

# SAMLAD ANALYS AV REGIONALA OCH NATIONELLA HAVSMILJÖDATA

HAVSMILJÖINSTITUTETS RAPPORT NR 2015:2

BILAGA 3: GRAFER ÖVER TIDSTRENDER

2015-05-05

PER MOKSNES  
ANDERS GRIMVALL  
JOHANNA ELAM

**HAVSMILJÖINSTITUTET**

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**Bilaga 3: Grafer över tidstrender**  
Bilaga till Havsmiljöinstitutets rapport 2015:2  
Samlad analys av regionala och nationella  
havsmiljödata

**Författare:**  
Per Moksnes, Havsmiljöinstitutet, enheten vid  
Göteborgs universitet  
Anders Grimvall, Havsmiljöinstitutet  
Johanna Elam, Havsmiljöinstitutet

**Kontaktuppgifter:**  
Havsmiljöinstitutet  
Box 260, 405 30 Göteborg  
Telefon: 031-786 65 61  
e-post: [per.moksnes@havsmiljoinstitutet.se](mailto:per.moksnes@havsmiljoinstitutet.se)  
webb: [www.havsmiljoinstitutet.se](http://www.havsmiljoinstitutet.se)

## Bilaga 3 Tidstrendsgrafer

Figurer över alla tidstrender som testats i studien. Figurerna visar årsmedelvärden per station av variabelvärden för perioden 1992-2012 för 10 olika variabler (se Tabeller nedan). Årsmedelvärdena är baserade på data från de månader som bedömningsgrunden föreskriver (se [Tabell 3](#)). Figurerna sorteras efter vattentyp och visar data för alla stationer som ingår i en vattentyp i samma figur. Figurerna visas i geografisk ordning (från Skagerrak till Bottenviken) och visar först resultat från kustvattentyper och därefter från utsjövattentyper för varje variabel i tur och ordning. Trendlinjer är endast utsatta för de stationer som visade signifikant trend i det statistiska testet. Observera att de statistiska testen är utförda på EK-värden som i många områden justeras efter salthalt. Graferna kan därför skilja sig från de värden som testats statistiskt. Graferna visar också data från de stationer som exkluderats från det statistiska testet då de saknat salthaltsdata. För variabler med bedömningskriterier har en streckad linje markerats för variabelvärdet som motsvarar EK-gränsvärdet mellan *God* och *Måttlig* status. Eftersom referensvärdet för närsalter justeras efter salthalten, som varierar mellan stationer och år, har konsekvent referensvärdet som fås av den lägsta salthalten använts för att beräkna gränsvärdet. Detta medför att gränsvärdet som visas för kväve-variabler är det högsta som kan fås efter salthaltskompensation medan gränsvärdet för fosforvariabler är det lägsta, beroende på att salthalten påverkar referensvärdet på olika vis för dessa variabler. För övriga variabler har tabellernas gränsvärden följts utan justering.

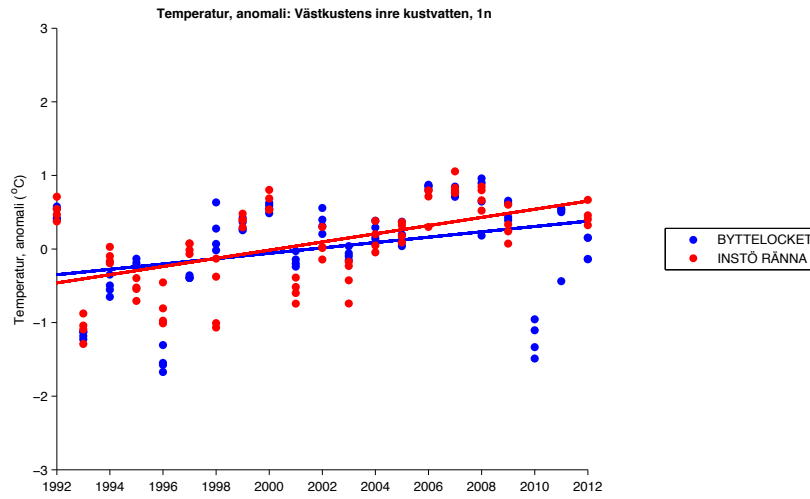
**Tabell 3.1.** Enhet, sidnummer och figurnummer för de 10 variablerna som visas i bilagan.

Variabel	Enhet	Sidnr.	Fig. nr.
Temperatur ytvatten	Temperatur anomali	1-10	1.1 - 1.29
Salthalt ytvatten	Salinitet anomali	11-20	2.1 - 2.29
Oorg kväve ytvatten	$\mu\text{mol DIN L}^{-1}$	21-31	3.1 - 3.32
Total kväve ytvatten	$\mu\text{mol Tot N L}^{-1}$	32-42	4.1 - 4.32
Oorg fosfor ytvatten	$\mu\text{mol DIP L}^{-1}$	43-53	5.1 - 5.32
Total fosfor ytvatten	$\mu\text{mol Tot P L}^{-1}$	54-64	6.1 - 6.32
Klorofyll a	$\text{mg Chl-a m}^{-3}$	65-74	7.1 - 7.28
Biovolym växtplankton	$\text{mm}^3 \text{L}^{-1}$	75-78	8.1 - 8.11
Siktdjup	m	79-88	9.1 - 9.29
Syre bottenvatten	$\text{ml O}_2 \text{L}^{-1}$	89-94	10.1-10.16

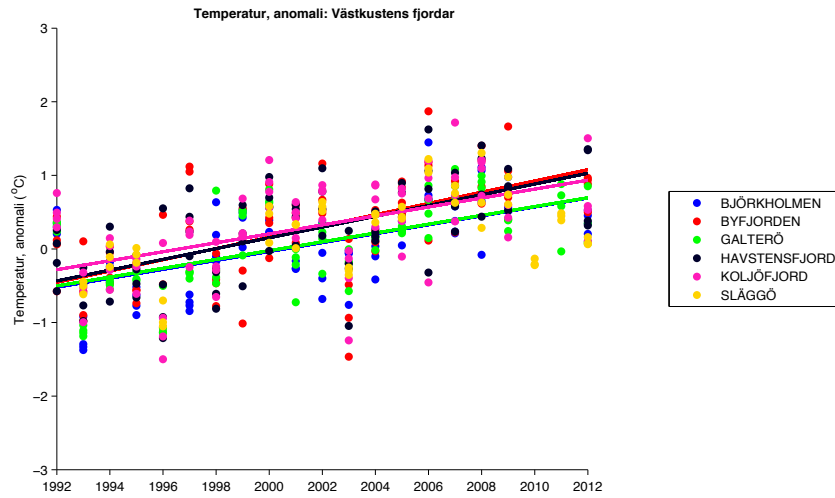
**Tabell 3.2.** Figurnummer per variabel och havsregion för de inkluderade variablerna

Havsregion	Figur serienr.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
	Temp	Sal	DIN	Tot N	DIP	Tot P	Chl-a	Bio	Sikt	Syre	
Skagerrak kust	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1	1-3	1-3	
Kattegat kust	4-8	4-8	4-8	4-8	4-8	4-8	4-8	-	4-8	4-8	
Södra Eg Östersjön kust	9-11	9-11	9-11	9-11	9-11	9-11	9-11	-	9-11	9-11	
Norra Eg Östersjön kust	12-16	12-16	12-16	12-16	12-16	12-16	12-15	2	12-16	-	
Bottenhavet kust	17-19	17-19	17-20	17-20	17-20	17-20	16-18	3	17-20	-	
Bottenvikens kust	20	20	21	21	21	21	19	-	21	-	
Skagerrak utsjö	21	21	22	22	22	22	20	4	22	-	
Kattegat utsjö	22	22	23	23	23	23	21	5	23	12	
Södra Eg Östersjön utsjö	23-24	23-24	24-25	24-25	24-25	24-25	22-23	6-7	24-25	13-14	
Norra Eg Östersjön utsjö	25-27	25-27	26-29	26-29	26-29	26-29	24-26	8-9	26-28	15-16	
Bottenhavet utsjö	28	28	30-31	30-31	30-31	30-31	27	10	29	-	
Bottenvikens utsjö	29	29	32	32	32	32	28	11	-	-	

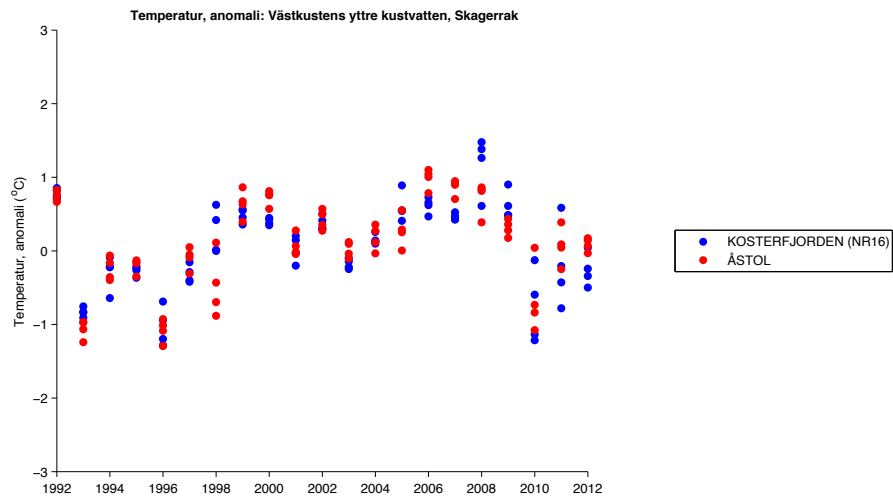
Figur 1.1



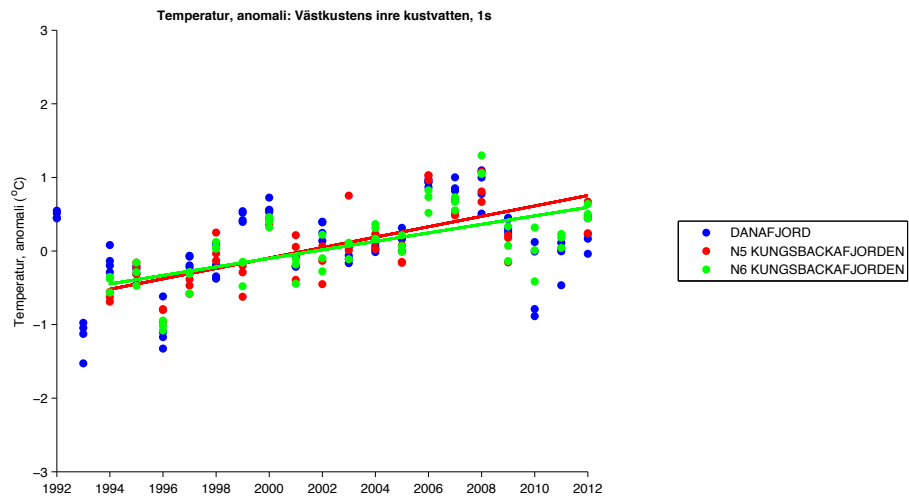
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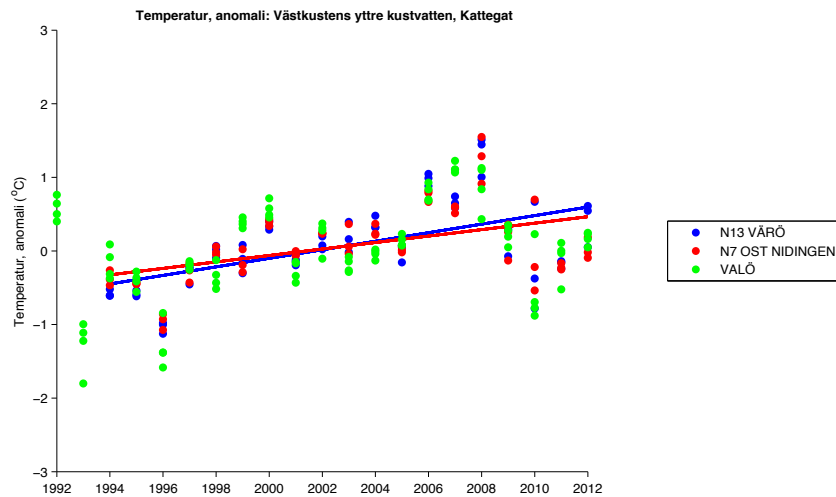
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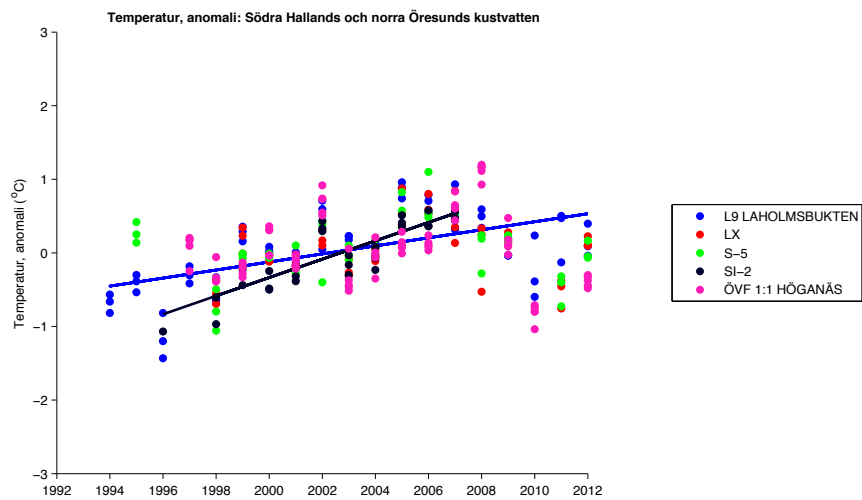
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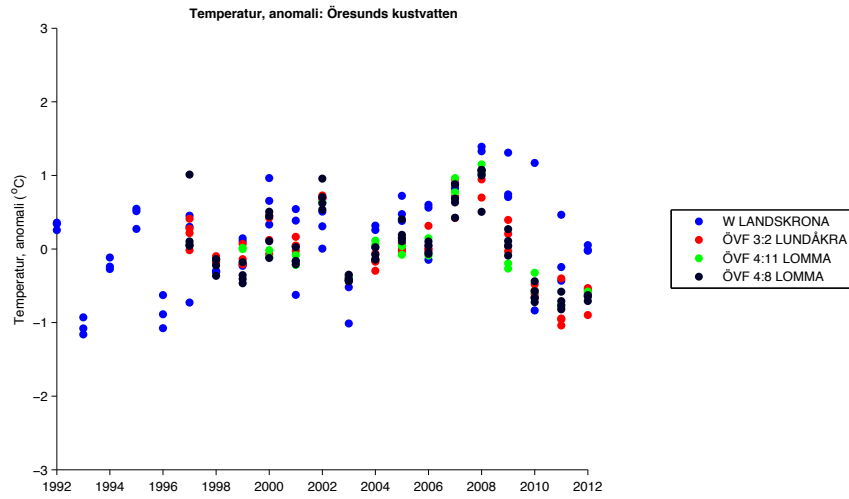
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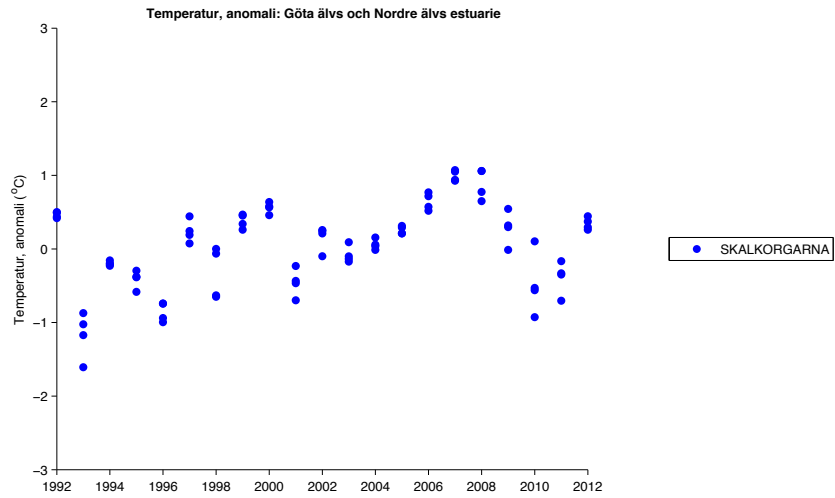
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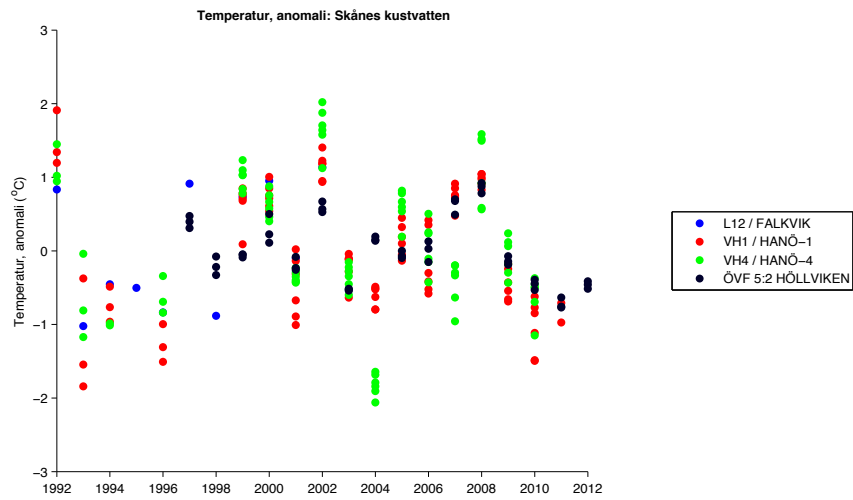
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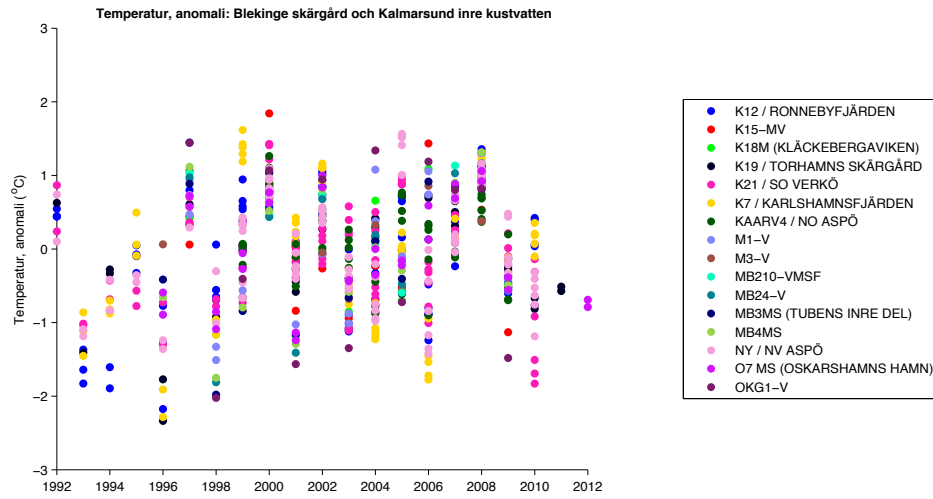
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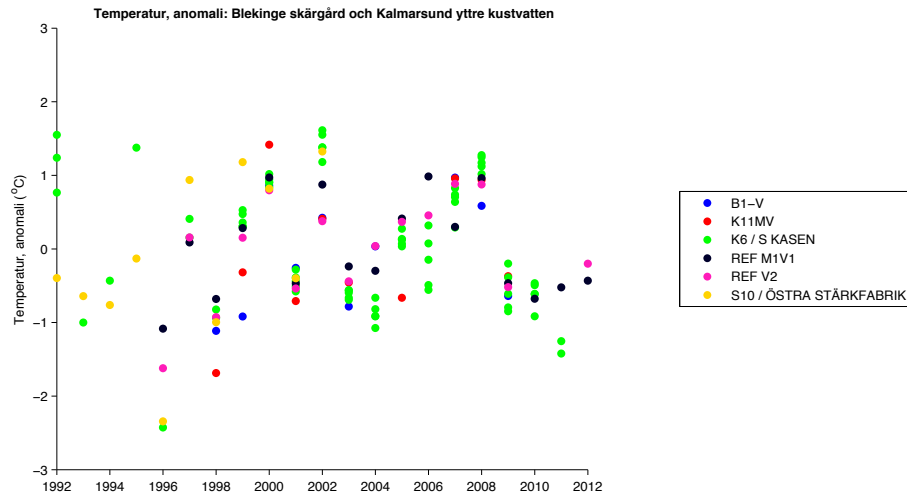
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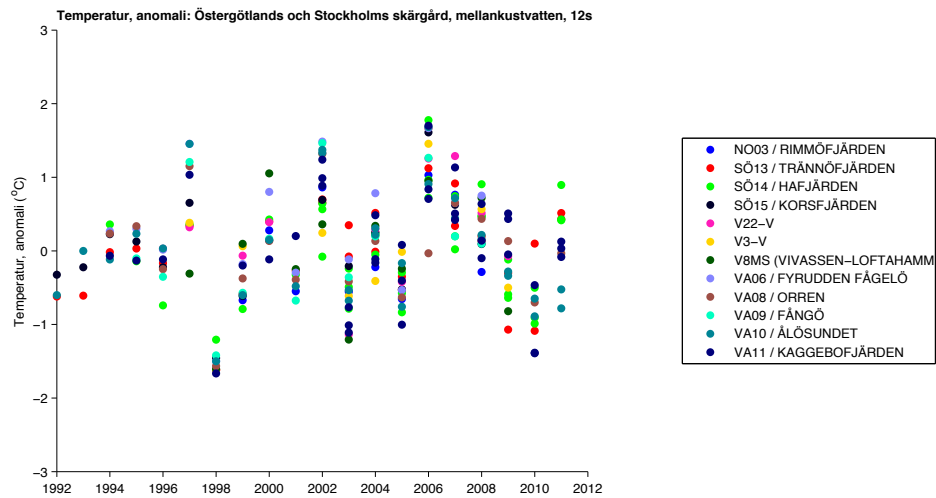
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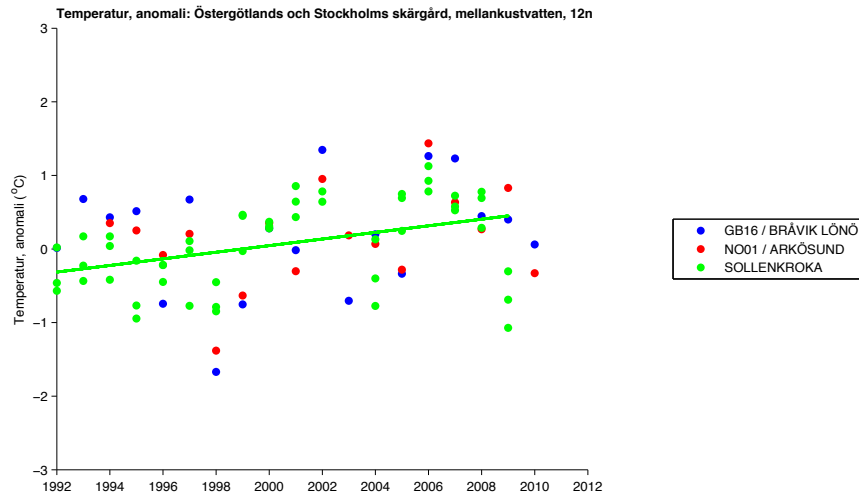
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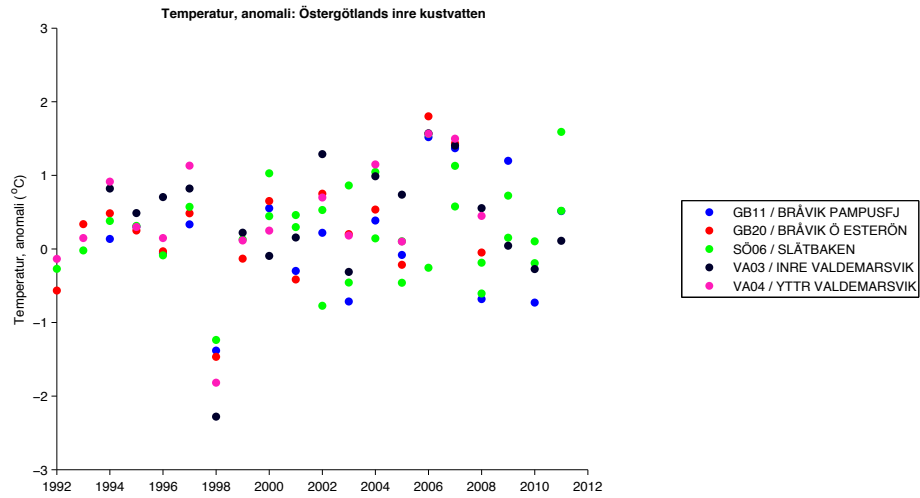
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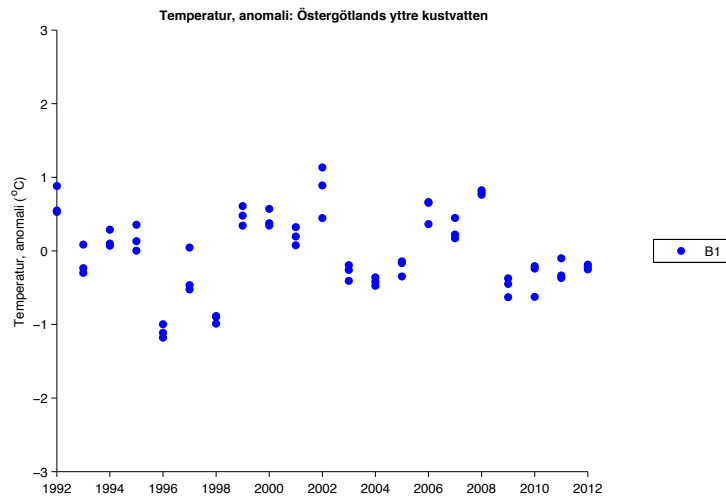
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Figur 1.14

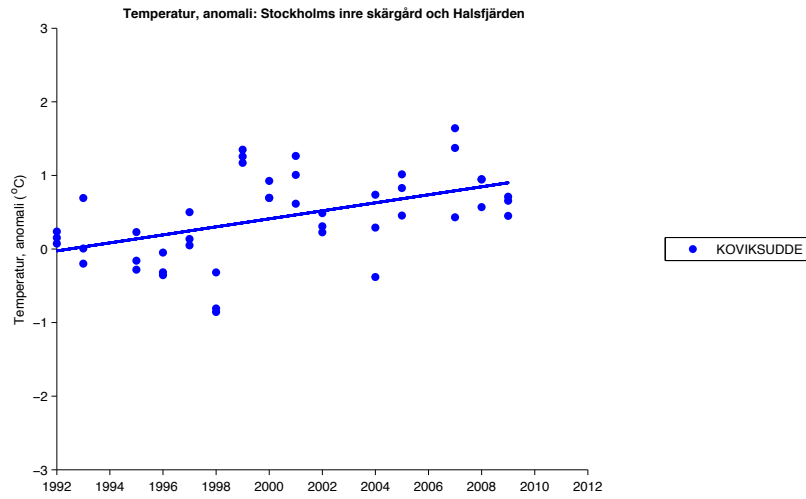


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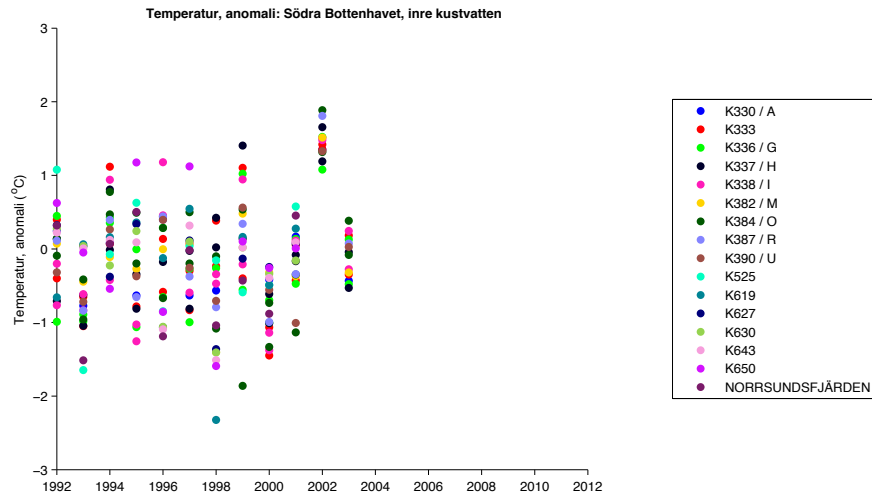




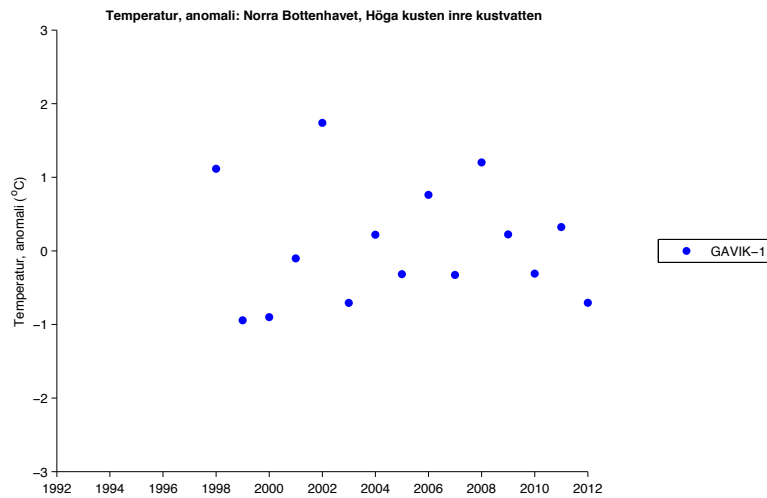
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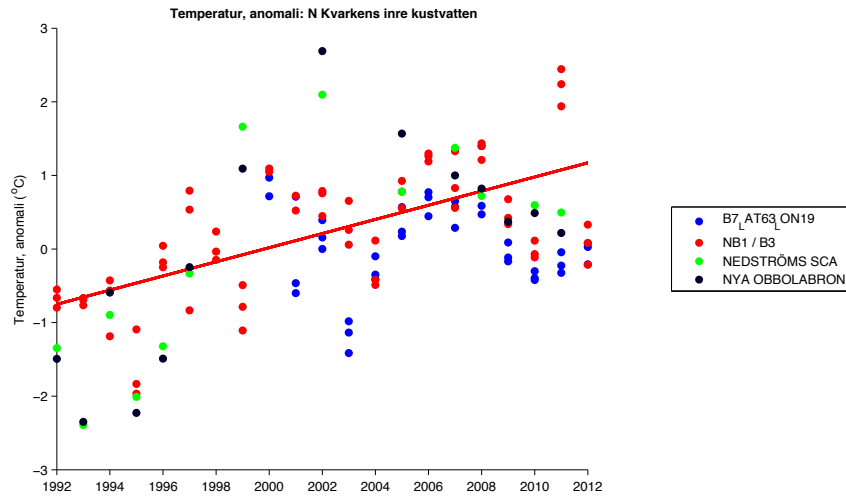
Figur 17



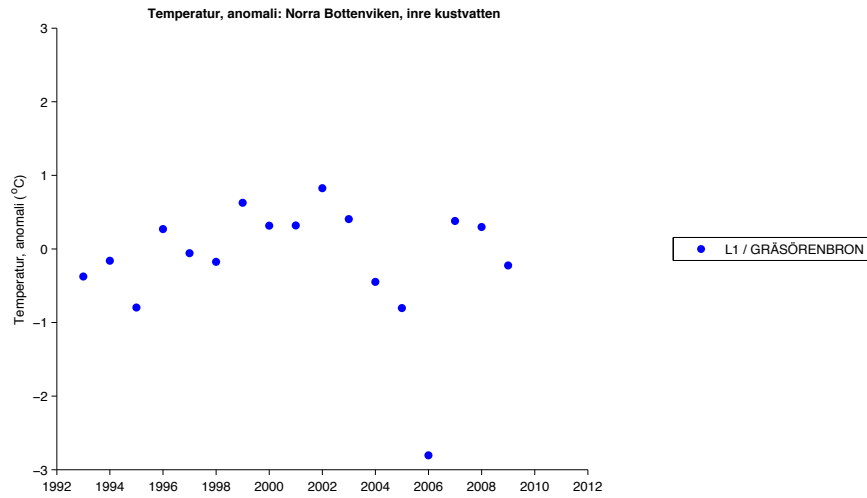
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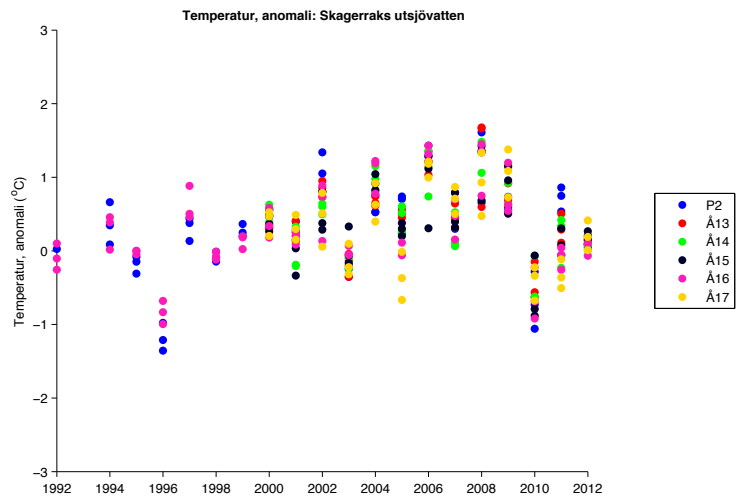
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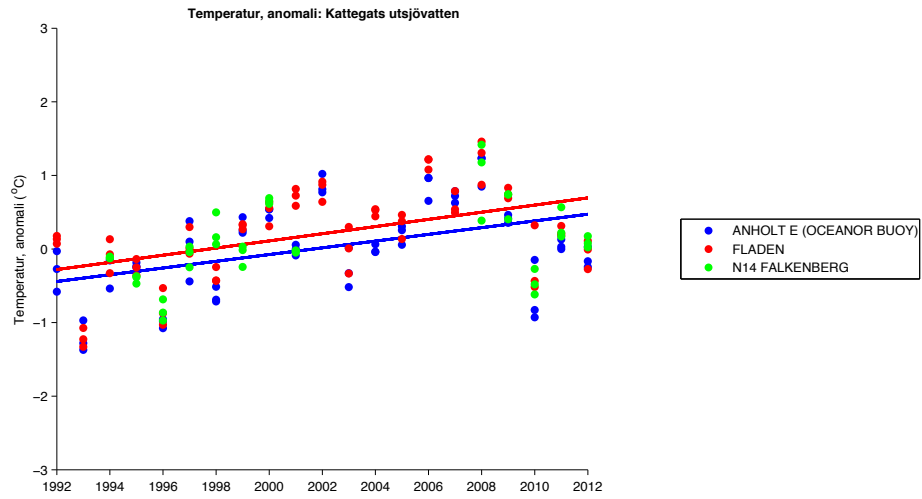
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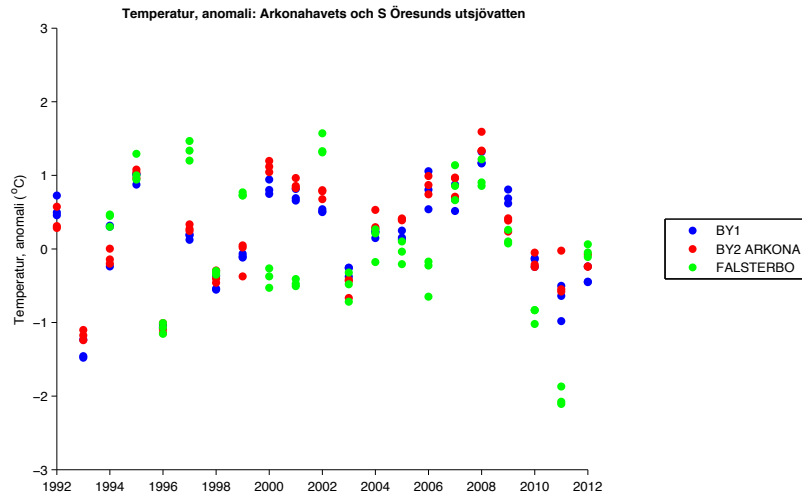
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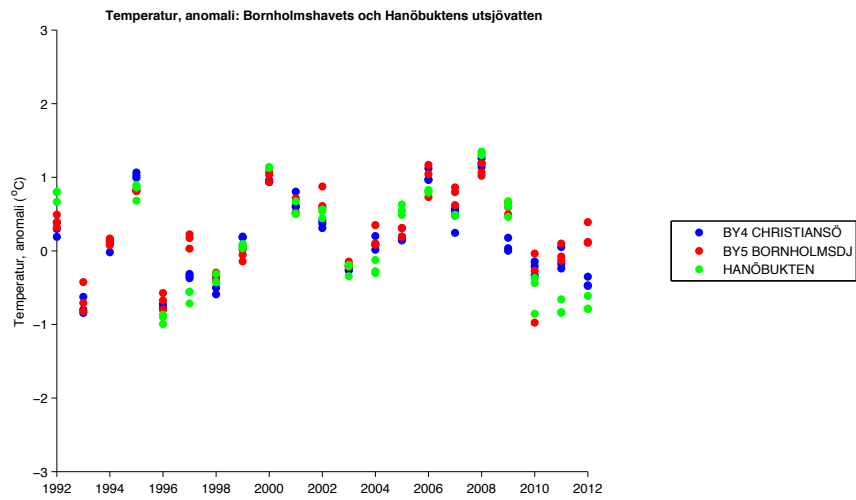
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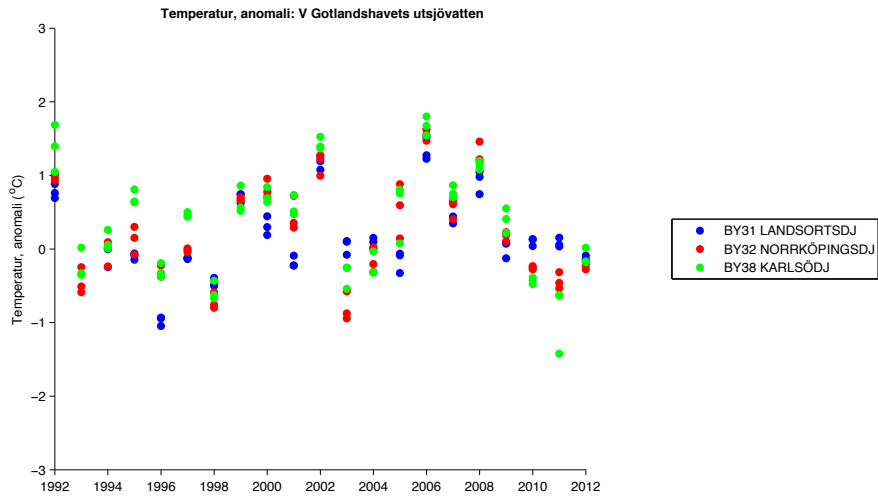
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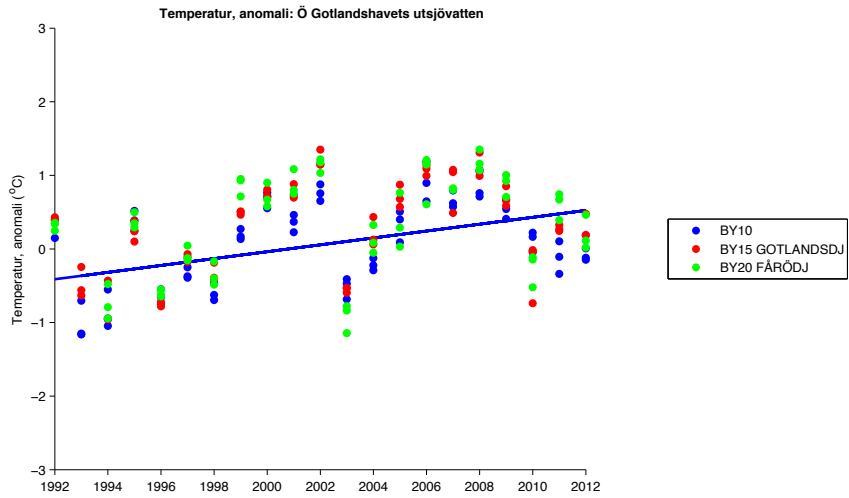
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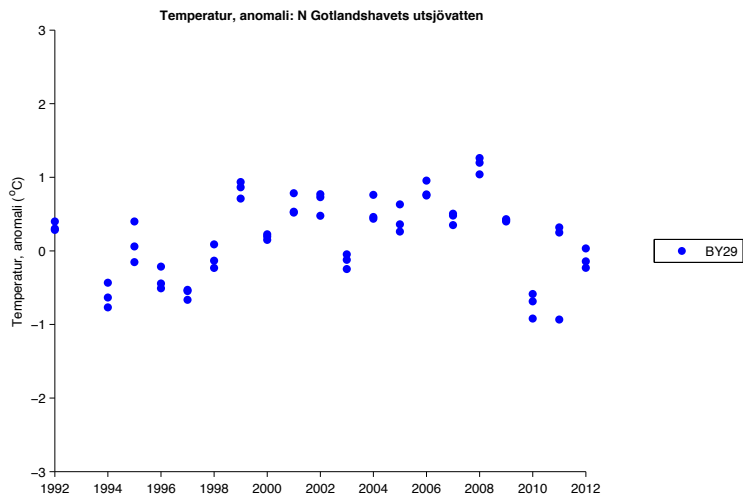
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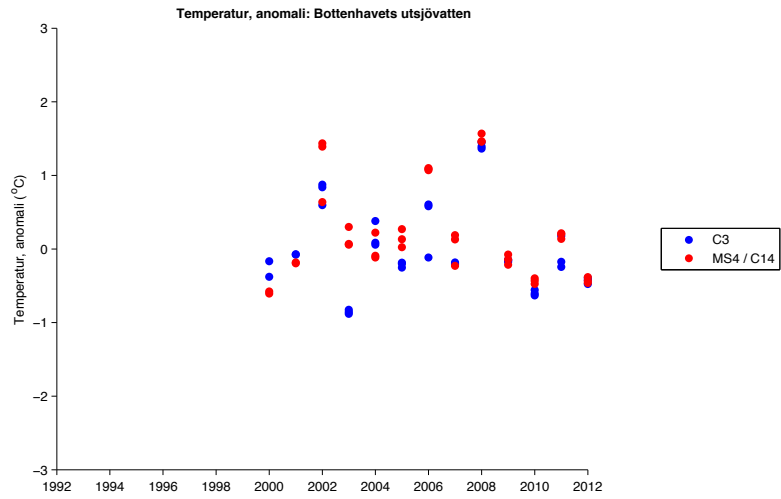
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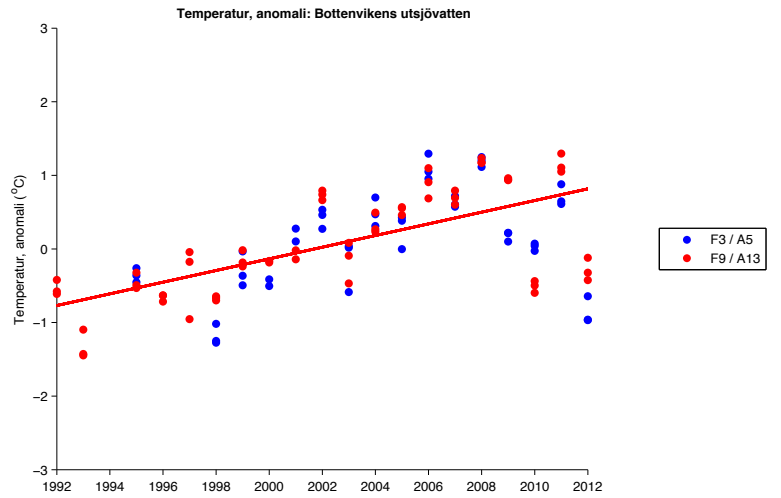
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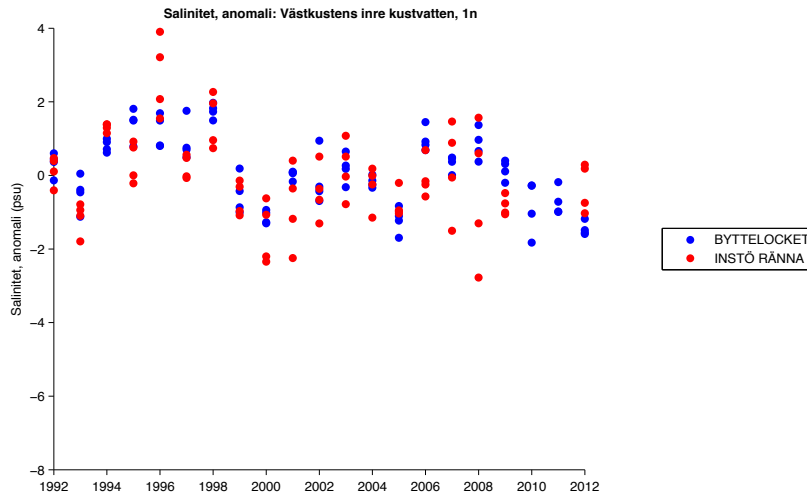
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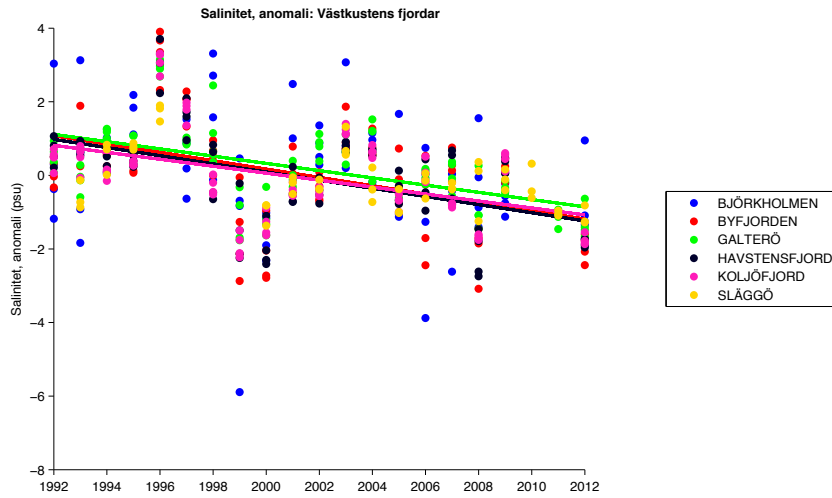
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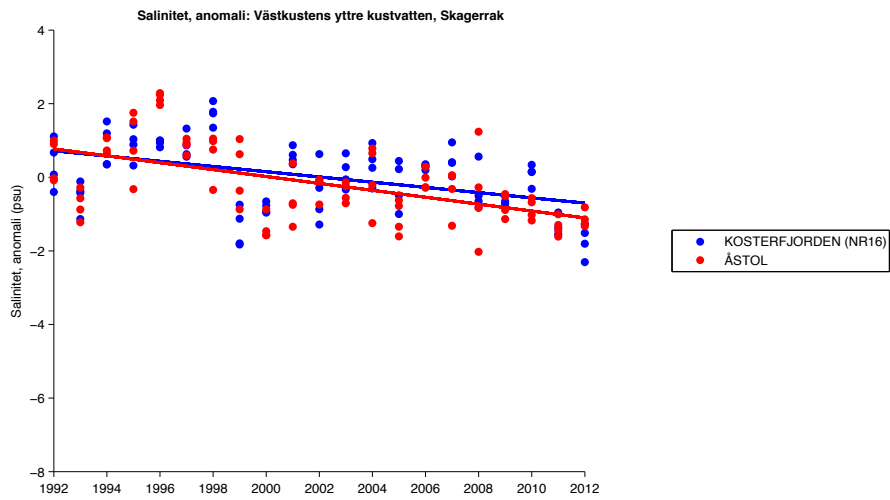
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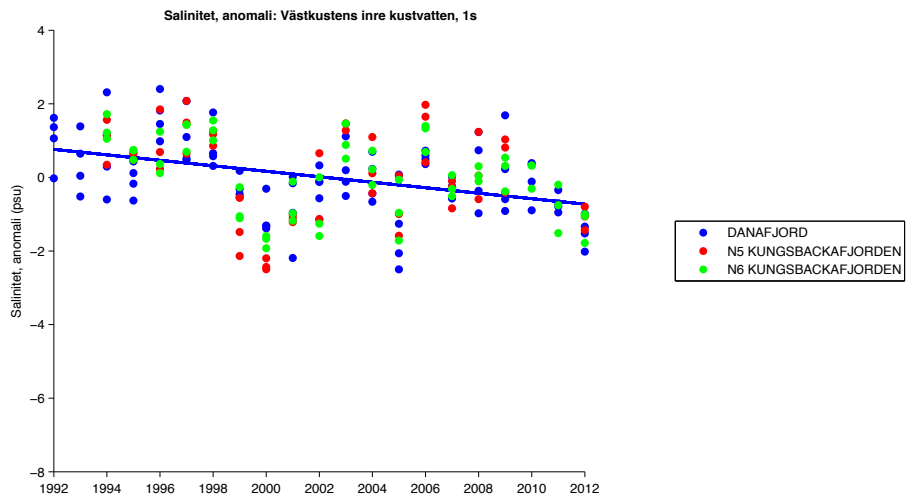
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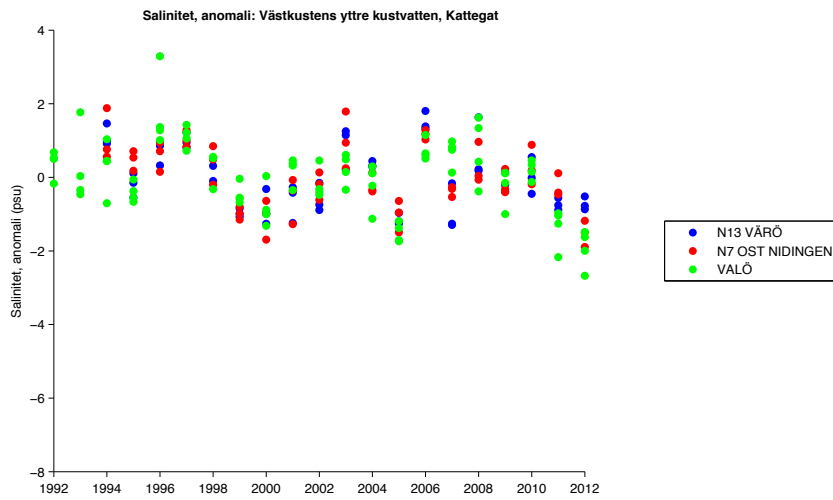
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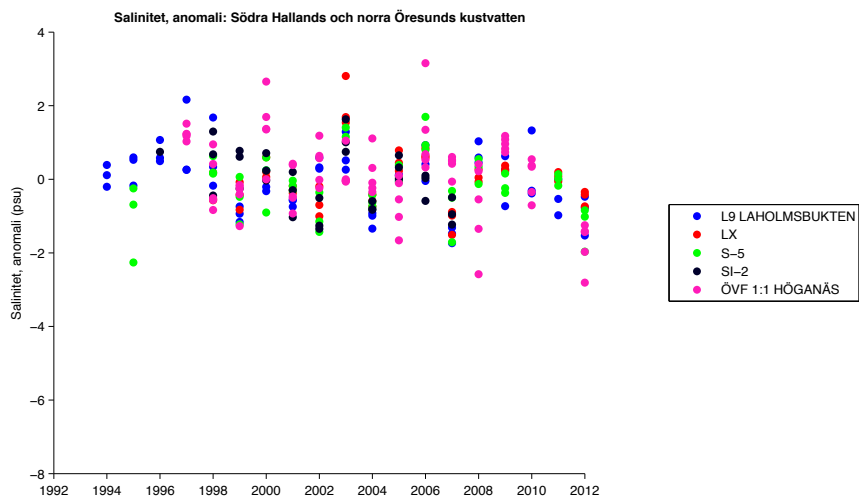
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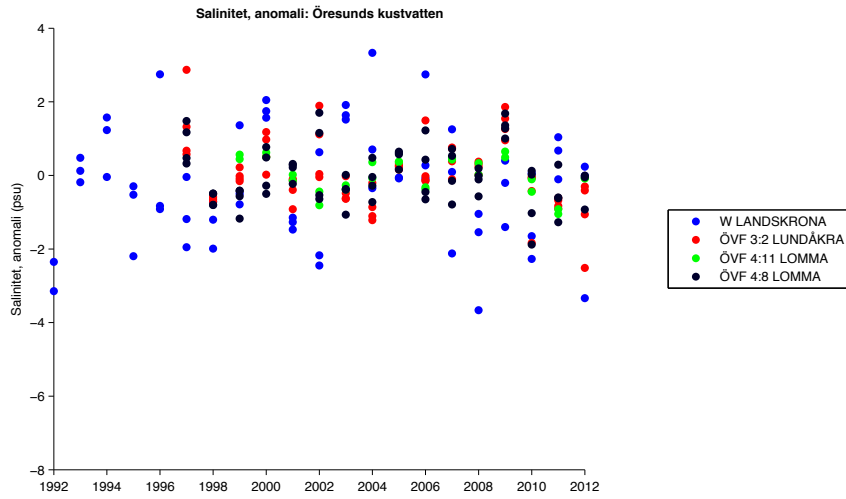
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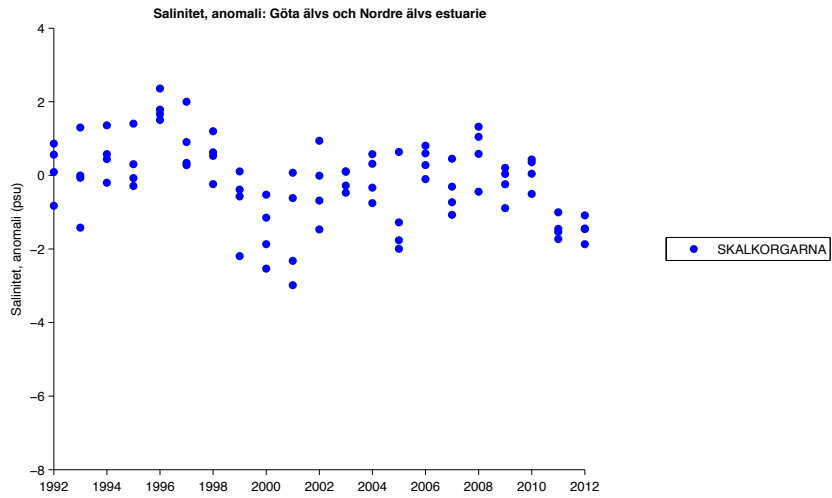
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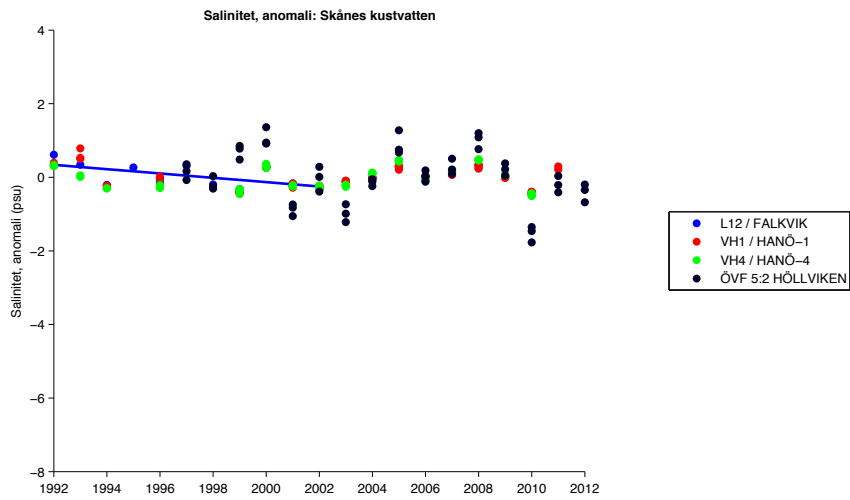
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Figur 2.8

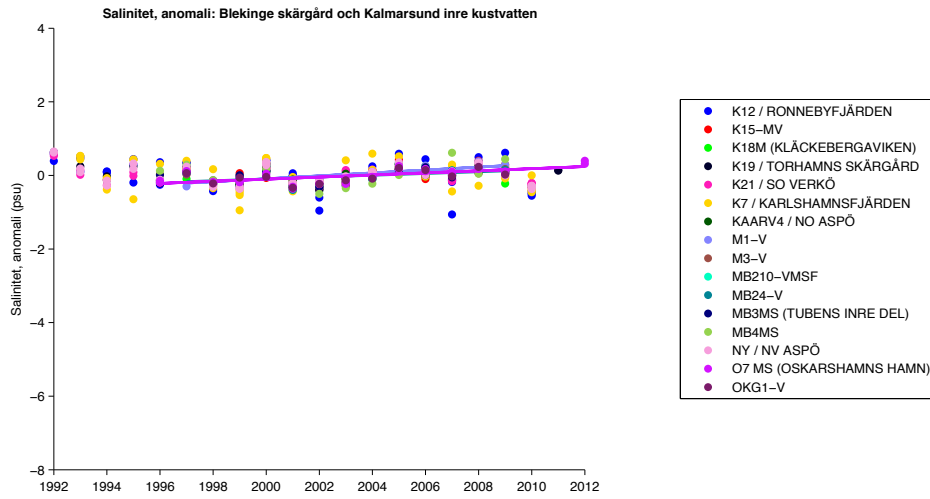


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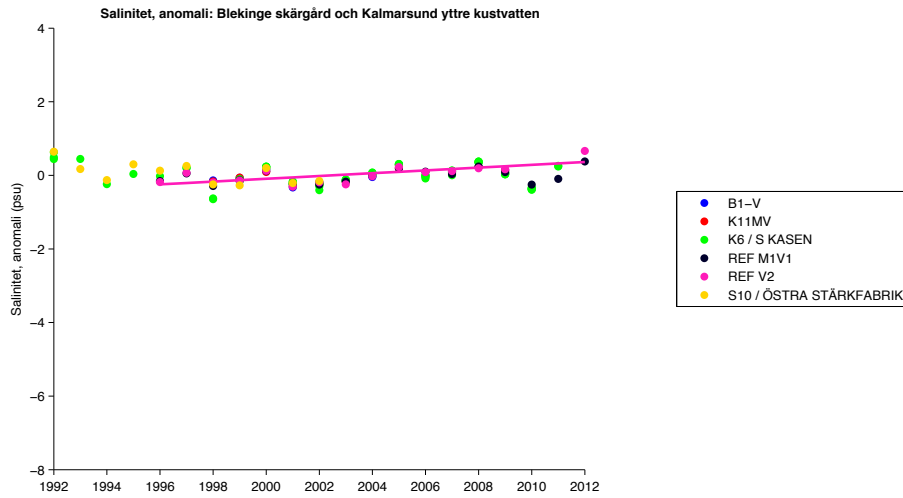




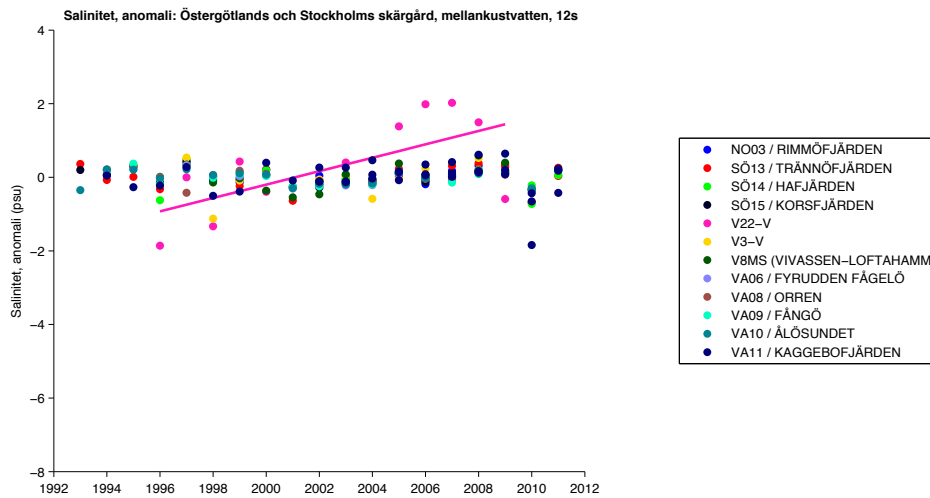
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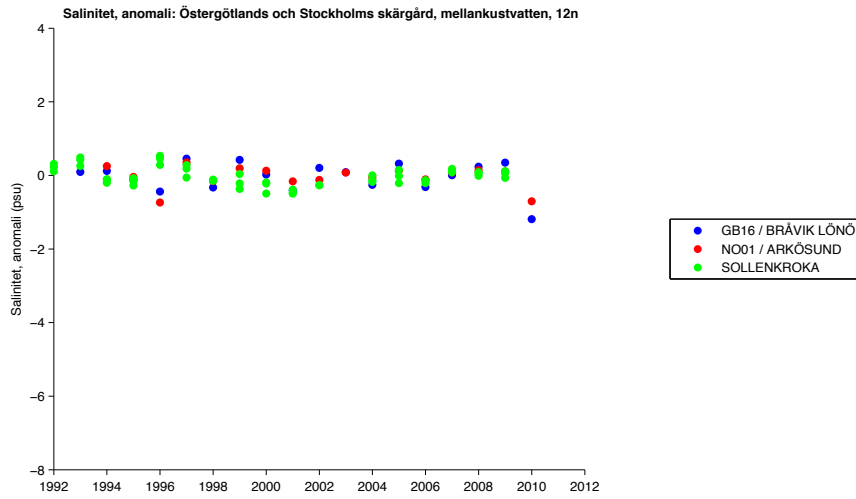
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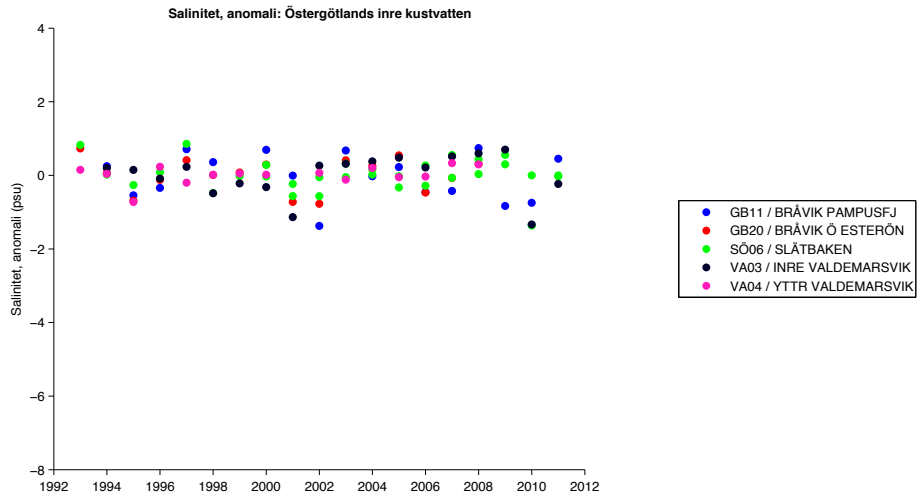
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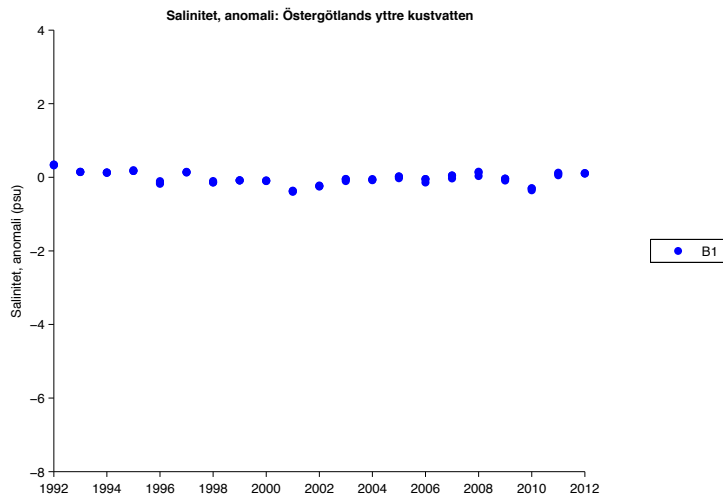
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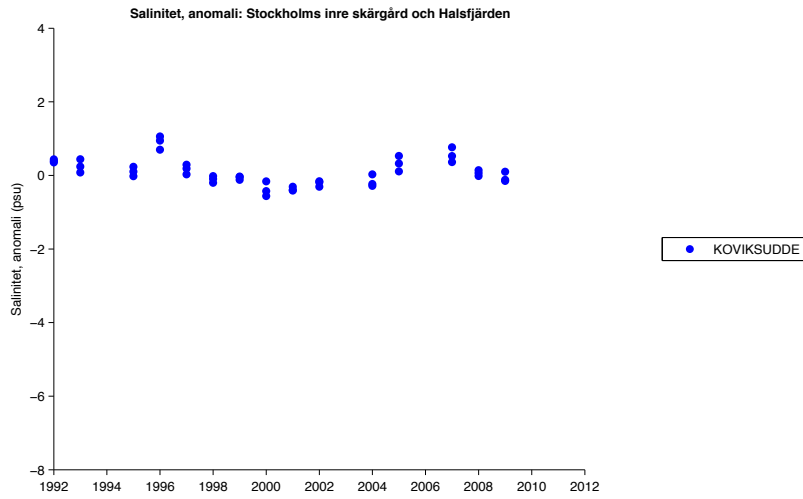
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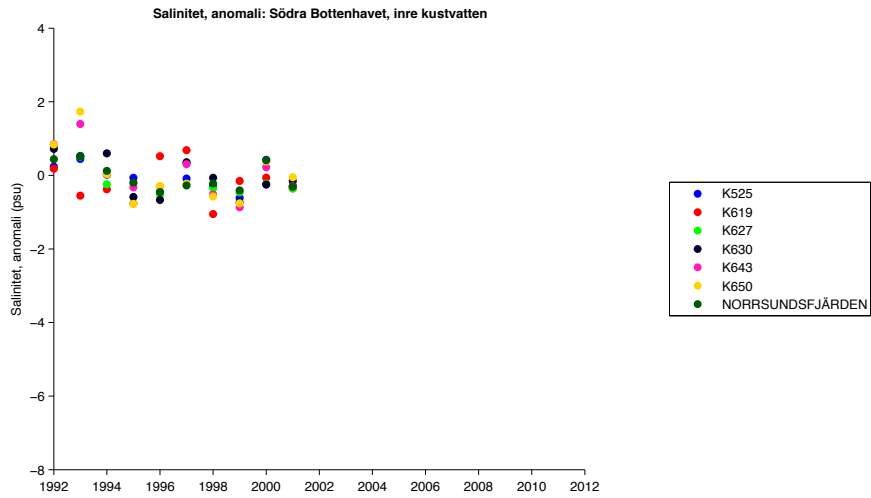
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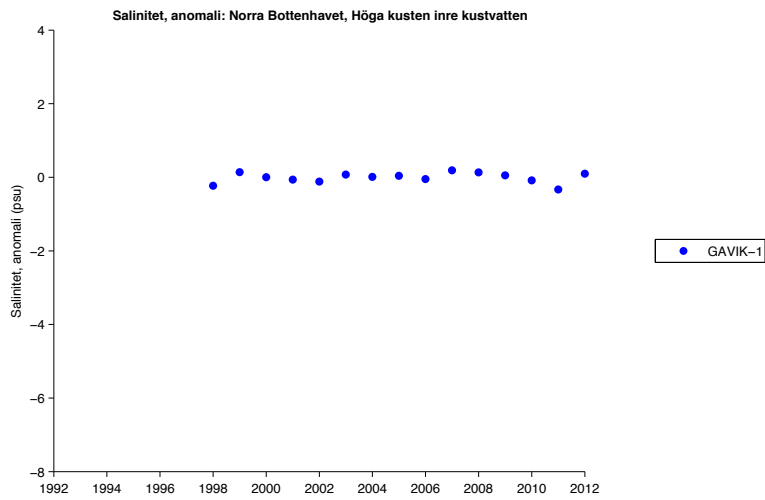
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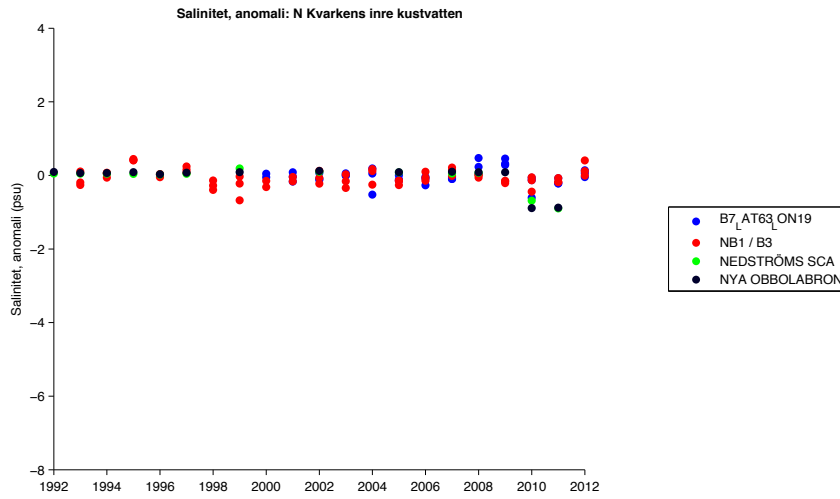
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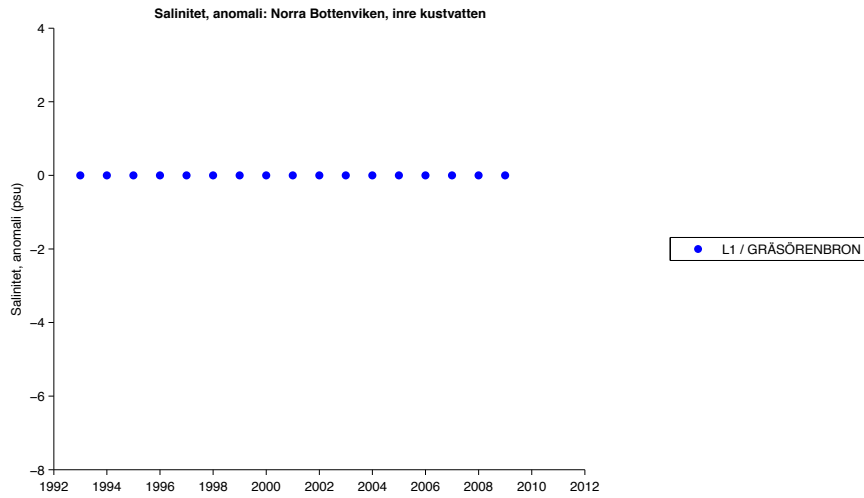
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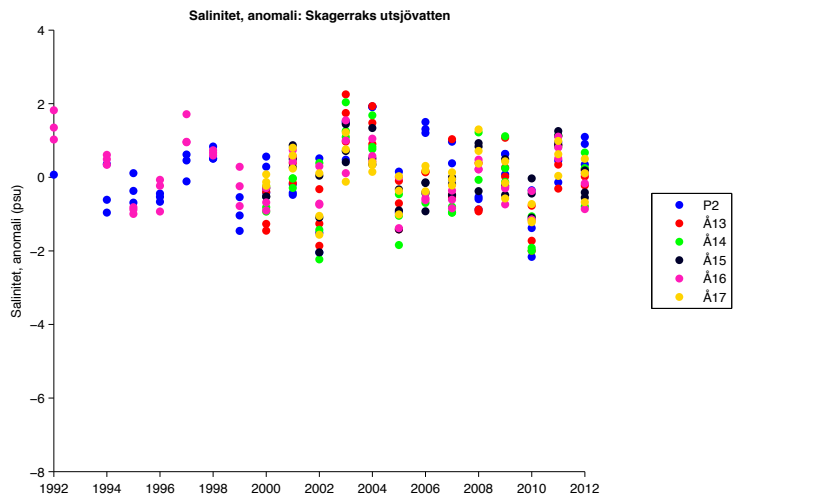
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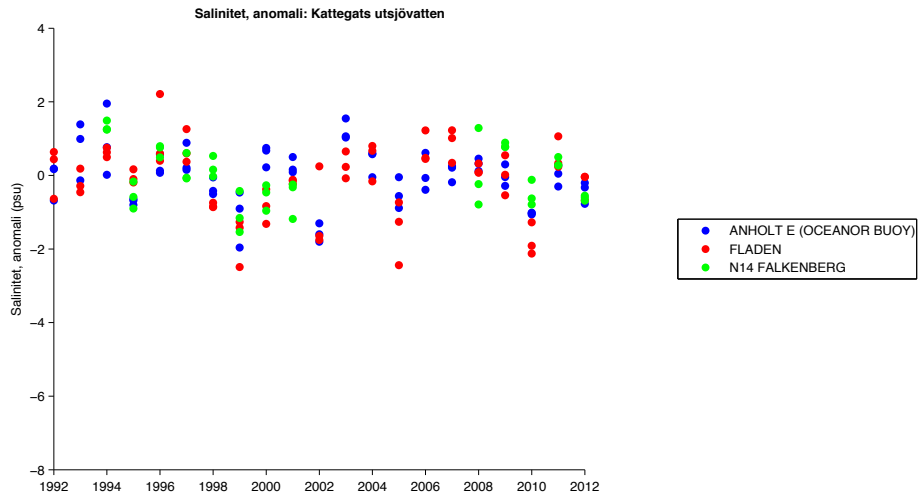
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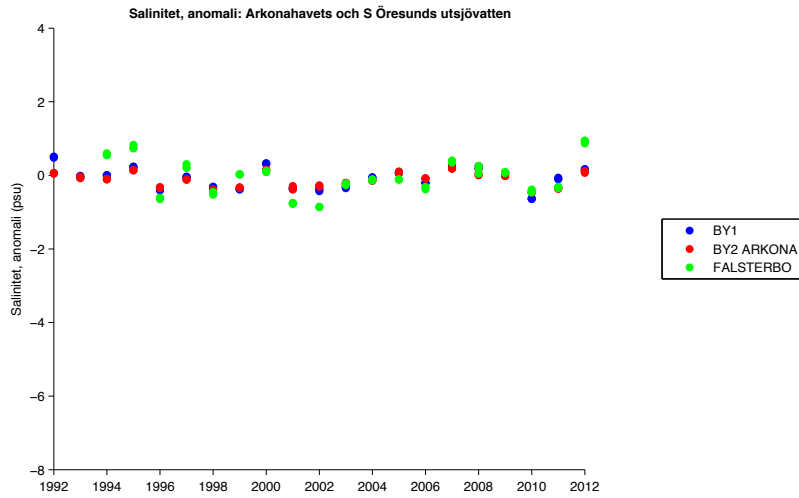
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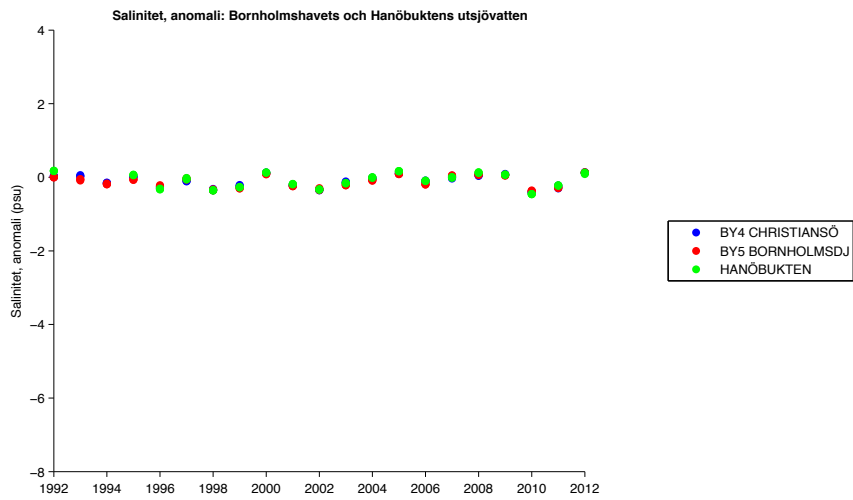
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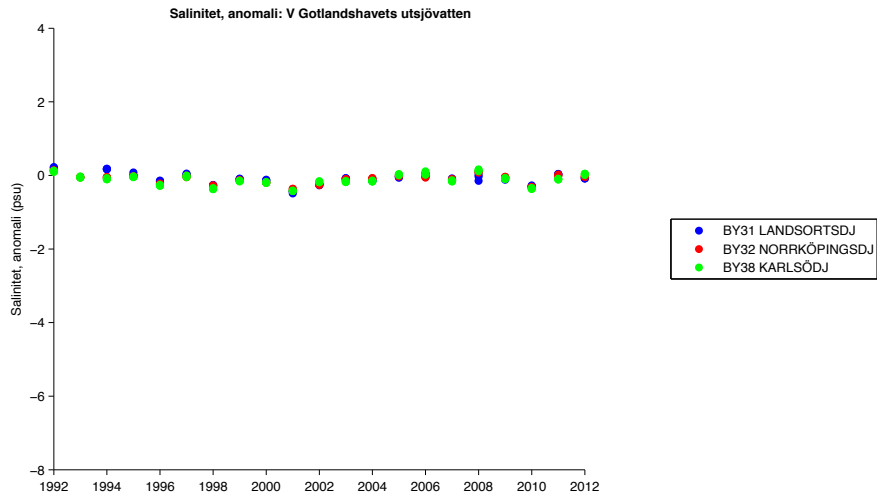
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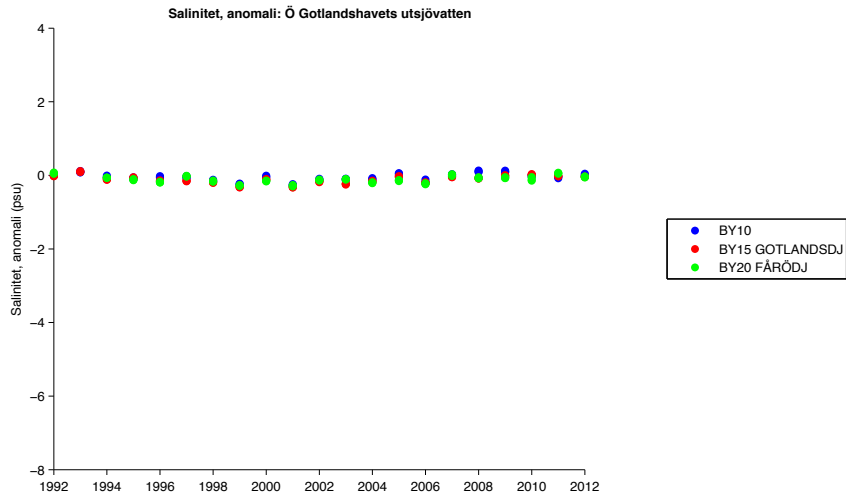
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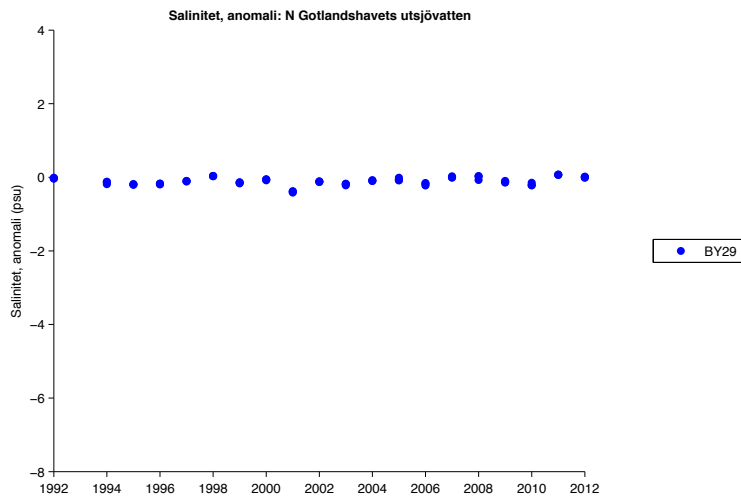
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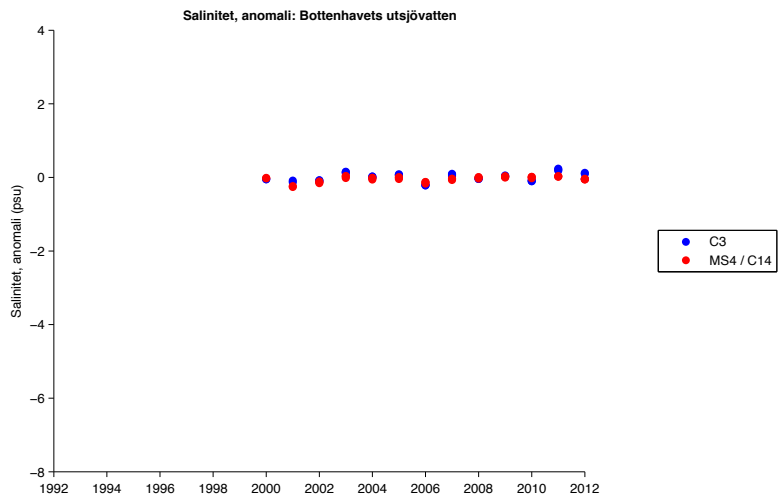
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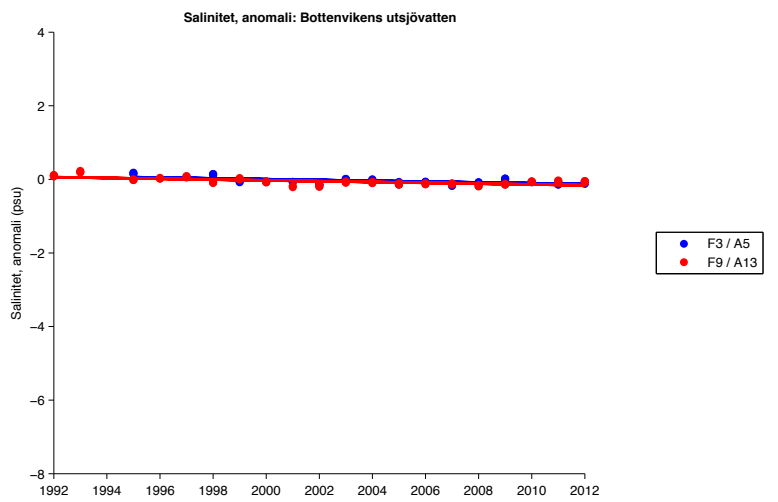
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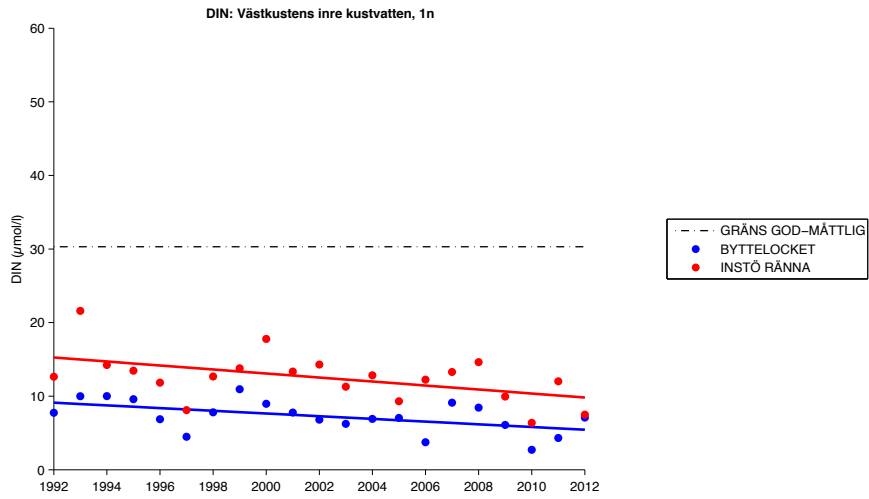
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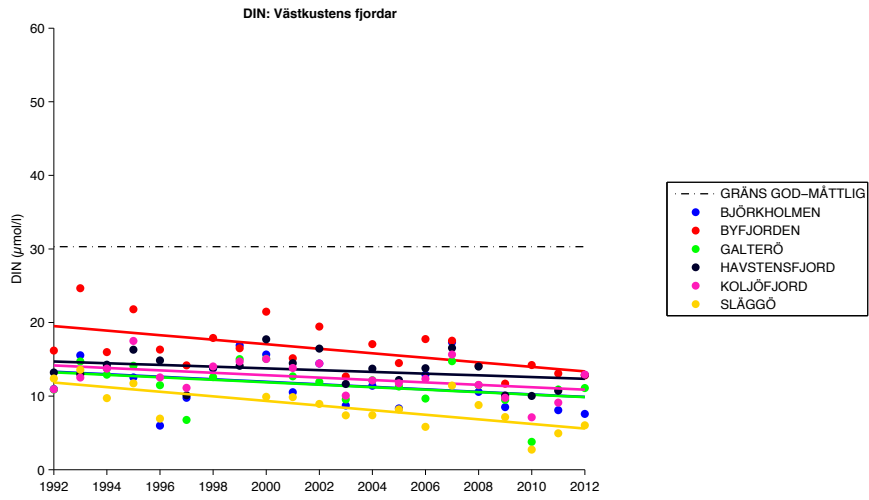
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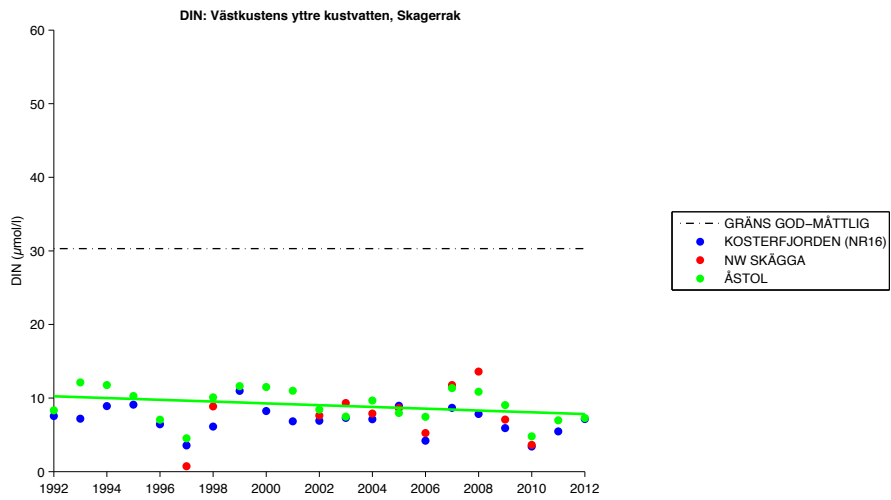
Figur 3.1



Figur 3.2

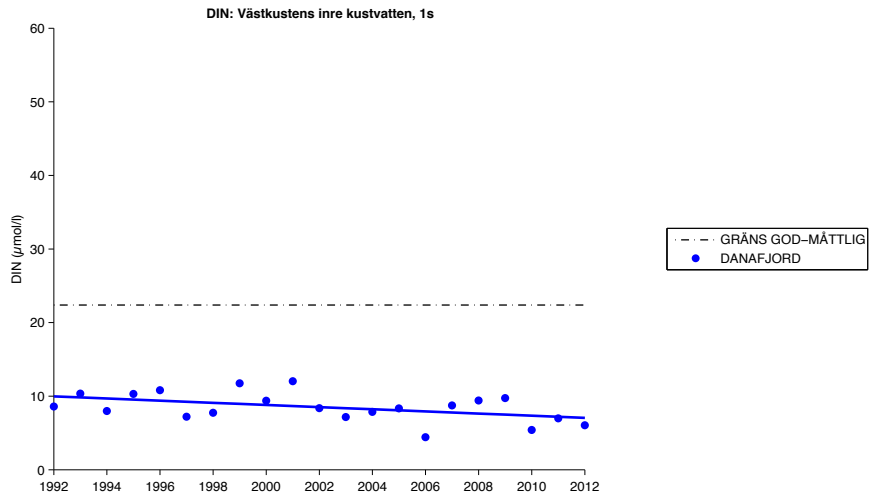


Figur 3.3

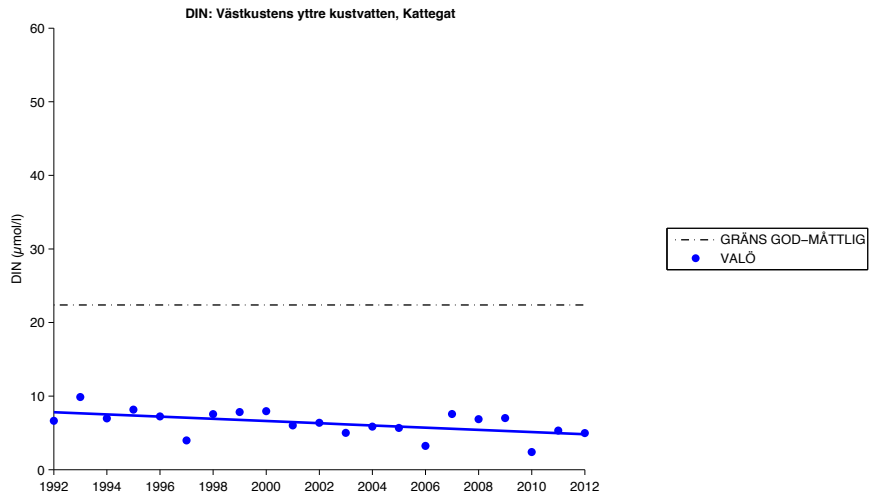




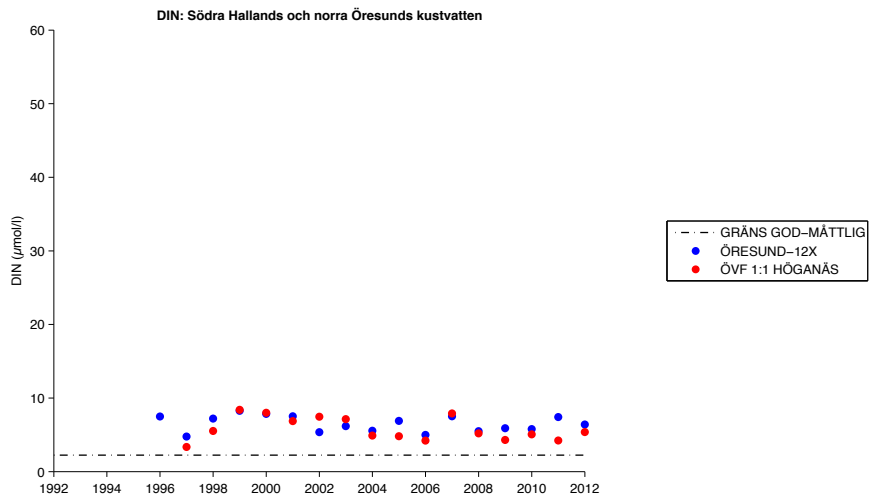
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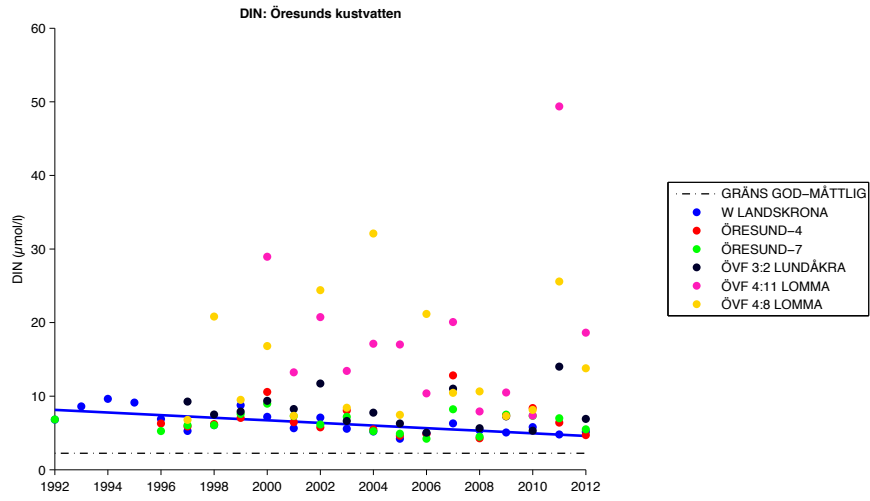
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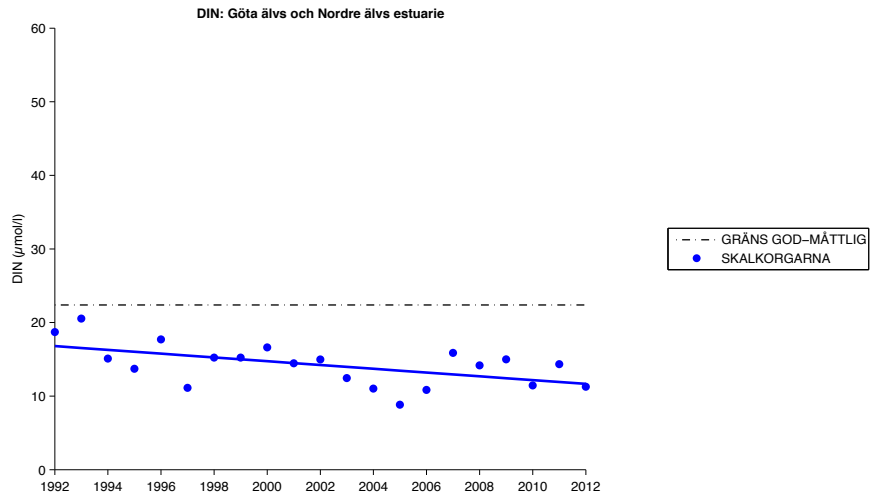
Figur 3.6



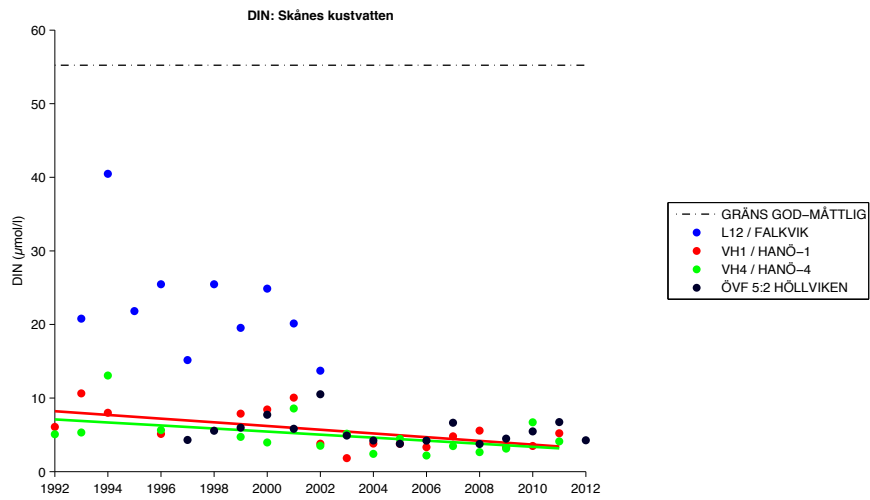
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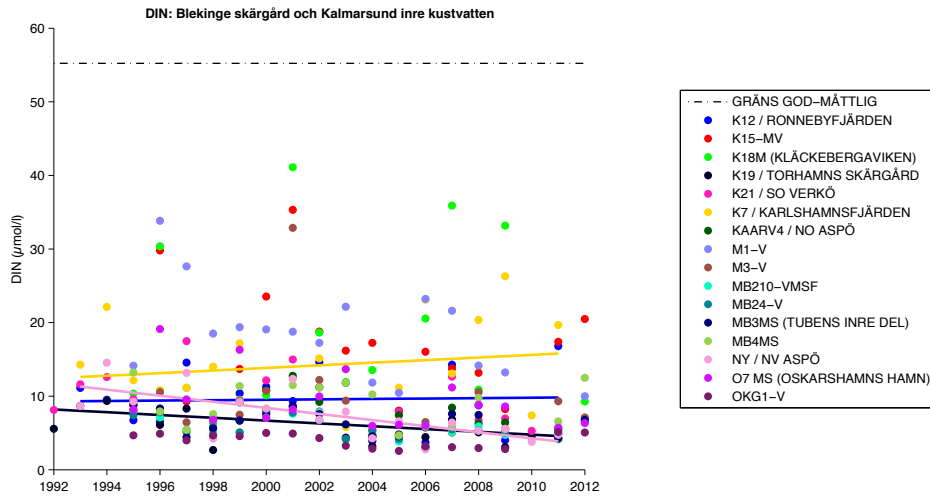
Figur 3.8



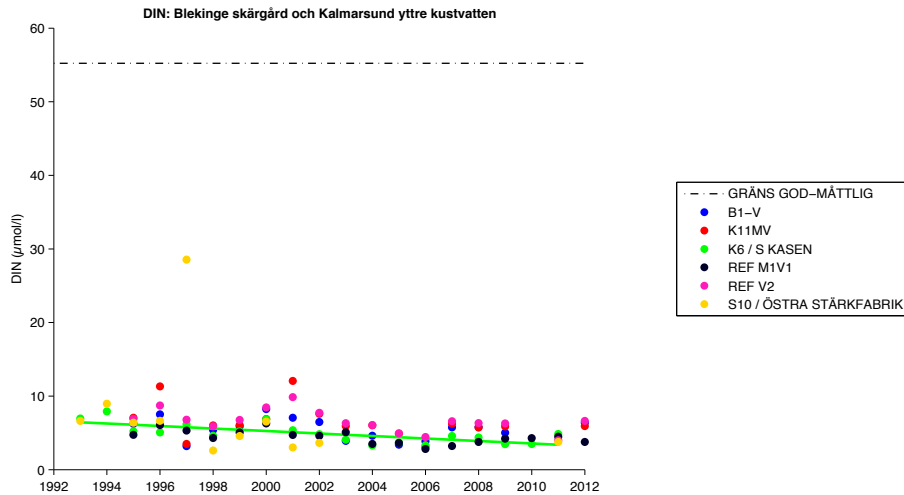
Figur 3.9



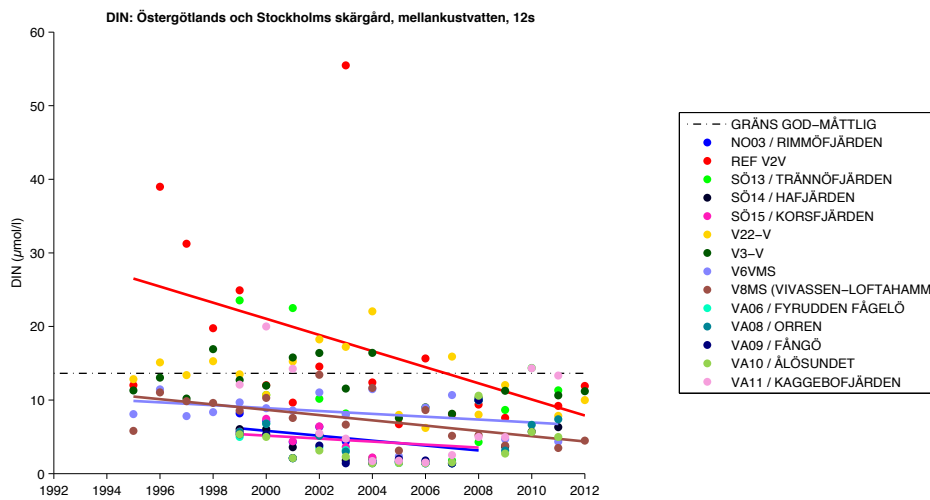
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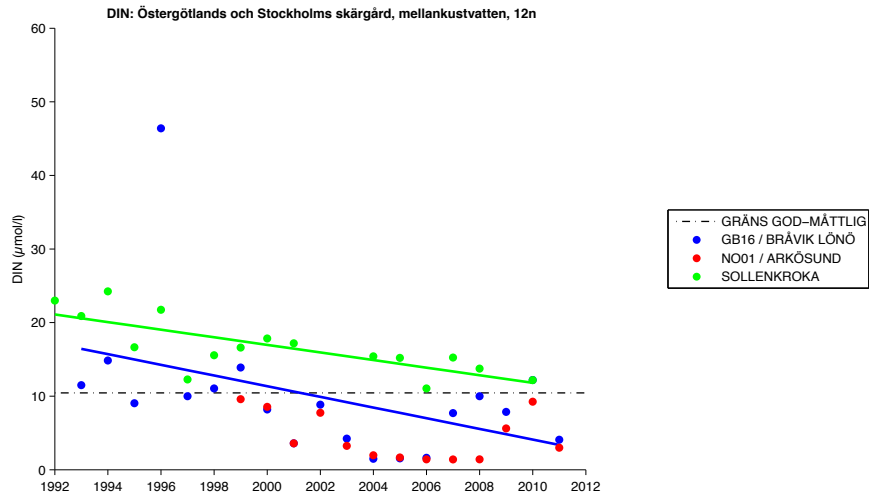
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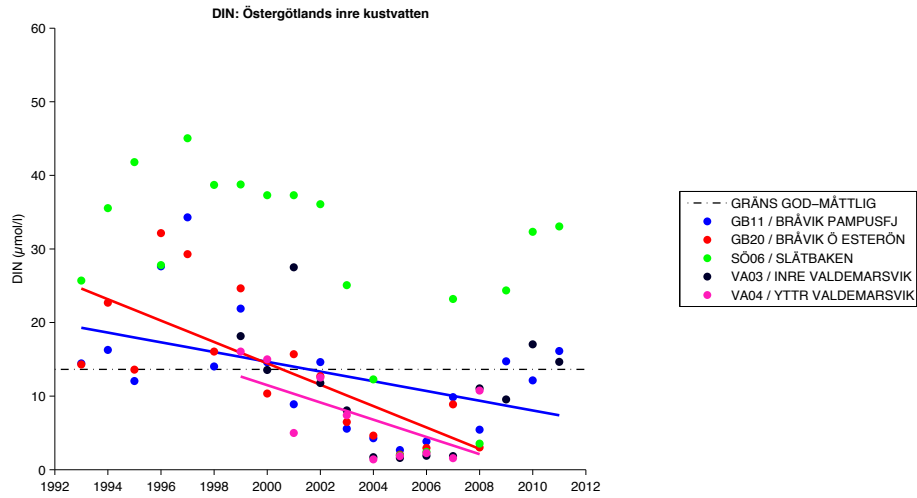
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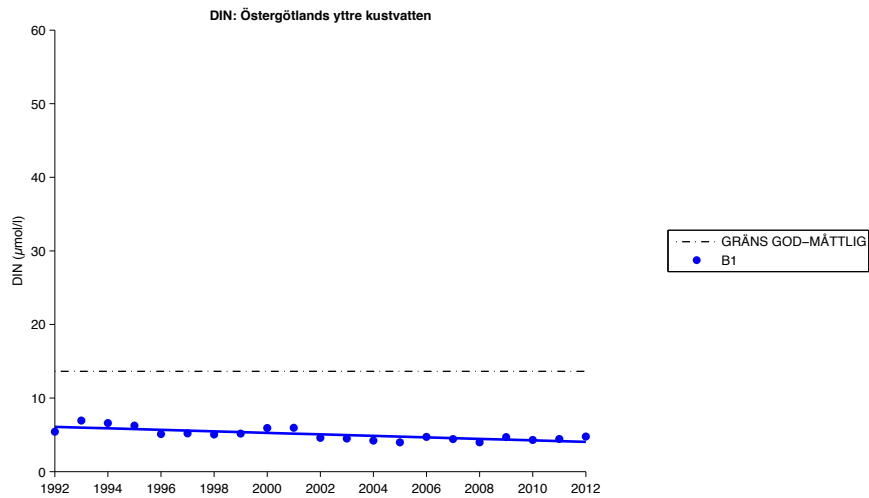
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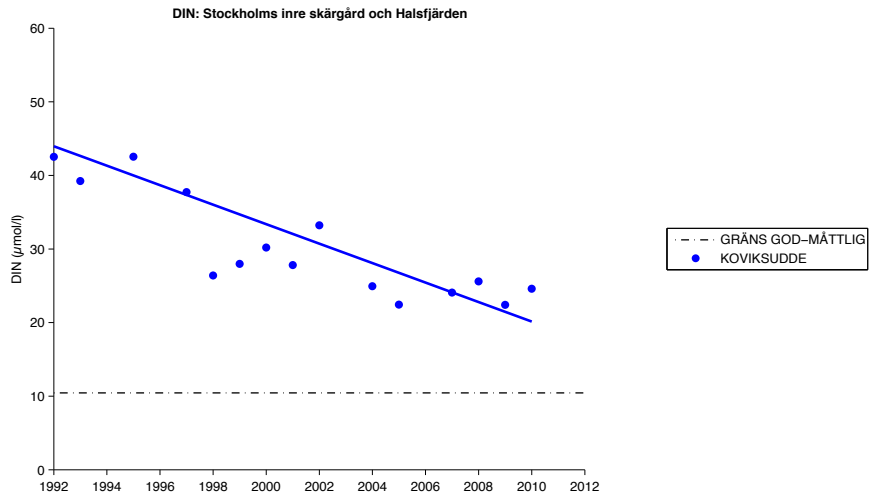
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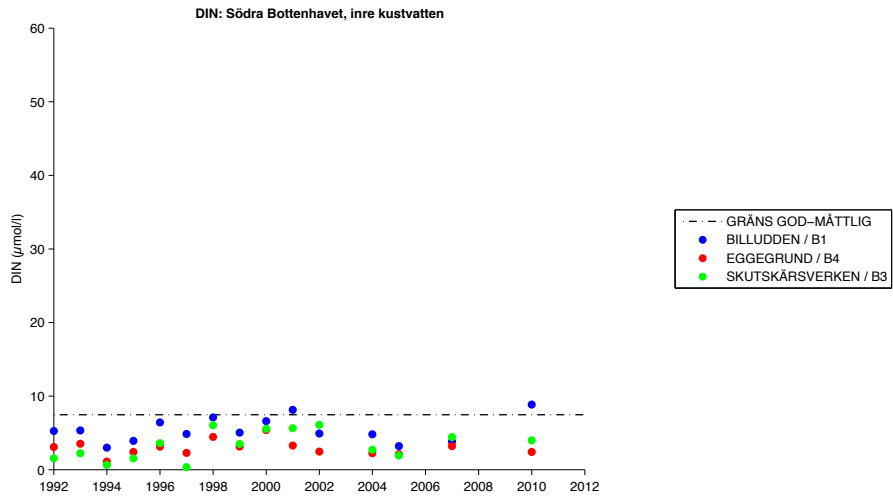
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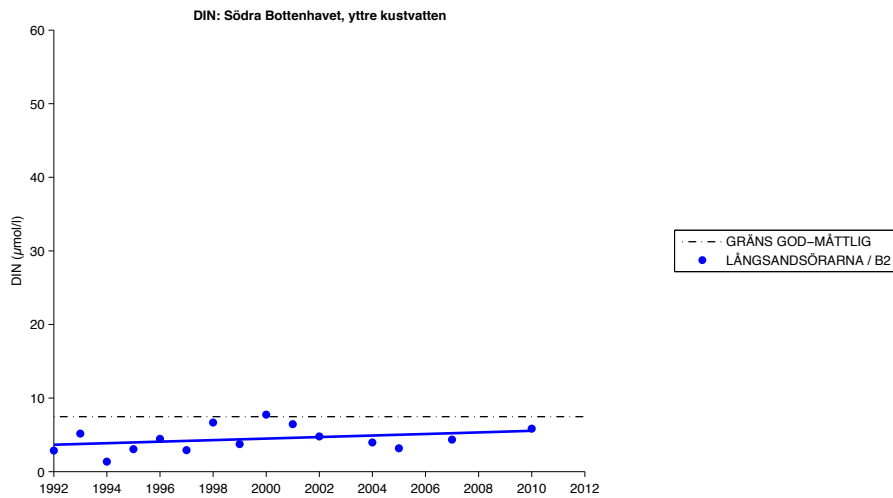
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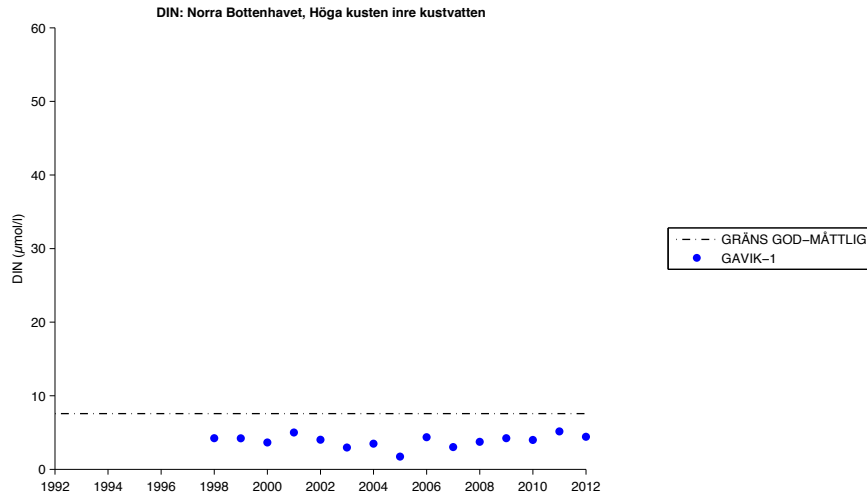
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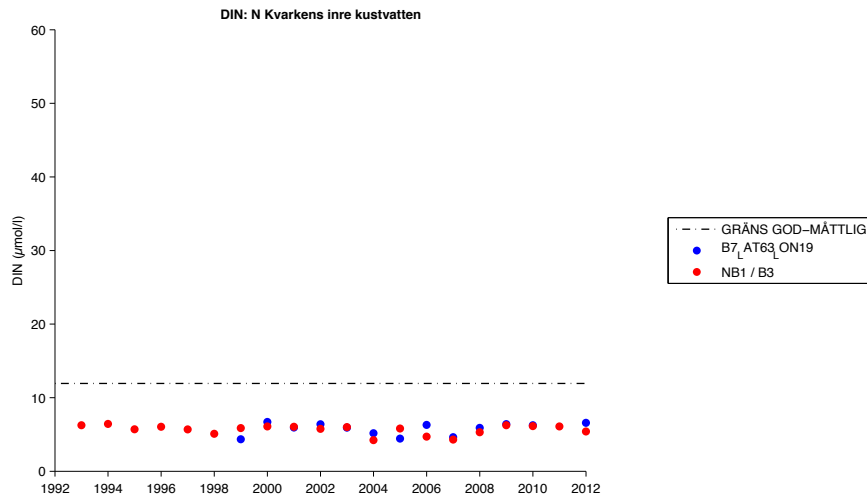
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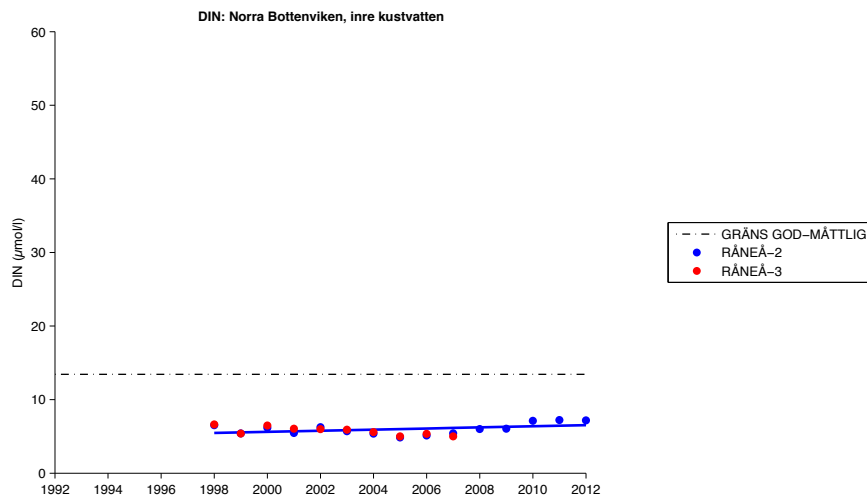
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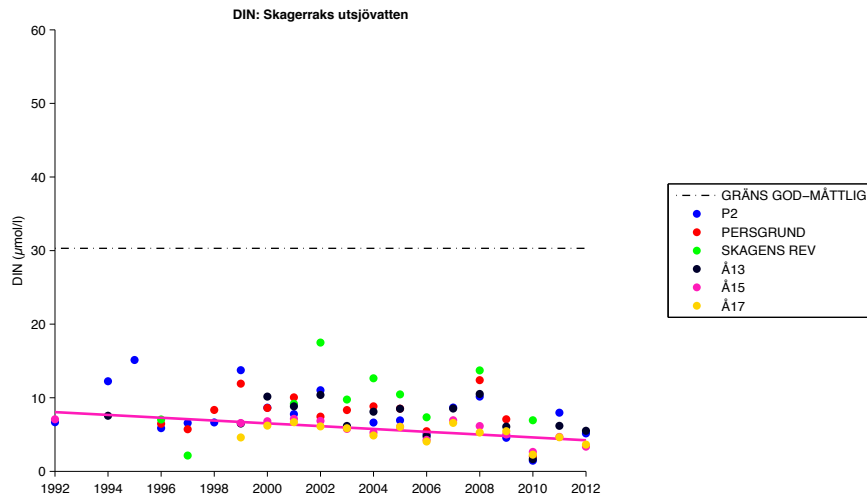
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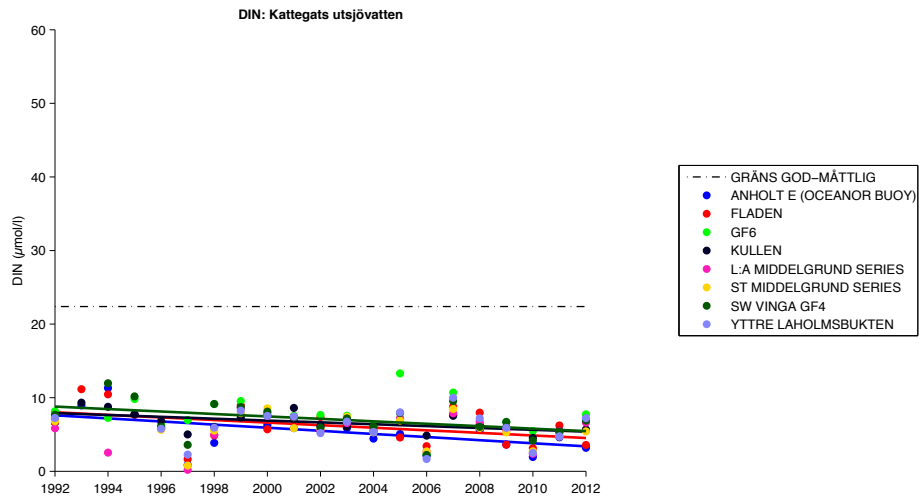
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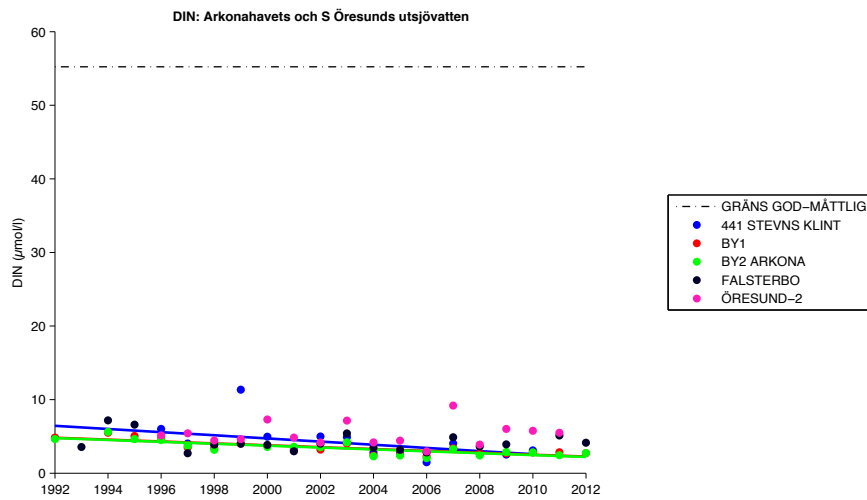
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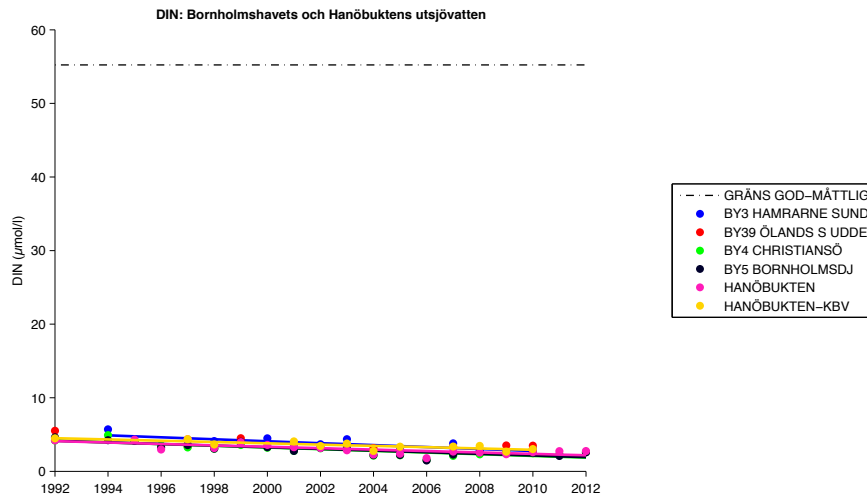
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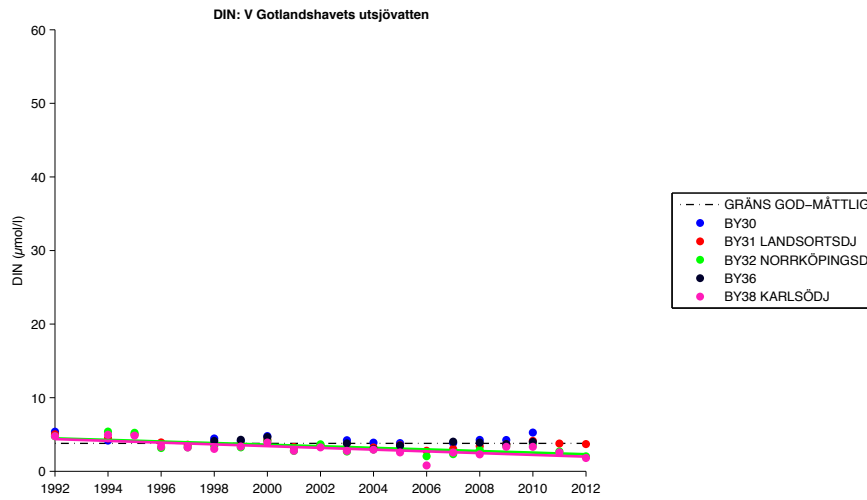
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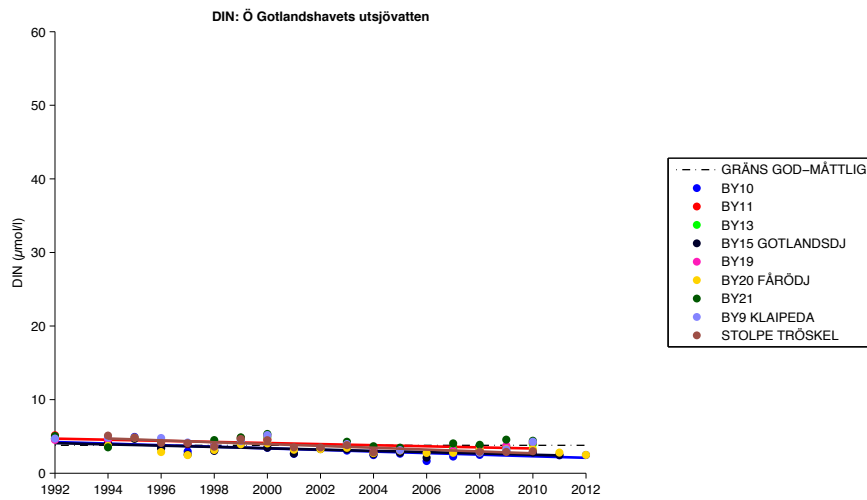
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Figur 3.26

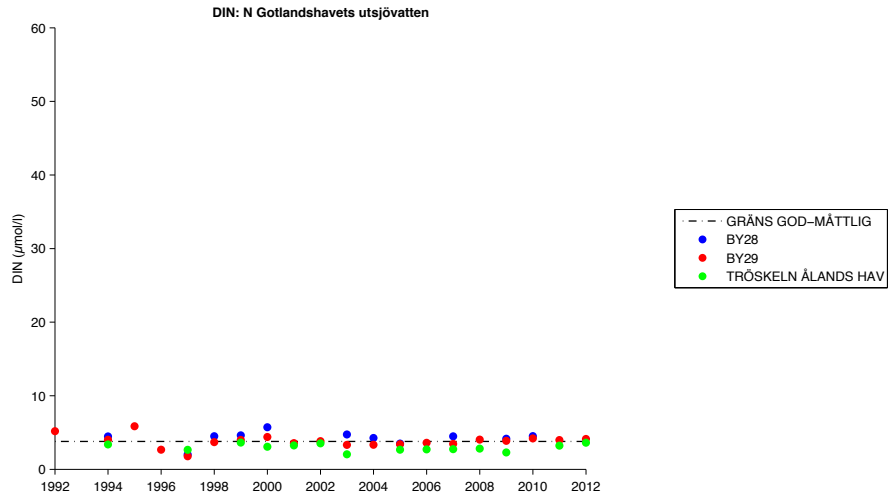


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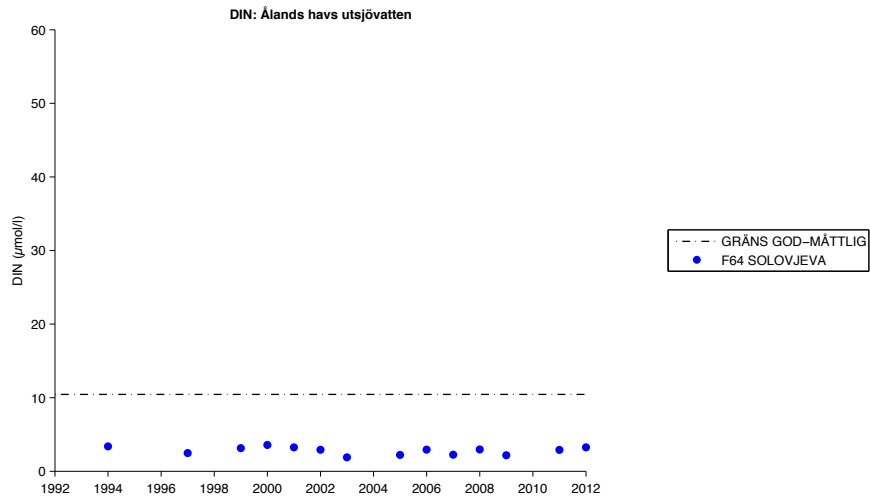




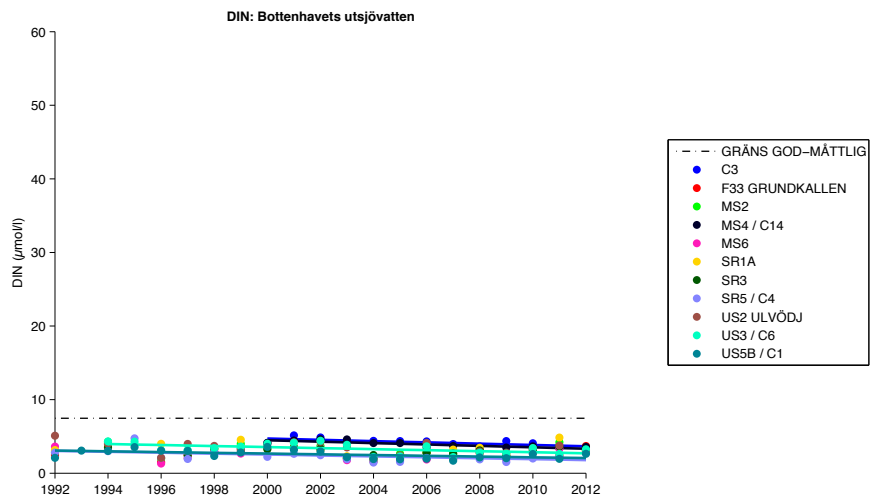
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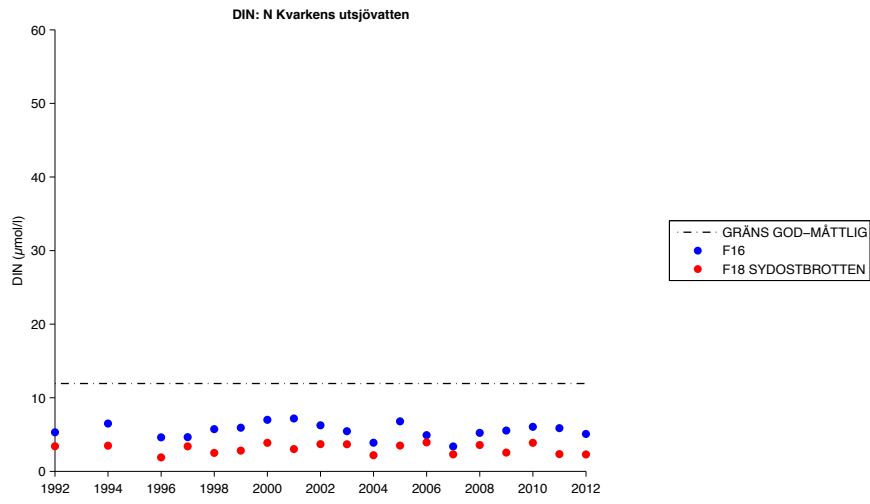
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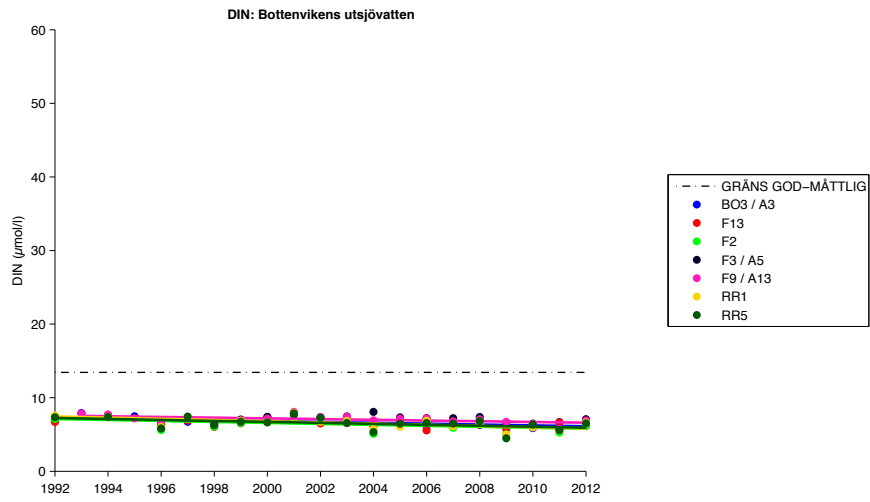
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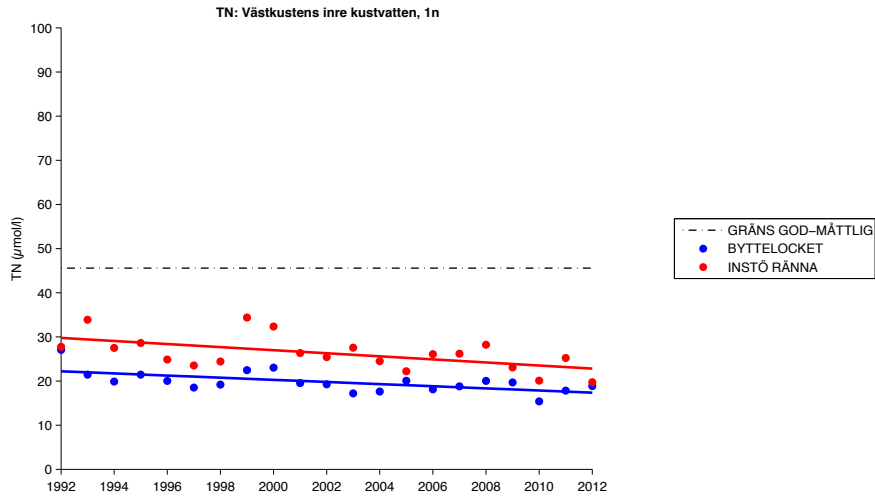
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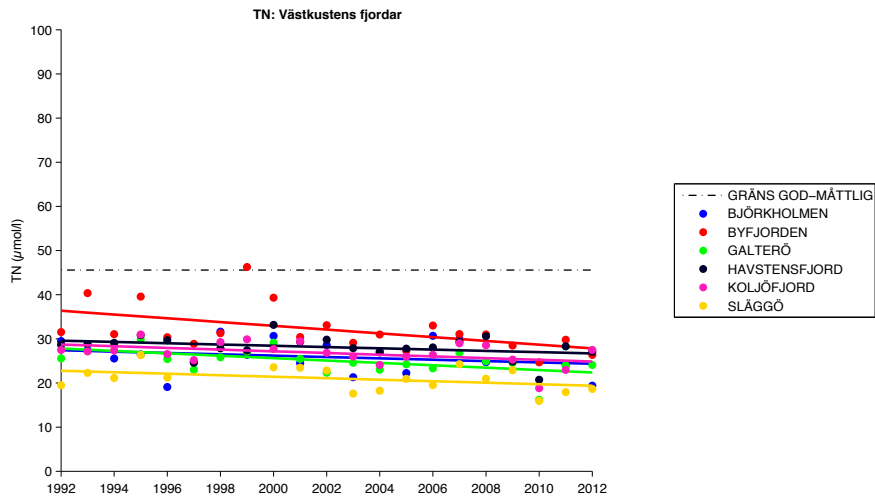
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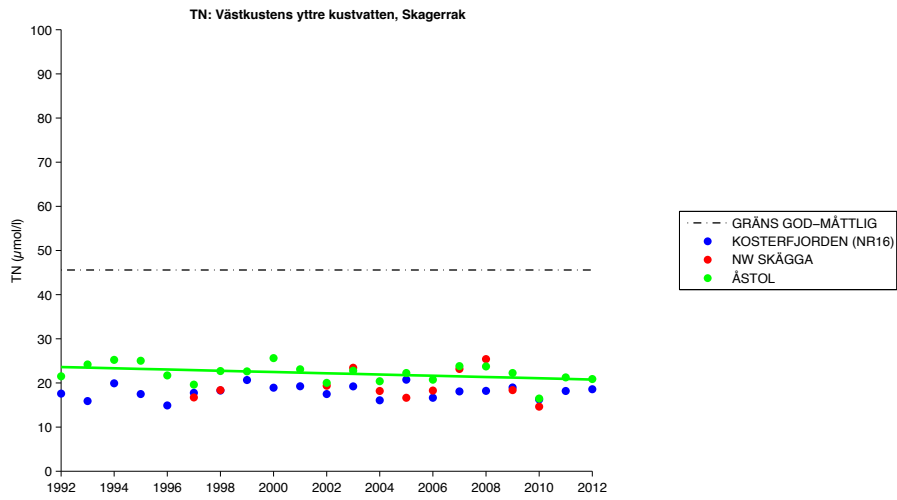
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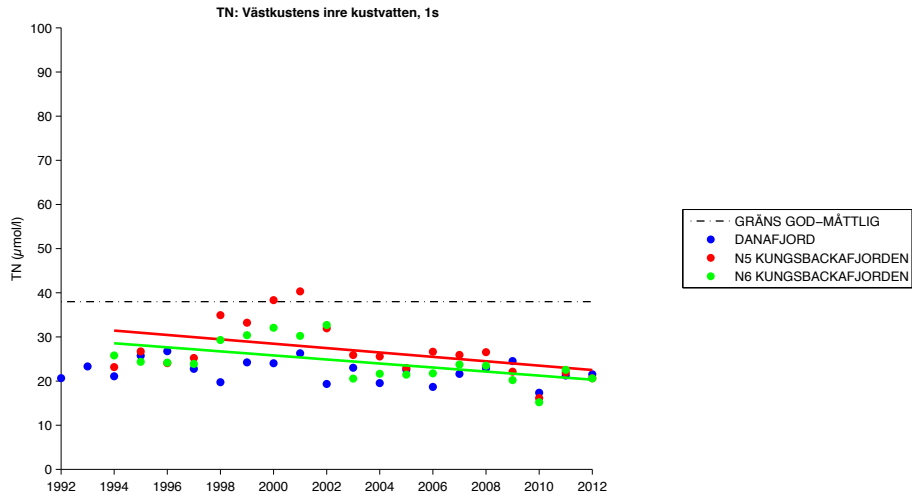
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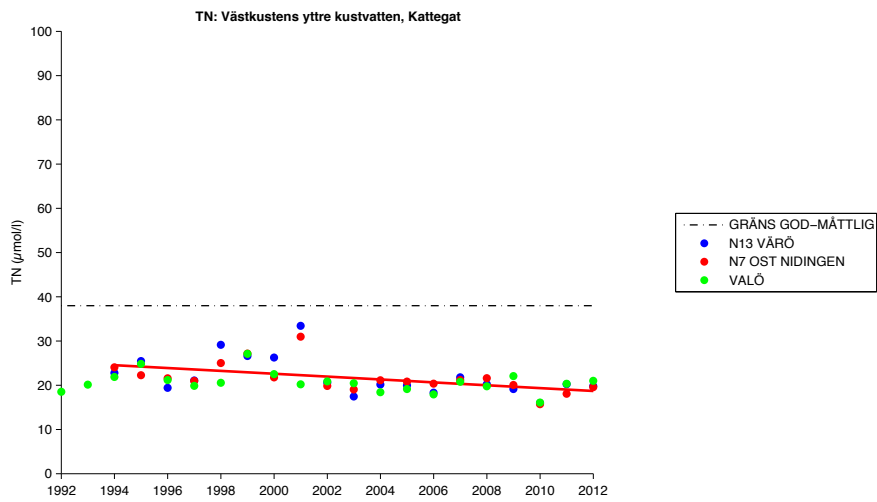
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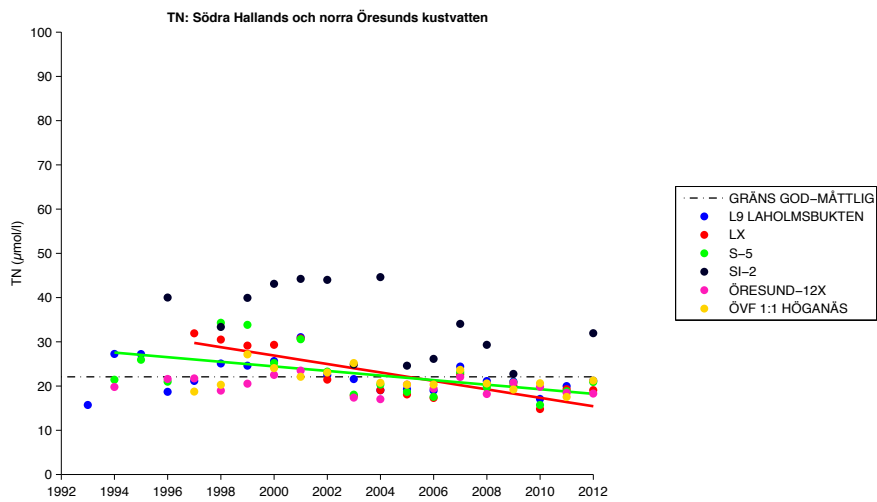
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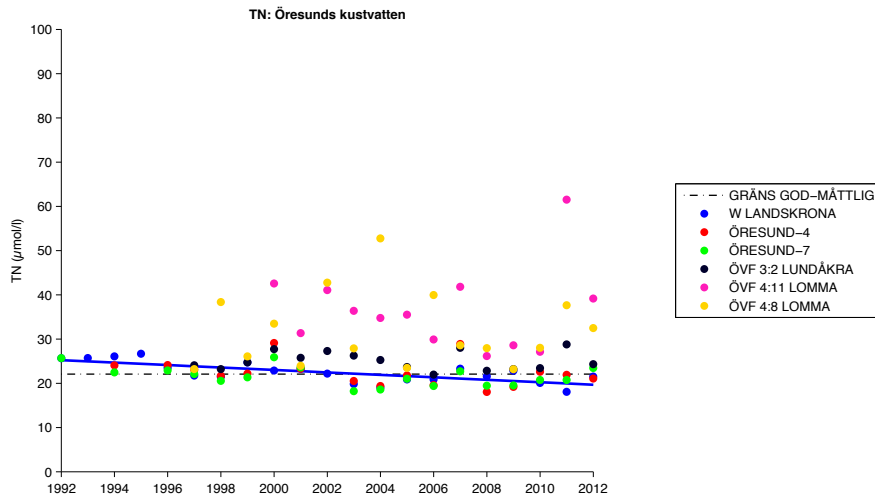
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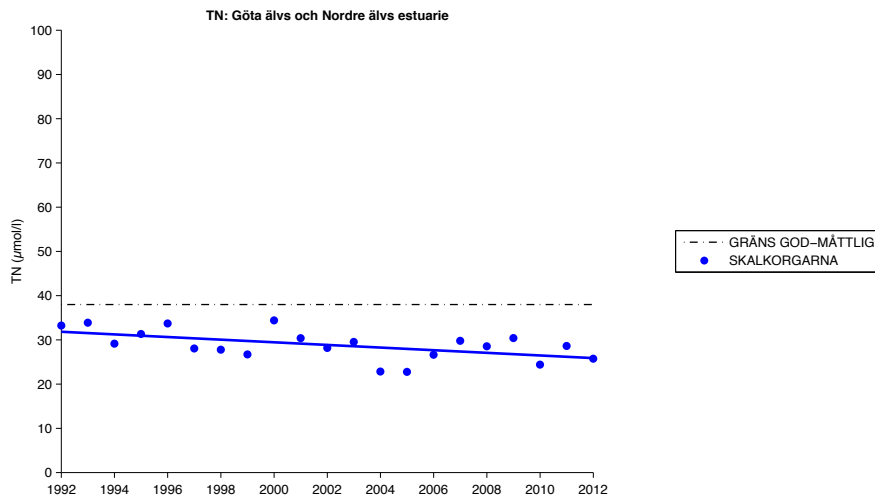
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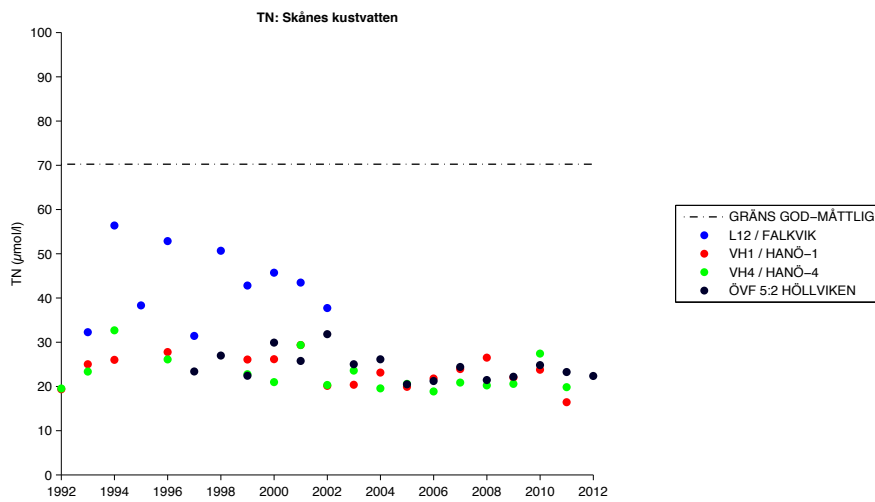
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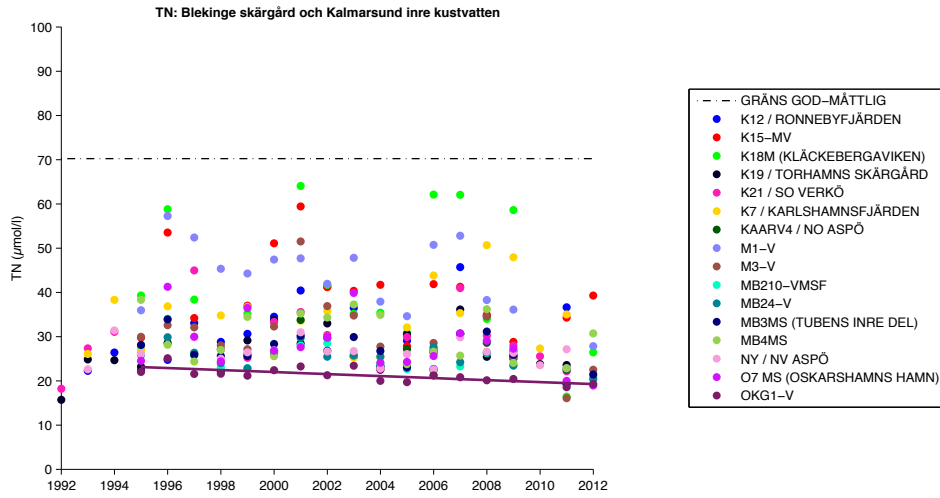
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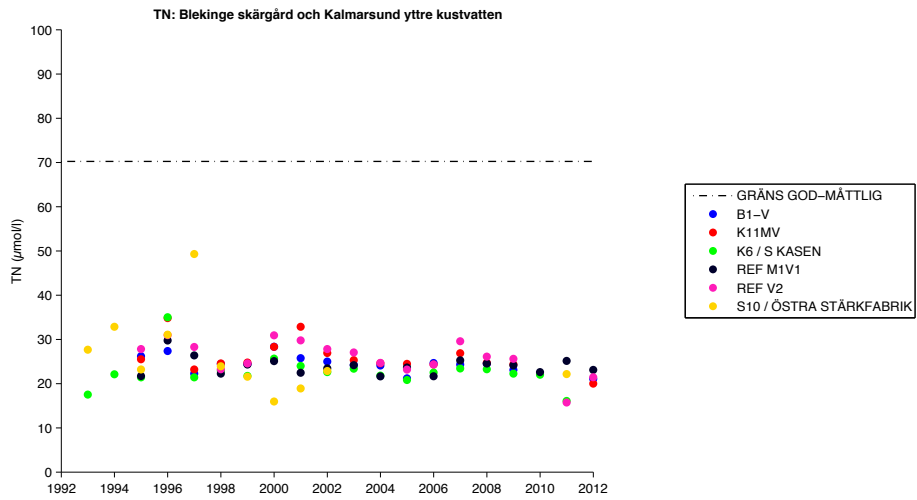
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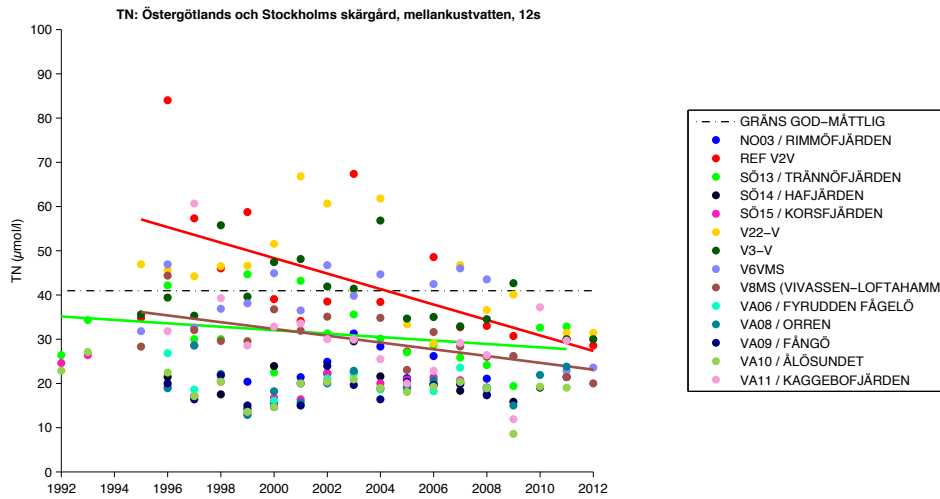
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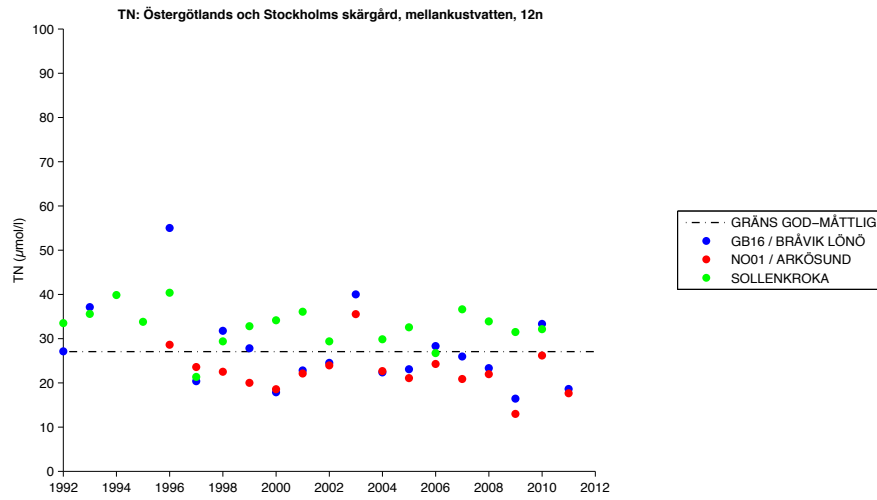
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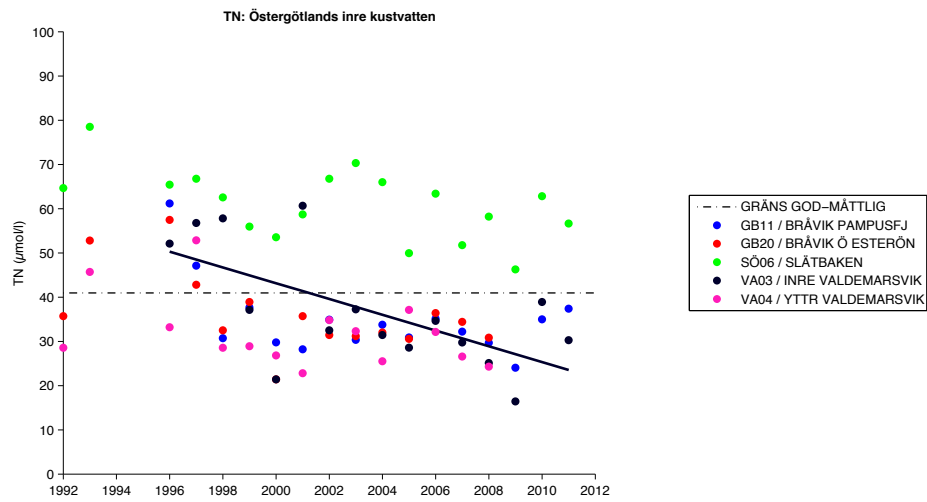
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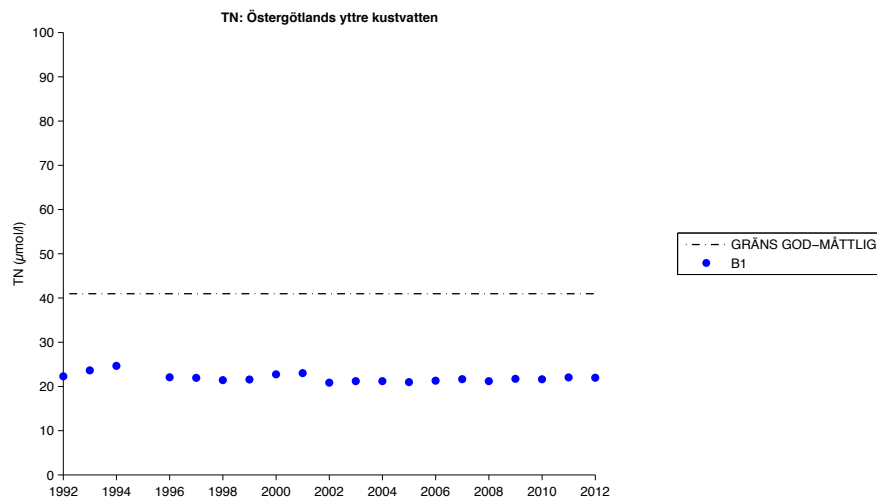
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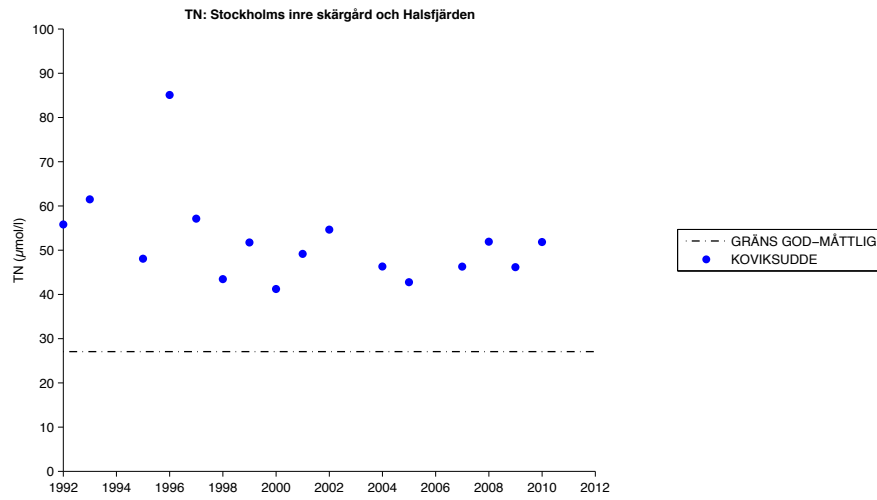
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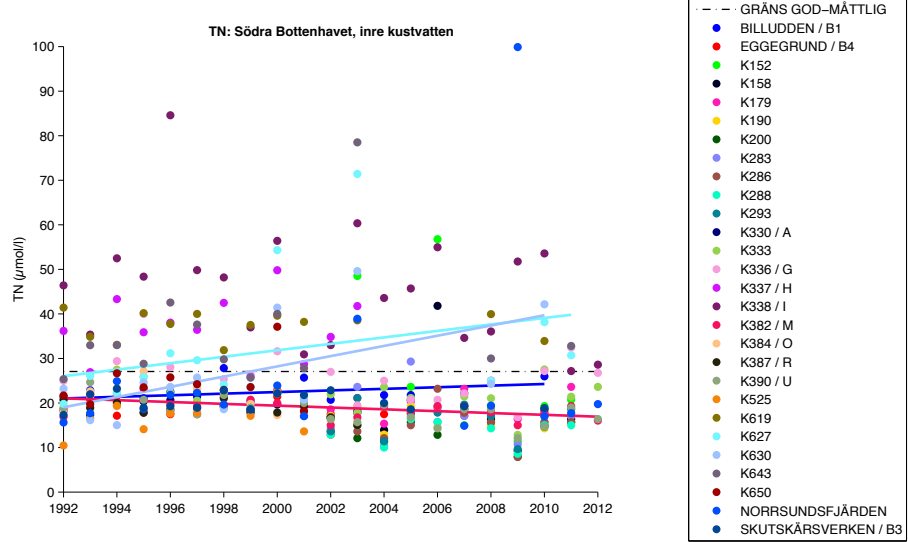
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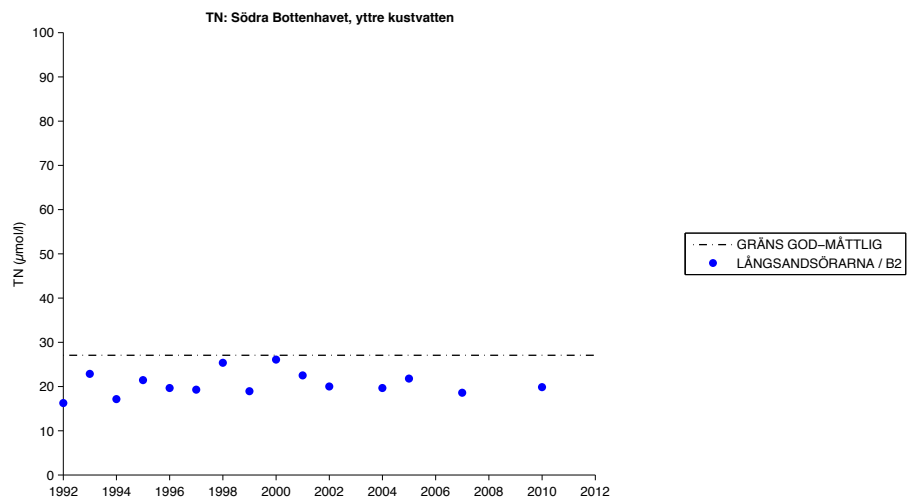
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Figur 4.17

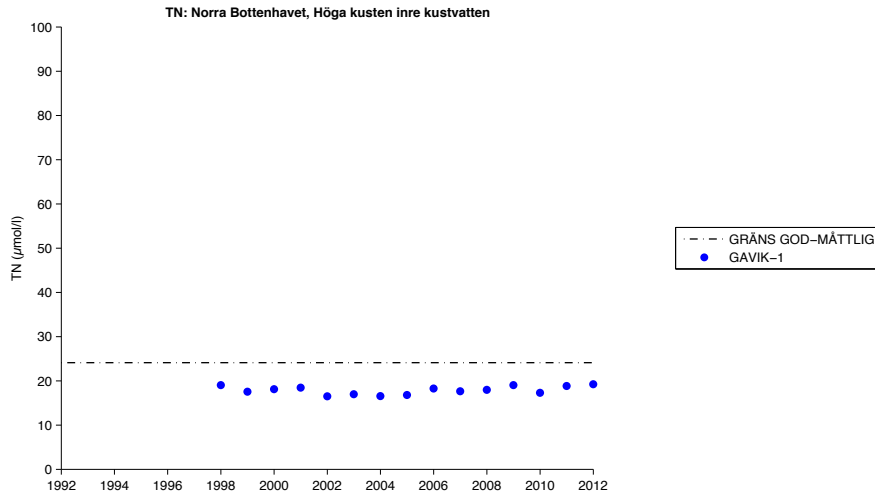


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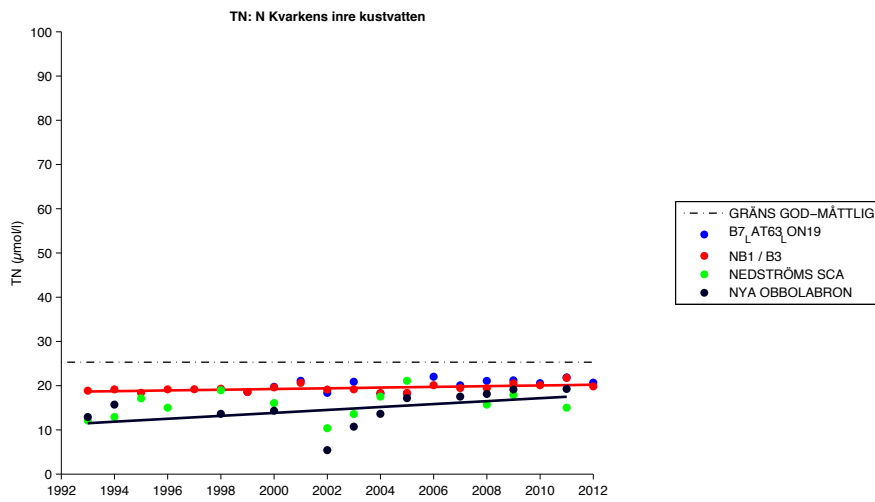




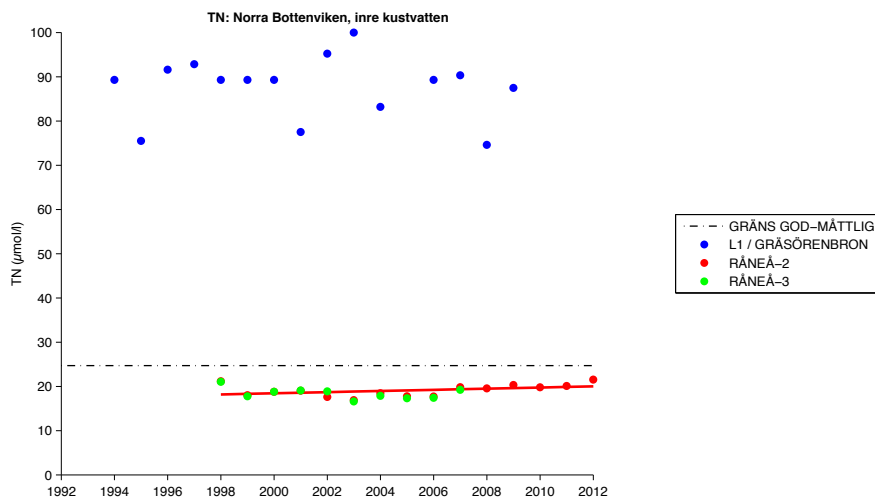
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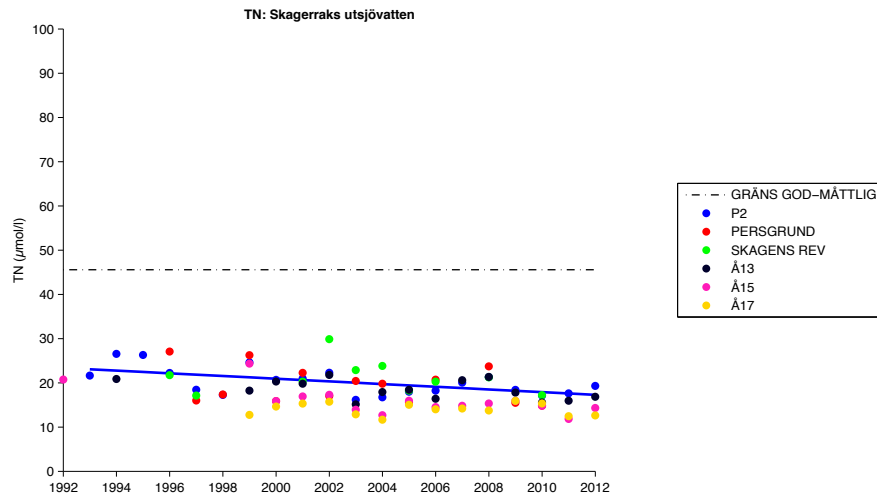
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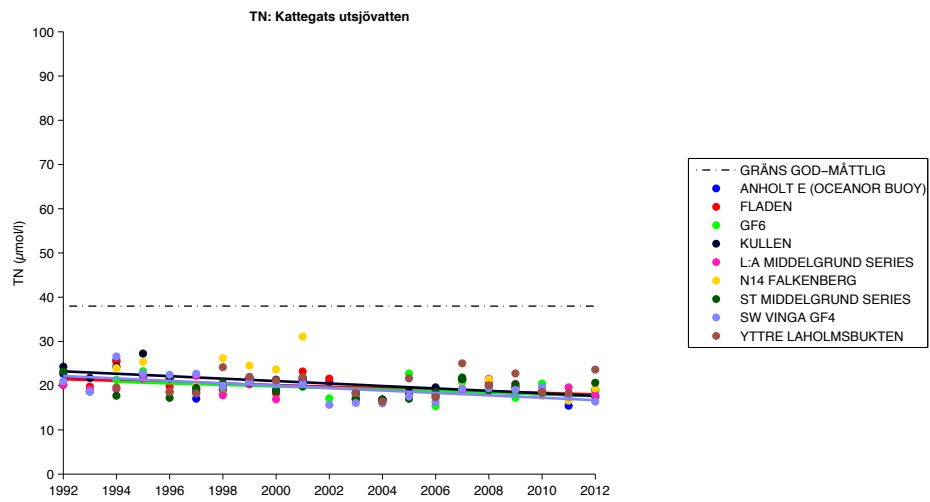
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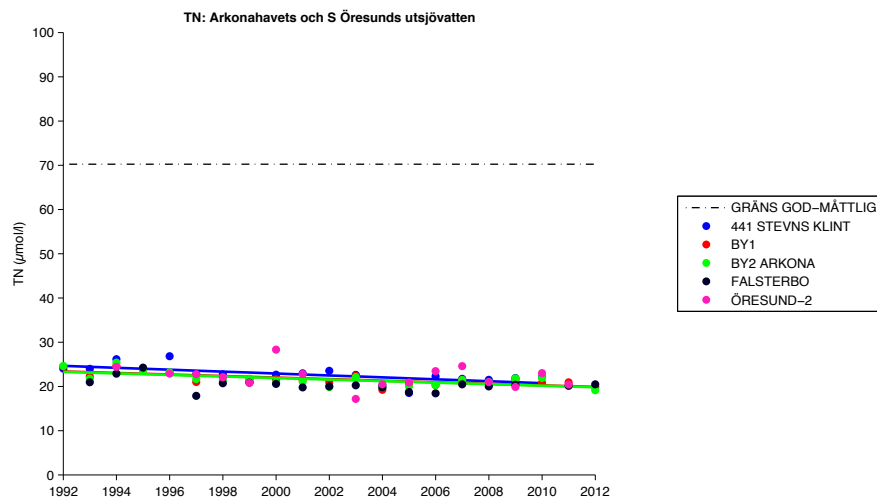
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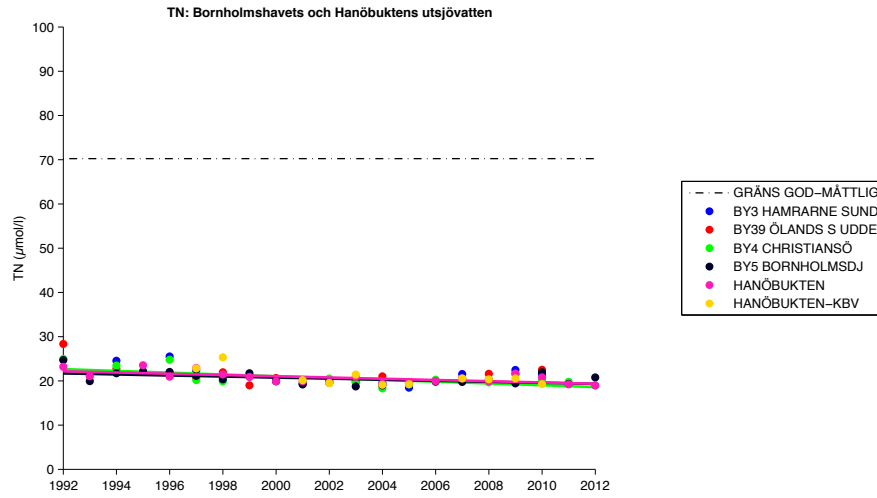
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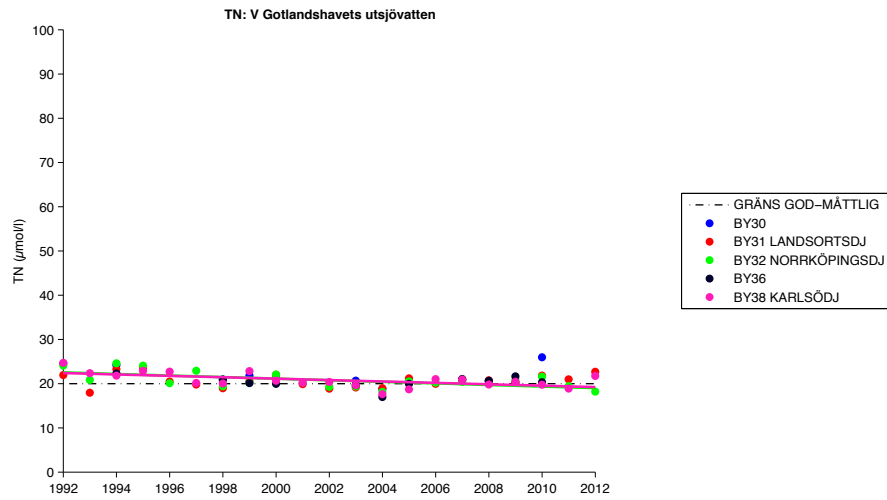
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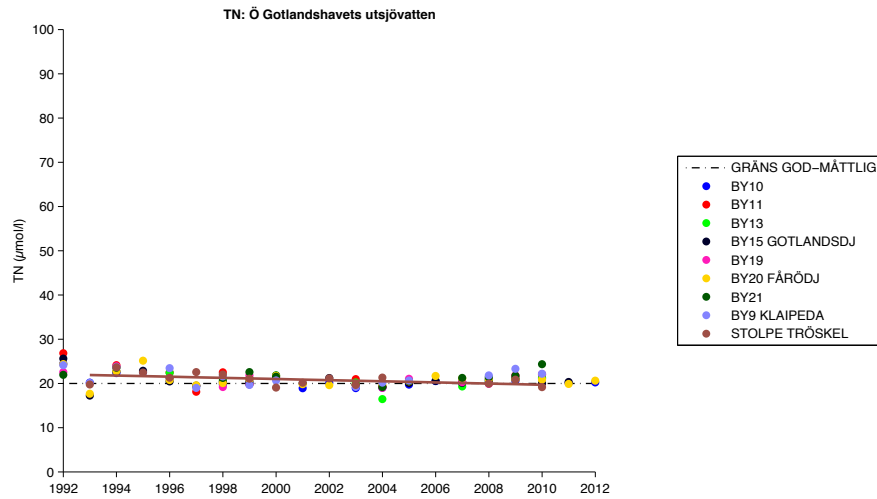
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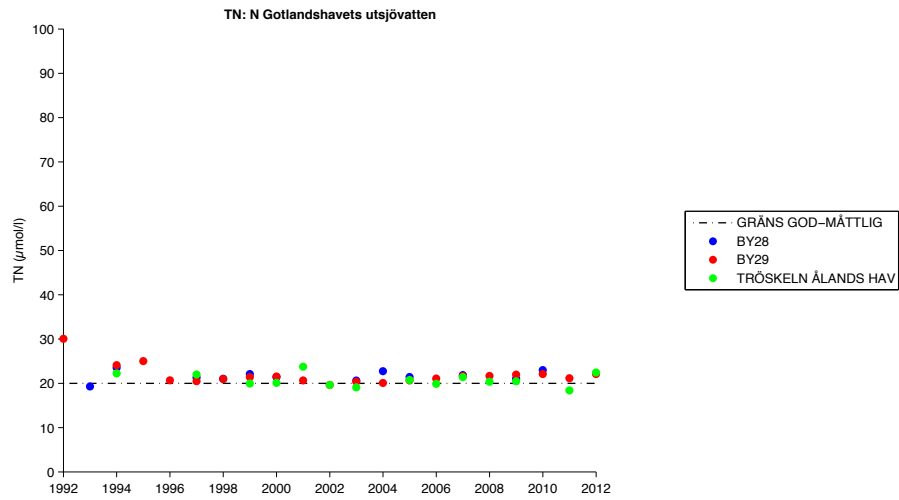
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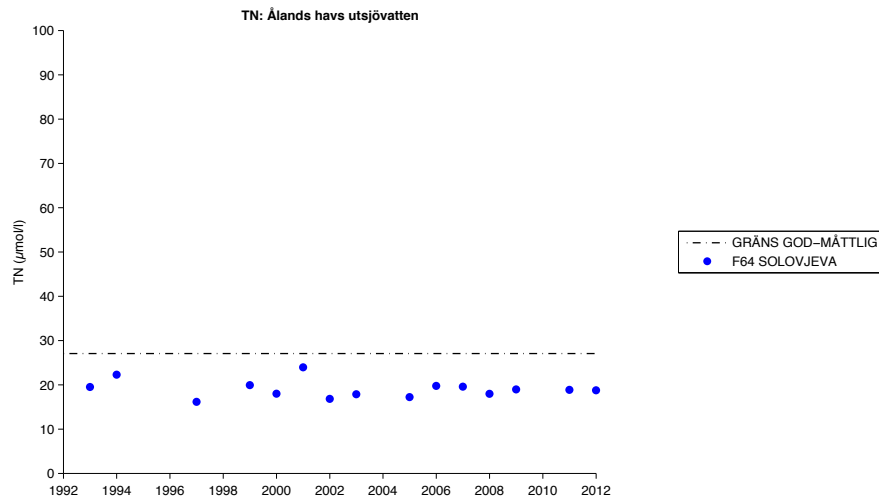
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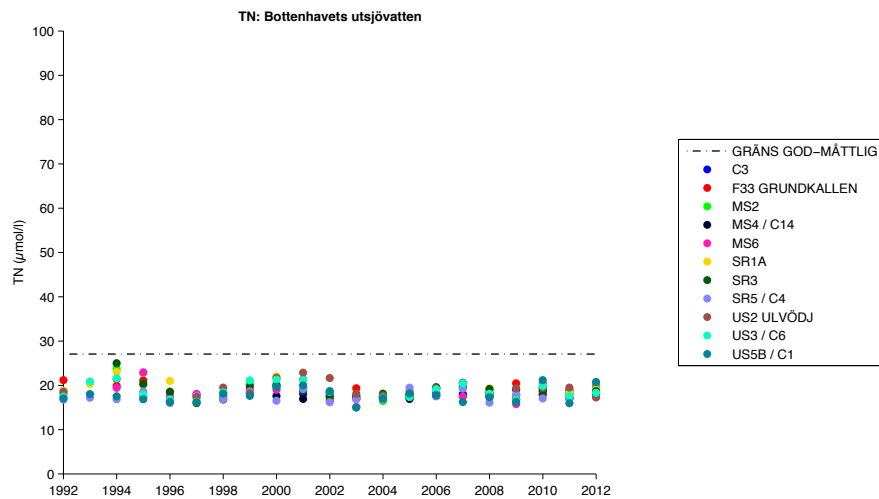
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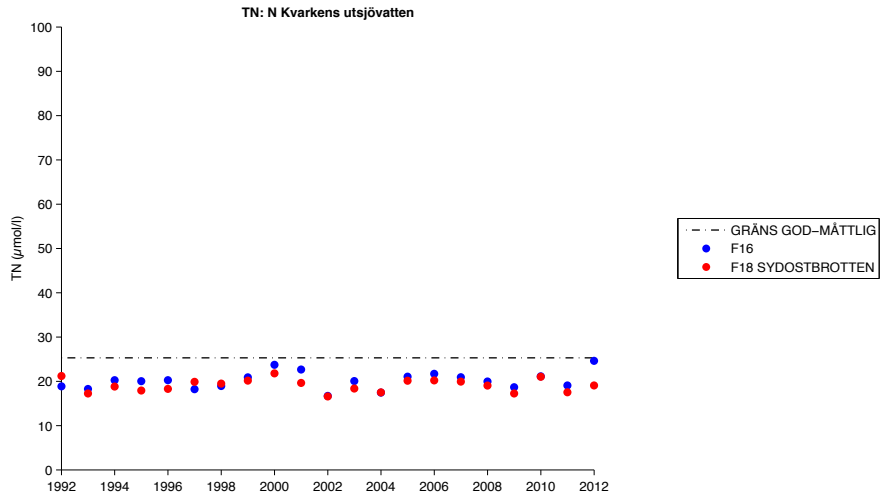
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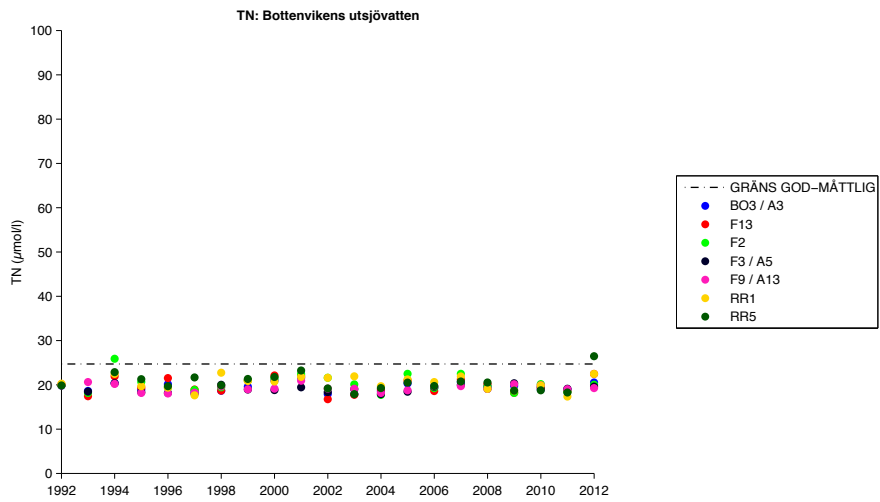
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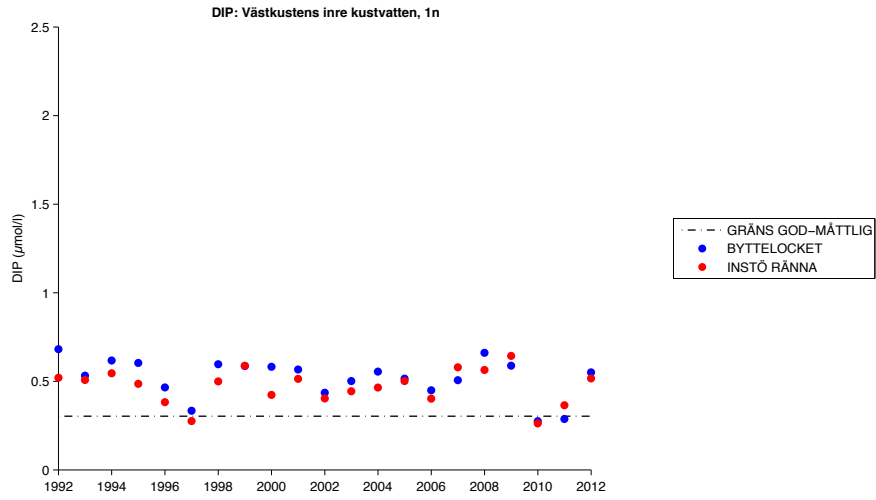
Figur 4.31



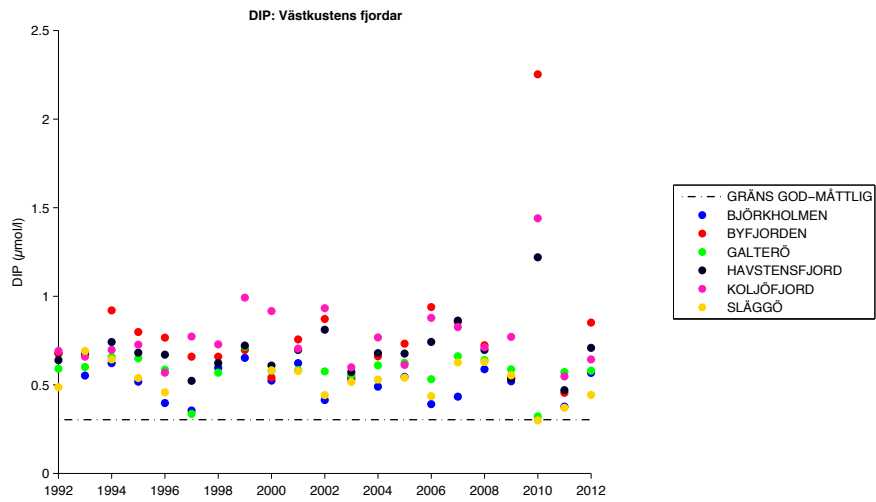
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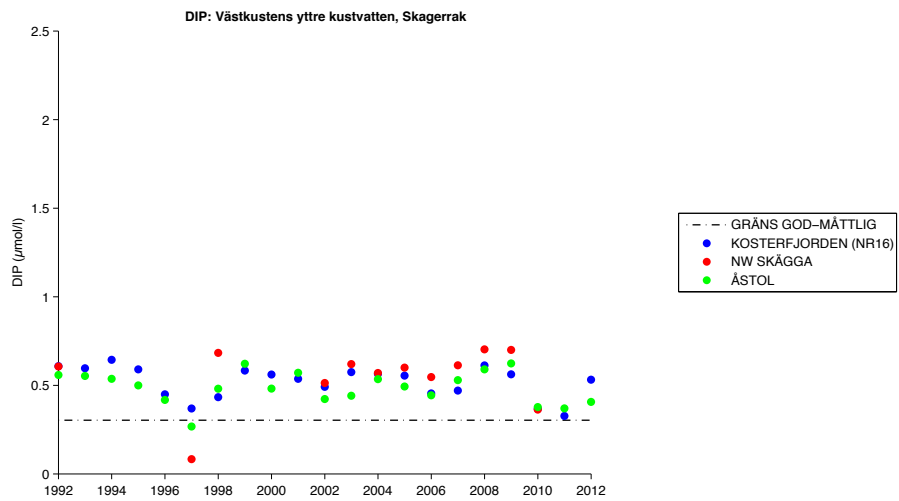
Figur 5.1



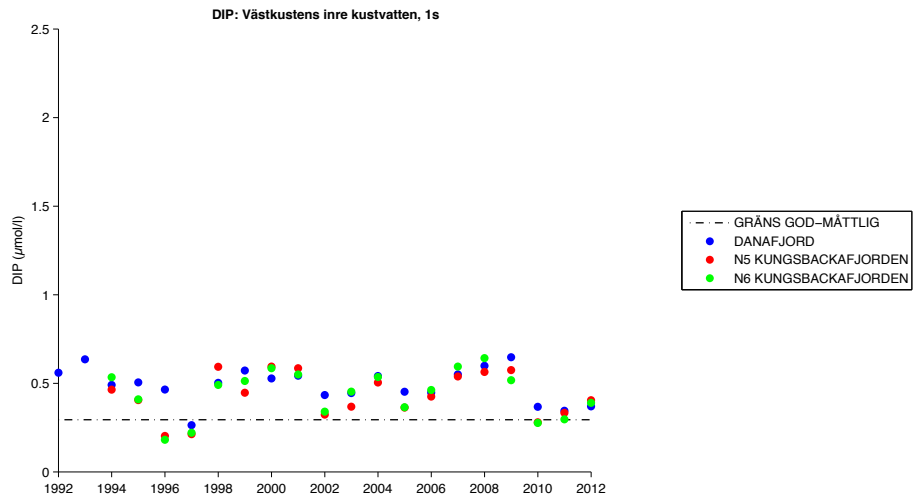
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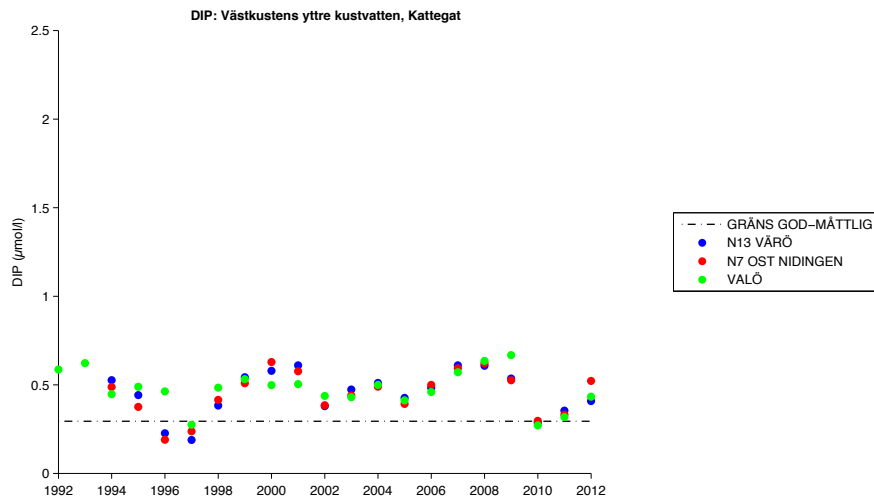
Figur 5.3



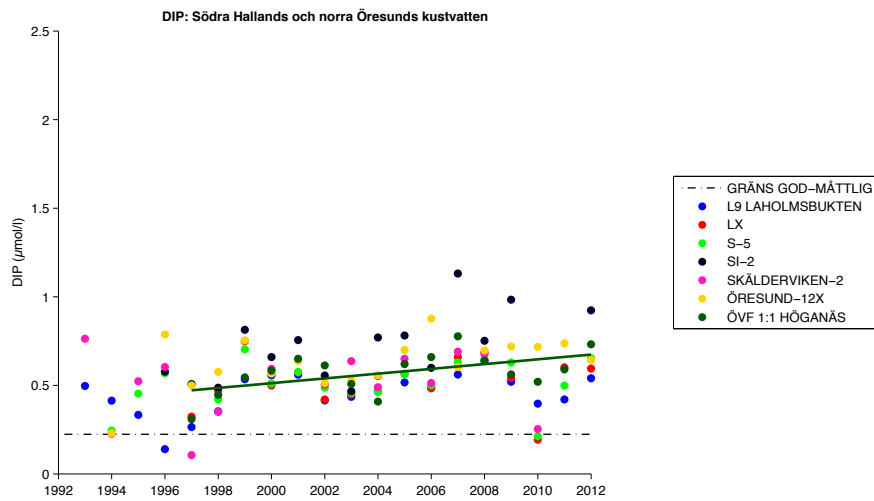
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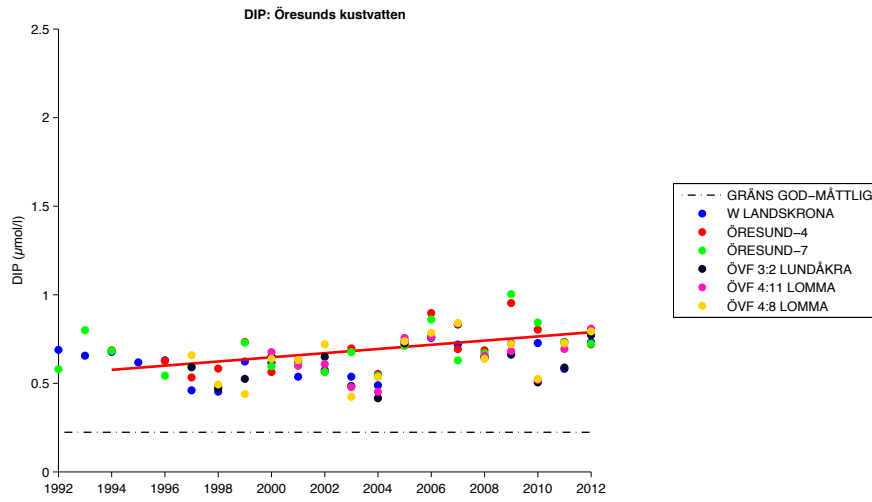
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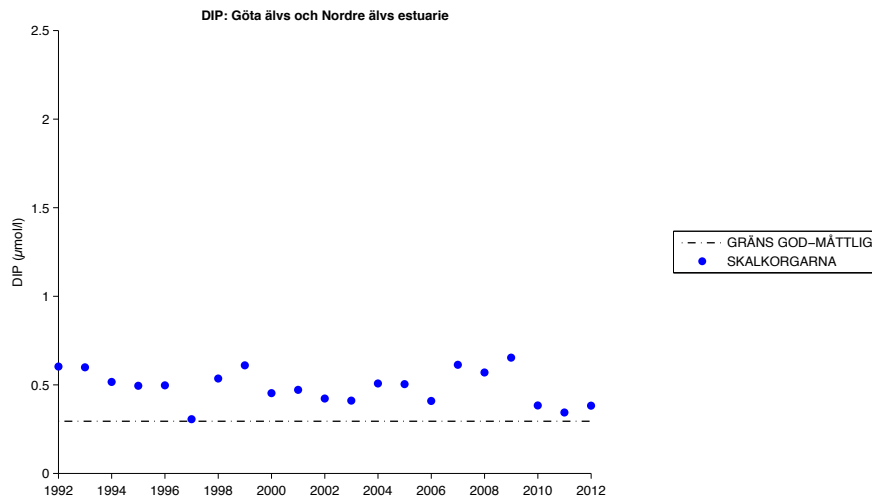
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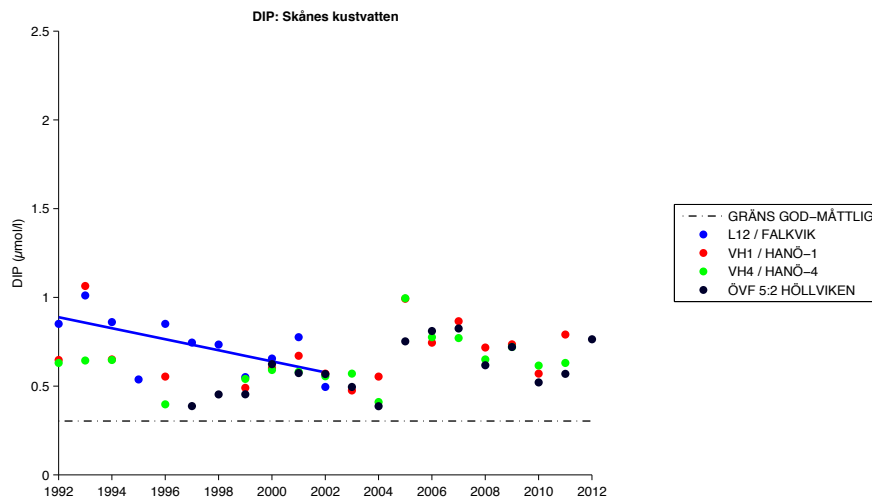
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Figur 5.8

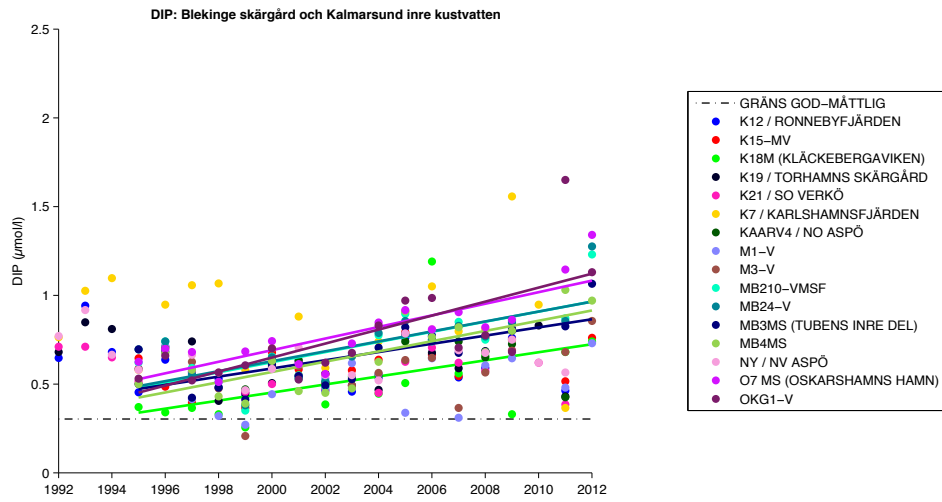


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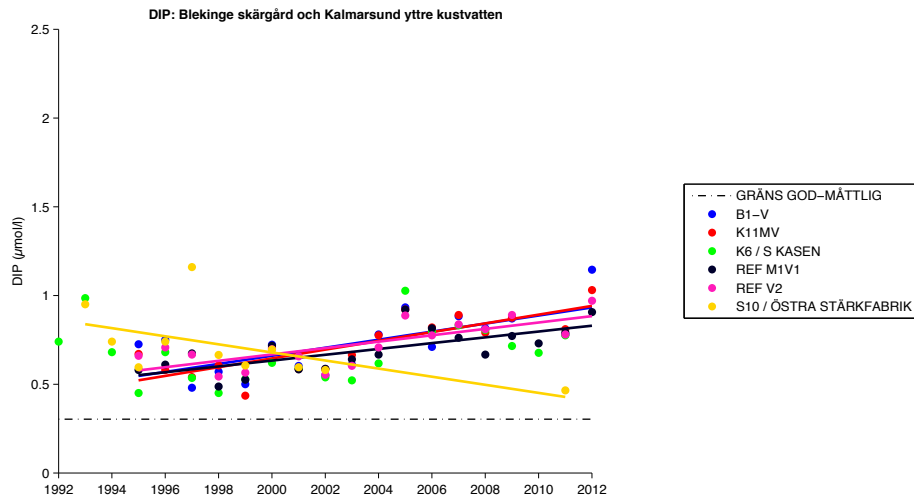




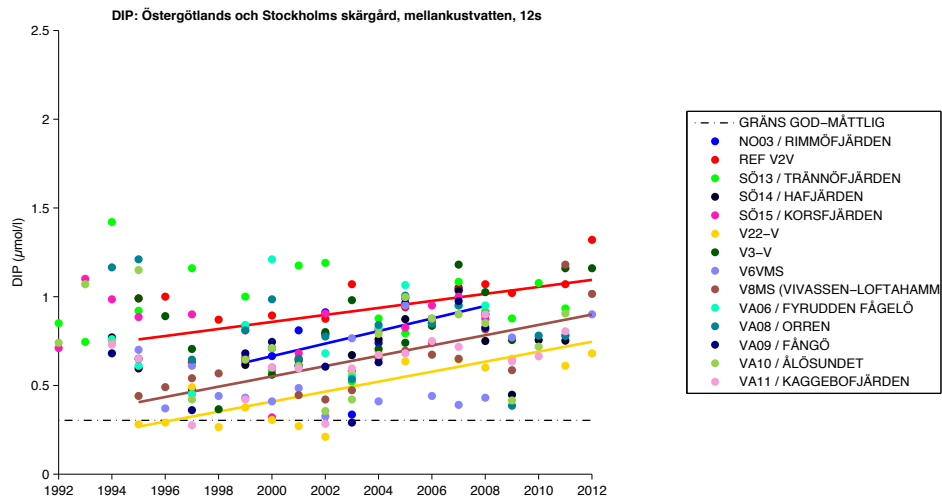
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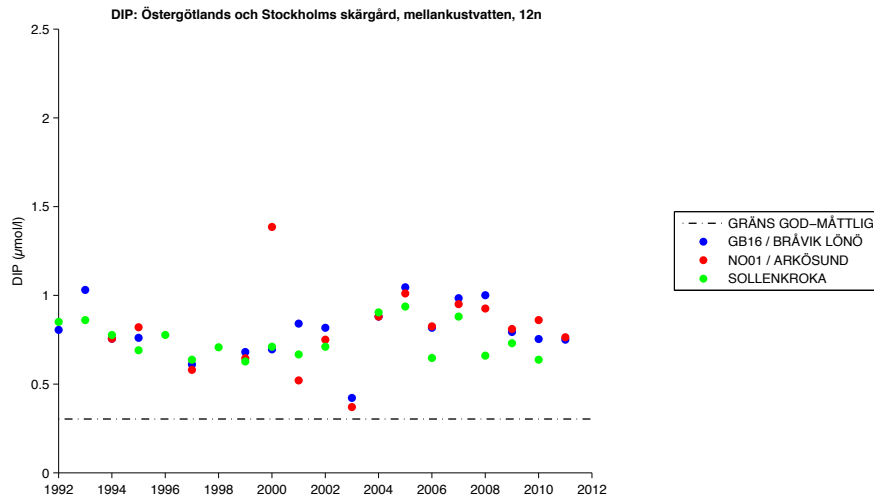
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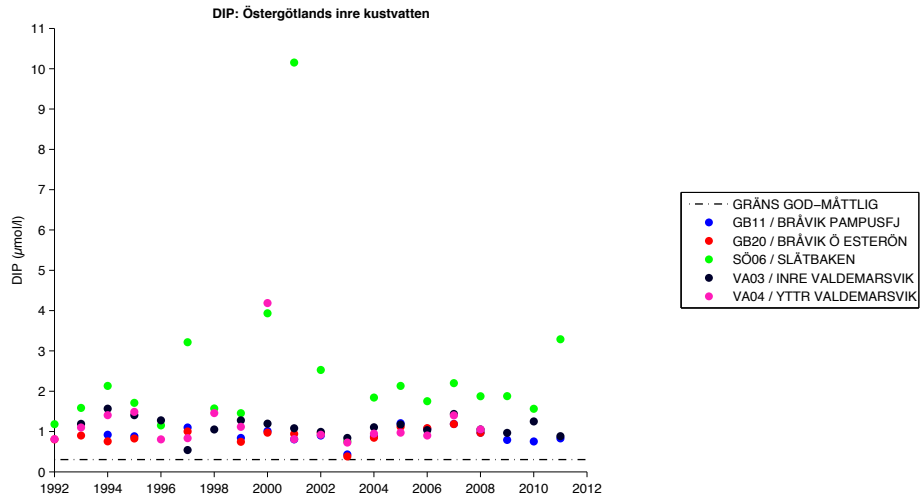
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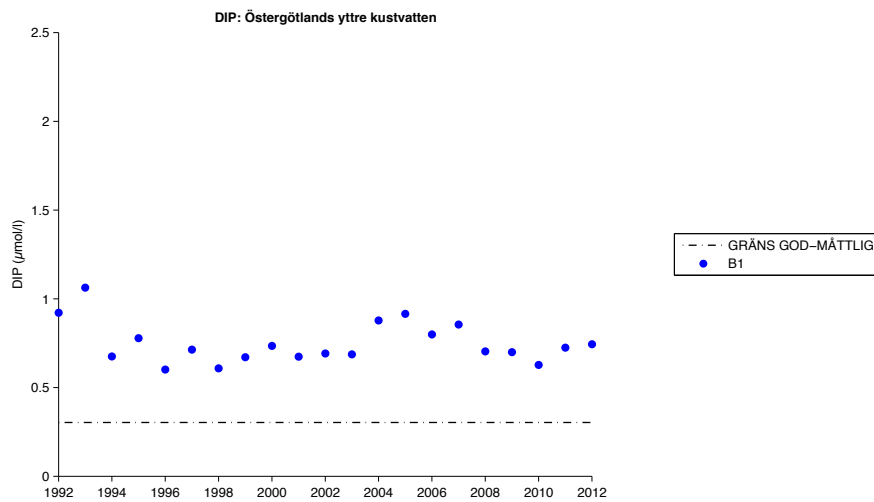
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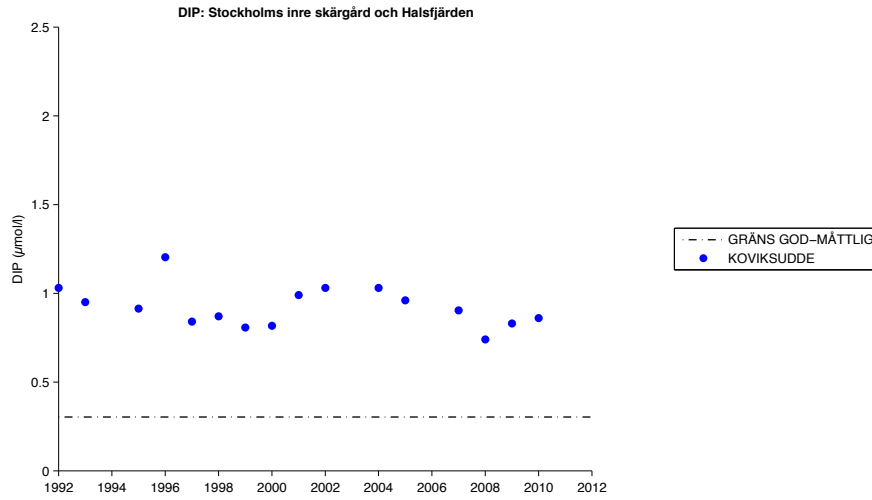
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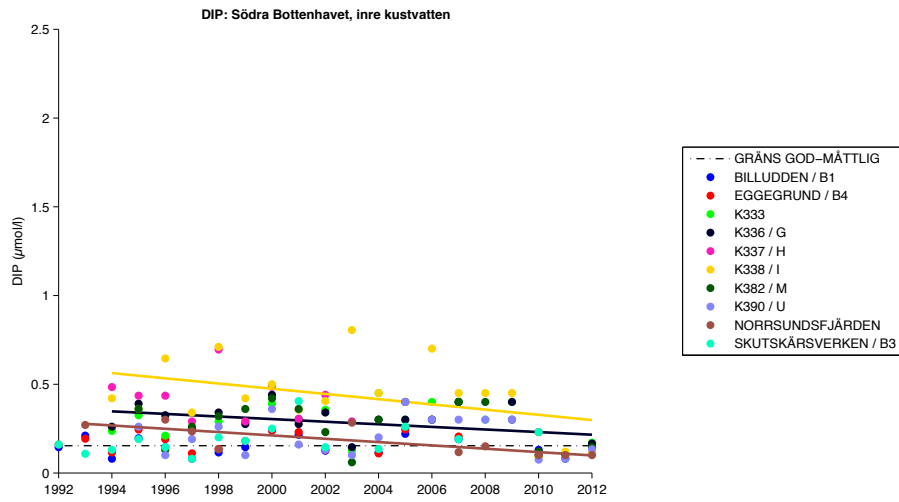
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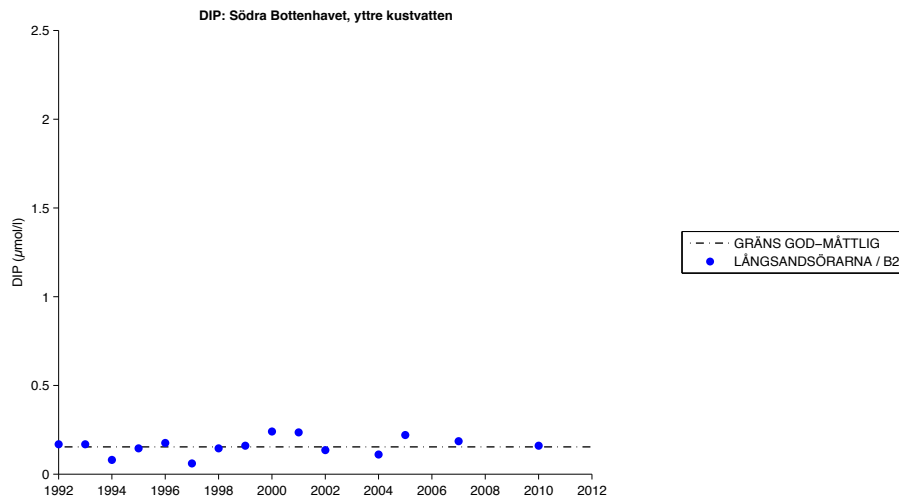
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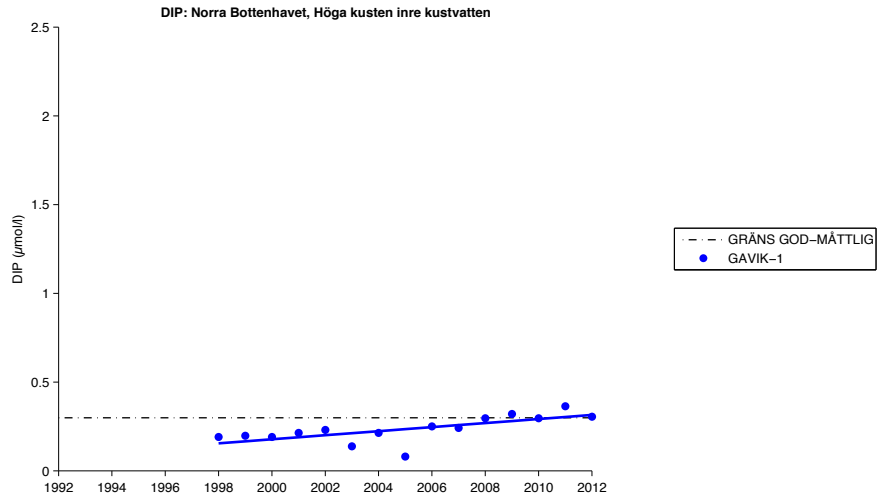
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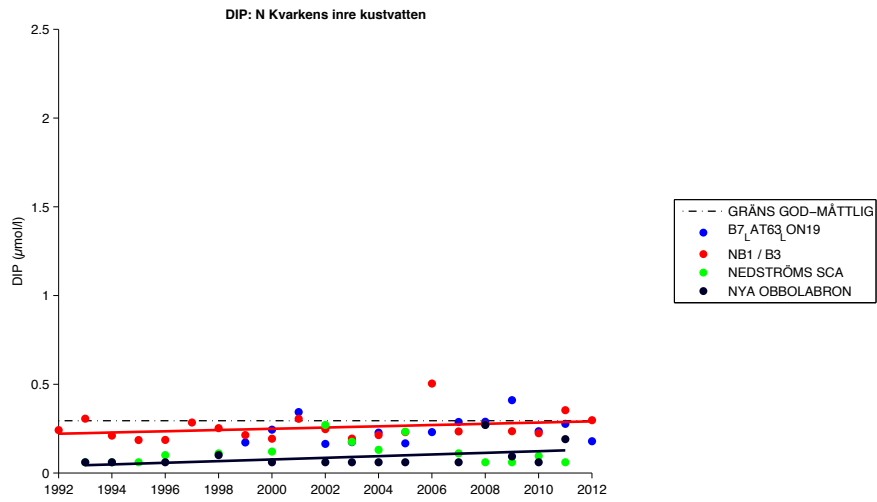
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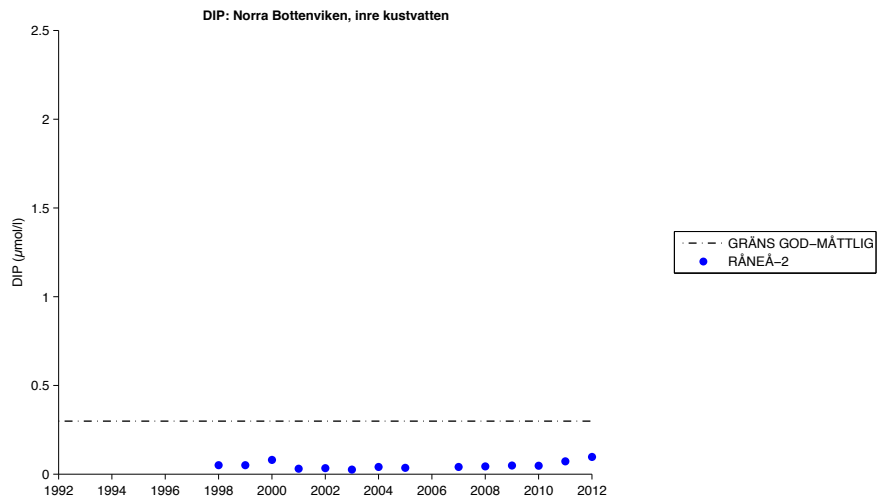
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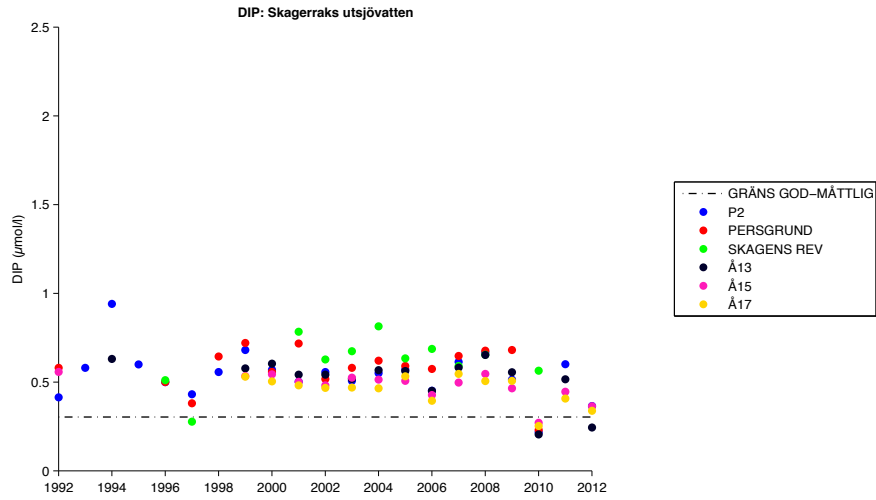
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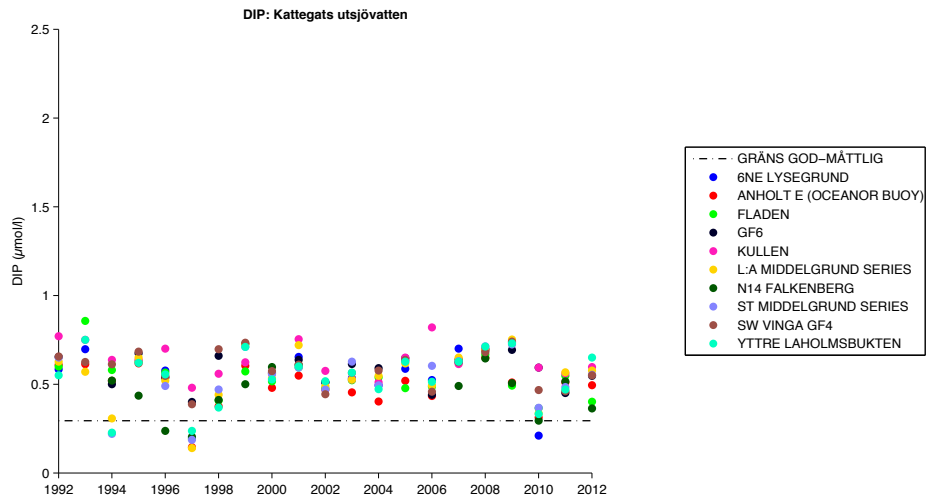
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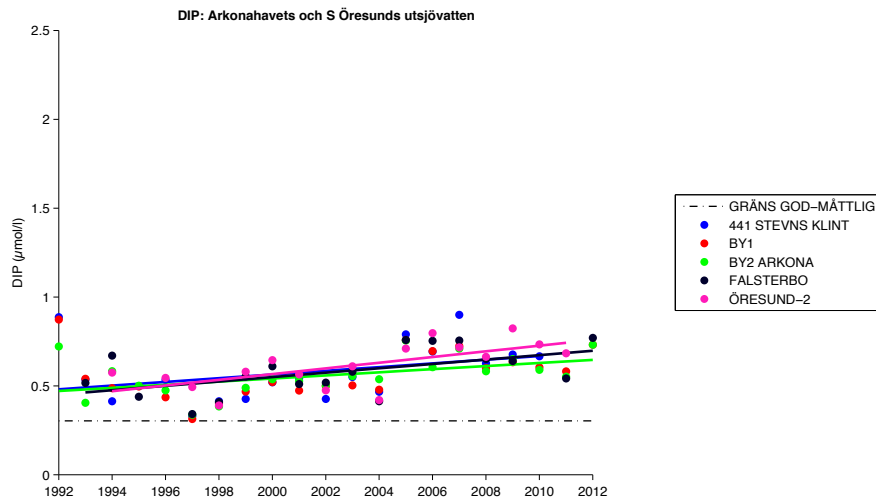
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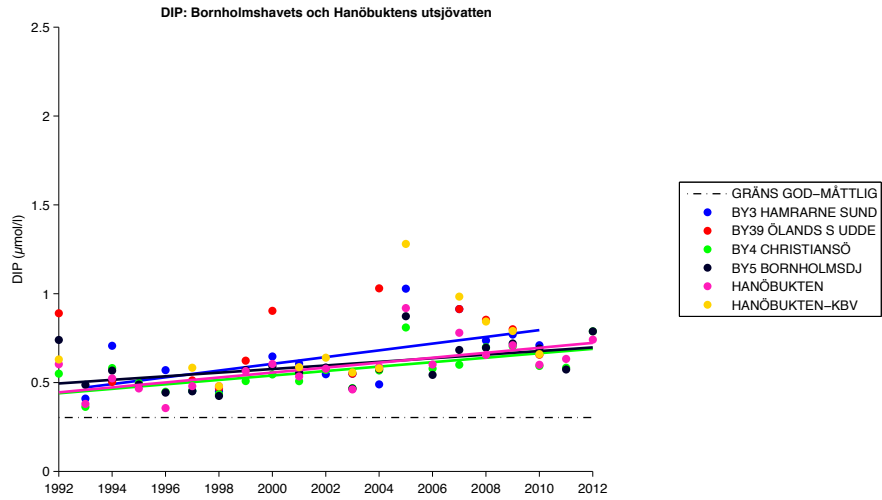
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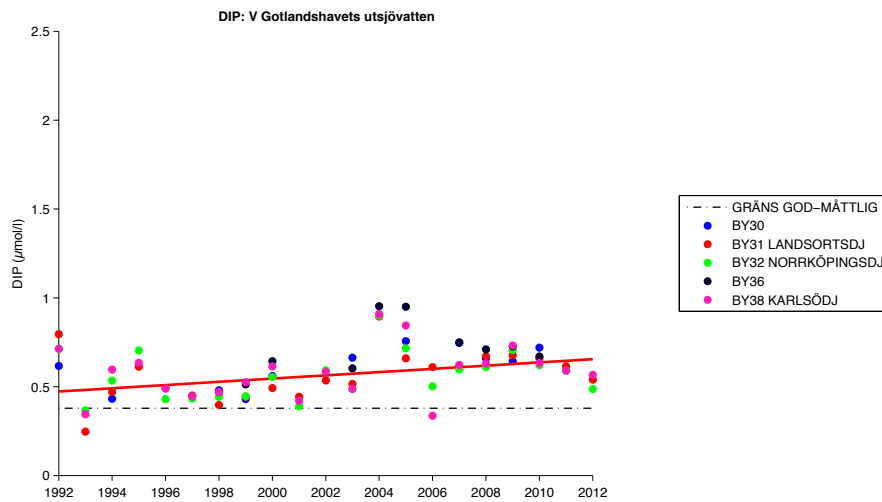
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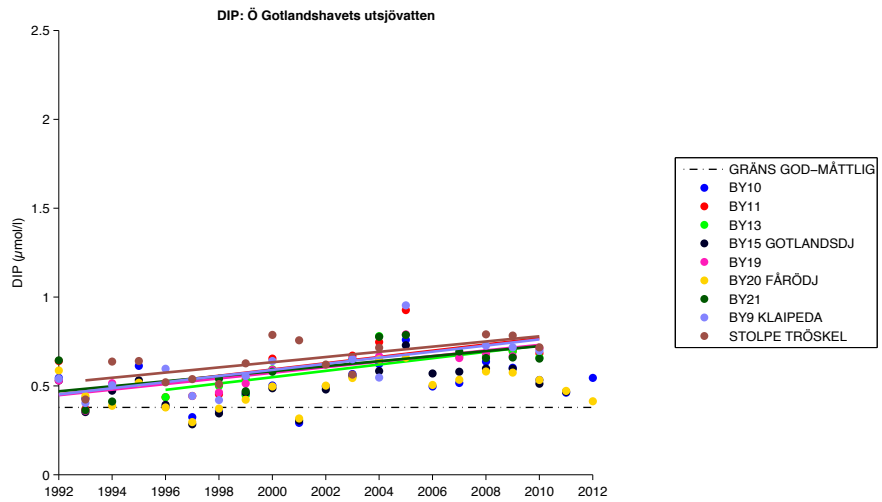
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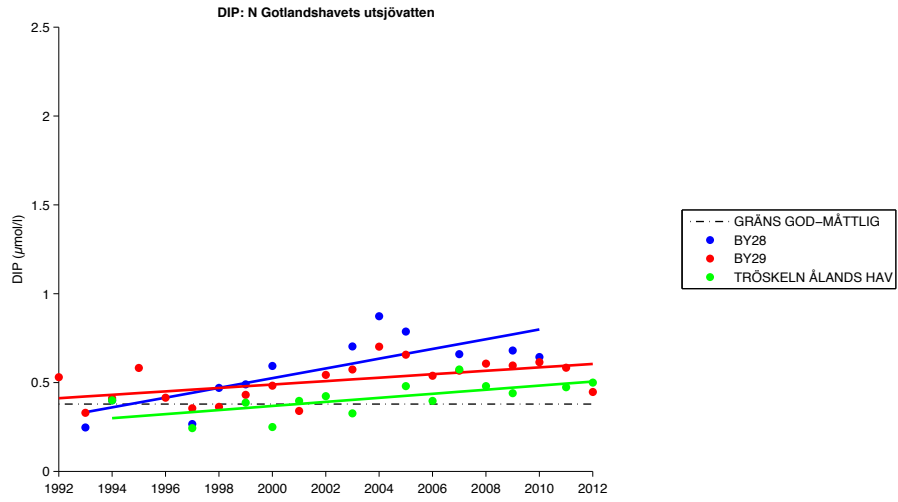
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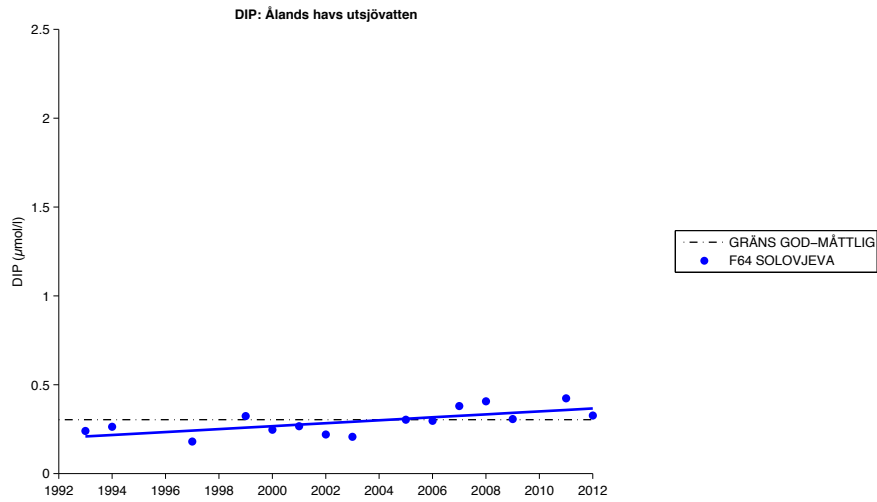
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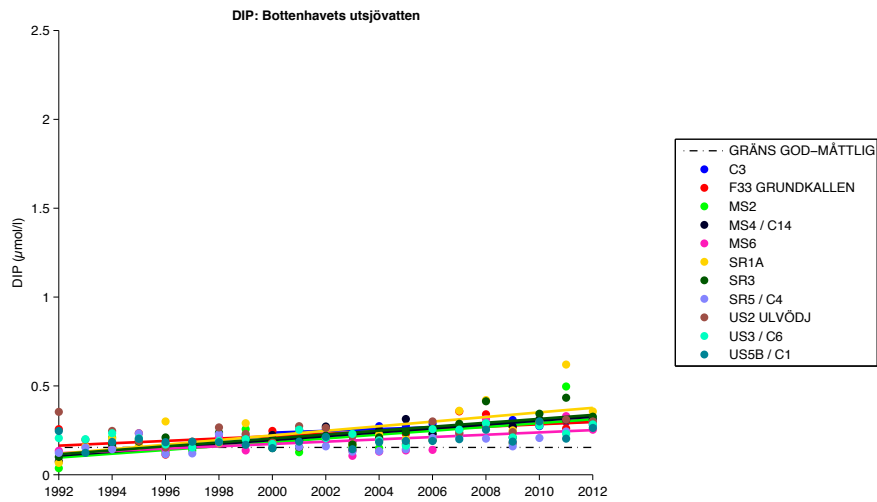
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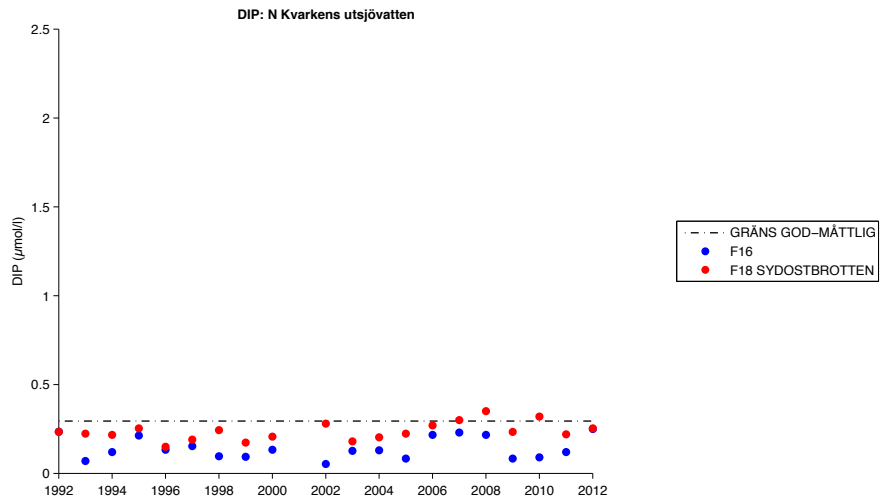
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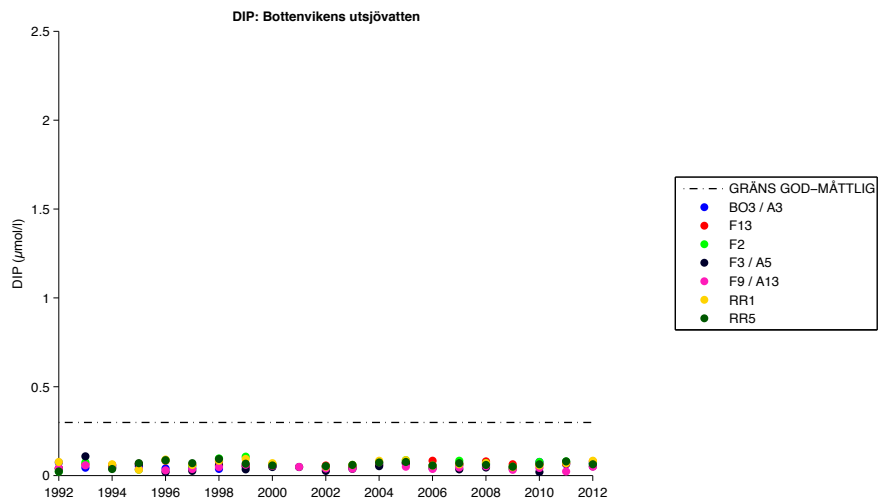
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Figur 5.31

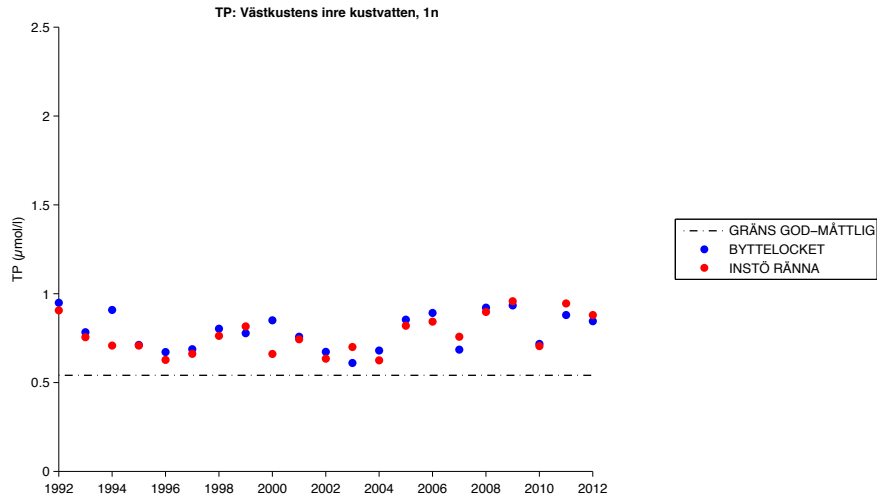


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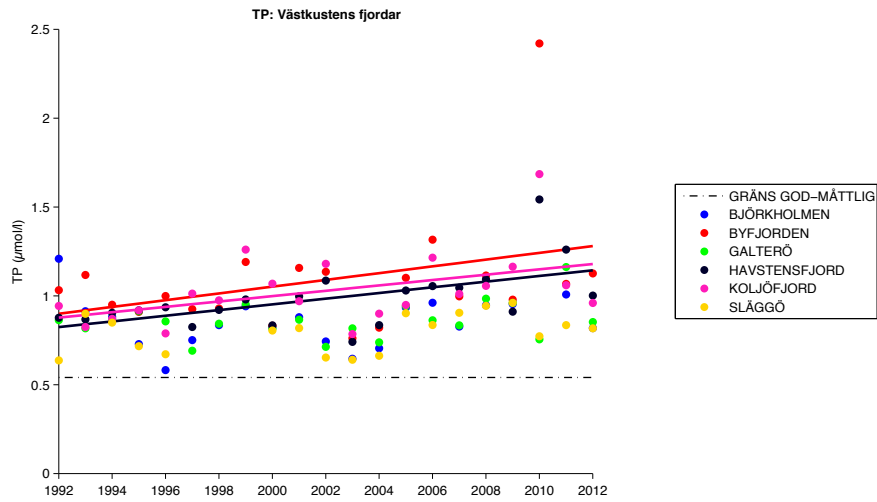




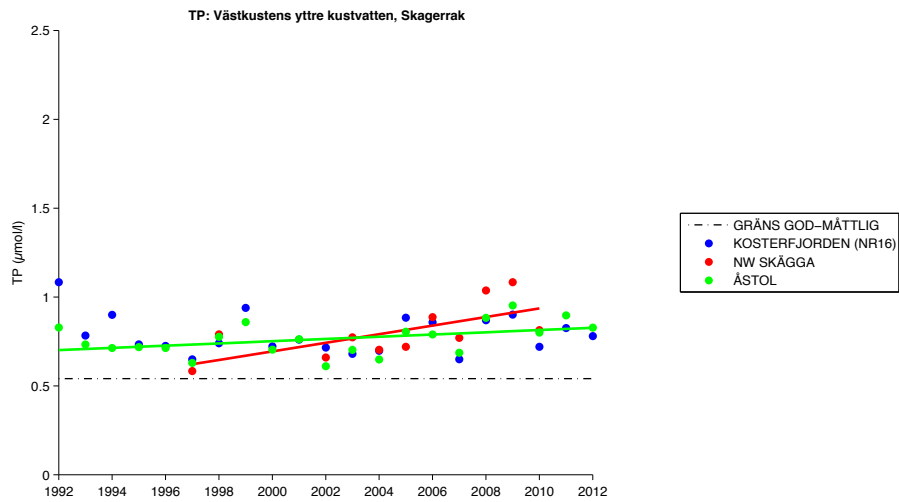
Figur 6.1



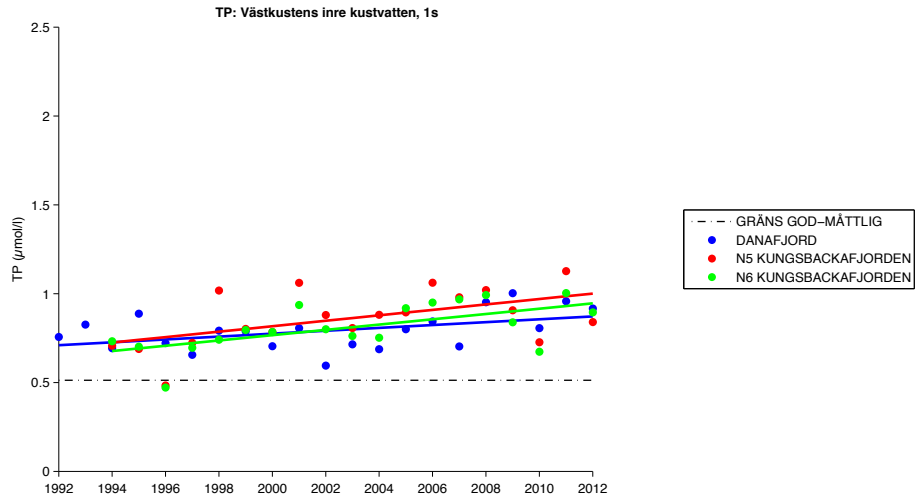
Figur 6.2



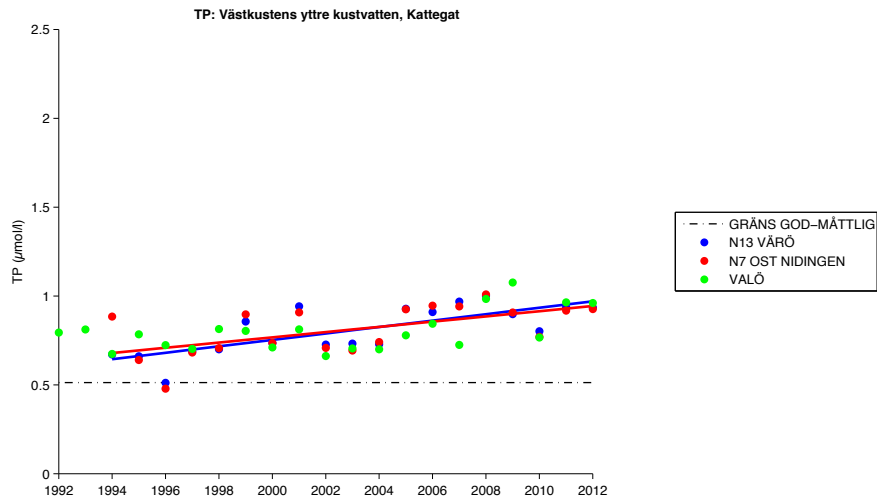
Figur 6.3



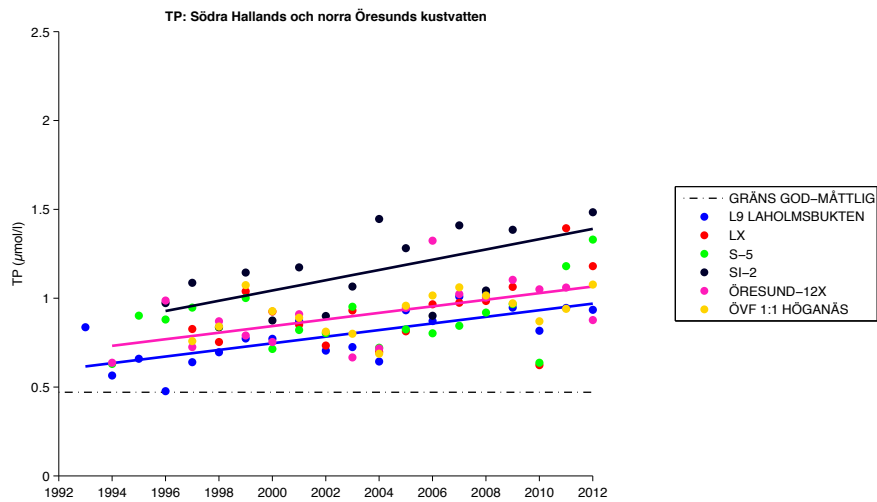
Figur 6.4



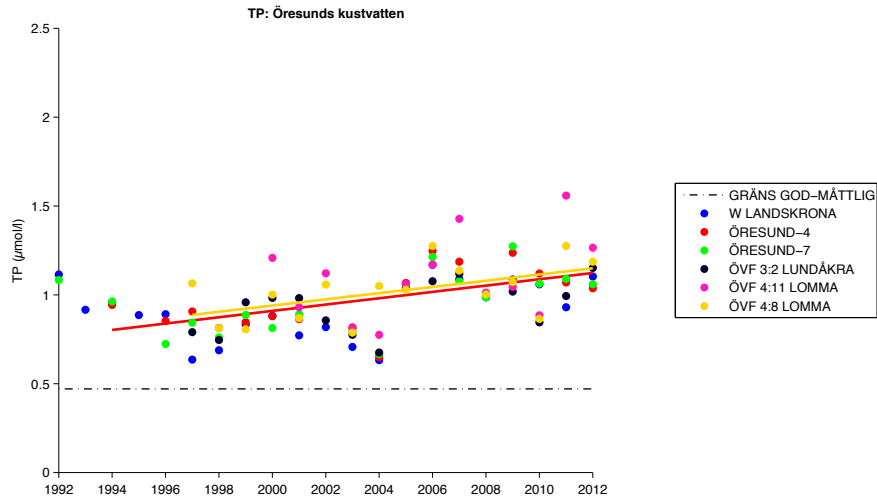
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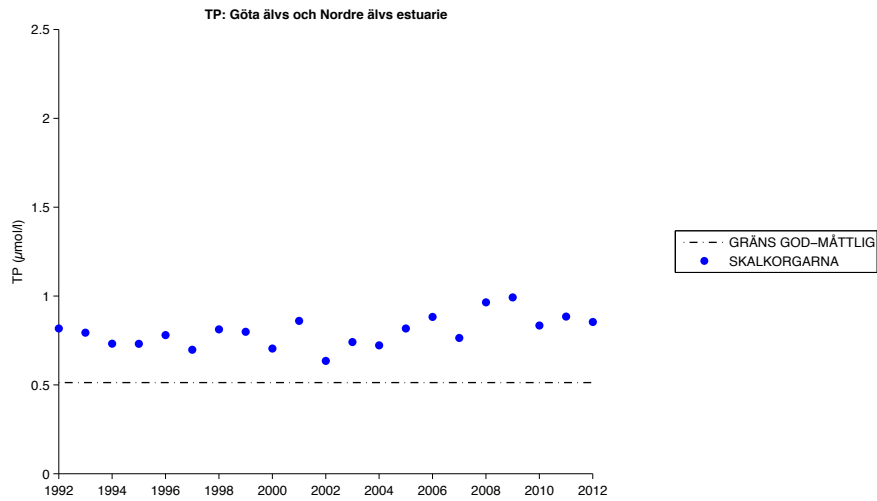
Figur 6.6



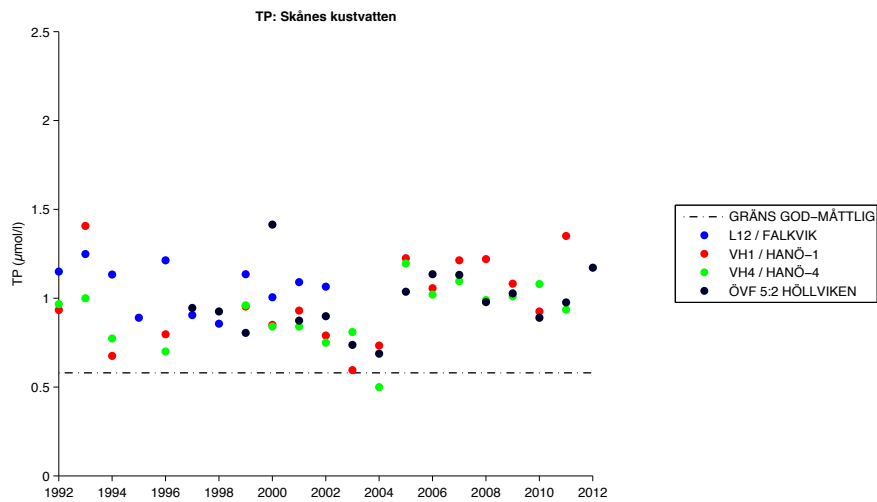
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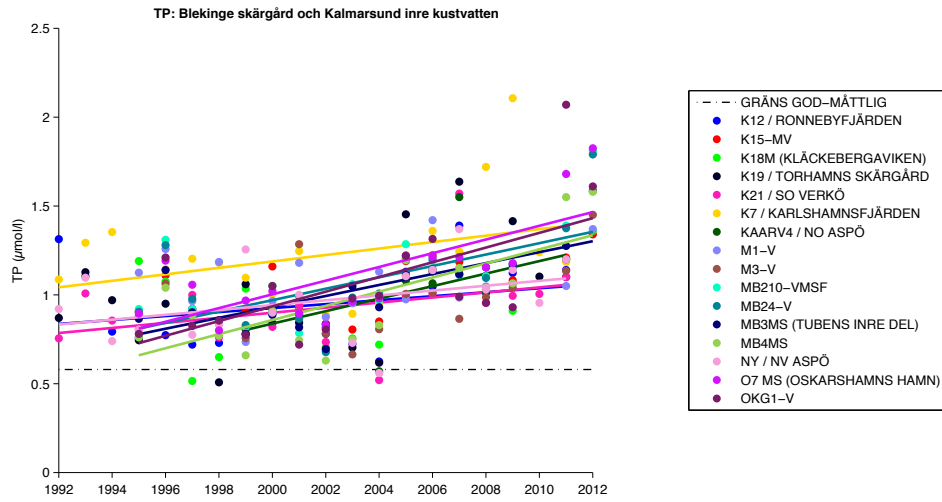
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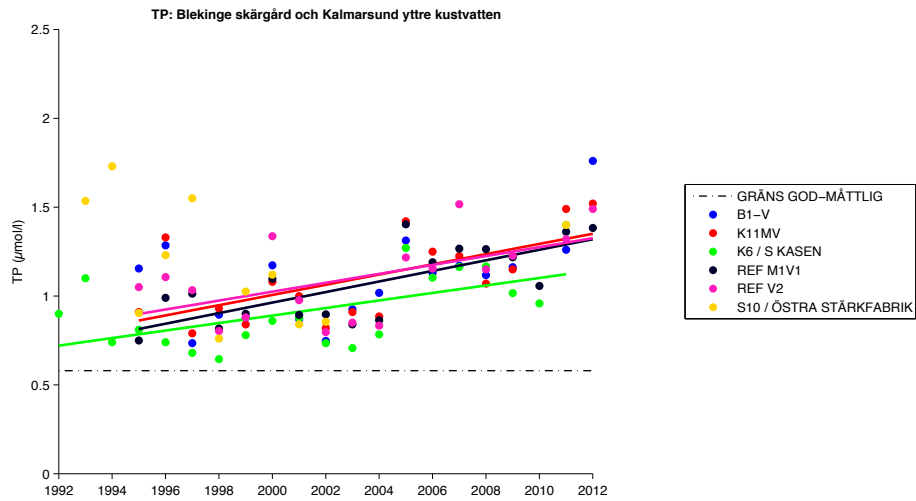
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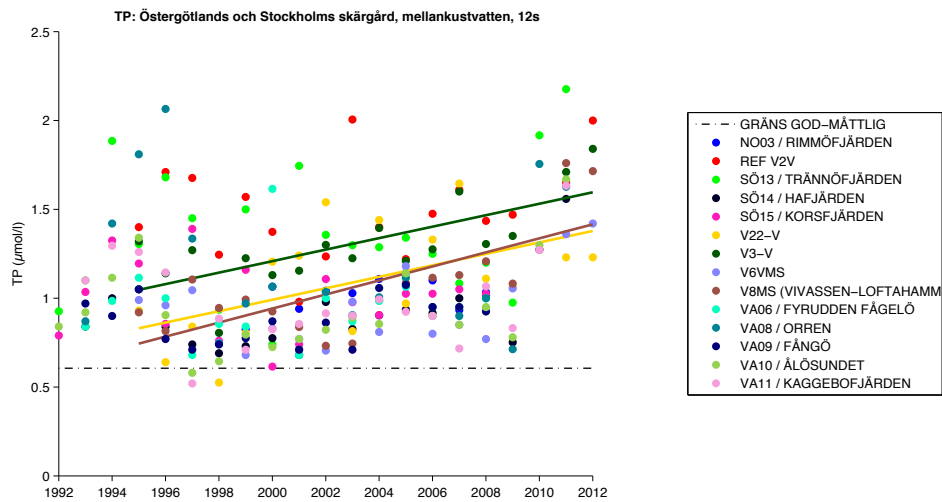
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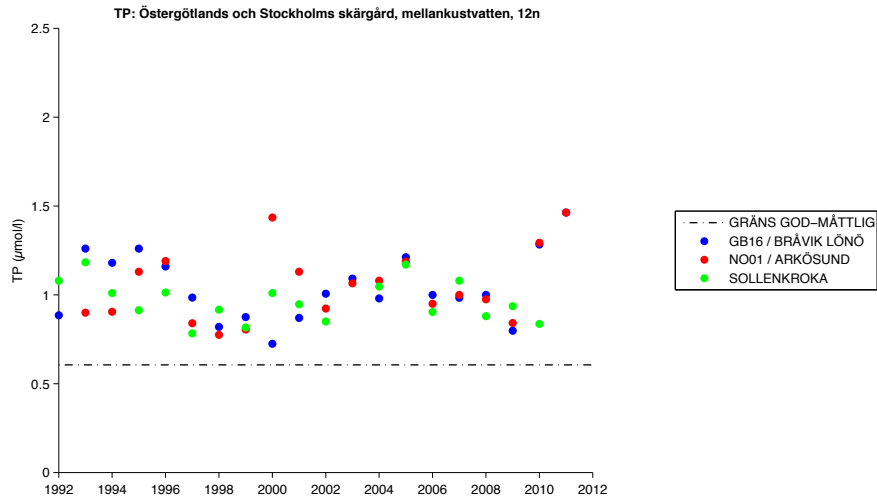
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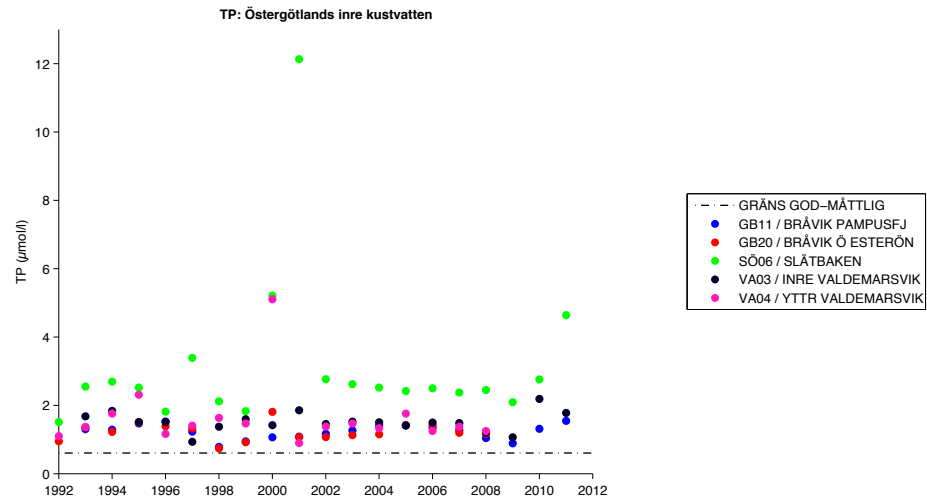
Figur 6.12



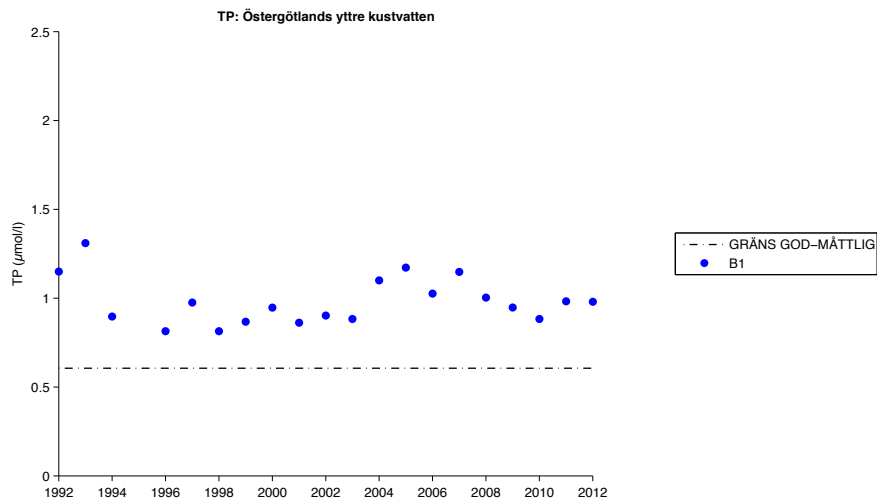
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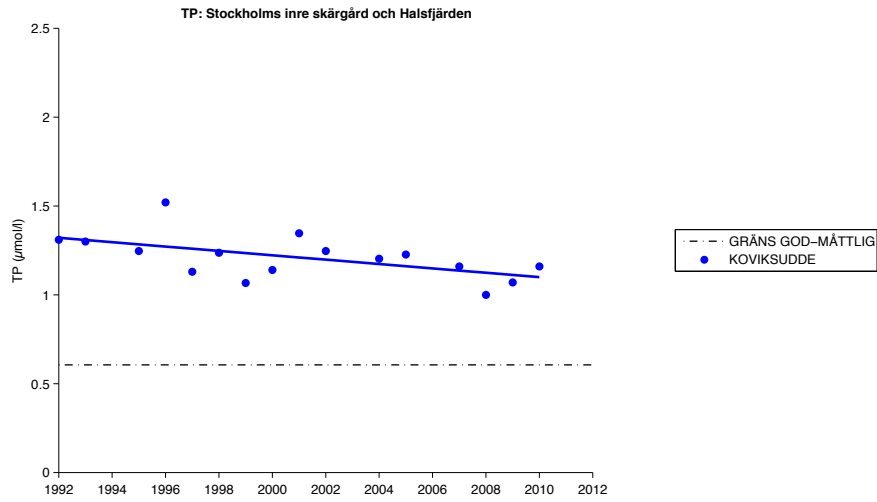
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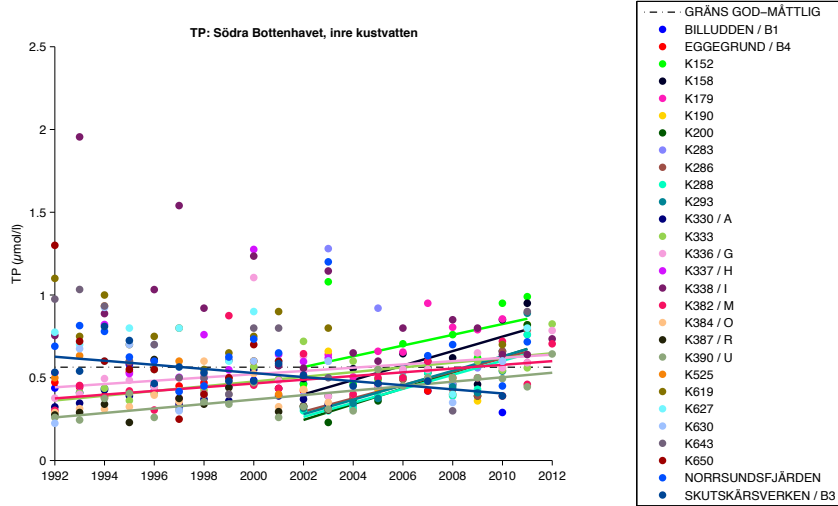
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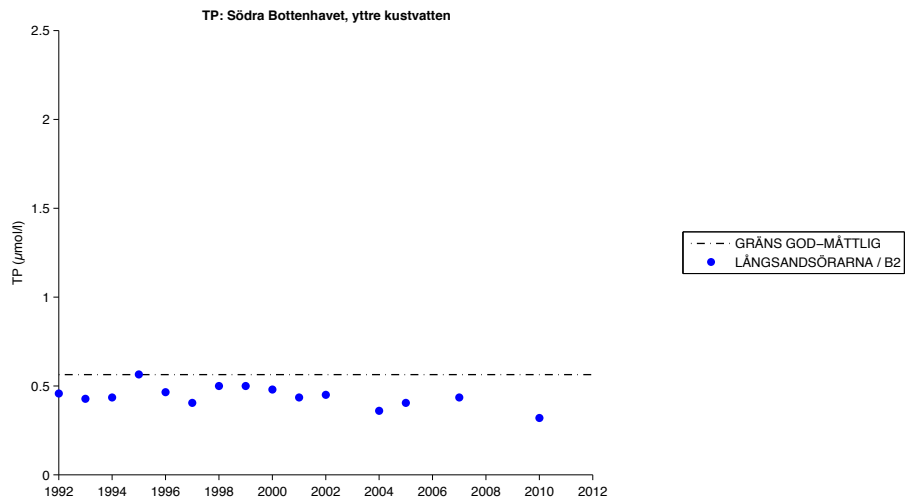
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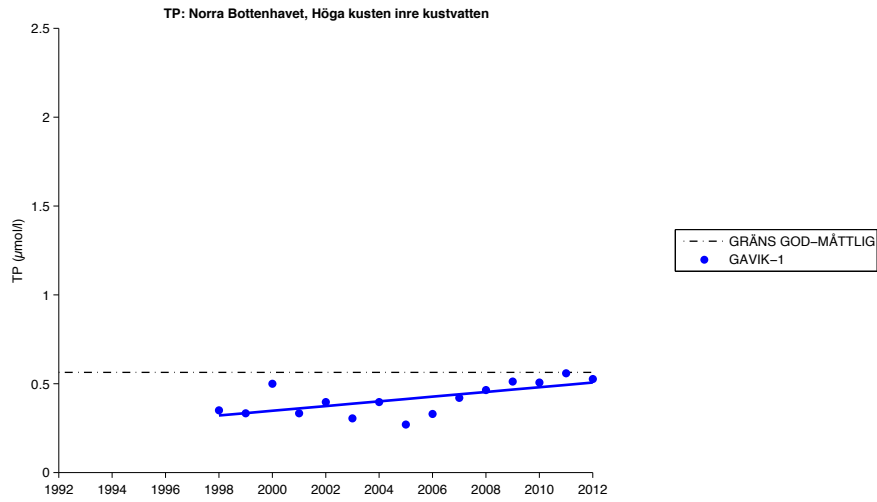
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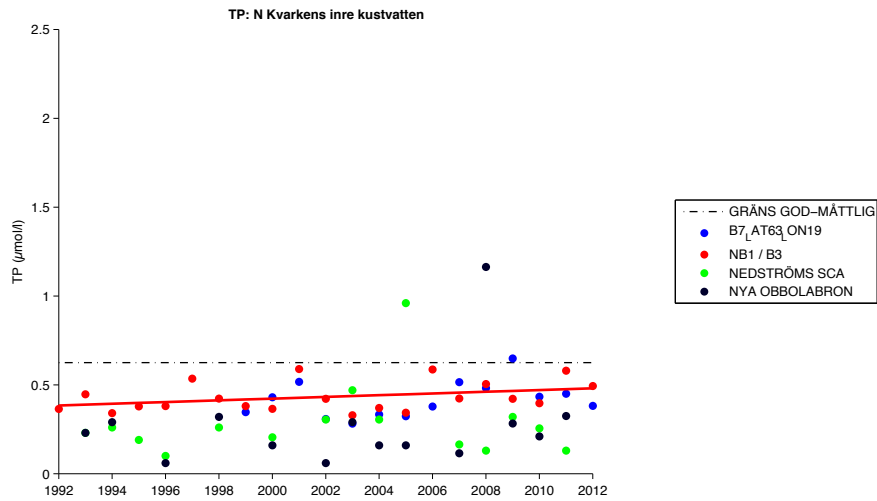
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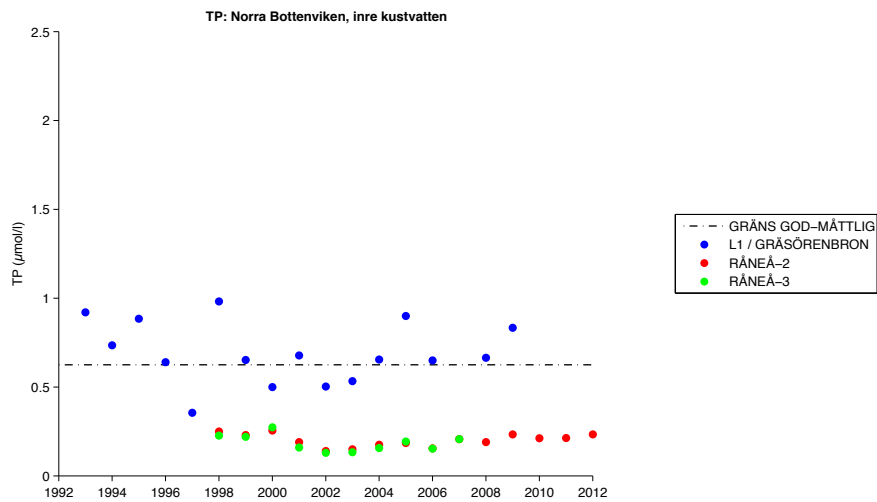
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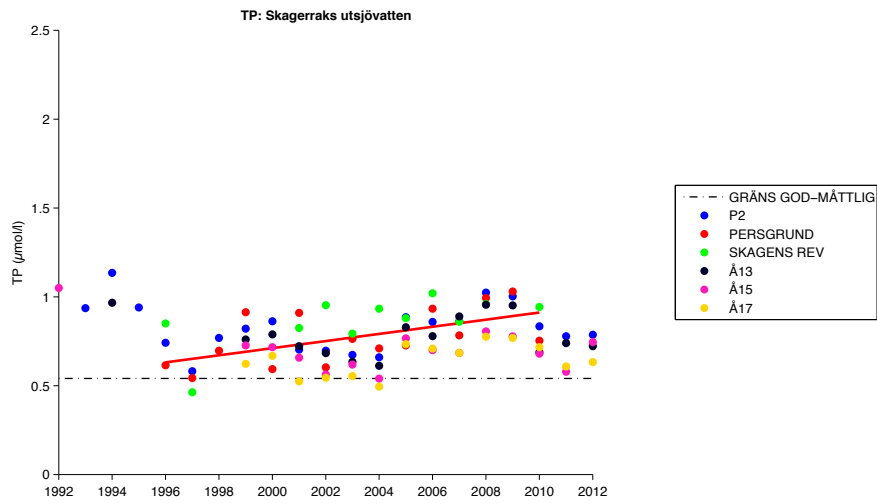
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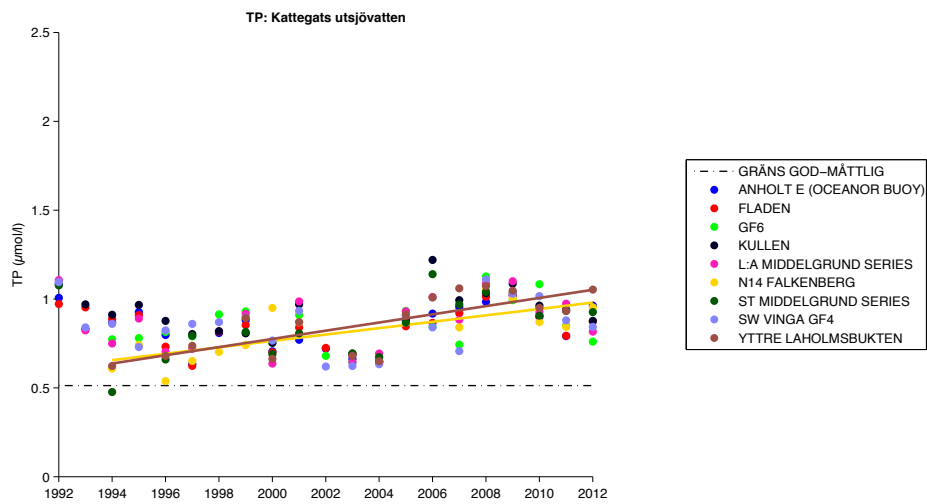
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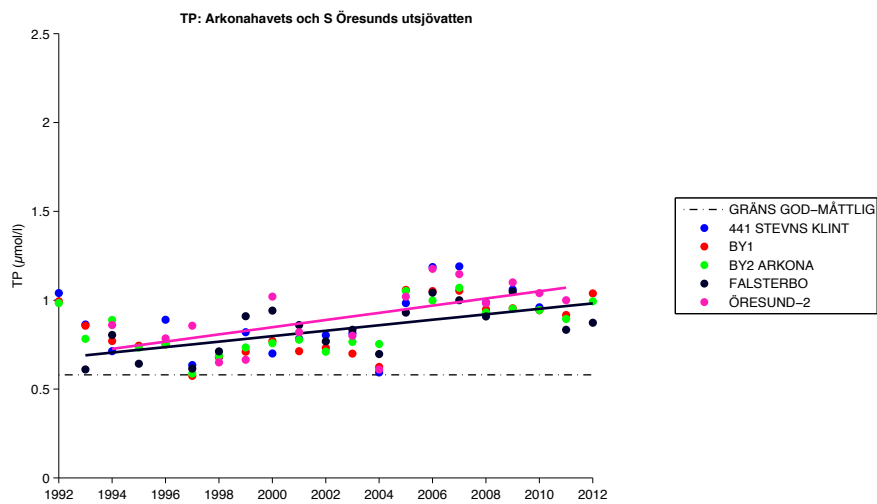
Figur 6.22



Figur 6.23

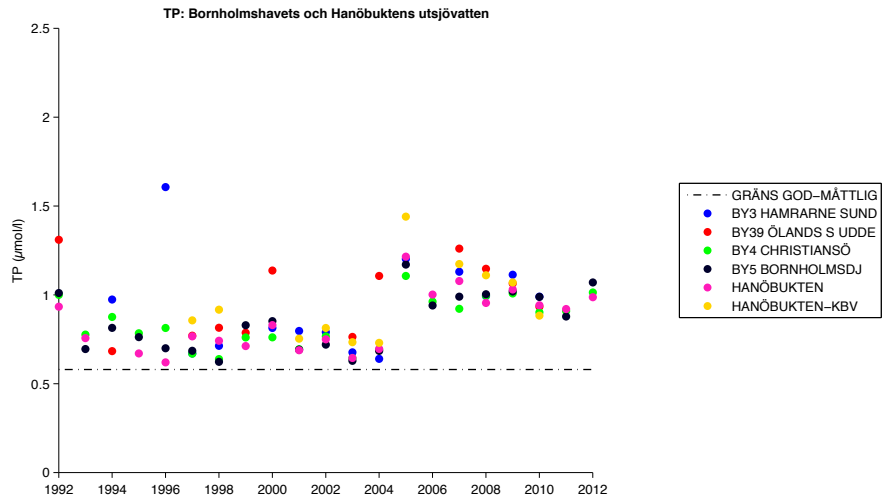


Figur 6.24

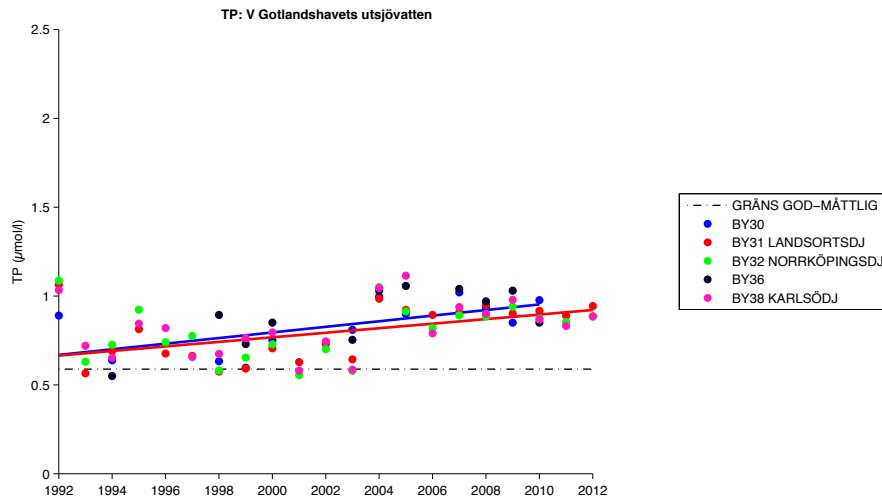




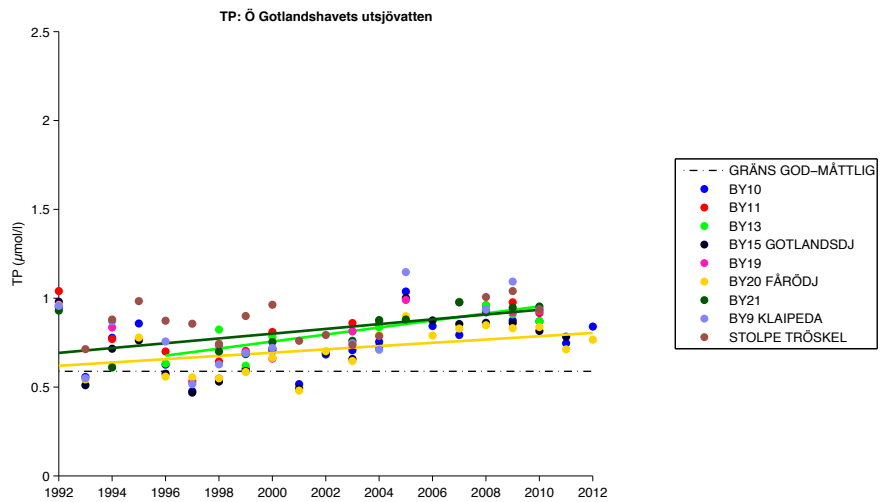
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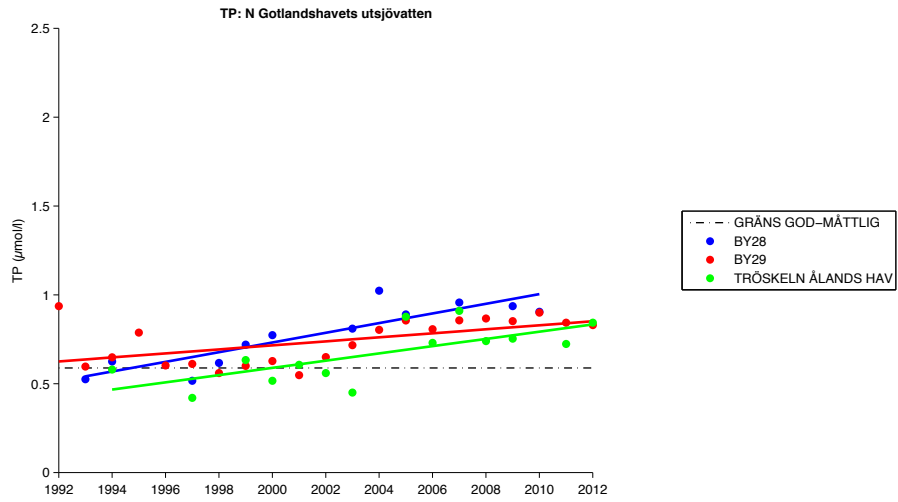
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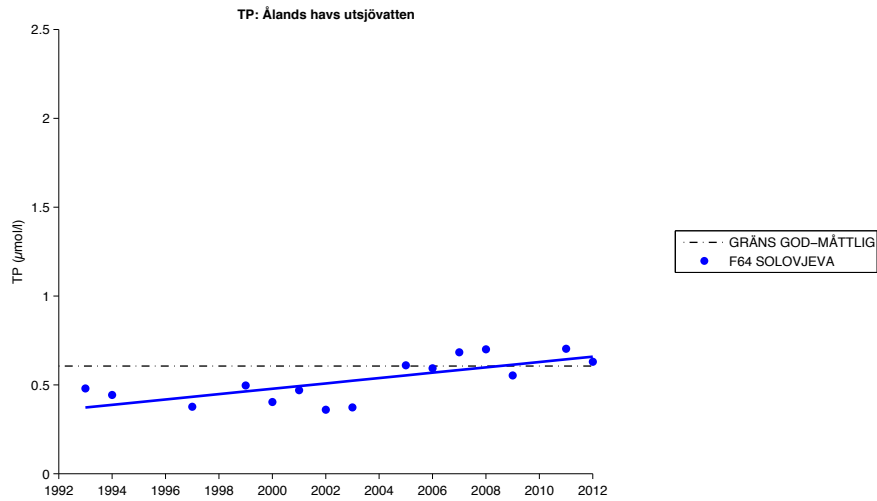
Figur 6.27



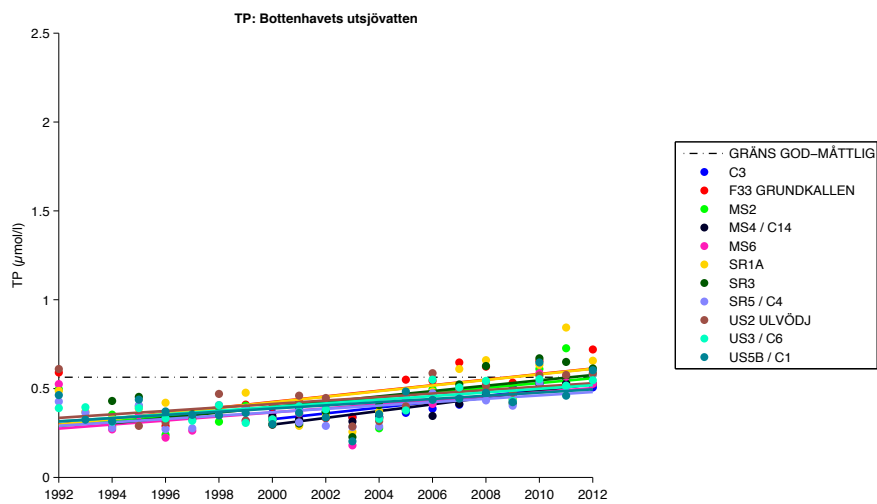
Figur 6.28



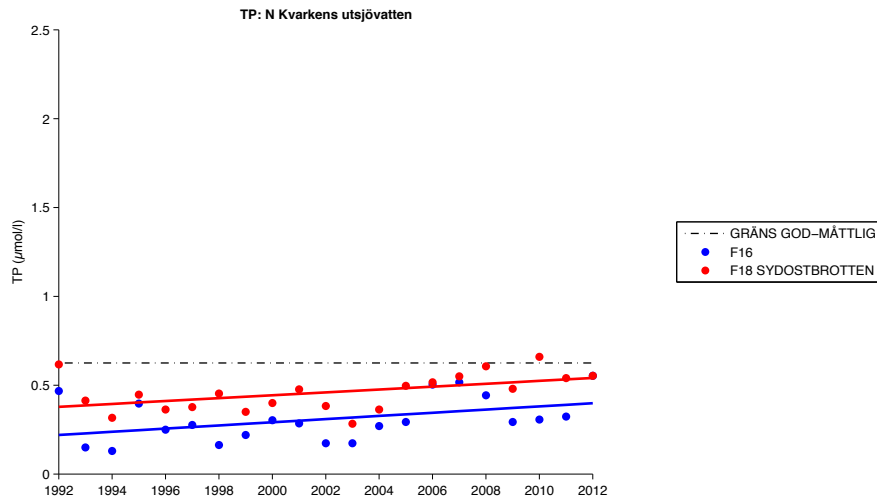
Figur 6.29



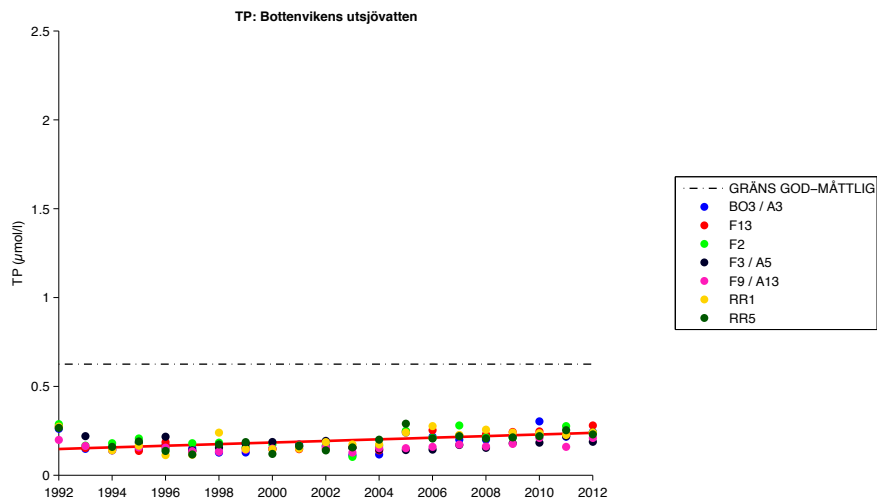
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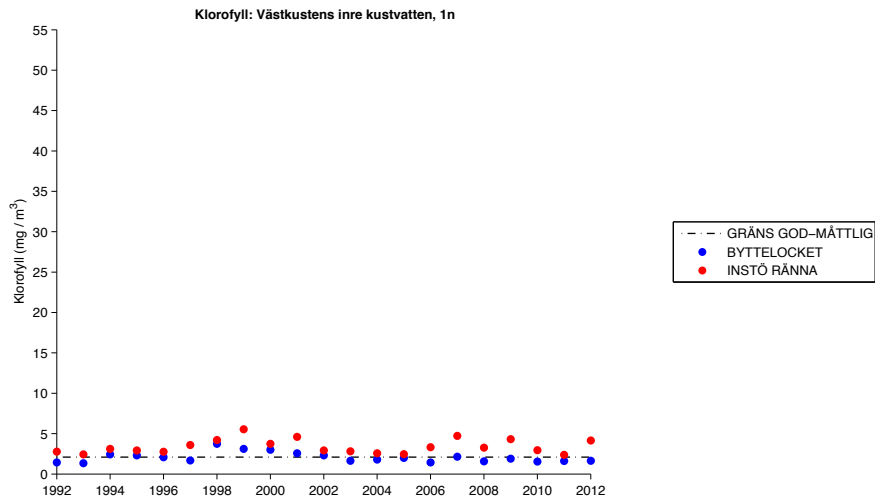
Figur 6.31



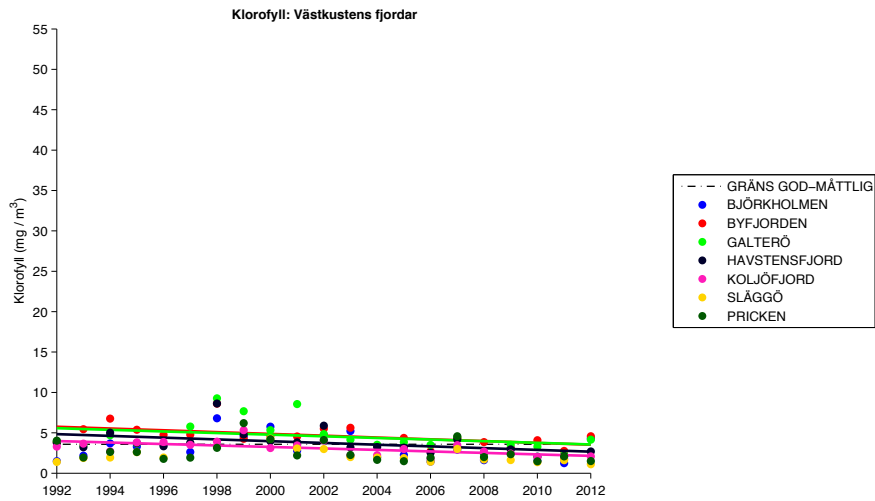
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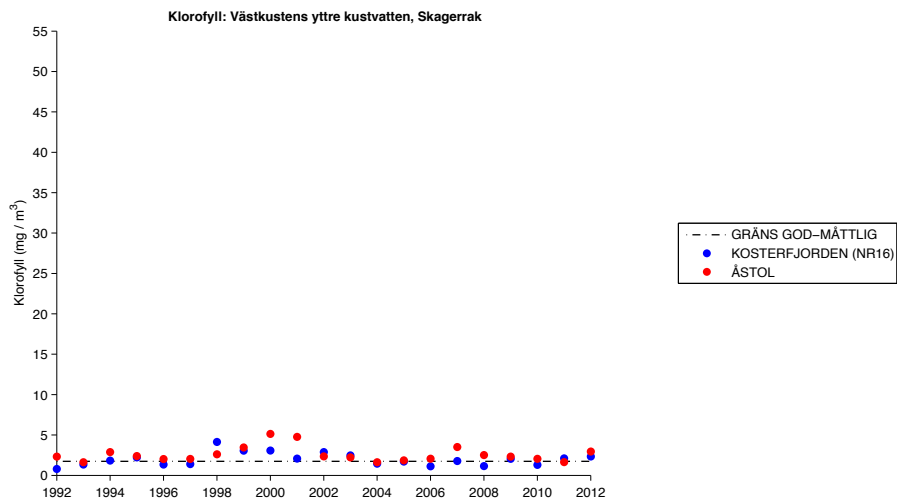
Figur 7.1



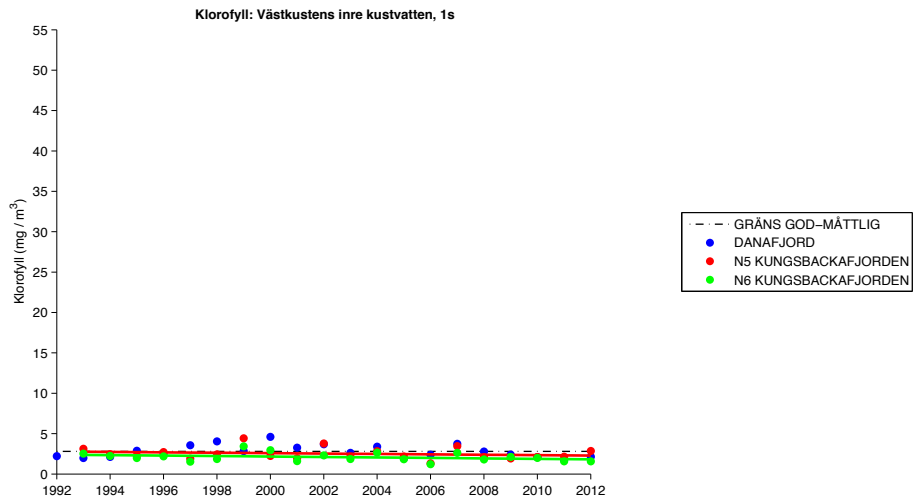
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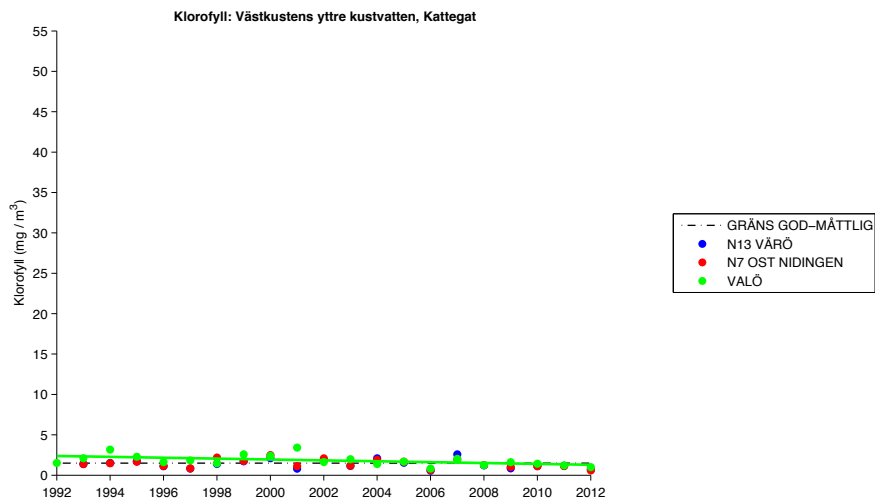
Figur 7.3



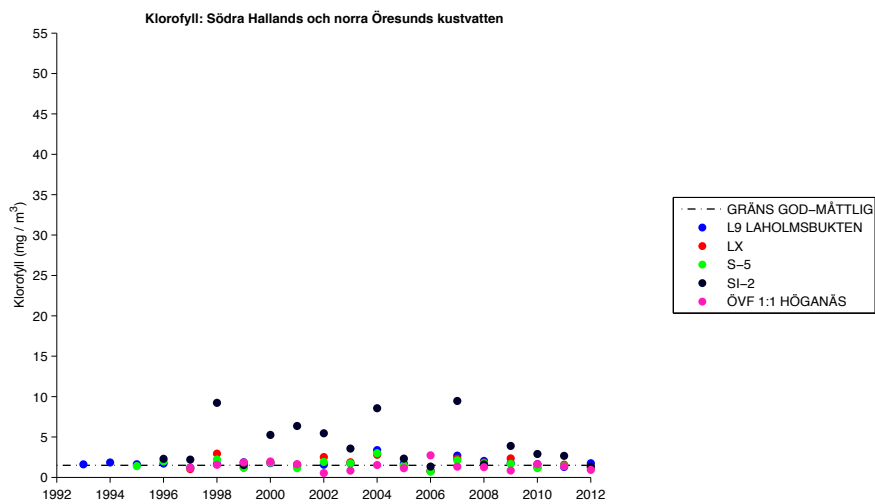
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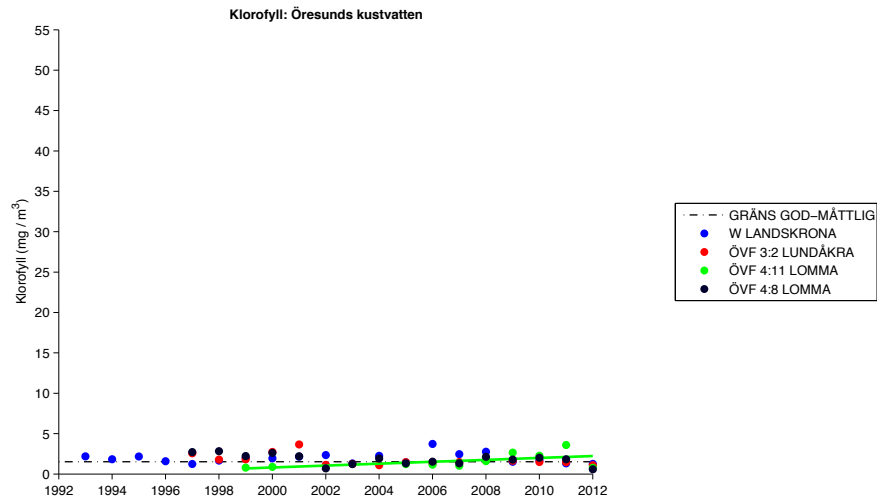
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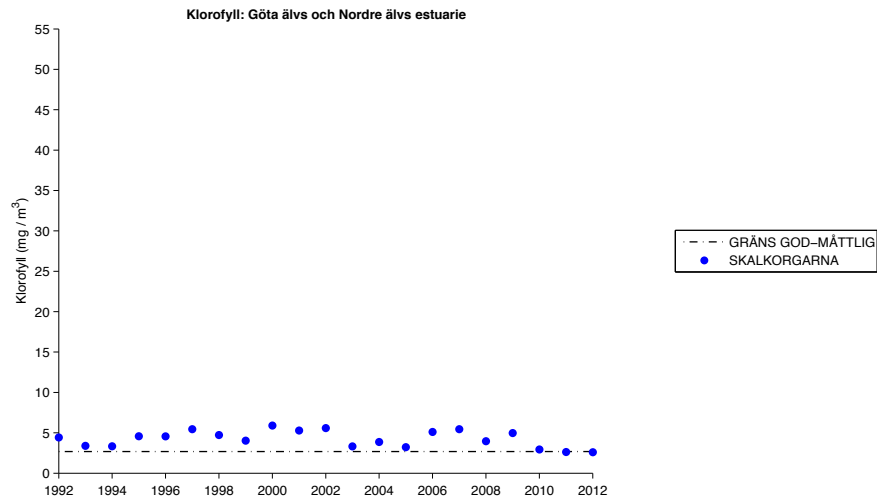
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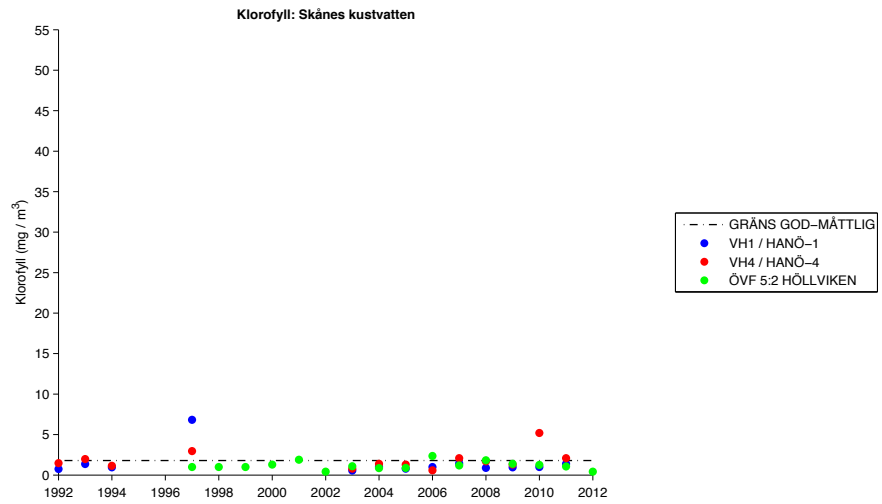
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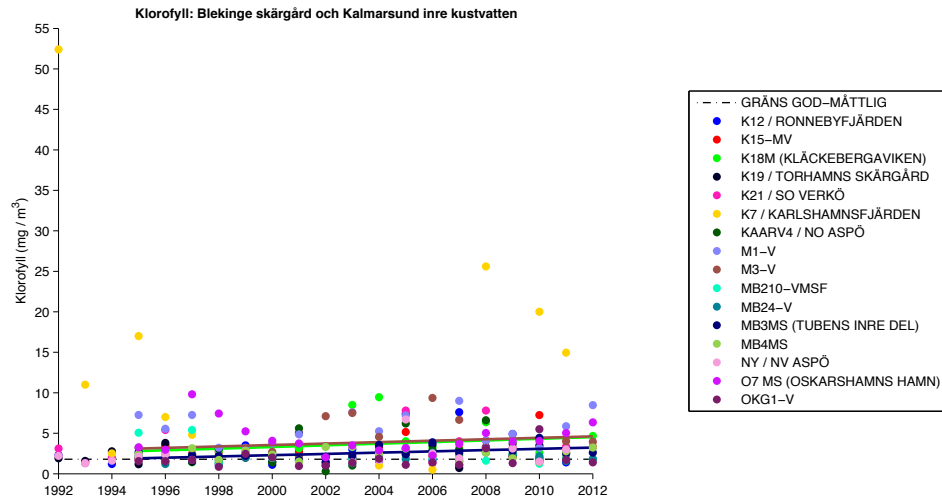
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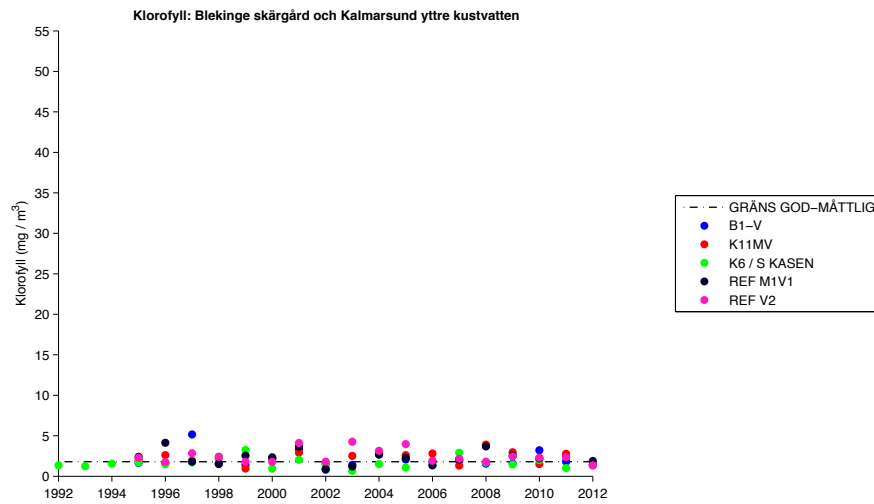
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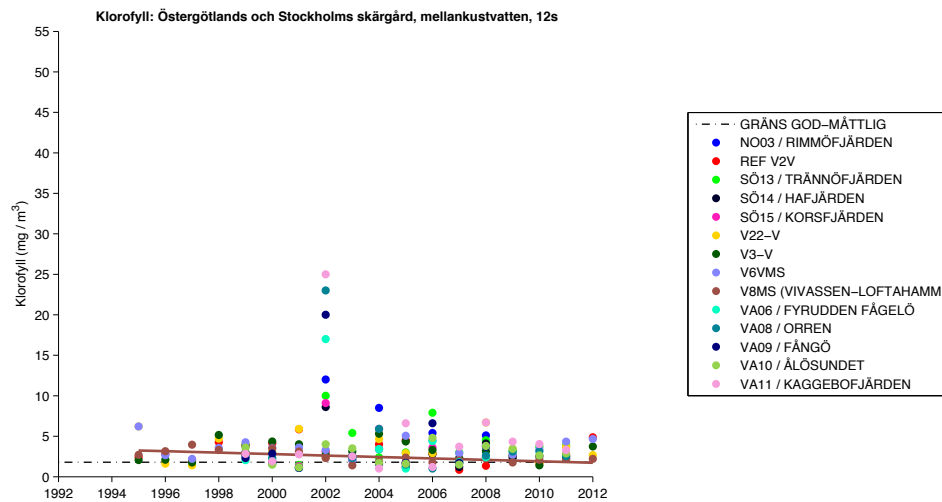
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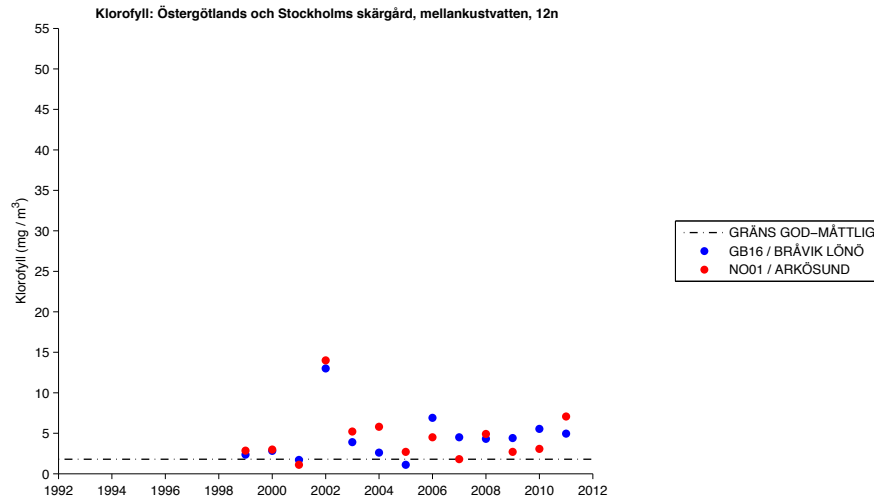
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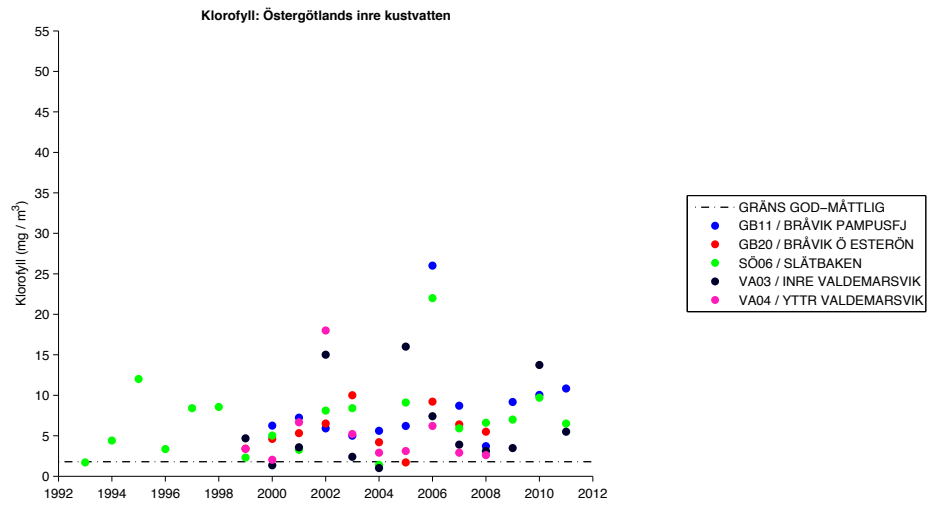
Figur 7.12



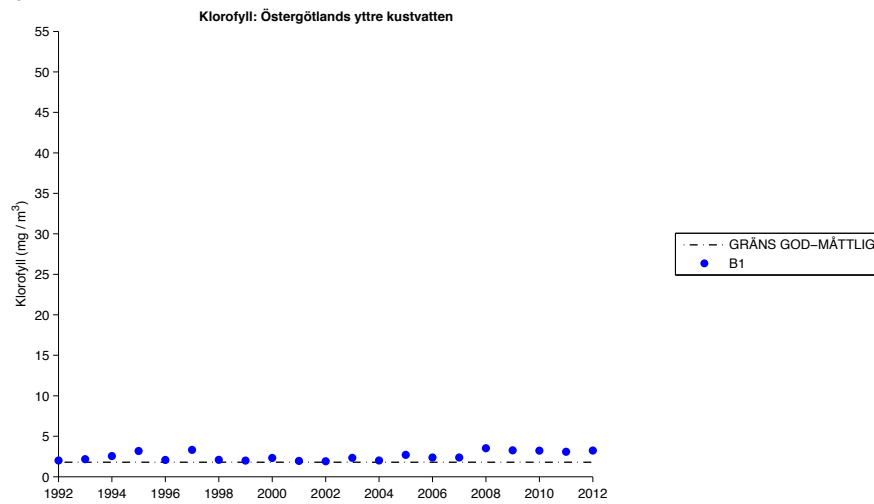
Figur 7.13



Figur 7.14

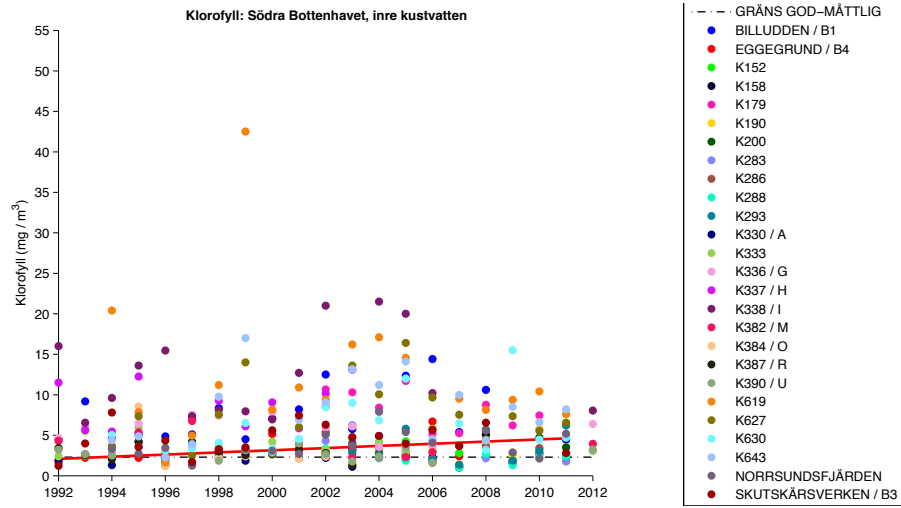


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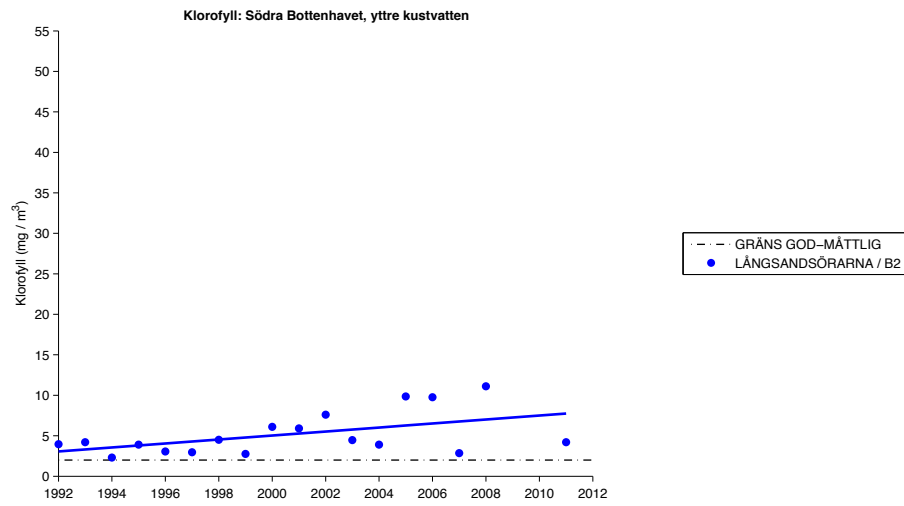




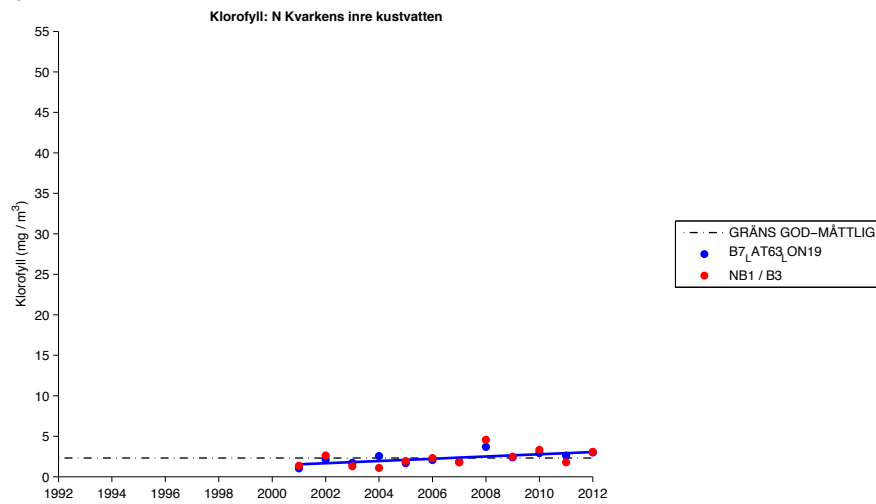
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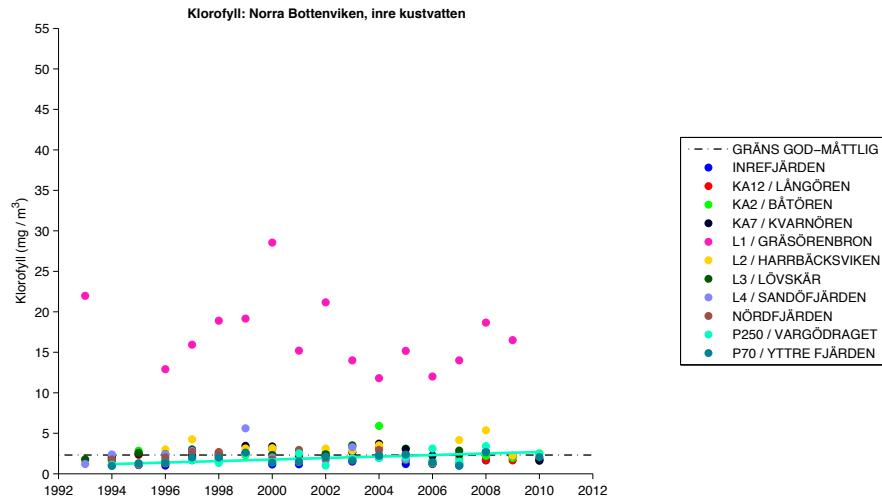
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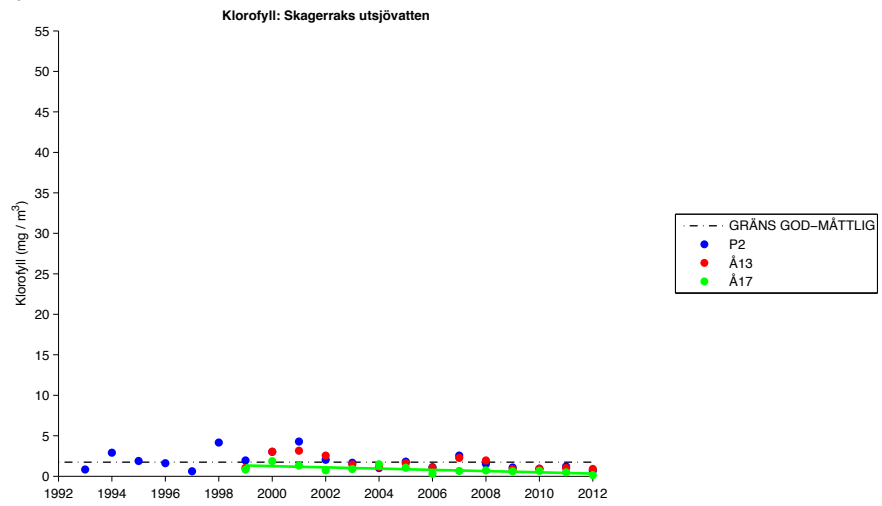
Figur 7.18



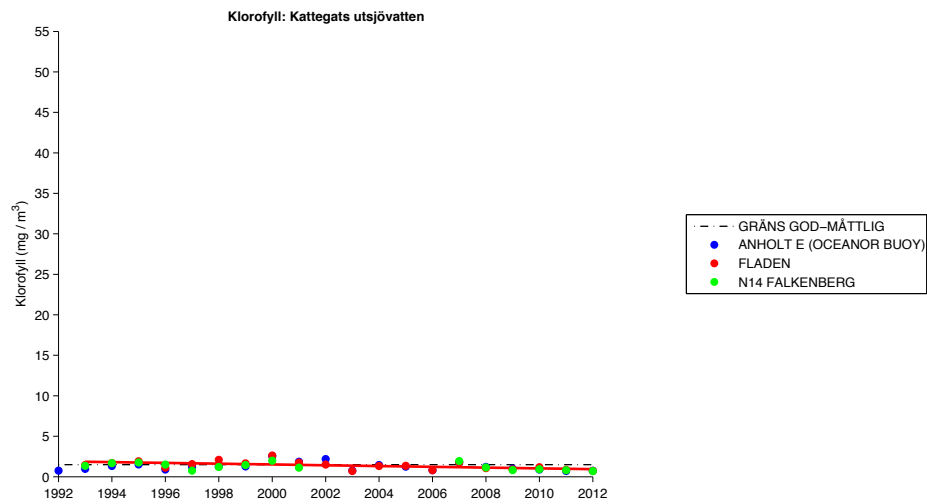
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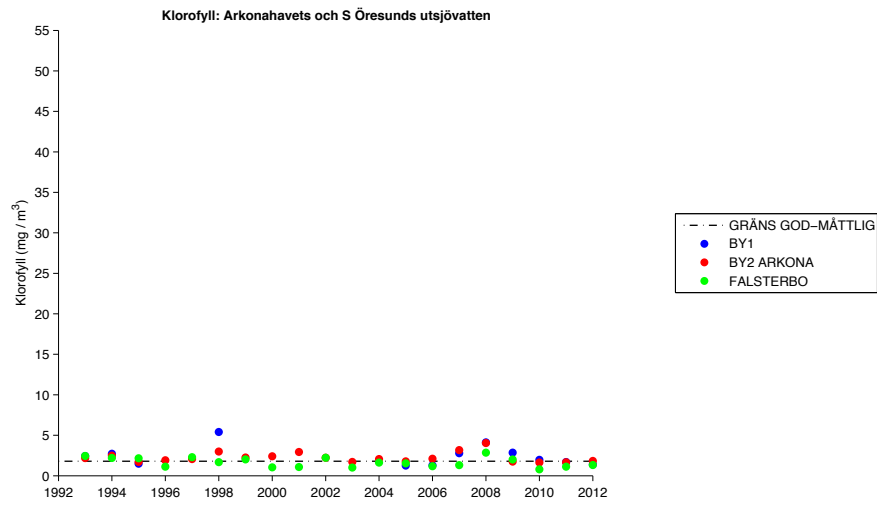
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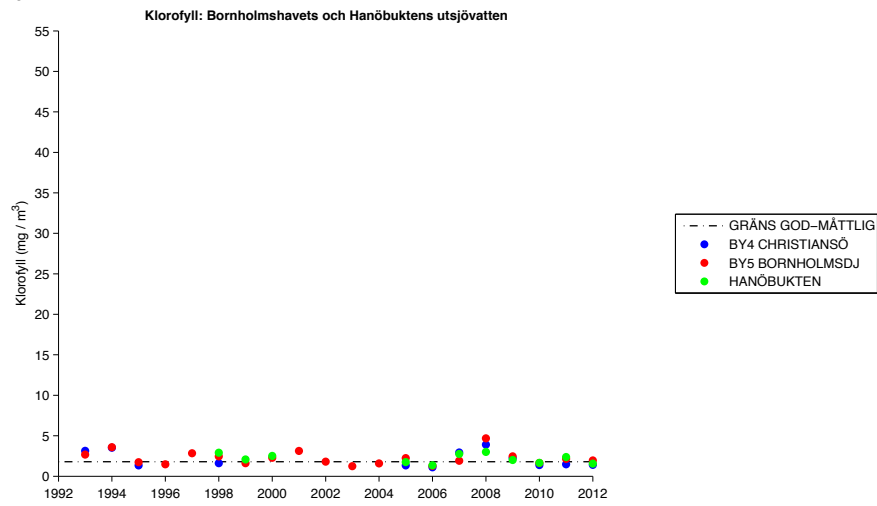
Figur 7.21



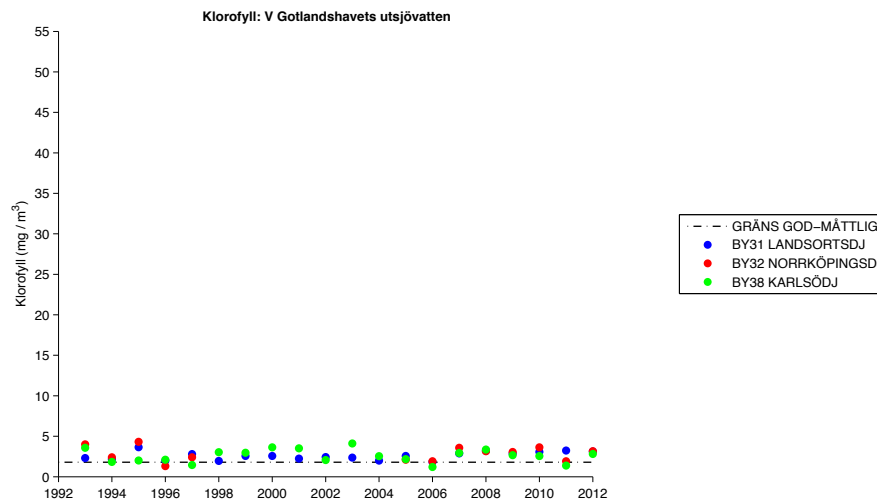
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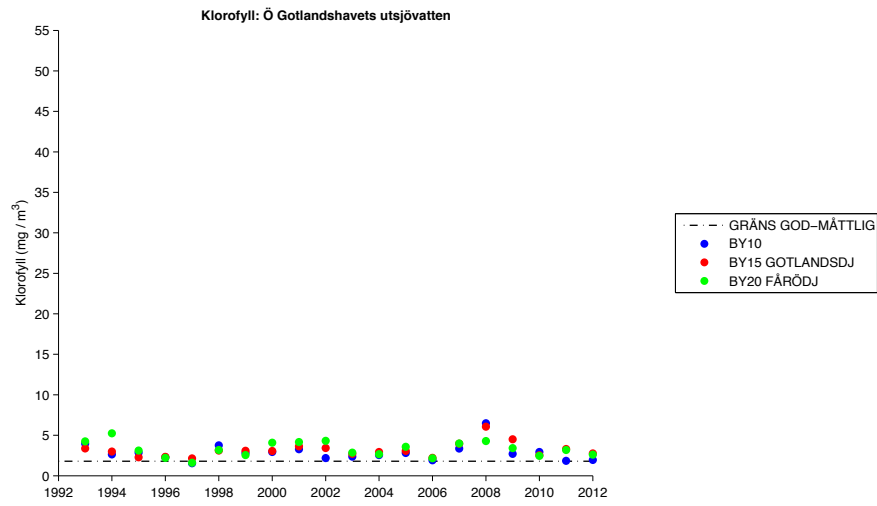
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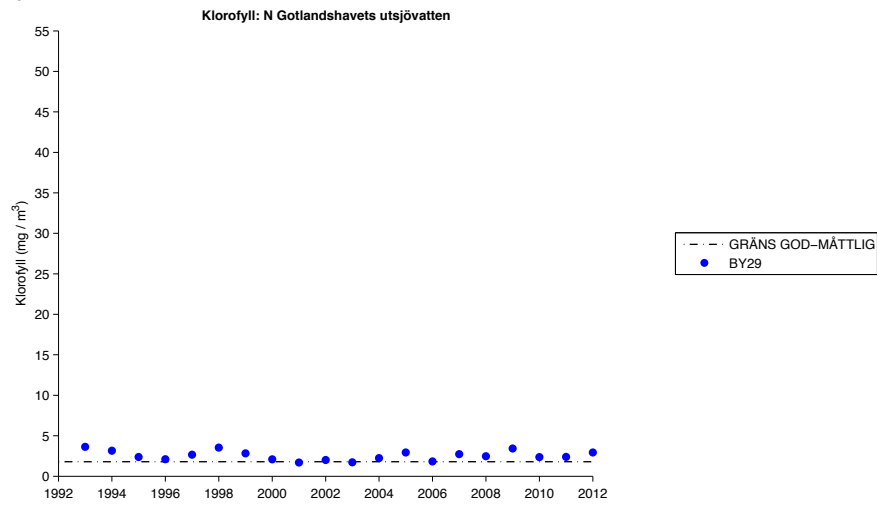
Figur 7.24



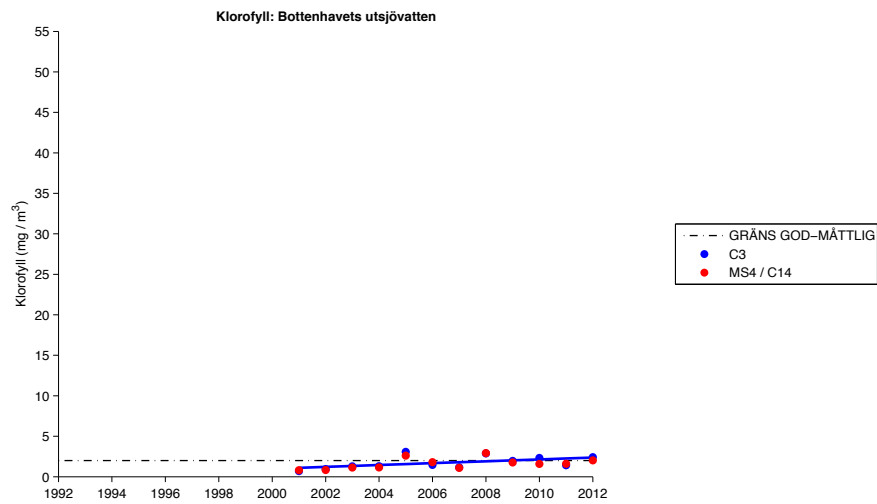
Figur 7.25



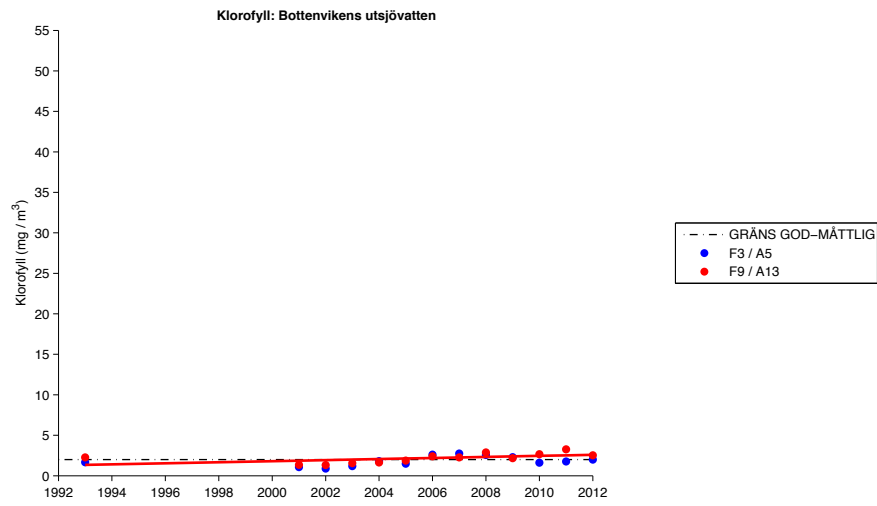
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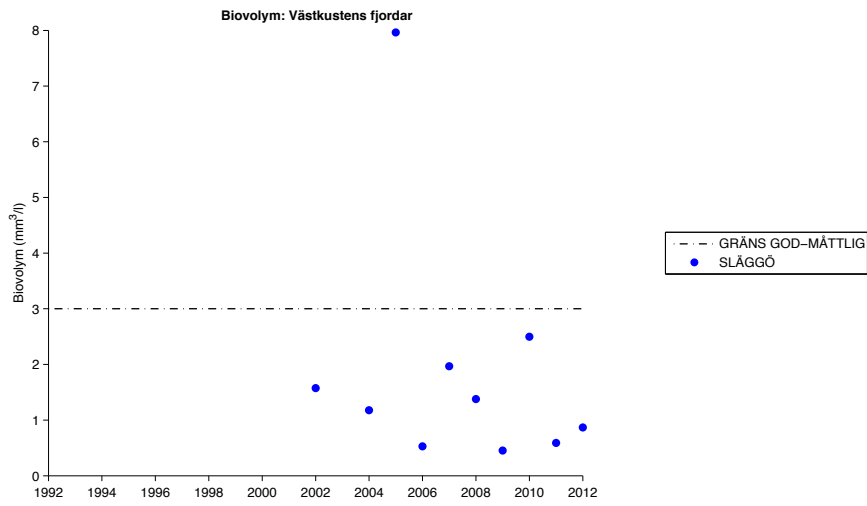
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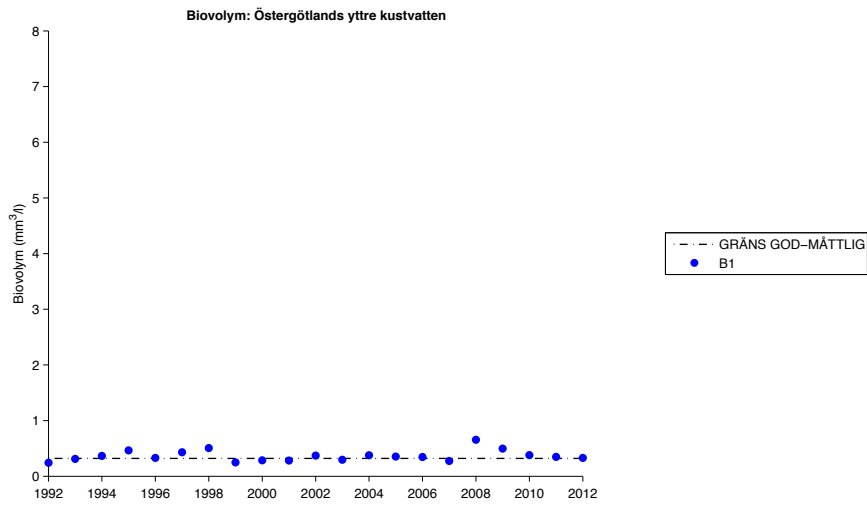
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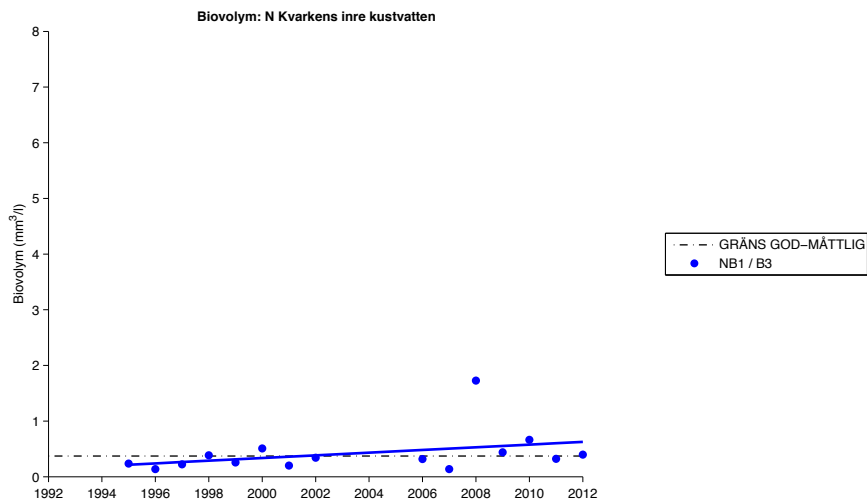
Figur 8.1



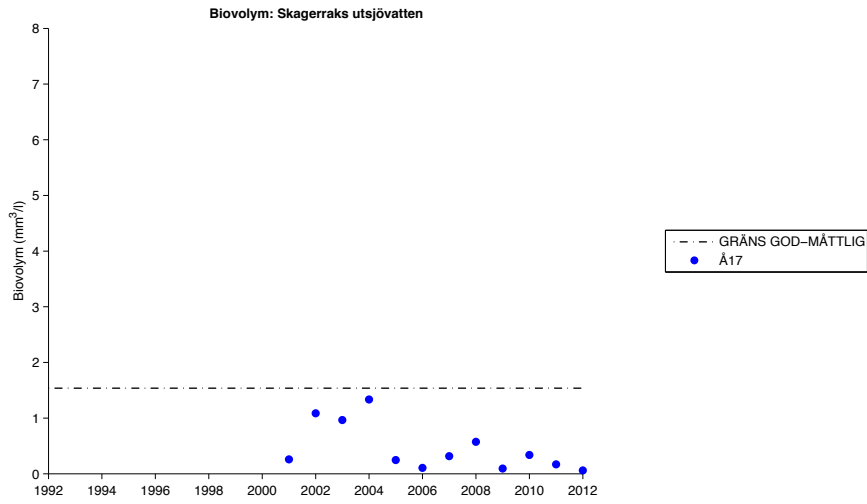
Figur 8.2



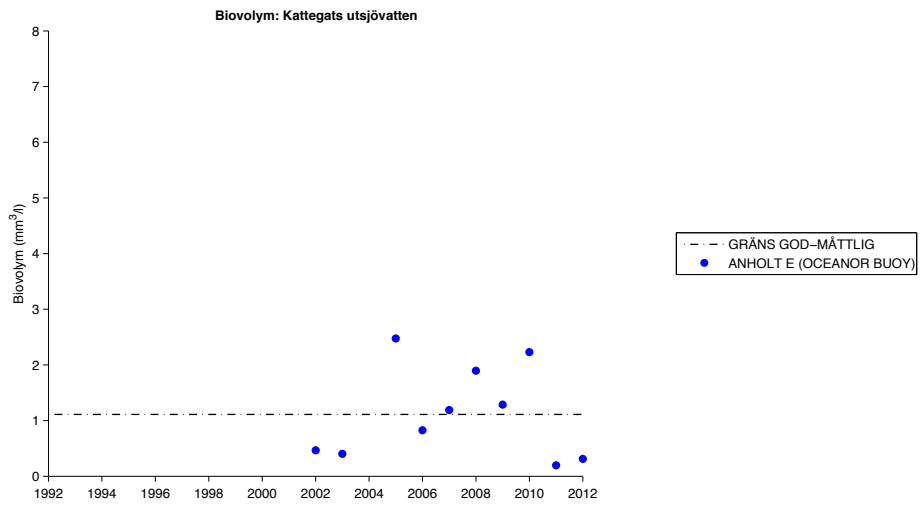
Figur 8.3



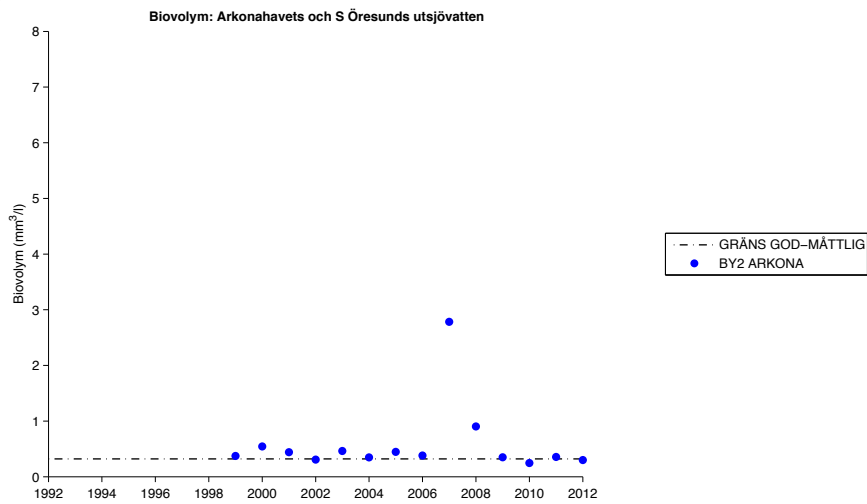
Figur 8.4



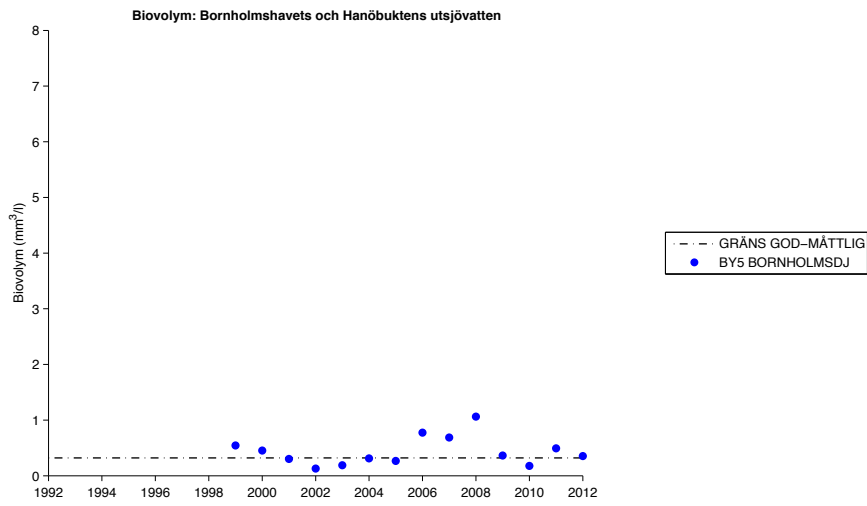
Figur 8.5



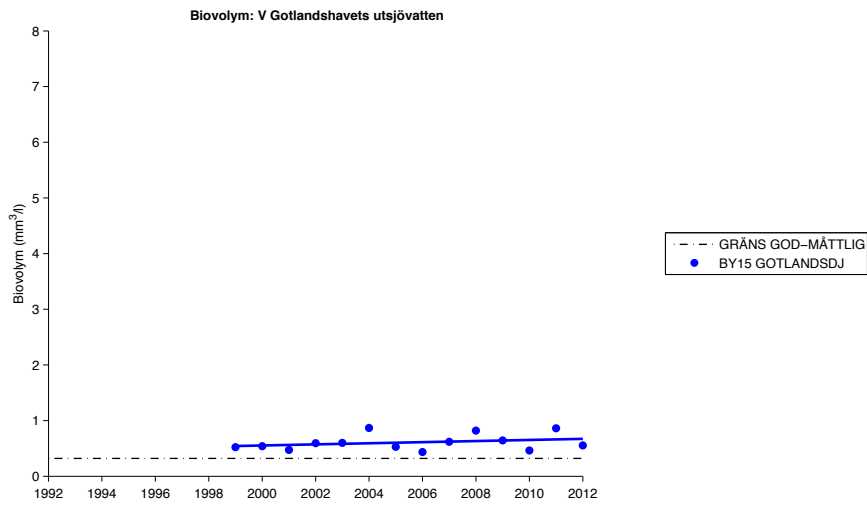
Figur 8.6



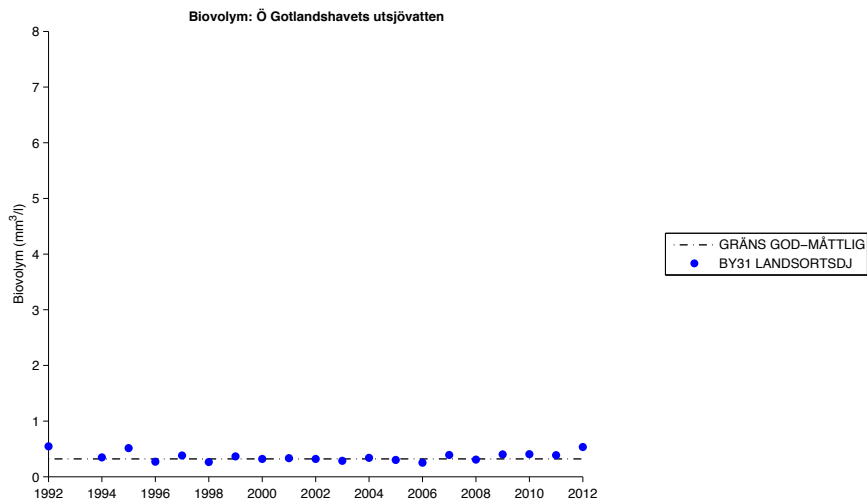
Figur 8.7



Figur 8.8

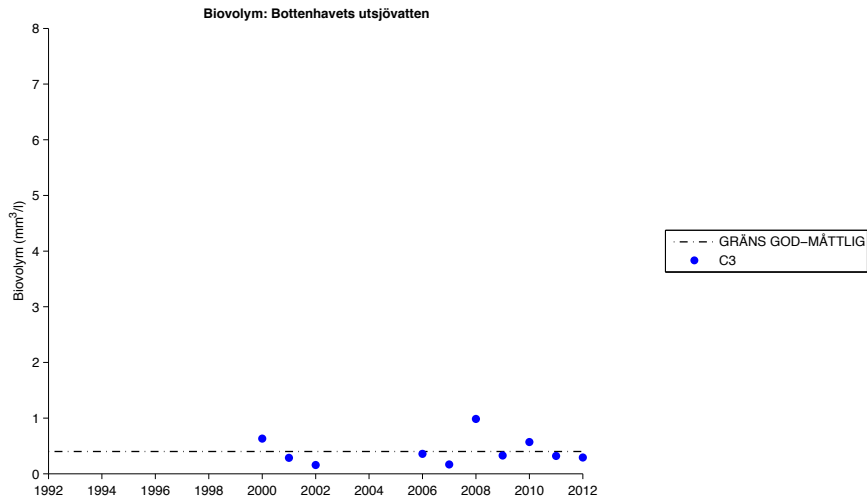


Figur 8.9

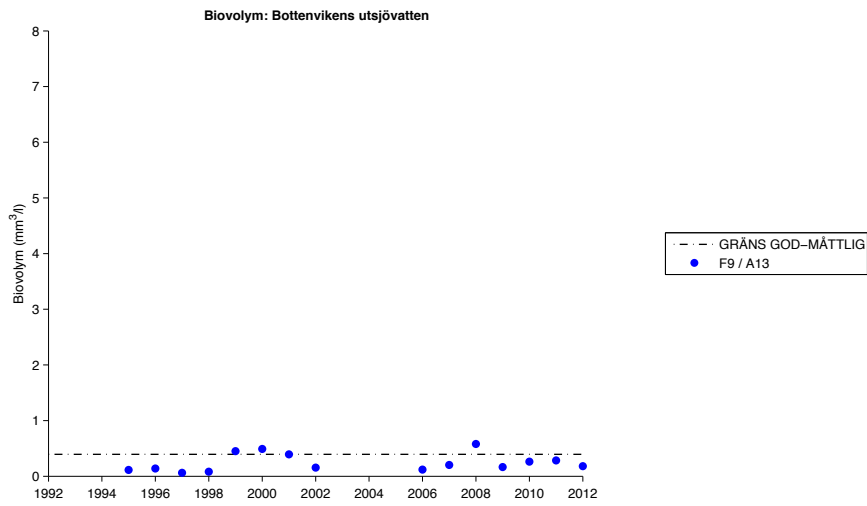




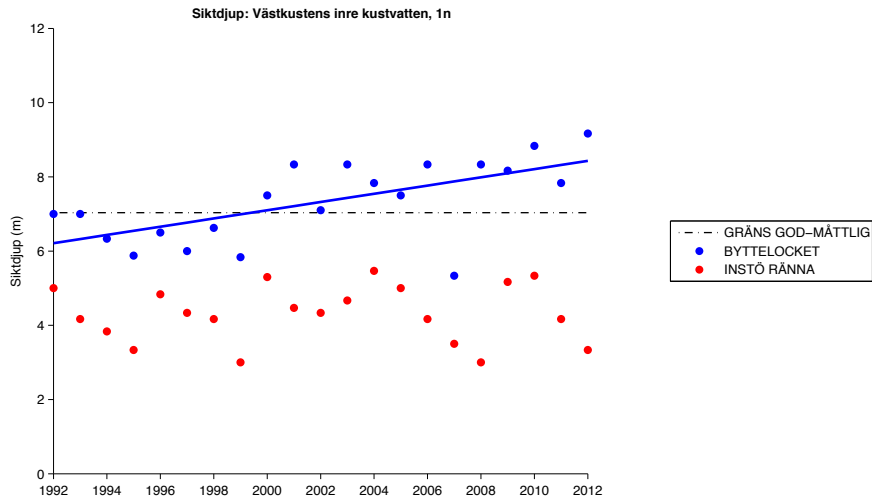
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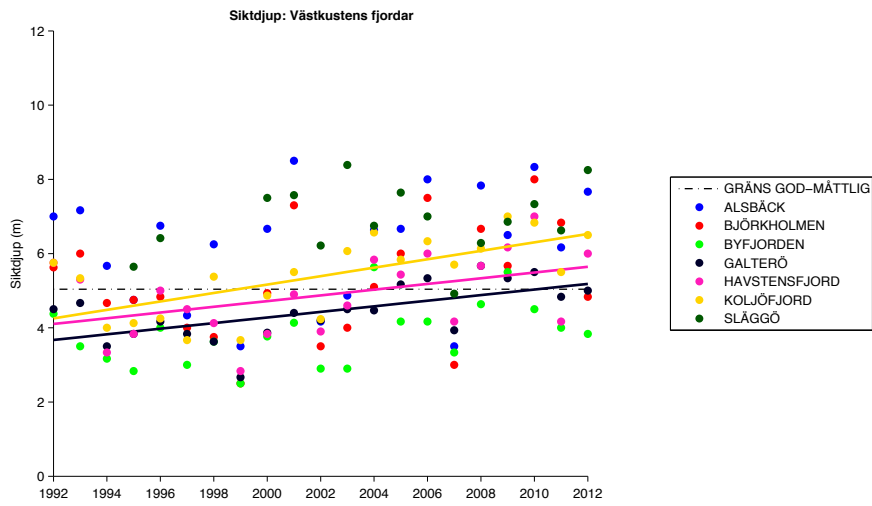
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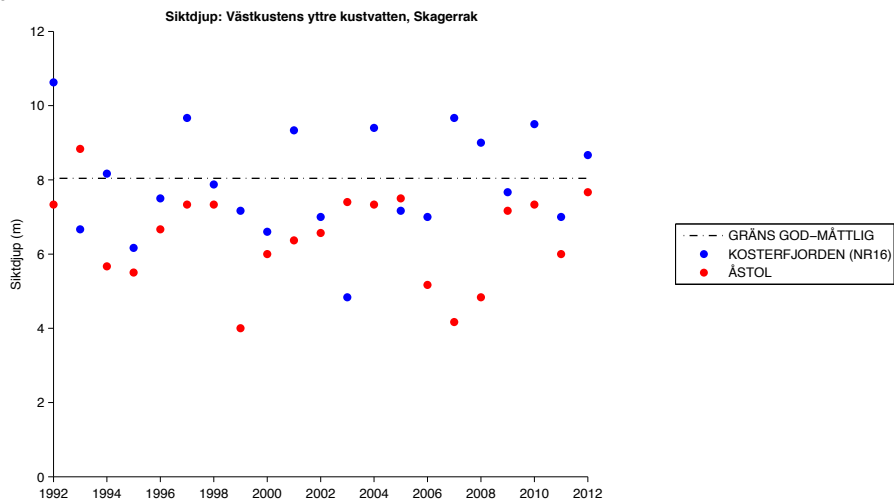
Figur 9.1



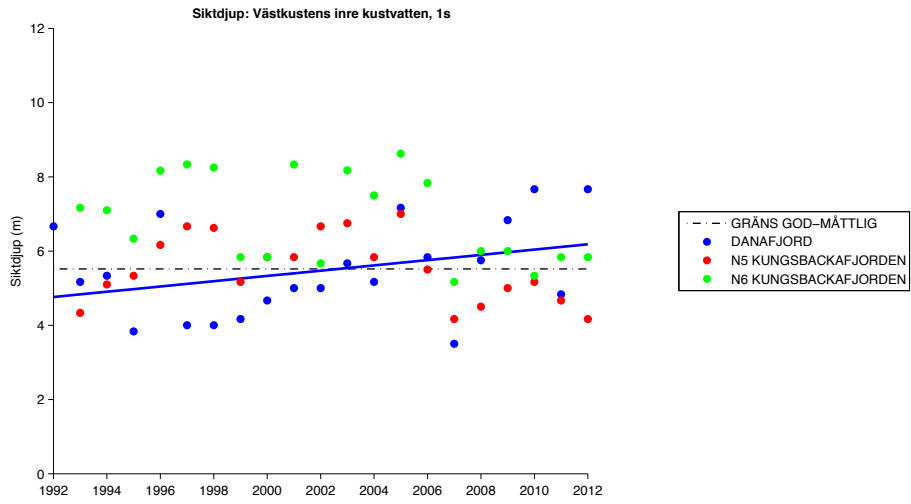
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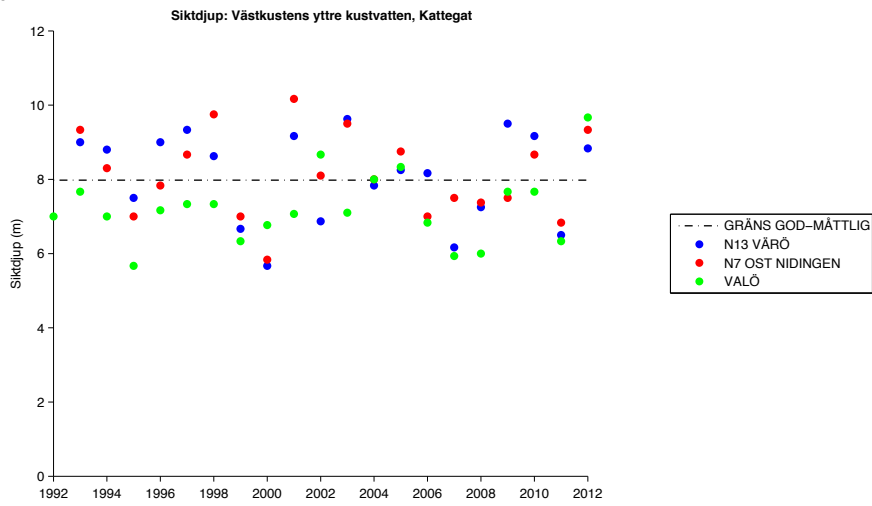
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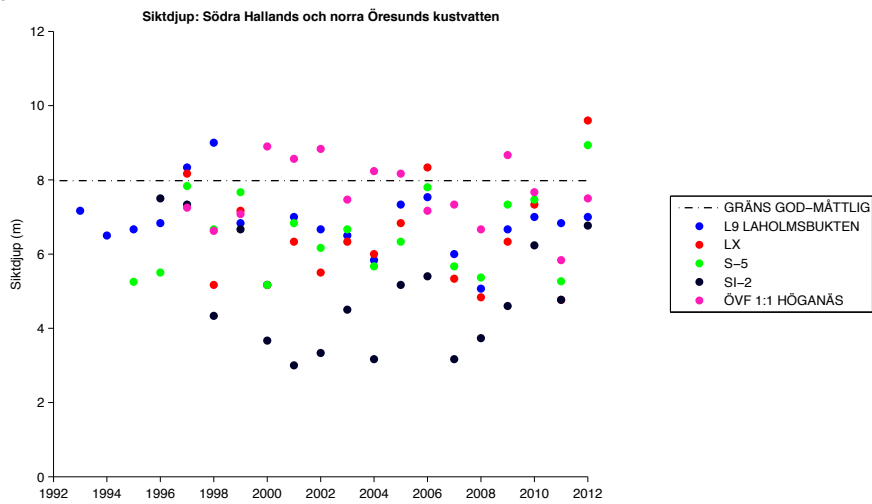
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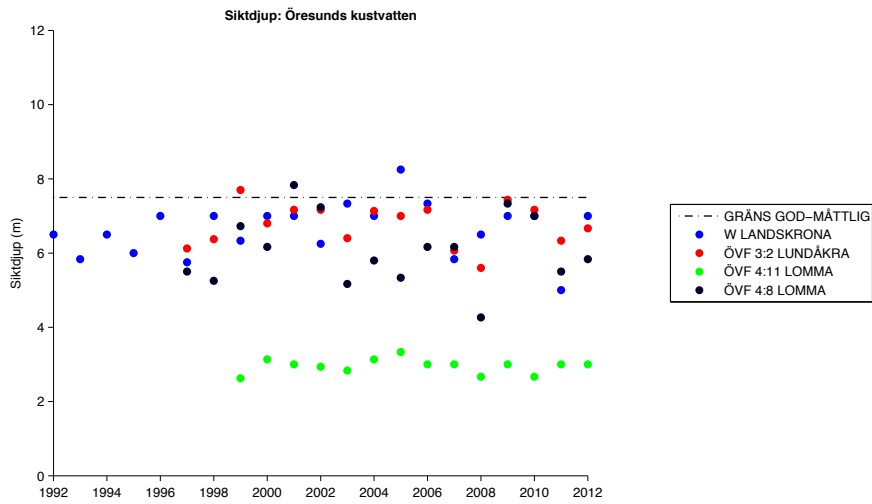
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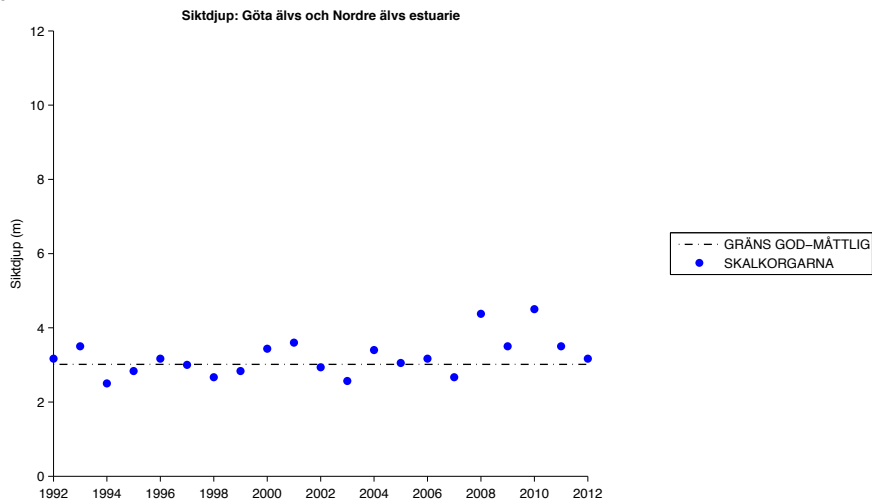
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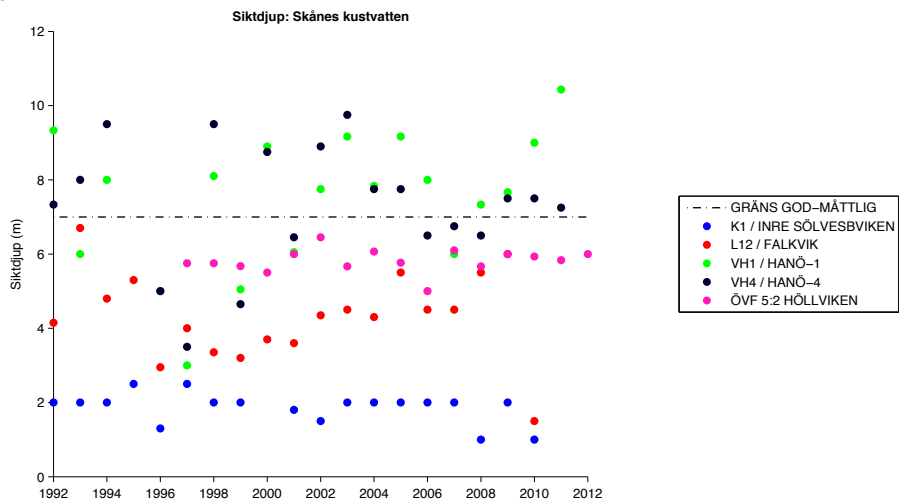
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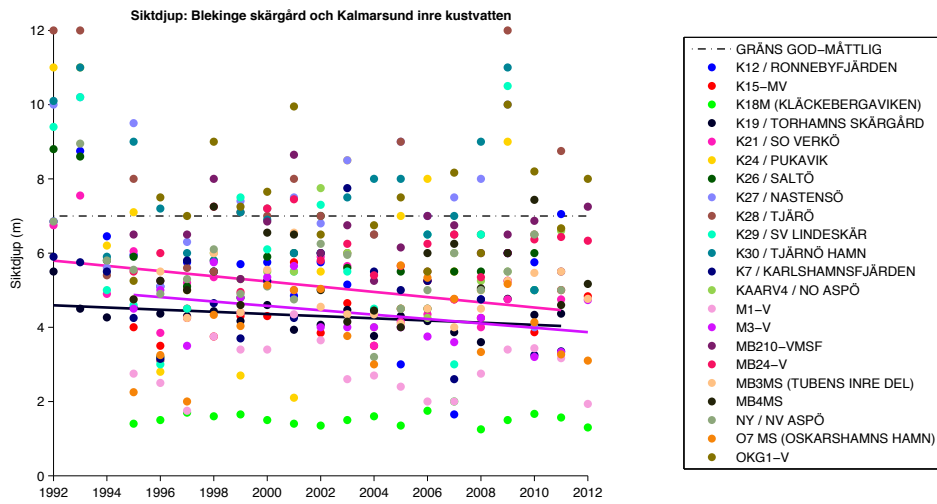
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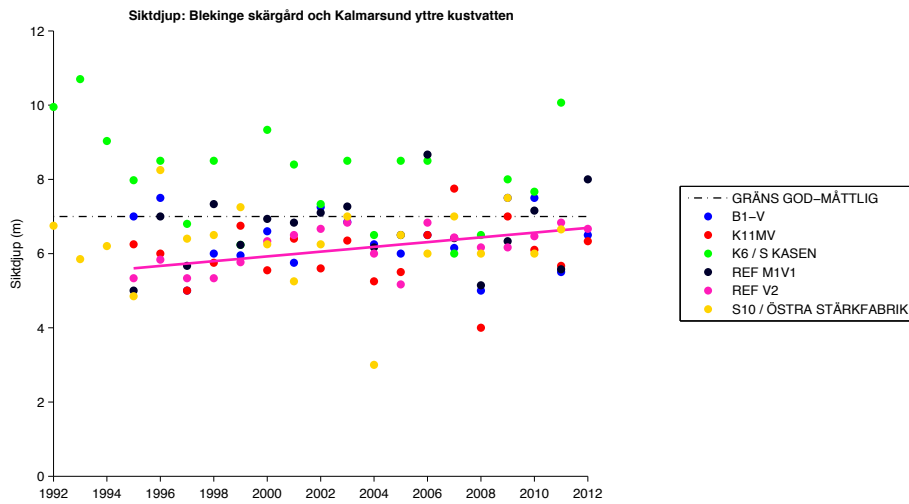
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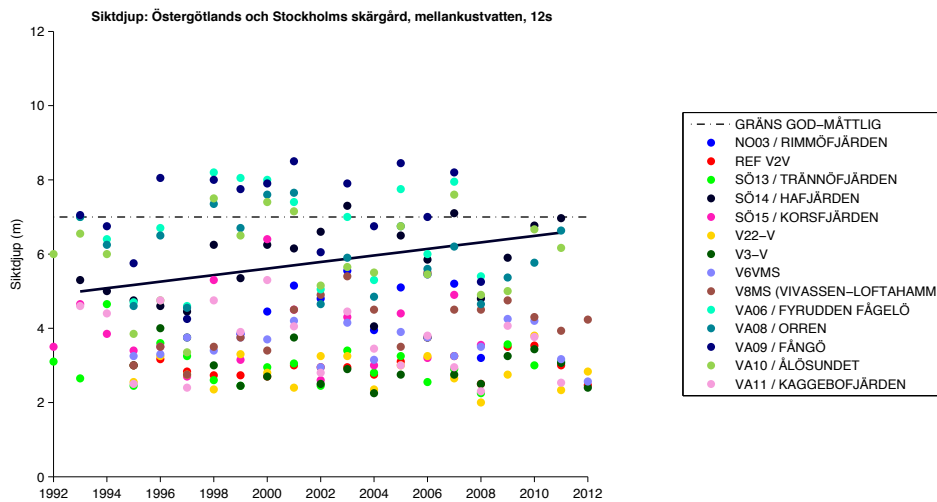
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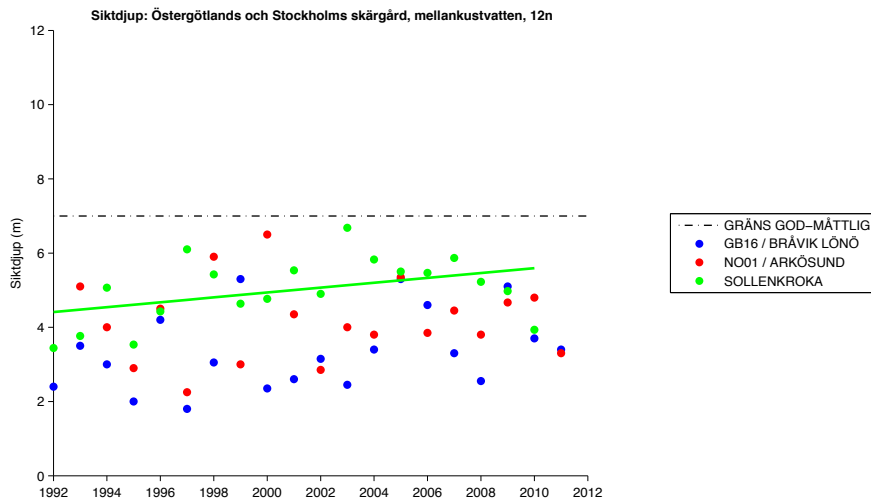
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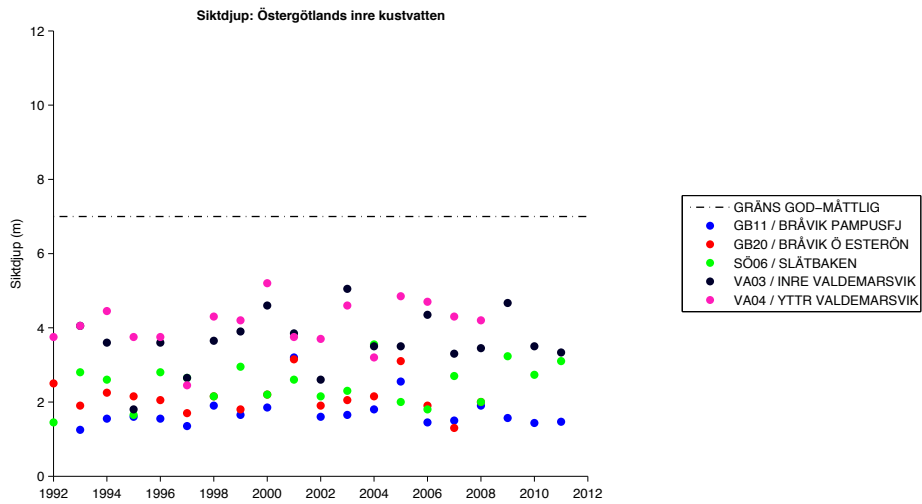
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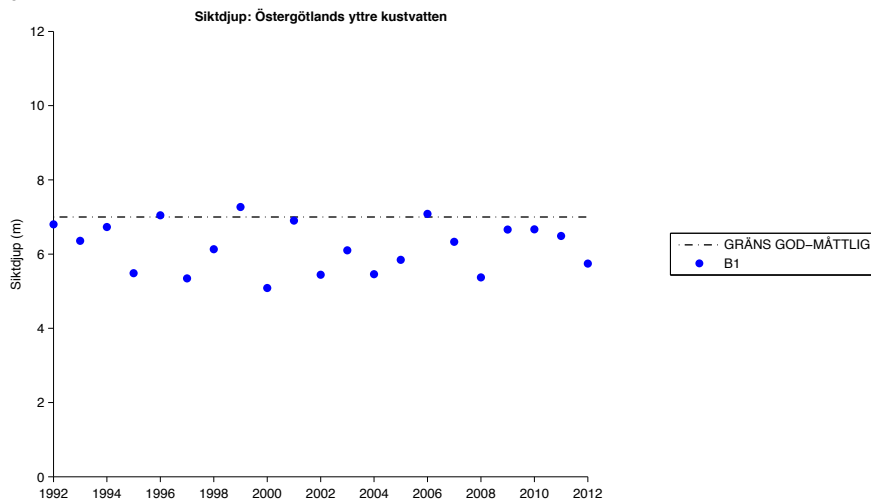
Figur 9.13



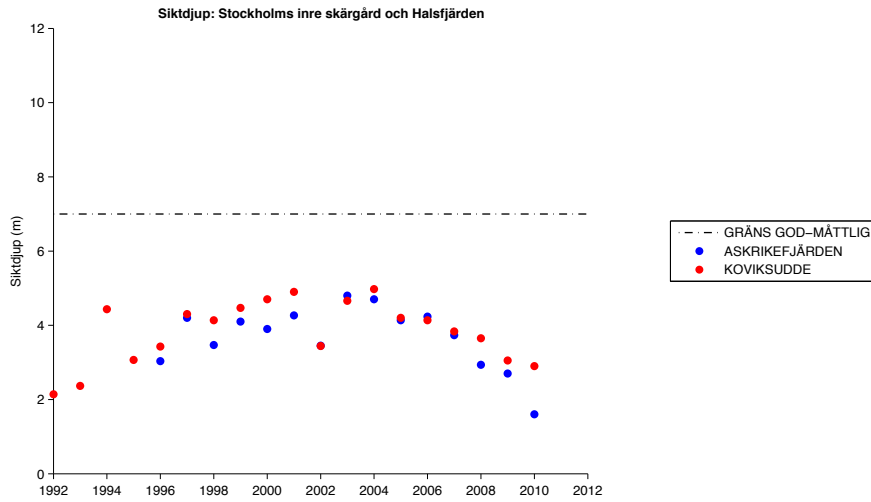
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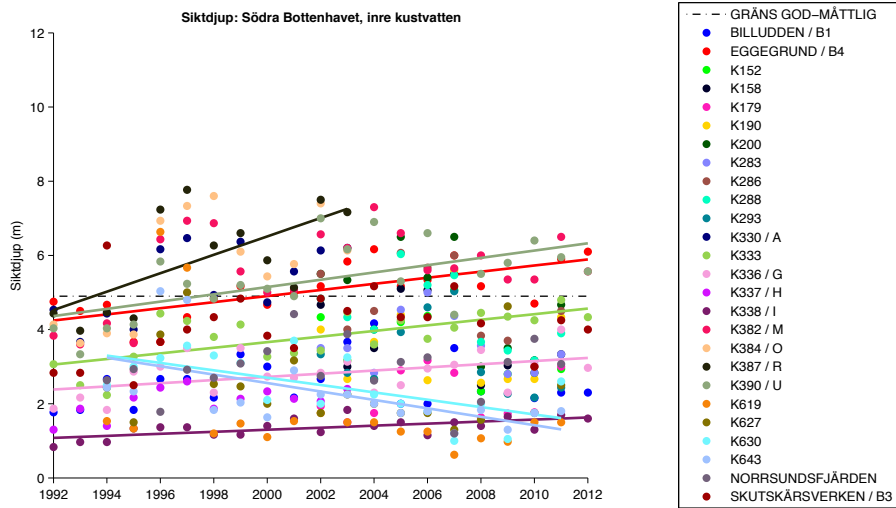
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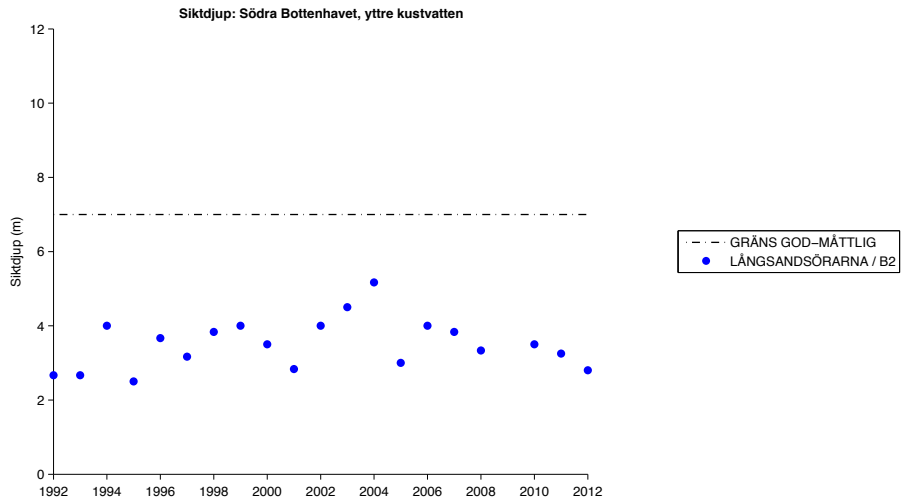
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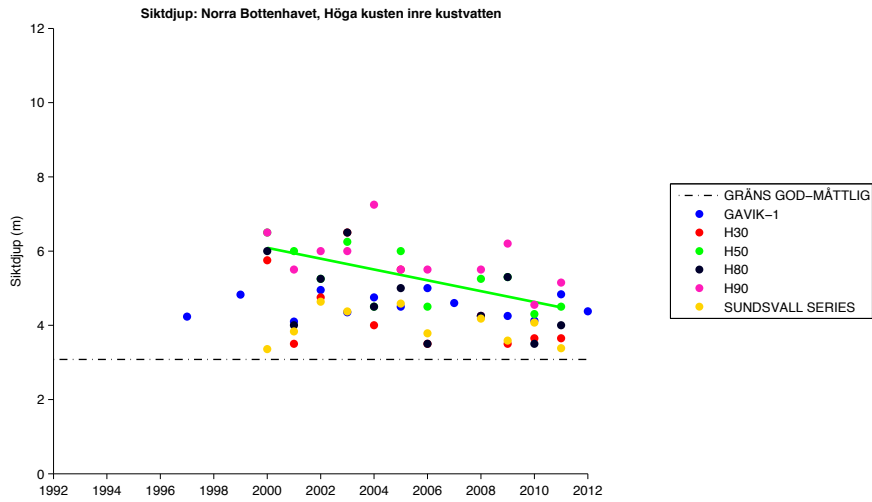
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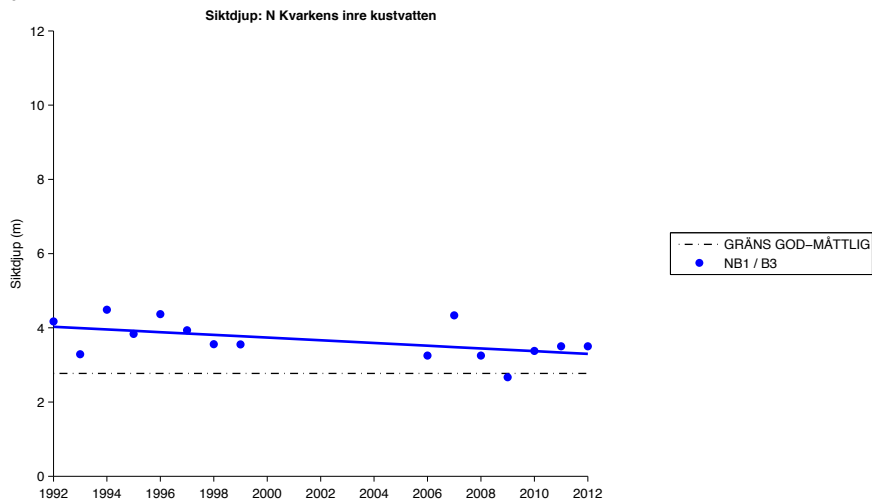
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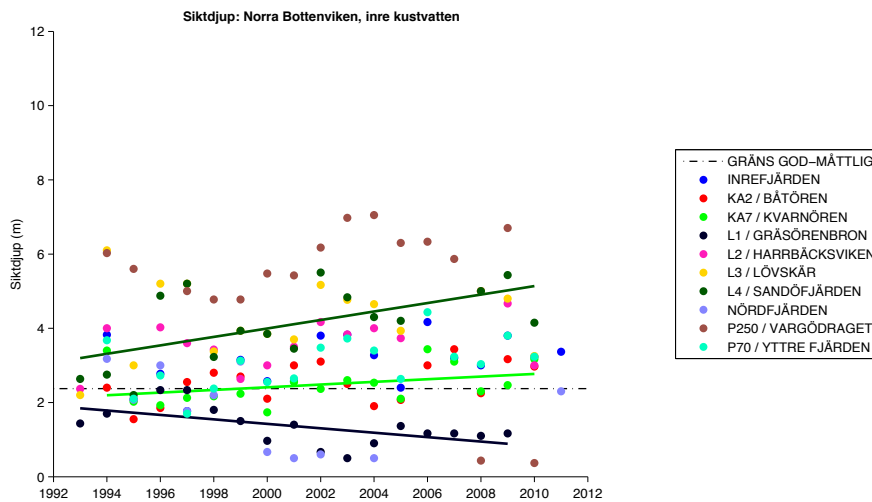
Figur 9.19



Figur 9.20

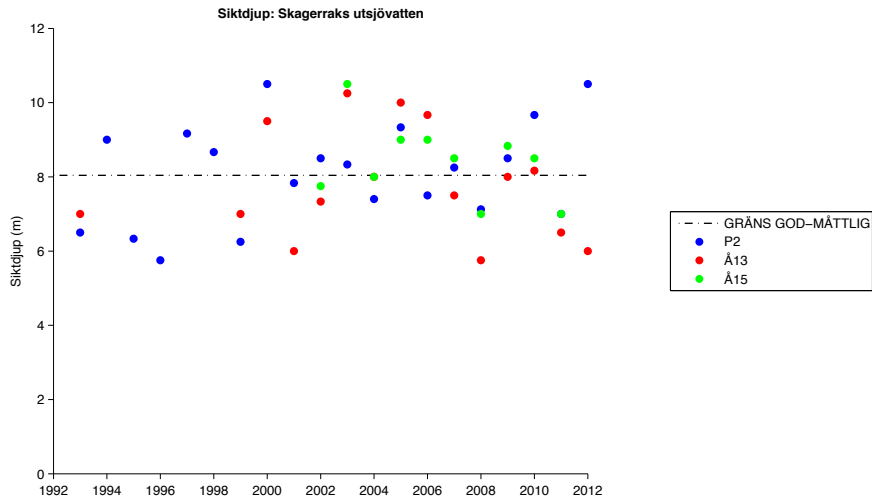


Figur 9.21

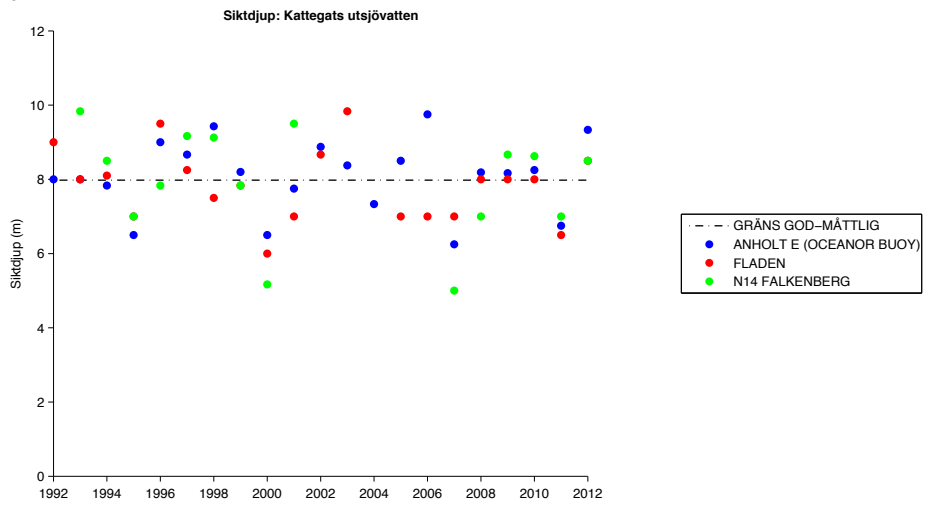




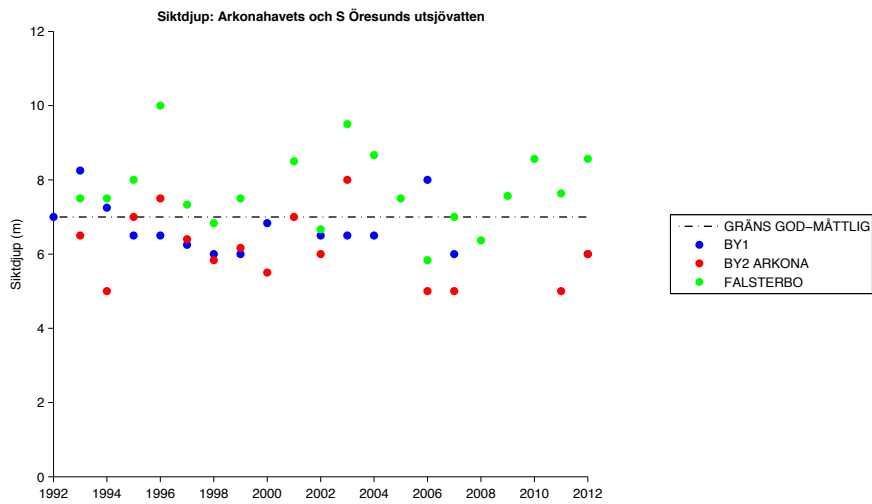
Figur 9.22



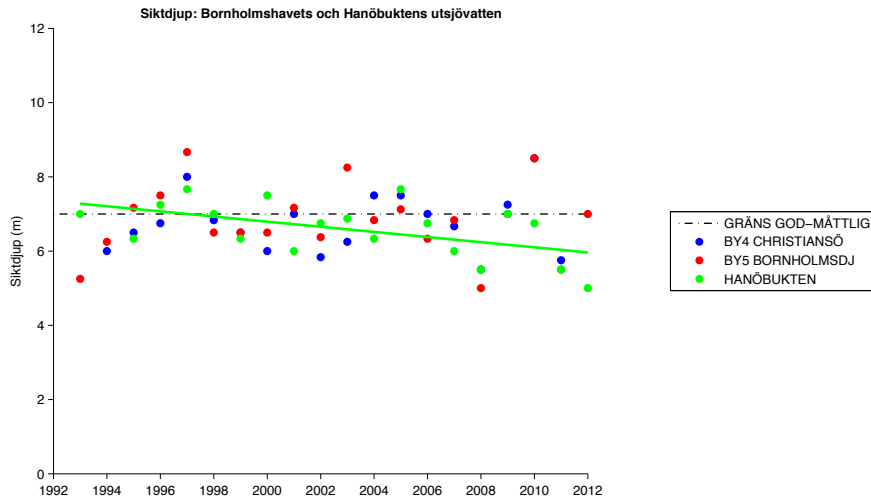
Figur 9.23



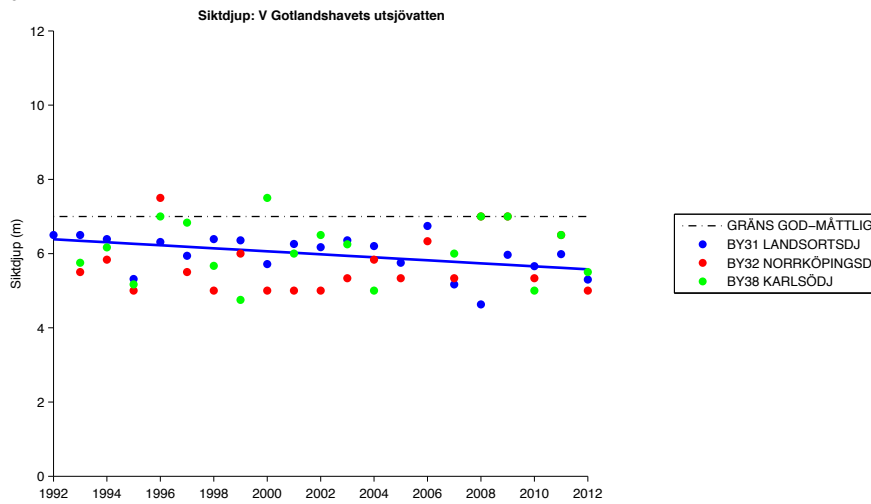
Figur 9.24



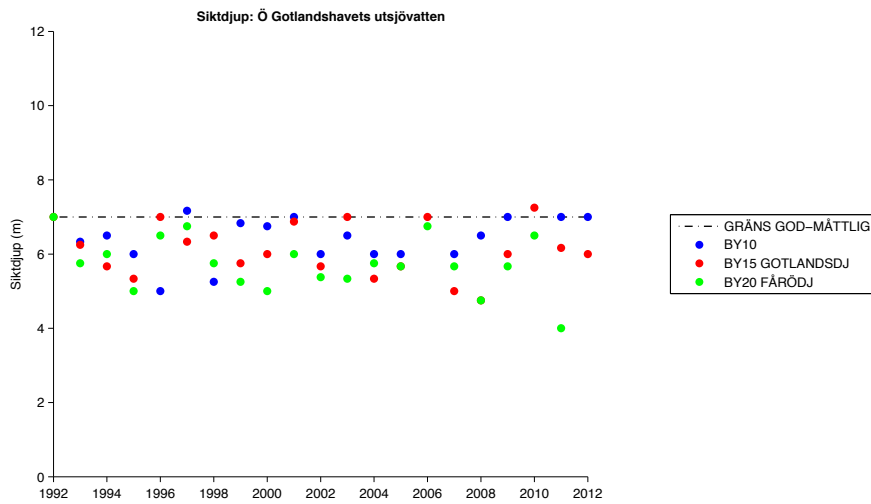
Figur 9.25



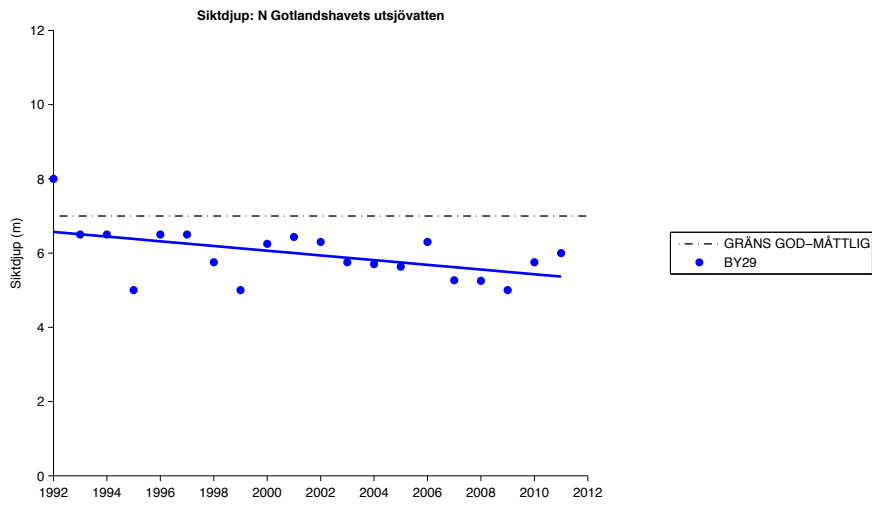
Figur 9.26



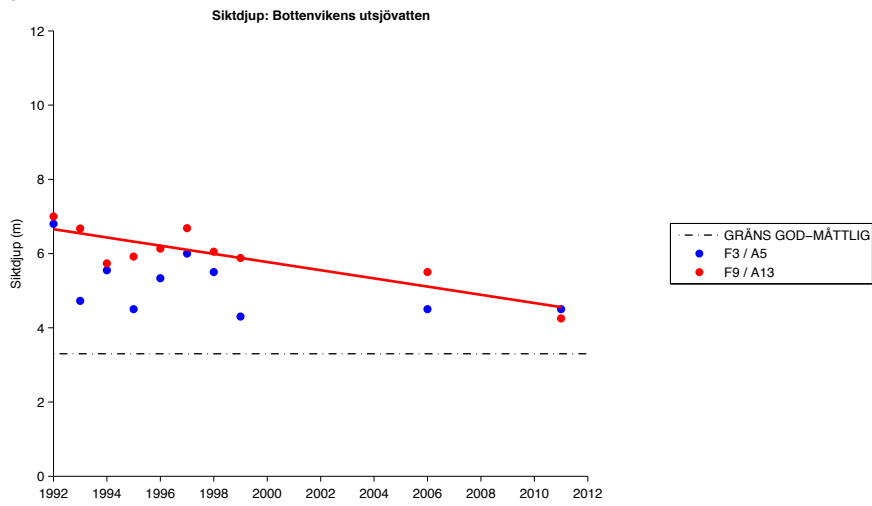
Figur 9.27



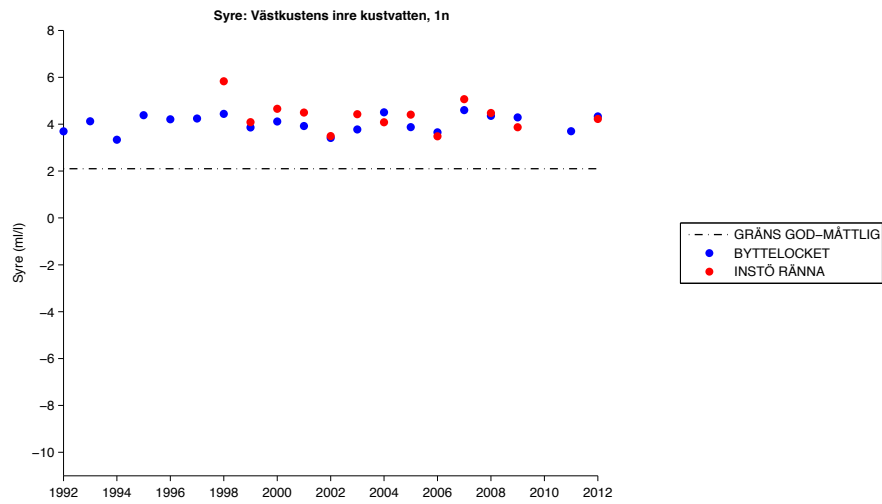
Figur 9.28



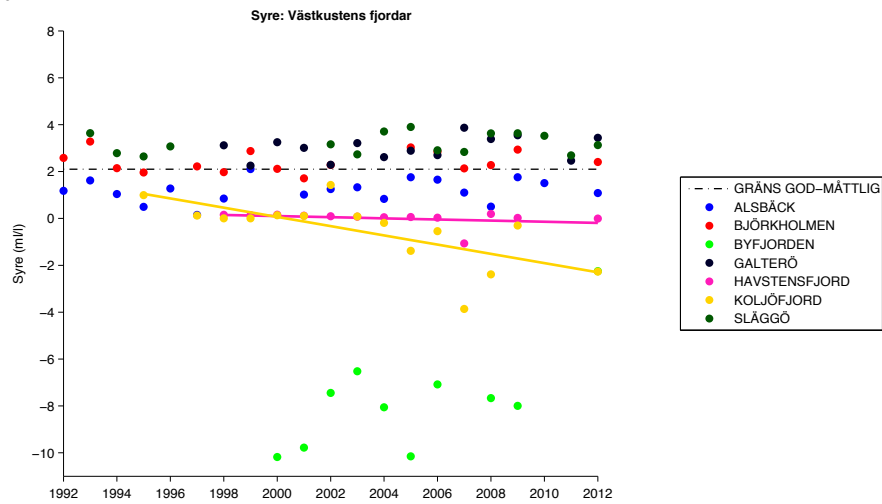
Figur 9.29



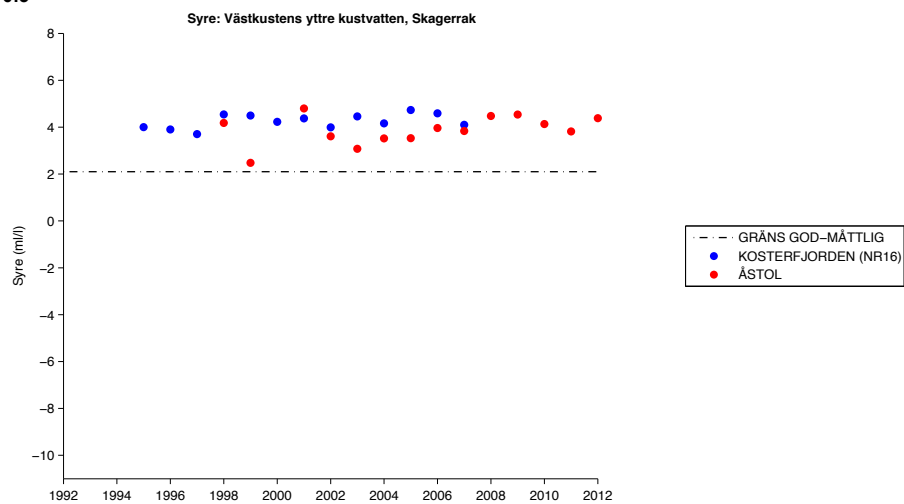
Figur 10.1



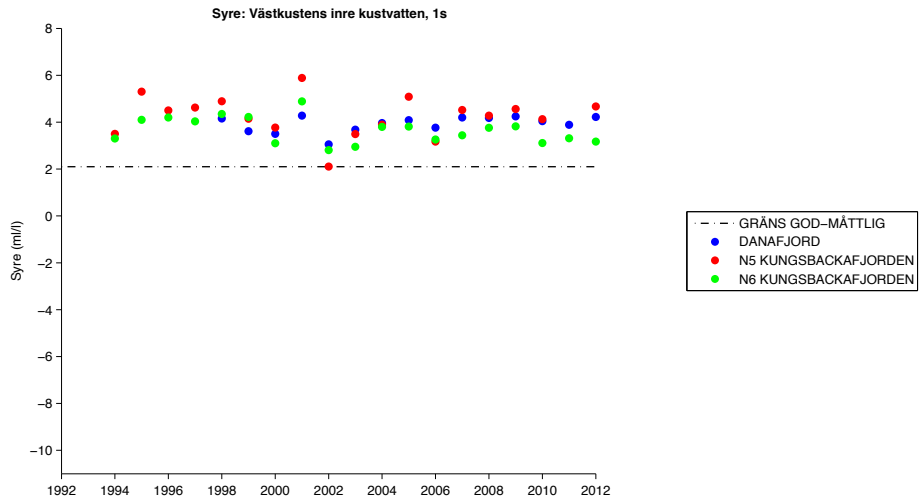
Figur 10.2



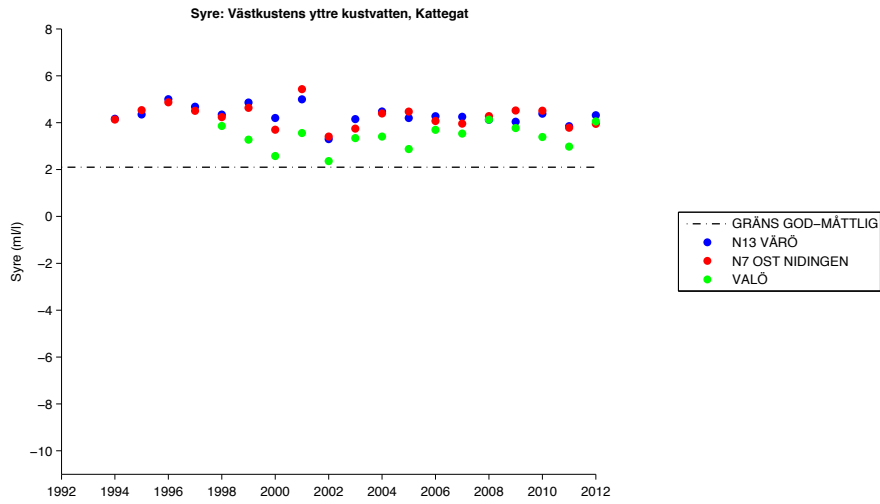
Figur 10.3



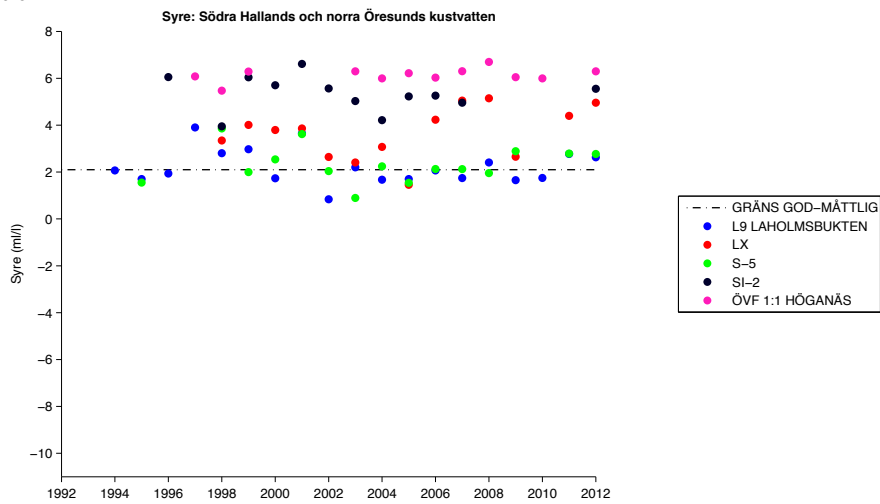
Figur 10.4



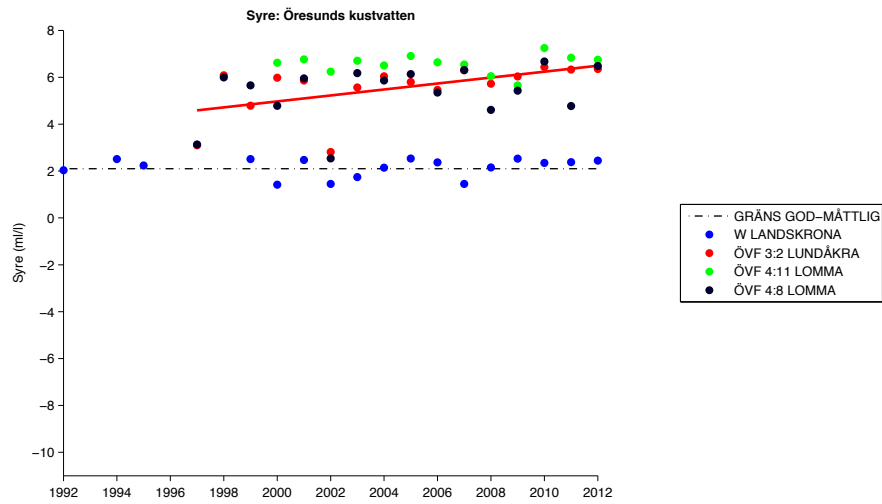
Figur 10.5



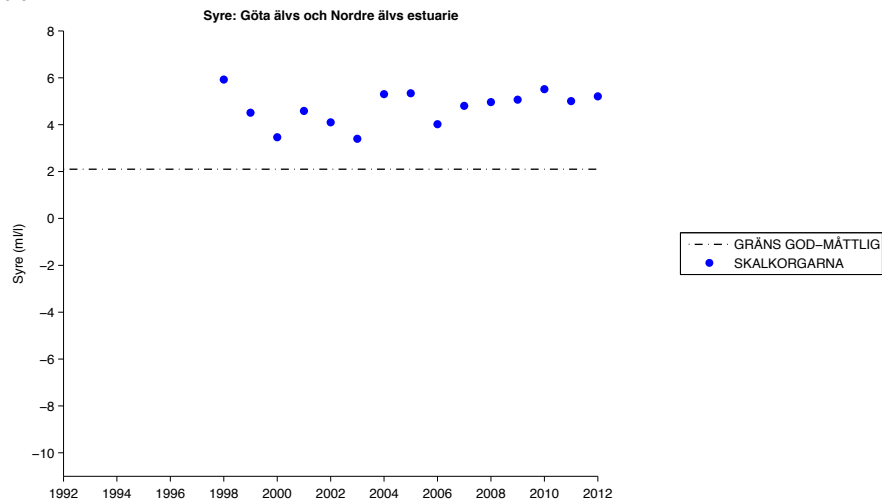
Figur 10.6



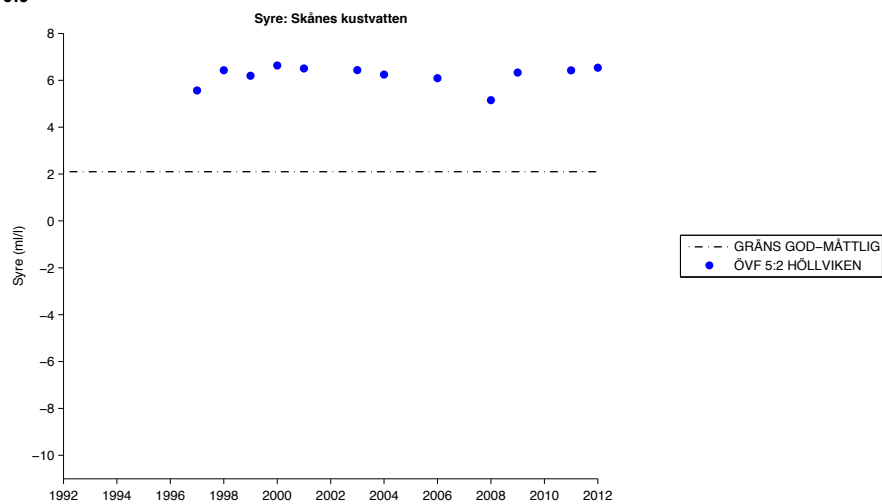
Figur 10.7



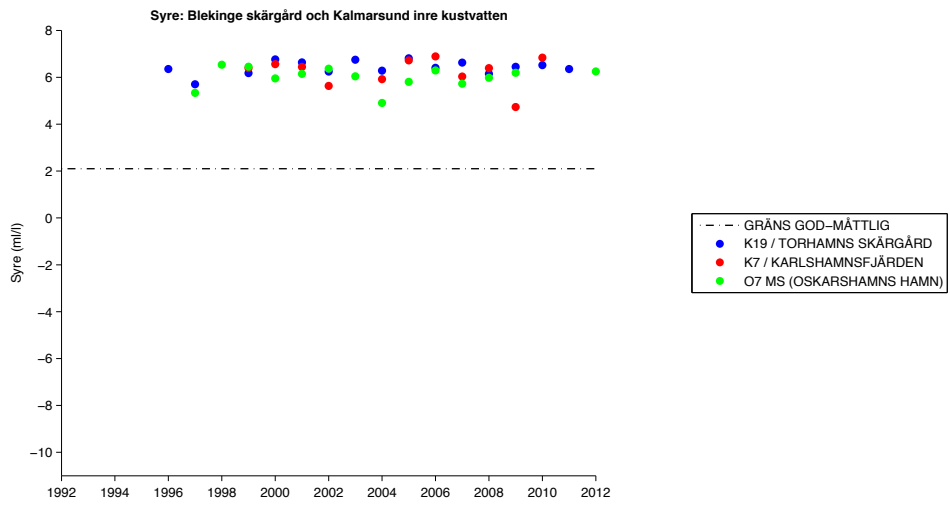
Figur 10.8



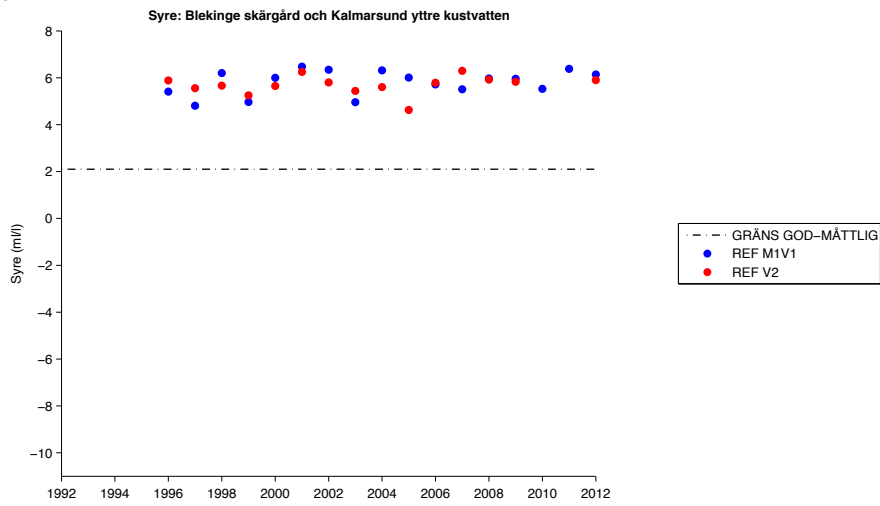
Figur 10.9



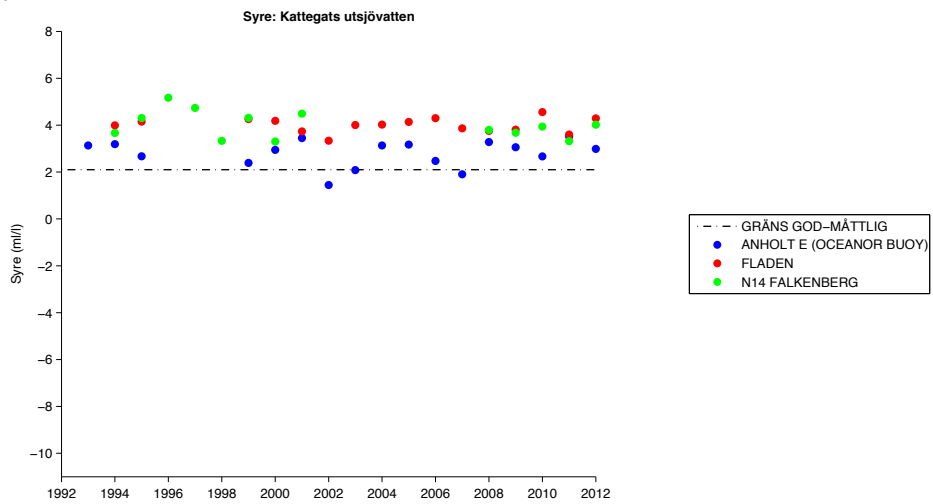
Figur 10.10



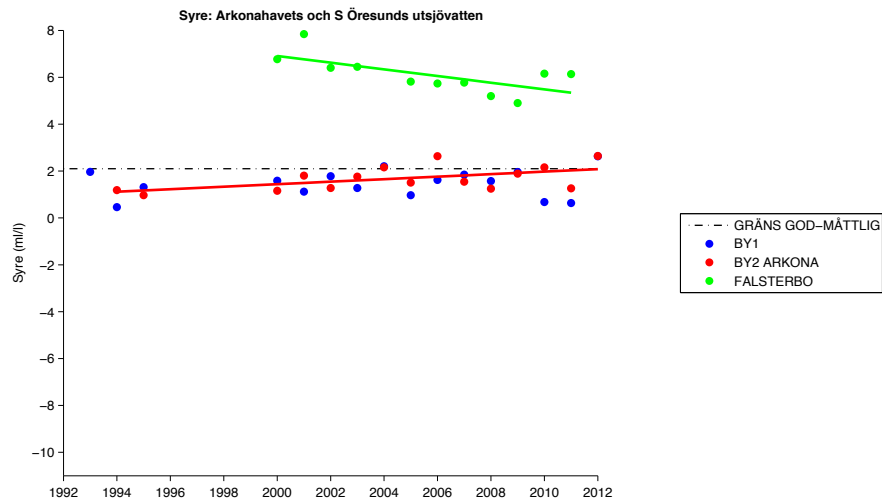
Figur 10.11



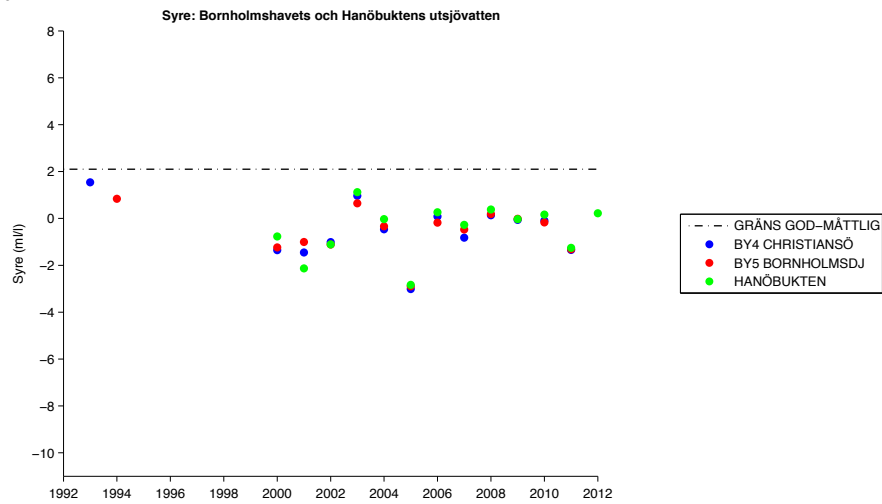
Figur 10.12



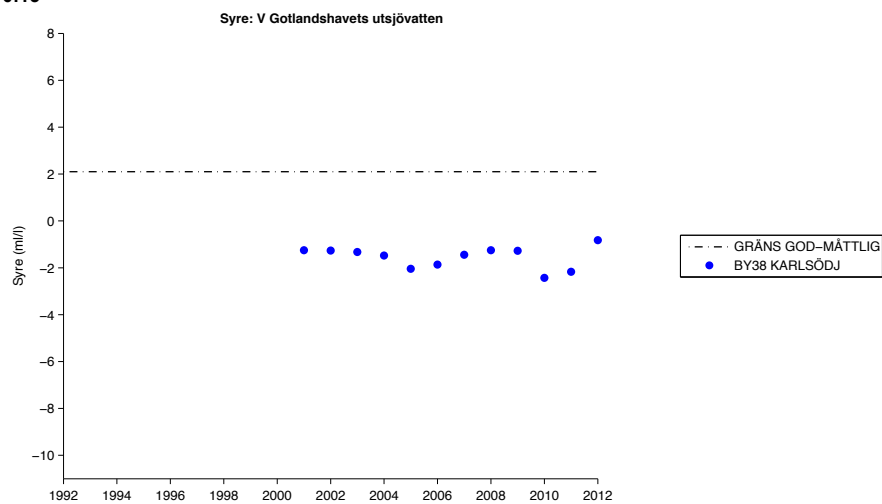
Figur 10.13



Figur 10.14

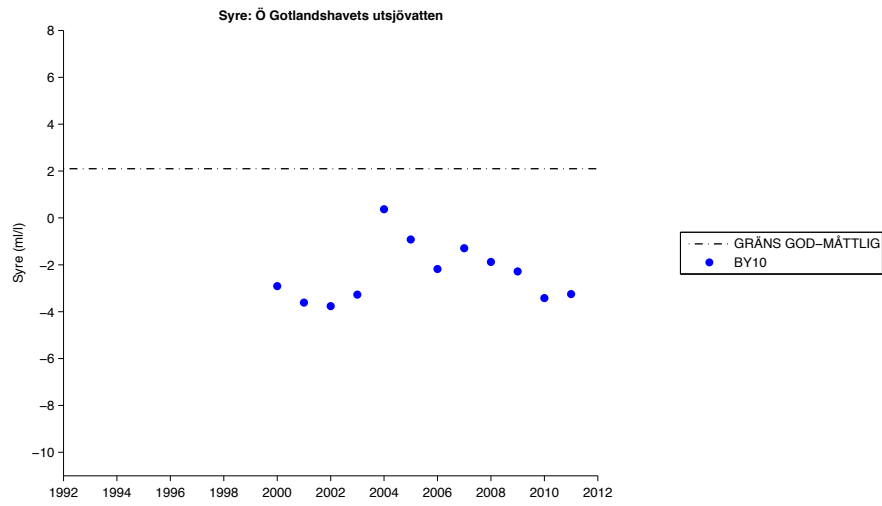


Figur 10.15





Figur 10.16





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