefjord, indre	165	975	439		482	975	439	729	584	40
200	Kattegat Nordsjælland	1,2,24,165,200	2,155			2,155	637		1,396	1,396	35
201	Køge Bugt	201	1,179	1,179		1,179	1,179	1,179	1,179	1,179	0
204	Jammerland Bugt og Musholm Bugt	204	1,381			1,381	558		969	969	30
206	Smålandsfarvandet, åbne del	16,17,18,25,35,36,37,206	2,017			2,017	1,657		1,837	1,837	9
207	Nakskov Fjord	207	359			354	286		320	320	11
208	Femerbælt	207,208,209	1,337			887	1,337		1,112	1,112	17
209	Rødsand og Bredningen	209	410			222	279		250	250	39
212	Fåborg Fjord	212	22			10	22		16	16	27
214	Det sydfynske Øhav	68,72,212,214	532	171	393	171	427	282	299	290	45
216	Lillebælt, syd	87,101,102,103,104,105,110,113,114,216	1,332			463	1,332		898	898	33
217	Lillebælt Bredningen	74,82,106,108,109,217	914	286	286	383	914	286	648	467	49
219	Århus Bugt, syd, Samsø og Nordlige Bælthav	59,62,92,93,127,128,142,146,219	2,694			668	2,694		1,681	1,681	38

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
221	Skagerrak	221	1,409			1,409			1,409	1,409	0
222	Kattegat Ålborg Bugt	222,159,160	2,034			2,034	2,034		2,034	2,034	0
224	Nordlige Lillebælt	122,123,224	1,398			806	1,398		1,102	1,102	21
225	Nordlige Kattegat ÅlbækBugt	225	715			715	715		715	715	0
231	Lillebælt Snævringen	231,124,125,80	800			189	145		167	167	79
232	Nissum Bredning	232	911	406	766	297	911	586	604	595	35
233	Kaas Bredning og Venø Bugt	232,233	2,075			1,872	1,563		1,718	1,718	17
234	Løgstør Bredning	157,158,234, 233, 236	6,752			1,838	4,645		3,241	3,241	52
235	Nibe Bredning og Langerak	157, 158, 233, 234, 235, 236, 238	11,242		10,730	5,118	11,242	10,730	8,180	9,455	16
236	Thisted Bredning	236	1,150			275	586		431	431	63
238	Halkær Bredning	238	639			114	311		213	213	67

Table B-5. Scenario 2, P50: Water body-specific MAIs based on the two individual indicators chlorophyll-a (Chl-a) and light penetration depth (light) estimated from statistical models (STAT) or mechanistic models (MEK), respectively.

The table shows both the individual calculations as well as the averaged water specific MAIs and the corresponding need for reduction in %. Danish P 50%

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
1	Roskilde Fjord,ydre	1,2	853			735	511		623	623	27
2	Roskilde Fjord, indre	2	434	434		434	417	434	426	430	1
6	Nordlige Øresund	6	1,149			1,149	1,149		1,149	1,149	0
16	Korsør Nor	16	32			32	20		26	26	19
17	Basnæs Nor	17	70			70	35		52	52	25
18	Holsteinborg Nor	18	26			26	26		26	26	0
24	Isefjord, ydre	24,165	1,079	732	897	685	853	815	769	792	27
25	Skælskør Fjord og Nor	25	40			34	39		37	37	8
28	Sejerø Bugt	28	198			198	198		198	198	0
29	Kalundborg Fjord	29	84	45	83	46	84	64	65	64	23
34	Smålandsfarvandet, syd	34	543			543	543		543	543	0
35	Karrebæk Fjord	35	1,268			1,268	1,011		1,140	1,140	10
36	Dybsø Fjord	36	59			59	59		59	59	0
37	Avnø Fjord	37	234			234	155		194	194	17
38	Guldborgsund	38	374			374	374		374	374	0
44	Hjelm Bugt	44	87			87	87		87	87	0
45	Grønsund	45	298			298	146		222	222	26
46	Fakse Bugt	46,47	589			589	589		589	589	0
47	Præstø Fjord	47	232			176	165		171	171	26
48	Stege Bugt	48,49	298			298	298		298	298	0

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
49	Stege Nor	49	29			23	16		19	19	33
56	Østersøen, Bornholm	56	939			939	939		939	939	0
57	Østersøen, Christiansø	57	4			4	4		4	4	0
59	Nærå Strand	59	93			53	68		60	60	35
62	Lillestrand	62	9			7	5		6	6	38
68	Lindelse Nor	68	41			41	41		41	41	0
72	Kløven	72	28			28	28		28	28	0
74	Bredningen	74	130			69	77		73	73	44
80	Gamborg Fjord	80	83			69	83		76	76	8
82	Aborg Minde Nor	82	140			64	60		62	62	56
83	Holckenhavn Fjord	83	284			132	174		153	153	46
84	Kerteminde Fjord	84,85	43			27	43		35	35	19
85	Kertinge Nor	85	21	21		21	14	21	18	19	8
86	Nyborg Fjord	83,86	305			176	293		235	235	23
87	Helnæs Bugt	87	186			67	186		127	127	32
89	Lunkebugten	89	18			5	18		12	12	36
90	Langelandssund	83,86,89,90	737			558	737		648	648	12
92	Odense Fjord, ydre	92,93	1,282	810	1,164	977	1,225	987	1,101	1,044	19
93	Odense Fjord, Seden Strand	93	1,220		667	1,220	721	667	970	819	33
95	Storebælt SV	95	141			41	141		91	91	36
96	Storebælt NV	96, 84, 85	199			38	199		118	118	41
101	Genner Bugt	101	42			13	30		21	21	49

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
102	Åbenrå Fjord	102	126	59		59	101	59	80	69	45
103	Als Fjord	103,104,105	290			72	290		181	181	38
104	Als Sund	104	65			65	65		65	65	0
105	Augustenborg Fjord	105	85	85		85	85	85	85	85	0
106	Haderslev Fjord	106	200			104	139		122	122	39
107	Juvre Dyb	107	366			265			265	265	28
108	Avnø Vig	108	58			43	37		40	40	31
109	Hejlsminde Nor	109	165			165	129		147	147	11
110	Nybøl Nor	110	74			57	69		63	63	16
111	Lister Dyb	111	2,059			1,900			1,900	1,900	8
113	Flensborg Fjord, indre	113	43	19		19	43	19	31	25	42
114	Flensborg Fjord, ydre	110,113,114	242	242		242	242	242	242	242	0
119	Vesterhavet, syd	119, 107, 111, 121, 120	8,746			4,541			4,541	4,541	48
120	Knudedyb	120	3,074	3,074		841		3,074	841	1,957	36
121	Grådyb	121	3,042			3,042			3,042	3,042	0
122	Vejle Fjord, ydre	122,123	994			533	994		763	763	23
123	Vejle Fjord, indre	123	579	579	538	555	502	558	529	543	6
124	Kolding Fjord, indre	124	503	321		277	343	321	310	315	37
125	Kolding Fjord, ydre	124,125	547			286	450		368	368	33
127	Horsens Fjord, ydre	127,128	836			555	469		512	512	39
128	Horsens Fjord, indre	128	785			417	470		443	443	44

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
129	Nissum Fjord, Ydre	129,131,130	2,301			2,301	1,375		1,838	1,838	20
130	Nissum Fjord, mellem	130,131	1,937			1,937	436		1,187	1,187	39
131	Nissum Fjord, Felsted Kog	131	1,783	1,783		0	1,396	1,783	698	1,241	30
132	Ringkøbing Fjord	132	5,045		4,638	5,045	4,447	4,638	4,746	4,692	7
133	Vesterhavet, nord	133,129,130,131, 132	7,423			7,423			7,423	7,423	0
136	Randers Fjord, indre	136	2,980	2,980	2,166	2,980	2,166	2,573	2,573	2,573	14
137	Randers Fjord, ydre	136,137	3,122	3,122	2,191	3,122	2,191	2,657	2,657	2,657	15
138	Hevring Bugt	138, 137, 136	3,251			3,251	3,251		3,251	3,251	0
139	Anholt	139	7			7	7		7	7	0
140	Djursland Øst	140	649			378	649		514	514	21
141	Ebeltoft Vig	141	14			14	14		14	14	0
142	Stavns Fjord	142	4			4	3		3	3	18
144	Knebel Vig	144	16			10	16		13	13	19
145	Kalø Vig	144,145	222	222	222	222	222	222	222	222	0
146	Norsminde Fjord	146	143			143	121		132	132	8
147	Århus Bugt og Begtrup Vig	144,145,147	703	703	703	692	703	703	698	700	0
154	Kattegat Læsø	154	55			55	55		55	55	0
157	Bjørnholms Bugt, Riisgårde Bredning, Skive Fjord og Lovns Bredning	157,158	3,651			1,214	2,678		1,946	1,946	47
158	Hjarbæk Fjord	158	1,852			688	1,207		947	947	49

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
159	Mariager Fjord, indre	159	491			109	351		230	230	53
160	Mariager Fjord, ydre	159,160	962			962	865		913	913	5
165	Isefjord, indre	165	975	439		482	975	439	729	584	40
200	Kattegat Nordsjælland	1,2,24,165,200	2,155			2,155	637		1,396	1,396	35
201	Køge Bugt	201	1,179	1,179		1,179	1,179	1,179	1,179	1,179	0
204	Jammerland Bugt og Musholm Bugt	204	1,381			1,381	564		972	972	30
206	Smålandsfarvandet, åbne del	16,17,18,25,35,36,37,206	2,017			2,017	1,657		1,837	1,837	9
207	Nakskov Fjord	207	359			357	291		324	324	10
208	Femerbælt	207,208,209	1,337			896	1,337		1,116	1,116	16
209	Rødsand og Bredningen	209	410			222	279		250	250	39
212	Fåborg Fjord	212	22			10	22		16	16	27
214	Det sydfynske Øhav	68,72,212,214	532	171	399	171	427	285	299	292	45
216	Lillebælt, syd	87,101,102,103,104,105,110,113,114,216	1,332			463	1,332		898	898	33
217	Lillebælt Bredningen	74,82,106,108,109,217	914	286	286	383	914	286	648	467	49
219	Århus Bugt, syd, Samsø og Nordlige Bælthav	59,62,92,93,127,128,142,146,219	2,694			668	2,694		1,681	1,681	38

No.	Name	Aggregation	Average annual N-load	Chl-a (STAT)	Light (STAT)	Chl-a (MEK)	Light (MEK)	N-MAI (STAT)	N-MAI (MEK)	Avg. MAI	Avg. reduction [%]
221	Skagerrak	221	1,409			1,409			1,409	1,409	0
222	Kattegat Ålborg Bugt	222,159,160	2,034			2,034	2,034		2,034	2,034	0
224	Nordlige Lillebælt	122,123,224	1,398			806	1,398		1,102	1,102	21
225	Nordlige Kattegat ÅlbækBugt	225	715			715	715		715	715	0
231	Lillebælt Snævringen	231,124,125,80	800			189	145		167	167	79
232	Nissum Bredning	232	911	476	836	297	911	656	604	630	31
233	Kaas Bredning og Venø Bugt	232,233	2,075			2,027	1,898		1,962	1,962	5
234	Løgstør Bredning	157,158,234, 233, 236	6,752			1,838	5,106		3,472	3,472	49
235	Nibe Bredning og Langerak	157, 158, 233, 234, 235, 236, 238	11,242		11,153	6,620	11,242	11,153	8,931	10,042	11
236	Thisted Bredning	236	1,150			289	626		458	458	60
238	Halkær Bredning	238	639			330	494		412	412	36

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