REPORT



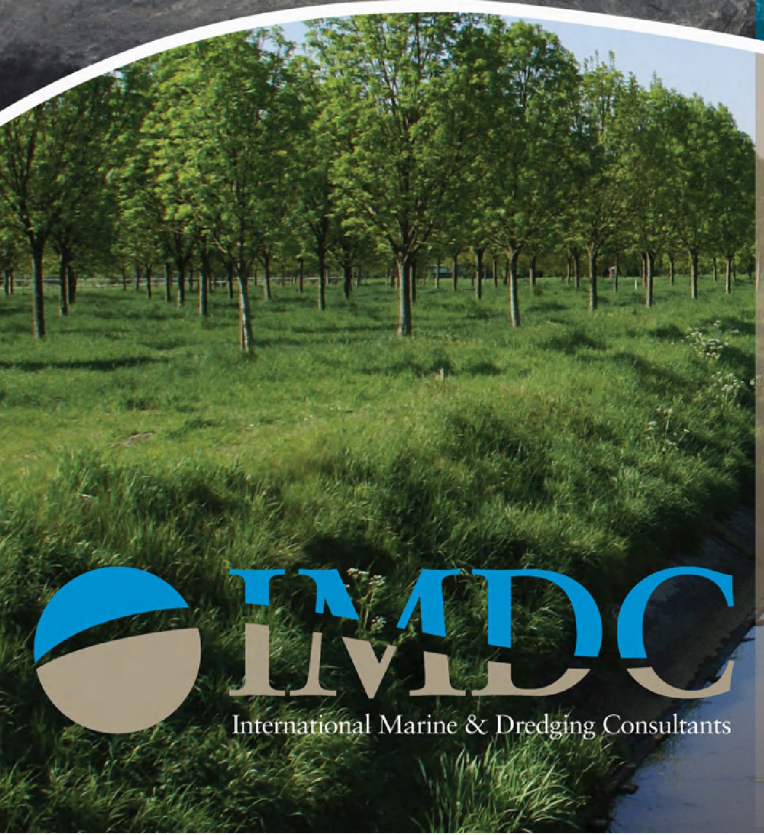
Vlaamse Overheid - Departement Mobiliteit en Openbare Werken

Afdeling Maritieme Toegang

Evaluation of the external effects on the siltation in Deurganckdok

Report 1.6: Overview of boundary conditions in the river Scheldt April 2011 – March 2012

21 december 2012 - version 2.0



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1. INTRODUCTION

1.1 THE ASSIGNMENT

This report is part of a set of reports IMDC, 2010 a-d, 2012 a-d, 2012 a-f) concerning the project 'Evaluation of the external effects on the siltation in Deurganckdok'. The terms of reference were prepared by 'Departement Mobiliteit en Openbare Werken van de Vlaamse Overheid, Afdeling Maritieme Toegang (16EF/2009/14). The study was awarded to International Marine and Dredging Consultants NV in association with Deltares and Gems International on 8 December 2009.

This study is a follow-up study on the study 'Opvolging aanslibbing Deurganckdok' that ran from January 2006 till March 2009 (IMDC, 2006 a-q; 2007 a-w, 2008 a-aa, 2009 a-o)

Waterbouwkundig Laboratorium– Cel Hydrometrie Schelde provided data on discharge, tide, salinity and turbidity along the river Scheldt and provided survey vessels for the long term and through tide measurements. Afdeling Maritieme Toegang provided maintenance dredging data. Agentschap voor Maritieme Dienstverlening en Kust – Afdeling Kust provided depth sounding measurements.

1.2 AIM OF THE STUDY

The purpose of this study entails evaluating the external effects on the siltation in the Deurganckdok. External effects are those effects caused by recent or near-future human operations near Deurganckdok:

- The construction of the Current Deflecting Wall downstream of the entrance of the Deurganckdok.
- The deepening and widening of the navigational channel in the Lower Sea Scheldt between the entrance of the Deurganckdok and the access channels to the locks of Zandvliet-Berendrecht.
- The deepening of the entrance to the Deurganckdok by removing the sill at the entrance.

1.3 OVERVIEW OF THE STUDY

This study constitutes of 3 parts:

- Reporting and analysis of existing documents and measurement data
- Execution of specific measurement campaigns to map the siltation and its environmental factors.
- Support in numerical modelling efforts

Reports of the project 'Evaluation of the external effects on the siltation in the Deurganckdok' are summarized inTable 1-1.

Table 1-1: Overview of the External Effects Deurganckdok Reports

Report	Description
I.	**Reporting**
I.1 Annual Sediment Balance: Bathymetry surveys, Density measurements, Maintenance and construction dredging activities	
1.1	Annual Sediment Balance: year 1: 1/4/2009-31/3/2010 (I/RA/11354/10.067/NZI)
1.2	Annual Sediment Balance: year 2: 1/4/2010-31/3/2011 (I/RA/11354/10.100/MBO/ANF)
1.3	Annual Sediment Balance: year 3: 1/4/2011-31/3/2012 (I/RA/11354/10.101/MBO/ANF)
I.2 Boundary Conditions: Upriver Discharge, Salt concentration Scheldt, Bathymetric evolution in access channels, dredging activities in Lower Sea Scheldt and access channels	
1.4	Boundary Conditions year 1: 01/04/2009 – 31/3/2010 (I/RA/11354/10.102/MBO/ANF)
1.5	Boundary Conditions year 2: 01/04/2010 – 31/3/2011 (I/RA/11354/10.103/MBO/ANF)
1.6	Boundary Conditions year 3: 01/04/2011 – 31/3/2012 (I/RA/11354/10.104/MBO/ANF)
I.3 Synthesis of CDW research	
1.7	Synthesis report of research on Current Deflecting Wall (I/RA/11354/10.063/MBO)
I.4 Analysis: evaluation of external effects on siltation in Deurganckdok	
1.8	Analysis of external effects on siltation processes and factors (I/RA/11354/10.105/MBO/ANF)
II.	**Measurement campaigns: Factors contributing to salt and sediment distribution in Deurganckdok: Salt-Silt (OBS3A) & Frame measurements, Through tide measurements (SiltProfiling & ADCP) & Calibrations**
II.1 Through tide measurements fixed transects	
2.1	Through tide Sediview measurement: Entrance DGD during spring tide Autumn 2011 (I/RA/11354/10.106/MBO/ANF)
2.2	Through tide Sediview measurement: Entrance DGD during neap tide Autumn 2011 (I/RA/11354/10.107/MBO/ANF)
2.3	Through tide Sediview measurement: Entrance DGD during spring tide Winter 2012 (I/RA/11354/10.108/MBO/ANF)
2.4	Through tide Sediview measurement: Entrance DGD during neap tide Winter 2012 (I/RA/11354/10.109/MBO/ANF)
II.2 Through tide measurements eddy currents	
2.5[2]	Through tide measurements: Eddy Currents DGD 02/03/2010 (I/RA/11283/10.051/MSA)
2.6	Through tide measurements: Eddy Currents DGD Autumn I/RA/11354/10.110/MBO/ANF)
2.7	Through tide measurements: Eddy Currents DGD Winter 2012 (I/RA/11354/10.111/MBO/ANF)
II.3 Salt Silt Distribution entrance Deurganckdok	
2.8[3]	Salt-Silt distribution Deurganckdok 1/4/2009-31/3/2010 (I/RA/11354/10.068/NZI)
2.9	Sal-Silt distribution Deurganckdok 1/6/2011-30/05/2012 (I/RA/11354/10.112/MBO/ANF)

Report	Description
II.4 Current Salt Silt Distribution CDW Deurganckdok	
2.10	Salt Silt & Current Distribution entrance Deurganckdok: frame measurements and throughtide measurements: Autumn 2011 (I/RA/11354/11.131/BQU)
2.11	Salt Silt & Current Distribution entrance Deurganckdok: frame measurements and throughtide measurements: Winter 2012 (I/RA/11354/10.114/MBO/ANF)
II.5 Quality Control instruments	
2.12	Calibration stationary & mobile equipment 16/03/2011 (I/RA/11354/10.113/MBO/ANF)
2.13	Calibration stationary equipment 2012 (I/RA/11354/12.011/JCA)

[2]: this report is part of the project Siltation Deurganckdok (11283)

[3]: this report contains report 2.35 of project Siltation Deurganckdok (I/RA/11283/09.085/MSA)

1.4 STRUCTURE OF THE REPORT

This report is the factual data report for two measurement actions during the period between April 2011 and March 2012:

- Monitoring salinity and sediment concentration in the Lower Sea Scheldt taken from on permanent data acquisition sites at Oosterweel, Prosperpolder and downstream (Buoy 84) of Deurganckdok.
- Monitoring dredging and dumping activities in the Lower Sea Scheldt.
- Beside these actions, navigation and meteorological conditions are also reported.

The first chapter comprises an introduction. The second chapter describes the project. Chapter 3 summarizes the measurement campaigns, while the ambient conditions are discussed in Chapter 4.

2. SEDIMENTATION IN DEURGANCKDOK

2.1 PROJECT AREA: DEURGANCKDOK

Deurganckdok is a tidal dock situated at the left bank in the Lower Sea Scheldt, between Liefkenshoek and Doel. Deurganckdok has the following characteristics:

1. the dock has a total length of 2750 m and is 450 m wide at the Scheldt end and 400 m wide at the inward end of the dock
2. The bottom of Deurganckdok is provided at a depth of –17m TAW in the transition zones between the quay walls and the central trench and of –19m TAW in the central trench.
3. the quay walls reach up to +9m TAW

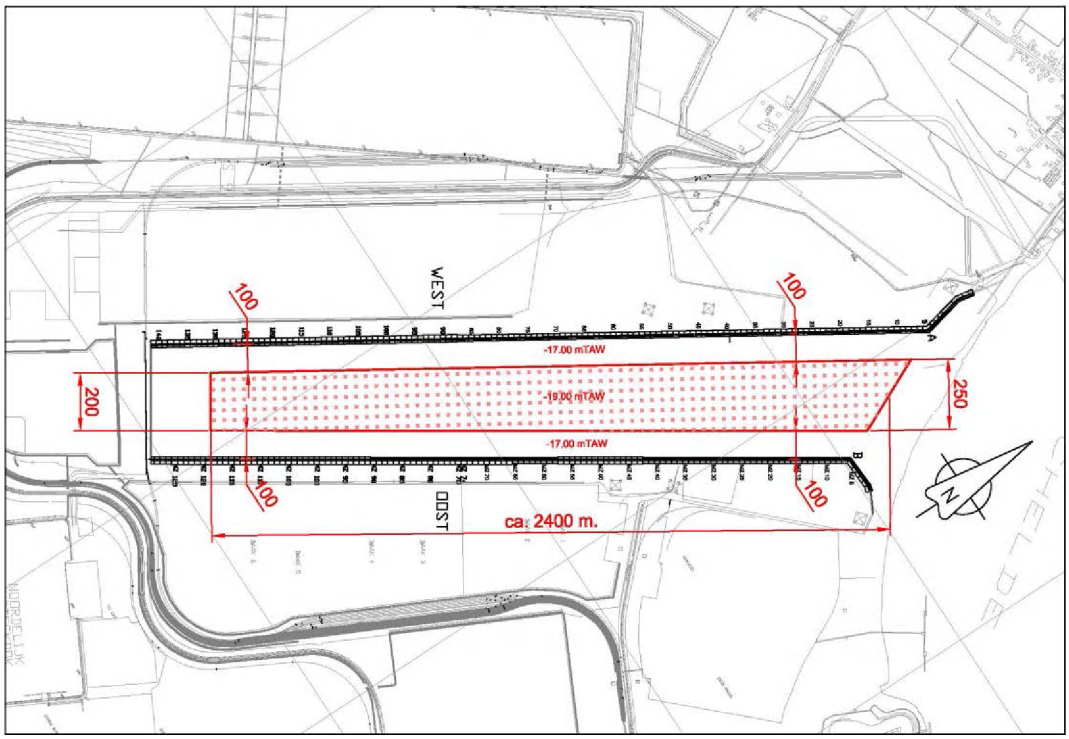


Figure 2-1: Overview of Deurganckdok

The dredging of the dock is performed in 3 phases. On 18 February 2005 the dike between the Scheldt and the Deurganckdok was breached. On 6 July 2005 Deurganckdok was officially opened. The second dredging phase was finalized a few weeks later. The first terminal operations have started since.

2.2 OVERVIEW OF THE STUDIED PARAMETERS

The first part of the study aims at determining a sediment balance of Deurganckdok and the net influx of sediment. The sediment balance comprises a number of sediment transport modes: deposition, influx from capital dredging works, internal replacement and removal of sediments due to maintenance dredging (Figure 2-1).

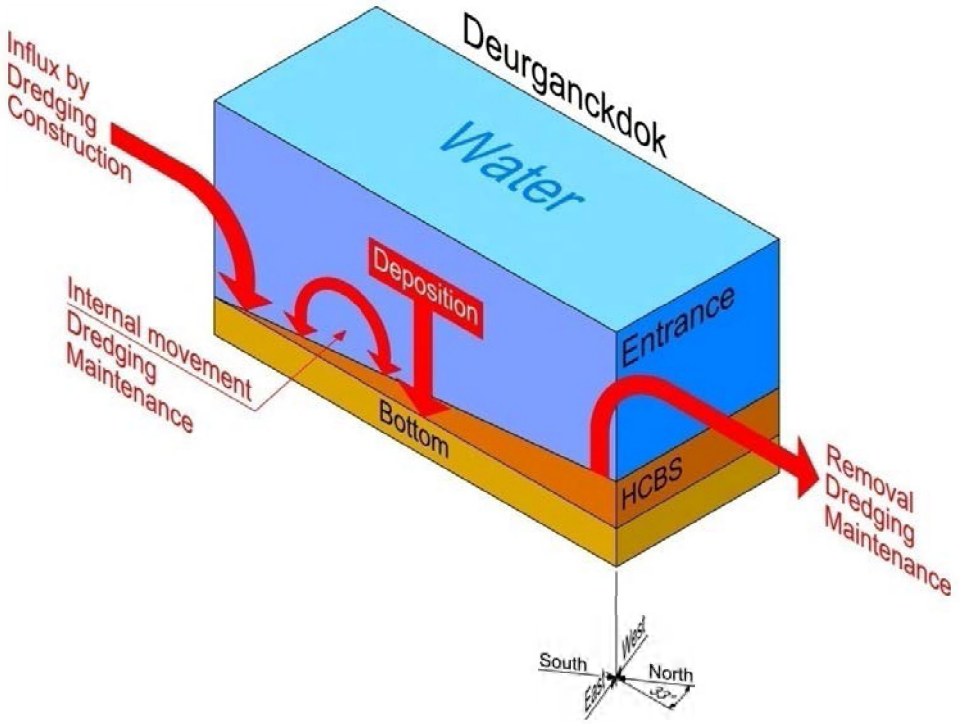


Figure 2-2: Elements of the sediment balance

A net deposition can be calculated from a comparison with a chosen initial condition t_0 (Figure 2-2). The mass of deposited sediment is determined from the integration of bed density profiles recorded at grid points covering the dock. Subtracting bed sediment mass at t_0 leads to the change in mass of sediments present in the dock (mass growth). Adding cumulated dry matter mass of dredged material removed since t_0 and subtracting any sediment influx due to capital dredging works leads to the total cumulated mass entered from the river Scheldt since t_0.

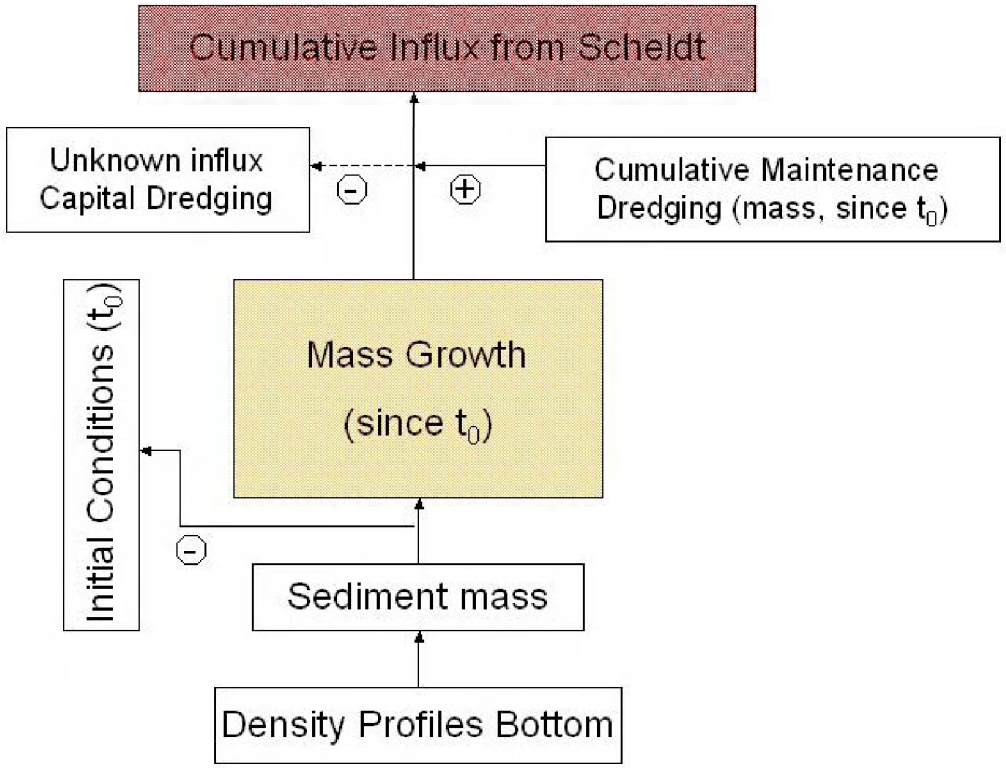


Figure 2-3: Determining a sediment balance

The main purpose of the second part of the study is to gain insight in the mechanisms causing siltation in Deurganckdok. The following mechanisms will be aimed at in this part of the study:

- Tidal prism, i.e. the extra volume in a water body due to high tide
- Vortex patterns due to passing tidal current
- Density currents due to salt gradient between the Scheldt river and the dock
- Density currents due to highly concentrated benthic suspensions

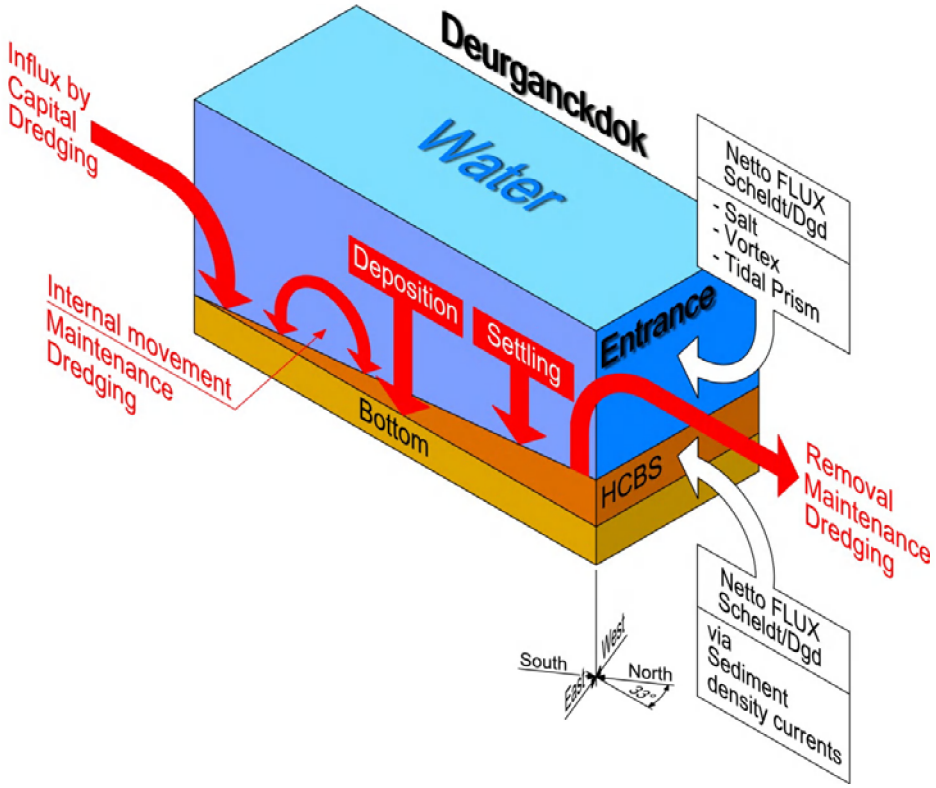


Figure 2-4: Transport mechanisms

These aspects of hydrodynamics and sediment transport have been landmark in determining the parameters to be measured during the project. Measurements will be focused on three types of timescales: one tidal cycle, one neap-spring cycle and seasonal variation within one year.

Following data are being collected to understand these mechanisms:

- Monitoring upstream discharge in the river Scheldt.
- Monitoring Salt and sediment concentration in the Lower Sea Scheldt at permanent measurement locations at Oosterweel, up- and downstream of the Deurganckdok.
- Long term measurement of salt and suspended sediment distribution in Deurganckdok.
- Monitoring near-bed processes (current velocity, turbidity, and bed elevation variations) in the central trench in the dock, near the entrance as well as near the current deflecting wall location.
- Dynamic measurements of current, salt and sediment transport at the entrance of Deurganckdok.
- Through tide measurements of vertical sediment concentration profiles -including near bed high concentrated benthic suspensions.
- Monitoring dredging activities at entrance channels towards the Kallo, Zandvliet and Berendrecht locks as well as dredging and dumping activities in the Lower Sea Scheldt.
- In situ calibrations were conducted on several dates to calibrate all turbidity and conductivity sensors.

2.3 SPECIFIC OBJECTIVES OF THIS REPORT

The natural ambient conditions in the Scheldt estuary change from the mouth near Vlissingen to the upstream boundaries near Ghent and the tributaries. Furthermore navigation and dredging activities are important human activities in the Lower Sea Scheldt.

These natural and human conditions can help to gain insight in the mechanisms causing siltation in Deurganckdok. For this reason this report summarises the following data for the period between April 2011 and March 2012:

- Ambient characteristics in the Lower Sea Scheldt:
  - Tide
  - Current
  - Salinity
  - Temperature
  - Turbidity/Suspended sediment concentration
  - Salinity downstream
- Fresh water inflow from the tributaries
- Meteorological conditions
- Human activities
  - Dredging/disposal
  - Navigation

3. OVERVIEW OF THE MEASUREMENT CAMPAIGNS

In the scope of this project, IMDC organized several measurements campaigns at the entrance, down- and upstream of Deurganckdok, and in the dock itself (see overview of various reports in Table 1-1). A detailed description of through tide measurement campaigns and long-term salinity measurements during this reporting period can be found in IMDC reports (2012c, 2010d, 2012k & 2012i).

Table 3-1 gives a global overview from the beginning of project of the coordinates of the measurement locations and the periods when data was gathered. Also the coordinates and periods for project HCBS2 is given in Table 3-1. Considering the through tide measurements coordinates are given for the sailed transects (i.e. left bank and right bank position). Figure 3-1 shows the Lower Sea Scheldt with the several measurement locations of projects HCBS2 and Deurganckdok. A sketch of each measurement campaign can be found from Figure 3-2 to Figure 3-16. Table 3-2 gives an overview of the measured parameters during these measurement campaigns.

Table 3-1: Measurement locations and periods for the HCBS2 and Deurganckdok measurements (01/01/2006 –31/03/2012)

Through tide measurements: Siltprofiler gauging points			
Location	***Easting (UTM ED 50)***	***Northing (UTM ED 50)***	***Period***
Location 1: Xa	588549	5684335	21/03/2006; 26/09/2006; 23/10/2007; 12/03/2008; 29/09/2008 ; 13/03/2009; 27/09/2011; 09/03/2012
Location 2: Xb	588596	5684411	
Location 3: Xc	588643	5684486	
Location 4: Xd	588690	5684562	
Location 5: Xe	588737	5684638	
Location 6: Ya	588606	5684217	
Location 7: Yb	588653	5684293	
Location 8: Yc	588700	5684368	
Location 9: Yd	588747	5684444	
Location 10: Ye	588793	5684520	
Location 11: Za	588662	5684099	
Location 12: Zb	588709	5684174	
Location 13: Zc	588756	5684250	
Location 14: Zd	588803	5684326	
Location 15: Ze	588850	5684402	

Through tide measurements: Transects					
Location	***Easting (UTM ED 50)***		***Northing (UTM ED 50)***		***Period***
Deurganckdok (in dock) (transect Y)	Left Bank	Right Bank	Left Bank	Right Bank	21/03/2006, 26/09/2006, 12/03/2008 & 11/03/09
	589059	591298	5684948	5683077	
Liefkenshoek (transect I)	Left Bank	Right Bank	Left Bank	Right Bank	22/03/2006, 27/09/2006 & 11/03/2008
	590318	590771	5684257	5683302	
Deurganckdok (downstream) (transect K)	Left Bank	Right Bank	Left Bank	Right Bank	22 - 23/03/2006, 27 - 28/09/2006 & 11/03/2008
	588484	589775	5684924	5685384	
Deurganckdok (entrance) (transect DGD)	Left Bank	Right Bank	Left Bank	Right Bank	22/03/2006, 27/09/2006, 24/10/2007, 11/03/2008, 19-26/06/2008, 24-30/09/2008, 2-10/12/2009, 6-12/03/2009, 6-13/10/2011, 8-16/03/2012
	588765	588541	5684056	5684527	
Schelle (transect S)	Left Bank	Right Bank	Left Bank	Right Bank	23/03/2006 & 28/09/2006
	592645	592953	5665794	5665682	
Waarde (transect W)	Left Bank	Right Bank	Left Bank	Right Bank	23/03/2006 & 28/09/2006
	573541	571318	5696848	5694933	
Deurganckdok (in dock) (Transect X, transect Y, transect Z)	North Side 588737 588793 588850	South Side 588408 588465 588521	North Side 5684638 5684520 5684402	South Side 5684107 5683989 5683871	01/10/2008
Deurganckdok (in dock) (Transect 1, transect 2, transect 3, transect 4)	North Side 588838 588891 588945 588998	North Side 5684844 5684763 5684681 5684599	South Side 588254 588330 588406 588482	South Side 5683880 5683836 5683791 5683746	02/03/2010, 29/09/2011, 12/03/2012

Near bed continuous monitoring			
Location	Easting (UTM ED 50)	Northing (UTM ED 50)	Period
Deurganckdok CDW	588653	5684906	14/03/2006 – 05/04/2006
Deurganckdok CDW	588685	5684880	19/04/2006 – 23/05/2006, 18/07/2006 – 11/10/2006, 15/03/2007 – 12/04/2007, 26/09/2007 – 05/12/2007, 20/02/2008 – 02/04/2008, 15/09/2011 – 09/10/2011, 28/02/2012 – 21/03/2012
Deurganckdok Sill	588805	5684170	19/04/2006 – 23/05/2006, 19/07/2006 – 11/10/2006, 09/02/2007 – 18/04/2007, 10/10/2007 – 28/11/2007, 27/02/2008 – 09/04/2008, 13/09/2011 – 18/10/2011, 29/02/2012 – 20/03/2012
Salt Silt measurements Deurganckdok			
Location	Easting (UTM ED 50)	Northing (UTM ED 50)	Period
P&O 1	588074	5682942	17/03/2006 – 28/04/2006
P&O 2	588767	5684045	17/03/2006 – 28/04/2006
PSA	588536	5684523	17/03/2006 – 28/04/2006
P&O 1	588074	5682942	20/07/2006 – 12/10/2006
P&O 2	588767	5684045	20/07/2006 – 12/10/2006
PSA	588536	5684523	20/07/2006 – 12/10/2006
P&O 1	588074	5682942	12/02/2007 – 27/03/2007
P&O 2	588767	5684045	12/02/2007 – 27/03/2007
PSA	588536	5684523	12/02/2007 – 27/03/2007
P&O 1	588074	5682942	20/06/2007 – 31/07/2007
P&O 2	588767	5684045	20/06/2007 – 31/07/2007
PSA	588536	5684523	20/06/2007 – 31/07/2007
P&O 1	588074	5682942	17/09/2007 – 10/12/2007
P&O 2	588767	5684045	17/09/2007 – 10/12/2007
PSA	588536	5684523	17/09/2007 – 10/12/2007
N entrance (PSA HNN)	588536	5684523	20/02/2008 – 24/03/2009
S entrance (DB Ports)	588767	5684045	20/02/2008 – 24/03/2009
S middle (DB Ports)	588074	5682942	20/02/2008 – 24/03/2009
S back (DB Ports)	587760	5682449	20/02/2008 – 24/03/2009
N entrance (PSA HNN)	588536	5684523	24/03/2009 – 09/04/2010, 20/05/2011 – 30/05/2012
S entrance (DB Ports)	588767	5684045	24/03/2009 – 09/04/2010 20/05/2011 – 30/05/2012

Settling velocity – INSSEV			
Location	Easting (UTM ED 50)	Northing (UTM ED 50)	Period
Deurganckdok CDW	588717	5684898	05/09/2006
Deurganckdok SILL	588800	5684250	06/09/2006
Deurganckdok Western quay wall	588452	5684355	07/09/2006

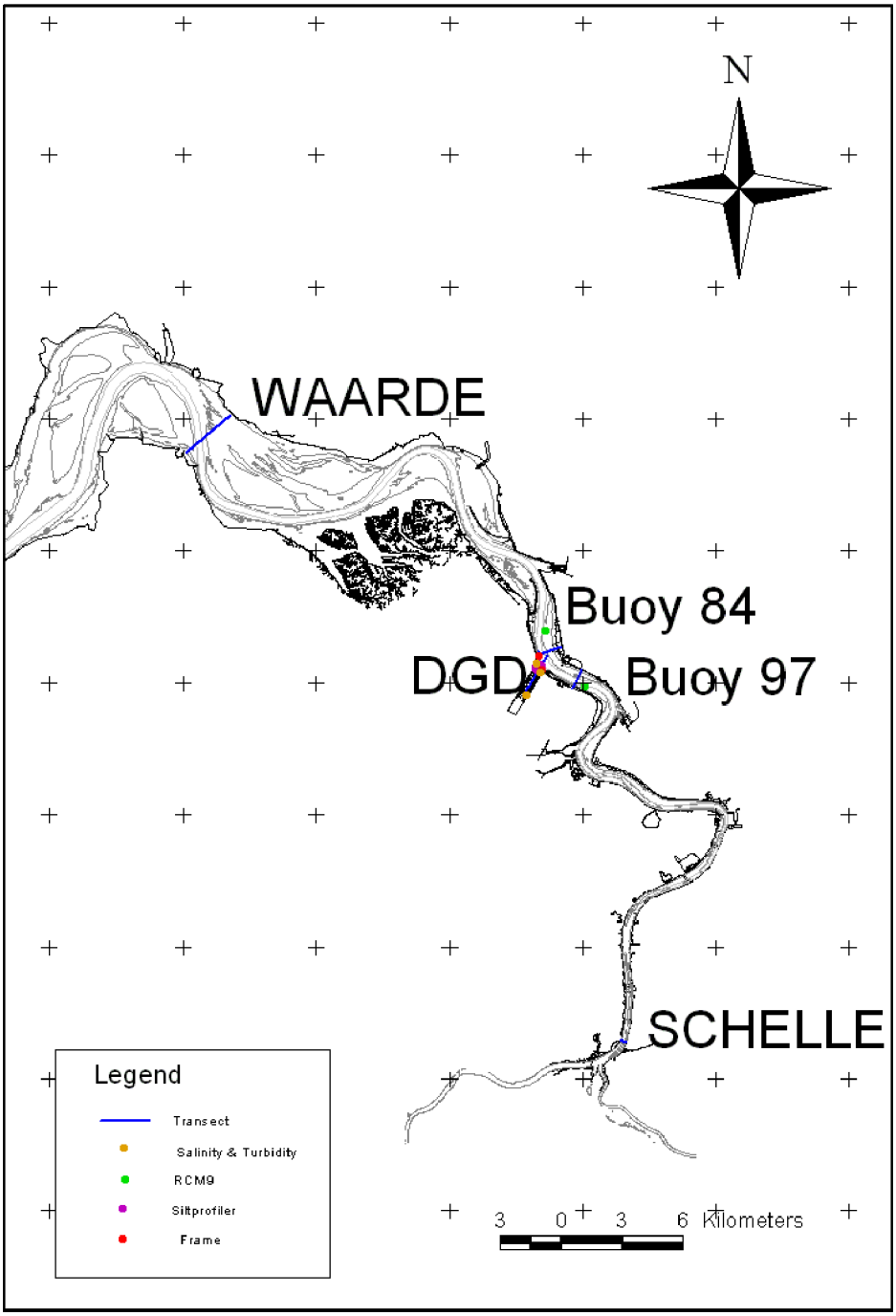


Figure 3-1: The measurement locations in the Lower Sea Scheldt and Deurganckdok (01/01/2006 – 31/03/2009)

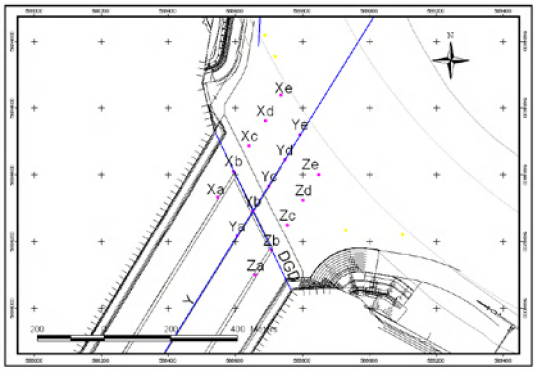


Figure 3-2: Through tide SiltProfiler measurements – Entrance Deurganckdok

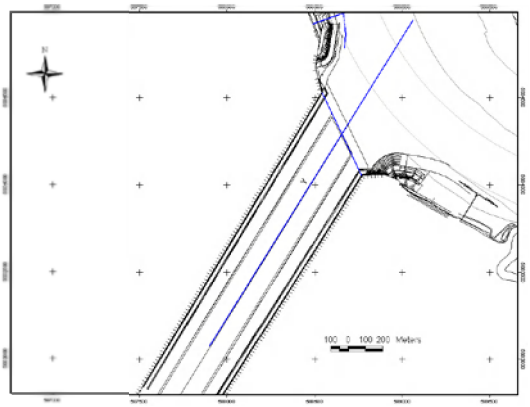


Figure 3-3: Through tide Salinity measurements – Deurganckdok (transect Y)

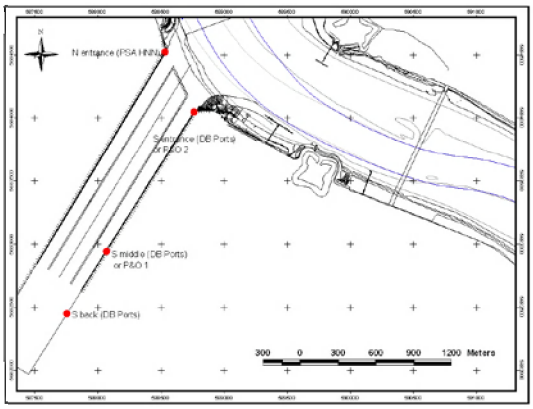


Figure 3-4: Long-term salinity measurements Deurganckdok

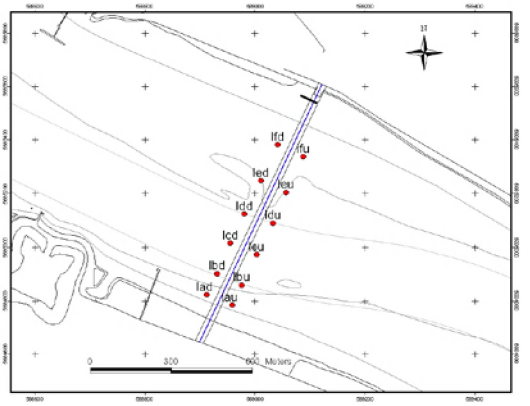


Figure 3-5: Through tide ADCP & SiltProfiler measurements – Upstream Deurganckdok (transect I)

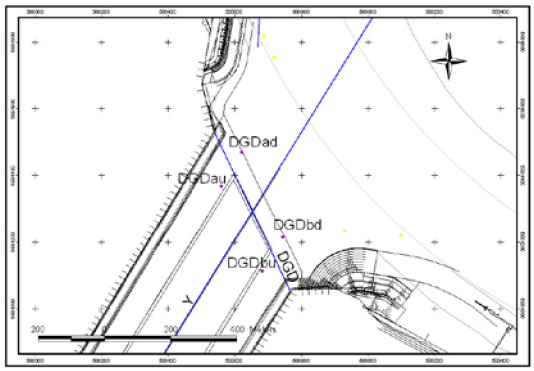


Figure 3-6: Through tide ADCP measurements – Entrance Deurganckdok (transect DGD)

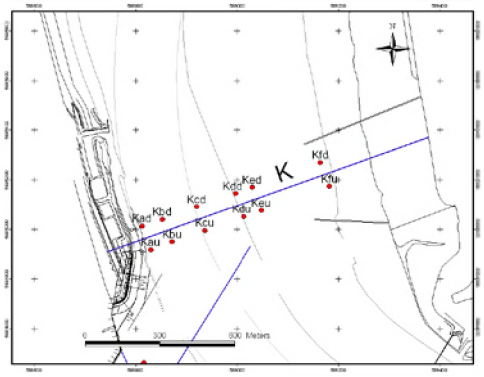


Figure 3-7: Through tide ADCP & SiltProfiler measurements – Downstream Deurganckdok (Transect K)

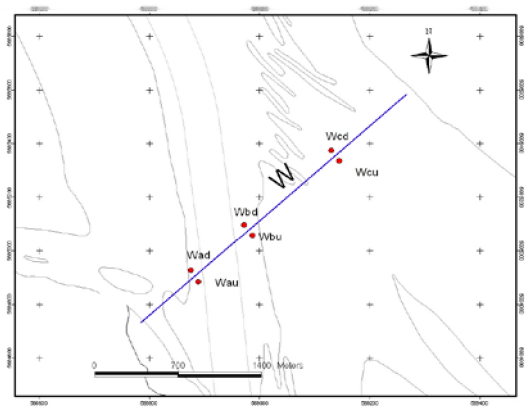


Figure 3-8: Through tide ADCP measurements - Waarde (transect W)

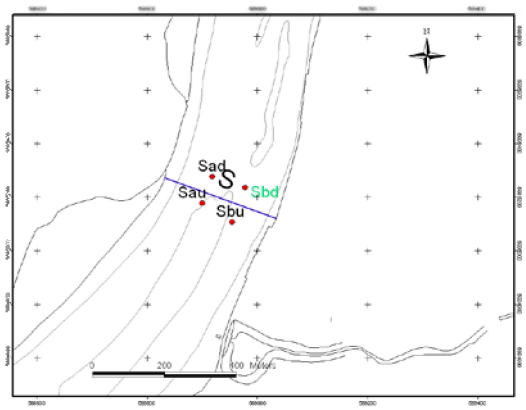


Figure 3-9: Through tide ADCP measurements - Schelle (transect S)

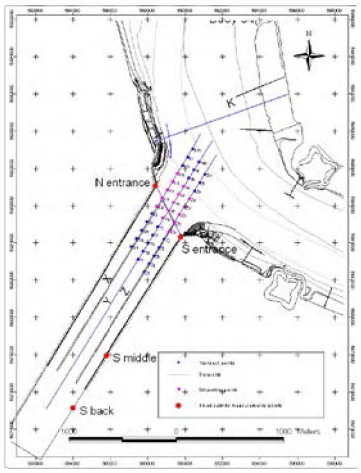


Figure 3-10: Through tide measurement ADCP eddy 01/10/2008

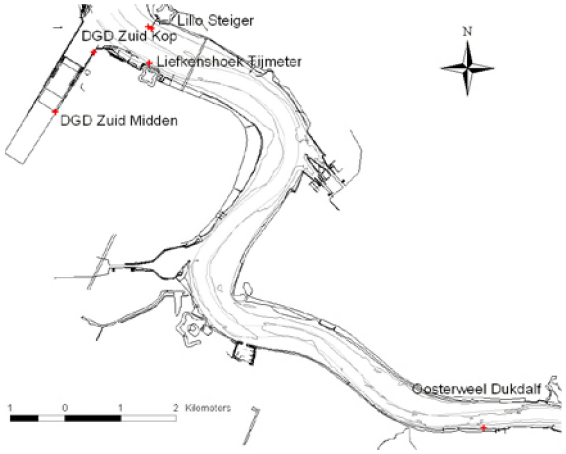


Figure 3-11: Calibration measurements - 15/03/2006 & 14/04/2006

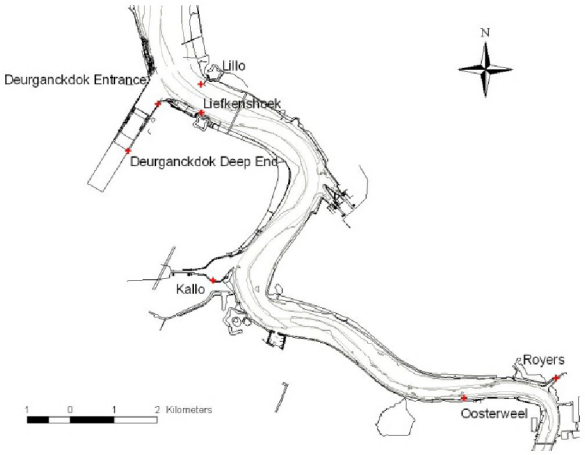


Figure 3-12: Calibration measurements – 23/06/2006, 18/09/2006 & 16/03/2011

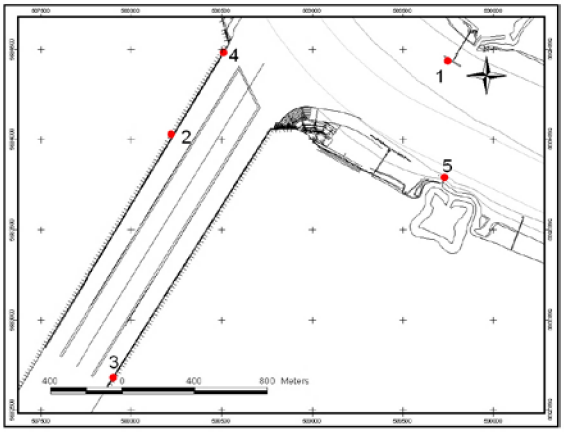


Figure 3-13:Calibration measurements – 10/09/2008

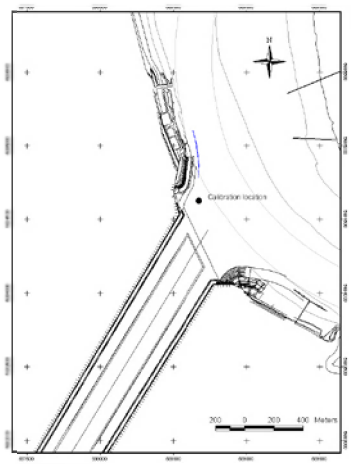


Figure 3-14:Calibration measurements – 16/03/2011 & 01/06/2012

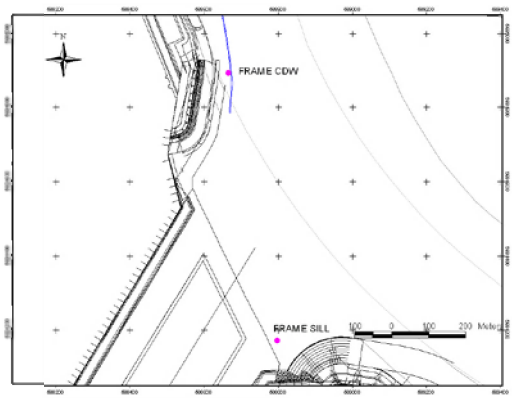


Figure 3-15:Near bed continuous monitoring

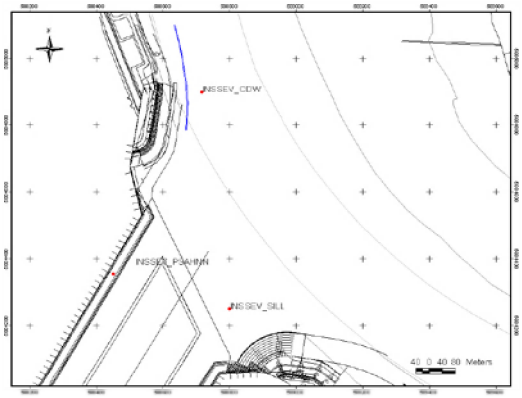


Figure 3-16: Settling velocity (INSSEV) 05/09/2006 – 07/09/2006

Table 3-2: The equipment and measured parameters per location by IMDC (01/01/2006 – 31/03/2012)

Through tide measurements									
Location	***Period***	***Instrument***	***Velocity***	***Direction***	***Temperature***	***Pressure***	***Conductivity***	***Turbidity***	***Depth***
Deurganckdok (in dock, transect Y	21/03/06, 26/09/06 12/03/08, 29/09/09 & 11/03/09, 13/03/09	SiltProfiler			X	X	X	X	
		Echosounder							X
		AADI RCM 9			X	X	X		
		CTD			X	X	X		
Liefkenshoek (transect I)	22/03/06, 27/09/06 & 11/03/08	ADCP	X	X					
		OBS			X	X	X	X	
		CTD			X	X	X		
		Pump Sampler							
		SiltProfiler			X	X	X	X	
		Echosounder							X
Deurganckdok (transect DGD)	22/03/06, 27/09/06, 24/10/07, 11/03/08, 19/06/08, 26/06/08, 24/09/08, 30/09/08, 02/12/08, 10/12/08, 06/03/09, 12/03/09, 28/09/11, 06/10/11,	ADCP	X	X					
		OBS			X	X	X	X	
		CTD			X	X	X		
		Pump Sampler							

	08/03/12 & 16/03/12								
Deurganckdok (transect K)	22/03/06, 27/09/06 & 11/03/08	ADCP	X	X					
		OBS			X	X	X	X	
		CTD			X	X	X		
		Pump Sampler							
	23/03/06 & 28/09/06	SiltProfiler			X	X	X	X	
		Echosounder							X
Schelle (transect S)	23/03/06 & 28/09/06	ADCP	X	X					
		OBS			X	X	X	X	
		CTD			X	X	X		
		Pump Sampler							
Waarde (Transect W)	23/03/06 & 28/09/06	Same as Schelle (transect S)							
Deurganckdok (Transect X, Y & Z)	01/10/08	ADCP	X	X					
		CTD			X	X	X		
Deurganckdok (Transect 1,2,3 & 4)	02/03/10	ADCP	X	X					
		CTD			X	X	X		
Deurganckdok (Transect X, Y & Z) - entrance	21/03/2006 26/09/2006 23/10/2007 12/02/2008 29/09/2008 13/03/2009	SiltProfiler			X	X	X	X	X

Deurganckdok (Transect X, Y & Z) - entrance	27/09/2011 09/03/2012	ADCP	X	X					
		SiltProfiler			X	X	X	X	X
Deurganckdok (Transect X, Y & Z) - eddy	01/10/2008 2/03/2010 29/09/2011 12/03/2012	ADCP	X	X				x	

Near bed continuous monitoring

Location	*Period*	*Instrument*	*Velocity*	*Direction*	*Temperature*	*Pressure*	*Conductivity*	*Turbidity*	*Depth*
Deurganckdok CDW	14/03/2006 – 05/04/2006 19/04/2006 – 23/05/2006 18/07/2006 – 11/10/2006 15/03/2007 – 12/04/2007 26/09/2007 – 05/12/2007 20/02/2008 – 02/04/2008	Valeport MIDAS OBS3+	X	X	X	X	X	X	
		AADI RCM9	X	X	X	X	X	X	
		ALTUS							X
		ARGUS			X	X	X	X	
Deurganckdok Sill	19/04/2006 – 23/05/2006 19/07/2006 – 11/10/2006 09/02/2007 – 18/04/2007	Idem	Idem						

	10/10/2007 – 28/11/2007 27/02/2008 – 09/04/2008								
Deurganckdok CDWdown	15/09/2011 – 14/10/2011 28/02/2012 – 20/03/2012	ADCP	X	X				X	
Deurganckdok CDWup	15/09/2011 – 14/10/2011 28/02/2012 – 20/03/2012	ADCP	X	X				X	
		AADI RCM9	X	X	X	X	X	X	
		ARGUS			X	X	X	X	
Deurganckdok Sill	15/09/2011 – 14/10/2011 28/02/2012 – 20/03/2012	Idem	Idem						

Long-term salinity measurements

Location	*Period*	*Instrument*	*Velocity*	*Direction*	*Temperature*	*Pressure*	*Conductivity*	*Turbidity*
Deurganckdok (Quay wall)	17/03/2006 – 28/04/2006	AADI RCM9	X	X	X	X	X	X
		OBS 3A			X	X	X	X

Deurganckdok (Quay wall)	20/07/2006 – 12/10/2006 12/02/2007 – 27/03/2007 20/06/2007 – 31/07/2007 19/09/2007 – 10/12/2007 20/02/2008 – 28/04/2008 28/04/2008 – 30/09/2008 01/10/2008 – 09/04/2010 20/05/2011 – 31/05/2012	OBS 3A			X	X	X	X

Long-term measurements

Location	*Period*	*Instrument*	*Depth sensor*
Buoy 84	01/01/2006 – 30/06/2006	AADI RCM 9	-5.6m TAW
		AADI RCM 9	-8.1m TAW
Buoy 97	01/01/2006 – 30/06/2006	AADI RCM 9	-5.3m TAW
		AADI RCM 9	-7.8m TAW
Buoy 84	01/07/2006 –	AADI RCM 9	-5.6m TAW

	31/12/2006	AADI RCM 9	-8.1m TAW
Buoy 97	01/07/2006 – 31/12/2006	AADI RCM 9	-5.3m TAW
		AADI RCM 9	-7.8m TAW
Buoy 84	01/01/2007 – 31/03/2007	AADI RCM 9	-5.6m TAW
		AADI RCM 9	-8.1m TAW
Buoy 97	01/01/2007 – 31/03/2007	AADI RCM 9	-5.3m TAW
		AADI RCM 9	-7.8m TAW
Buoy 84	01/04/2007 – 30/06/2007	AADI RCM 9	-5.6m TAW
		AADI RCM 9	-8.1m TAW
Buoy 97	01/04/2007 – 30/06/2007	AADI RCM 9	-5.3m TAW
		AADI RCM 9	-7.8m TAW
Buoy 84	01/07/2007 – 30/09/2007	AADIRCM9	-5.6m TAW
		AADIRCM9	-8.1m TAW
Buoy 97	01/07/2007 – 30/09/2007	AADIRCM9	-5.3m TAW
		AADIRCM9	-7.8m TAW
Buoy 84	01/10/2007 – 31/12/2007	AADIRCM9	-5.6m TAW
		AADIRCM9	-8.1m TAW
Buoy 97	01/10/2007 –	AADIRCM9	-5.3m TAW

	31/12/2007	AADIRCM9	-7.8m TAW
Buoy 84	01/01/2008 – 31/03/2008	AADIRCM9	-5.6m TAW
		AADIRCM9	-8.1m TAW
Buoy 97	01/01/2008 – 31/03/2008	AADIRCM9	-5.3m TAW
		AADIRCM9	-7.8m TAW

4. AMBIENT CONDITIONS

4.1 ENVIRONMENTAL CHARACTERISTICS IN THE LOWER SEA SCHELDT

4.1.1 Long-term turbidity, salinity and current measurements

Long-term measurements were executed in the Lower Sea Scheldt on fixed locations at Oosterweel, Buoy 84 and Prosperpolder (Figure 4-1). The measurements at Buoy 97 was removed in 2008. The measured data on these locations is current velocity, current direction, temperature, pressure, conductivity and turbidity using AADI (AADI Data Instruments) RCM-9 and RCM Seaguard units. Both AADI instruments has comparable sensors and were set up to measure every 10 minutes. The RCM-9 at Prosperpolder is replaced by CTD-sensor of the firm Valeport on 15/12/2011.These measurements were maintained by WL – Cel Hydrometrie Schelde. More information about the AADI RCM-9 can be found in report of IMDC (2005l) and about the AADI RCM Seaguard in report IMDC (2011c).

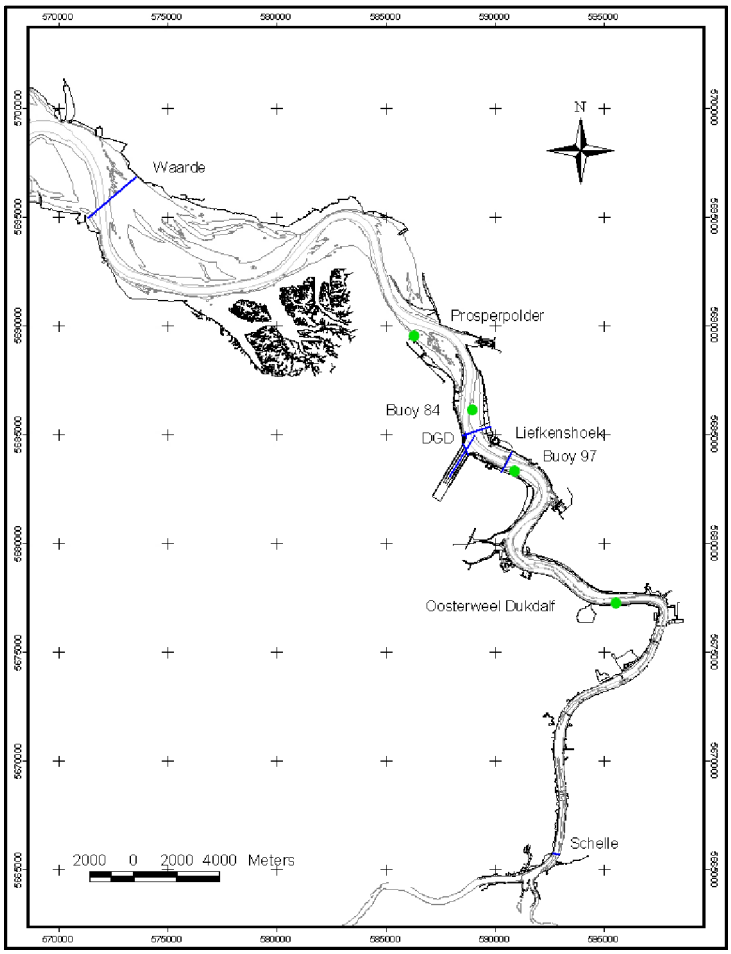


Figure 4-1: All measurement locations 01/2007 – 03/2012

At the left bank on the River Scheldt at Oosterweel (Figure 4-1), measurements were conducted by 2 AADI units and at Prosperpolder by 1 AADI unit. These instruments were suspended from a mooring at fixed distances from the bottom (Table 4-1). The AADI unit used at Prosperpolder measured only reliable temperature, conductivity and pressure.

Table 4-1: Measurement locations and periods at Oosterweel (left bank) & Prosperpolder .

Location	Depth sensor	Easting (UTM ED50)	Northing (UTM ED50)
Oosterweel (top)	4.5m above bottom (-2.3m TAW)	595 574	5 677 278
Oosterweel (bottom)	1m above bottom (-5.8m TAW)	595 574	5 677 278
Buoy 84 (top)	3.3m above bottom (-5.6m TAW)	588 884	5 685 934
Buoy 84 (bottom)	0.8m above bottom (-8.1m TAW)	588 884	5 685 934
Prosperpolder	2.5m above bottom (-1.5m TAW)	586 307	5 689 501

The long-term measurement at Buoy 84 (and previously Buoy 97) was set up by IMDC. IMDC started the measurements on the 21st of September 2005 and was stopped on the 12th of April 2007. WL – Cel Hydrometrie Schelde continued these measurements at Buoy 84 on 9th of May 2007. A fixed set up was used in which a steel frame was placed on the bottom, with 2 AADI units suspended and held upright by subsurface buoys. The lower AADI was placed at 0.80m above the bottom, while the upper one was placed at a distance of 2.5m above the lower one (Table 4-1).

During whole measurement period, inclusive the IMDC period, there were short interruptions to calibrate the instruments: 13/04/2006 – 18/04/2006; 05/09/2007 – 13/09/2007, 30/01/2008 – 06/02/2008 and 22/10/2008 – 30/10/2008, 16/03/2011 and 01/06/2012.

4.1.1.1 Methodology of Processing

The data of these measurements was processed by IMDC and is presented in Annex A. The collected data was validated and outliers were removed. Erroneous measurements because of malfunction of sensors, growth on sensors, instrument failure were also removed from the dataset and are documented in Table 4-2.

Salinity was calculated using the temperature, conductivity and pressure in the PSS-78 formula (Unesco, 1991 & IMDC, 2002, see Annex F).

Turbidity values were converted to suspended sediment concentration (SSC) using an equation of calibration curve. The calibration curve was set up by WL- Hydrologisch InformatieCentrum and are reported in IMDC (2012e).

Table 4-2: Chronological overview of missing and faulty data for period 01/04/2011 - 31/03/2012 at measurement locations Oosterweel, Buoy 84 and Prosperpolder.

Oosterweel left bank – 4.5 m above bottom				
Period	***Serial number***	***No data***	***Faulty data***	***Comment***
07/06/2012 – 09/06/2011	0152		x	Anomalous data removed
18/09/2011 – 22/09/2011	0152	x		No data available
23/12/2011	0152	x		No data available
17/02/2012 – 20/02/2012	0065	x		No data available
Oosterweel left bank – 1 m above bottom				
Period	***Serial number***	***No data***	***Faulty data***	***Comment***
13/05/2011 – 26/05/2011	0171	x		No data available
07/11/2011 – 10/11/2011	0171	x		No data available
10/01/2012 – 12/01/2012	0171	x		No data available
16/02/2012 – 20/02/2012	0171	x		No data availabel
Buoy 84 top – 3.3 m above bottom				
Period	***Serial number***	***No data***	***Faulty data***	***Comment***
09/11/2011 – 30/11/2011	0173	x		Instrument,t 0173 replaced by instrument 0172
21/01/2012 – 01/02/2012	0172	x		No data available
14/02/2012 – 22/02/2012	0172	x		No data available
Buoy 84 bottom – 0.8 m above bottom				
Period	***Serial number***	***No data***	***Faulty data***	***Comment***
11/01/2012 01/02/2012	64	x		Problem with instrument 64
14/02/2012 – 31/03/2012	64			Problem with instrument 64

Prosperpolder – 2.5 m above bottom				
Period	***Serial number***	***No data***	***Faulty data***	***Comment***
27/10/2011 – 15/12/2011	RCM9	x		No data available
12/01/2012 – 02/02/2012	CTD	x		No data available

4.1.1.2 Results (weekly)

The data gathered during these long-term measurements is current velocity, current direction, temperature, pressure and turbidity. In Annex A the processed data is visualized per location and per week in some plots:

- The title shows the week number followed by the year
- The first graph shows the current velocity and the current direction. The direction is scaled from 0 to 360
- The second graph depicts the salinity and temperature
- The third and last graph shows the waterlevel at the nearest tidal gauge and the suspended sediment concentration

All times are given in CET (Dutch: MET).

4.1.1.3 Results (monthly)

Monthly results (minimum, maximum and average) are shown in Annex A. The minimum, maximum and average value for velocity magnitude, temperature and suspended sediment concentration is given for every month. For salinity the minimum, maximum and mean are calculated for both high water slack and low water slack.

4.1.1.4 Results (deployment period)

An overview of the evolution of the monthly minimum, maximum and average values for velocity magnitude, temperature and suspended sediment concentration is given in Annex A. For salinity the minimum, maximum and mean are given for both high water slack and low water slack. Notice that for the suspended sediment concentration the graphs are only given since 2006. The graphs are given for the whole deployment period (April 2011 – March 2012).

4.1.1.5 Total results (October 2005 – March 2012)

The results for the whole deployment period are also given in Annex A. The minimum, maximum and average value for velocity magnitude, temperature and suspended sediment concentration is given for the period from October 2005 till March 2012. For salinity the minimum, maximum and mean are calculated for both high water slack and low water slack is given.

4.1.2 Vertical tide

WL – Cel Hydrometrie Schelde, delivered tidal data for the period from 01/04/2011 till 31/03/2012. It is reported together with the processed data of the long-term measurement campaigns and those at Oosterweel and Prosperpolder in Annex A.

4.2 FRESH WATER INFLOW

The fresh water discharge at Schelle are provided by WL - Hydrologische Informatie Centrum. The discharge data are based on gauging stations at Kleine Nete (Grobbendonk), the Grote Nete (Itegem), the Dijle (Haacht), the Dender (Appels), the Zenne (Eppegem) and the Bovenschelde (Melle). The discharges at the gauging stations are converted to discharges at the mouth of the tributaries and then to a 5-daily averaged fresh water discharge at Schelle.

This procedure is more described in WL (2009) and is based on the use of correction coefficients that take in account the surface of the hydrological basins.

In Annex B a graph of the evolution of the fresh water discharge is given just as a table with the decade averages of the fresh water discharge. Also the monthly averages are compared to the expected discharges in a graph.

4.3 METEOROLOGICAL DATA

The meteorological conditions for the measurement station Deurne for the period 01/04/2011 - 31/12/2011 is reported in Annex C. This data have been obtained from the KMI (Royal Meteorological Institute of Belgium). The meteorological conditions for the period 01/01/2012 – 31/03/2012 is not available yet.

4.4 HUMAN ACTIVITIES

4.4.1 Dredging activities

Afdeling Maritieme Toegang provided information about the dates, times, volumes and locations of dredging activities. In Annex D an overview is given of all the dredging activities from 01/04/2011 till 31/03/2012. Weekly volumes are given per location.

4.4.2 Navigation

Weekly data of navigation was delivered by Afdeling Scheepvaartbegeleiding – Schelde Rader Keten for the period of 01/04/2011 till 31/03/2012. To order the data a splitting up of the Beneden Zeeschelde was done in 4 areas. The first area is from de Belgian border up to locks of Zandvliet – Berendrecht (sluizencomplex Zandvliet – Berendrecht), the second goes from this point forward up to Deurganckdok. The third area is from Deurganckdok up to the lock of Kallo (Kallosluis) and finally the fourth goes up to the lock of Royers (Royerssluis). A more detailed description of the areas can be found in Annex E. Also a distinction is made between the draughts. In Annex E a total number is given which refers to the total of passing ships registered by Afdeling Scheepvaartbegeleiding - Schelde Radar Keten. In addition a difference was made between inland navigation and seagoing ships, just as between arrival and departure. Notice that for a certain area and certain draught, the total may deviate from the sum of inland navigation and seagoing. This can be explained by the presence of ships like dredgers, which were only counted in the column ‘total’. Also a difference may occur between the total number and the sum of the arrival and departure number. This is due to vessels that have the same entry and exit point.

Finally it should be mentioned that not all inland shipping is observed by the system, which means that the actual number of inland shipping will be higher.

5. REFERENCES

IMDC (2002). Studie Densiteitsstroming in het kader van LTV Schelde, Stroom- en saliniteitsmeting t.h.v. Deurganckdok uitgevoerd op 12/06/202, I/RA/11216/02.042/CMA.

IMDC (2005a). Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 1: Test survey 17/02/2005, I/RA/11265/05.008/MSA.

IMDC (2005b). Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 2.1: Deurganckdok 17/02/2005, I/RA/11265/05.009/MSA.

IMDC (2005c). Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 2.2: Zandvliet 17/02/2005, I/RA/11265/05.010/MSA.

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IMDC (2005e). Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 2.4: Schelle 17/02/2005, I/RA/11265/05.0012/MSA.

IMDC (2005f). Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 2.5: Deurganckdok 16/02/2005, I/RA/11265/05.013/MSA.

IMDC (2005g). Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 2.6: Kallosluis 18/02/2005, I/RA/11265/05.014/MSA.

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IMDC (2005j). Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 4: Cohesive sediment properties february 2005, I/RA/11265/05.017/MSA

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IMDC (2006c) Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 7.2 22 March 2006 Parel 2 – Deurganckdok (downstream), I/RA/11291/06.095/MSA.

IMDC (2006d) Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 7.3 22 March 2006 Laure Marie – Liefkenshoek, I/RA/11291/06.096/MSA.

IMDC (2006e) Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 7.4 23 March 2006 Parel 2 – Schelle, I/RA/11291/06.097/MSA.

IMDC (2006f) Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 7.5 23 March 2006 Laure Marie – Deurganckdok (downstream), I/RA/11291/06.098/MSA.

IMDC (2006g) Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 7.6 23 March 2006 Veremans – Waarde, I/RA/11291/06.099/MSA.

IMDC (2006h) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.1 Opmeting stroming en zout- en sedimentbeweging aan de ingang van het Deurganckdok (SiltProfiler), I/RA/11283/06.087/WGO.

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IMDC(2006n): Studie van de stromingsvelden en sedimentuitwisseling aan de ingang van Deurganckdok. Additional processing of ADCP and salinity data 17/11/2005 and 28/11/2005 (I/RA/15030/06.040/BDC).

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IMDC (2007e). Uitbreiding studie densiteitsstromingen in de Beneden Zeeschelde in het kader van LTV Meetcampagne naar hooggeconcentreerde slibsuspensies Deelrapport 11.3 Through tide Measurement Sediview & Siltprofiler 28/9 Stream - Raai K (I/RA/11291/06.106/MSA), in opdracht van AWZ.

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IMDC (2007i) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 1.1 Sediment Balance: Three monthly report 1/4/2006 – 30/06/2006 (I/RA/11283/06.113/MSA)

IMDC (2007j) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 1.2 Sediment Balance: Three monthly report 1/7/2006 – 30/09/2006 (I/RA/11283/06.114/MSA)

IMDC (2007k) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 1.3 Sediment Balance: Three monthly report 1/10/2006 – 31/12/2006 (I/RA/11283/06.115/MSA)

IMDC (2007l) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 1.4 Sediment Balance: Three monthly report 1/1/2007 – 31/03/2007 (I/RA/11283/06.116/MSA)

IMDC (2007m) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 1.5 Annual Sediment Balance (I/RA/11283/06.117/MSA)

IMDC (2007n) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.2 Through tide measurement SiltProfiler 26/09/2006 Stream (I/RA/11283/06.068/MSA)

IMDC (2007o) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.4 Through tide measurement Sediview spring tide 27/09/2006 Parel 2 (I/RA/11283/06.119/MSA)

IMDC (2007p) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.7 Salt-Silt distribution & Frame Measurements Deurganckdok 15/07/2006 – 31/10/2006 (I/RA/11283/06.122/MSA)

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IMDC (2007r) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 3.1 Boundary conditions: Three monthly report 1/1/2007 – 31/03/2007 (I/RA/11283/06.127/MSA)

IMDC (2007s) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing Deelrapport 1.10: Sediment Balance: Three monthly report 1/4/2007 – 30/06/2007 (I/RA/11283/07.081/MSA)

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IMDC (2007u) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 3.11: Boundary conditions: Two monthly report 1/07/2007 – 30/09/2007 (I/RA/11283/07.098/MSA)

IMDC (2008a) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.5: Through tide measurement Sediview average tide 24/10/2007 (I/RA/11283/06.120/MSA)

IMDC (2008b) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 4.1: Analysis of siltation Processes and Factors (I/RA/11283/06.129/MSA)

IMDC (2008c) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 1.12: Sediment Balance: Four monthly report 1/9/2007 – 31/12/2007 (I/RA/11283/07.083/MSA)

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IMDC (2008f) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.09: Calibration stationary equipment autumn (I/RA/11283/07.095/MSA)

IMDC (2008g) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.10: Through tide measurement SiltProfiler 23 October 2007 (I/RA/11283/07.086/MSA)

IMDC (2008h) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.11: Through tide measurement Salinity Profiling winter 12 March 2008 (I/RA/11283/07.087/MSA)

IMDC (2008i) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.12: Through tide measurement Sediview winter 11 March 2008 – Transect I (I/RA/11283/07.088/MSA)

IMDC (2008j) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.13: Through tide measurement Sediview winter 11 March 2008 – Transect K (I/RA/11283/07.089/MSA)

IMDC (2008k) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.14: Through tide measurement Sediview winter 11 March 2008 – Transect DGD (I/RA/11283/07.090/MSA)

IMDC (2008l) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.15: Through tide measurement SiltProfiler winter 12 March 2008 (I/RA/11283/07.091/MSA)

IMDC (2008m) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.17: Salt-Silt distribution & Frame Measurements Deurganckdok autumn (17/9/2007-10/12/2007) (I/RA/11283/07.093/MSA)

IMDC (2008n) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.18: Salt-Silt distribution & Frame Measurements Deurganckdok winter (18/02/2007-31/03/2008) (I/RA/11283/07.094/MSA)

IMDC (2008o) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.19: Calibration stationary & mobile equipment winter (I/RA/11283/07.096/MSA)

IMDC (2008p) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 3.12: Boundary conditions: Three monthly report 1/9/2007 – 31/12/2007 (I/RA/11283/07.099/MSA)

IMDC (2008q) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 3.13: Boundary conditions: Three monthly report 1/1/2008 – 31/3/2007 (I/RA/11283/07.100/MSA)

IMDC (2008r) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 3.14: Boundary conditions: Annual report (I/RA/11283/07.101/MSA)

IMDC (2008s) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 4.10: Analysis of siltation Processes and Factors (I/RA/11283/07.102/MSA)

IMDC (2008t) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing Deelrapport 1.20: Sediment Balance: Three monthly report 1/4/2008 – 30/06/2008 (I/RA/11283/08.076/MSA)

IMDC (2008u) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.20: Through tide measurement Sediview during average tide Spring 2008 – 19 June 2008 (I/RA/11283/08.081/MSA)

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IMDC (2008w) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing Deelrapport 1.21: Sediment Balance: Three monthly report 1/7/2008 – 30/09/2008 (I/RA/11283/08.077/MSA)

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IMDC (2008y) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.28: Through tide measurement ADCP eddy Summer 2008 – 1 October 2008 (I/RA/11283/08.089/MSA)

IMDC (2008z) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.32: Salt-Silt distribution Deurganckdok: six monthly report 1/4/2008 – 30/9/2008 (I/RA/11283/08.093/MSA)

IMDC (2008aa) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 3.20: Boundary conditions: Six monthly report 1/4/2008 – 30/09/2008 (I/RA/11283/08.096/MSA)

IMDC (2009a) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.23: Through tide measurement Sediview during spring tide Summer 2008 – 30 September 2008 (I/RA/11283/08.084/MSA)

IMDC (2009b) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.29: Through tide measurement SiltProfiler summer 2008 – 29 September 2008 (I/RA/11283/07.090/MSA)

IMDC (2009c) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.34: Calibration stationary & mobile equipment autumn 2008 (I/RA/11283/08.095/MSA)

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IMDC (2009e) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.24: Through tide measurement Sediview during neap tide Autumn 2008 (I/RA/11283/08.085/MSA)

IMDC (2009f) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.25: Through tide measurement Sediview during spring tide Autumn 2008 (I/RA/11283/08.086/MSA)

IMDC (2009g) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing Deelrapport 1.23: Sediment Balance: Three monthly report 1/01/2009 – 31/03/2009 (I/RA/11283/08.079/MSA)

IMDC (2009h) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing Deelrapport 1.24: Annual Sediment Balance (I/RA/11283/08.080/MSA)

IMDC (2009i) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.26: Through tide measurement Sediview during neap tide Winter 2009 (I/RA/11283/08.087/MSA)

IMDC (2009j) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.30: Through tide measurement SiltProfiler winter 2009 (I/RA/11283/08.091/MSA)

IMDC (2009k) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.31: Through tide measurement Salinity Profiling winter 2009 (I/RA/11283/08.092/MSA)

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IMDC (2009m) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 3.21: Boundary conditions: Six monthly report 1/10/2008 – 31/03/2009 (I/RA/11283/08.097/MSA)

IMDC (2009n) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.27: Through tide measurement Sediview during spring tide Winter 2009 (I/RA/11283/08.088/MSA)

IMDC (2009o) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 4.20: Analysis of siltation Processes and Factors (I/RA/11283/08.098/MSA)

IMDC (2009p) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.35: Salt-Silt distribution Deurganckdok: nine monthly report 1/04/2009 – 31/12/2009 (I/RA/11283/09.085/MSA)

IMDC (2010a) Evaluatie externe effecten aanslibbing Deurganckdok. Deelrapport 2.5 Through Tide measurement: eddy currents DGD 02/03/2010 (I/RA/11283/10.051/MSA)

IMDC (2010b) Evaluatie externe effecten aanslibbing Deurganckdok. Deelrapport 2.8 Sal-Silt distribution Deurganckdok 01/04/2009 – 31/03/2010 (I/RA/11354/10.068/NZI)

IMDC (2011a) Evaluatie externe effecten aanslibbing Deurganckdok. Deelrapport 1.1 Annual Sediment Balance year 1: 1/04/2009 – 31/03/2010 (I/RA/11354/10.067/NZI)

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IMDC (2011c) Evaluatie externe effecten aanslibbing Deurganckdok. Deelrapport 1.4 Boundary Conditions year 1: 01/04/2009 – 31/03/2010 (I/RA/11354/10.102/MBO/ANF)

IMDC (2011d) Evaluatie externe effecten aanslibbing Deurganckdok. Deelrapport 1.7 Synthesis report of research on Current Deflecting Wall (I/RA/11354/10.063/MBO)

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IMDC (2012c) Evaluatie externe effecten aanslibbing Deurganckdok. Deelrapport 2.5 Through Tide measurement: eddy currents DGD Autumn 2011 (I/RA/11354/10.110/MBO/ANF)

IMDC (2012d) Evaluatie externe effecten aanslibbing Deurganckdok. Deelrapport 2.10 Salt-Silt & Current Distribution entrance Deurganckdok: Frame measurements and through tide measurements: Autumn 2011 (I/RA/11354/11.131/BQU)

IMDC (2012e) Evaluatie externe effecten aanslibbing Deurganckdok. Deelrapport 2.12 Calibration stationary & mobile equipment 16/03/2011 (I/RA/11354/11.113/MBO/ANF)

IMDC (2012f) Evaluatie externe effecten aanslibbing Deurganckdok. Deelrapport 1.5 Boundary conditions year 2: 01/04/2010 – 31/03/2011 (I/RA/11354/11.103/MBO/ANF)

IMDC (2012g) Evaluatie externe effecten aanslibbing Deurganckdok. Deelrapport 2.3 Through Tide Sediview measurement: entrance DGD during spring tide in Winter 2012 (I/RA/11354/10.108/MBO/ANF)

IMDC (2012h) Evaluatie externe effecten aanslibbing Deurganckdok. Deelrapport 2.4 Through Tide Sediview measurement: entrance DGD during neap tide in Winter 2012 (I/RA/11354/10.109/MBO/ANF)

IMDC (2012k) Evaluatie externe effecten aanslibbing Deurganckdok. Deelrapport 2.7 Through Tide measurement: eddy currents DGD Winter 2012 (I/RA/11354/10.111/MBO/ANF)

IMDC (2012l) Evaluatie externe effecten aanslibbing Deurganckdok Deelrapport 2.11 Salt-Silt & Current Distribution entrance Deurganckdok: Frame measurements and through tide measurements: Winter 2012 (I/RA/11354/11.114/MBO/ANF)

IMDC (2012m) Evaluatie externe effecten aanslibbing Deurganckdok. Deelrapport 1.3 Annual Sediment Balance year 3: 1/04/2011 – 31/03/2012 (I/RA/11354/10.101/MBO/ANF)

IMDC (2012n) Evaluatie externe effecten aanslibbing Deurganckdok. Deelrapport 2.9 Sal-Silt distribution Deurganckdok 01/04/2009 – 31/05/2010 (I/RA/11354/10.112/MBO/ANF)

IMDC (2012o) Evaluatie externe effecten aanslibbing Deurganckdok. Deelrapport 2.13 Calibration stationary & mobile equipment 01/06/2012 (I/RA/11354/12.011/JCA)

IMDC (2012p) Evaluatie externe effecten aanslibbing Deurganckdok. Deelrapport 1.6 Boundary conditions year 3: 01/04/2011 – 31/03/2012 (I/RA/11354/11.104/MBO/ANF)

Unesco (1983). Algorithms for computation of fundamental properties of seawater, UNESCO Technical Papers in Marine Science, 44. UNESCO, France.

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Annex A Long-term measurements at Oosterweel, Buoy 84 and Prosperpolder (WL – cel hydrometrie)

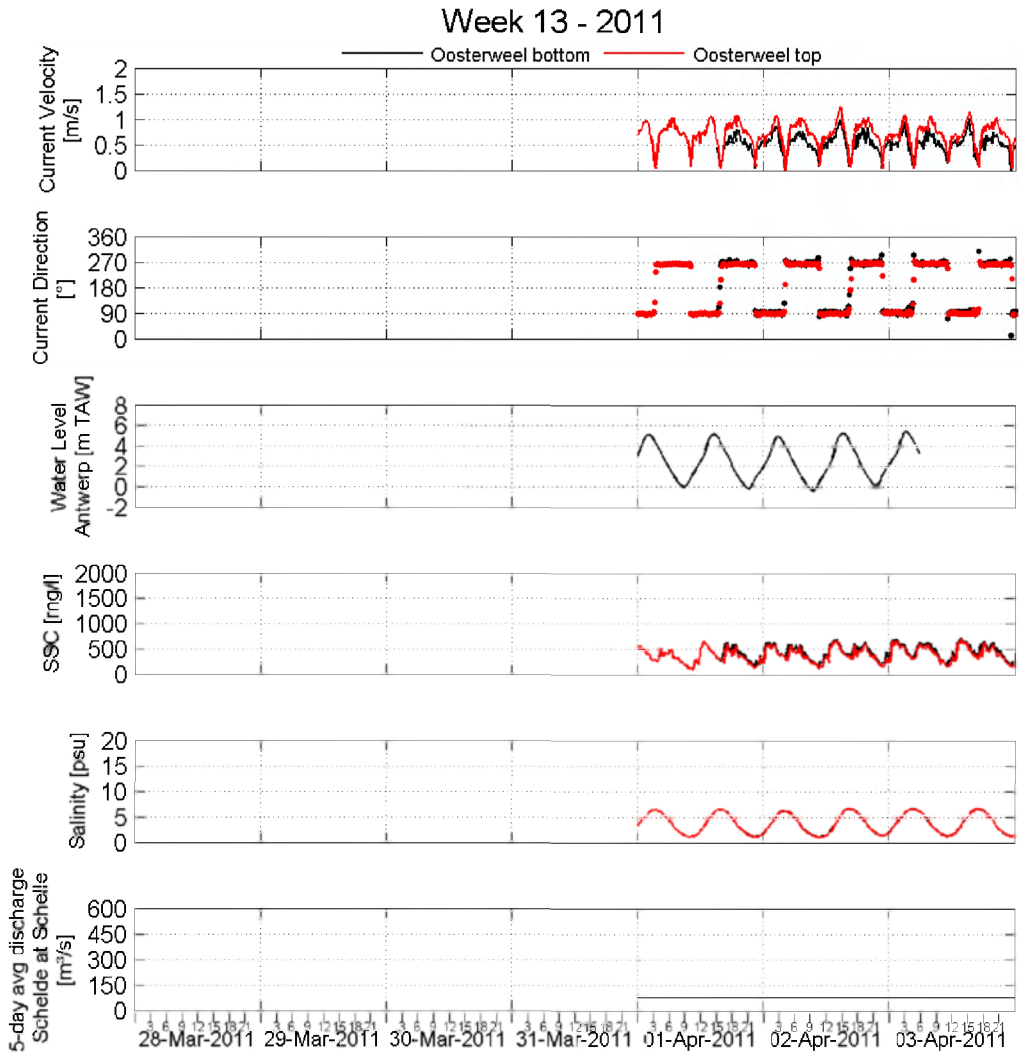
A.1 Datasheets week series

Datasheet order

Nr	Location	Depth of Instrument		Serial number instrument	Period
		[m] above bottom	[m TAW]		
1	Oosterweel (top)	4.5	-2.0	AADI RCM-9 0152	01/04/2011 – 14/05/2012
				AADI Seaguard 0065	
2	Oosterweel (Bottom	1.0	-5.5	AADI Seaguard 0171	01/04/2011 – 23/04/2012
3	Buoy 84 (top)	3.3	-6.0	AADI Seaguard 0173	01/04/2011 – 09/11/2011
				AADI Seaguard 0172	30/11/2011 – 26/03/2012
4	Buoy 84 (bottom)	0.8	-8.0	AADI RCM-9 0248	01/04/2011 –11/01/2012
				AADI Seaguard 0064	01/02/2012 – 14/02/2012
5	Prosperpolder	2.5	-1.5	AADI RCM-9 0117	01/04/2011 – 27/10/2011
				CTD-500 _ 29914	15/12/2011 – 04/05/2012

A.1.1 Oosterweel

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

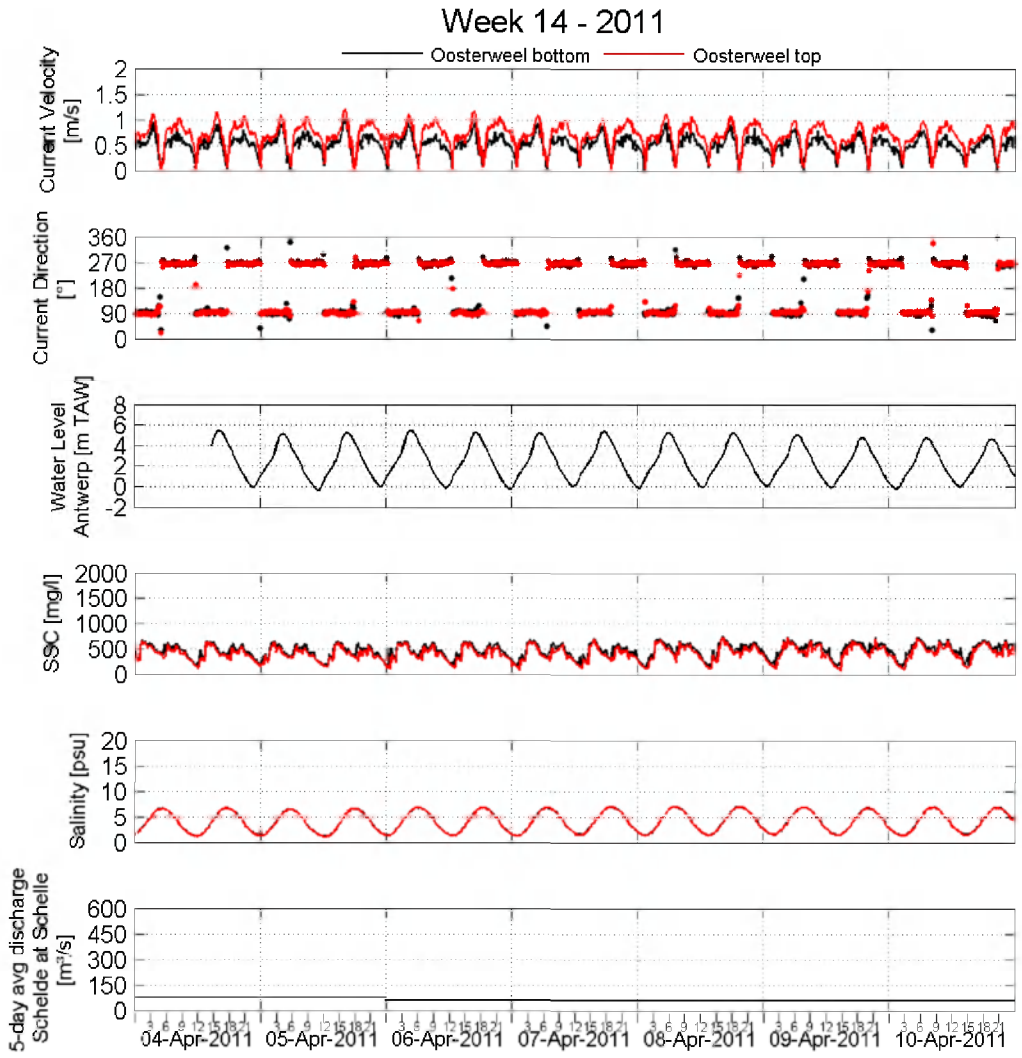
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

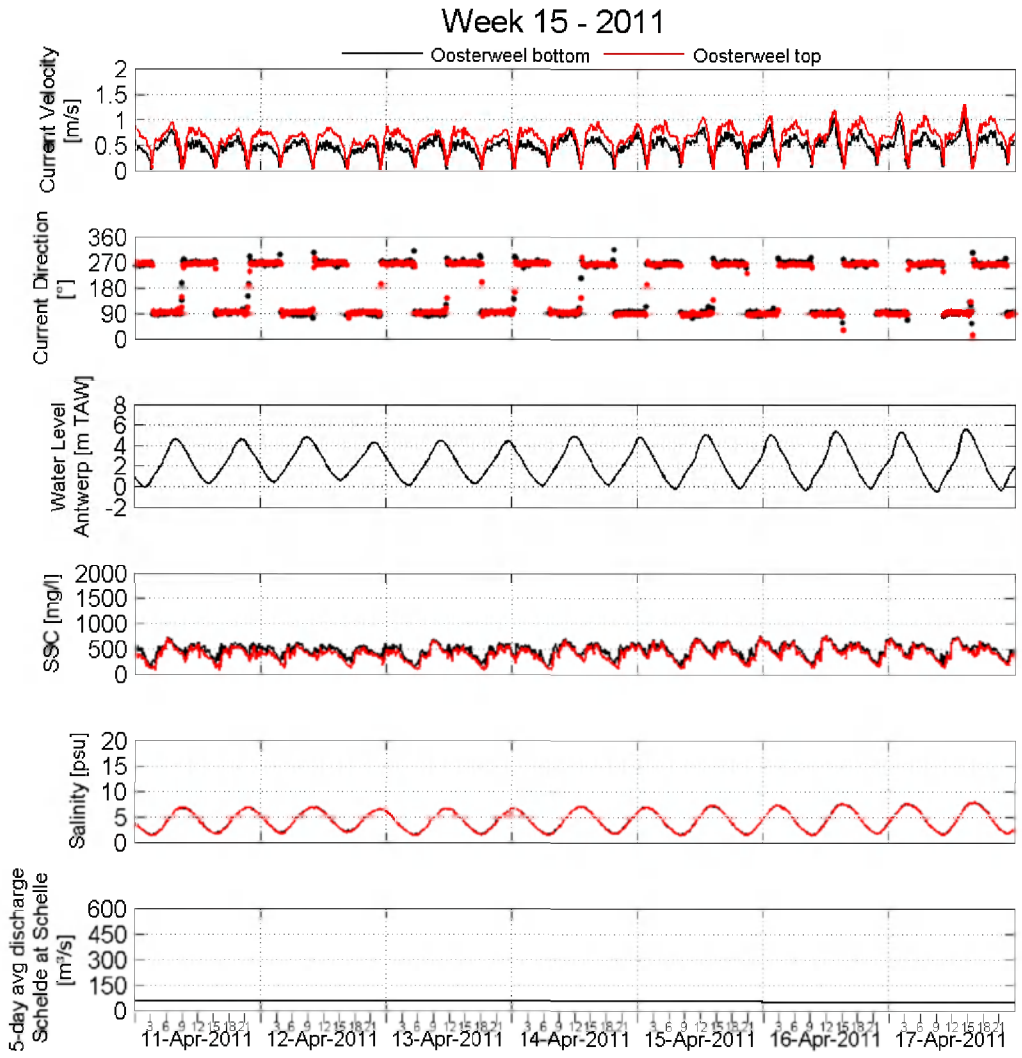
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

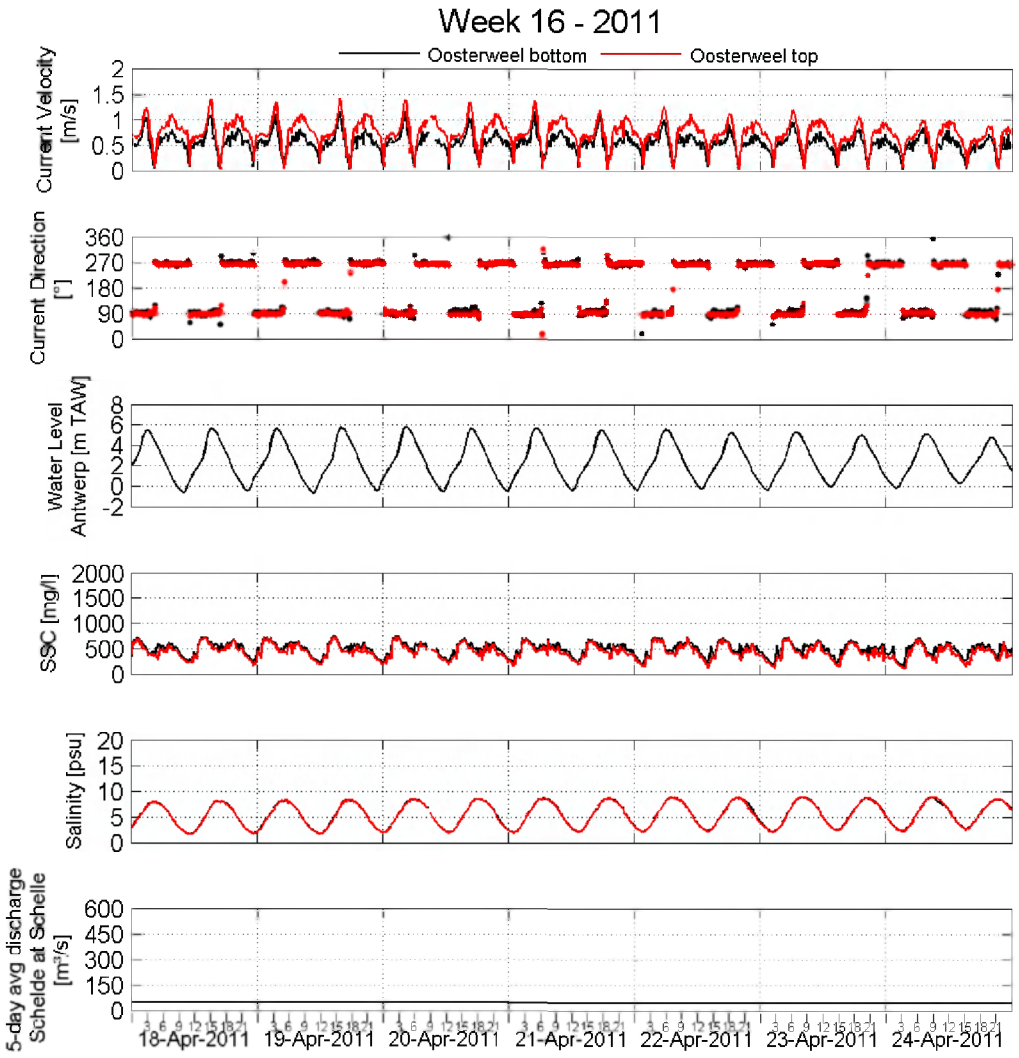
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

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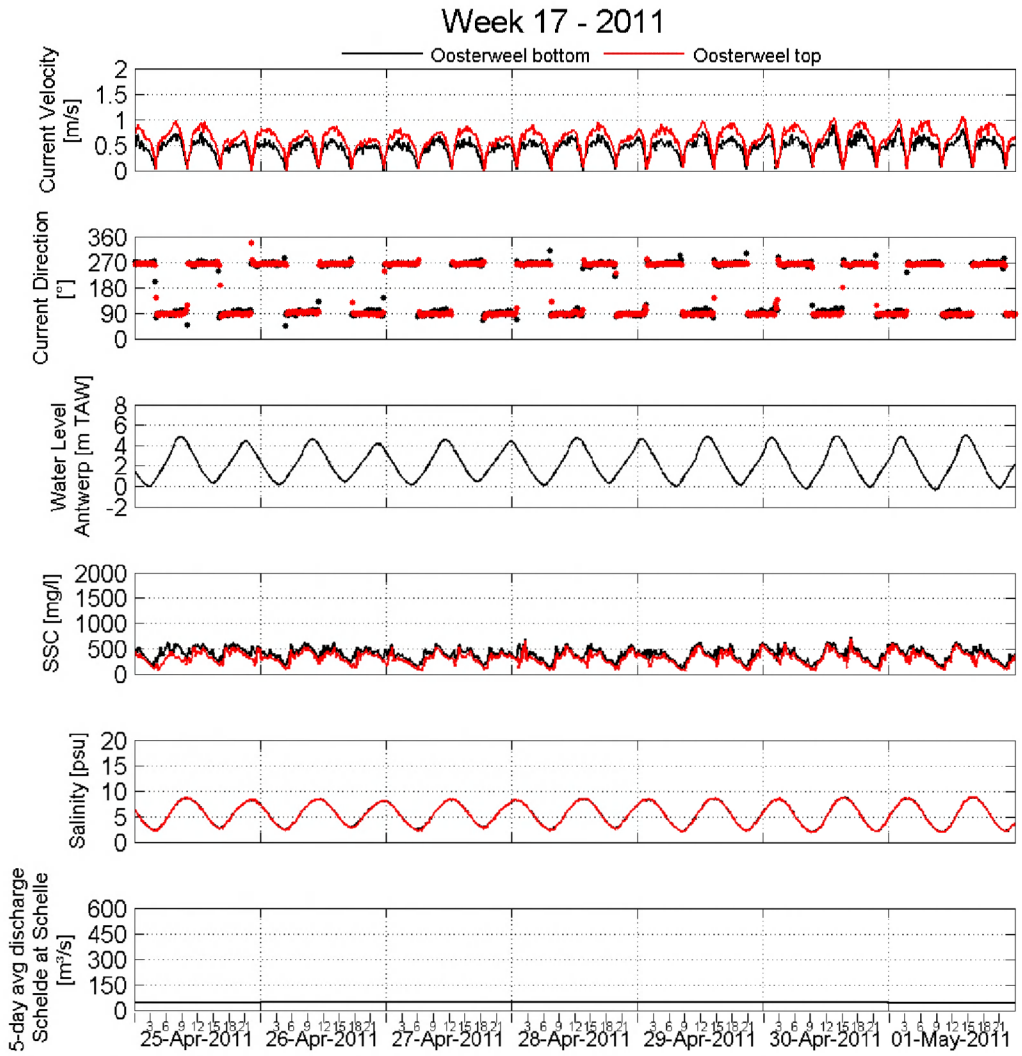
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

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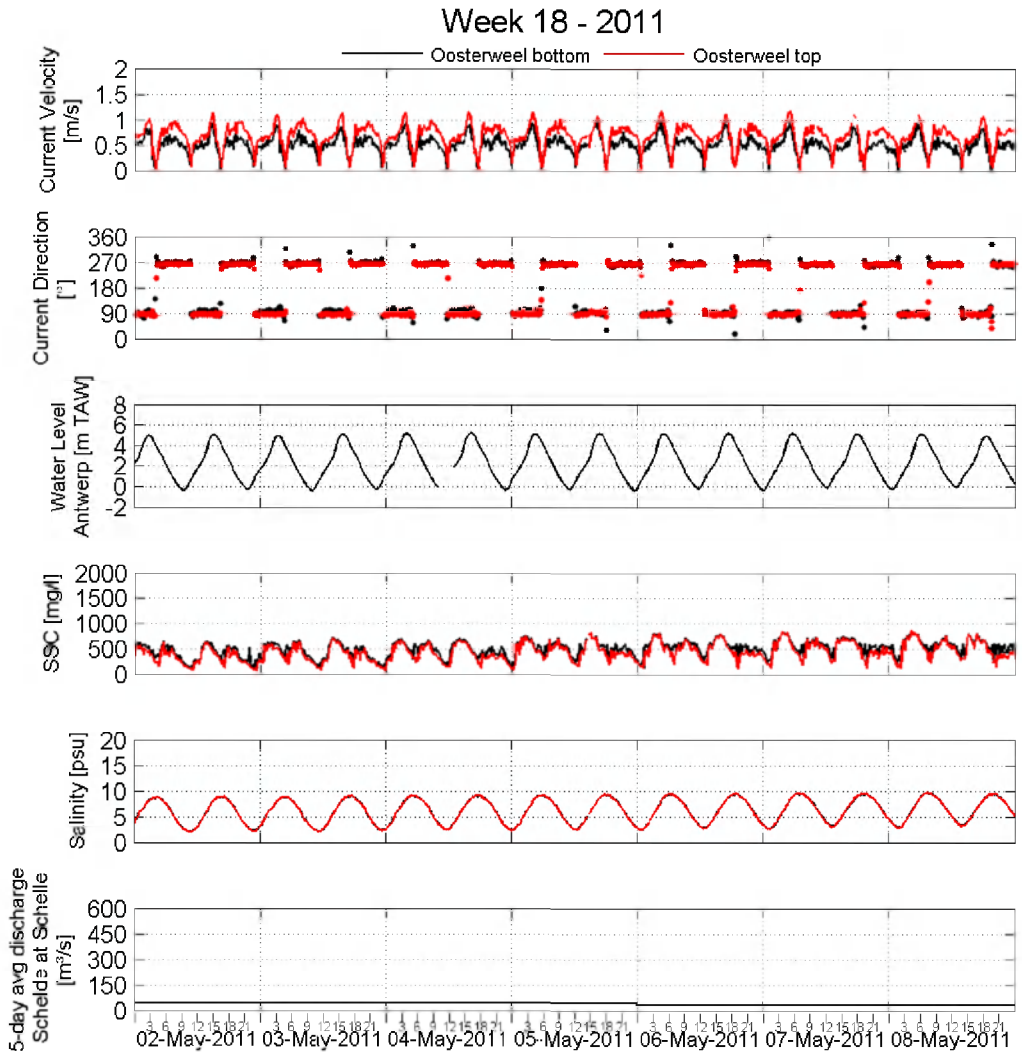
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Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

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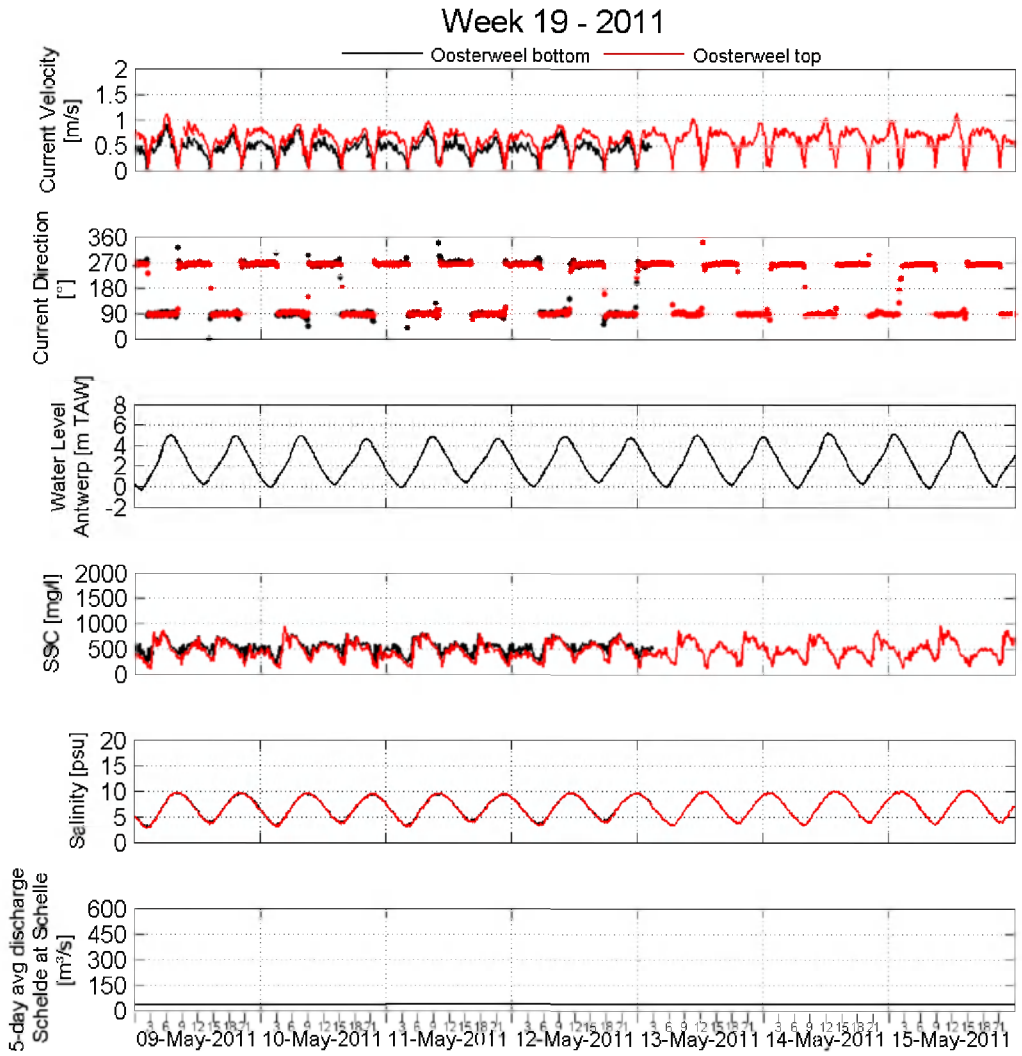
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Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

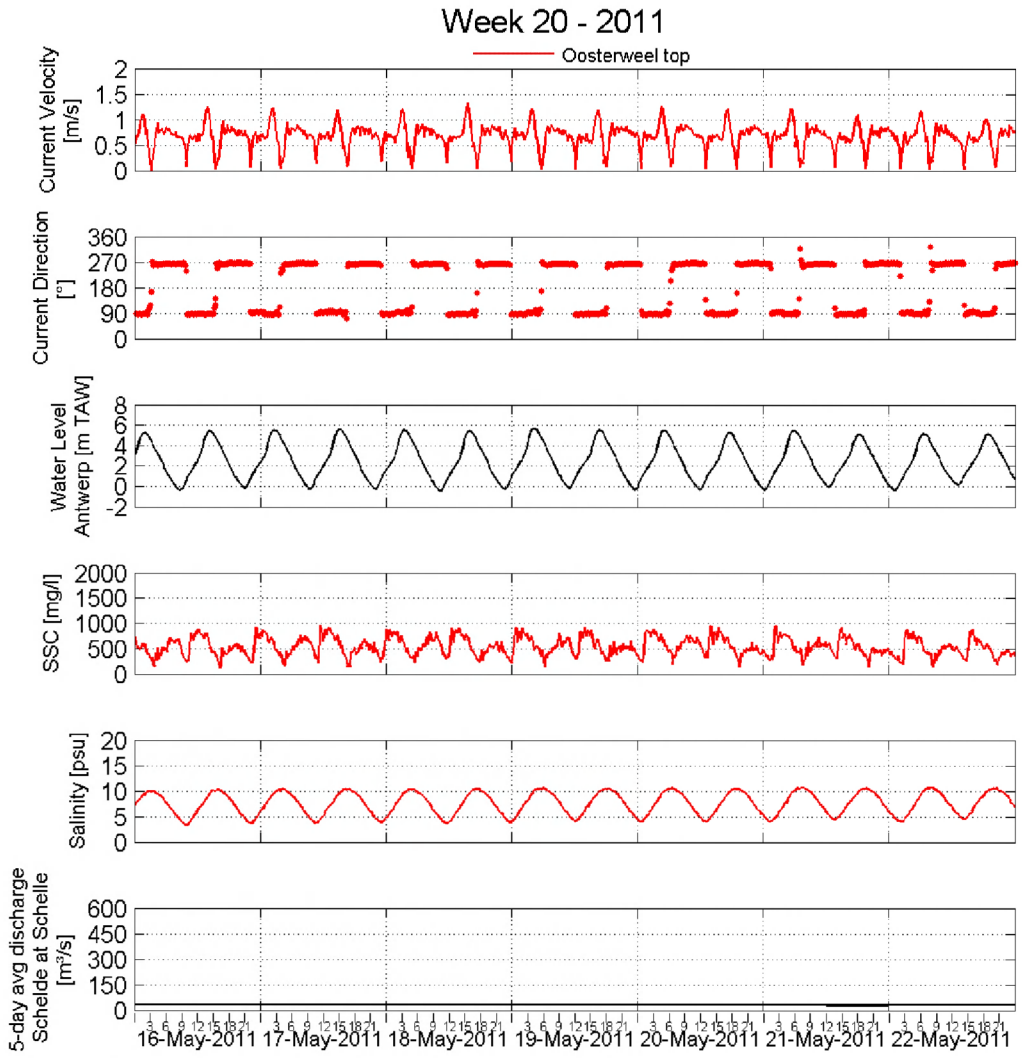
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Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

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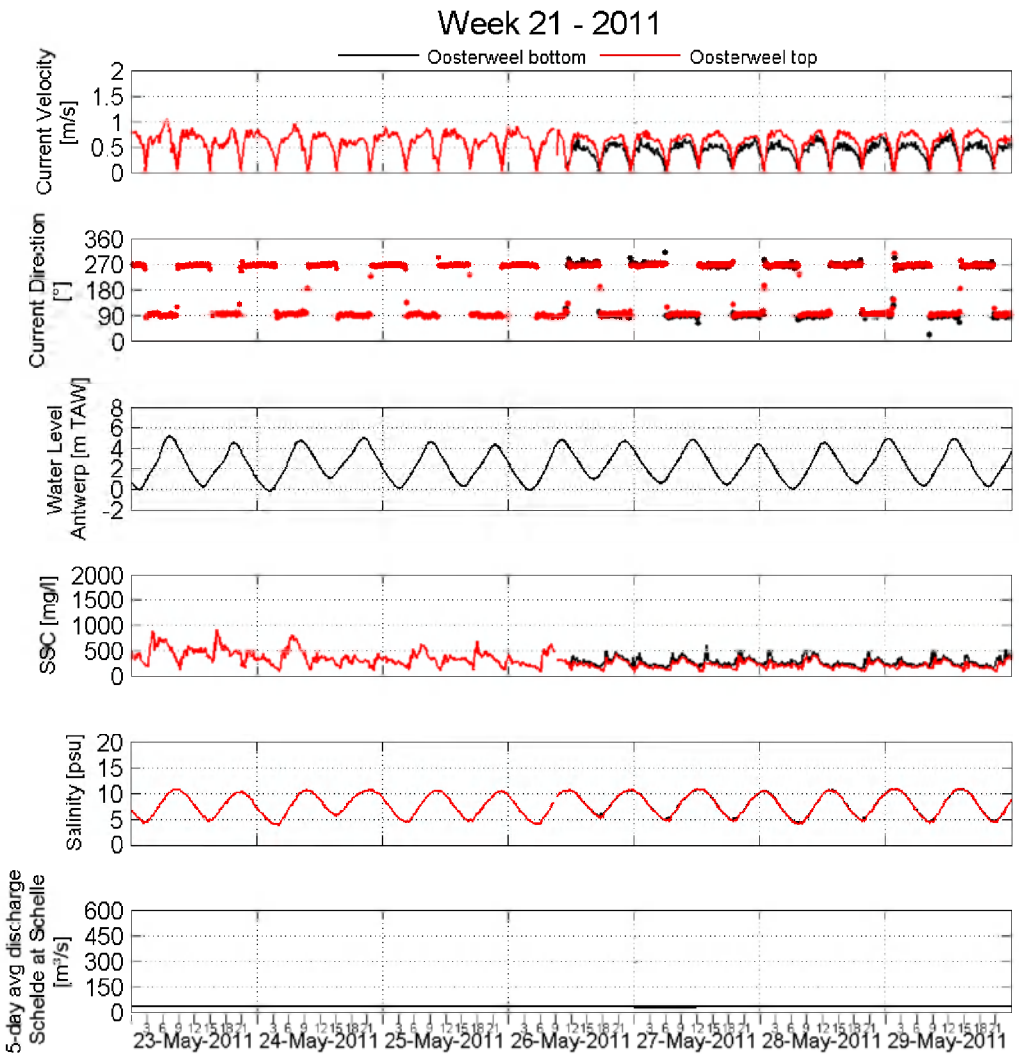
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

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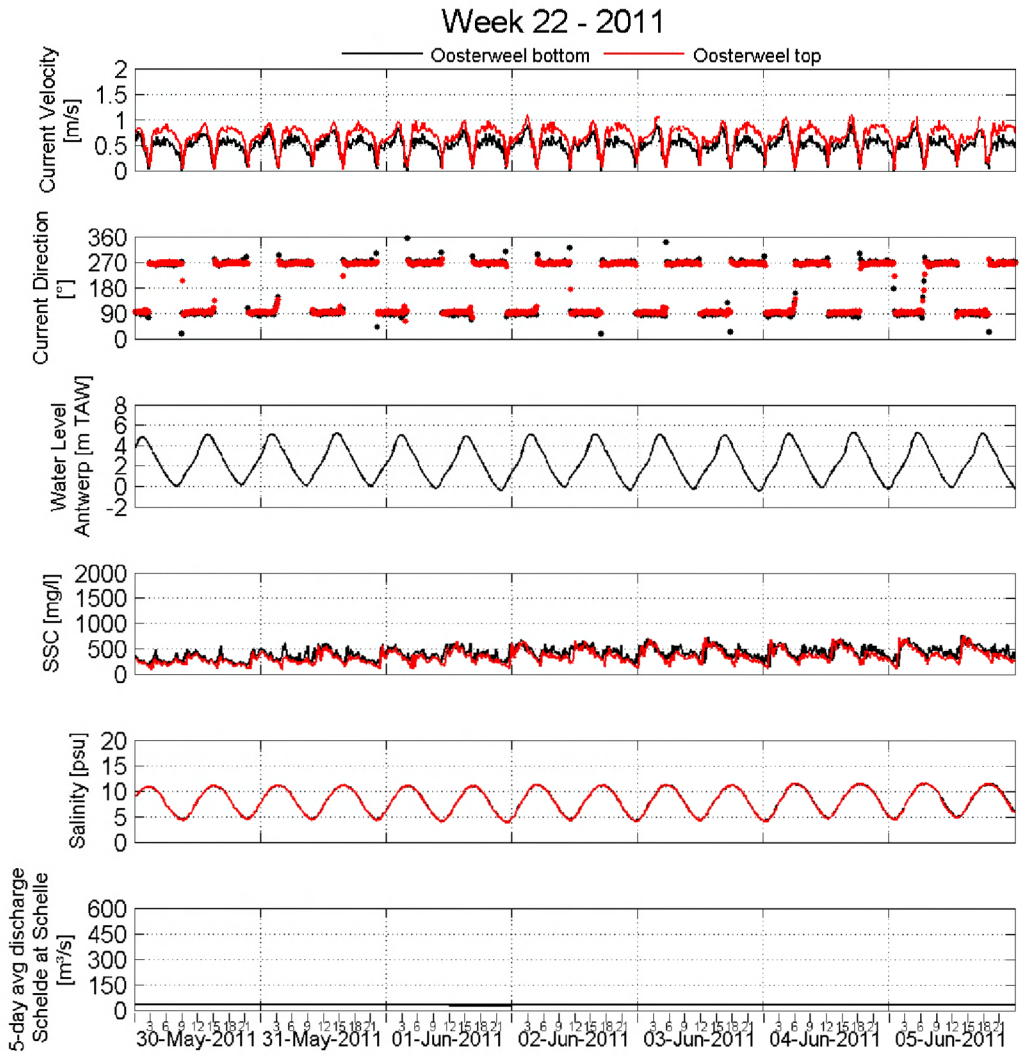
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Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

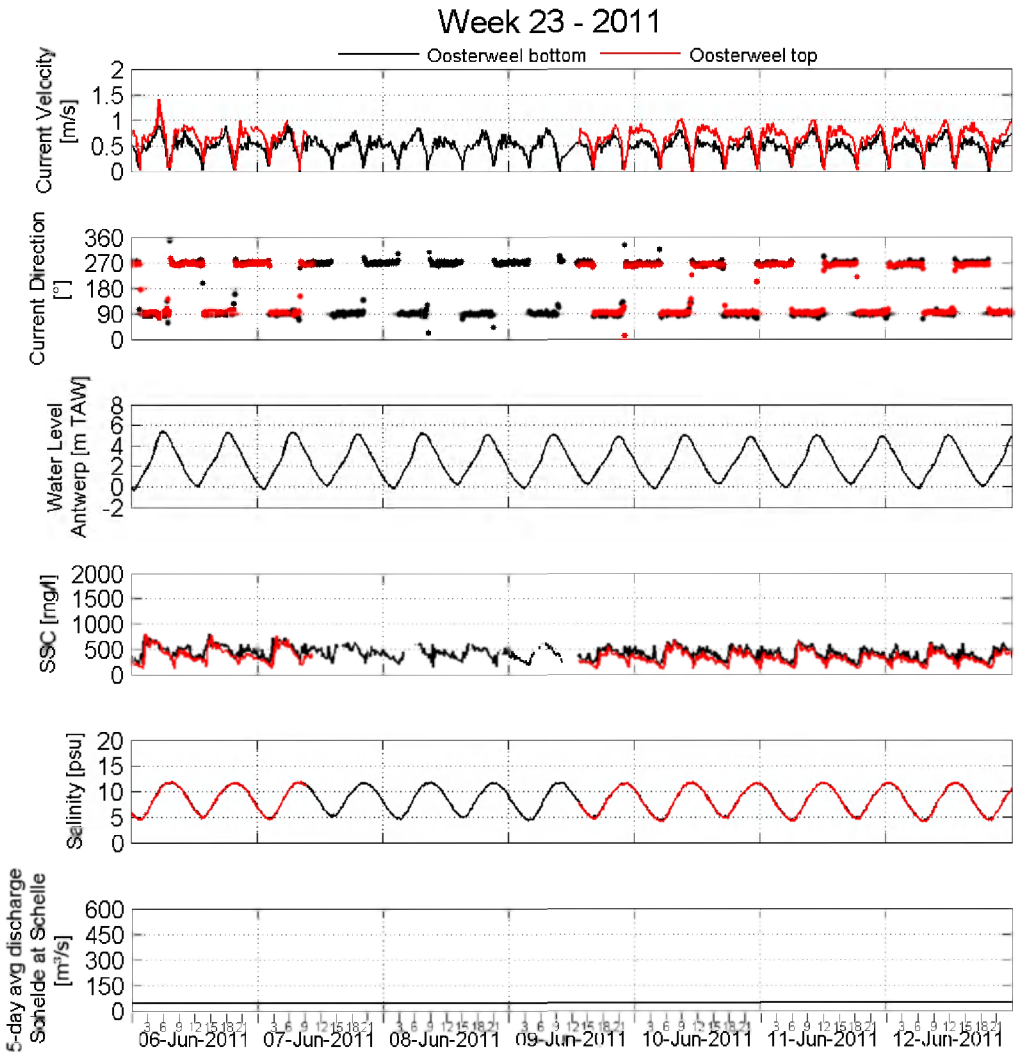
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Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

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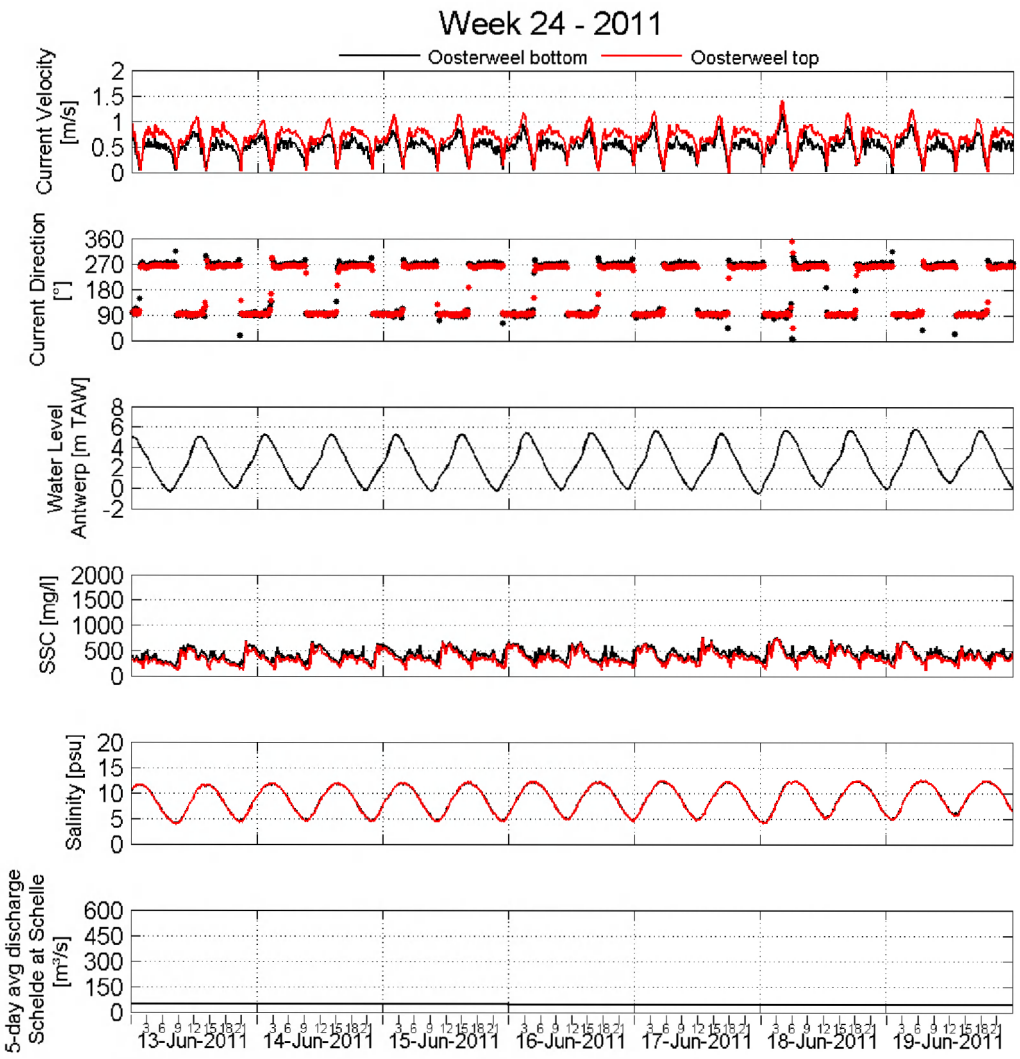
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Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

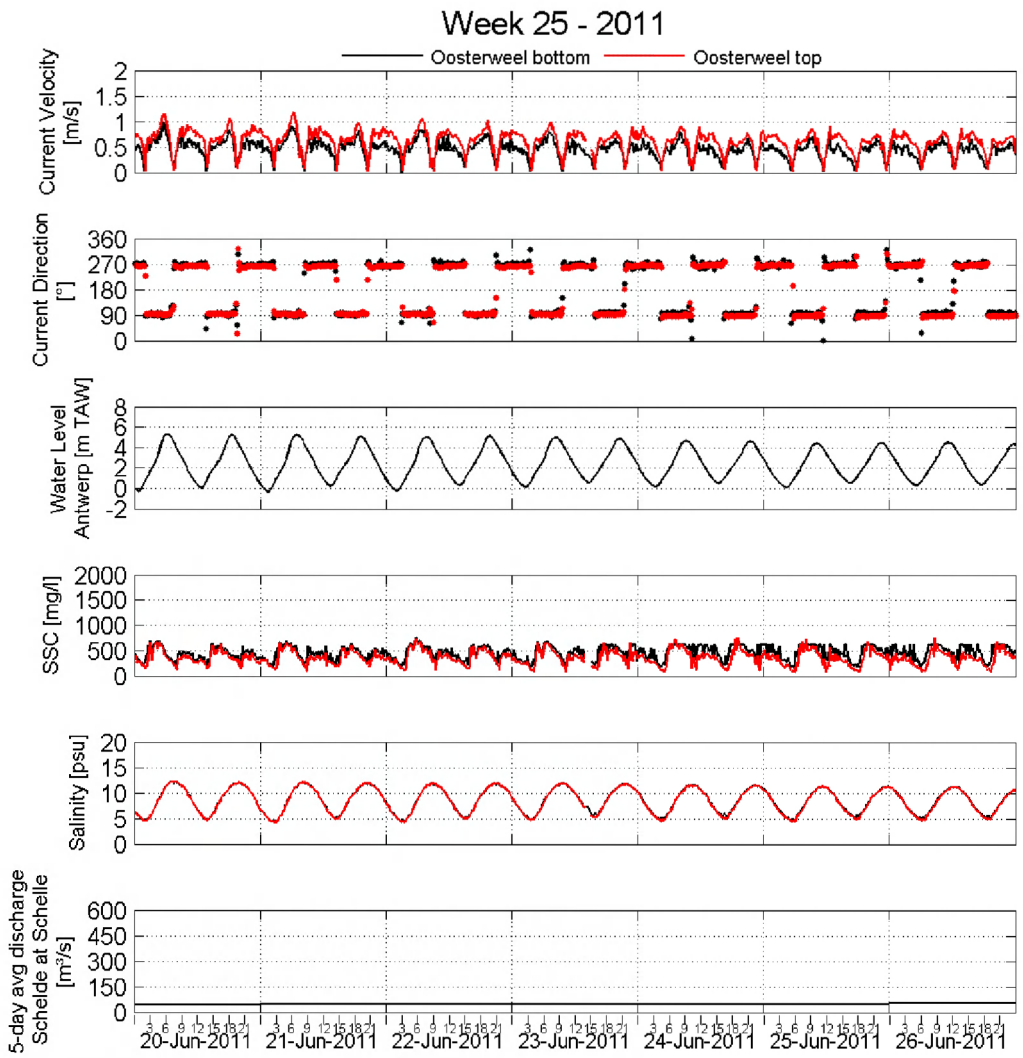
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Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

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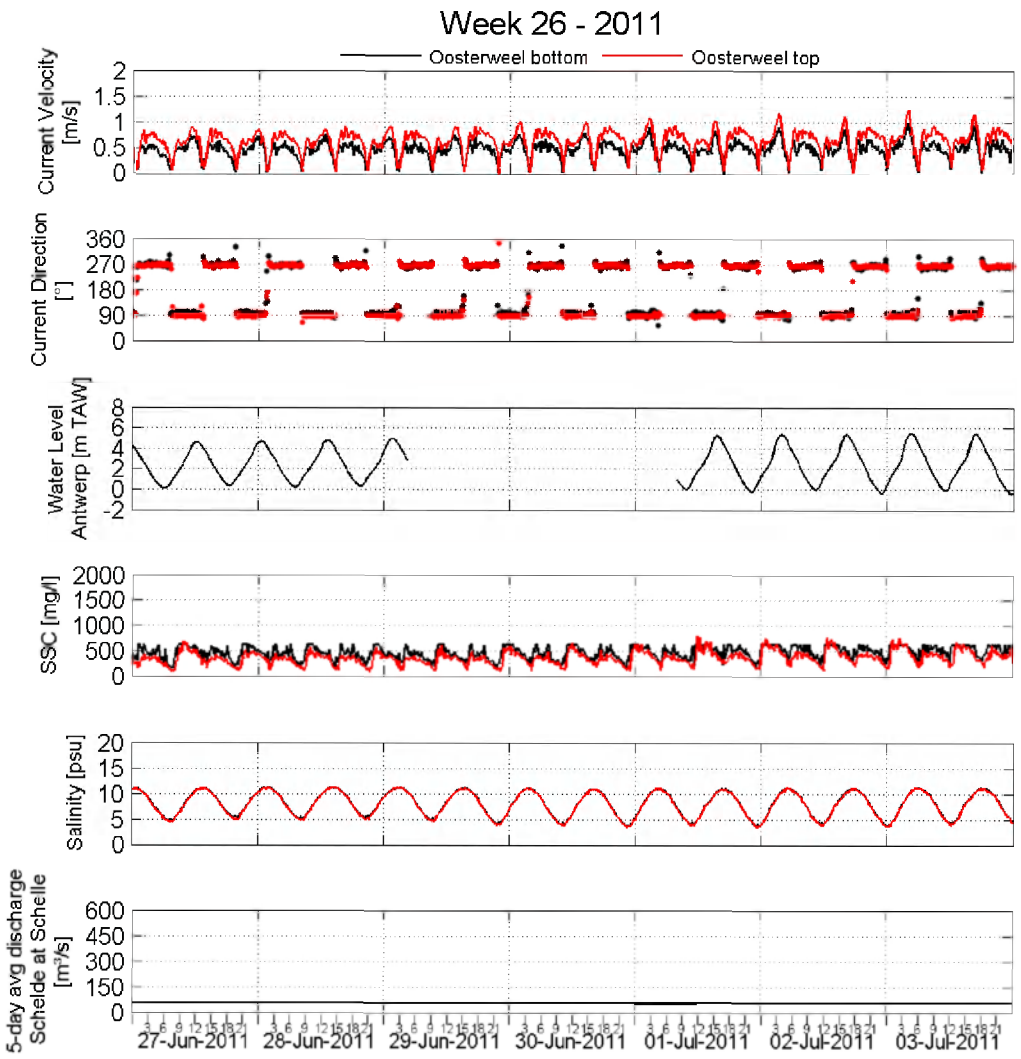
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Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

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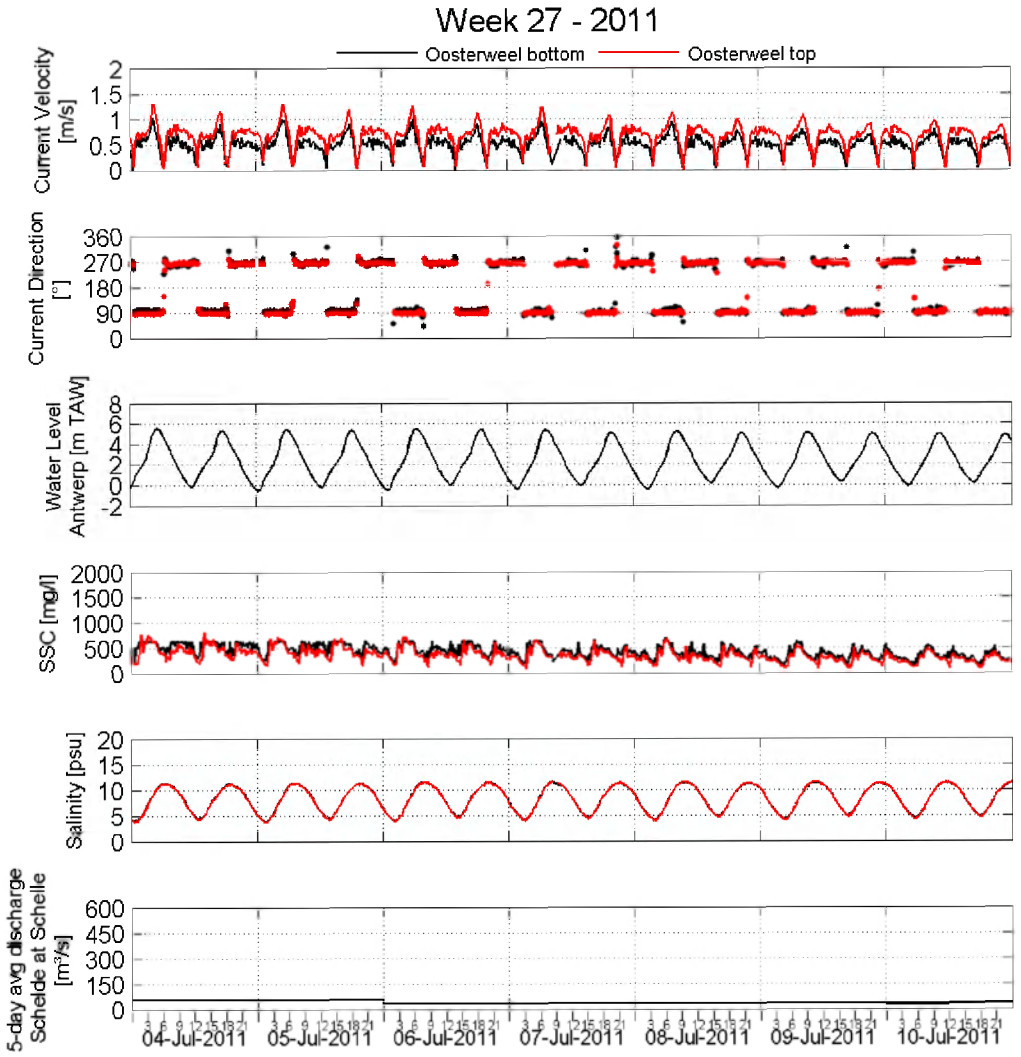
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Oosterweel (top & bottom)

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I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

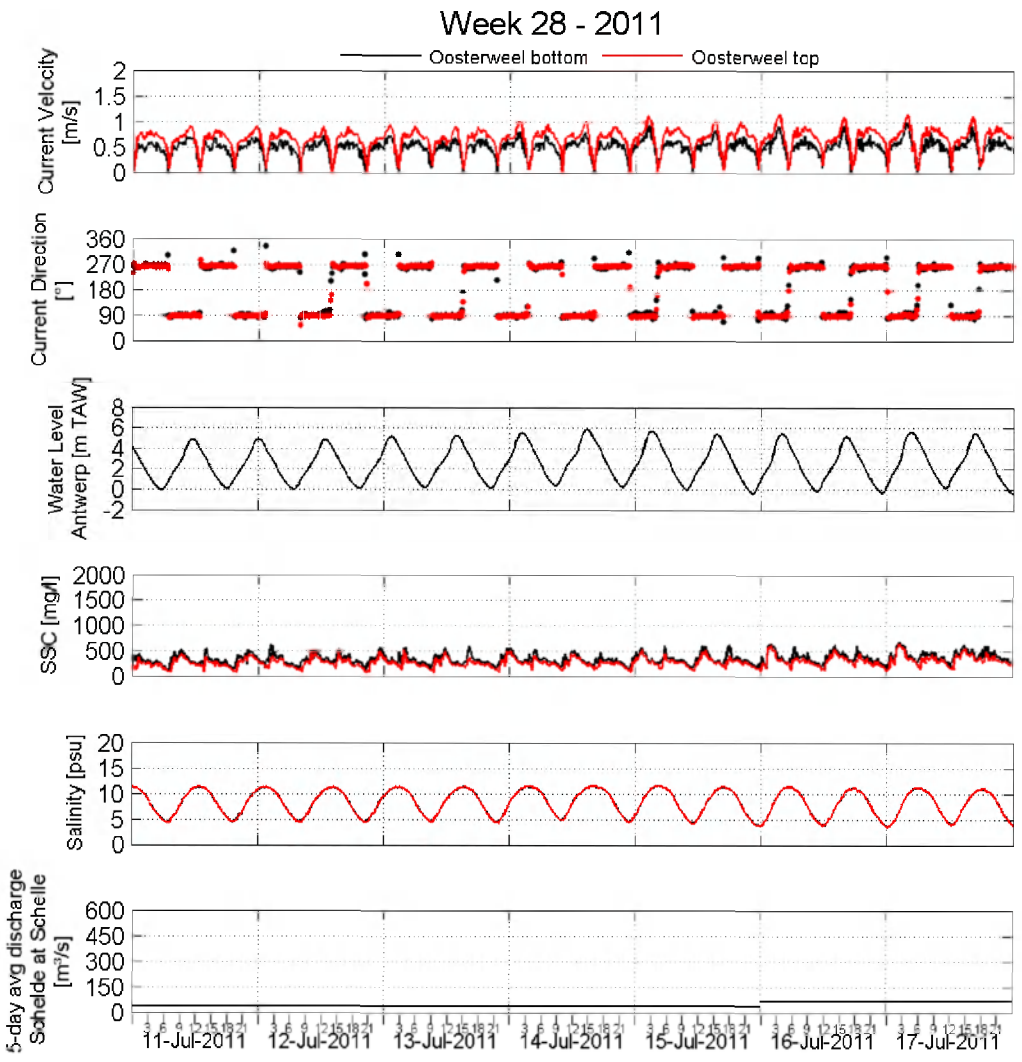
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

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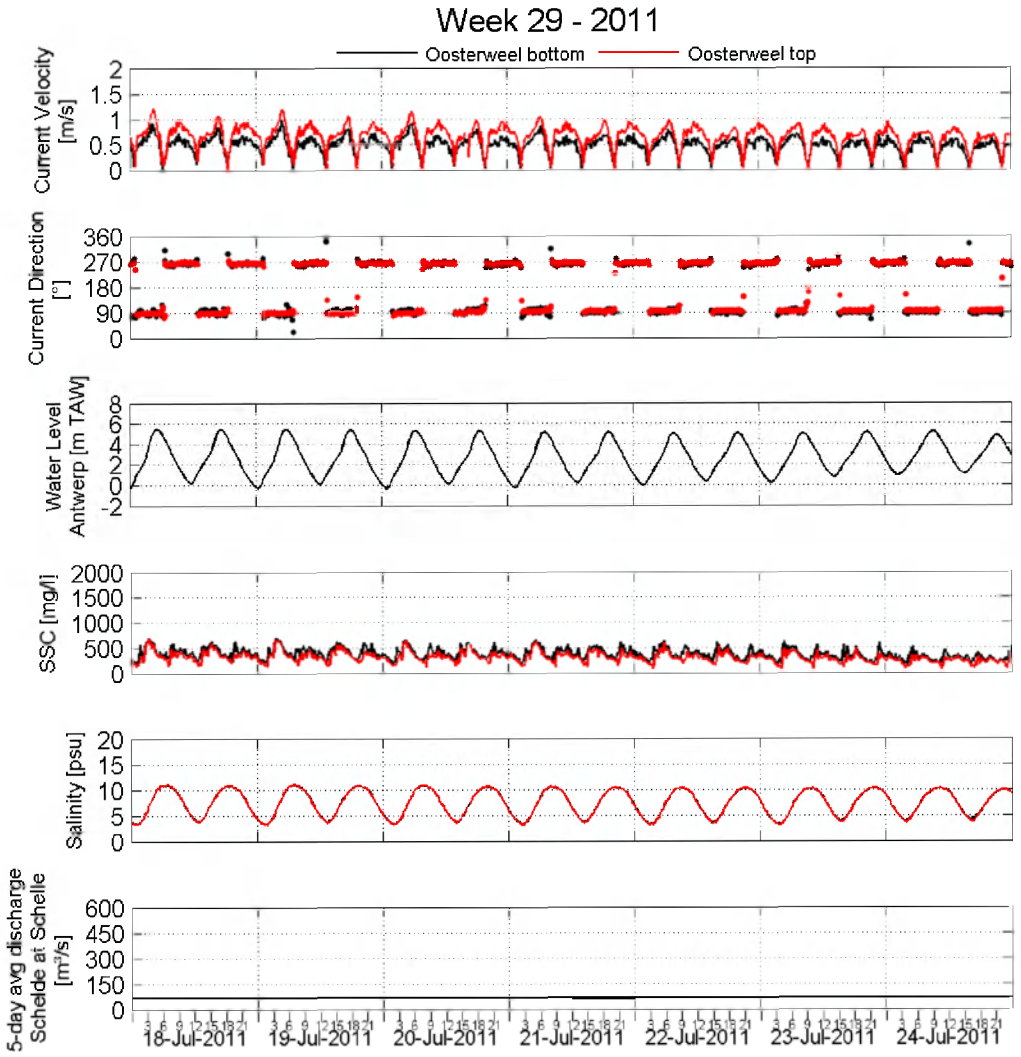
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Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

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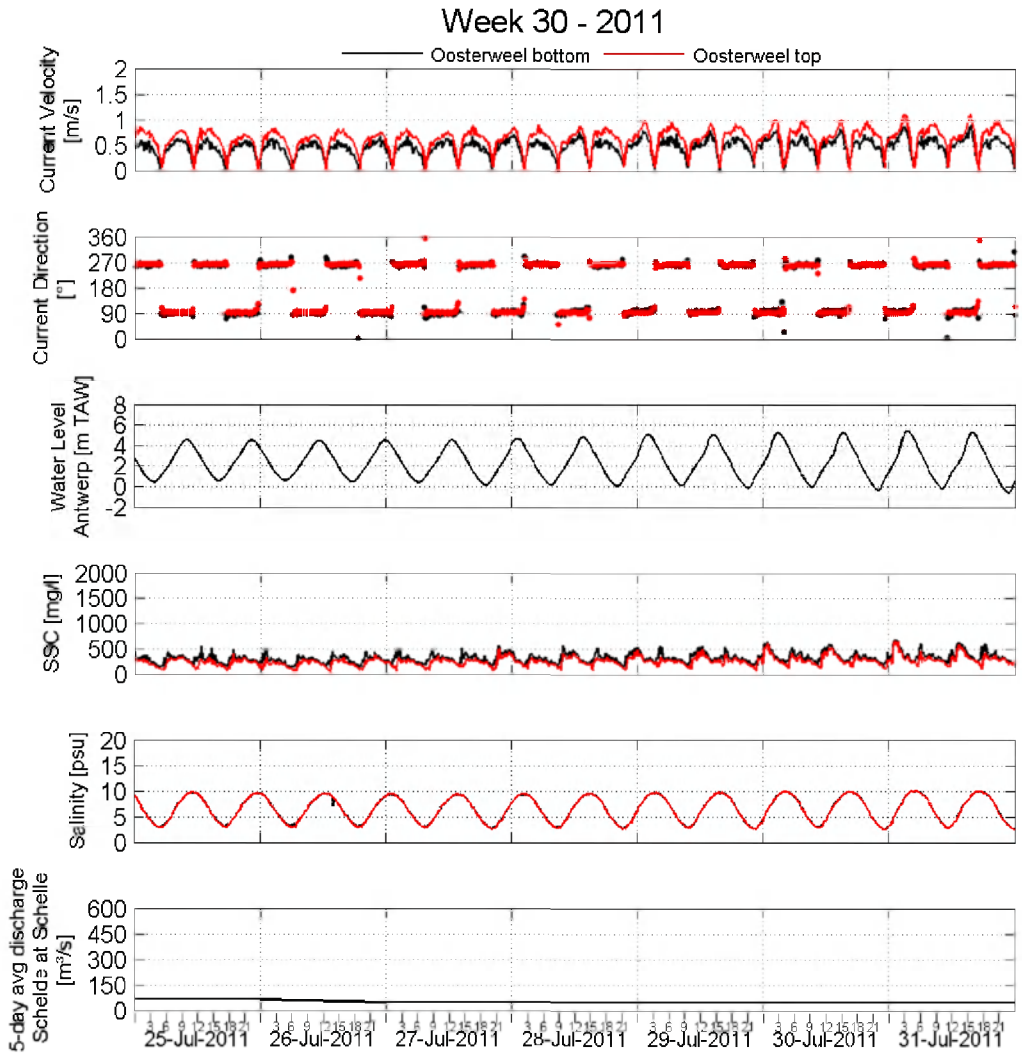
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Oosterweel (top & bottom)

In Association with: Deltares GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

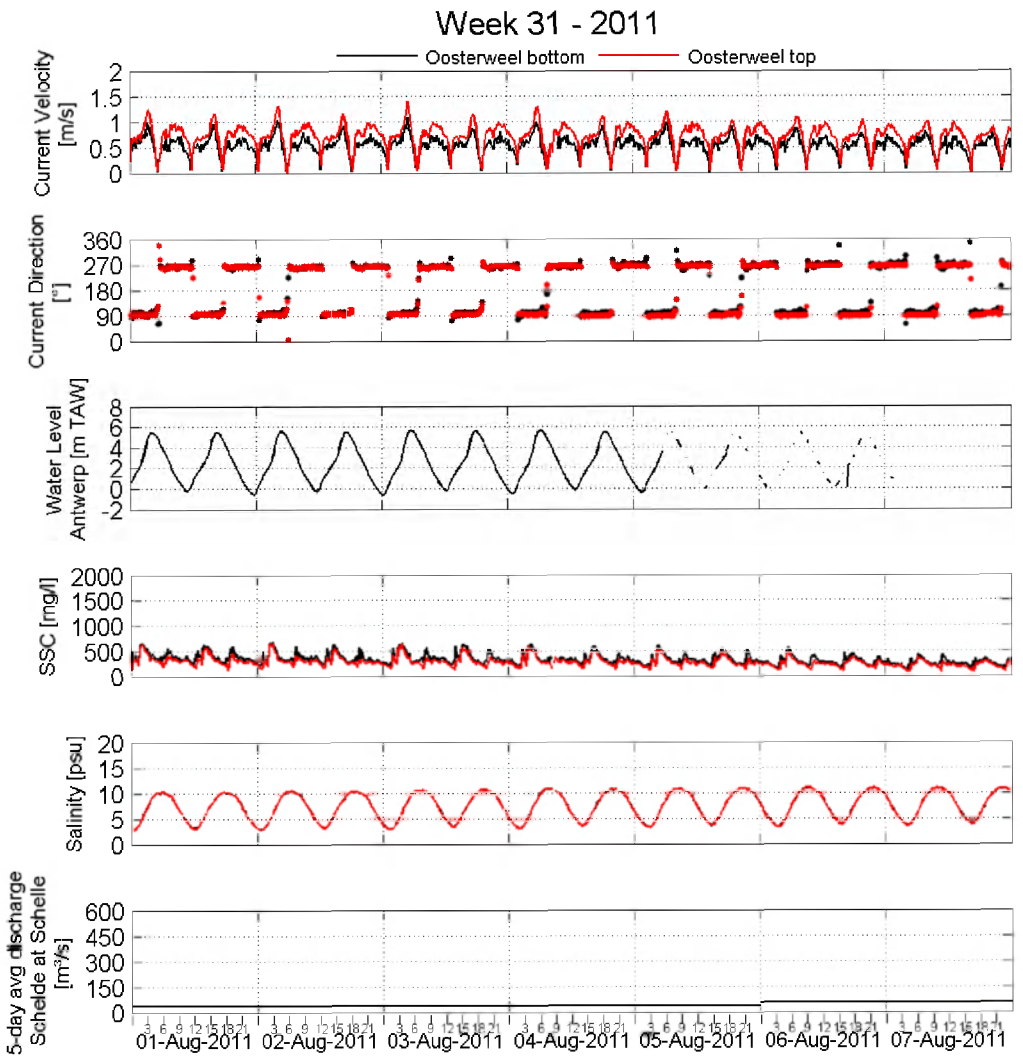
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Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

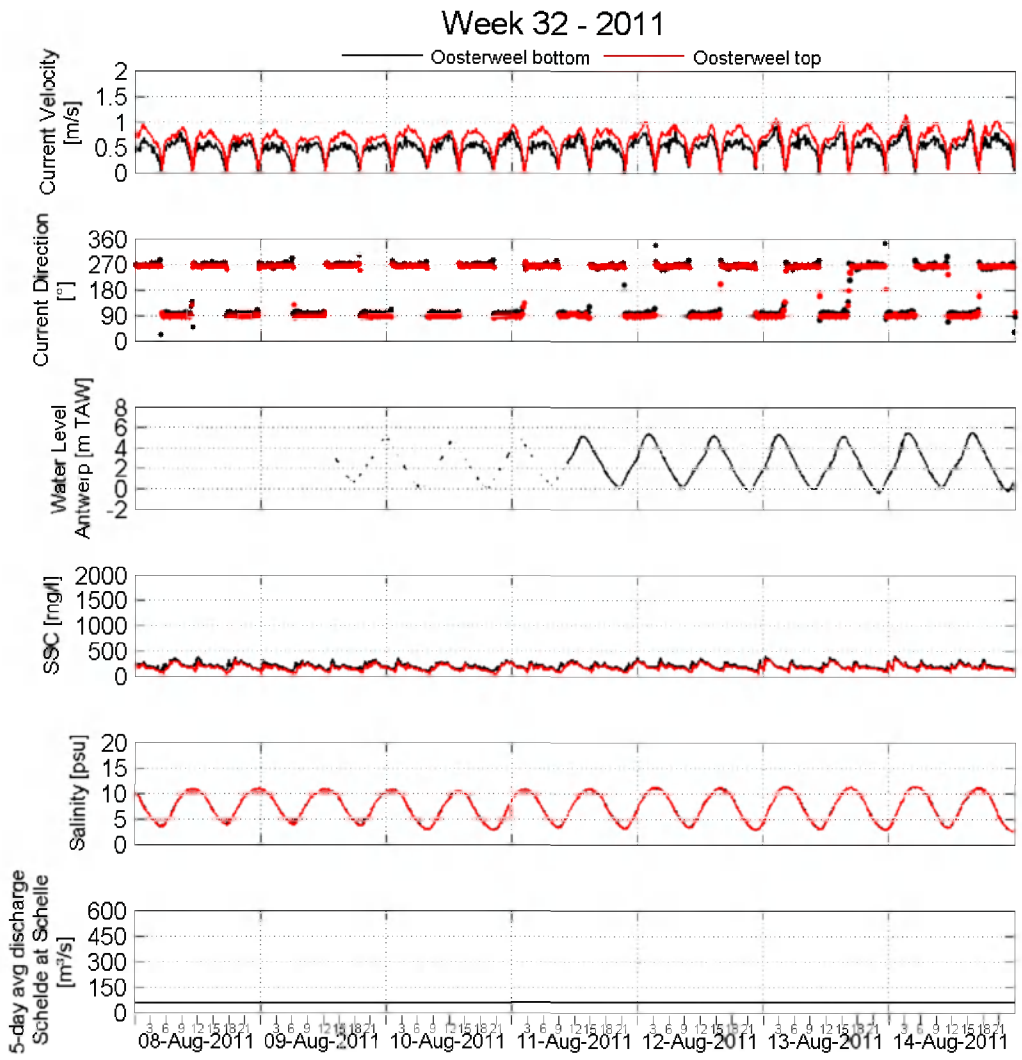
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Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

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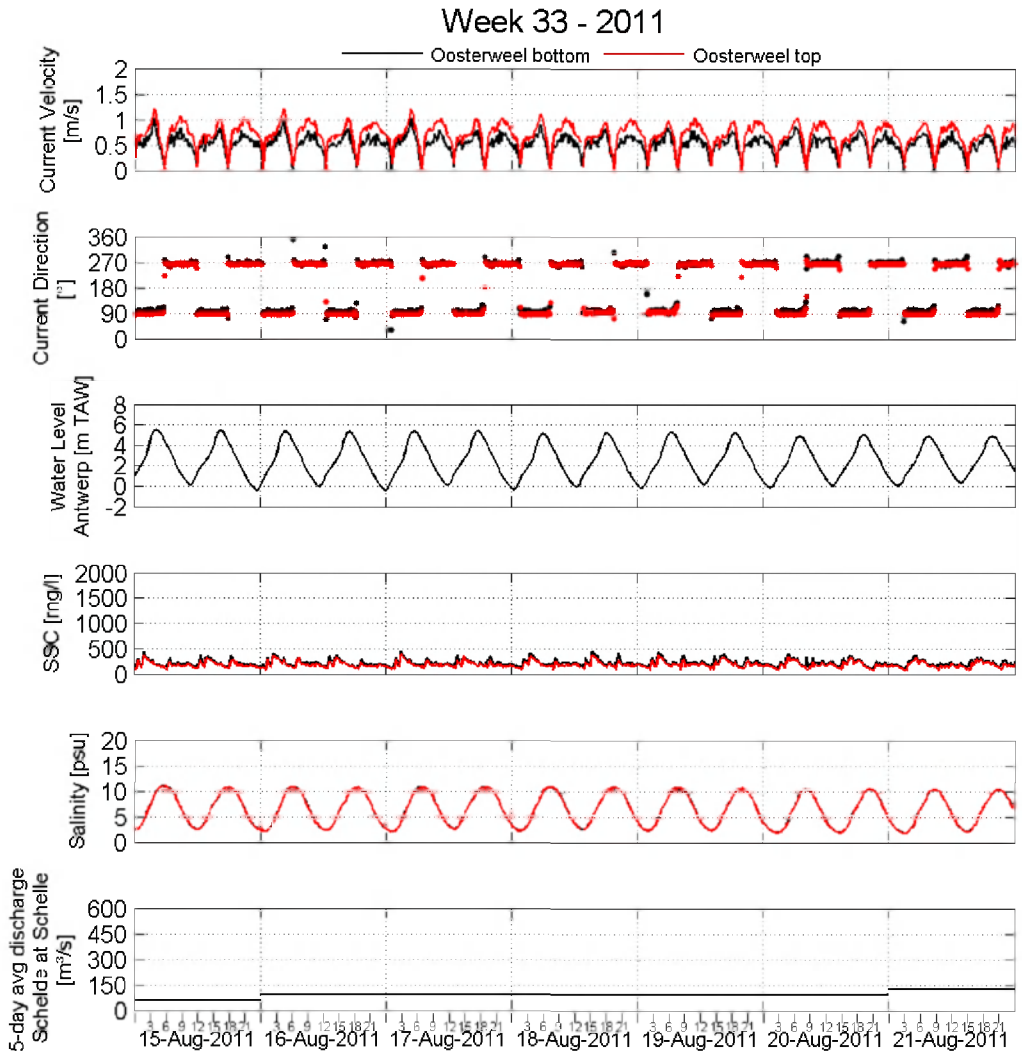
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In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

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Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

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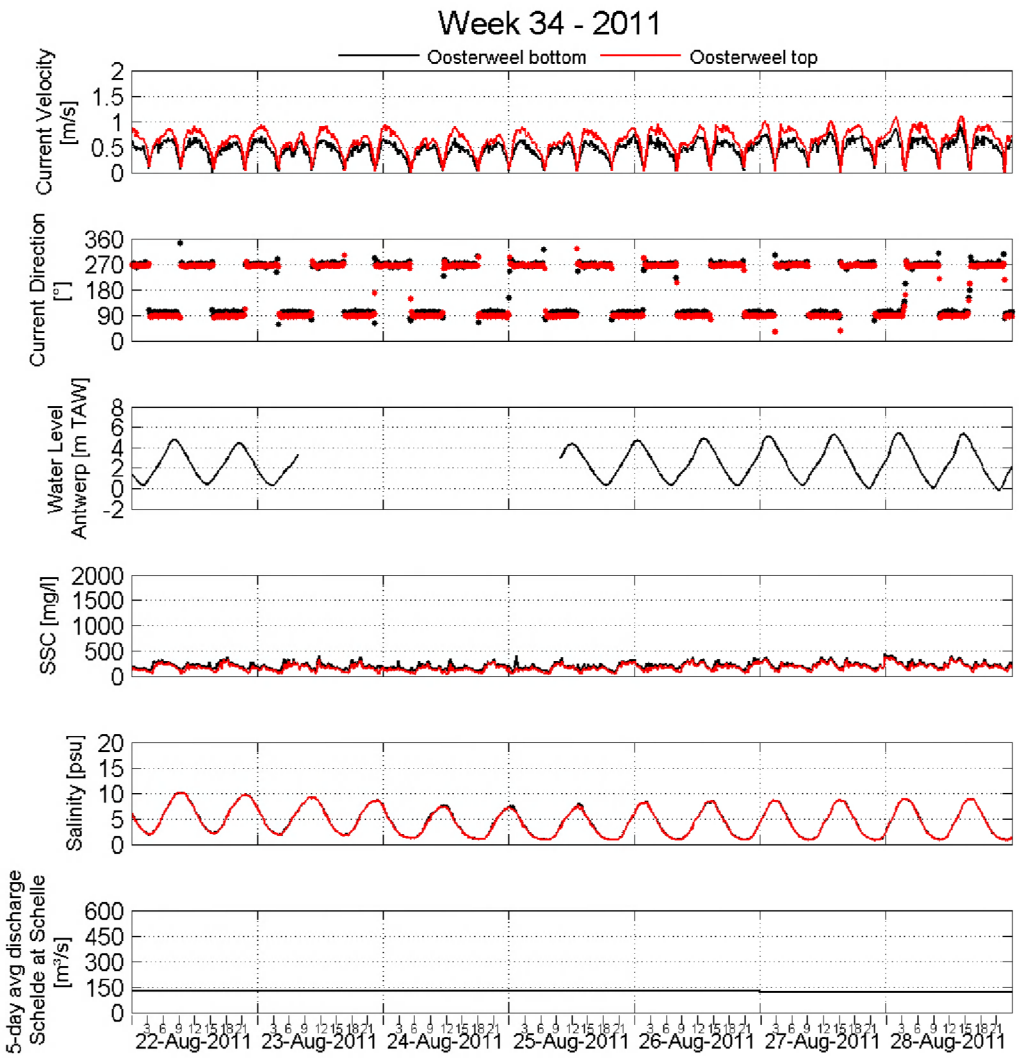
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Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

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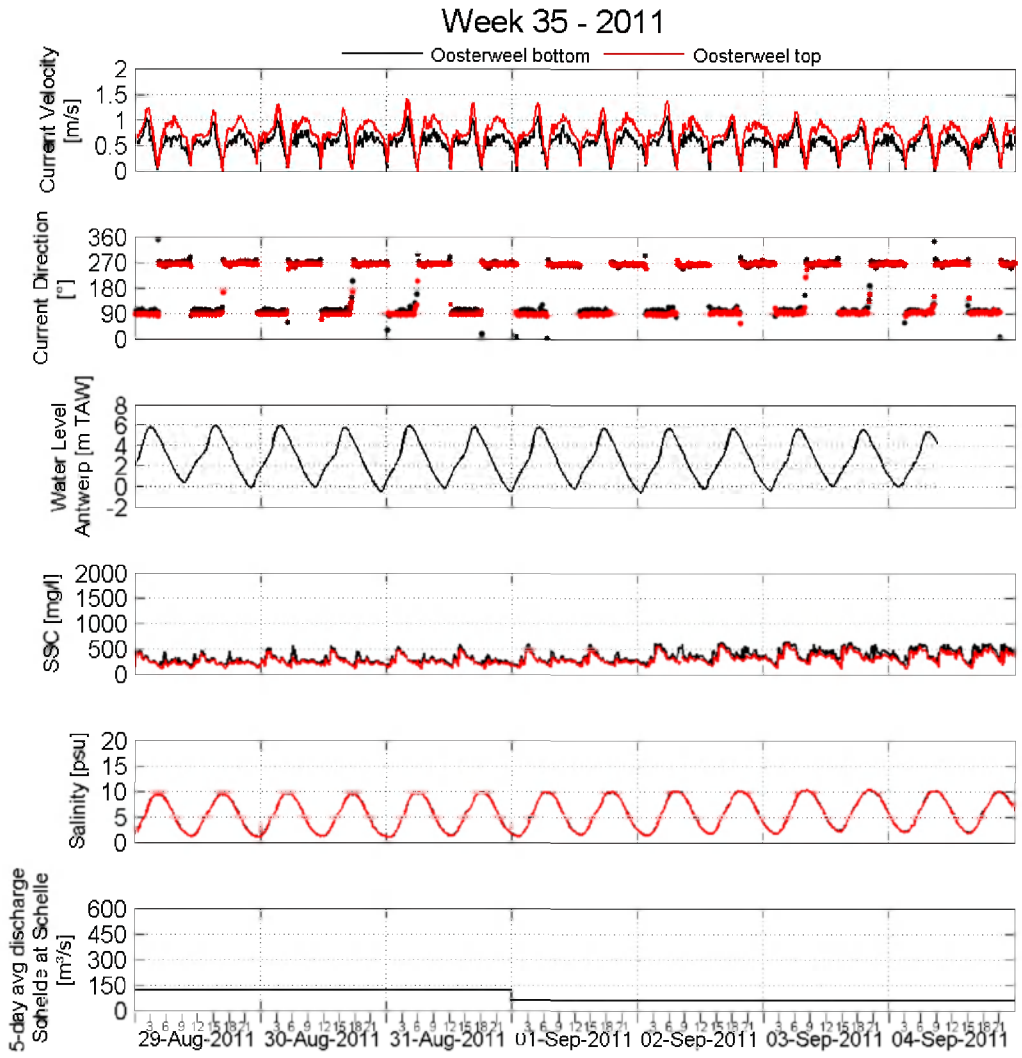
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Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

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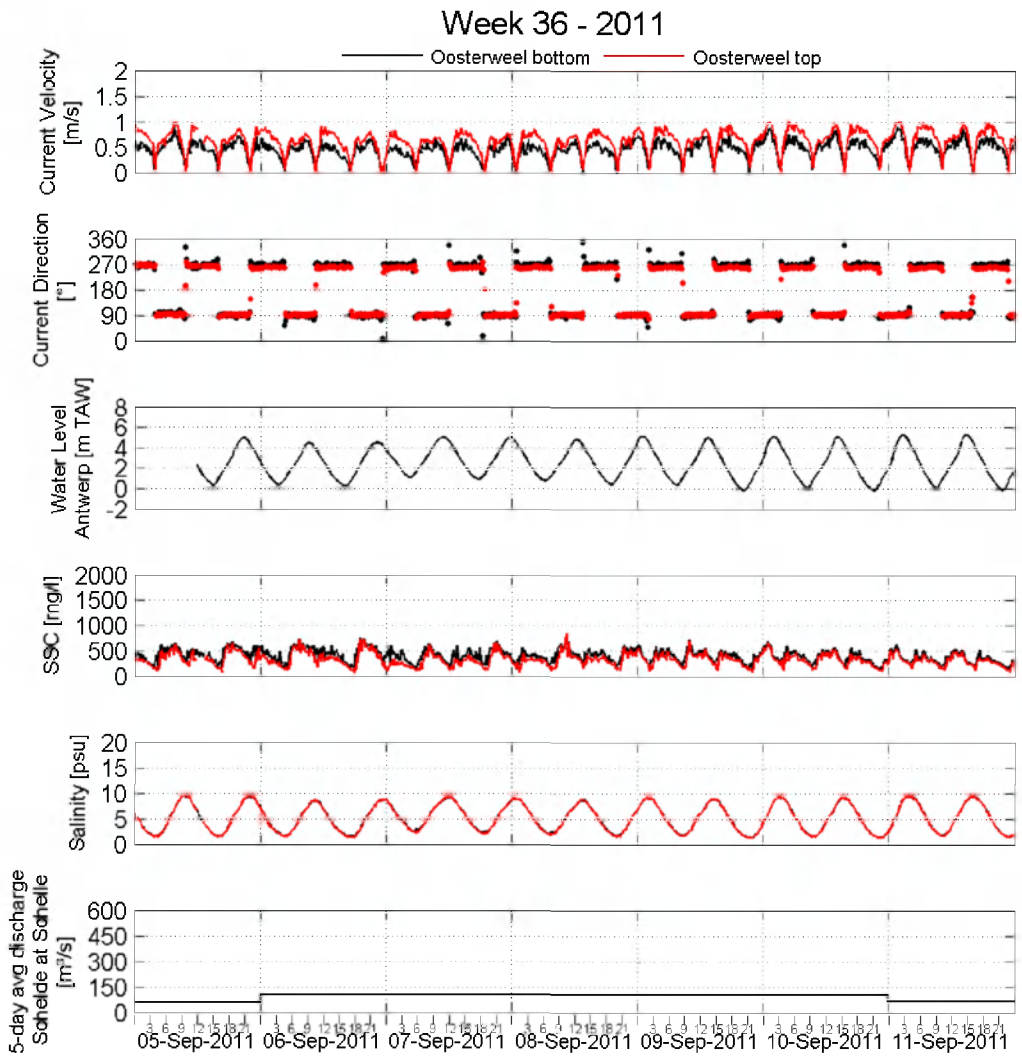
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Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

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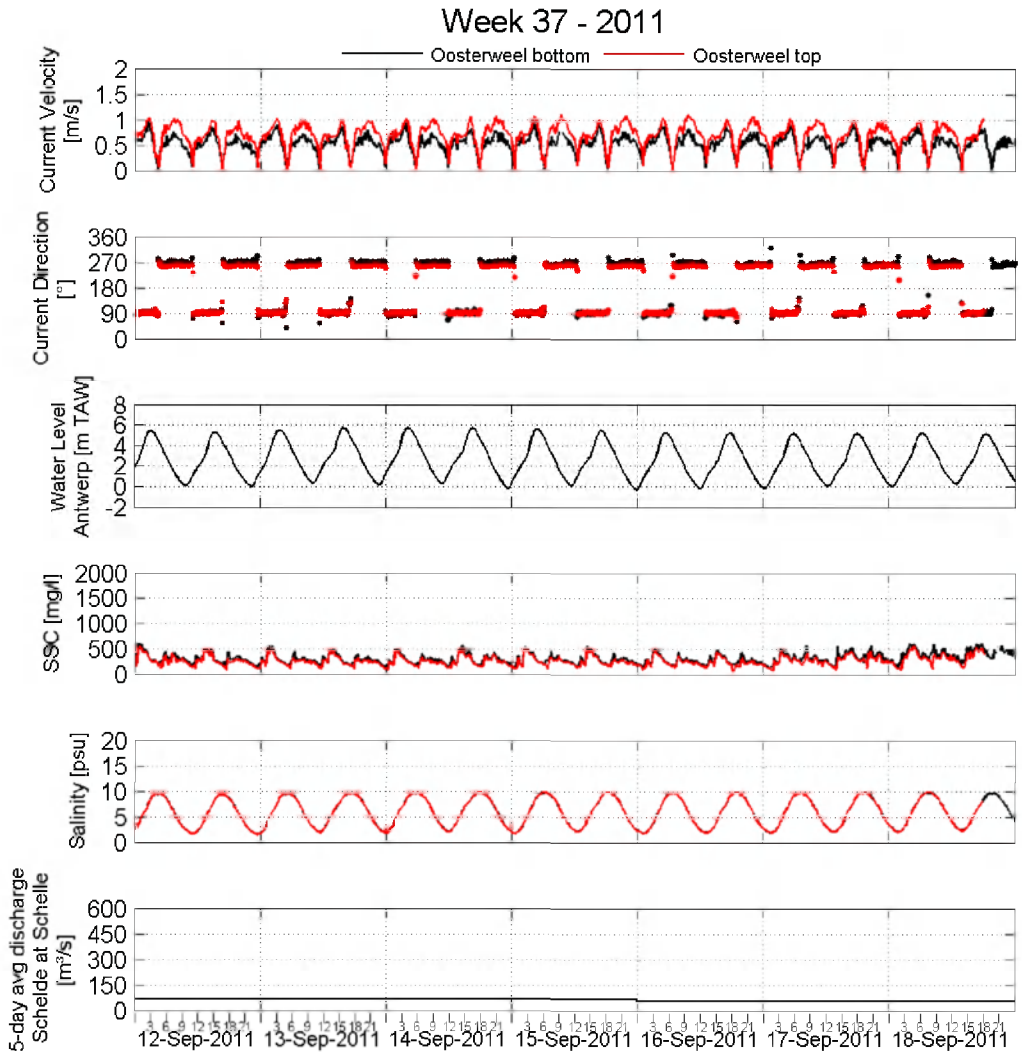
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Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

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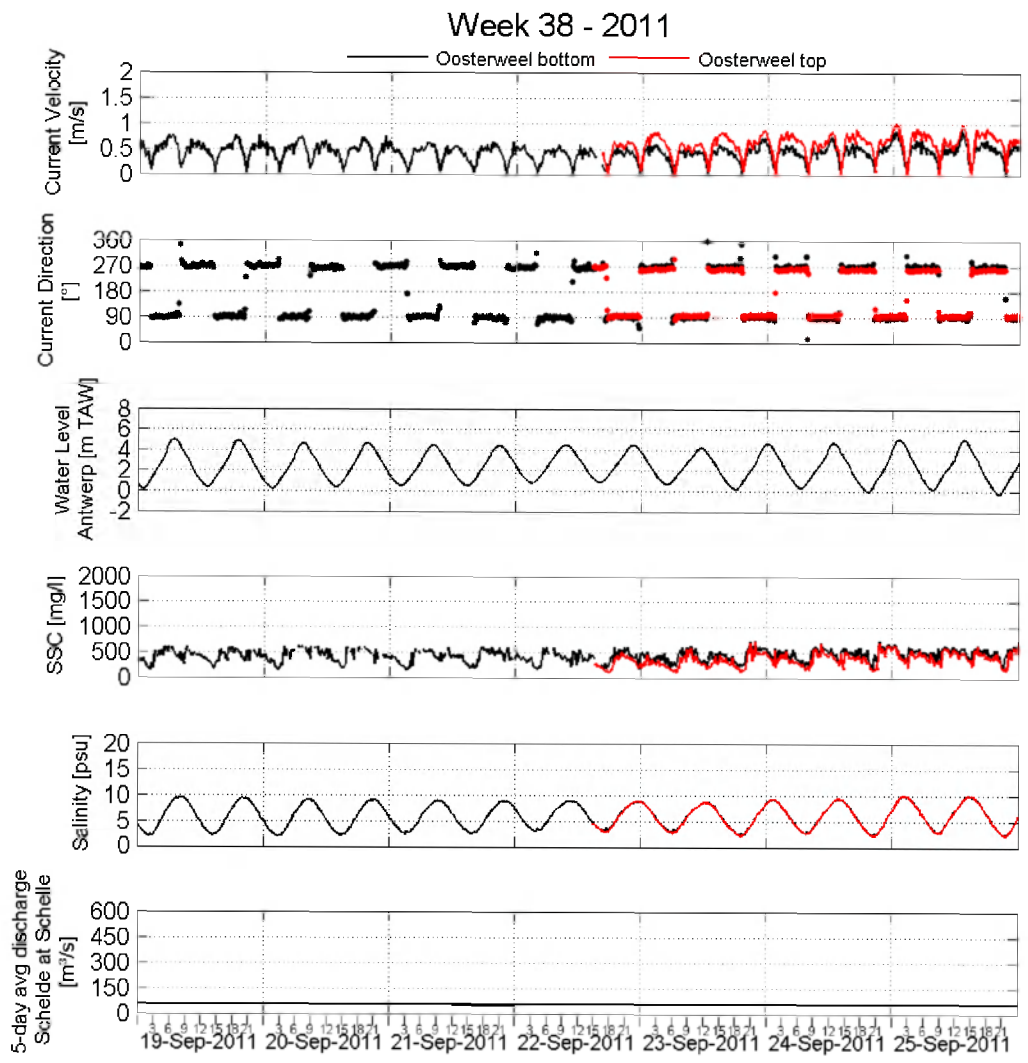
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Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

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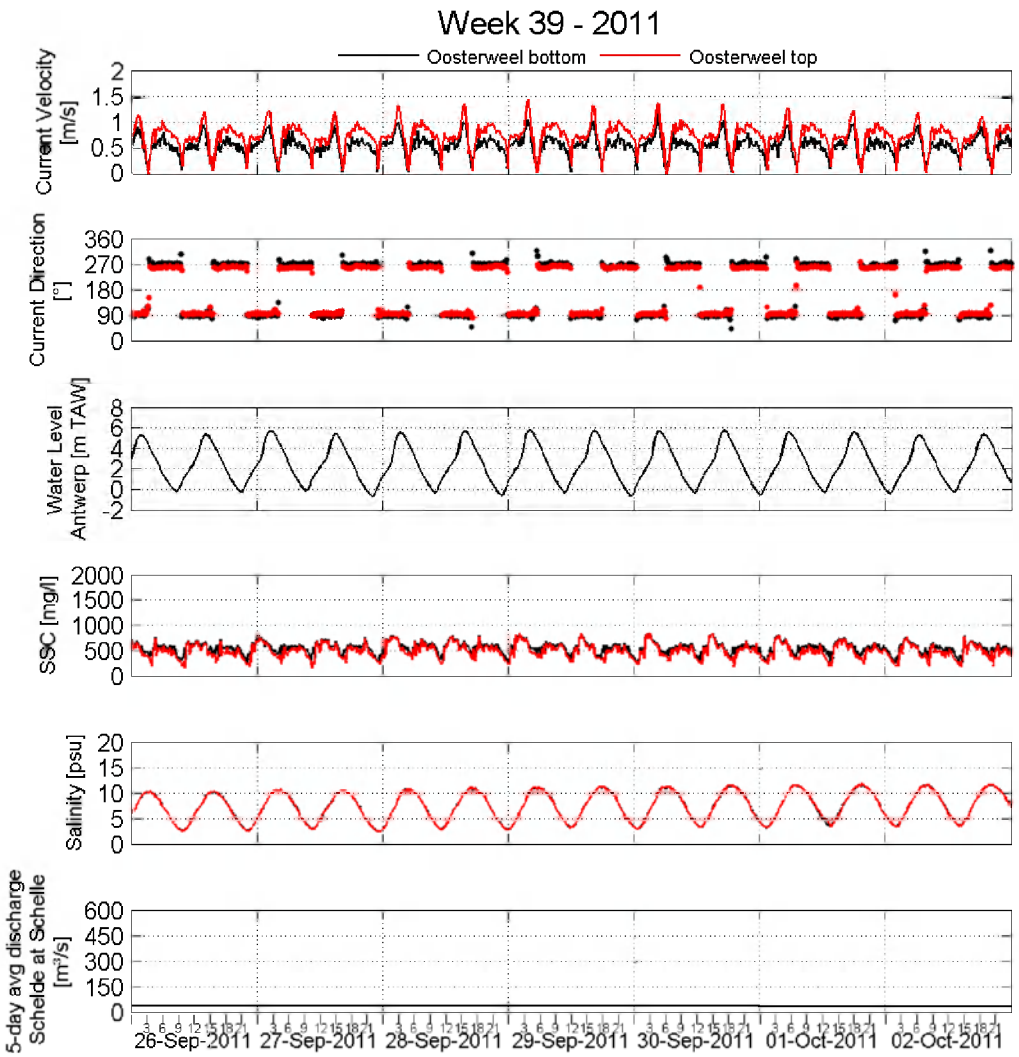
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Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

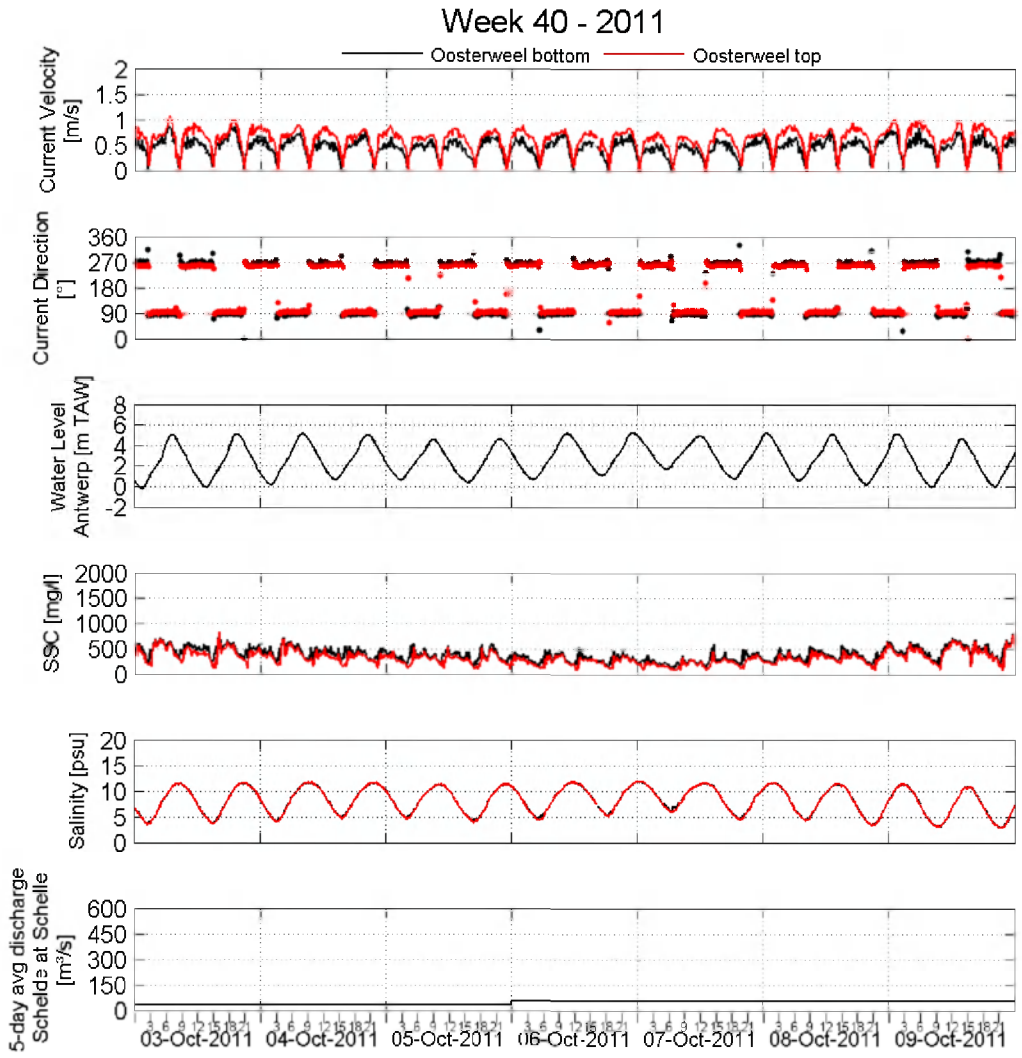
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Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

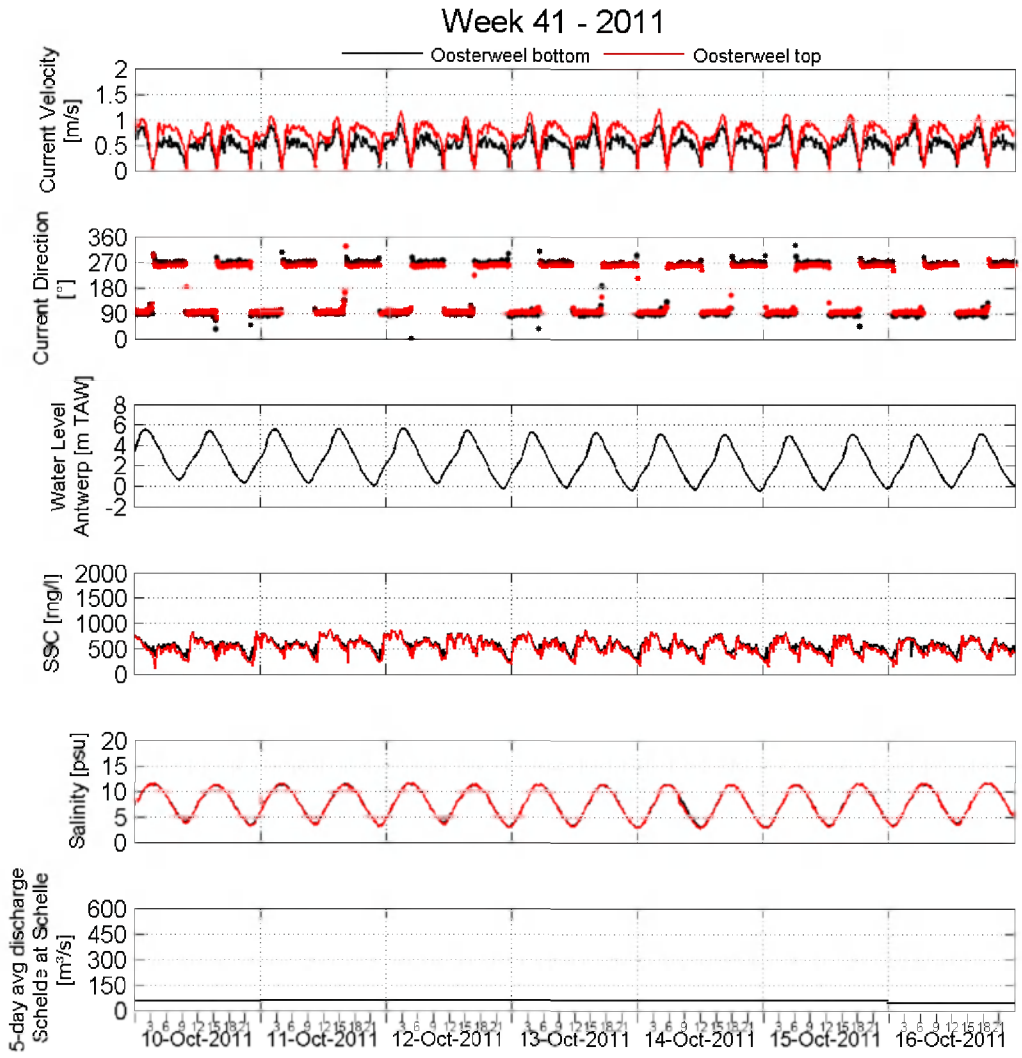
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Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

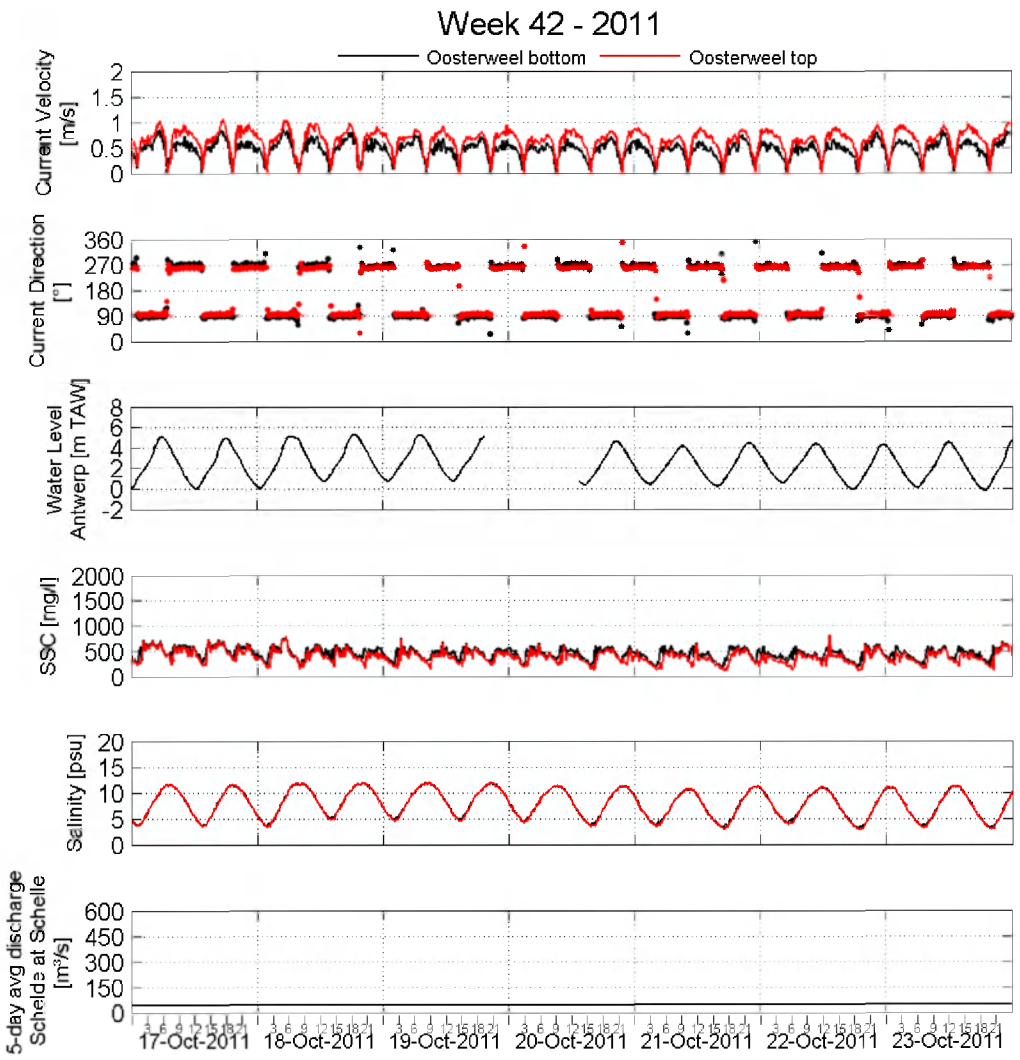
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

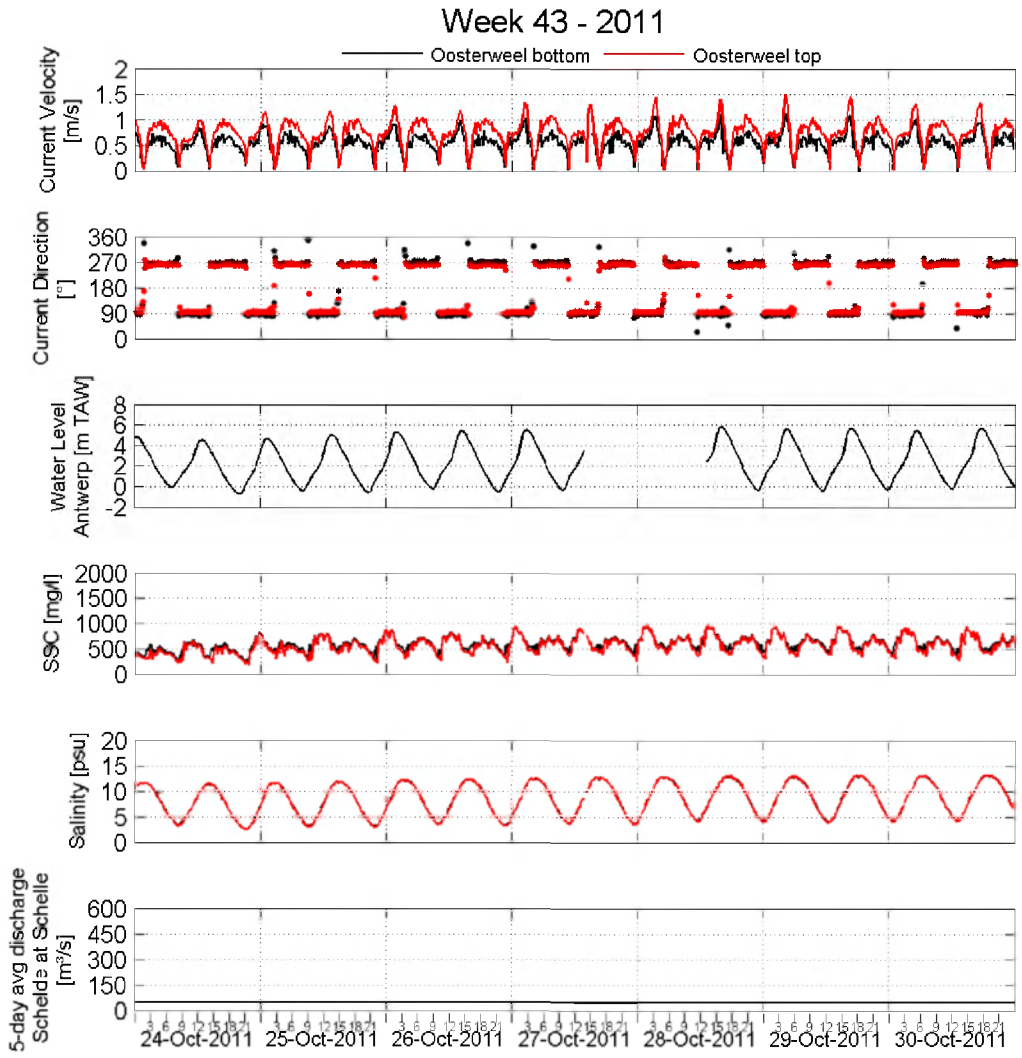
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

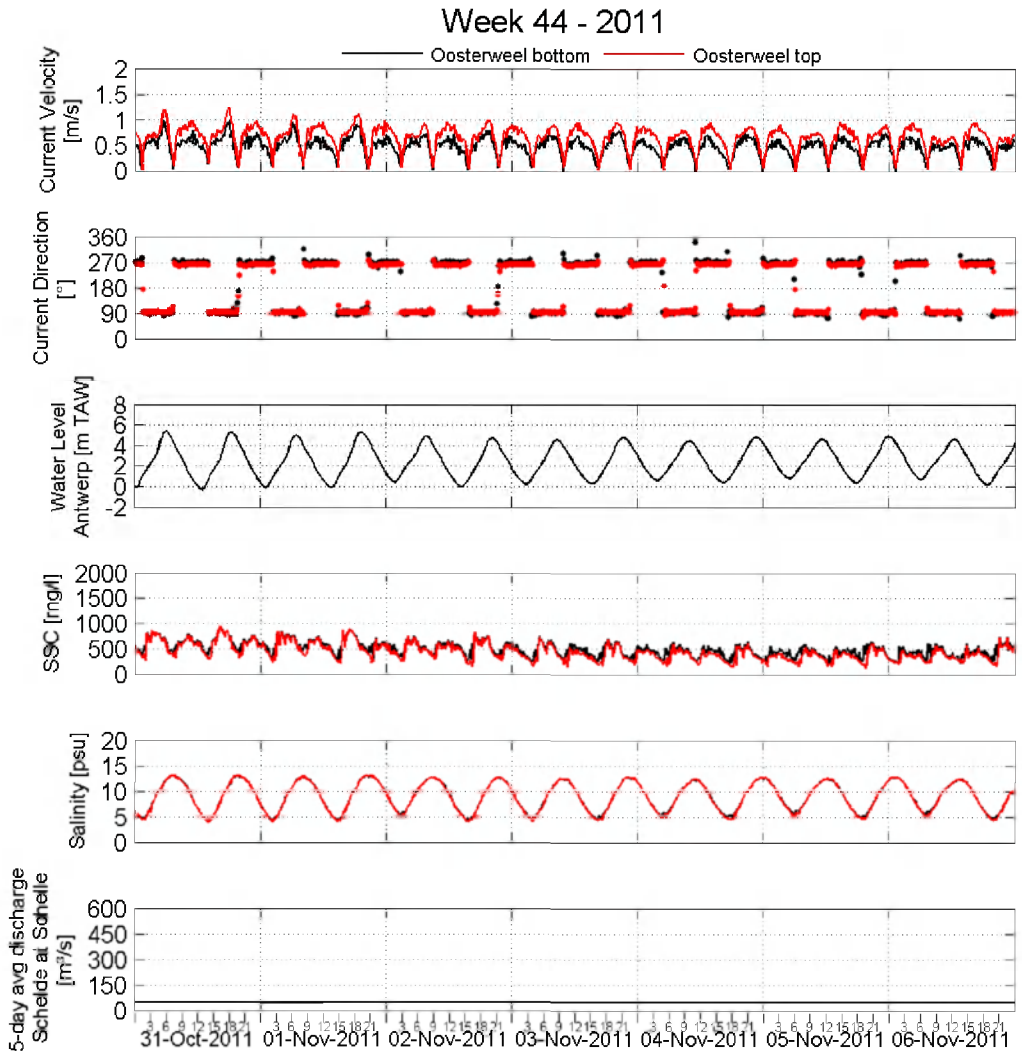
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

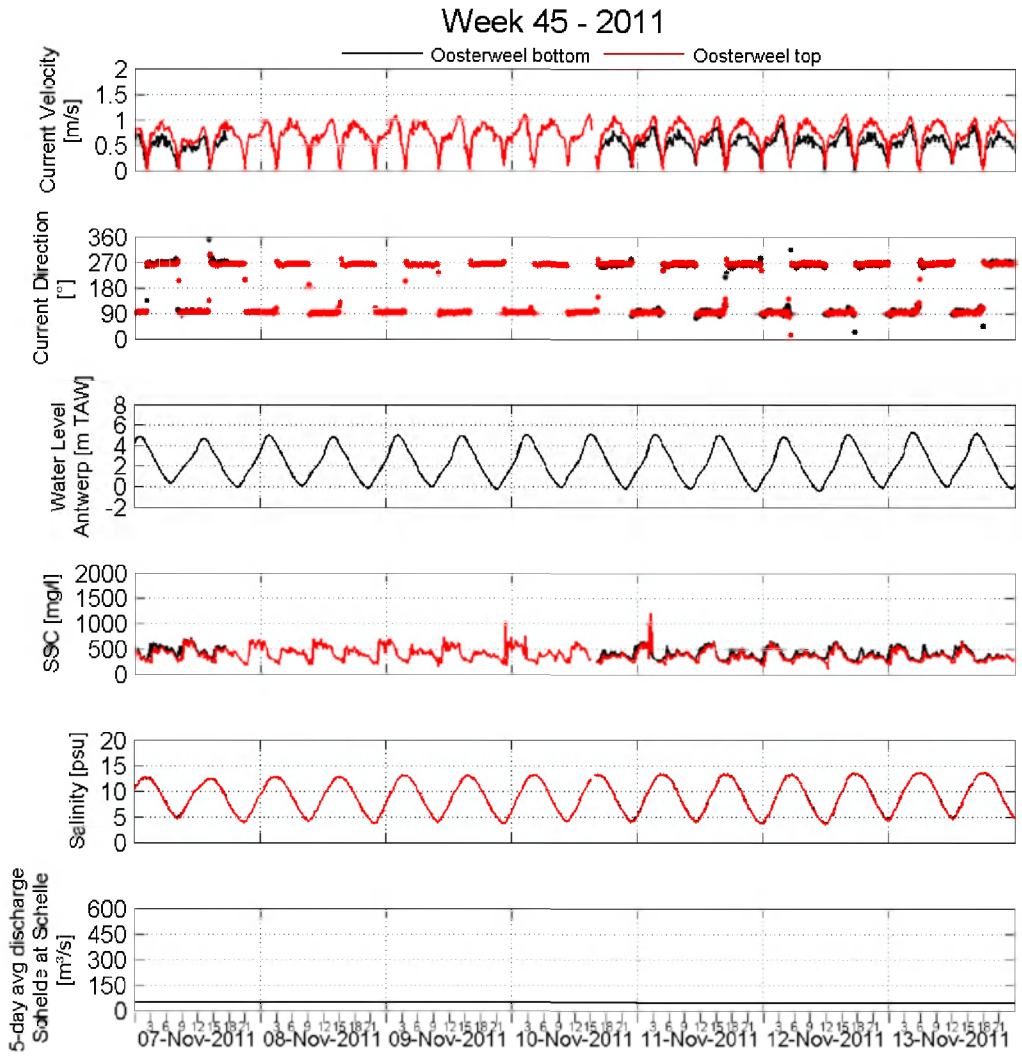
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

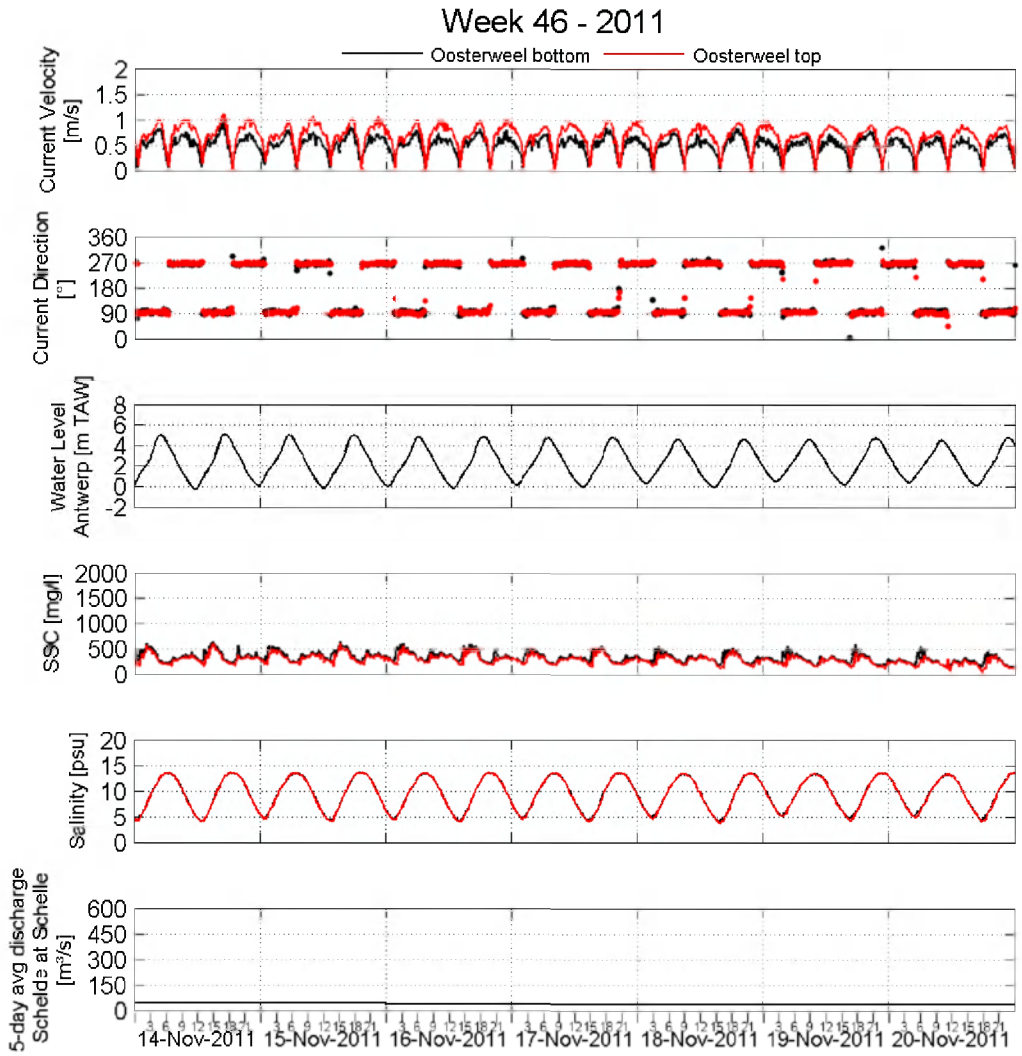
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

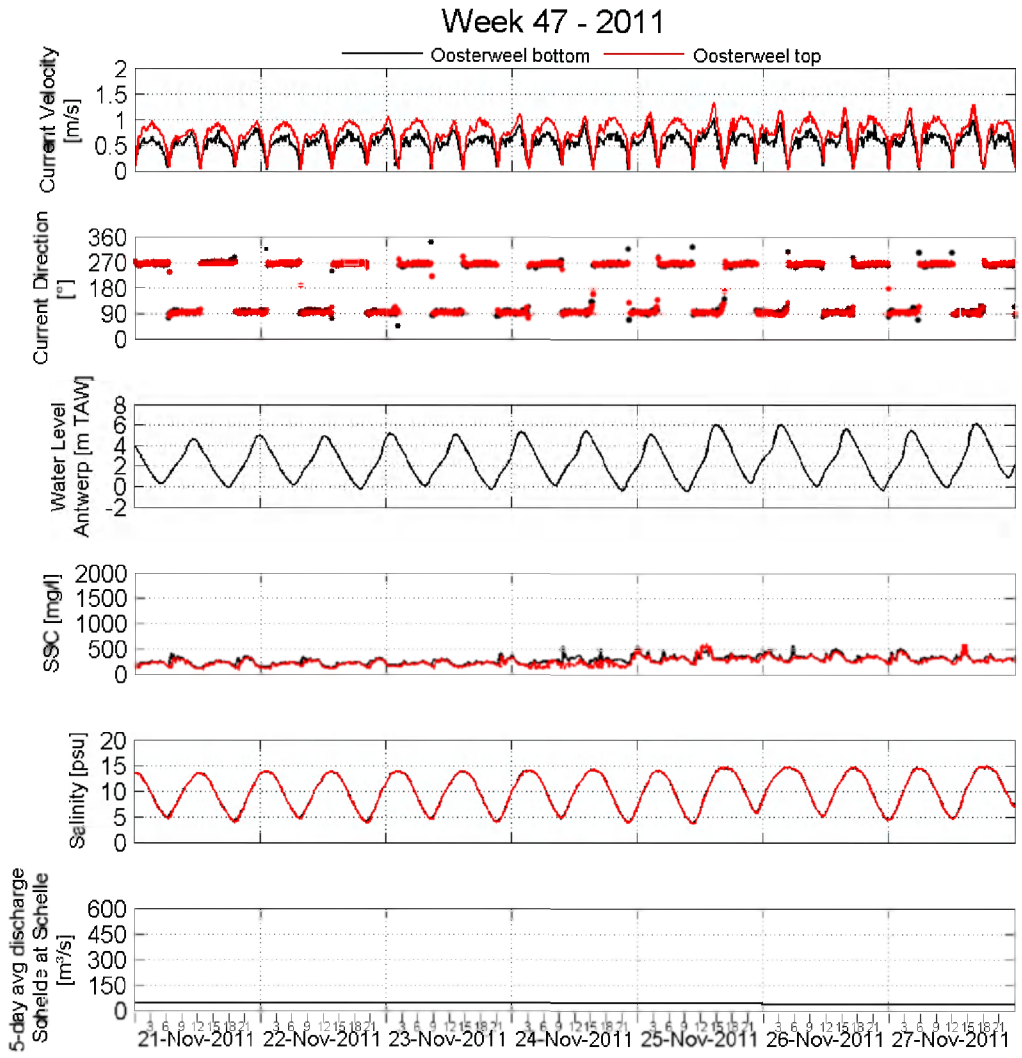
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

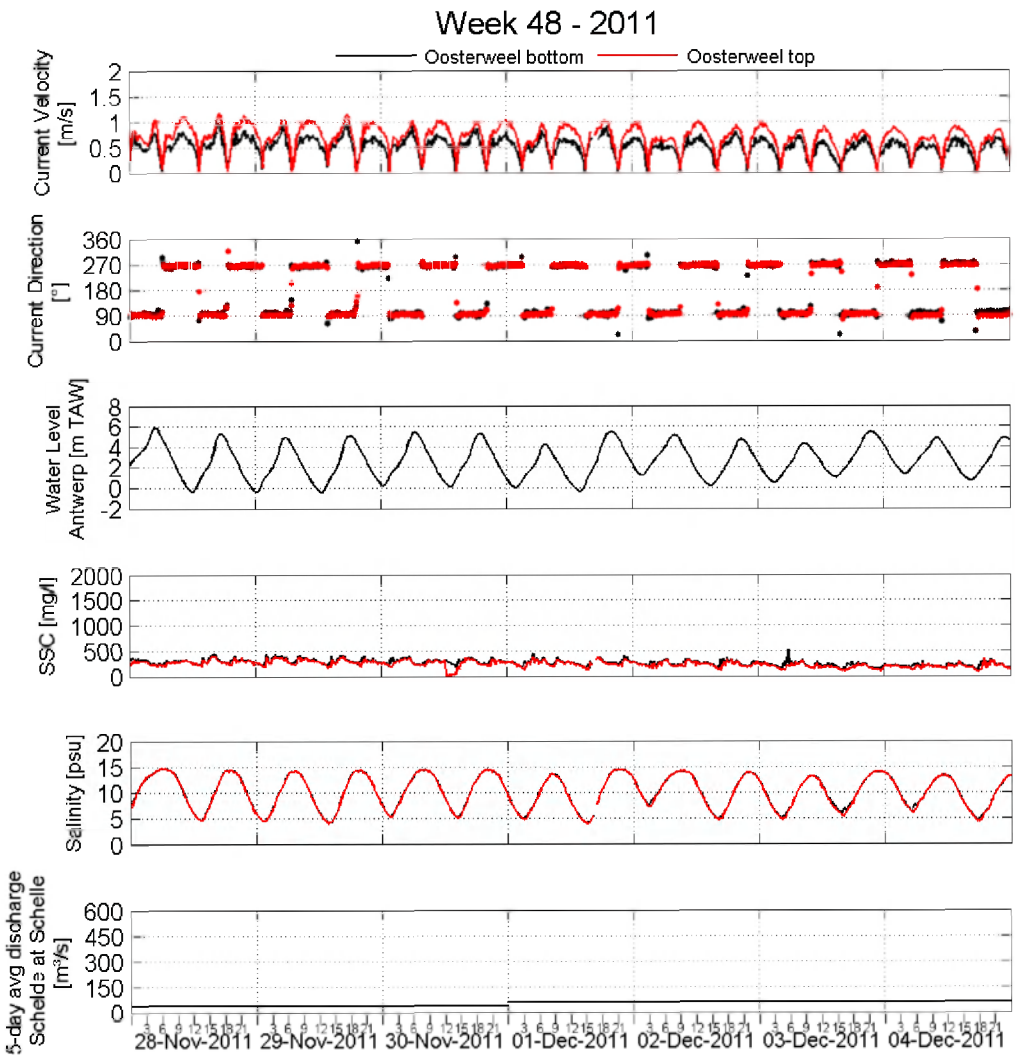
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

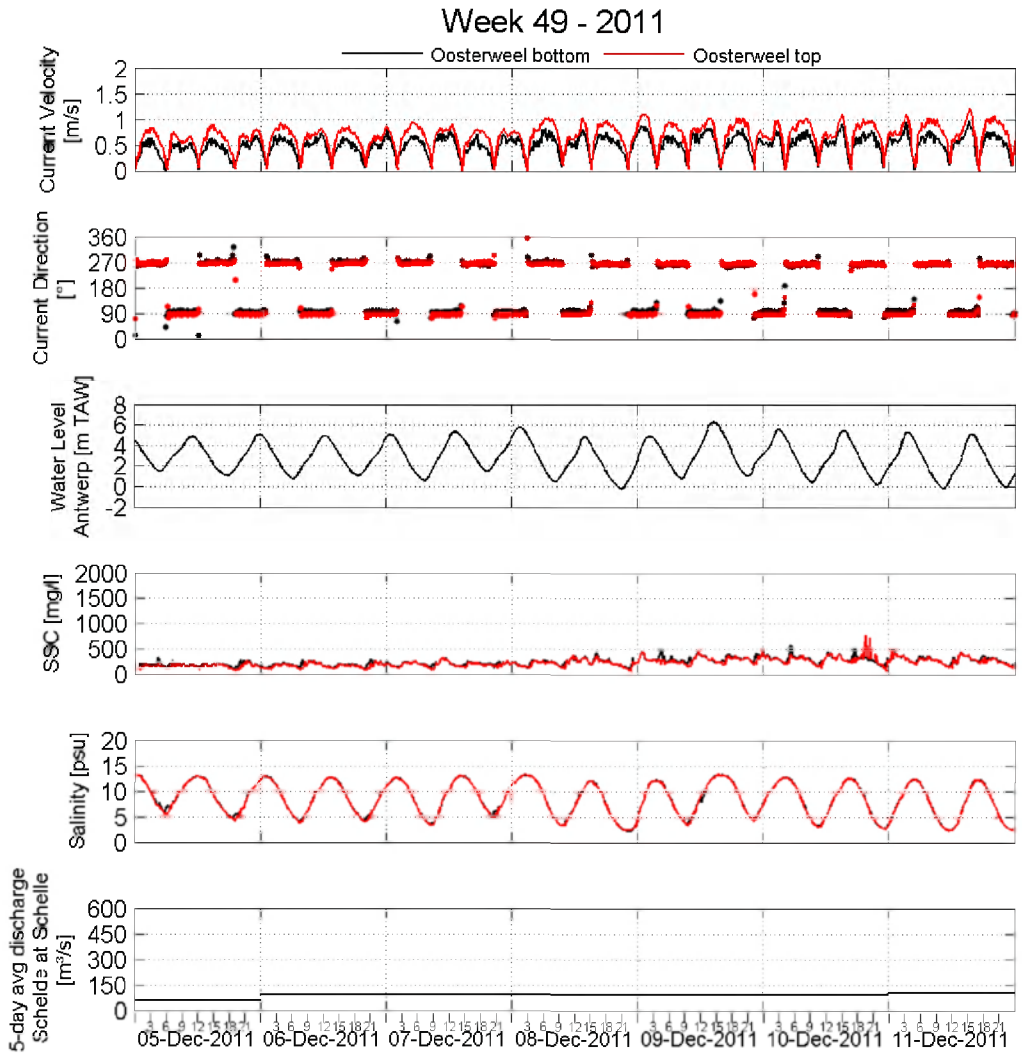
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

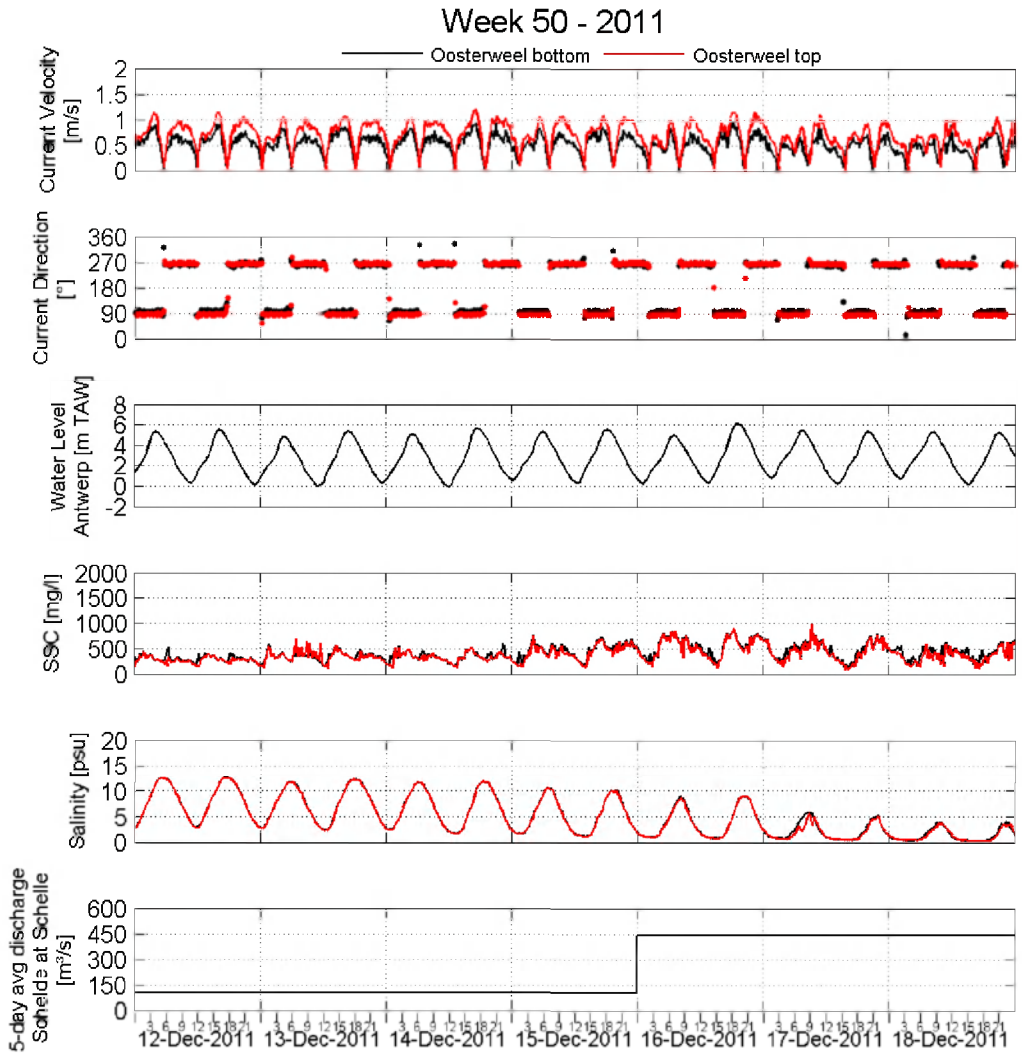
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

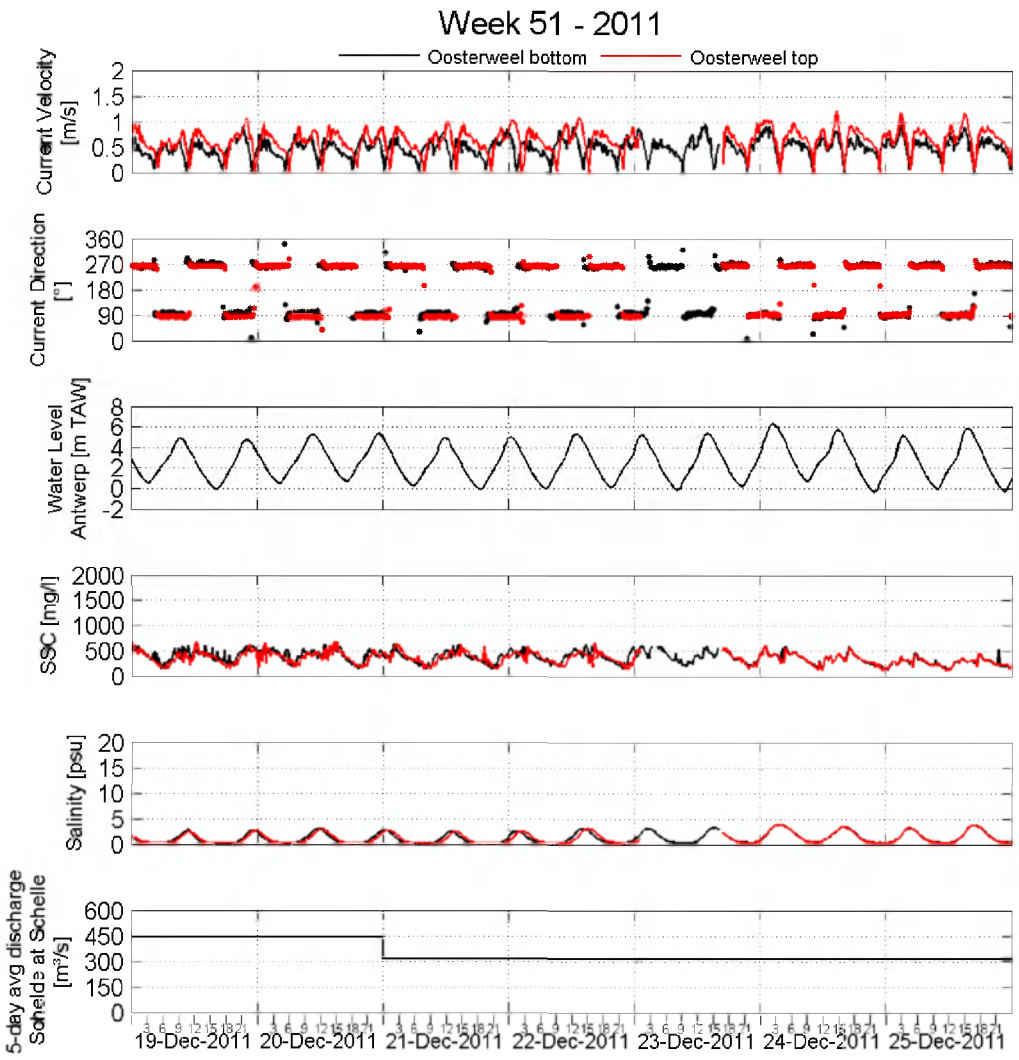
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

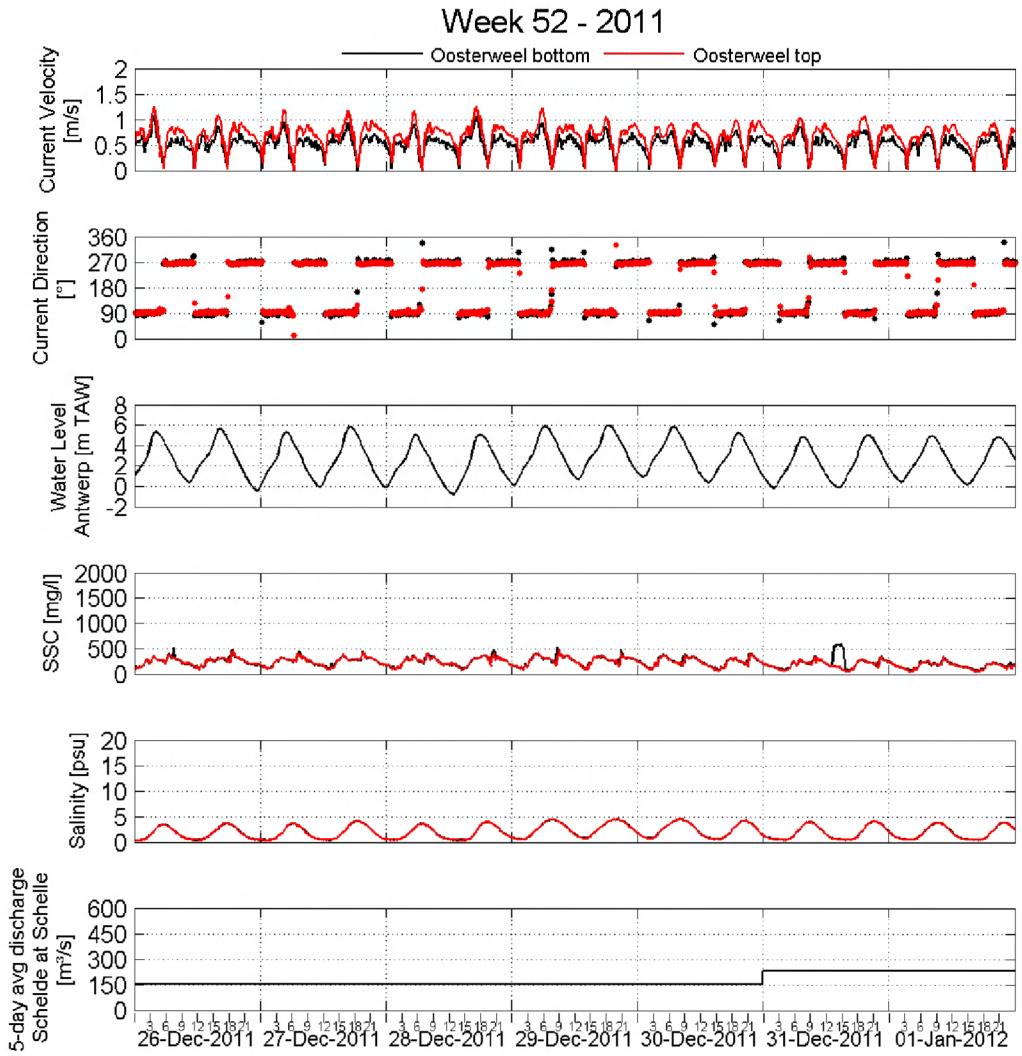
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

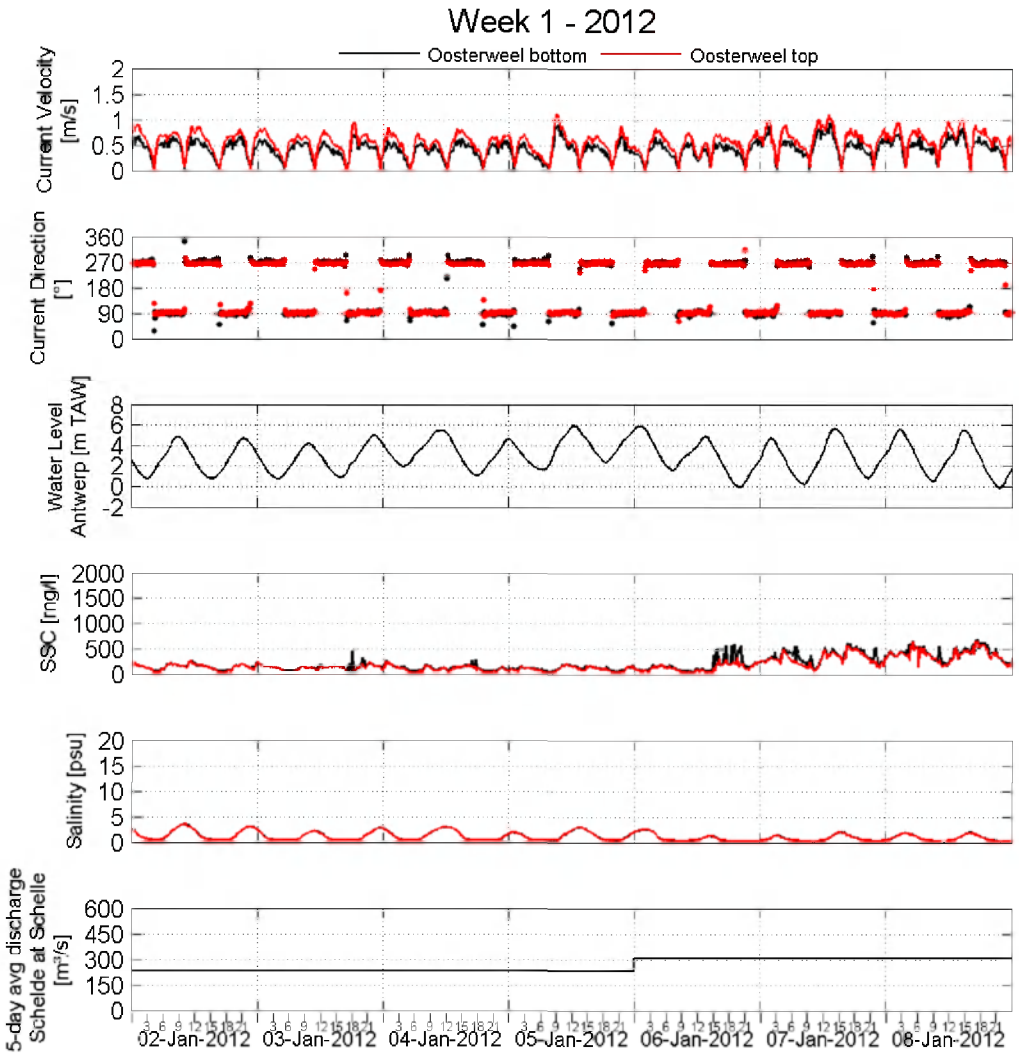
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

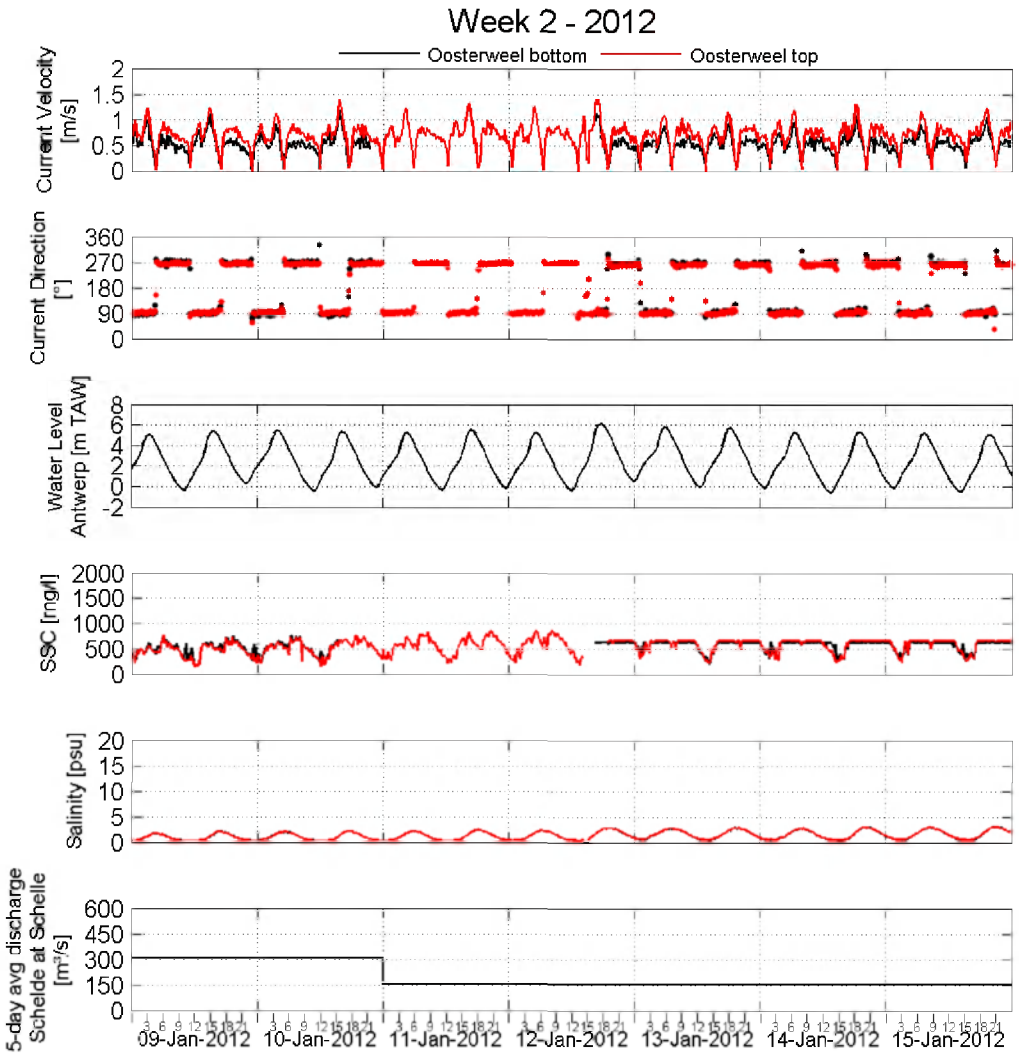
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

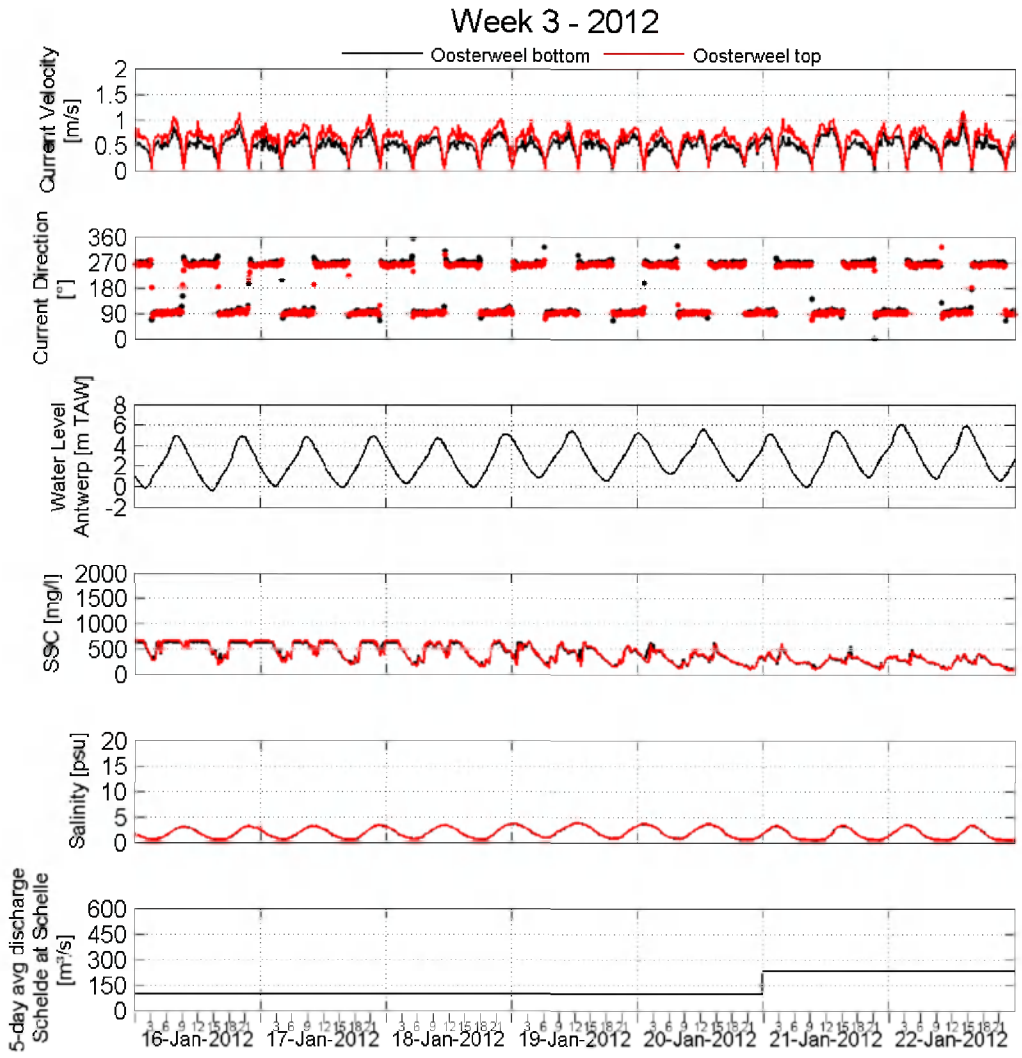
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

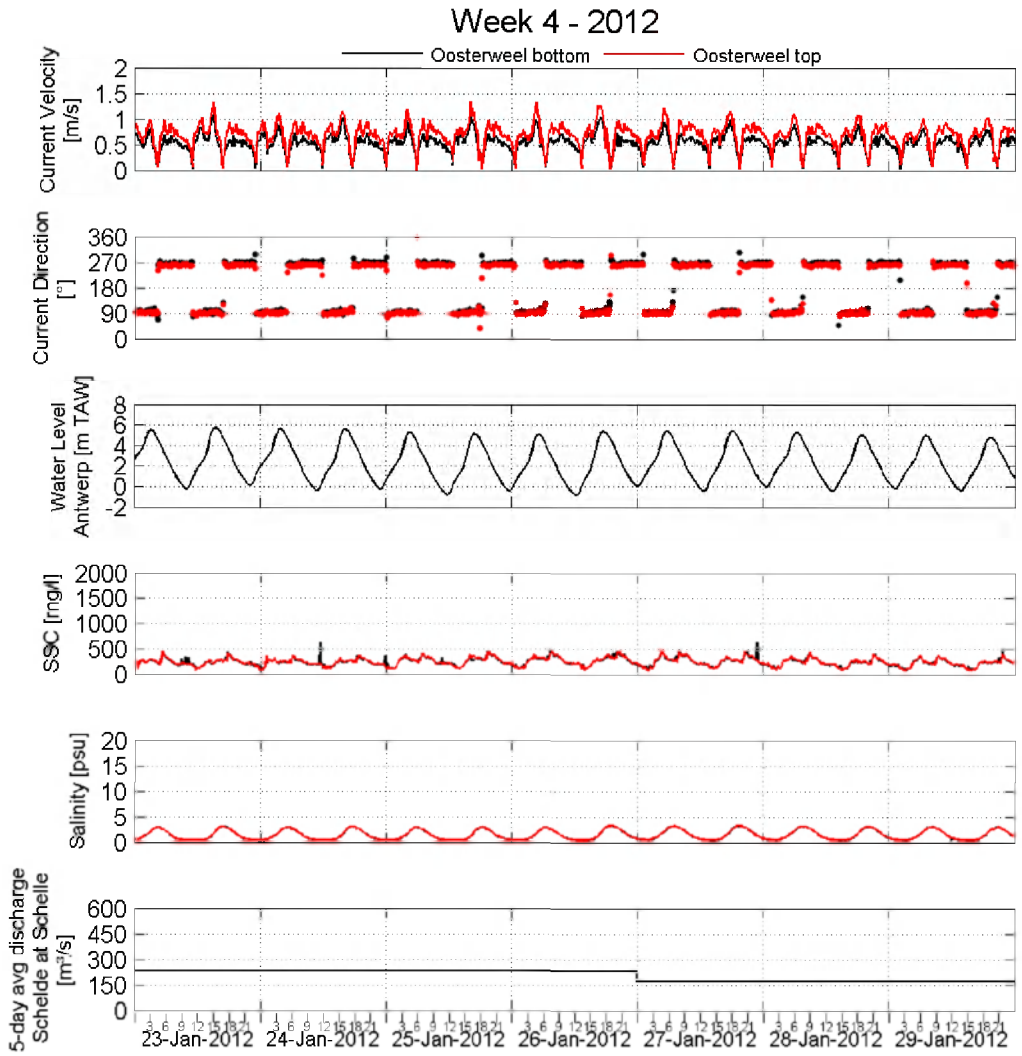
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

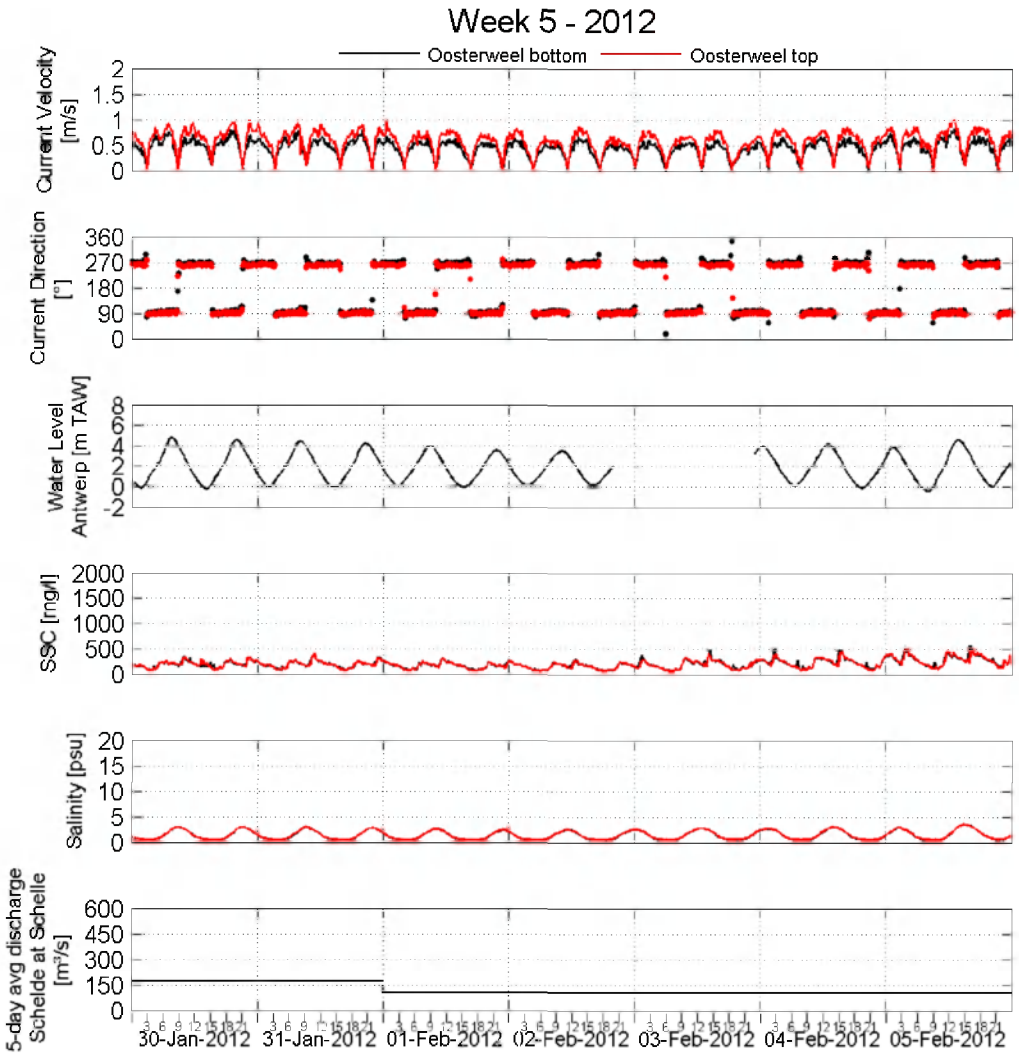
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

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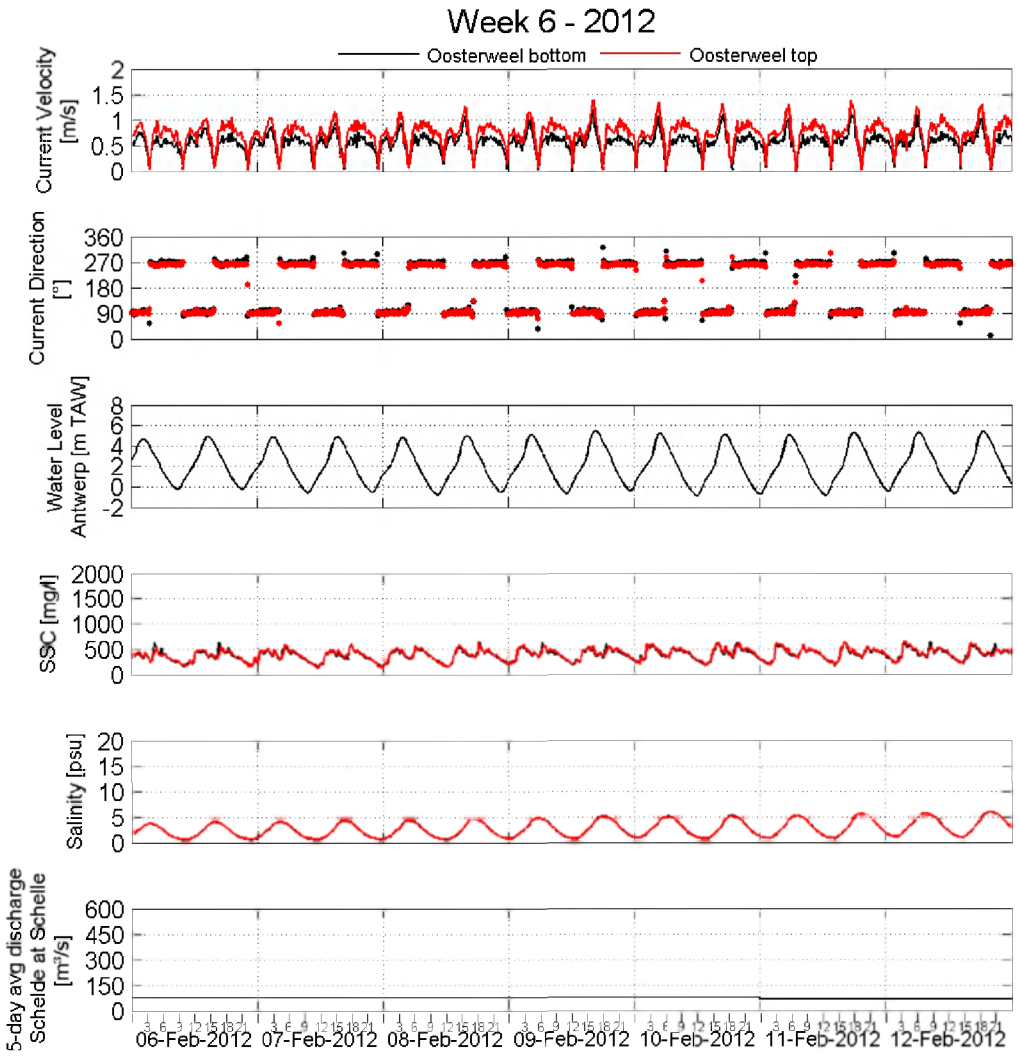
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Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

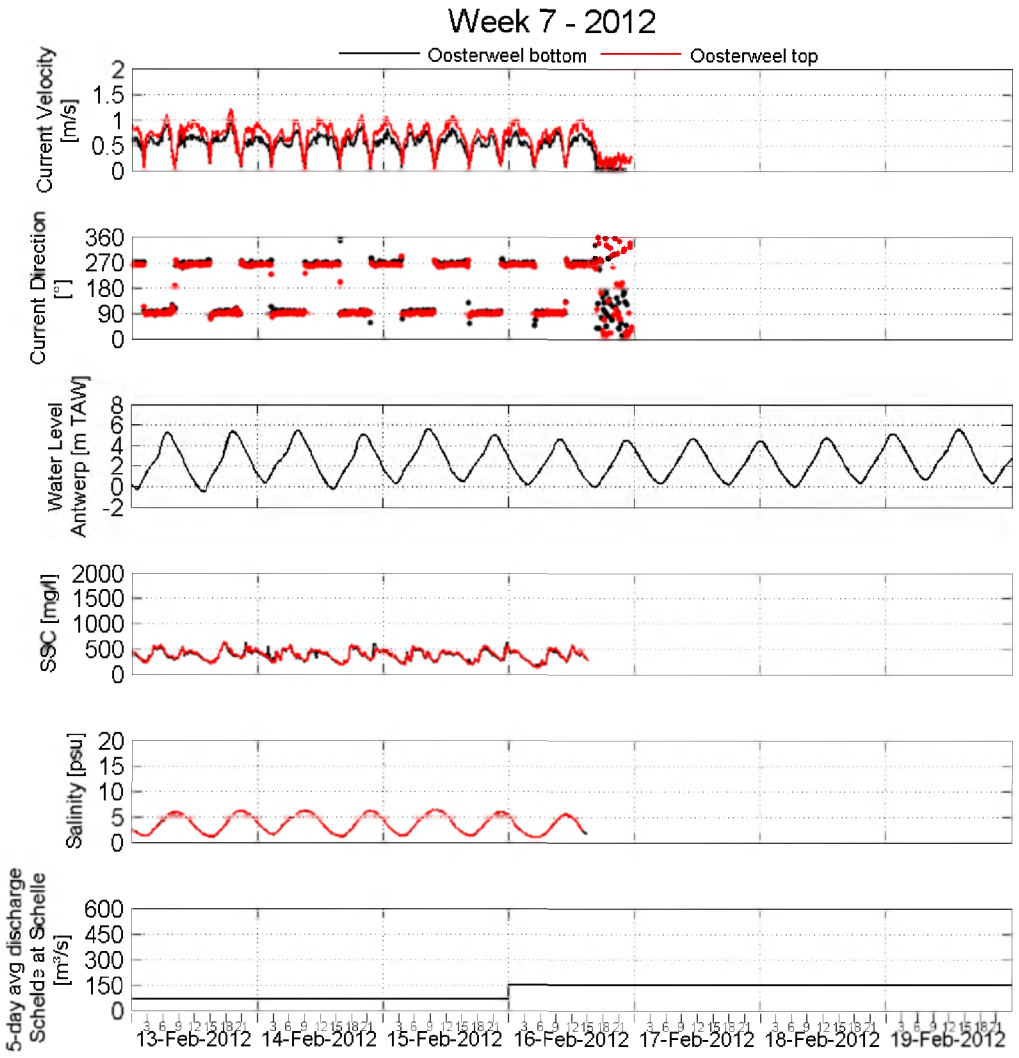
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

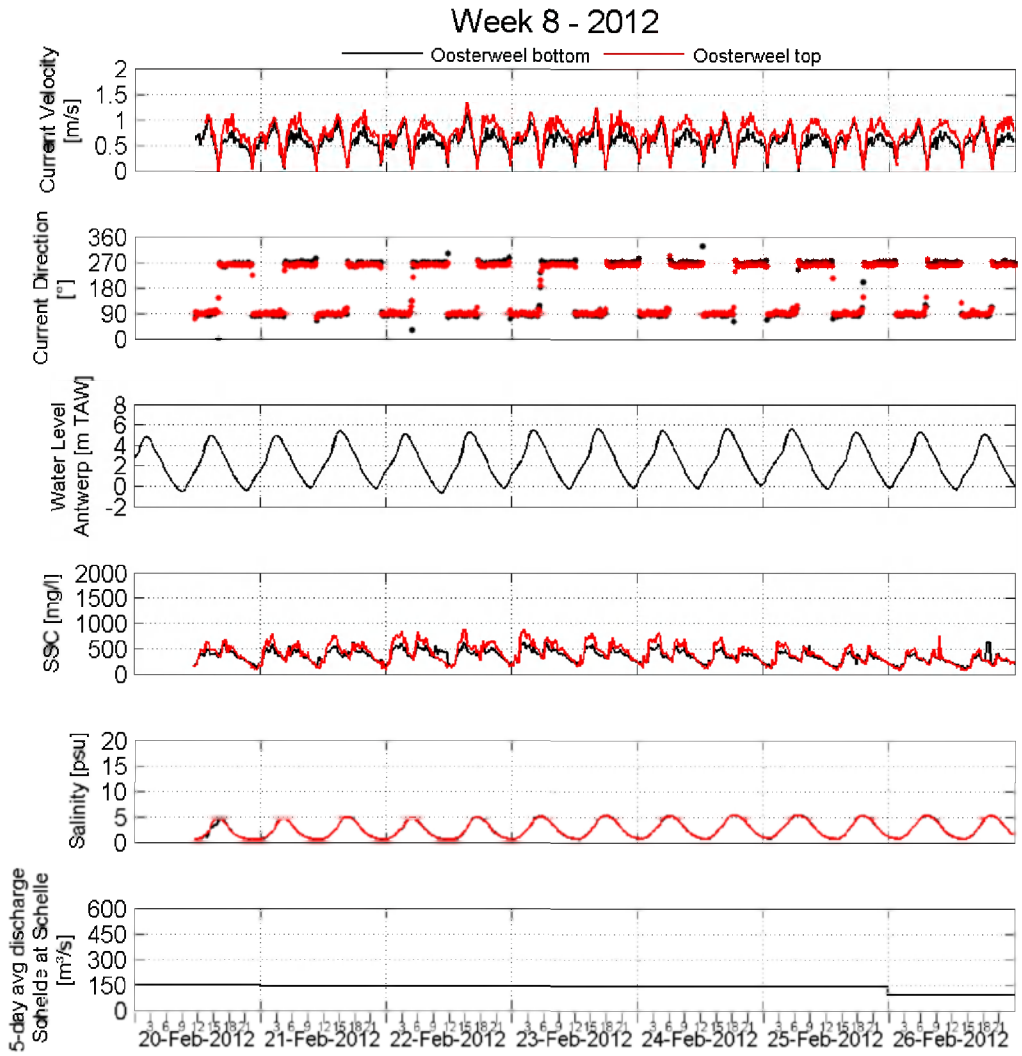
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

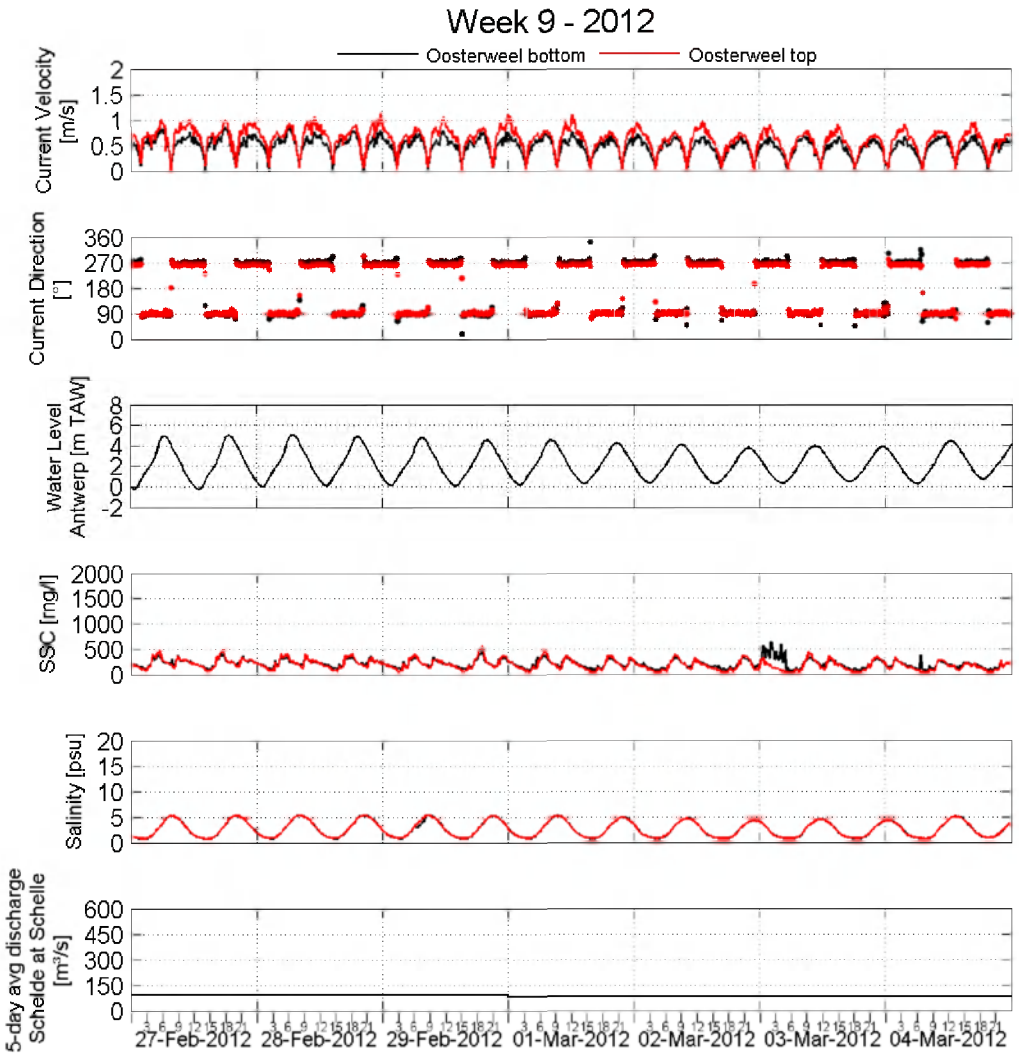
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

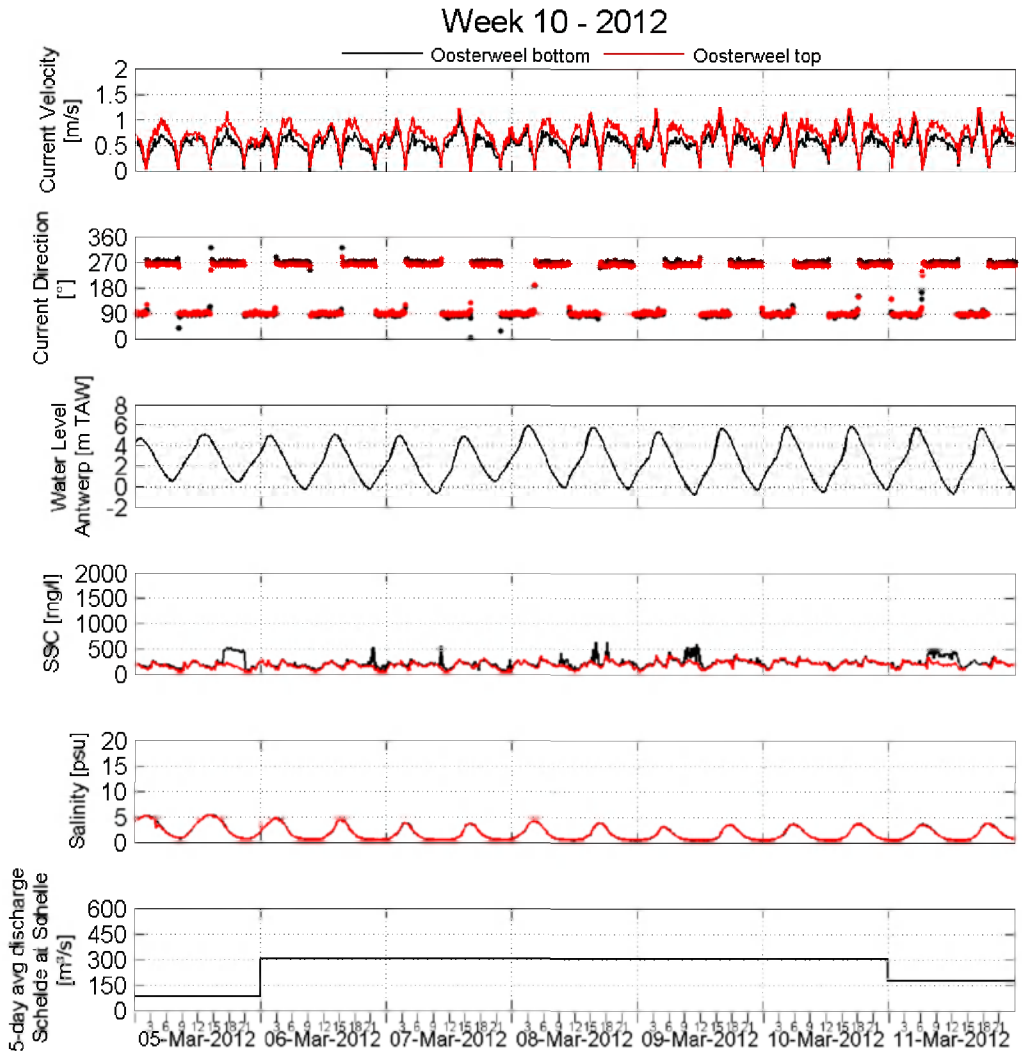
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

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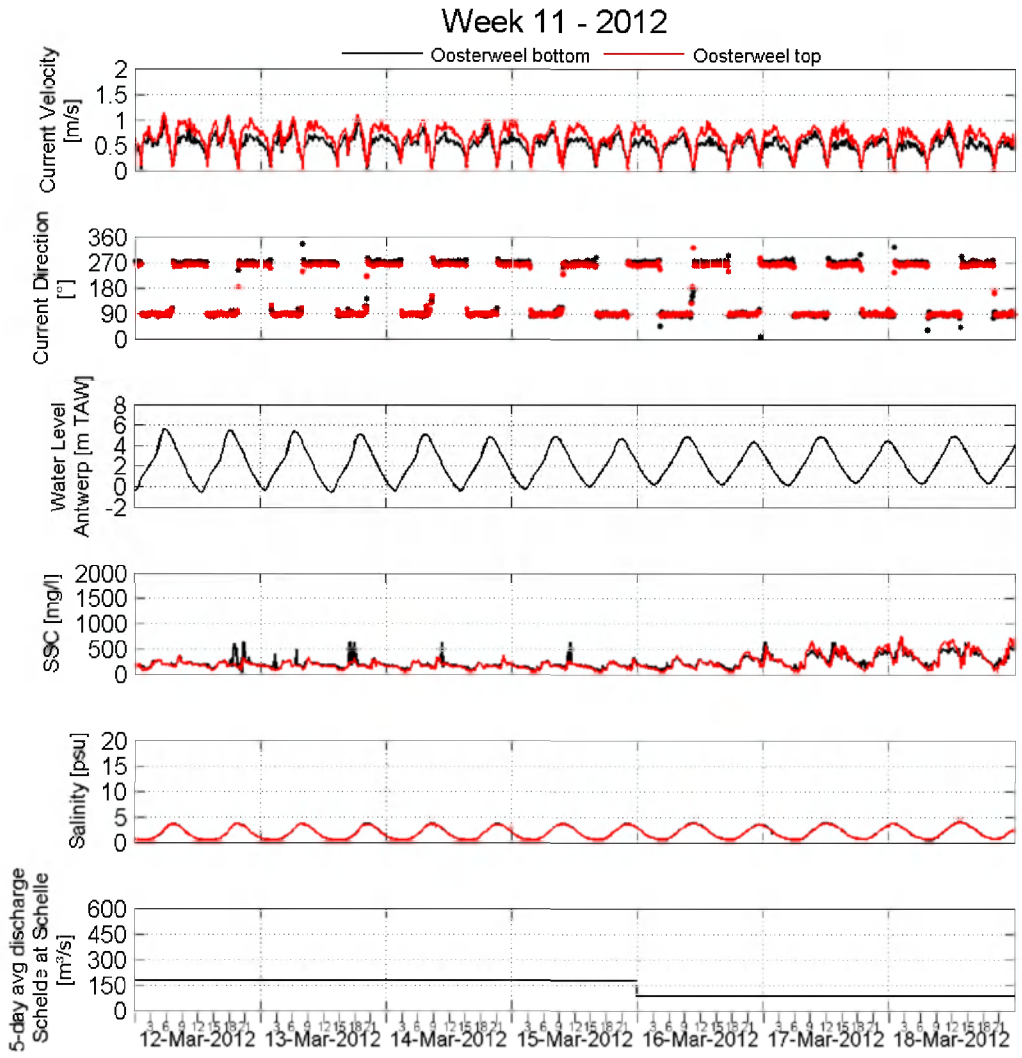
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

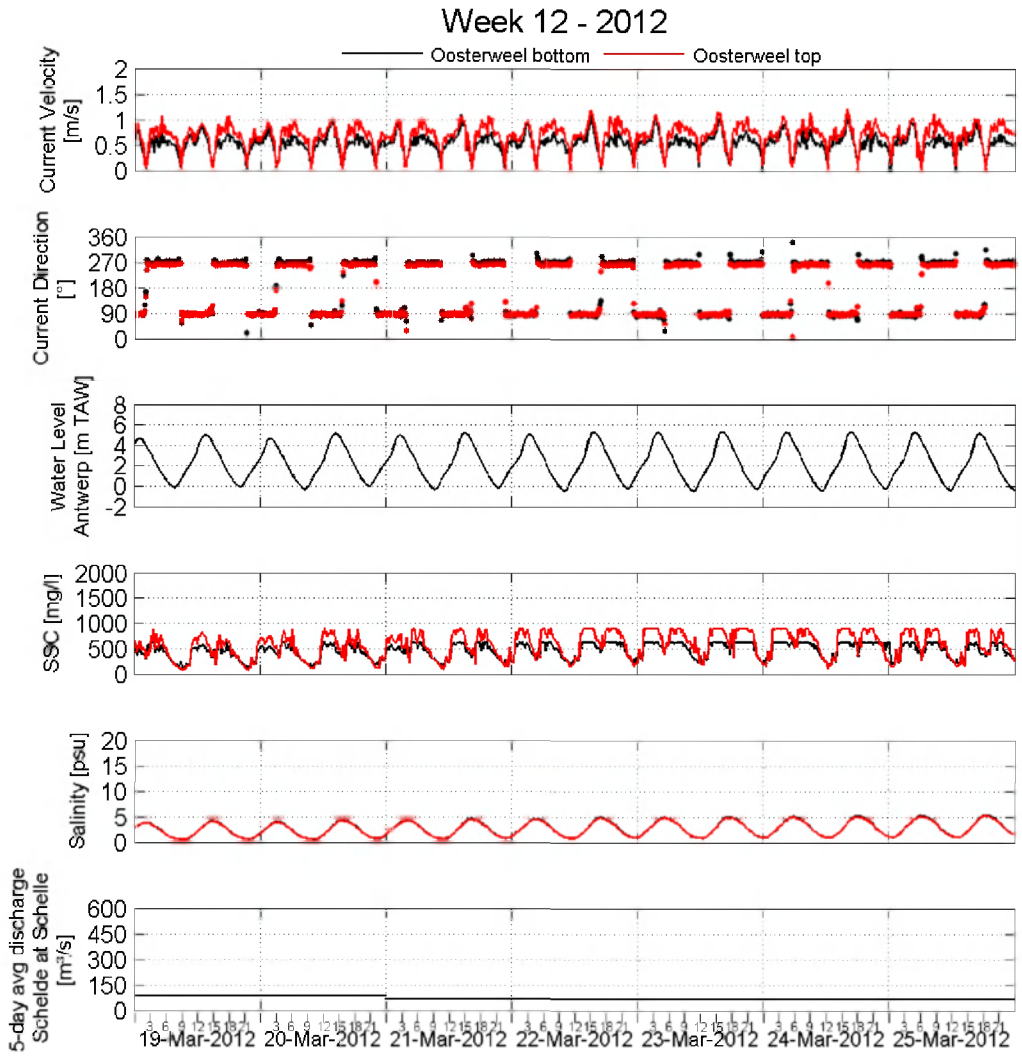
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

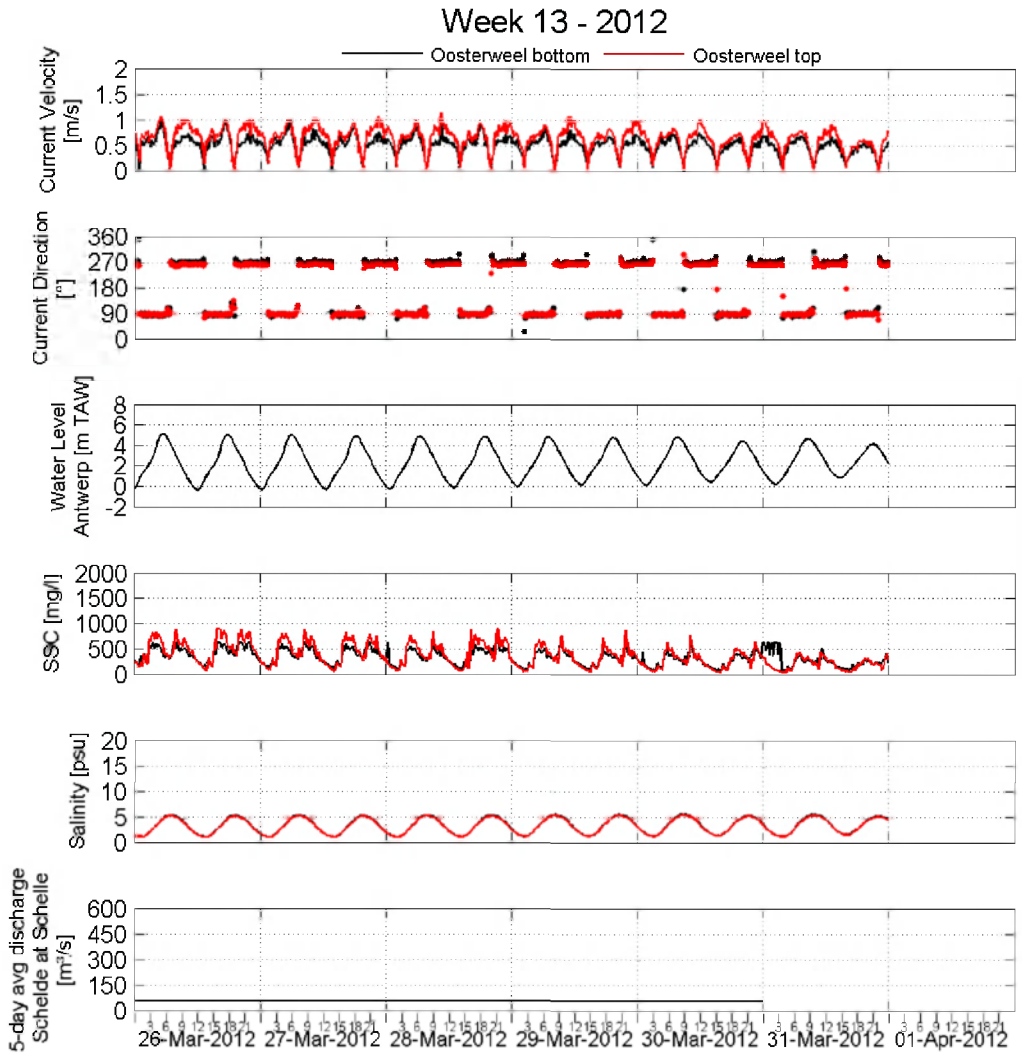
Location:

Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

Location:

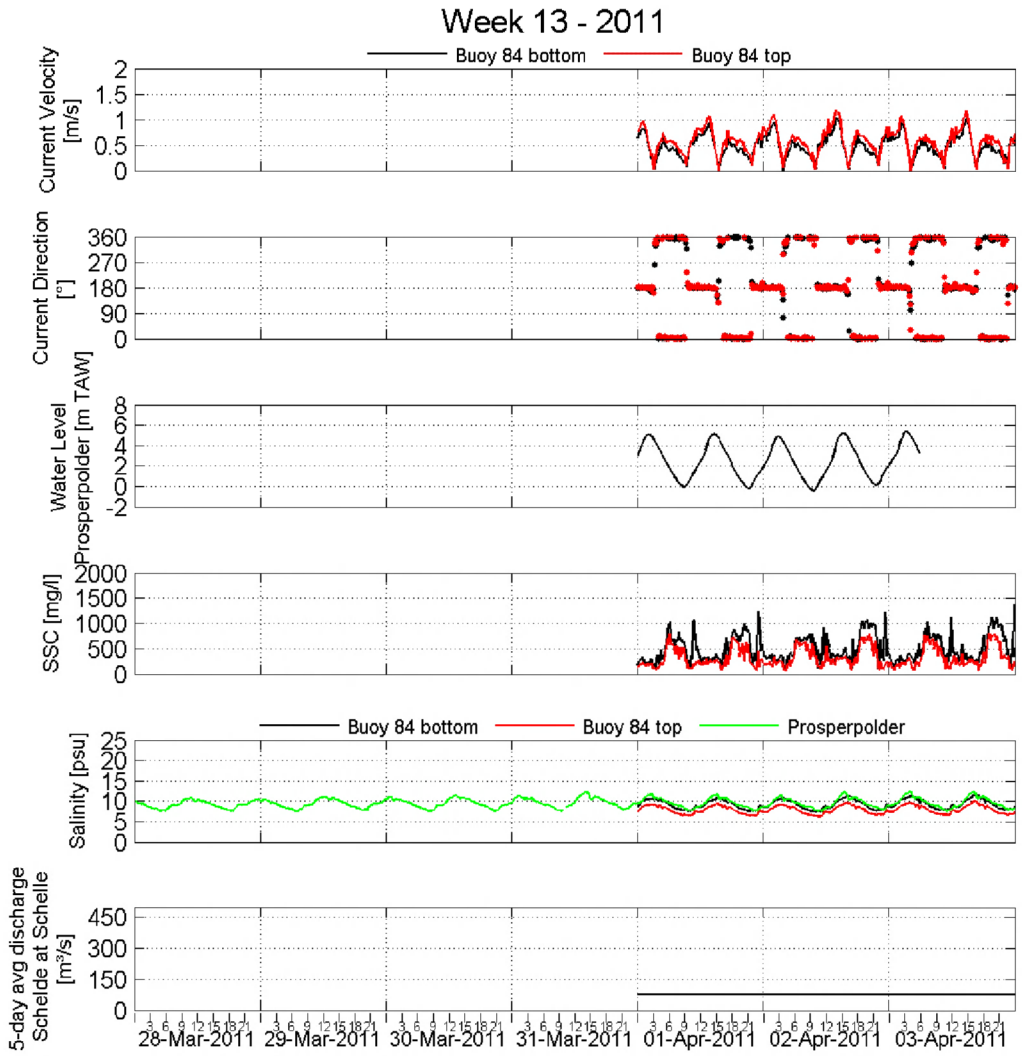
Oosterweel (top & bottom)

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

A.1.2 Buoy 84 and Prosperpolder

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

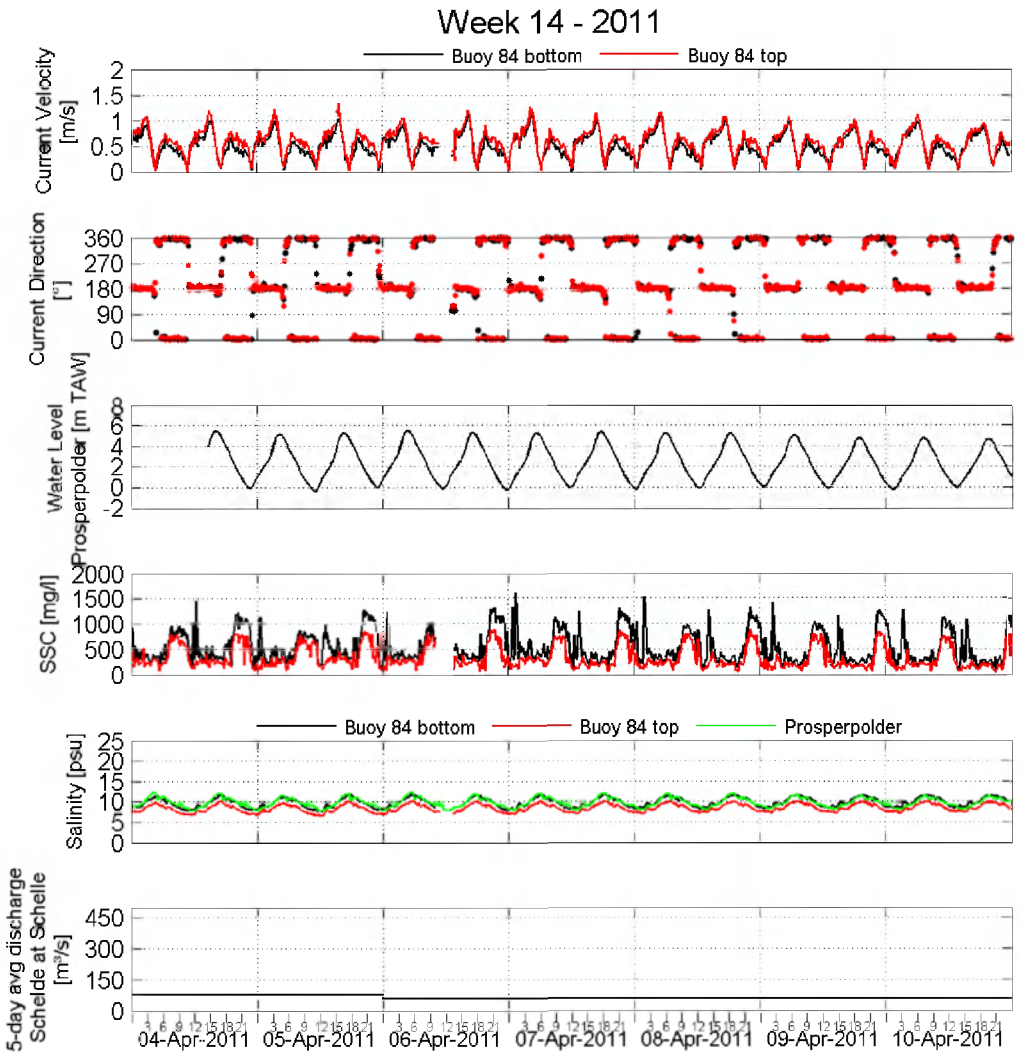
Location:

Buoy 84 (top & bottom) & Prosperpolder

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

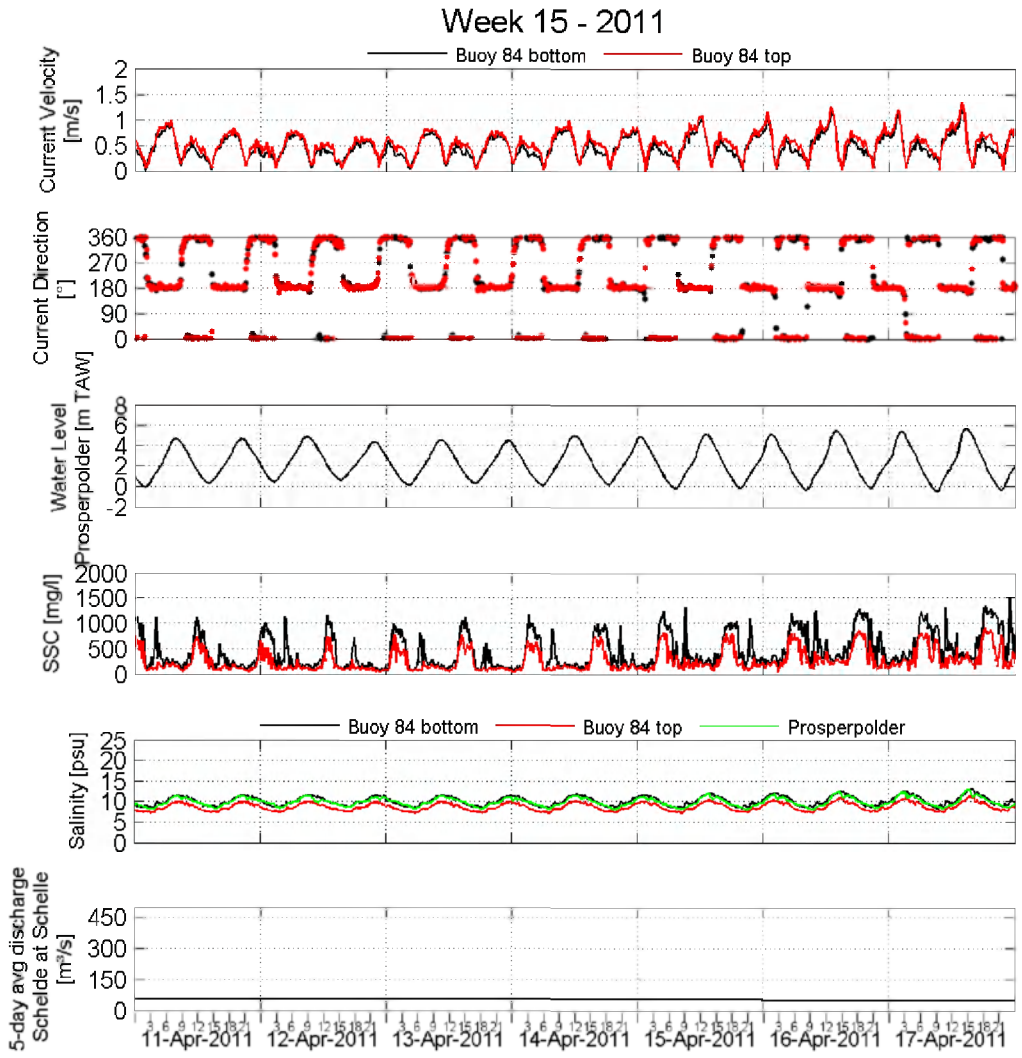
Location:

Buoy 84 (top & bottom) & Prosperpolder

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

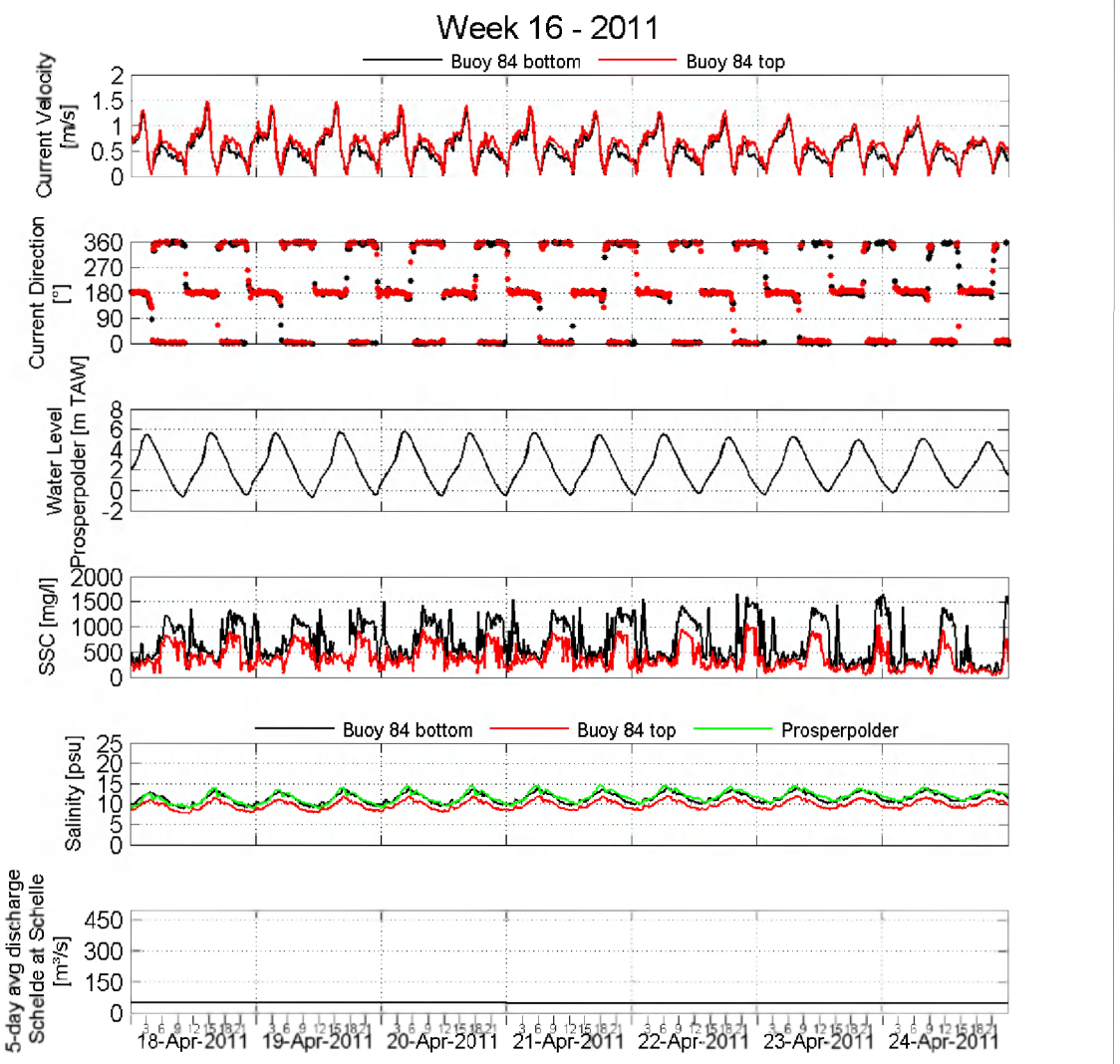
Location:

Buoy 84 (top & bottom) & Prosperpolder

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

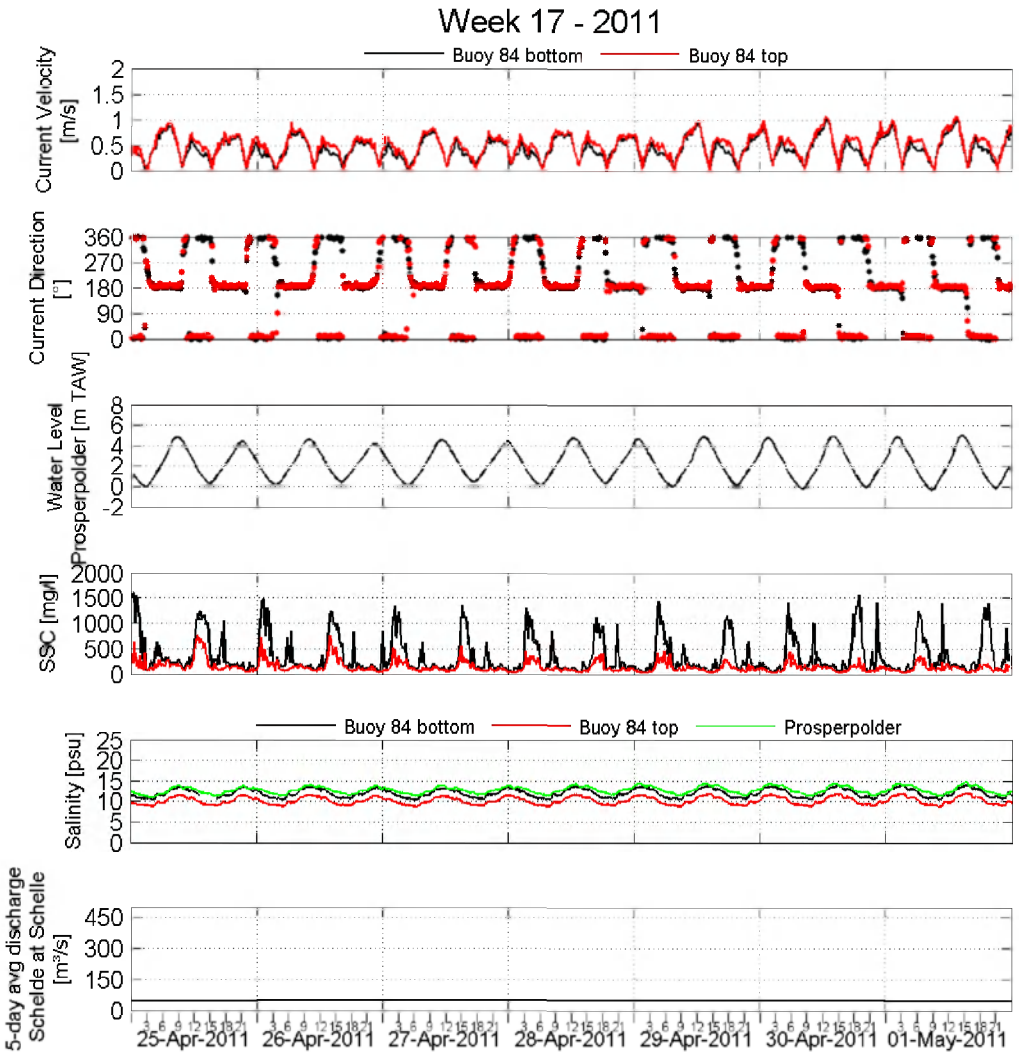
Location:

Buoy 84 (top & bottom) & Prosperpolder

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

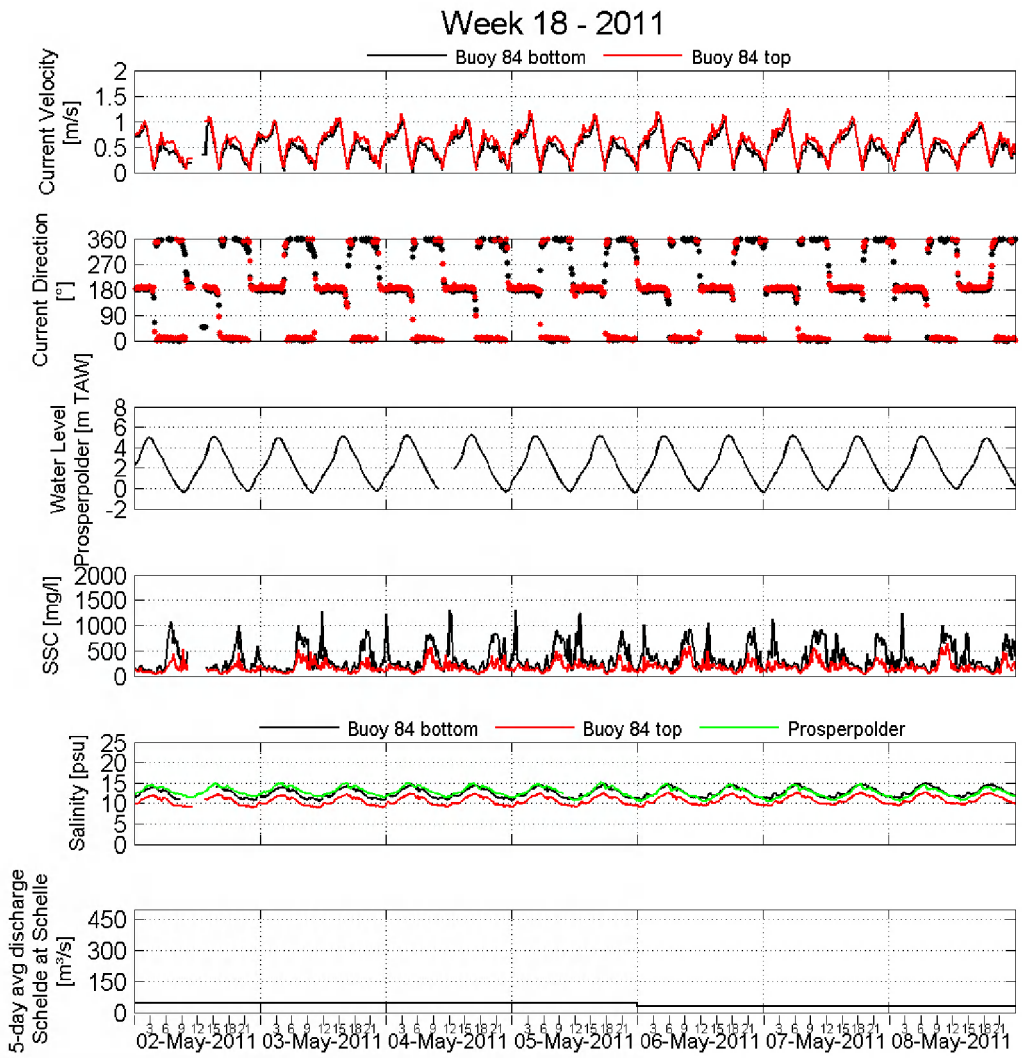
Location:

Buoy 84 (top & bottom) & Prosperpolder

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

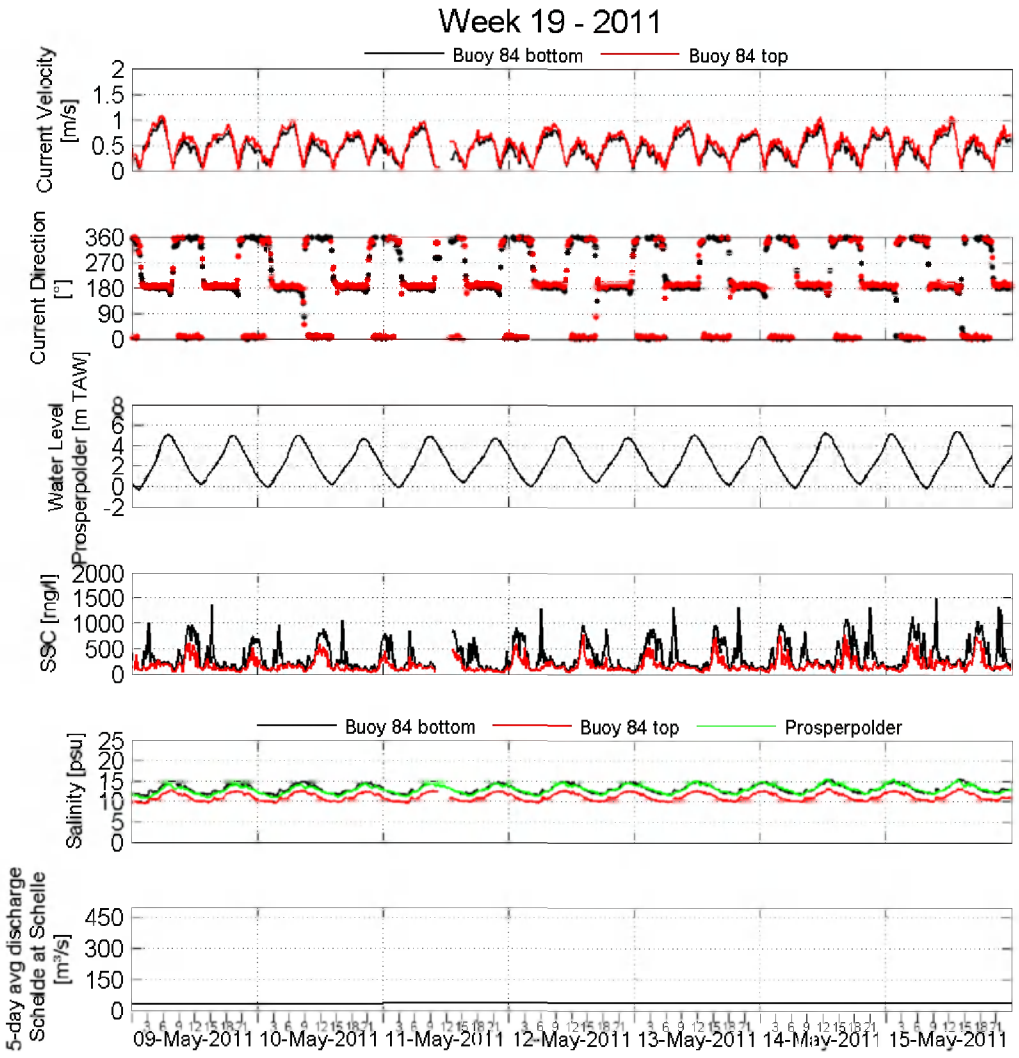
Location:

Buoy 84 (top & bottom) & Prosperpolder

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

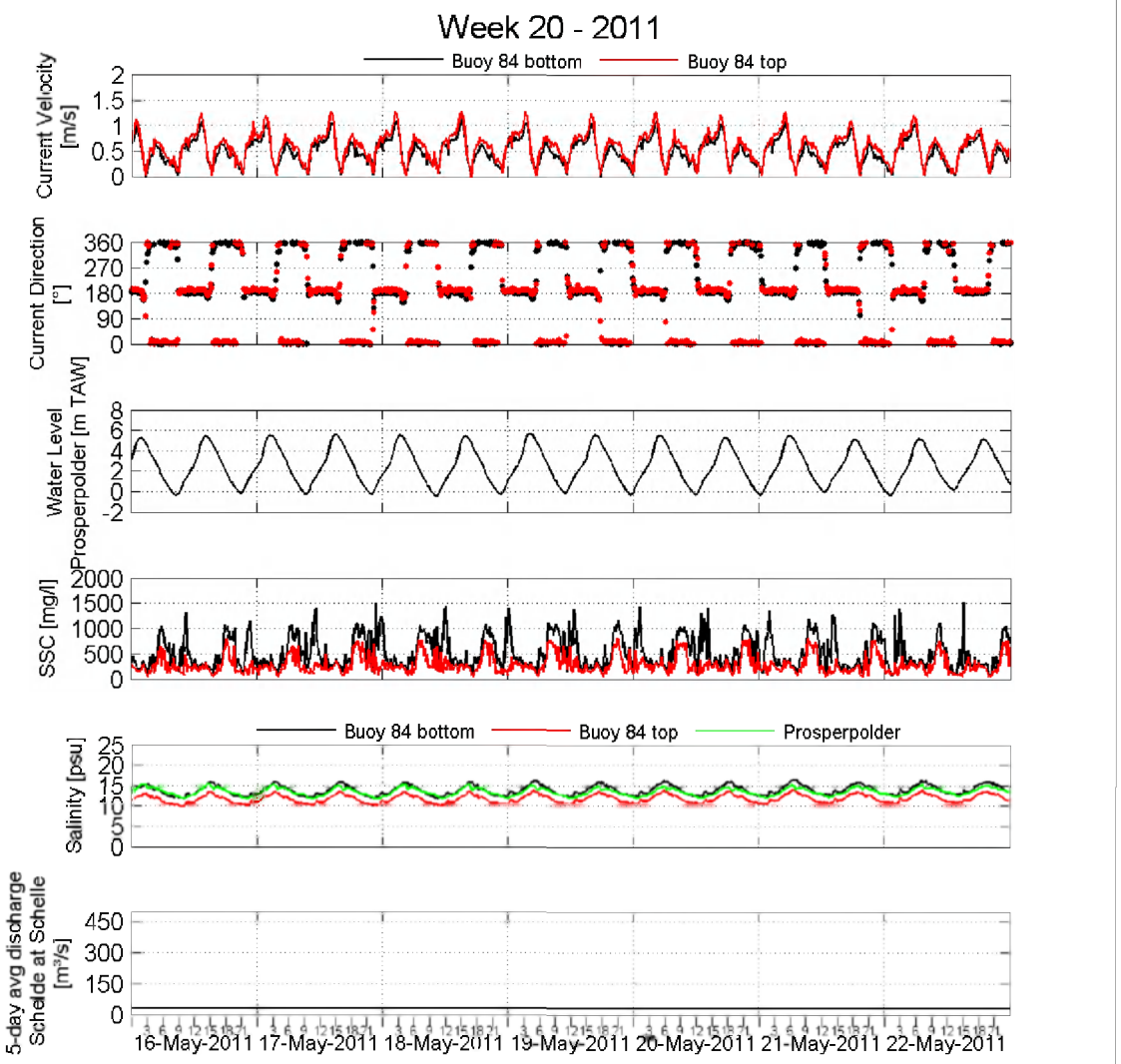
Location:

Buoy 84 (top & bottom) & Prosperpolder

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

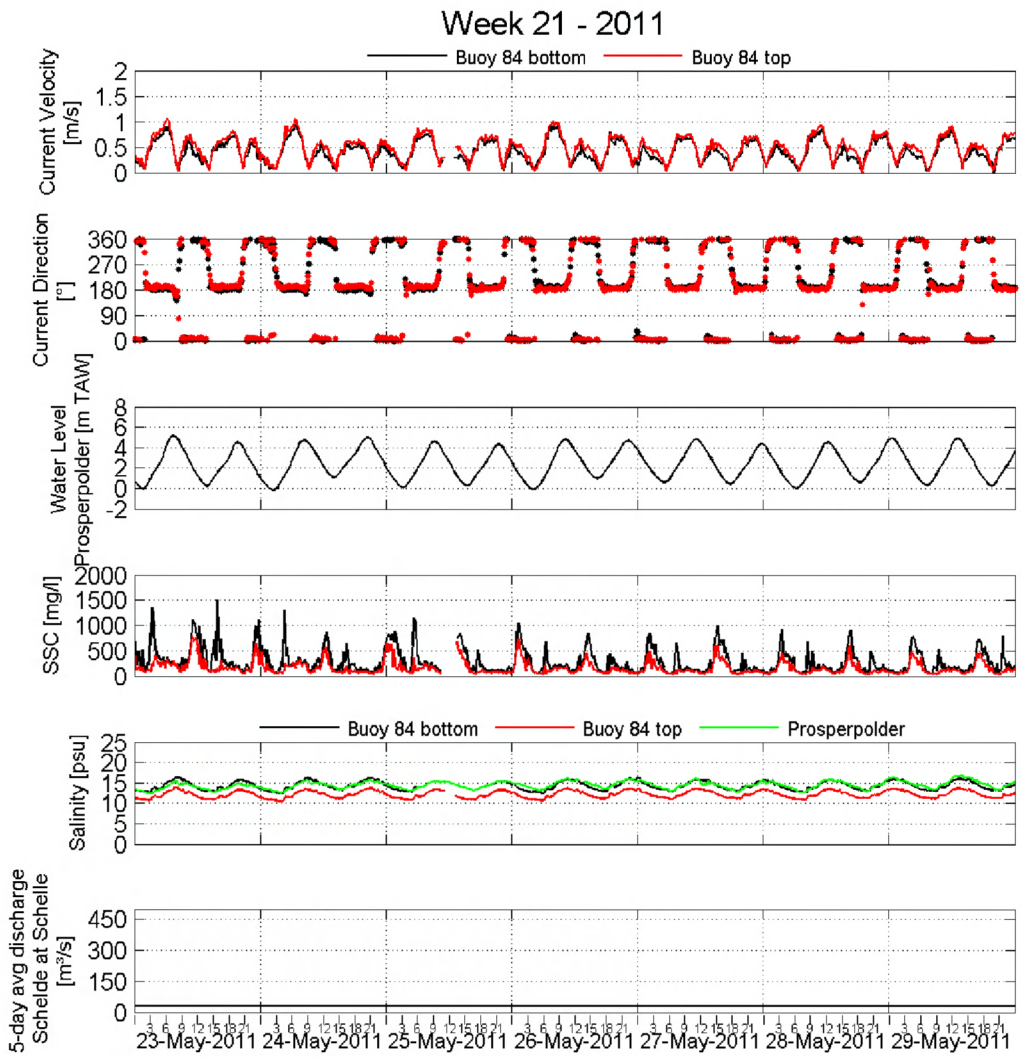
Location:

Buoy 84 (top & bottom) & Prosperpolder

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

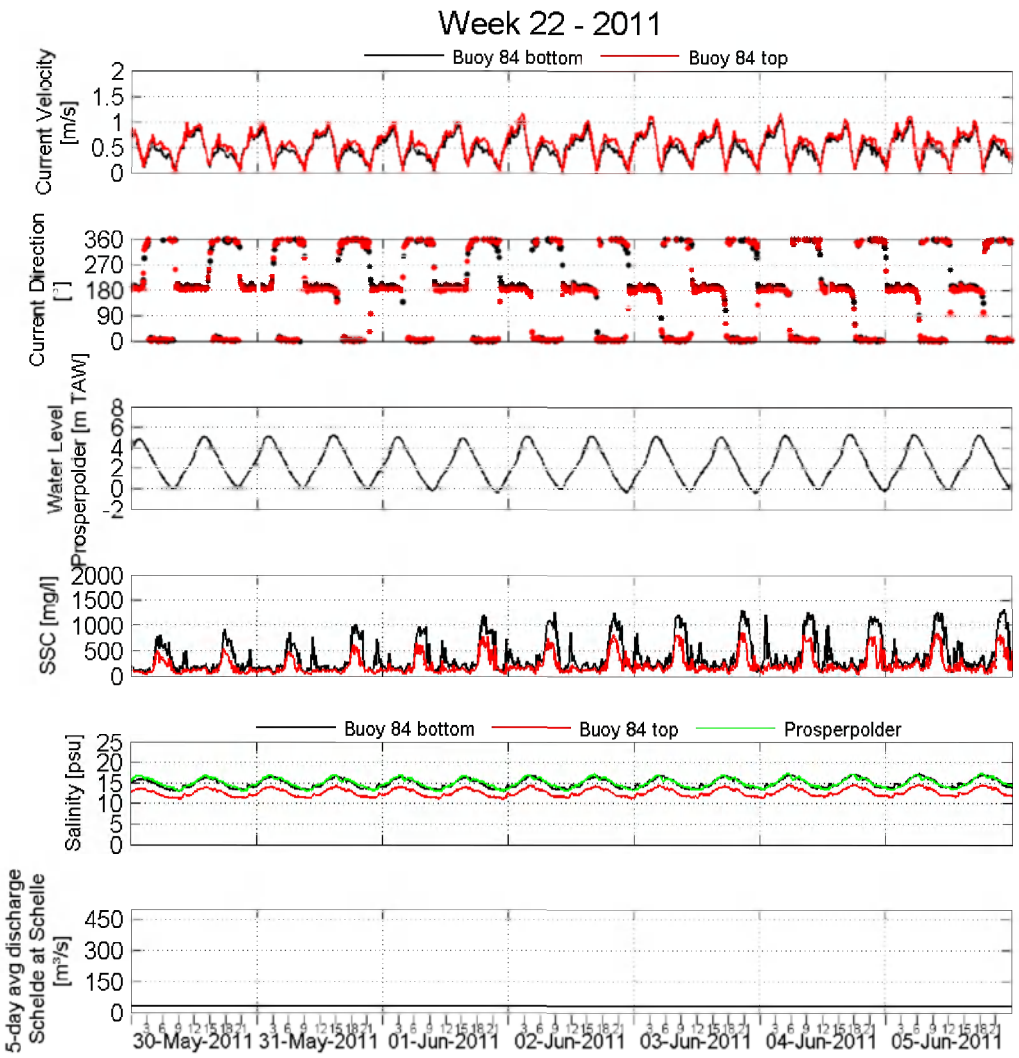
Location:

Buoy 84 (top & bottom) & Prosperpolder

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

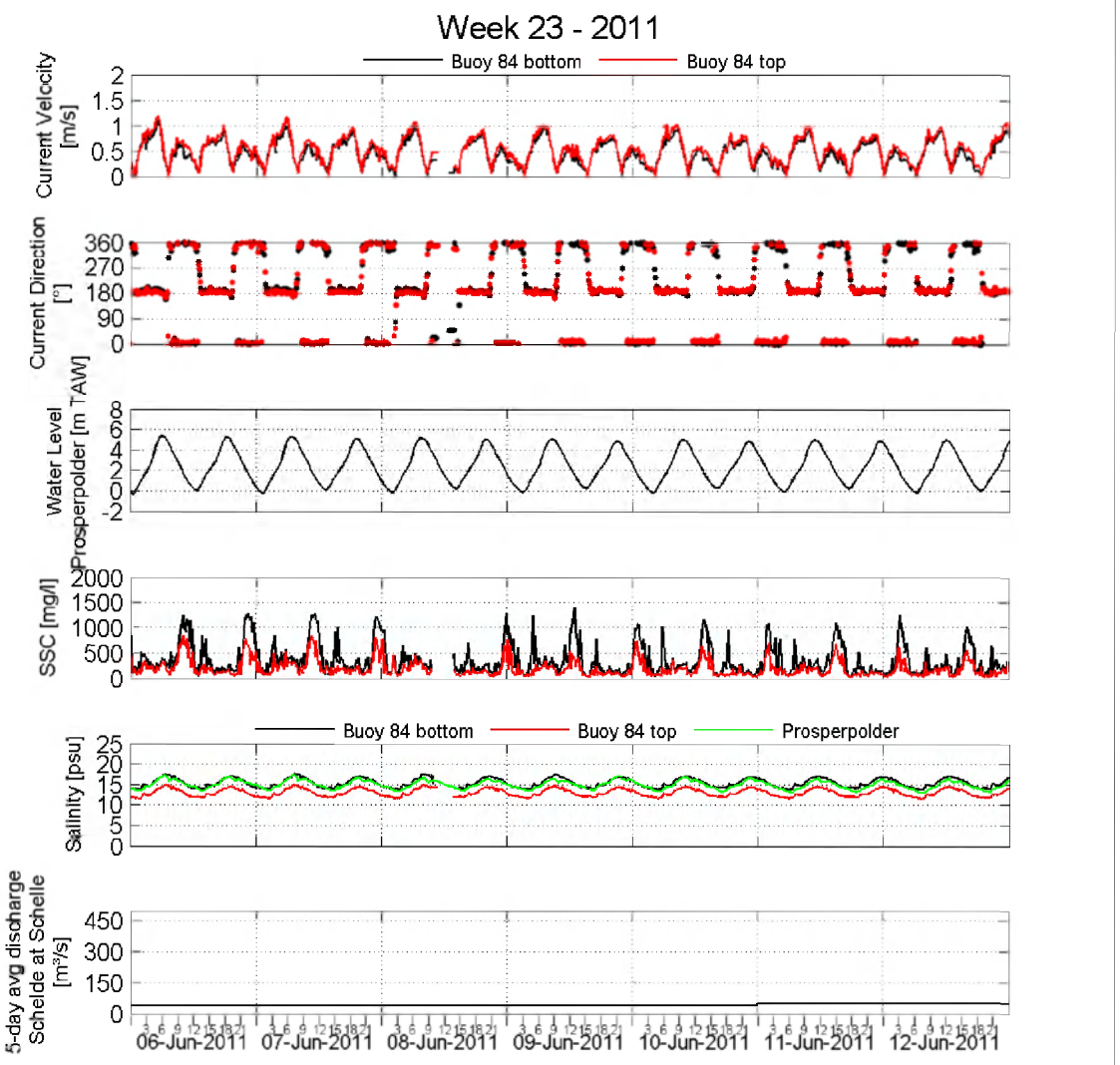
Location:

Buoy 84 (top & bottom) & Prosperpolder

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

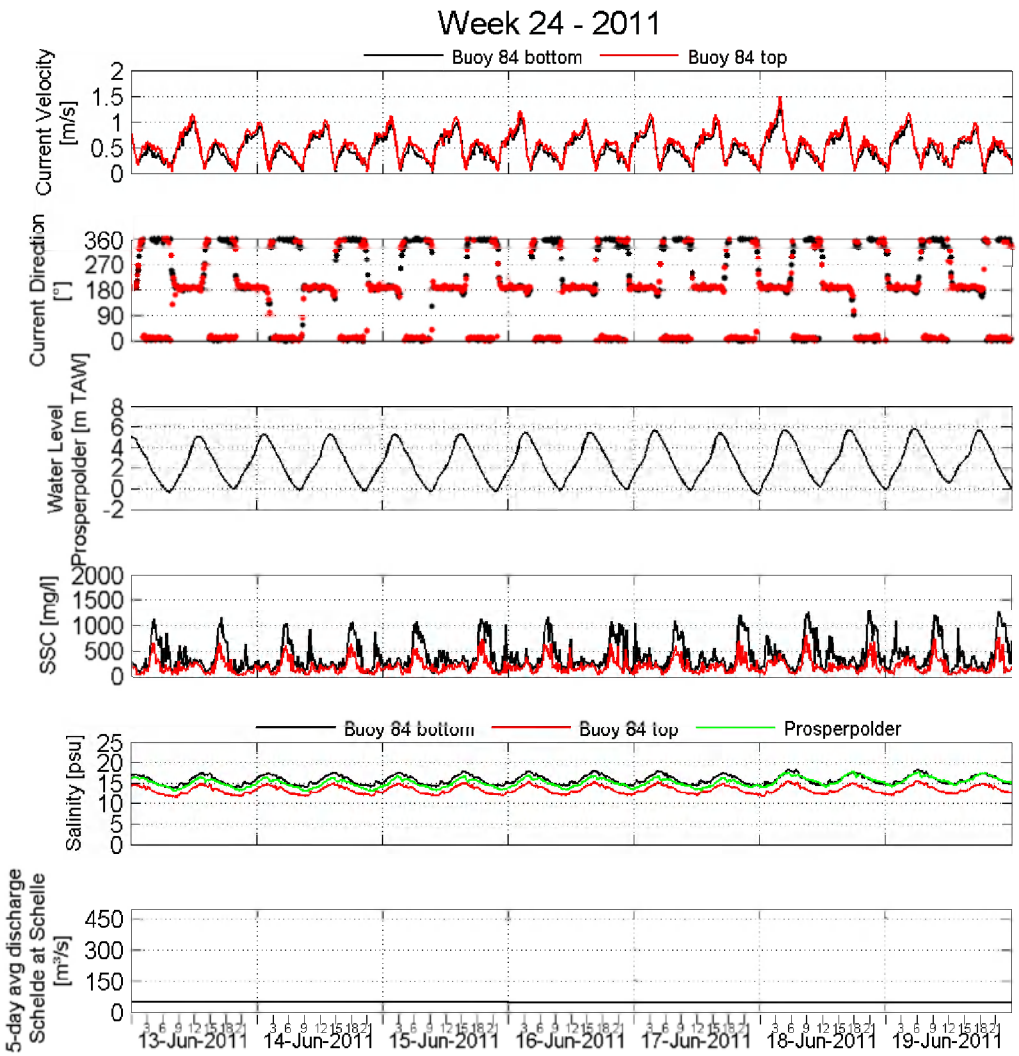
Location:

Buoy 84 (top & bottom) & Prosperpolder

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

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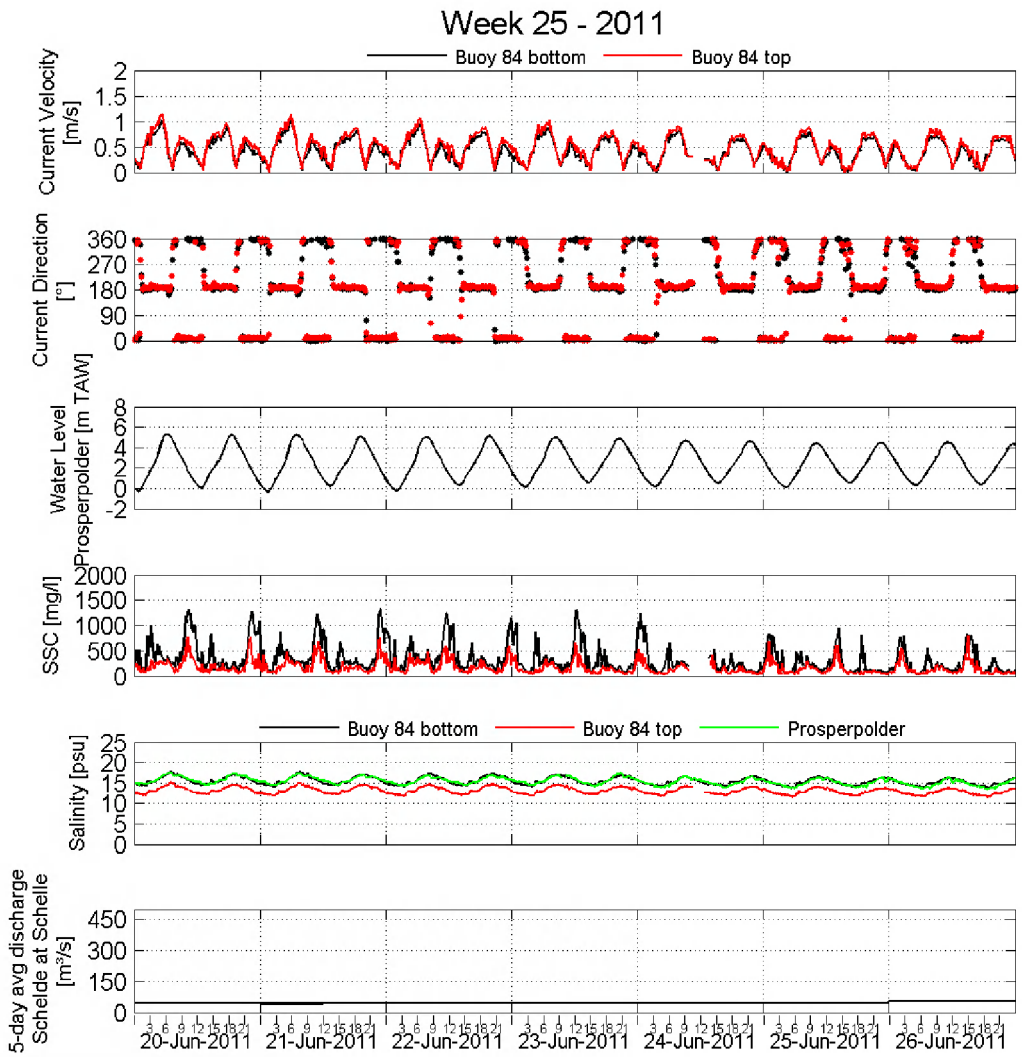
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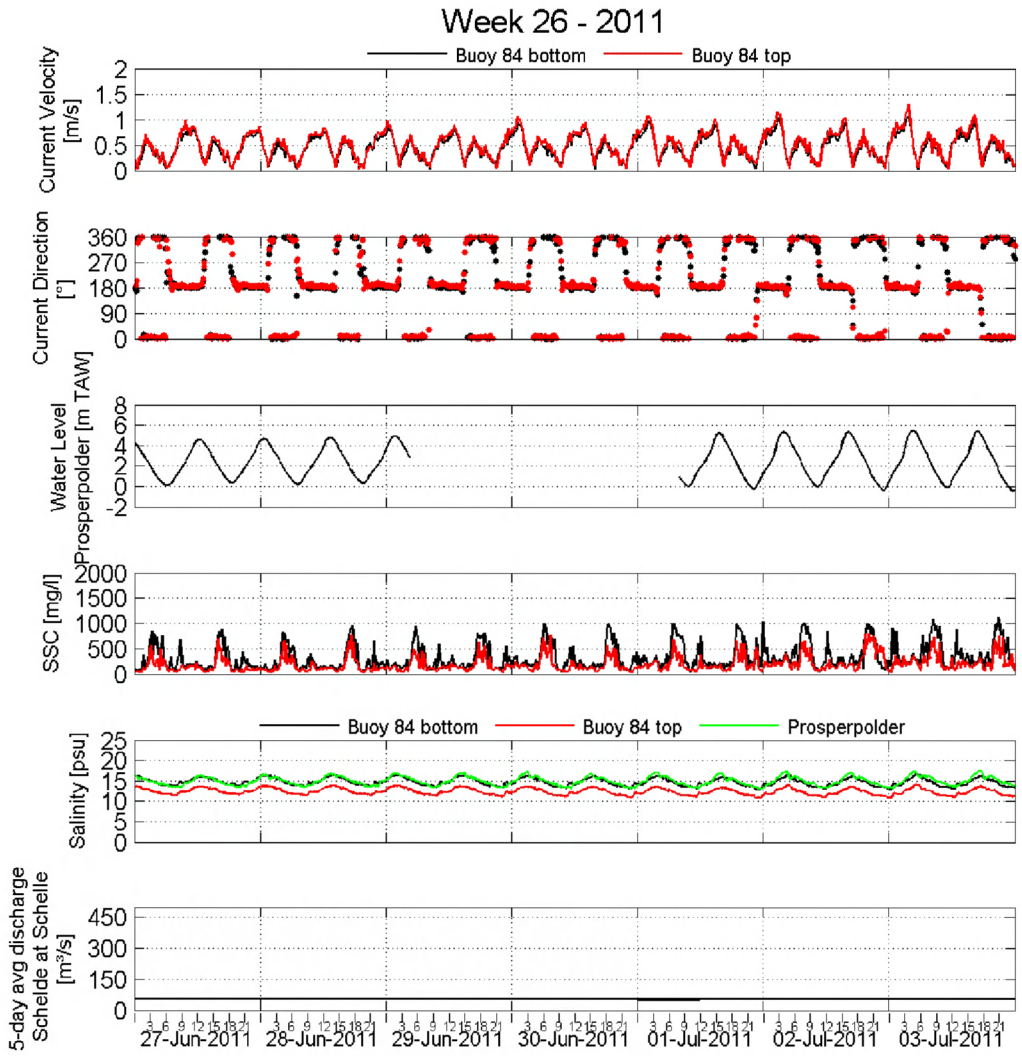
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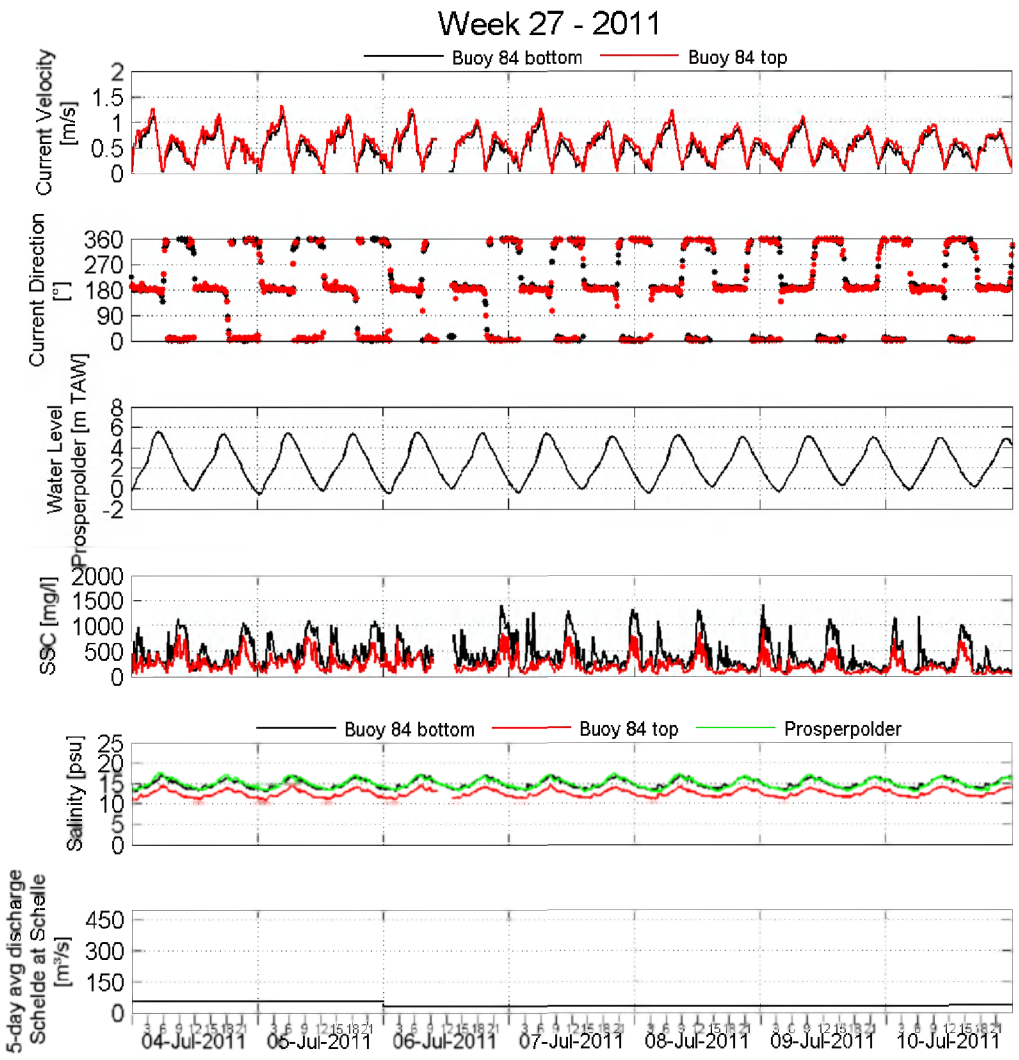
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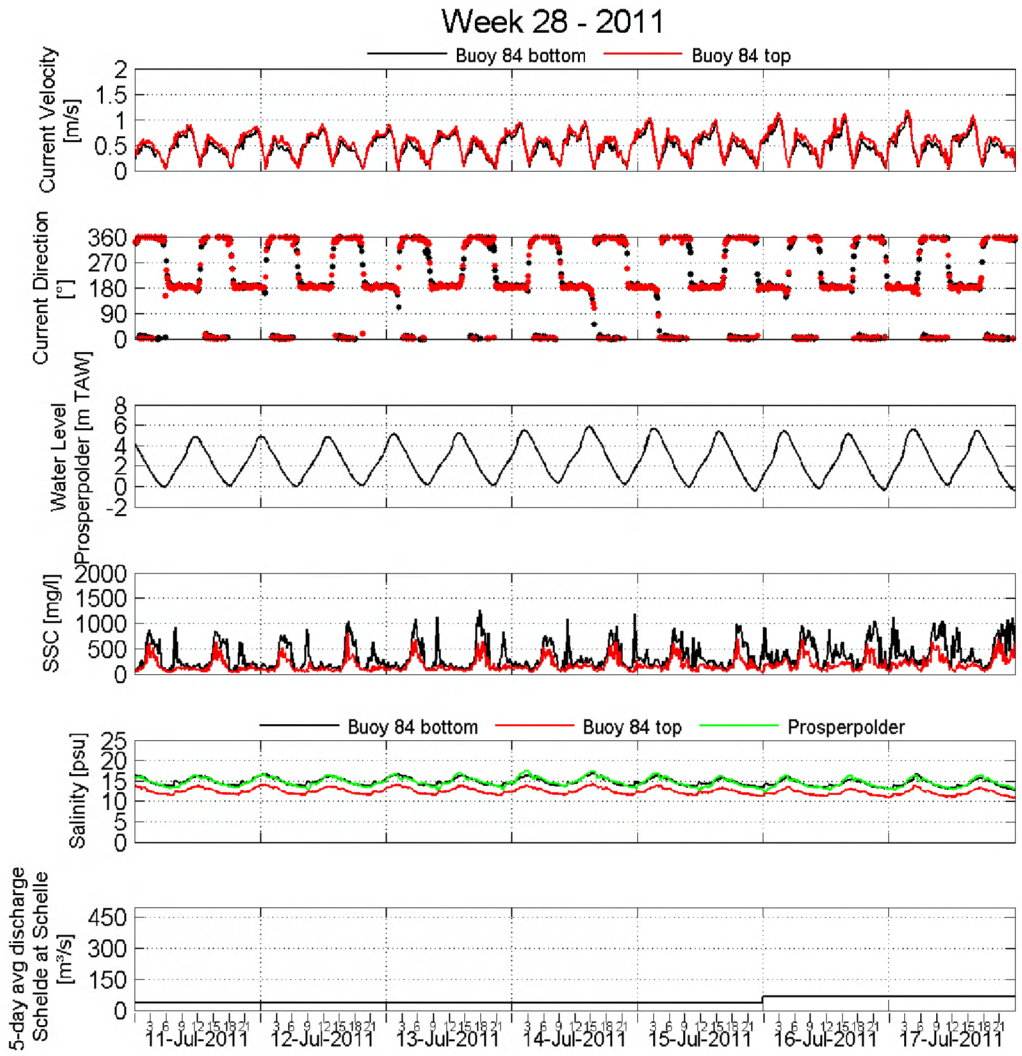
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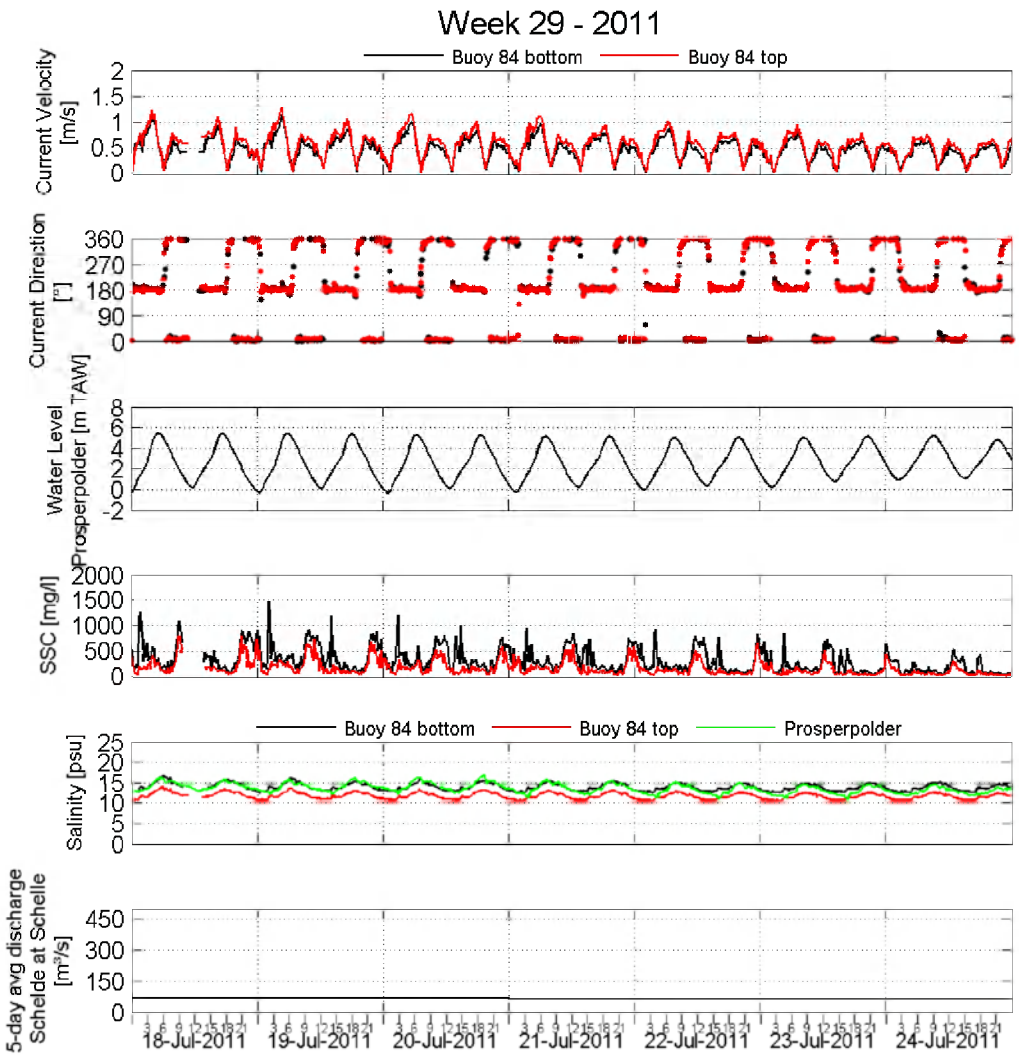
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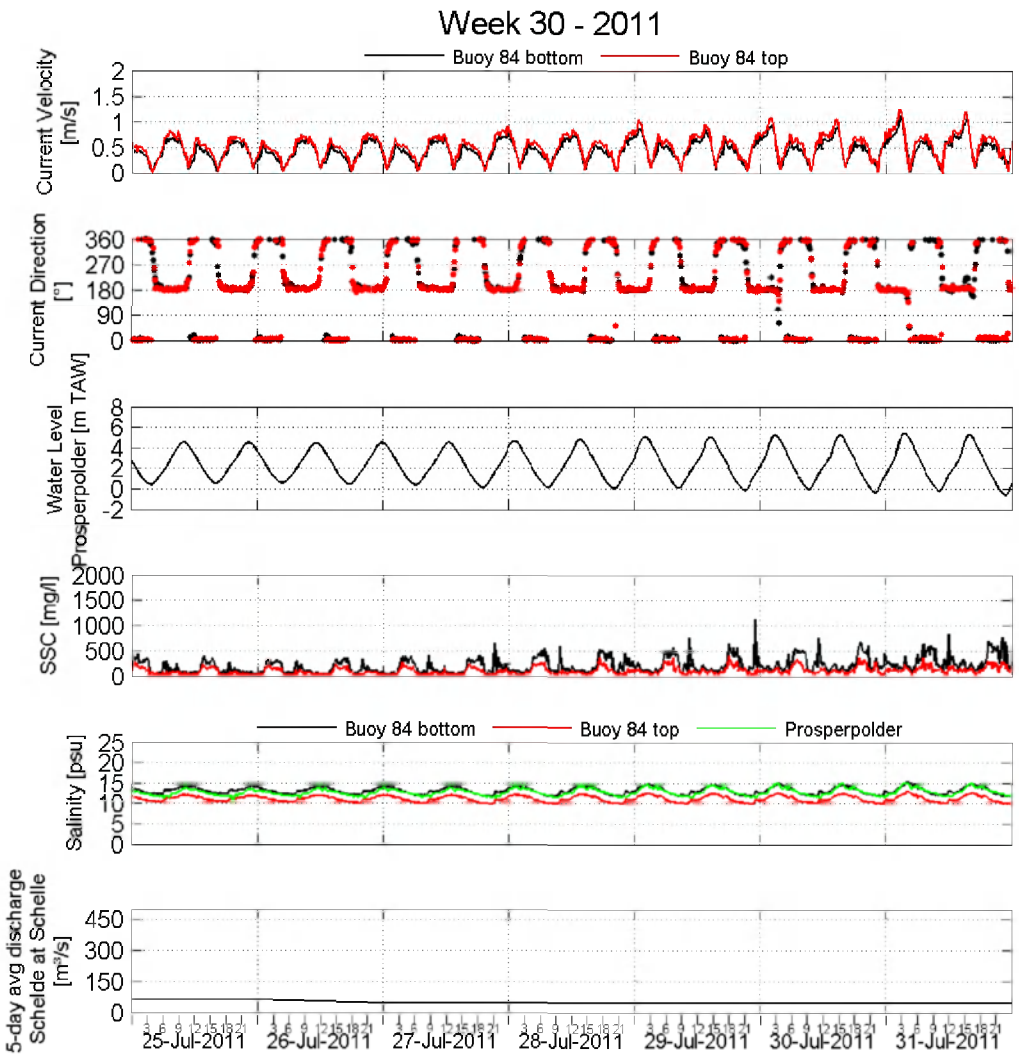
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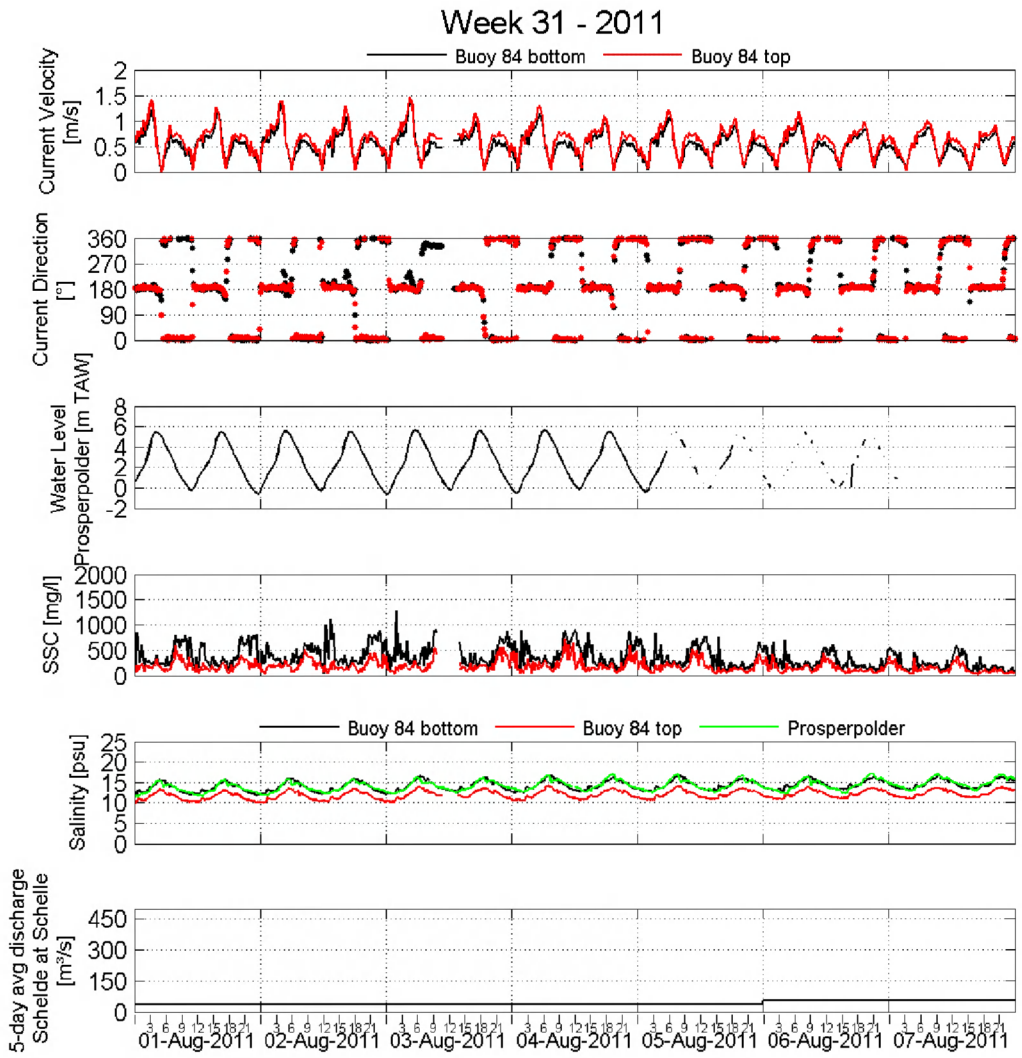
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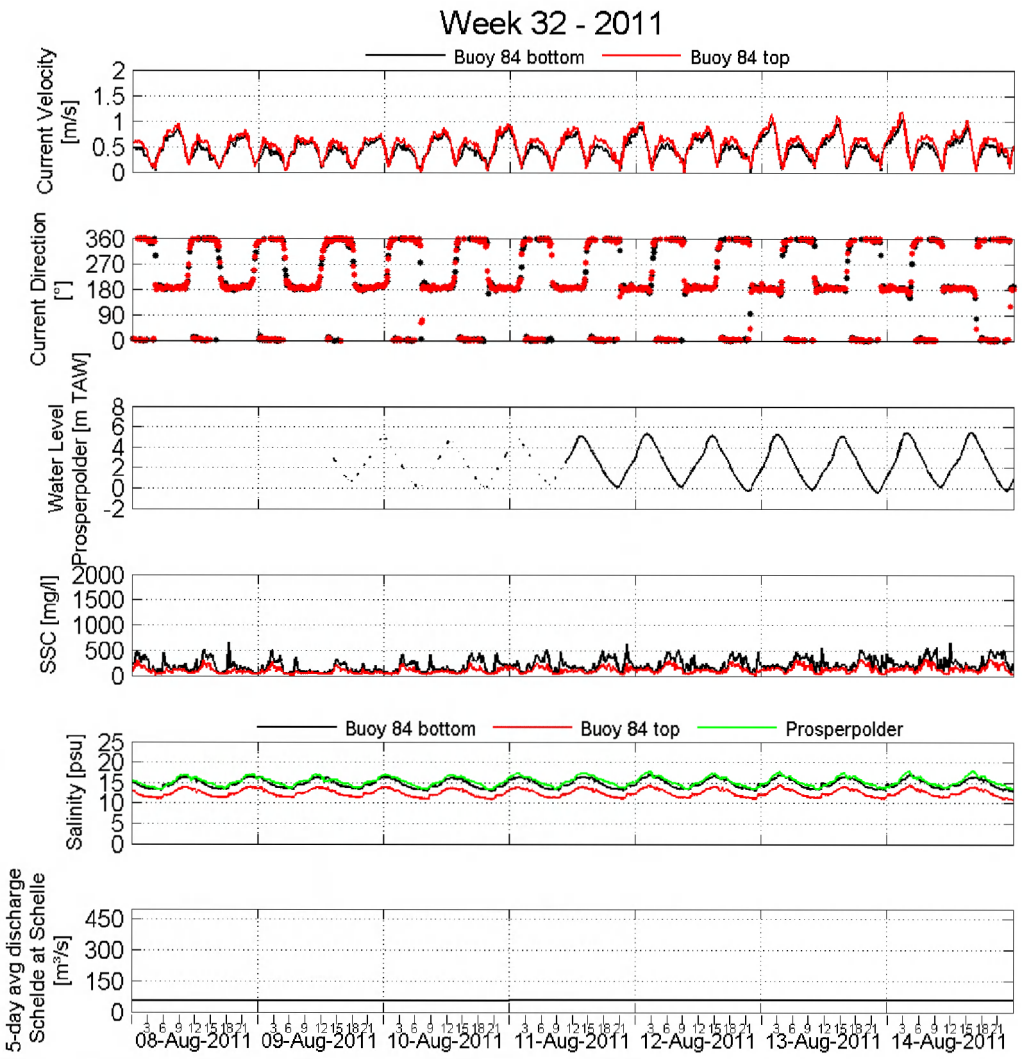
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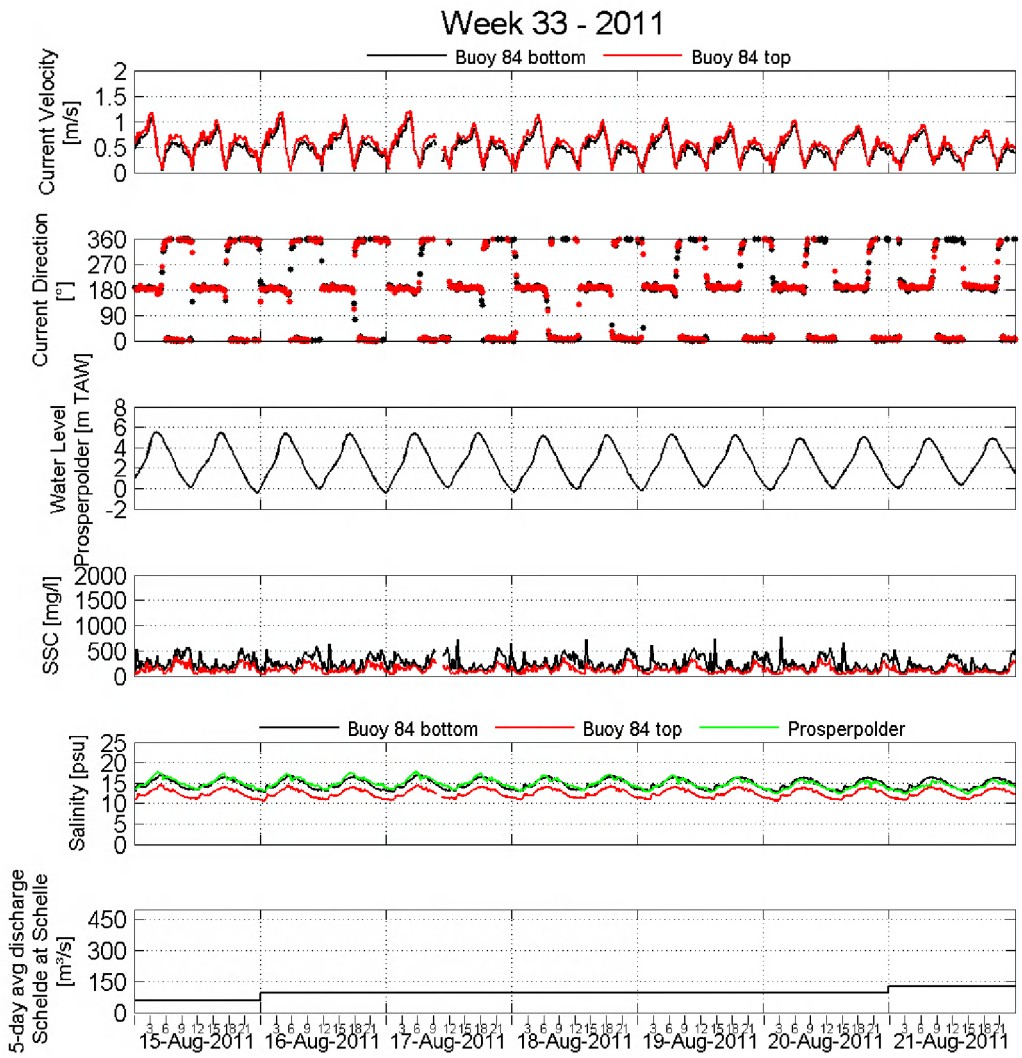
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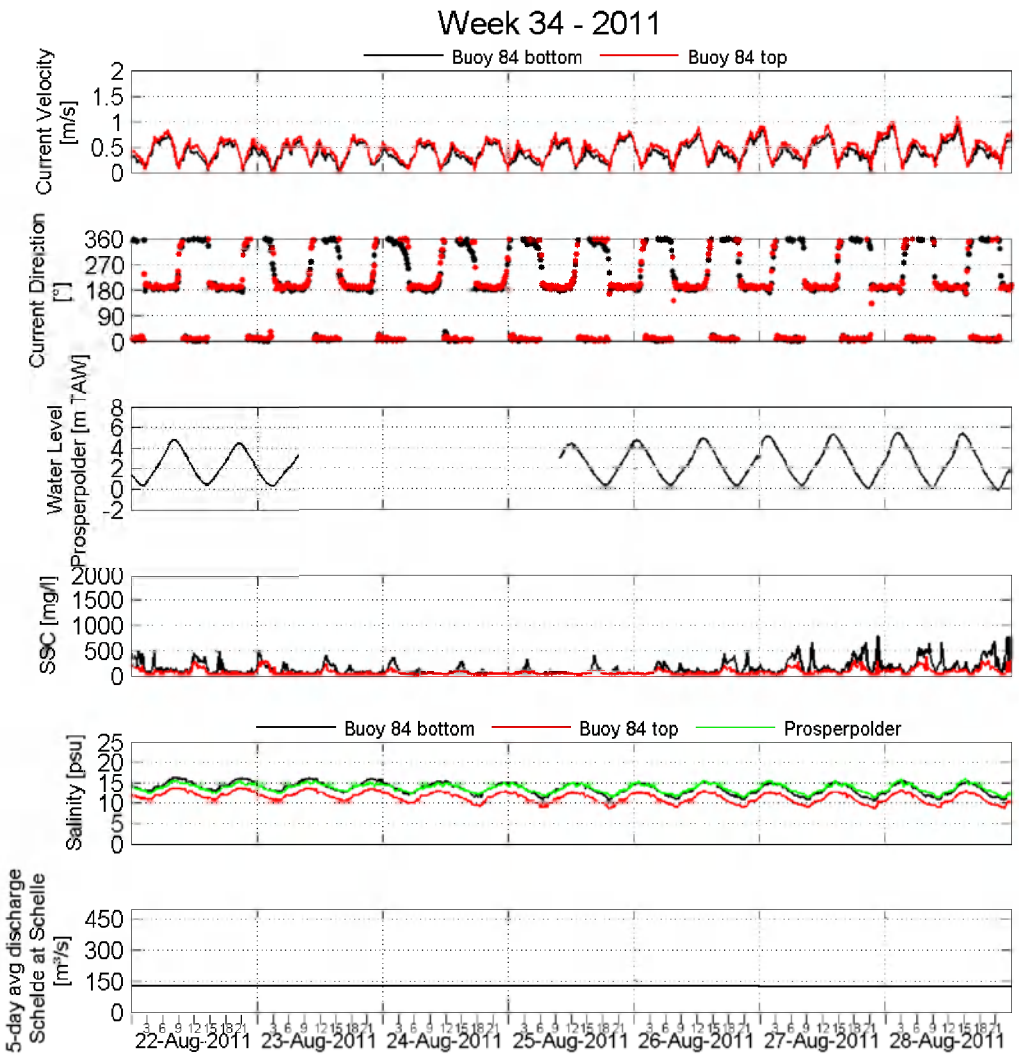
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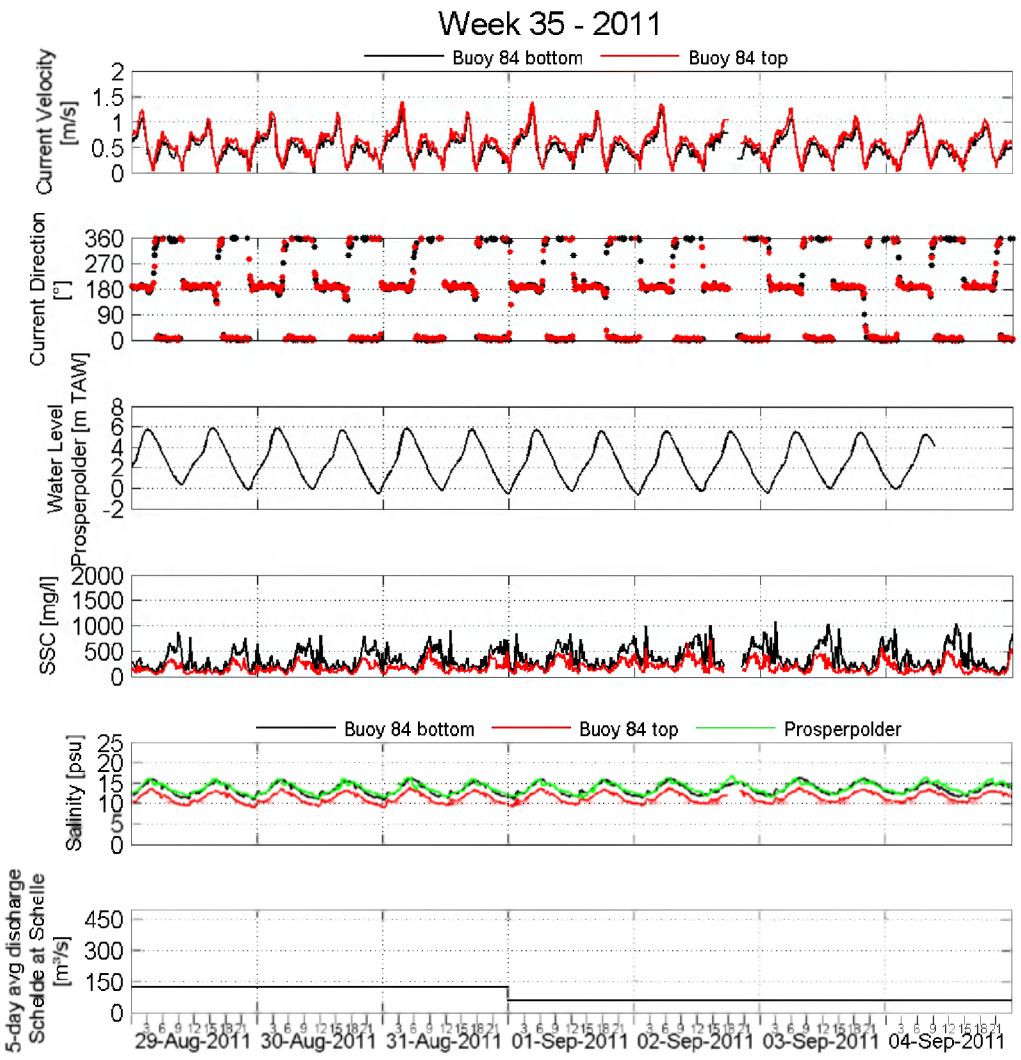
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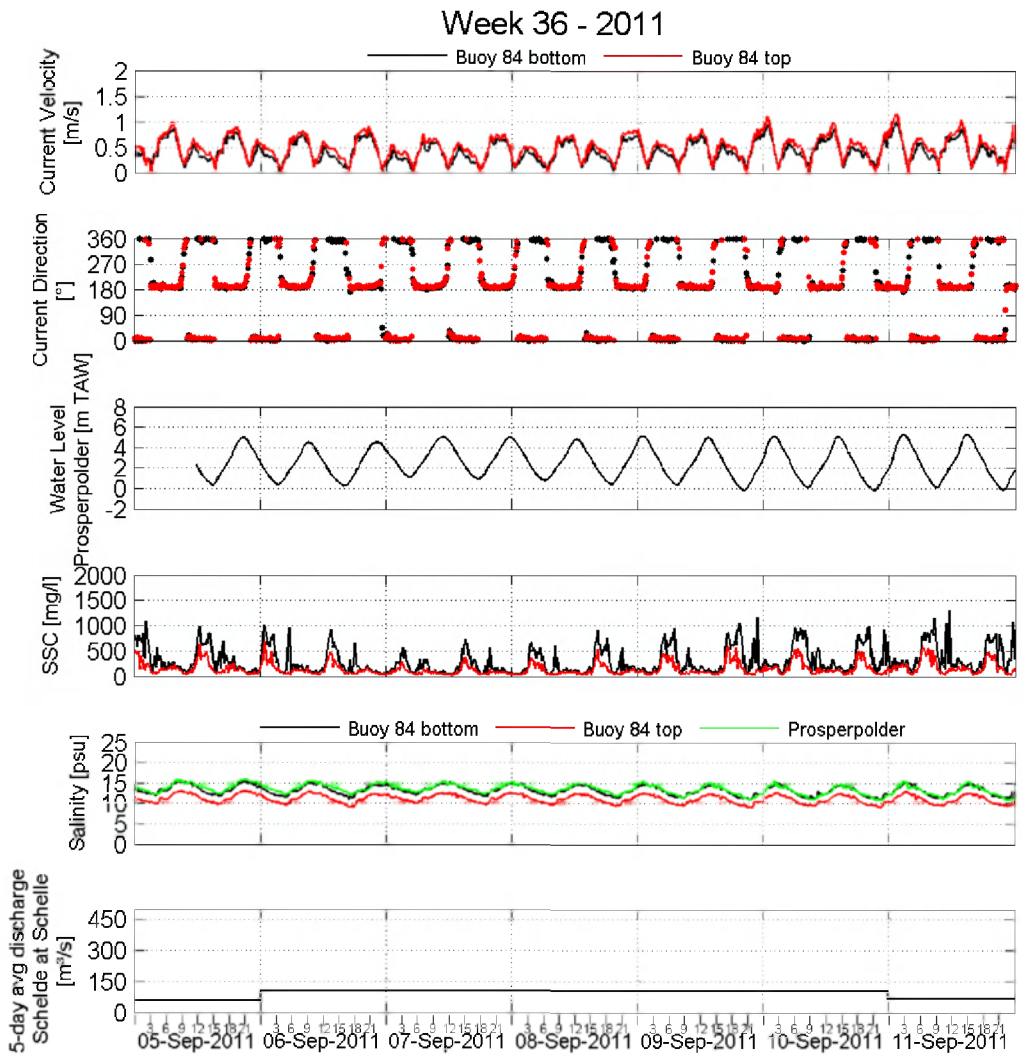
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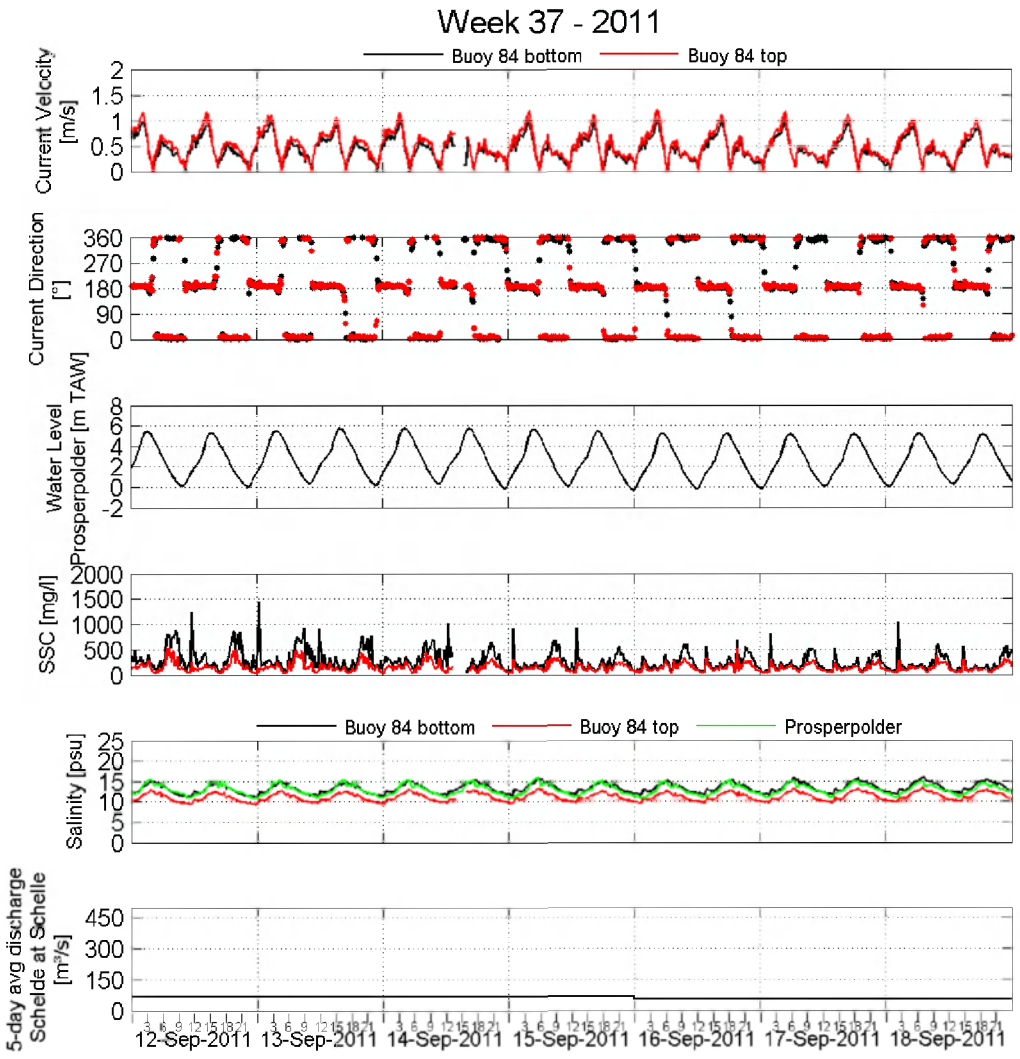
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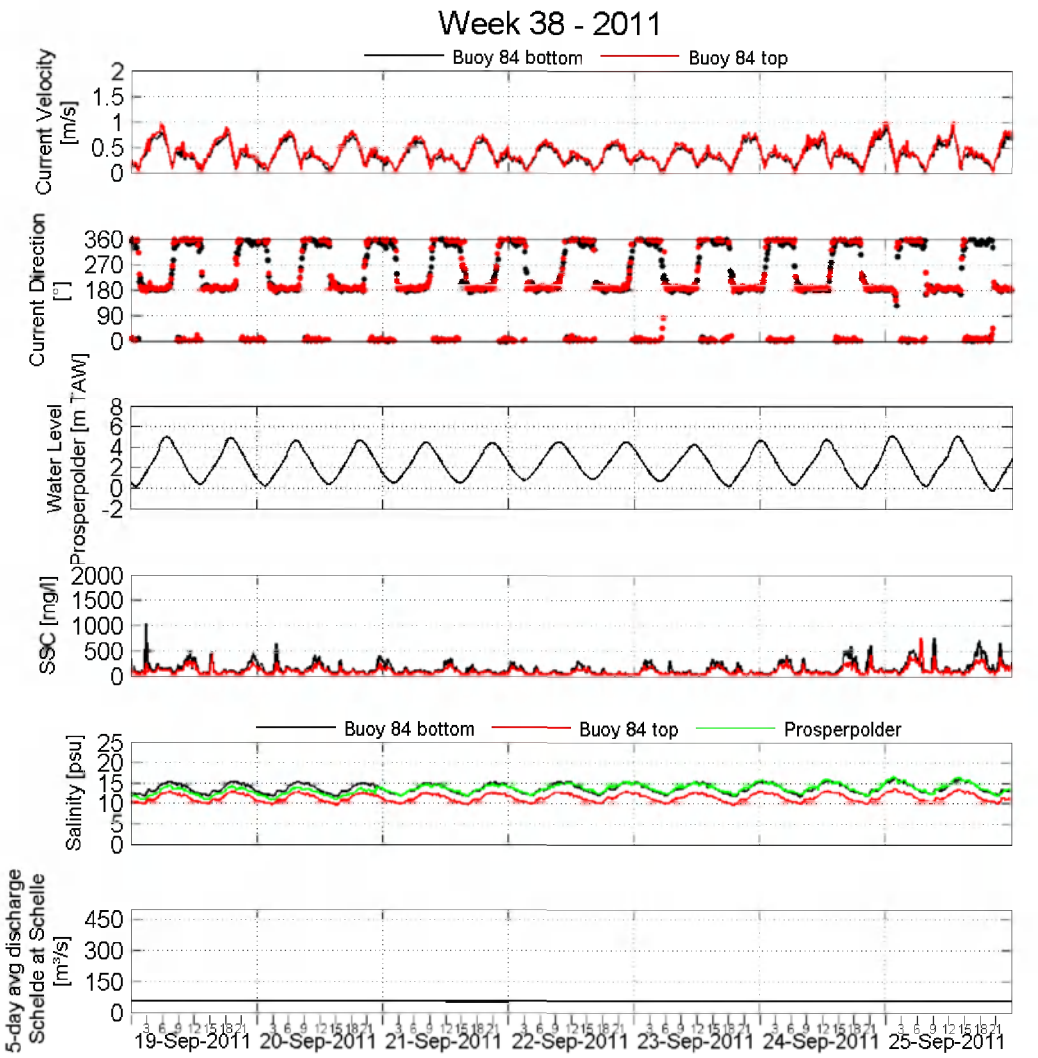
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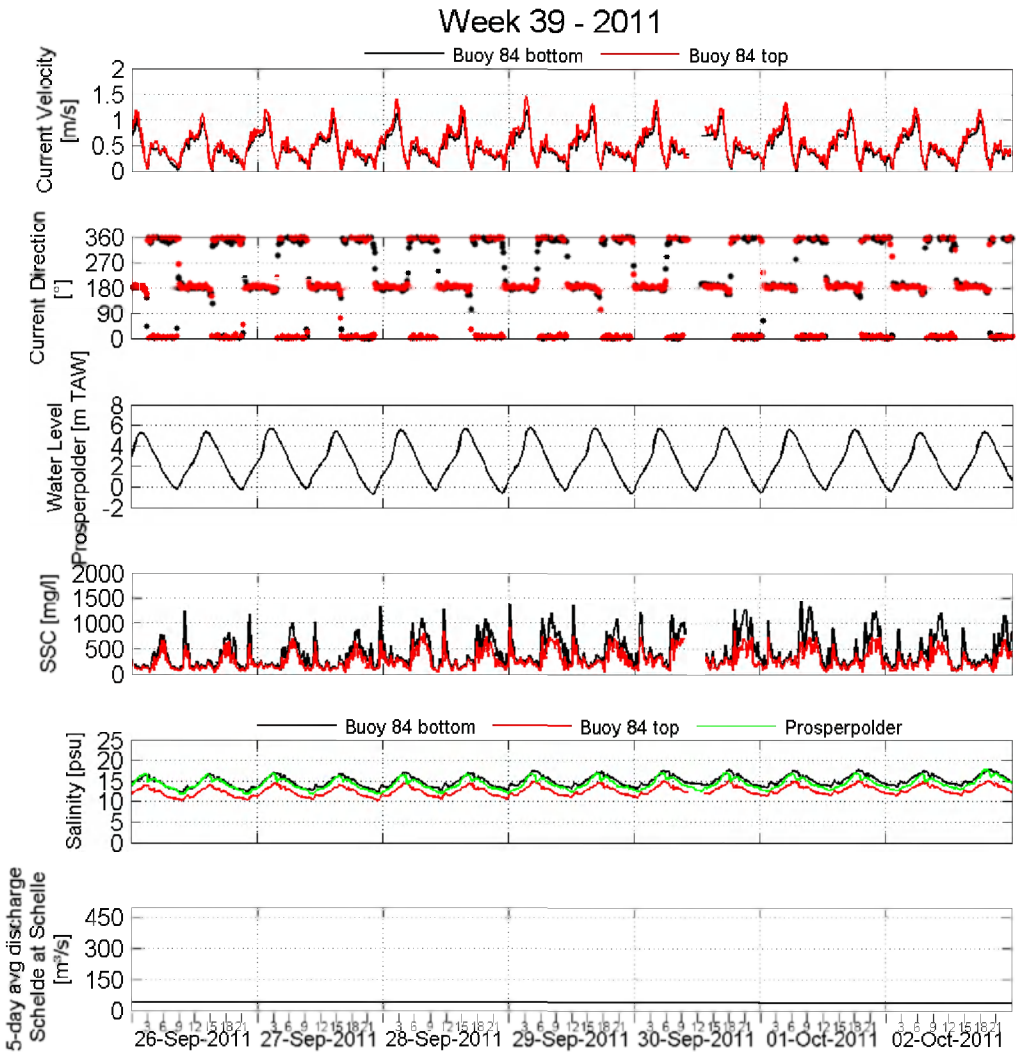
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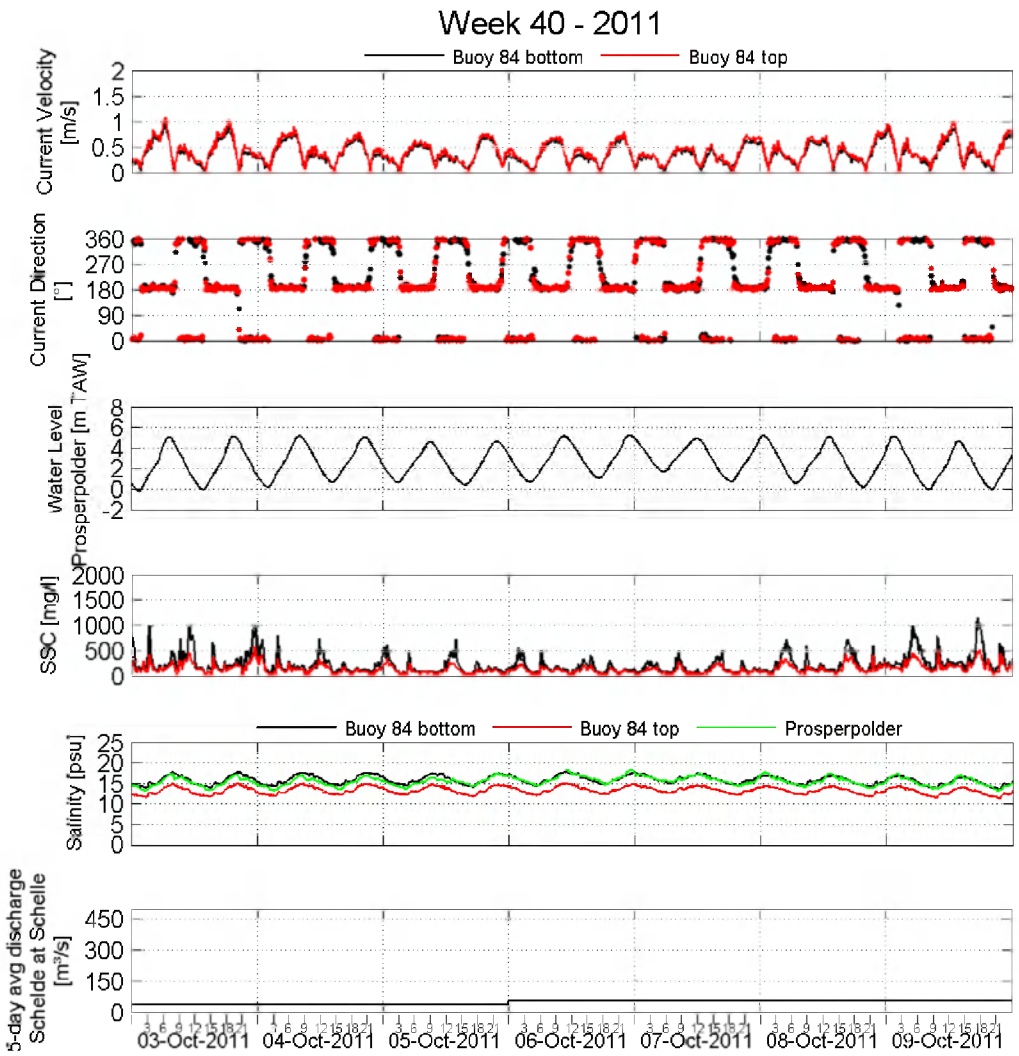
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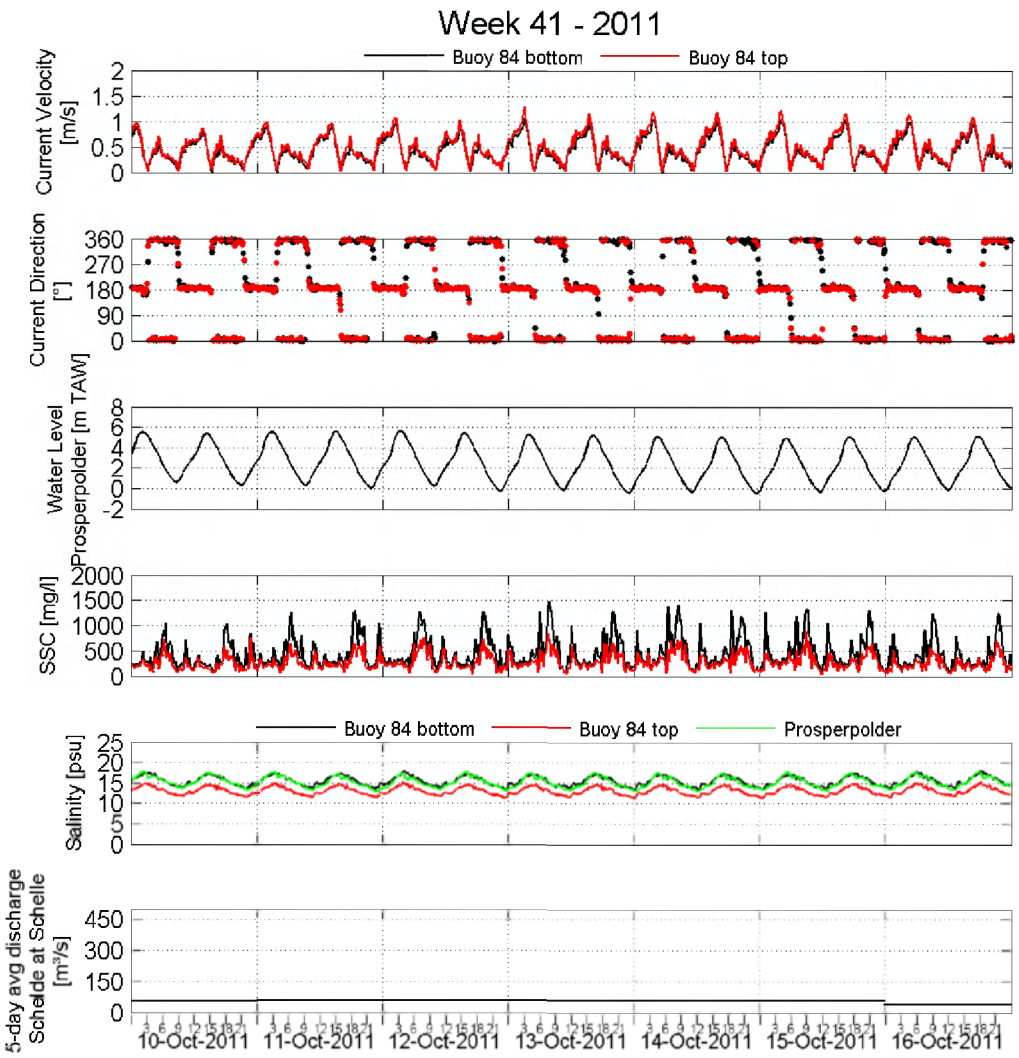
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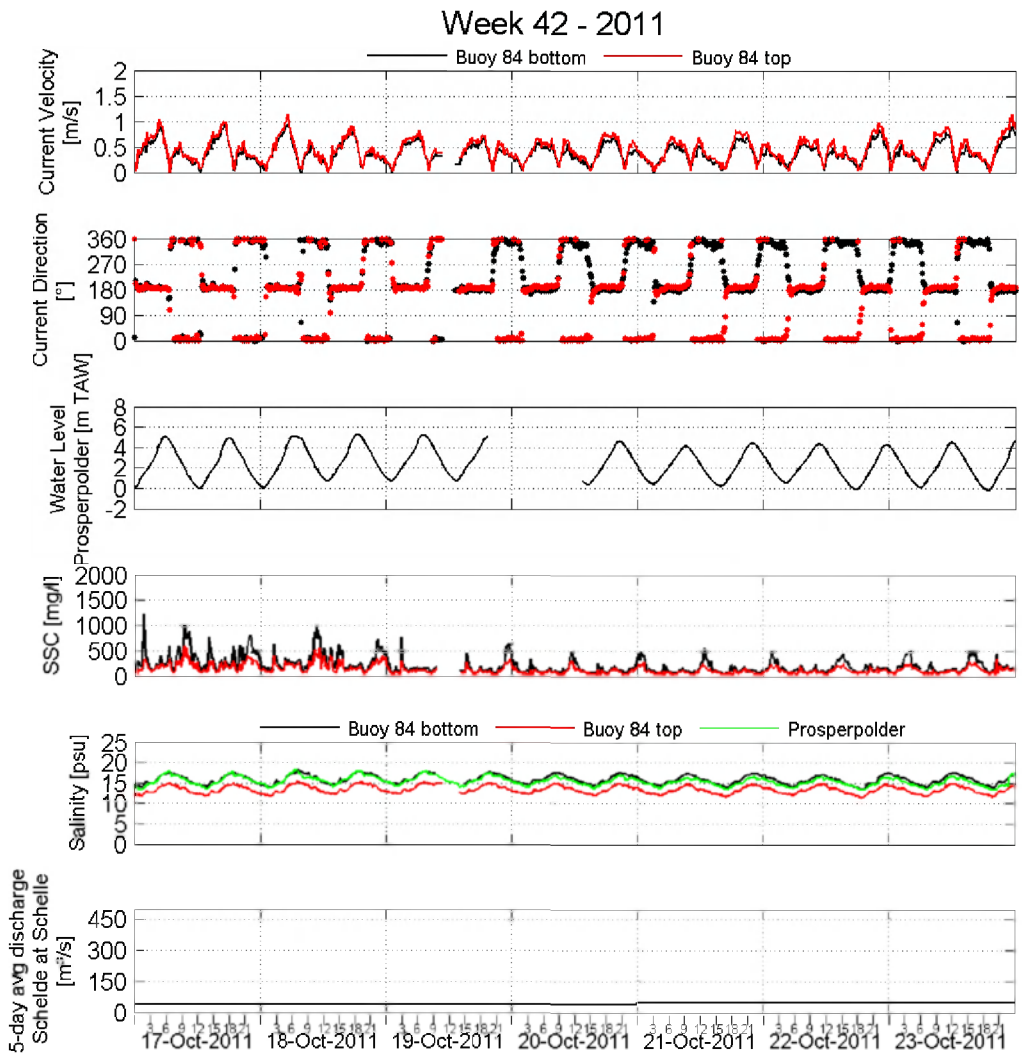
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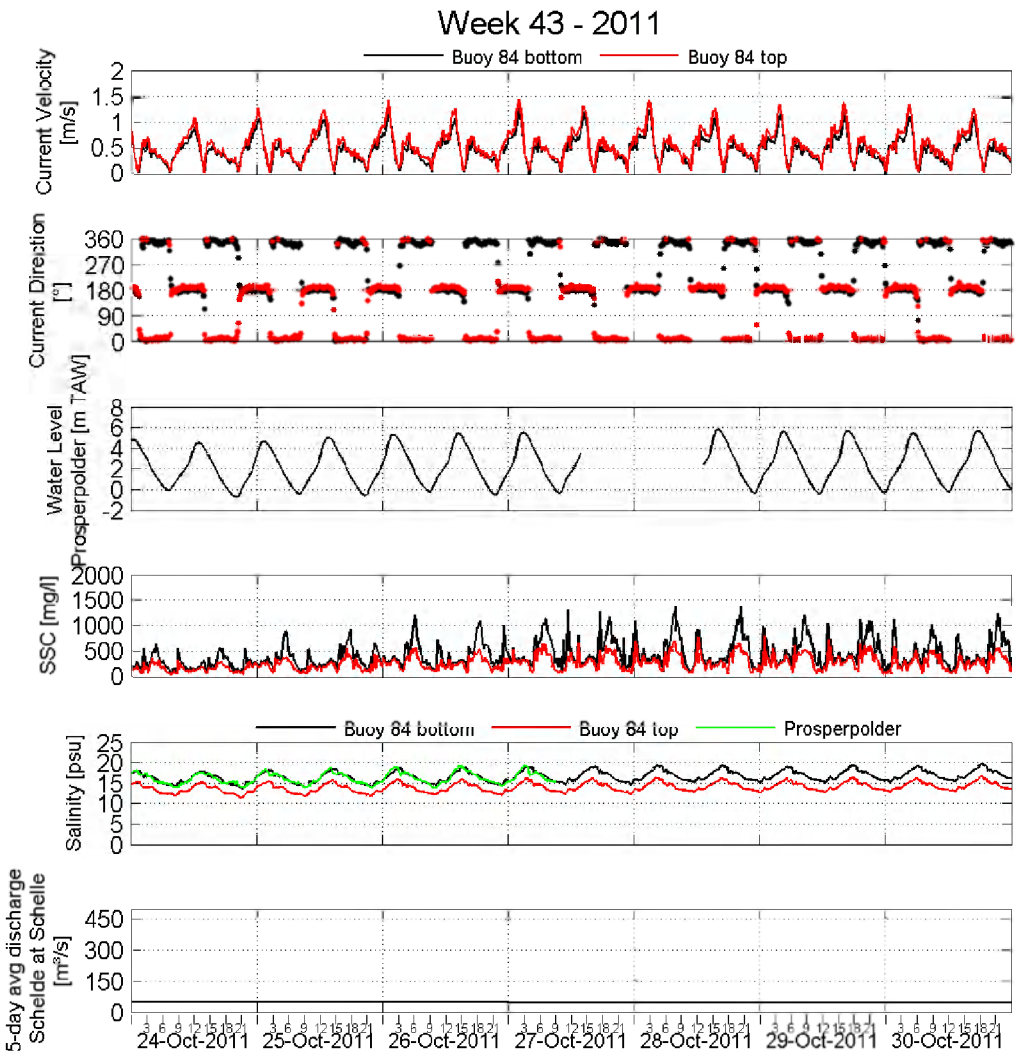
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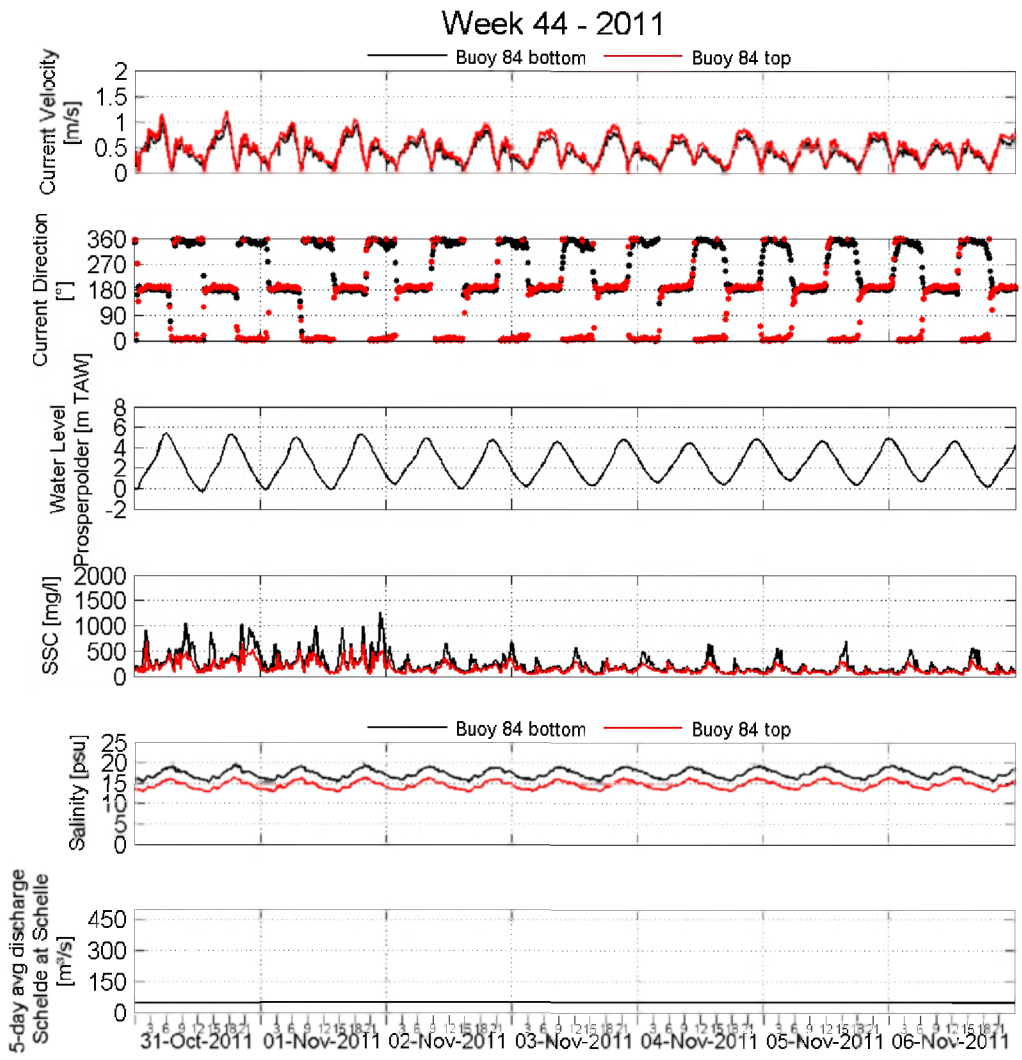
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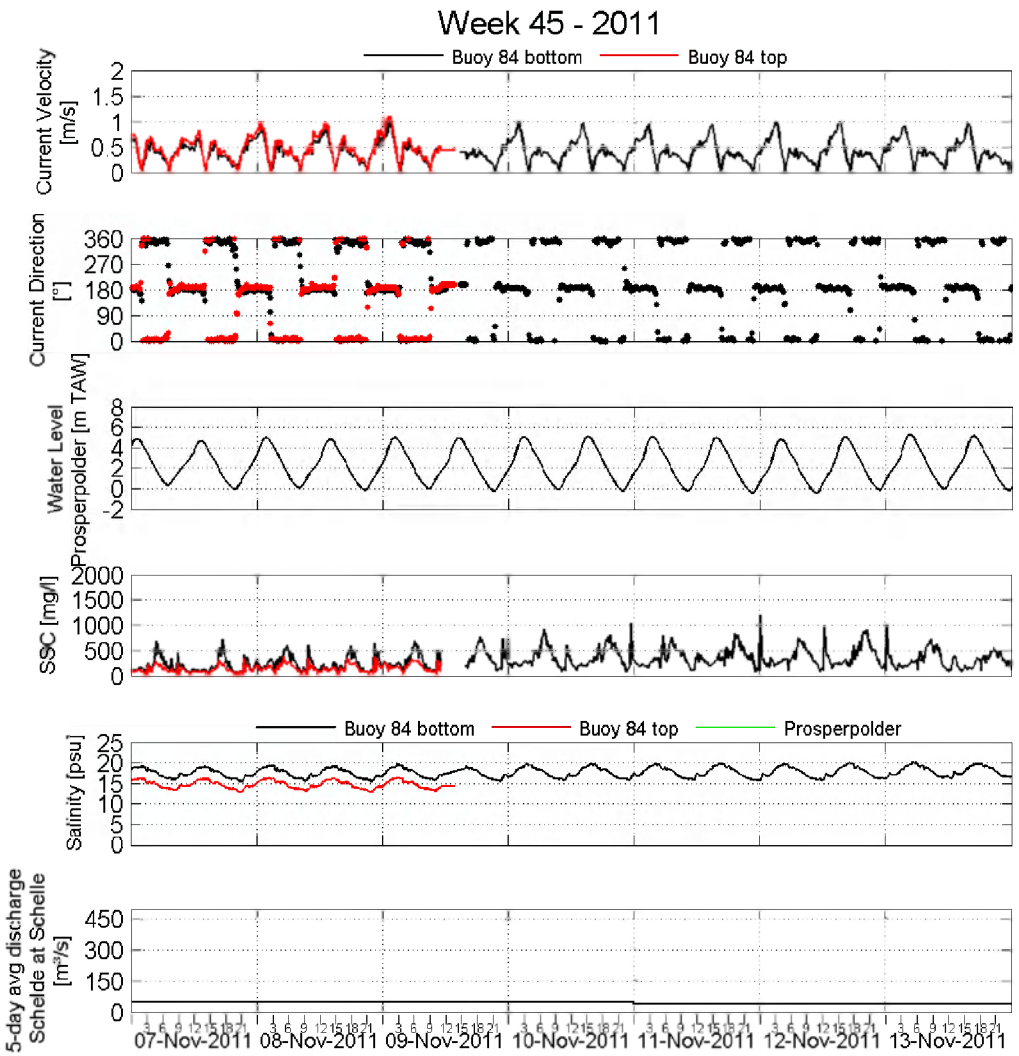
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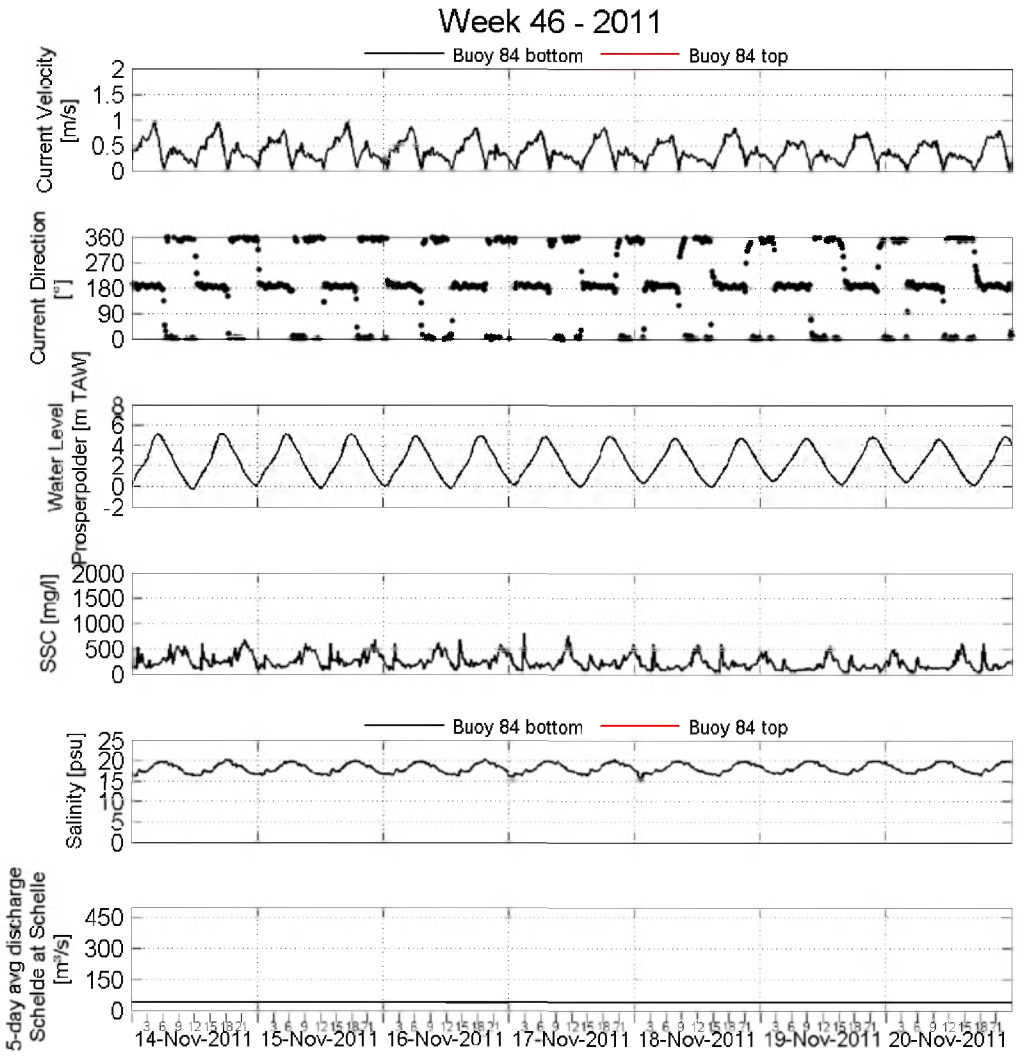
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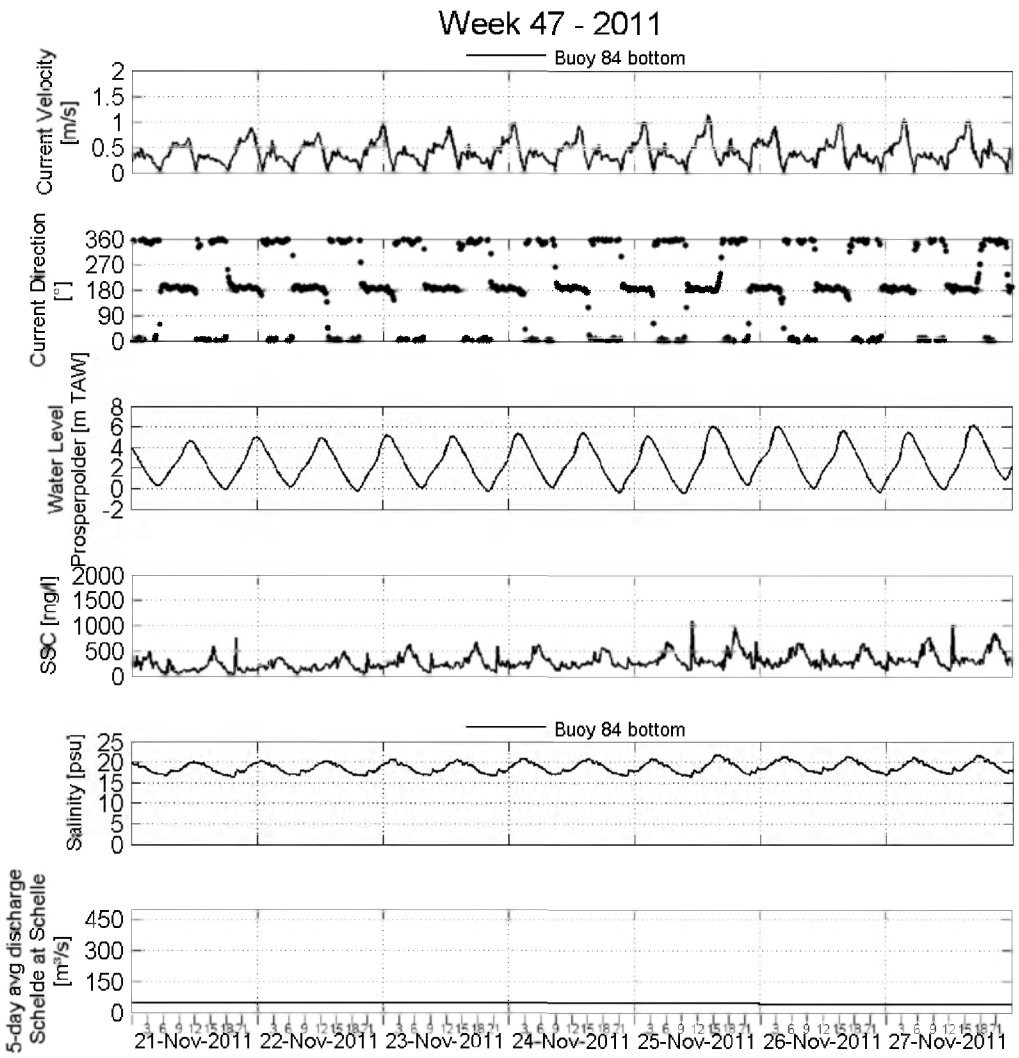
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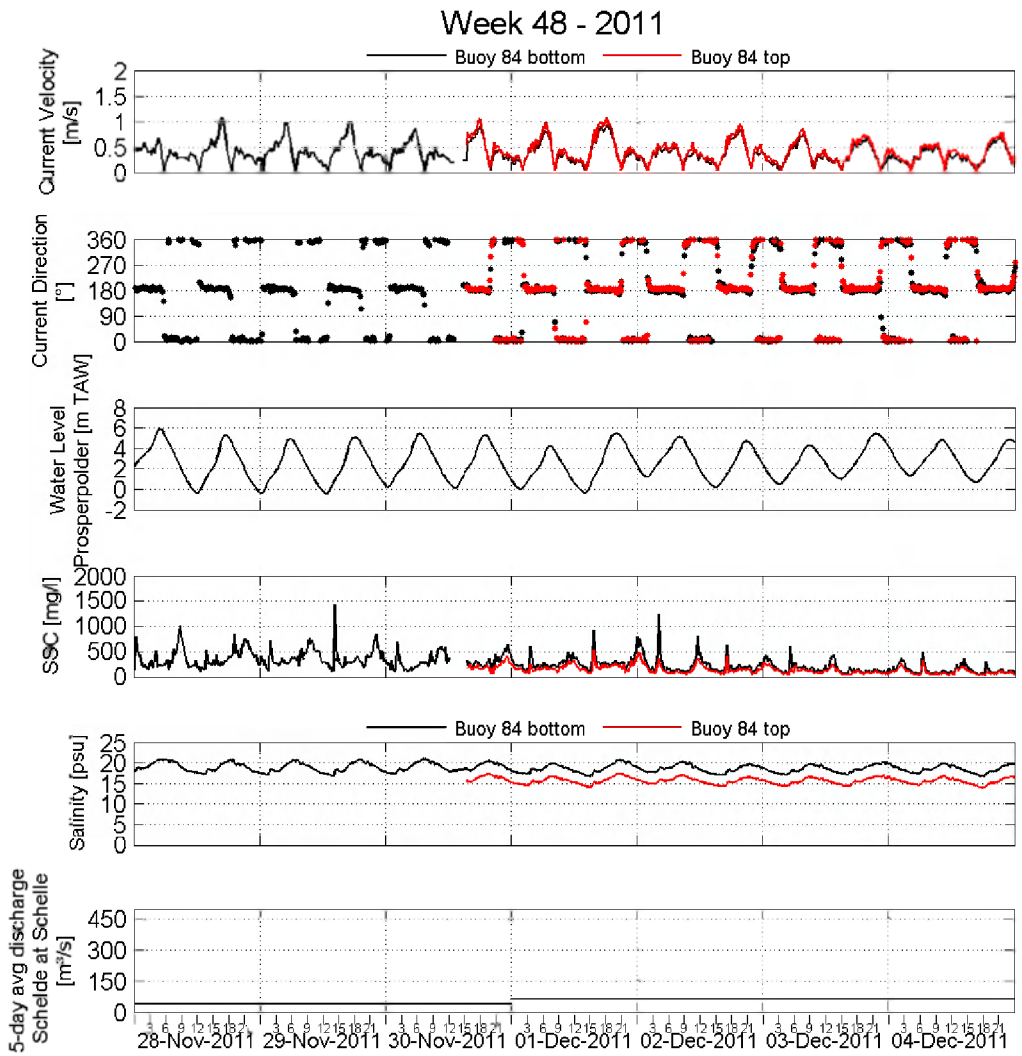
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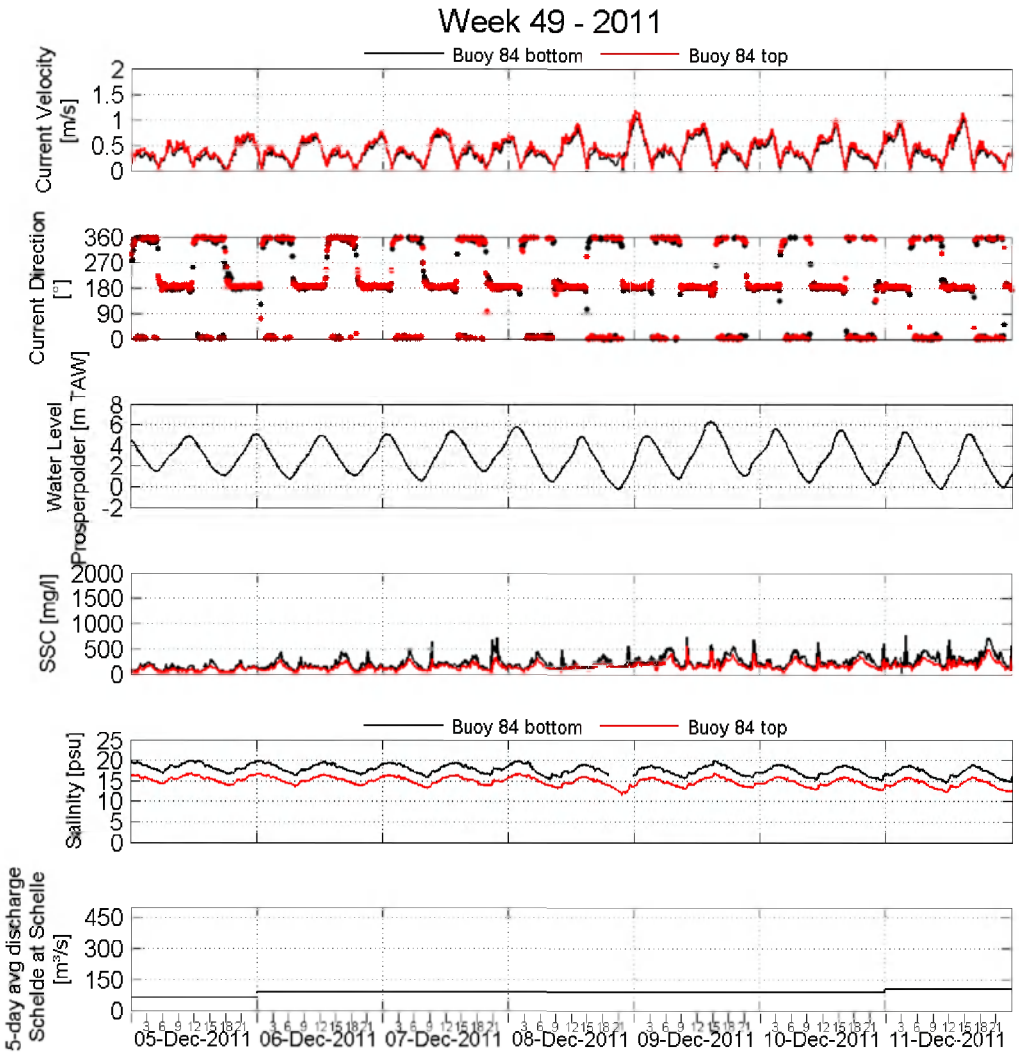
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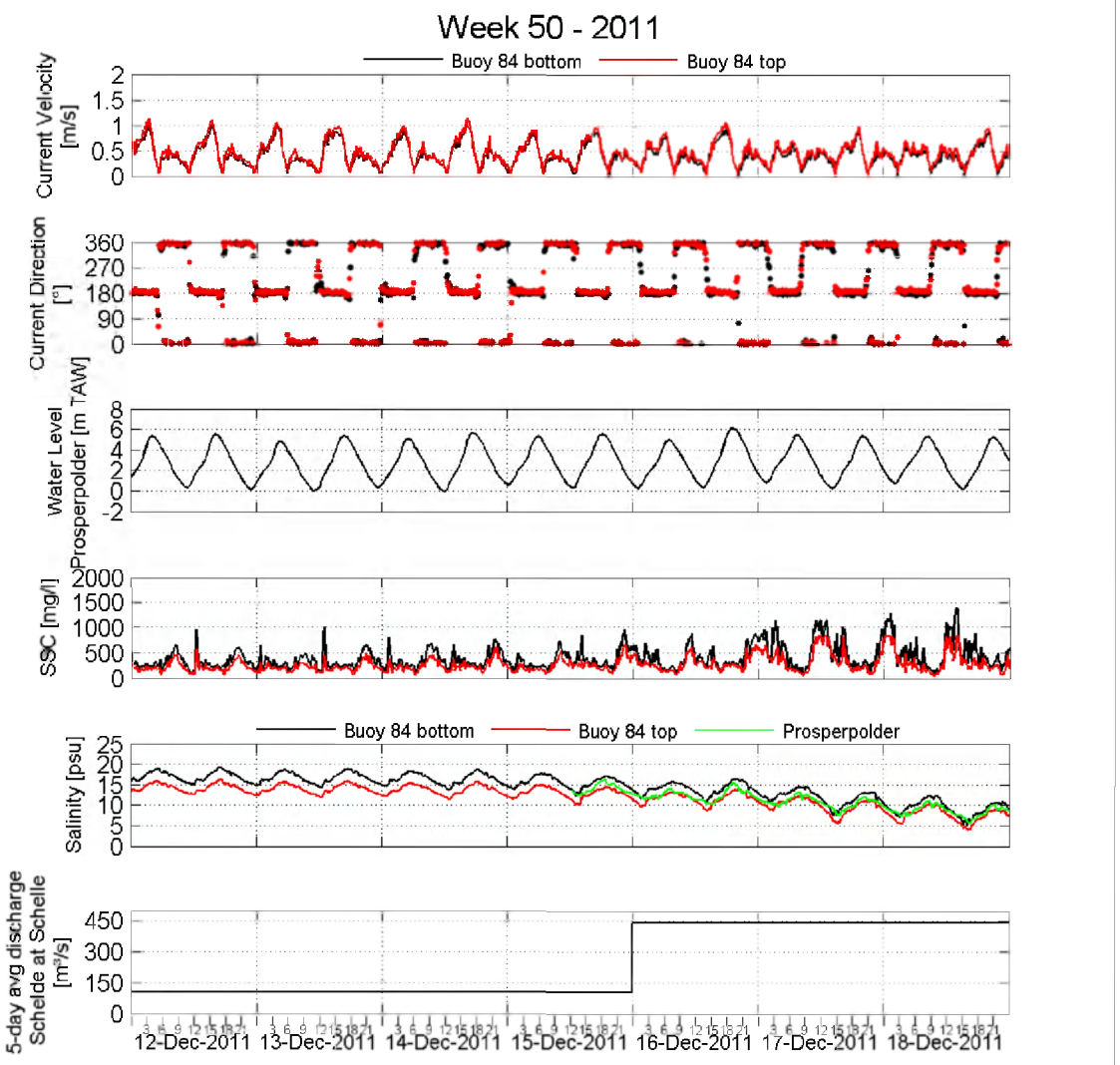
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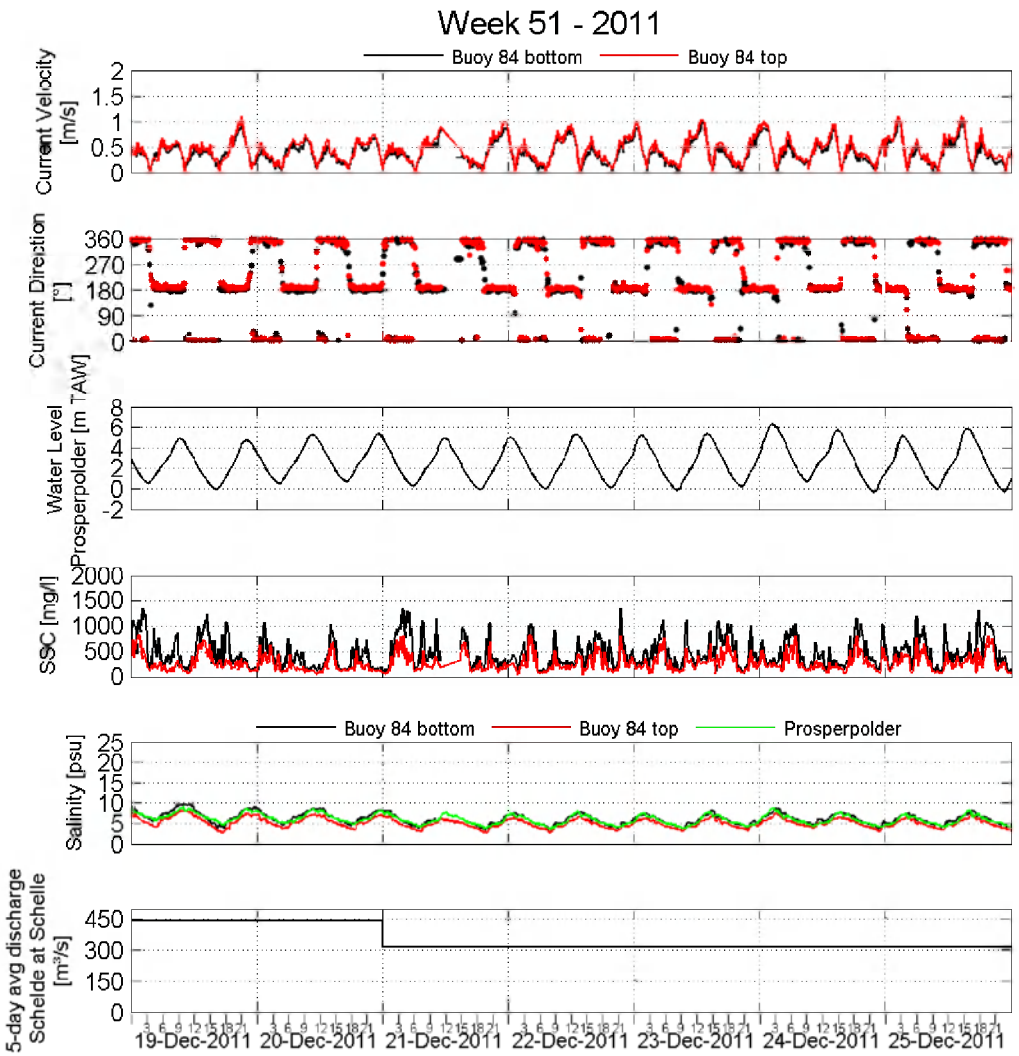
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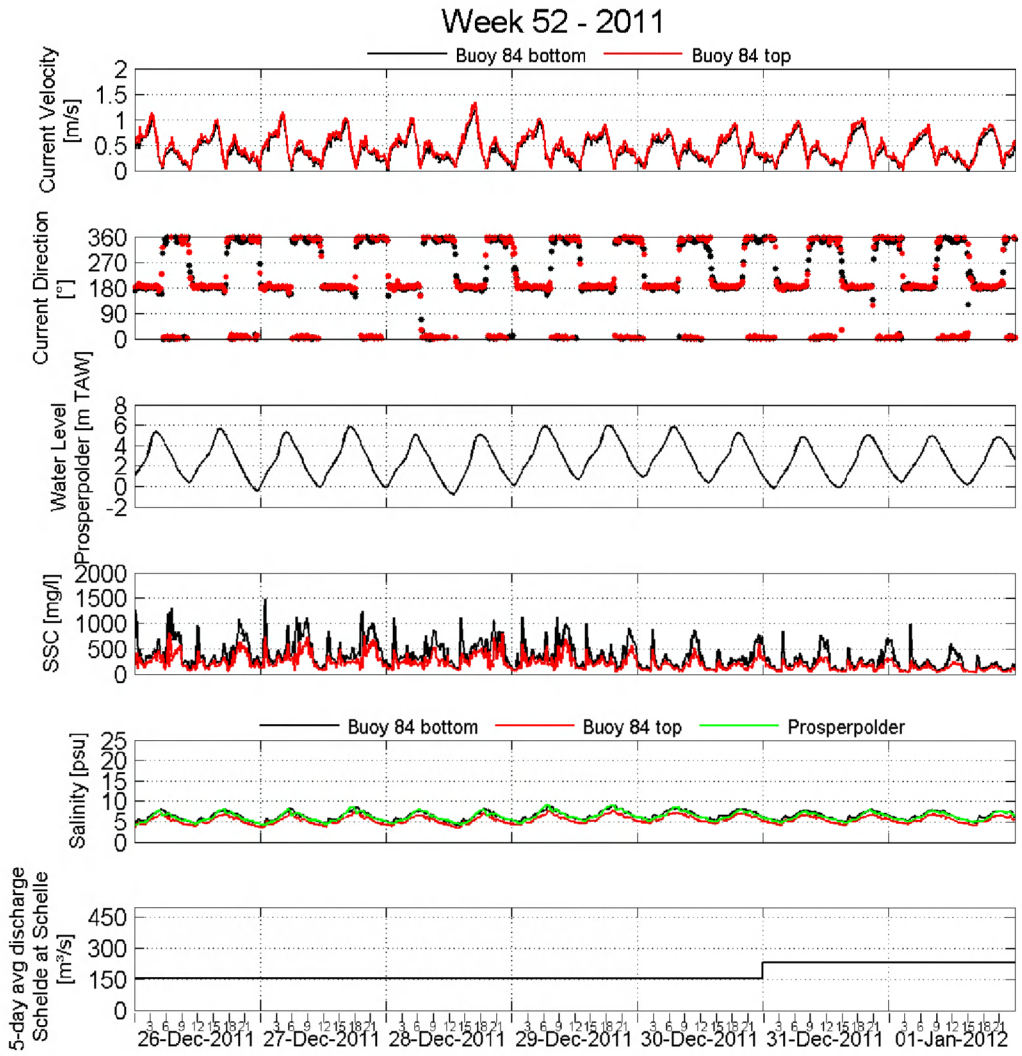
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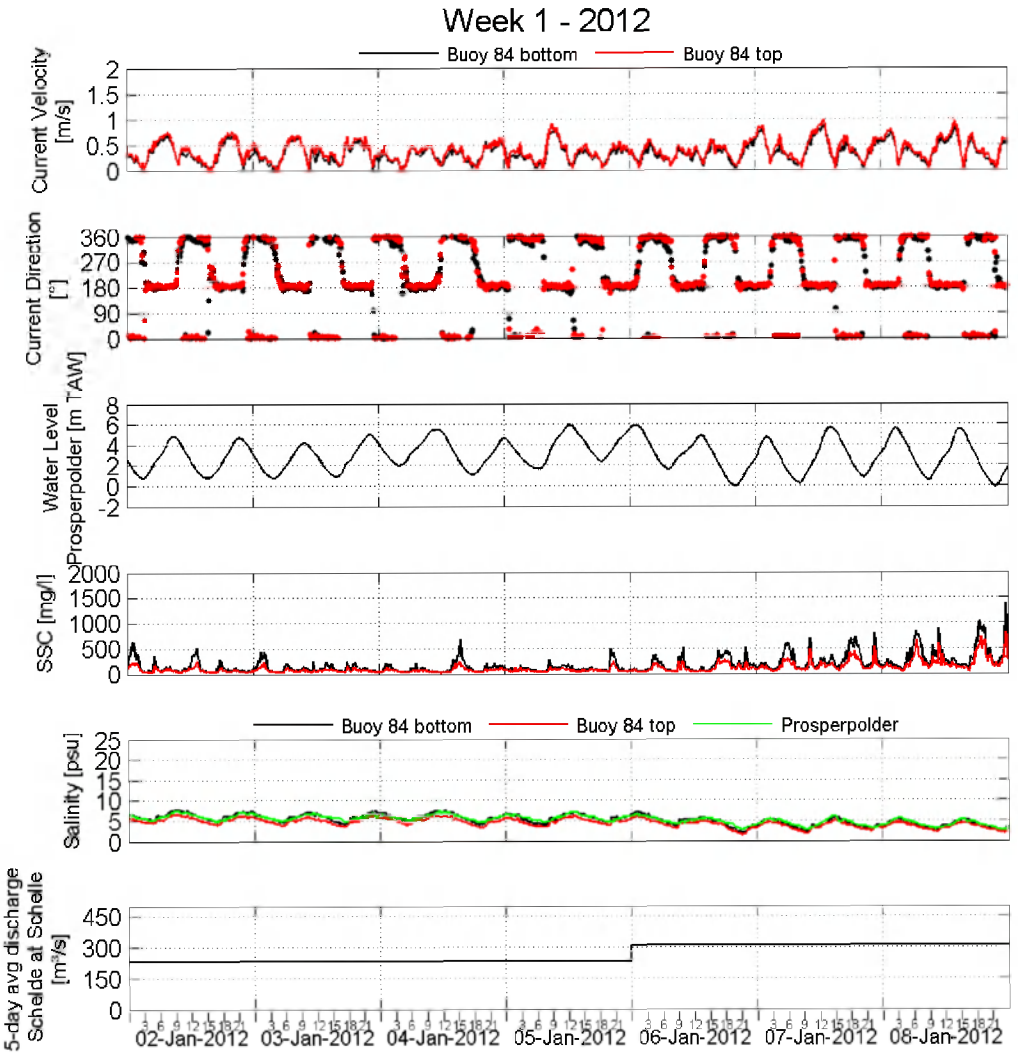
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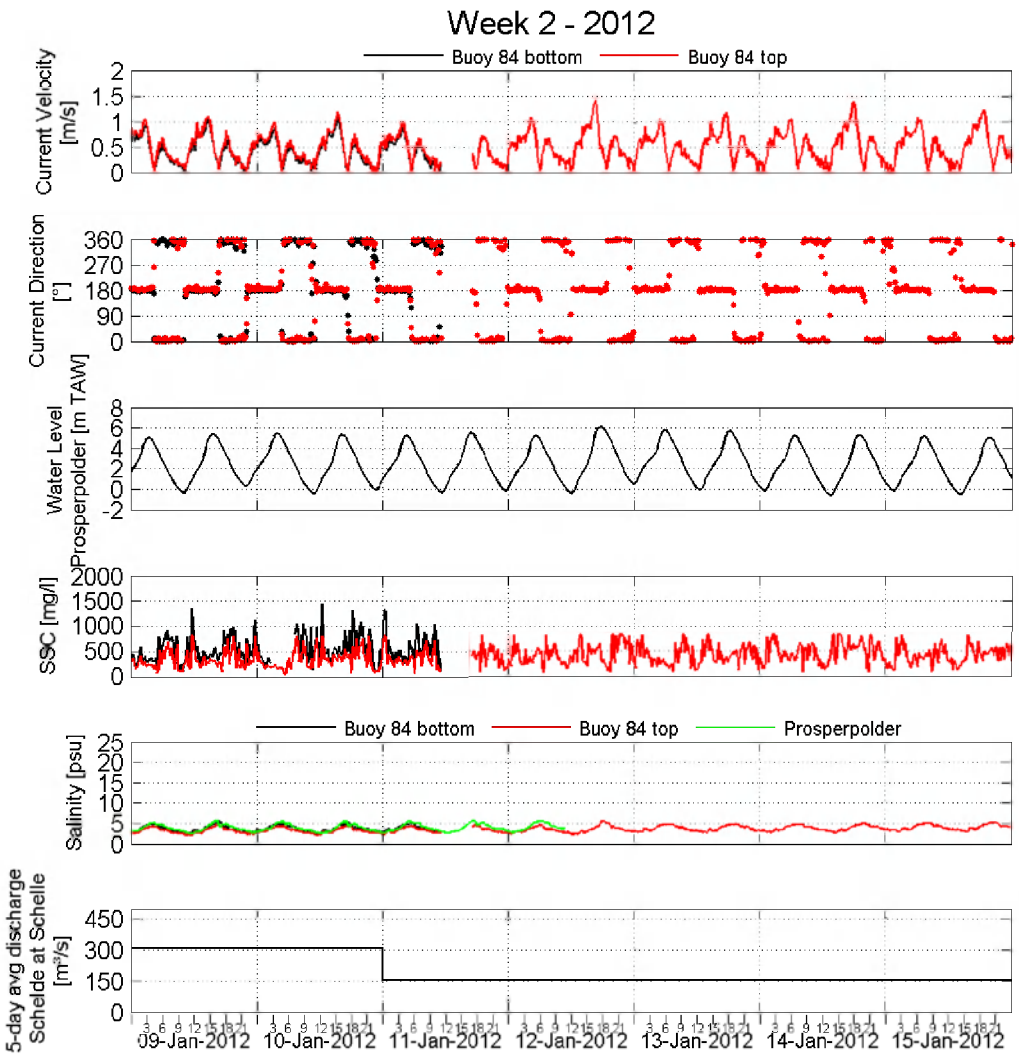
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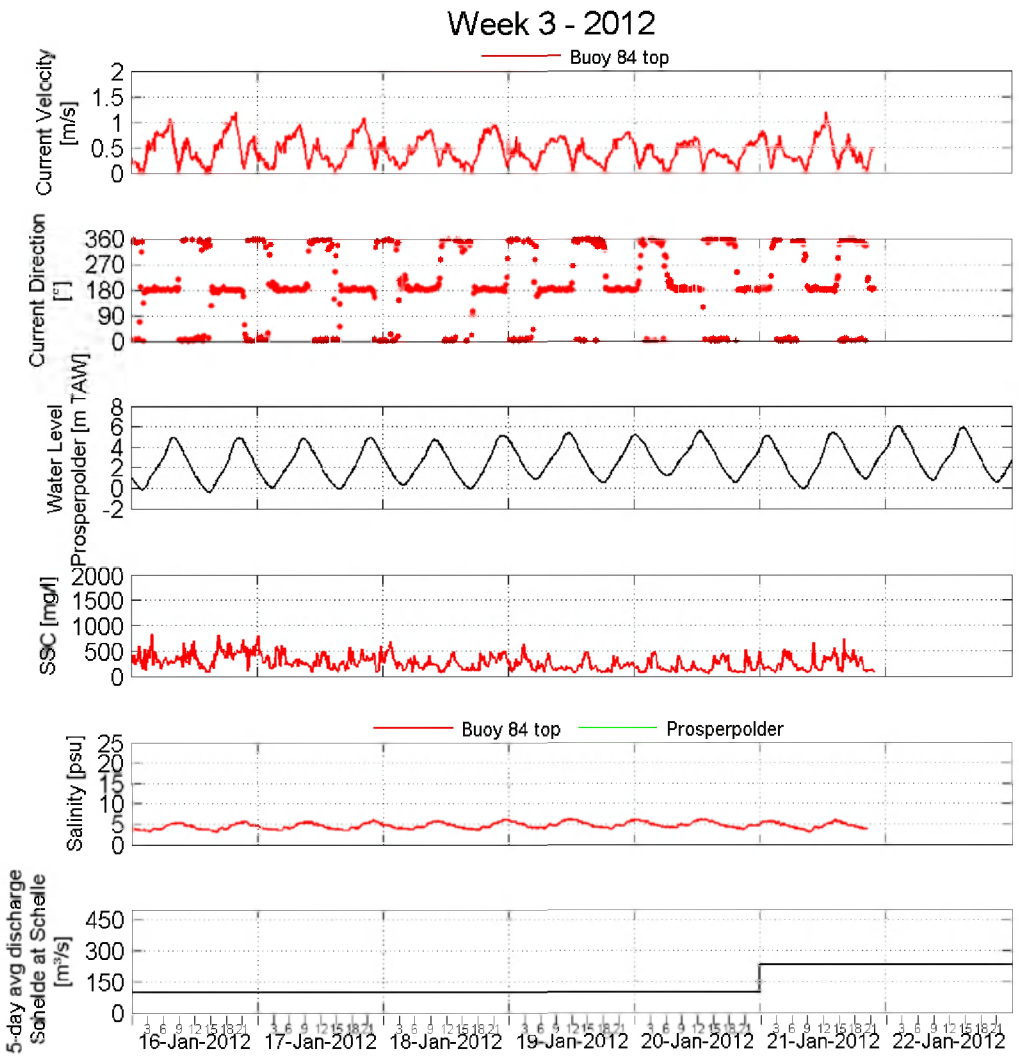
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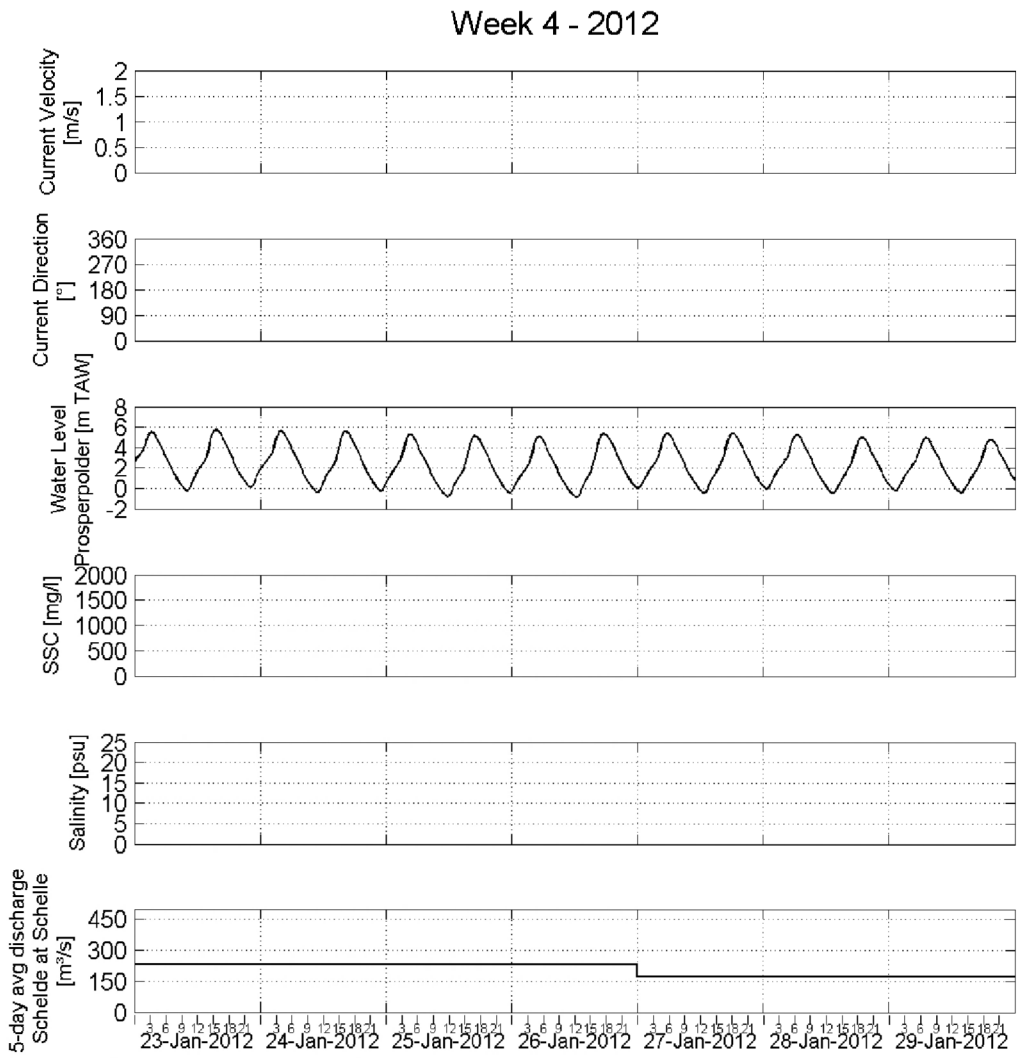
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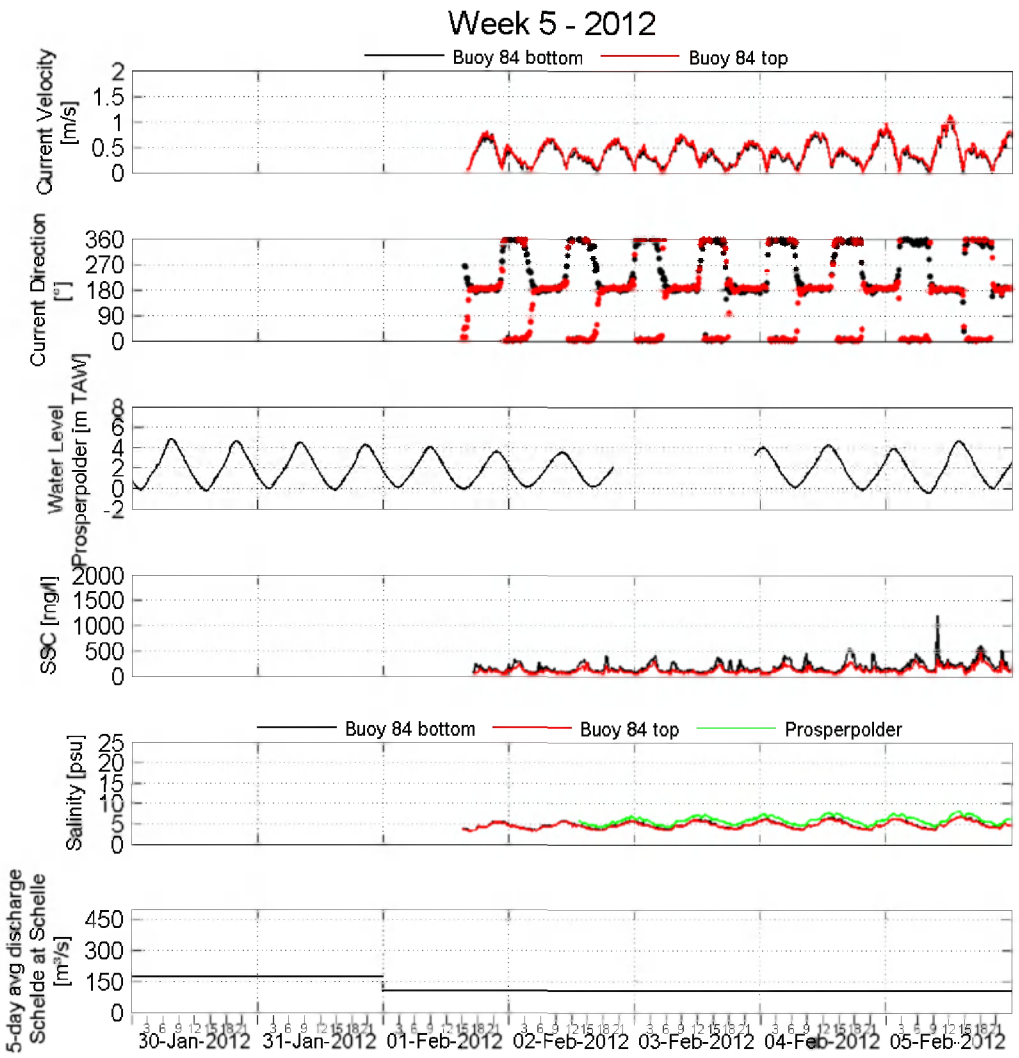
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Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

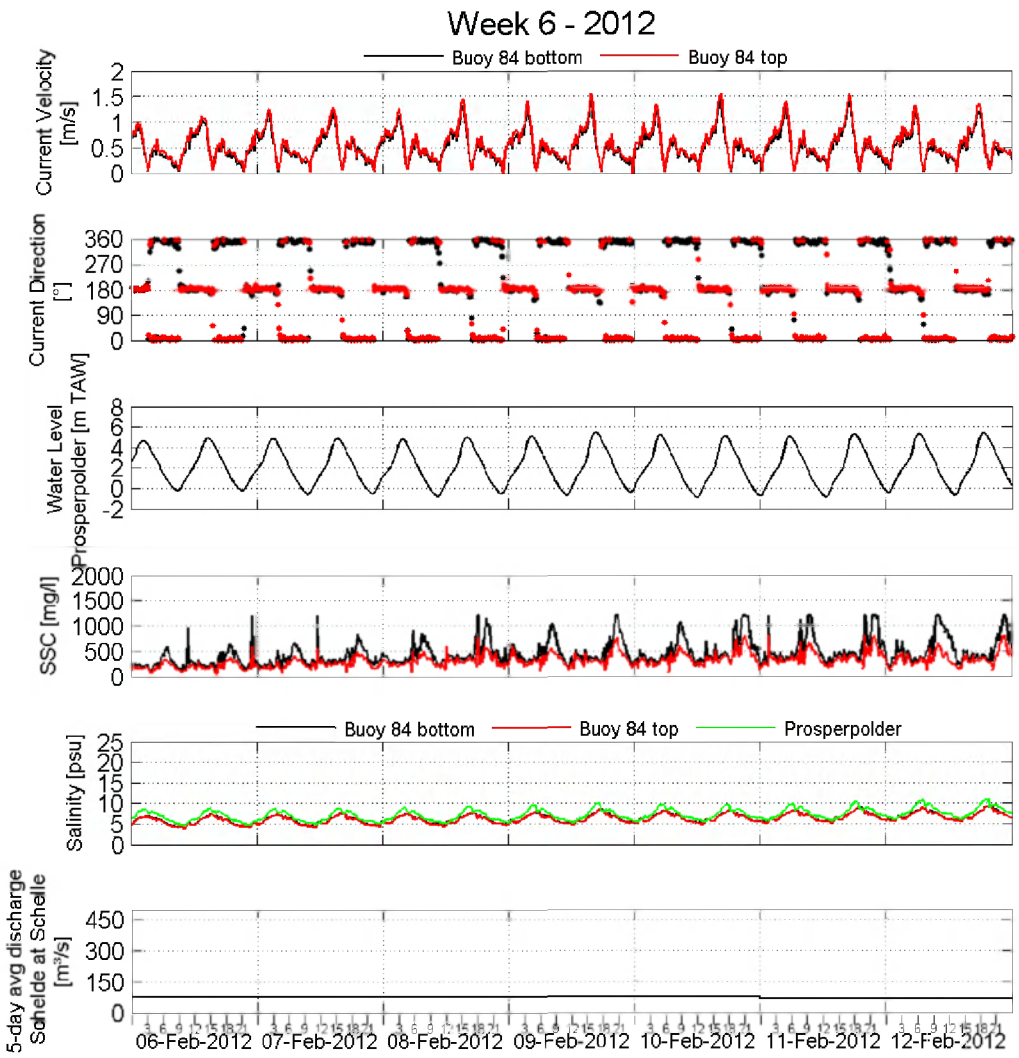
Location:

Buoy 84 (top & bottom) & Prosperpolder

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

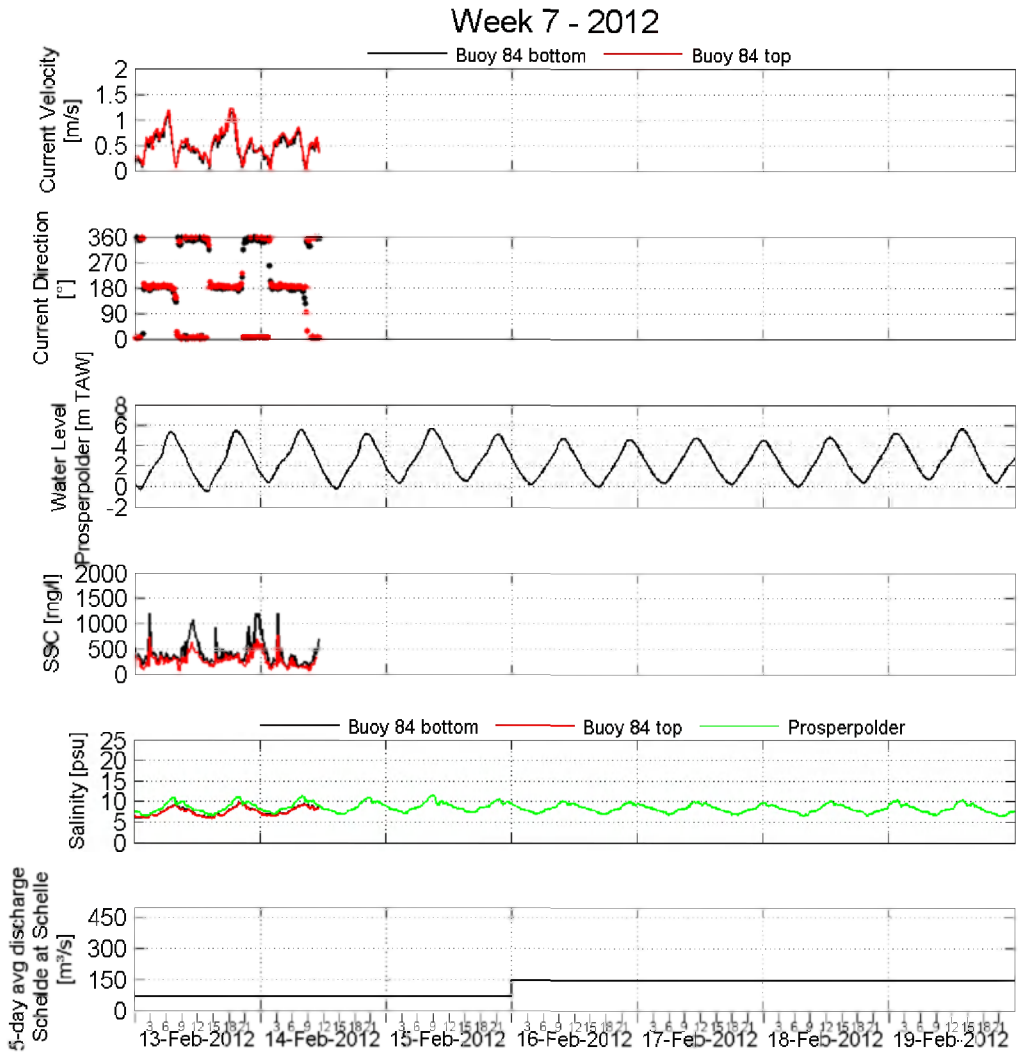
Location:

Buoy 84 (top & bottom) & Prosperpolder

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

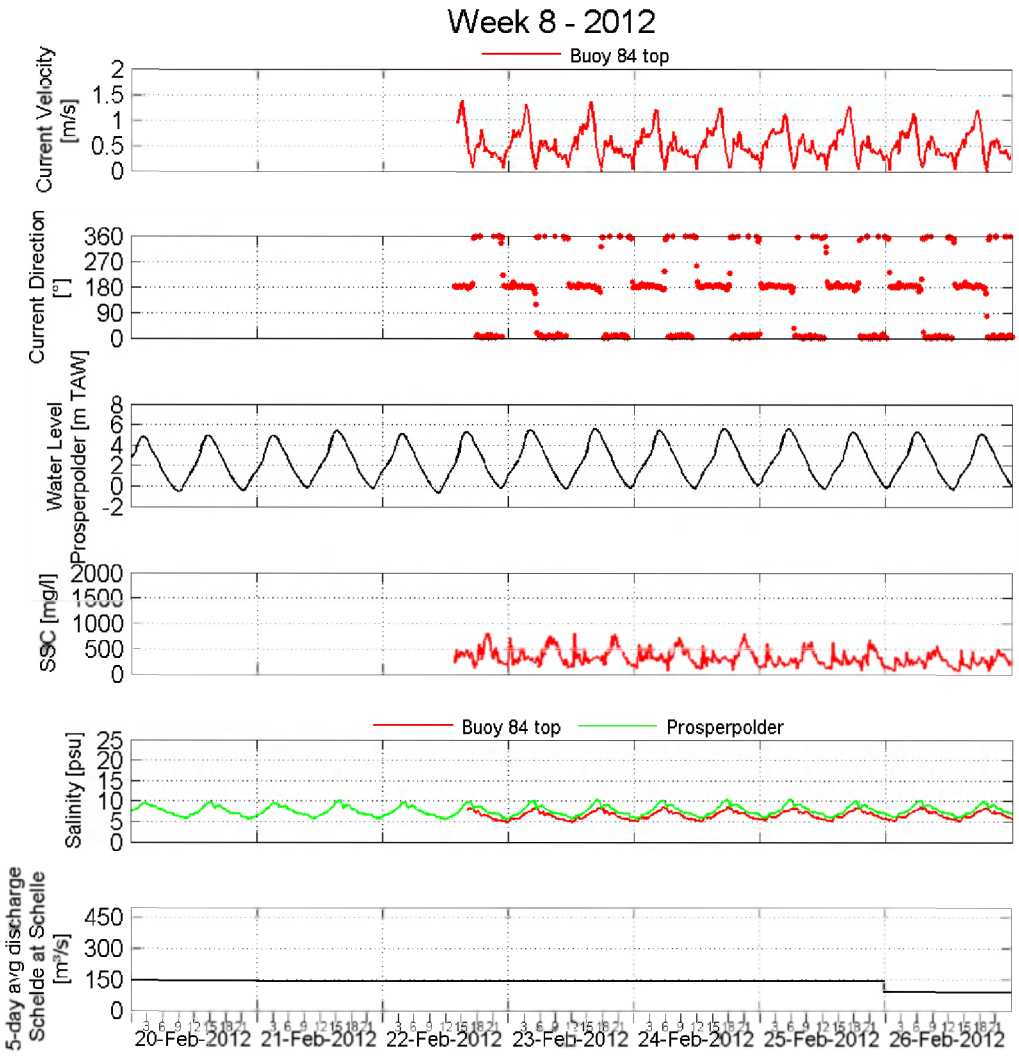
Location:

Buoy 84 (top & bottom) & Prosperpolder

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

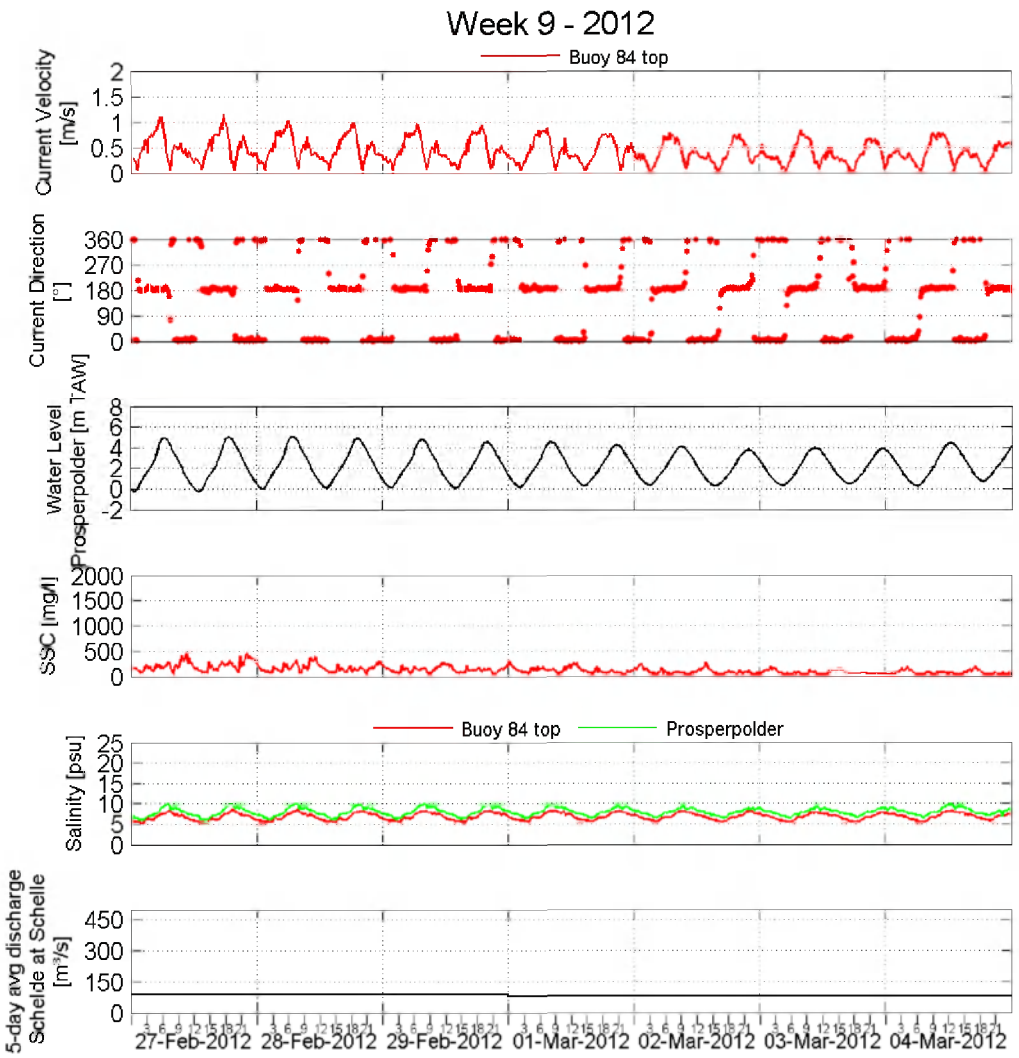
Location:

Buoy 84 (top & bottom) & Prosperpolder

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

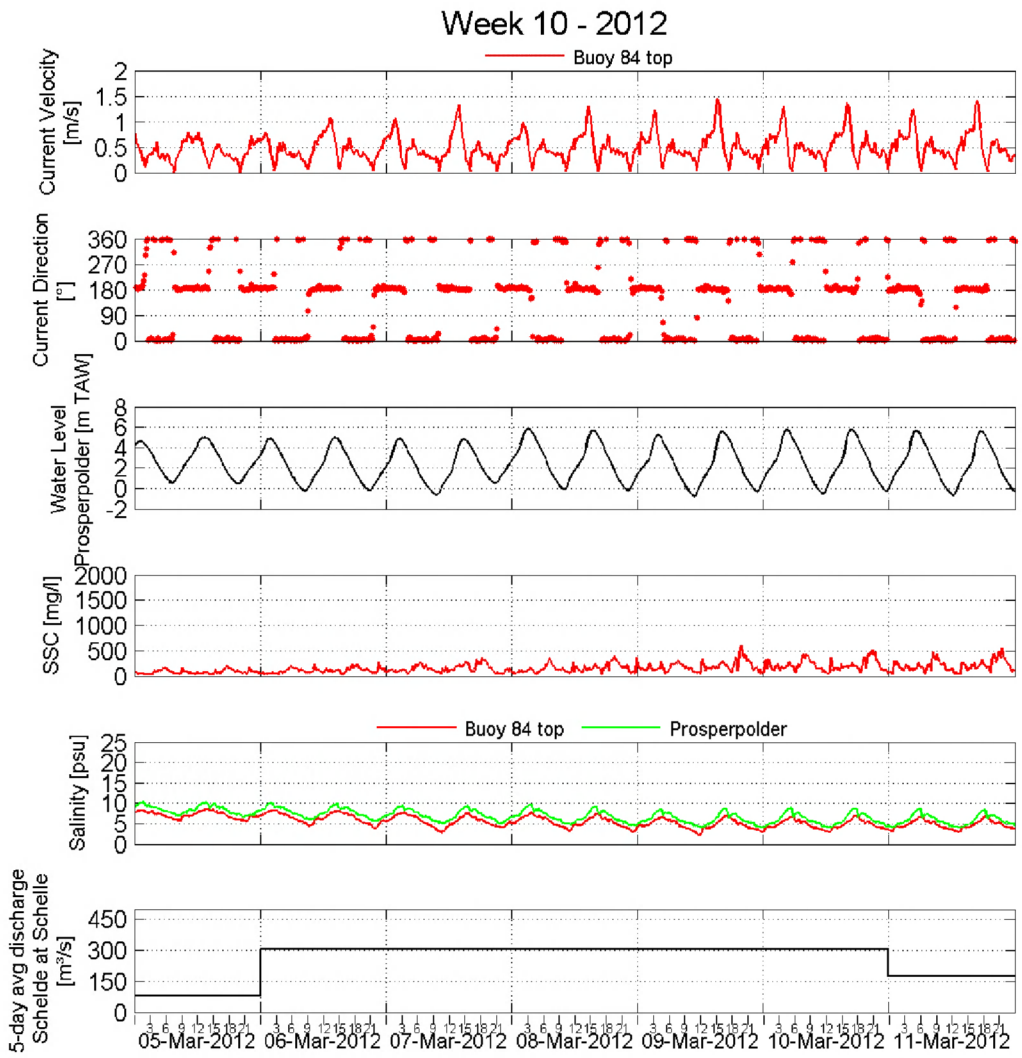
Location:

Buoy 84 (top & bottom) & Prosperpolder

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

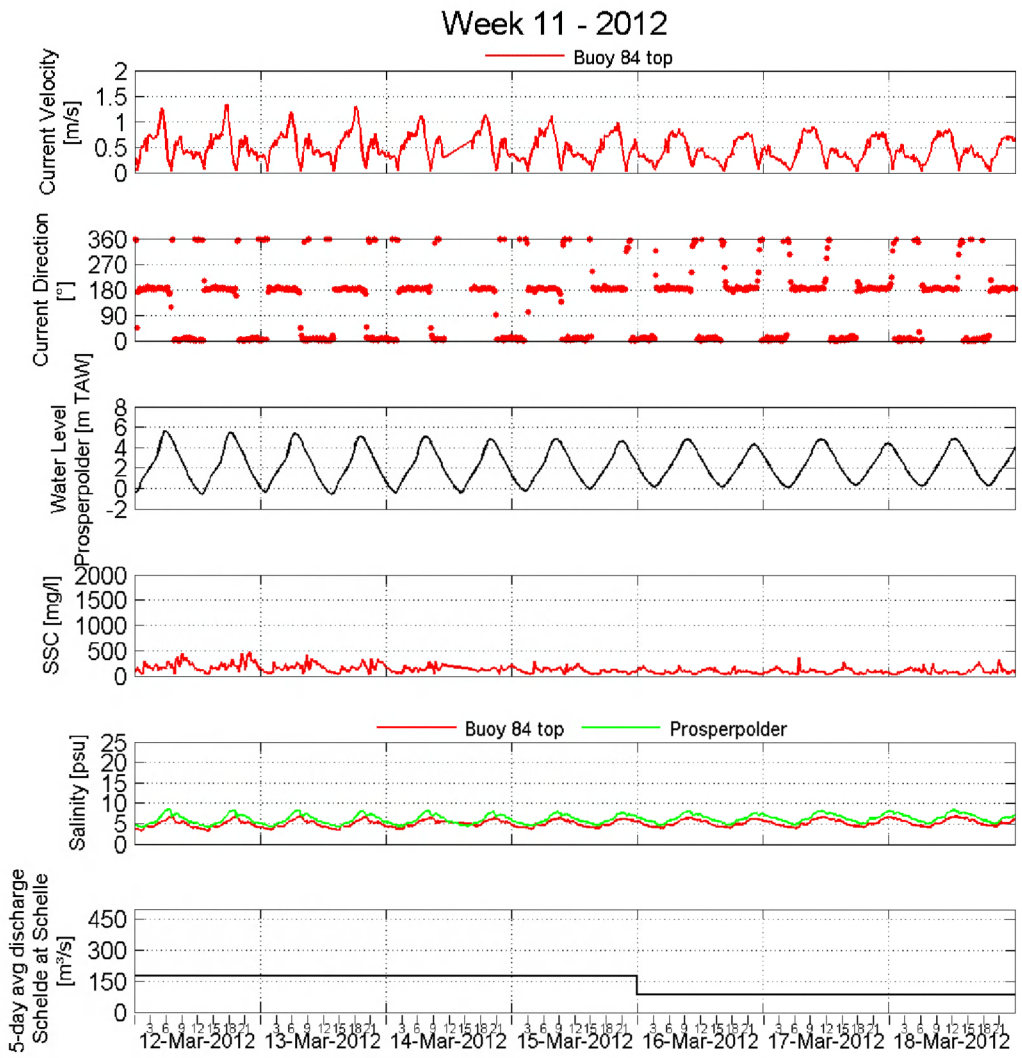
Location:

Buoy 84 (top & bottom) & Prosperpolder

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

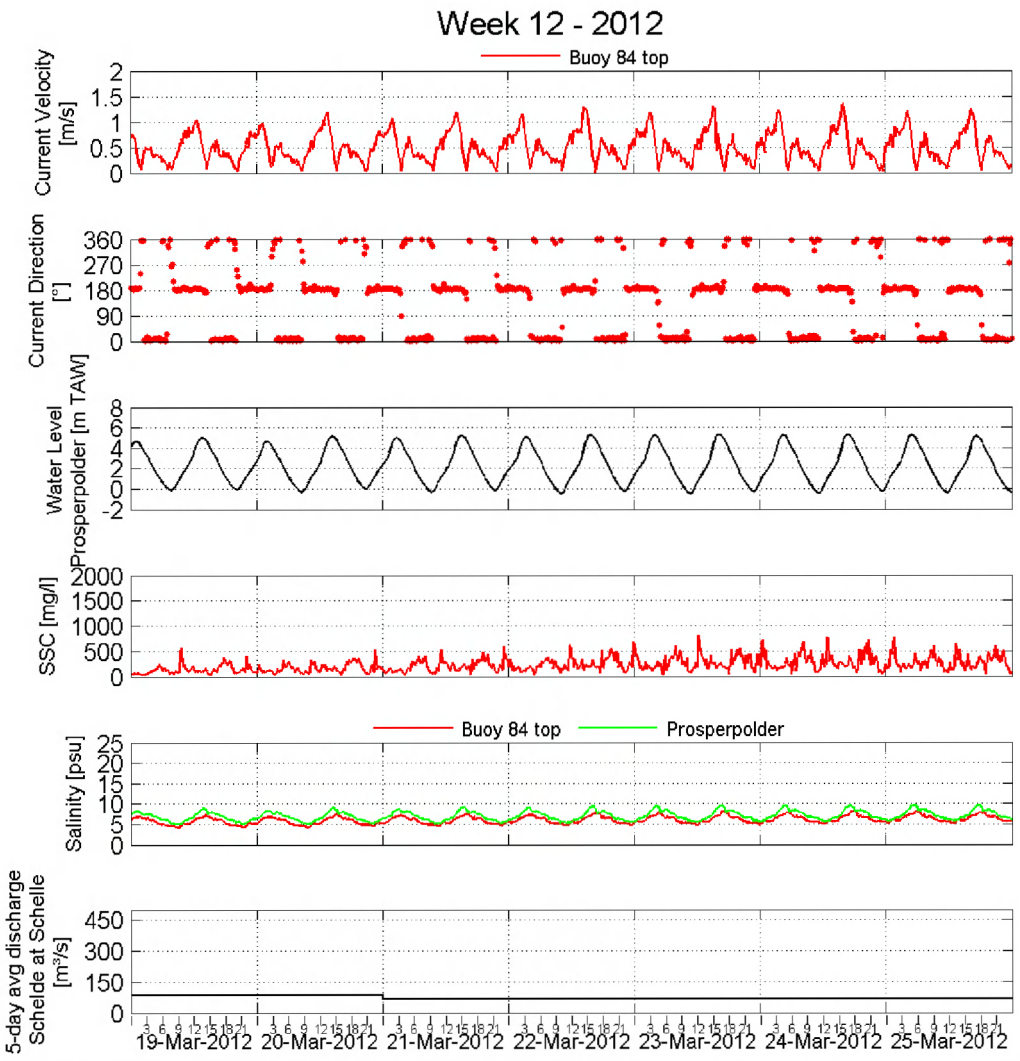
Location:

Buoy 84 (top & bottom) & Prosperpolder

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

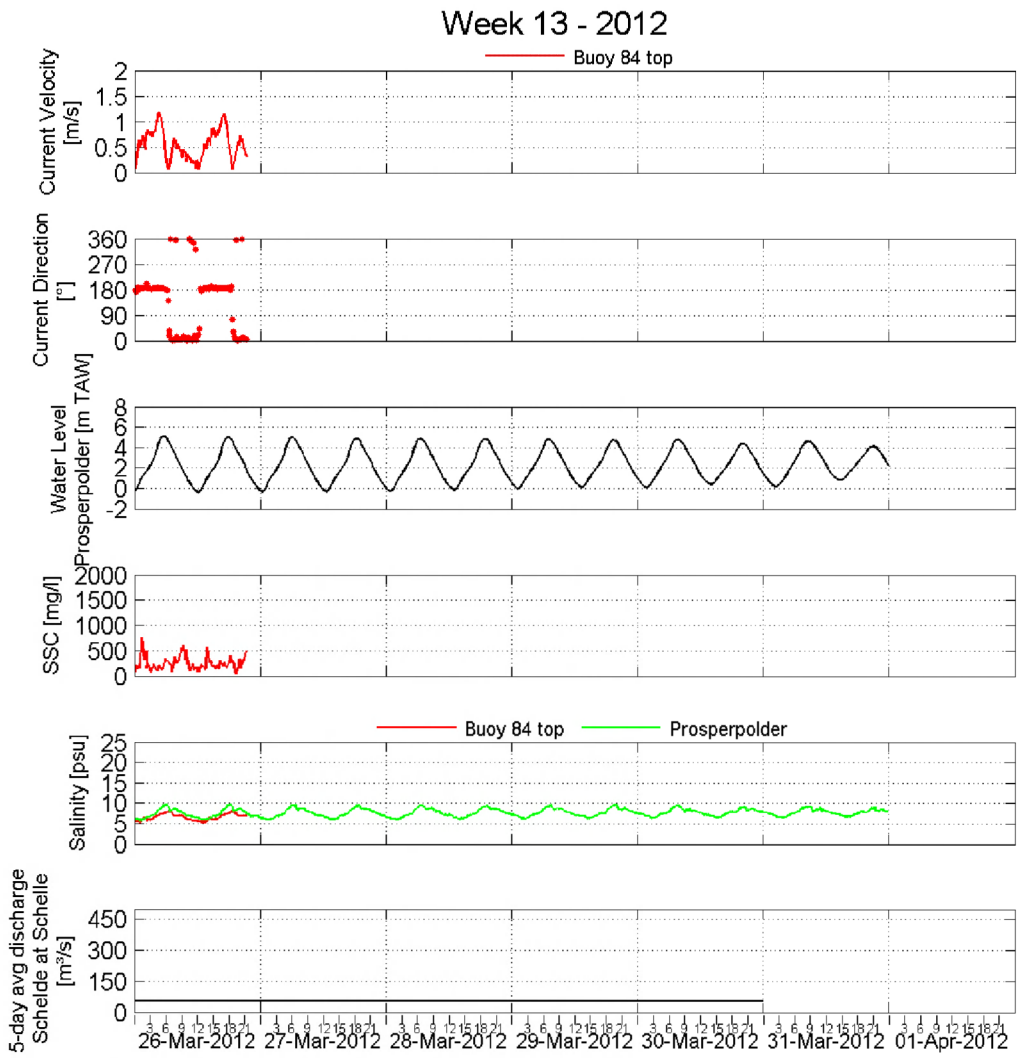
Location:

Buoy 84 (top & bottom) & Prosperpolder

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

11354 Boundary conditions: yearly report 01/04/2011 - 31/03/2012



Week series: current velocity & direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

Location:

Buoy 84 (top & bottom) & Prosperpolder

In Association with: Deltares, GEMS International

I/RA/11354/10.103/MBO/ANF

A.2 Monthly results Minimum, Maximum and Average Velocity Magnitude, Temperature, Salinity & Suspended Sediment Concentration

Location: Oosterweel left bank
4.5 meter above bottom [-2.0 m TAW]

Velocity magnitude [m/s]			
Month	***Minimum***	***Maximum***	***Average***
April 2010	0.01	1.41	0.67
May 2010	0.01	1.33	0.64
June 2010	0.01	1.42	0.64
July 2010	0.01	1.28	0.65
August 2010	0.01	1.41	0.67
September 2010	0.01	1.44	0.67
October 2010	0.01	1.49	0.67
November 2010	0.01	1.32	0.69
December 2010	0.01	1.27	0.66
January 2011	0.01	1.40	0.63
February 2011	0.01	1.37	0.67
March 2011	0.01	1.25	0.65
Temperature [°C]			
Month	***Minimum***	***Maximum***	***Average***
April 2011	10.5	16.6	13.5
May 2011	15.6	18.1	17.0
June 2011	17.4	19.8	18.7
July 2011	18.7	20.6	19.6
August 2011	18.72	20.7	19.9
September 2011	17.0	20.1	18.5
October 2011	12.4	19.4	16.0
November 2011	9.1	14.3	12.1
December 2011	5.0	10.5	7.4
January 2012	5.7	8.1	6.9
February 2012	0.7	6.1	3.6
March 2012	5.9	11.6	8.6

-: No data or less than 30% of the monthly data available.
*: Less than 70% of the monthly data available.

Salinity [ppt]						
Month	***Minimum***		***Maximum***		***Average***	
	HW	***LW***	***HW***	***LW***	***HW***	***LW***
April 2011	2.0	1.0	8.8	2.7	7.3	1.7
May 2011	4.7	2.0	11.1	4.7	9.6	3.6
June 2011	5.6	3.5	12.4	5.3	11.4	4.5
July 2011	3.6	2.5	11.5	4.8	10.4	3.7
August 2011	3.6	0.8	11.3	4.0	9.8	2.2
September 2011	2.0	1.2	11.4	3.3	9.0	2.0
October 2011	3.7	2.5	13.2	4.5	10.5	3.5
November 2011	5.1	3.6	14.6	5.2	13.1	4.3
December 2011	0.2	0.2	14.4	4.7	6.9	1.5
January 2012	0.3	0.3	3.9	0.7	2.4	0.5
February 2012	0.6	0.5	6.3	1.5	4.6	0.8
March 2012	1.5	0.5	5.4	1.2	4.3	0.8

Suspended sediment concentration [mg/l]			
Month	**Minimum**	**Maximum**	**Average**
April 2011	56	765	390
May 2011	65	970	416
June 2011	80	787	351
July 2011	61	813	305
August 2011	38	648	200
September 2011	58	852	346
October 2011	75	944	454
November 2011	14	1197	325
December 2011	50	981	286
January 2012	27	860	326
February 2012	53	887	332
March 2012	27	890	310

-: No data or less than 30% of the monthly data available.
*: Less than 70% of the monthly data available.

Location: Oosterweel left bank
1.0 meter above bottom [-5.5 m TAW]

Velocity magnitude [m/s]			
Month	***Minimum***	***Maximum***	***Average***
April 2011	0.01	1.16	0.49
May 2011	0.01*	0.94*	0.47*
June 2011	0.01	1.15	0.48
July 2011	0.01	1.03	0.48
August 2011	0.01	1.08	0.50
September 2011	0.01	1.15	0.49
October 2011	0.01	1.12	0.50
November 2011	0.01	1.02	0.51
December 2011	0.01	1.07	0.55
January 2012	0.01	118	0.48
February 2012	0.01	1.17	0.52
March 2012	0.01	1.21	0.51
Temperature [°C]			
Month	***Minimum***	***Maximum***	***Average***
April 2011	10.7	16.6	13.6
May 2011	15.6*	17.8*	16.8*
June 2011	17.4	19.5	18.7
July 2011	18.7	20.6	19.5
August 2011	18.7	20.8	19.9
September 2011	17.1	20.1	18.5
October 2011	12.4	19.4	16.0
November 2011	9.1	14.3	12.0
December 2011	5.0	10.6	7.4
January 2012	5.2	7.8	6.6
February 2012	0.2	5.7	3.2
March 2012	5.4	11.1	8.1

-: No data or less than 30% of the monthly data available.
*: Less than 70% of the monthly data available.

Salinity [ppt]						
Month	***Minimum***		***Maximum***		***Average***	
	HW	***LW***	***HW***	***LW***	***HW***	***LW***
April 2011	1.1	-	8.8	-	4.7	-
May 2011	2.0*	-	11.2*	-	6.5*	-
June 2011	4.0	3.8	12.3	5.5	8.5	4.9
July 2011	2.6	3.6	11.4	4.6	7.6	4.1
August 2011	0.9	-	11.2	-	6.3	-
September 2011	1.3	-	11.3	-	5.8	-
October 2011	2.6	-	13.1	-	7.7	-
November 2011	3.6	-	14.6	-	9.0	-
December 2011	0.2	-	14.4	-	5.1	-
January 2012	0.3	-	3.9	-	1.7	-
February 2012	0.5	-	6.2	-	2.7	-
March 2012	0.4	-	5.4	-	2.6	-

Suspended sediment concentration [mg/l]			
Month	***Minimum***	***Maximum***	***Average***
April 2011	118	778	457
May 2011	112	927	438
June 2011	135	789	438
July 2011	126	708	380
August 2011	85	676	243
September 2011	121	853	412
October 2011	116	930	512
November 2011	111	887	360
December 2011	74	961	308
January 2012	49	783	315
February 2012	65	620	316
March 2012	47	620	293

-: No data or less than 30% of the monthly data available.
*: Less than 70% of the monthly data available.

Location: Buoy 84

3.3 meter above bottom [-6.0 m TAW]

Velocity magnitude [m/s]			
Month	***Minimum***	***Maximum***	***Average***
April 2011	0.01	1.45	0.55
May 2011	0.01	1.27	0.53
June 2011	0.01	1.5	0.51
July 2011	0.01	1.32	0.53
August 2011	0.01	1.45	0.53
September 2011	0.01	1.45	0.48
October 2011	0.01	1.43	0.47
November 2011	0.01*	1.11*	0.46*
December 2011	0.01	1.34	0.44
January 2012	0.01*	1.41*	0.43*
February 2012	0.01*	1.55*	0.50*
March 2012	0.01	1.44	0.47
Temperature [°C]			
Month	***Minimum***	***Maximum***	***Average***
April 2011	10.4	16.6	13.3
May 2011	15.3	18.0	17.0
June 2011	17.1	20.0	18.7
July 2011	18.6	20.8	19.6
August 2011	18.8	21.4	20.1
September 2011	17.7	20.6	18.8
October 2011	13.4	19.7	16.4
November 2011	10.2*	15.0*	14.2*
December 2011	6.1	10.8	8.0
January 2012	6.8*	8.5*	7.6*
February 2012	2.0*	6.8*	4.2*
March 2012	5.8	11.6	8.2

-: No data or less than 30% of the monthly data available.
*: Less than 70% of the monthly data available.

Salinity [ppt]						
Month	***Minimum***		***Maximum***		***Average***	
	HW	***LW***	***HW***	***LW***	***HW***	***LW***
April 2011	6.4	-	11.9	-	9.3	-
May 2011	9.2	-	14	-	11.6	-
June 2011	11.4	-	15.2	-	13.2	-
July 2011	10	-	14.2	-	12.1	-
August 2011	8.8	-	14.3	-	12.1	-
September 2011	9.2	-	14.7	-	11.6	-
October 2011	11.5	11.9	16.4	13.5	13.8	12.6
November 2011	13.6*	13.4*	17*	13.7*	15.8*	13.5*
December 2011	3.2	-	17.2	-	10.4	-
January 2012	2.1*	-	6.5*	-	4.4*	-
February 2012	3.5*	3.4*	9.4*	-	6.4*	-
March 2012	2.6	-	8.4	-	6	-

Suspended sediment concentration [mg/l]			
Month	***Minimum***	***Maximum***	***Average***
April 2011	29	1068	285
May 2011	31	806	189
June 2011	31	857	191
July 2011	27	928	173
August 2011	19	710	125
September 2011	22	910	160
October 2011	36	888	207
November 2011	30*	626*	140*
December 2011	33	821	217
January 2012	31*	821*	243*
February 2012	45*	820*	245*
March 2012	28	820	156

-: No data or less than 30% of the monthly data available.
*: Less than 70% of the monthly data available.

Location: Buoy 84
0.8 meter above bottom [-8.0 m TAW]

Velocity magnitude [m/s]			
Month	***Minimum***	***Maximum***	***Average***
April 2011	0.01	1.32	0.48
May 2011	0.01	1.1	0.46
June 2011	0.01	1.26	0.45
July 2011	0.02	1.15	0.47
August 2011	0.01	1.4	0.46
September 2011	0.01	1.28	0.42
October 2011	0.01	1.26	0.41
November 2011	0.01	1.14	0.4
December 2011	0.01	1.17	0.39
January 2012	0.01	1.07	0.35
February 2012	0.01*	1.44*	0.45*
March 2012	-	-	-
Temperature [°C]			
Month	***Minimum***	***Maximum***	***Average***
April 2011	10.4	16.7	13.4
May 2011	15.3	18.1	16.9
June 2011	17.2	20.0	18.7
July 2011	18.0	20.9	19.6
August 2011	18.8	21.2	20.1
September 2011	17.7	20.6	18.8
October 2011	13.37	19.6	16.4
November 2011	10.2	14.8	12.7
December 2011	6.2	10.8	8.0
January 2012	7.2	8.7	7.7
February 2012	1.9*	6.2*	3.7*
March 2012	-	-	-

-: No data or less than 30% of the monthly data available.
*: Less than 70% of the monthly data available.

Salinity [ppt]						
Month	***Minimum***		***Maximum***		***Average***	
	HW	***LW***	***HW***	***LW***	***HW***	***LW***
April 2011	10.6	7.5	13.8	11.2	12.3	9.3
May 2011	13.8	11	16.6	13.8	15.2	12.3
June 2011	16	13.3	18.1	14.9	16.9	14.2
July 2011	14.1	11.9	16.9	14.1	15.6	13.2
August 2011	14.7	11	16.9	13.7	16	12.8
September 2011	14.1	11.2	17.5	13.5	15.4	12.2
October 2011	16.7	13.6	19.4	16.1	17.7	14.6
November 2011	18.5	16	21.4	20.4	19.8	16.7
December 2011	7.3	4.2	20.4	17.9	13.7	10.9
January 2012	4.8	2.7	7.9	6	6.2	4.1
February 2012	3.5*	-	9.5*	-	6.2*	-
March 2012	-	-	-	-	-	-

Suspended sediment concentration [mg/l]			
Month	***Minimum***	***Maximum***	***Average***
April 2011	3	1653	504
May 2011	38	1528	357
June 2011	40	1389	357
July 2011	34	1469	322
August 2011	25	1287	242
September 2011	27	1454	279
October 2011	3	1491	329
November 2011	44	1432	267
December 2011	3	1491	338
January 2012	35	1369	248
February 2012	54	1205*	352*
March 2012	-	-	-

-: No data or less than 30% of the monthly data available.
*: Less than 70% of the monthly data available.

Location: Prosperpolder[1]

2.5 meter above bottom [-1.5 m TAW]

Temperature [°C]			
Month	***Minimum***	***Maximum***	***Average***
April 2011	6.01	12.04	8.16
May 2011	10	18	13.31
June 2011	15.1	19.5	16.85
July 2011	16.9	20.6	18.62
August 2011	18.4	21.8	19.51
September 2011	18.6	22	20.01
October 2011	17.5	20.7	18.68
November 2011	13.2	20.4	16.75
December 2011	-	-	-
January 2012	9.72*	16.74*	13.18*
February 2012	10.29	16.26	13.26
March 2012	9.46	15.82	12.53

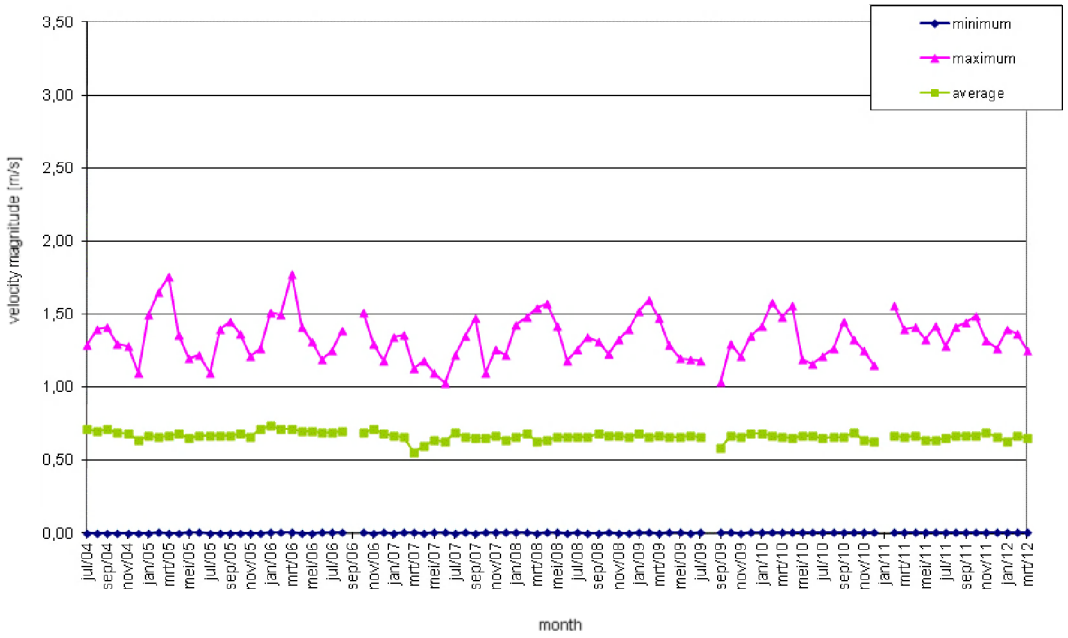
Salinity [ppt]						
Month	***Minimum***		***Maximum***		***Average***	
	HW	***LW***	***HW***	***LW***	***HW***	***LW***
April 2011	6.9	4.5	11.4	8.4	9.6	6.5
May 2011	10.9	8.1	14.4	12.2	12.6	9.8
June 2011	13.9	10.9	16.9	14.2	15	12.4
July 2011	15.9	13.4	17.6	15.2	16.6	14.1
August 2011	13.5	11.8	17.4	14.3	15.8	13.1
September 2011	14.3	11.9	17.6	14.4	16.1	13.2
October 2011	13.7	11.2	16.9	13.3	15.3	12.3
November 2011	16.1	12.9	19.1	15.8	17.3	14.3
December 2011	-	-	-	-	-	-
January 2012	7.1*	4.1*	15.3*	12.3*	8.8*	5.9*
February 2012	4.9	2.8	7.7	5.7	6.1	4.2
March 2012	7.3	4.7	11.3	7.7	9.6	6.4

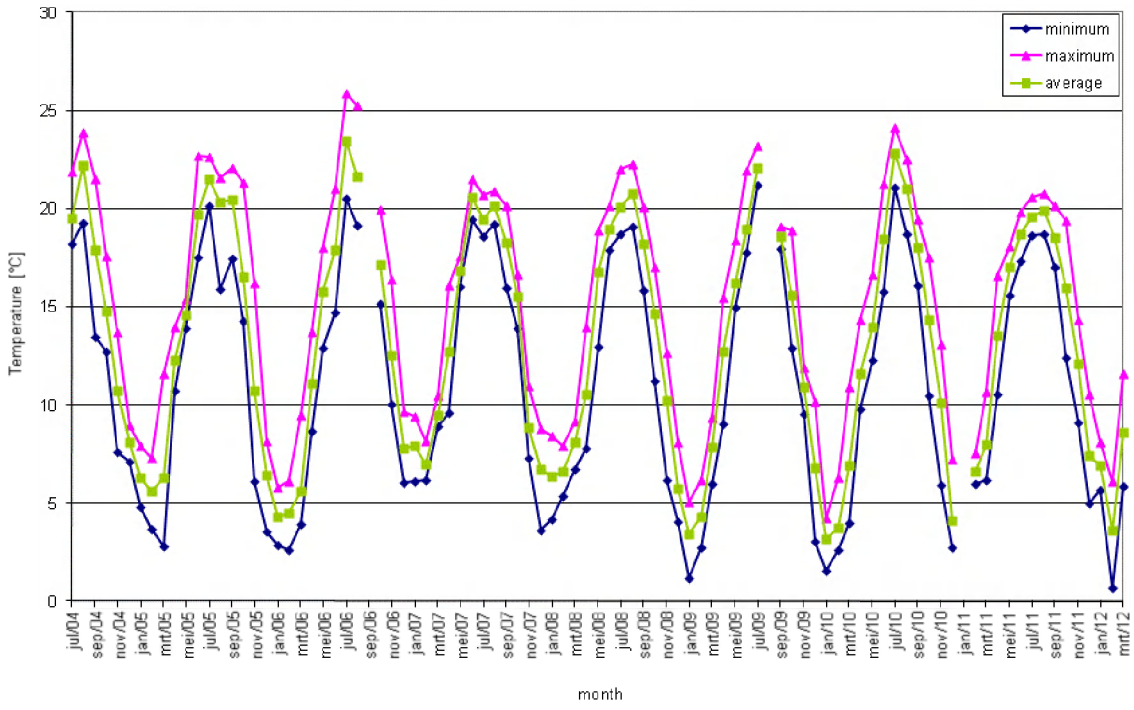
-: No data or less than 30% of the monthly data available.
*: Less than 70% of the monthly data available.

[1] Current velocity and suspended sediment were not measured at Prosperpolder.

A.3 Graphs monthly results for the whole deployment period

Velocity magnitude & temperature





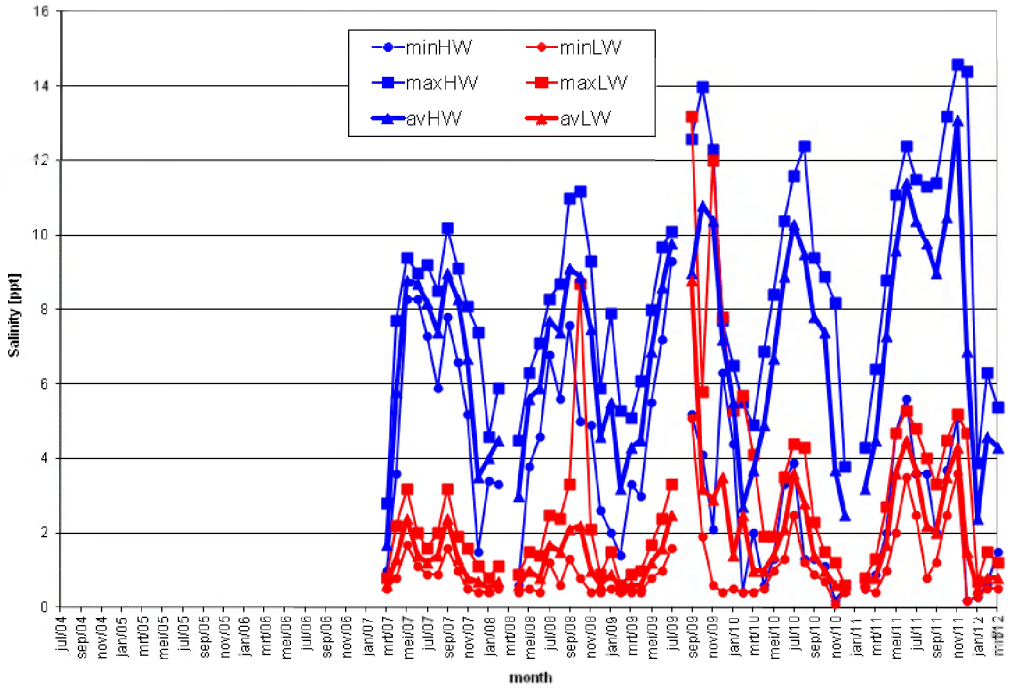
Oosterweel left bank
4.5m above bottom (-2.0m TAW)

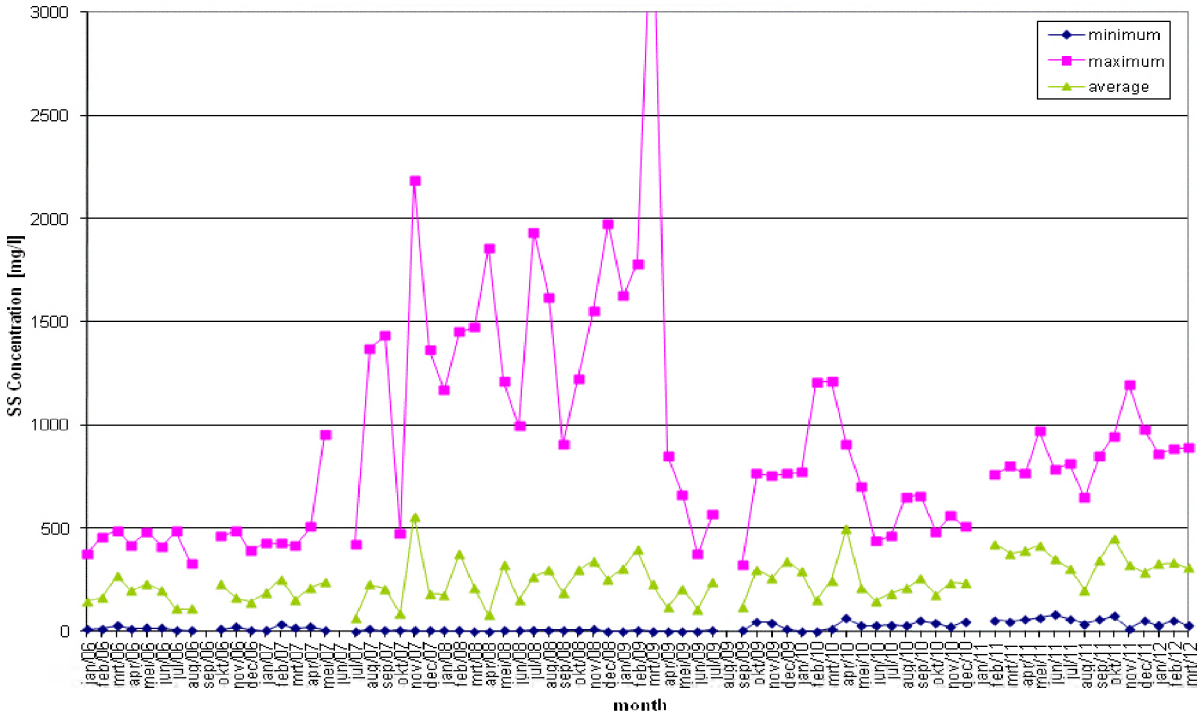
Data processed by:

In association with:

I/RA/11354/10.104/MBO/ANF

Salinity & SS Concentration





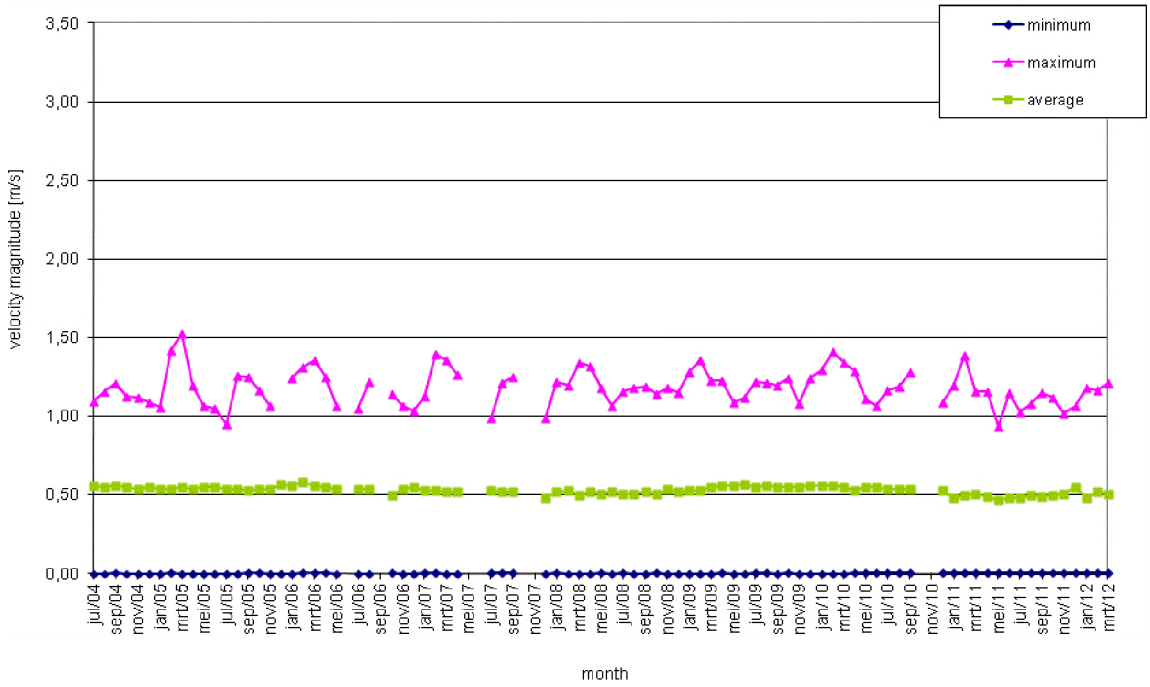
Oosterweel left bank
4.5m above bottom (-2.0m TAW)

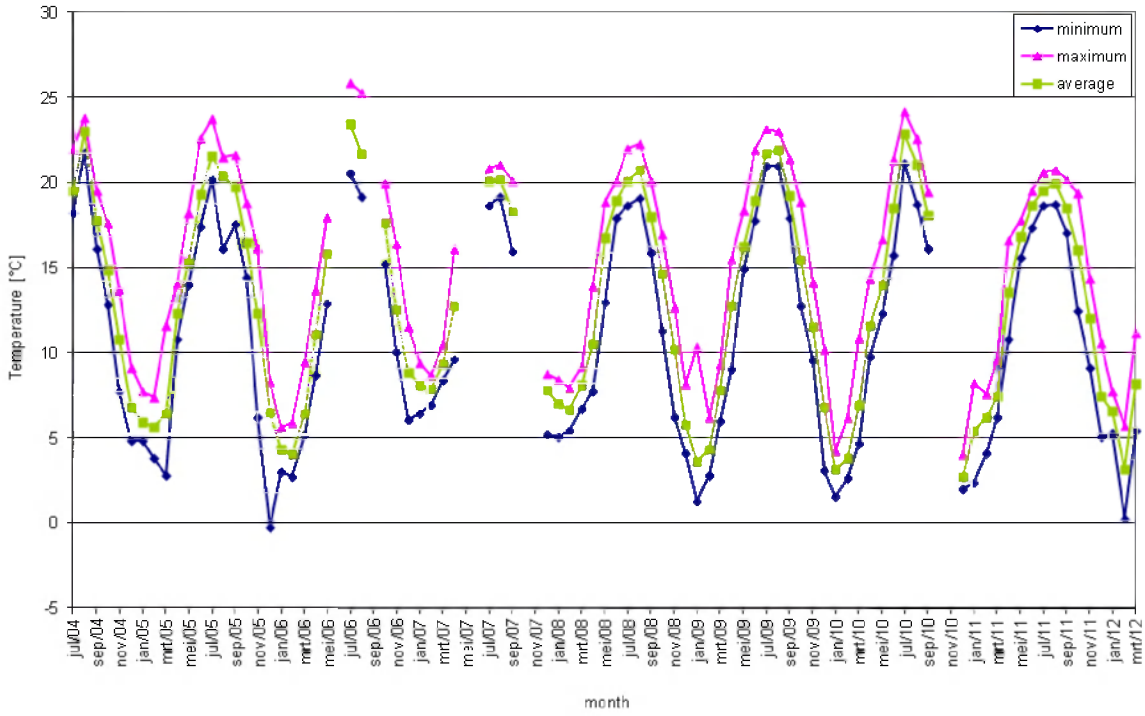
Data processed by: IMDC

In association with: Deltares GEMS

I/RA/11354/10.104/MBO/ANF

Velocity magnitude & temperature





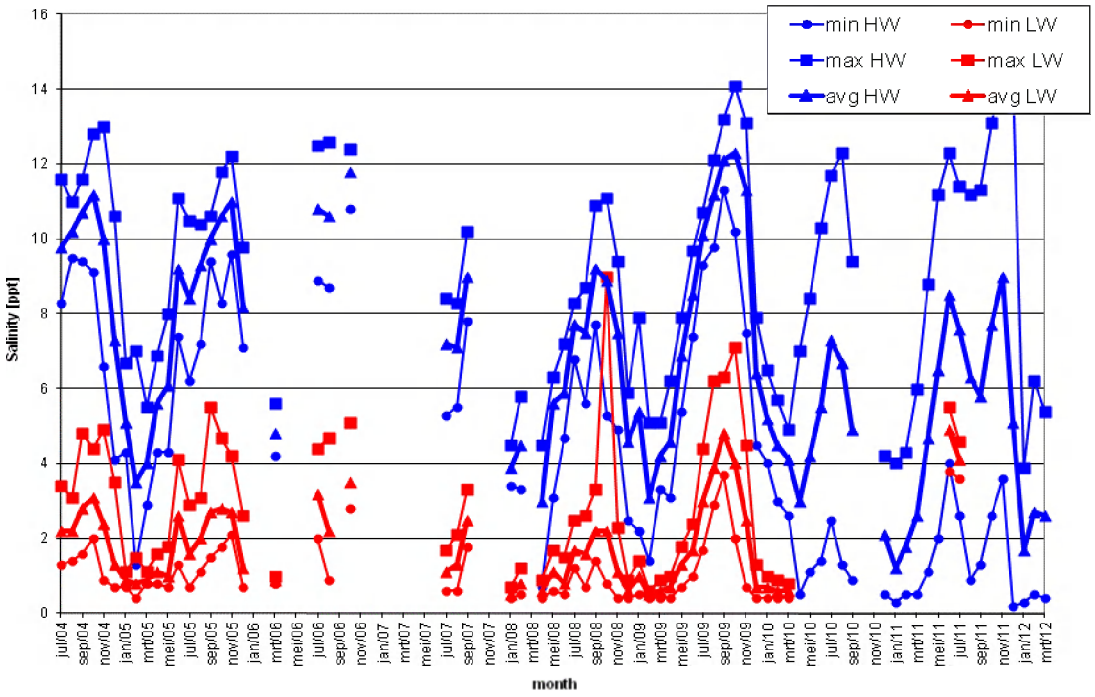
Oosterweel left bank
1m above bottom (-5.5m TAW)

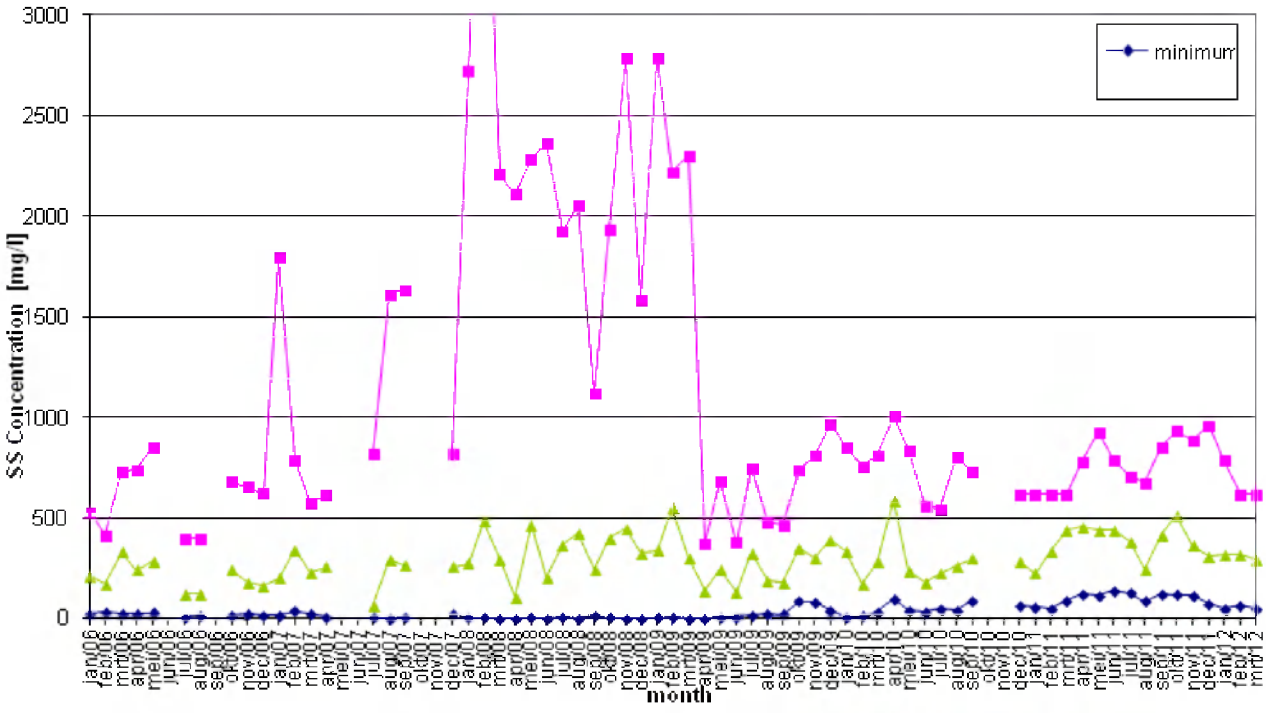
Data processed by: IMDC

In association with: Deltares, GEMS International

I/RA/11354/10.104/MBO/ANF

Salinity & SS Concentration





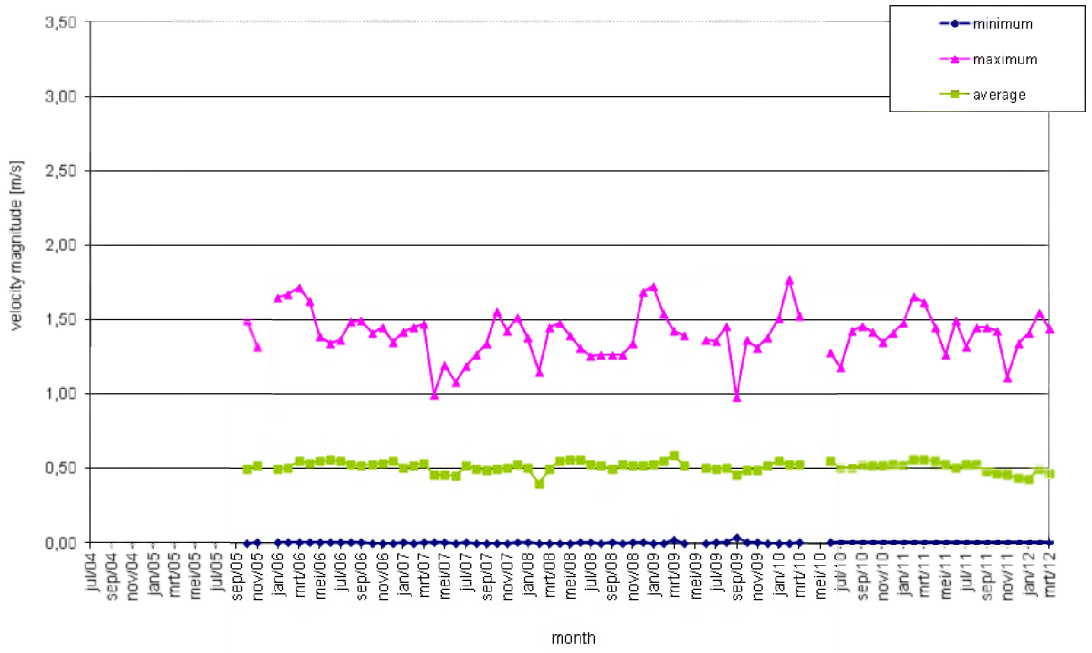
Oosterweel left bank
1m above bottom (-5.5m TAW)

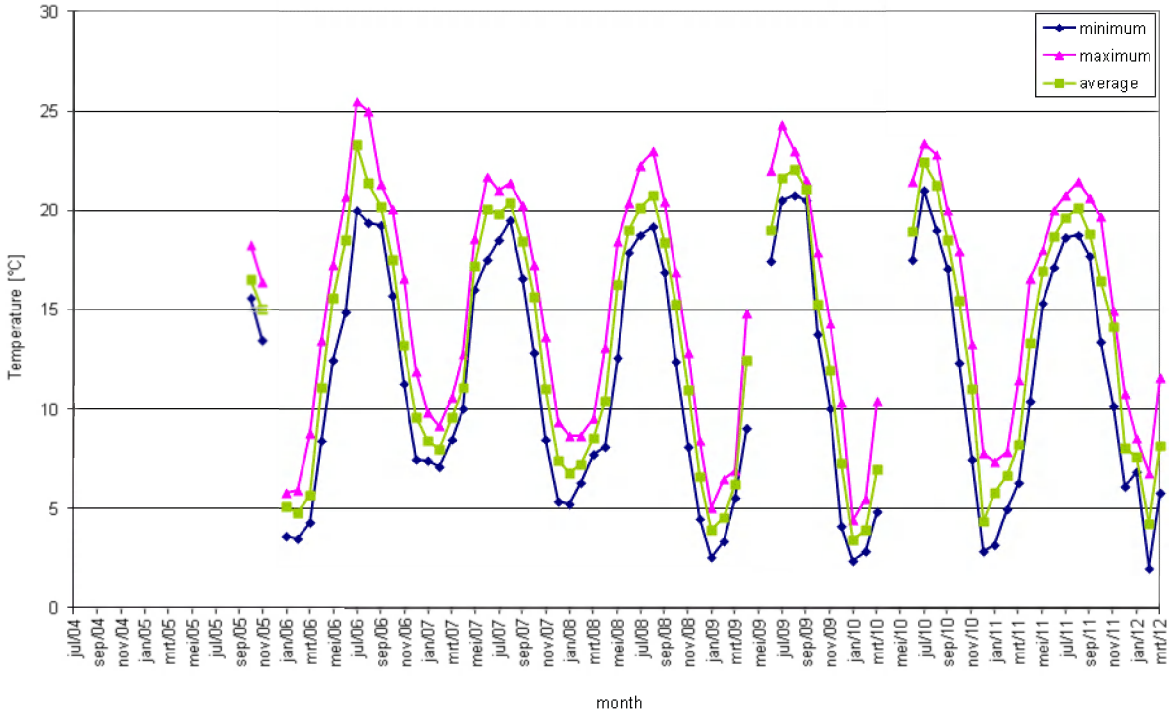
Data processed by: IMDC

In association with: Deltares, GEMS International

I/RA/11354/10.104/MBO/ANF

Velocity magnitude & temperature





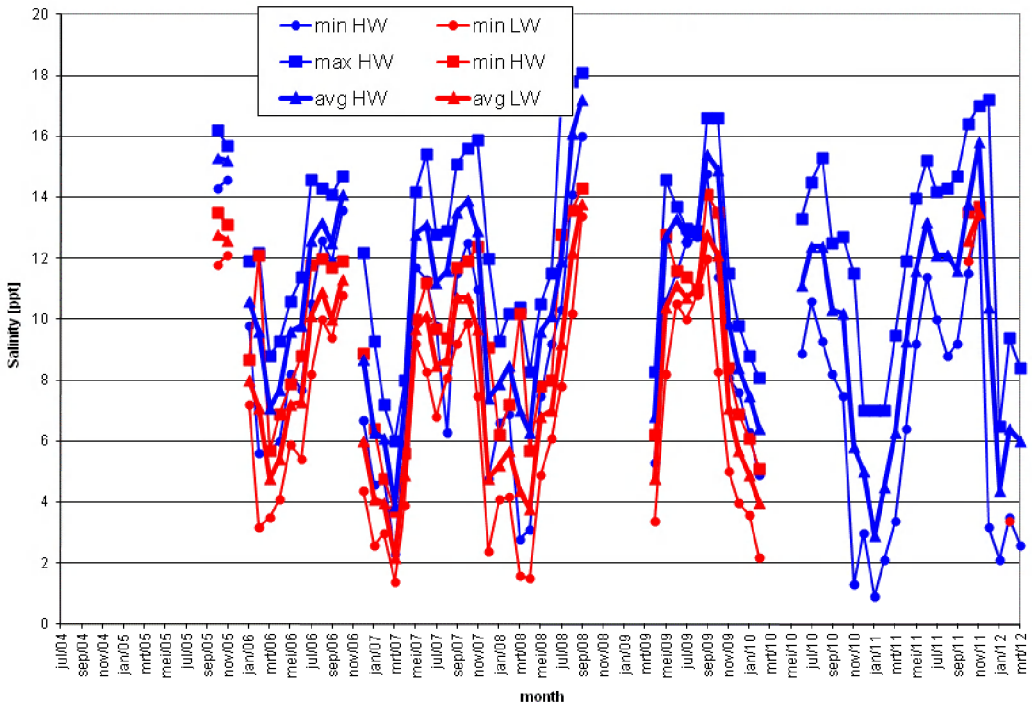
Buoy 84
3.3 m above bottom (-4.8 m TAW)

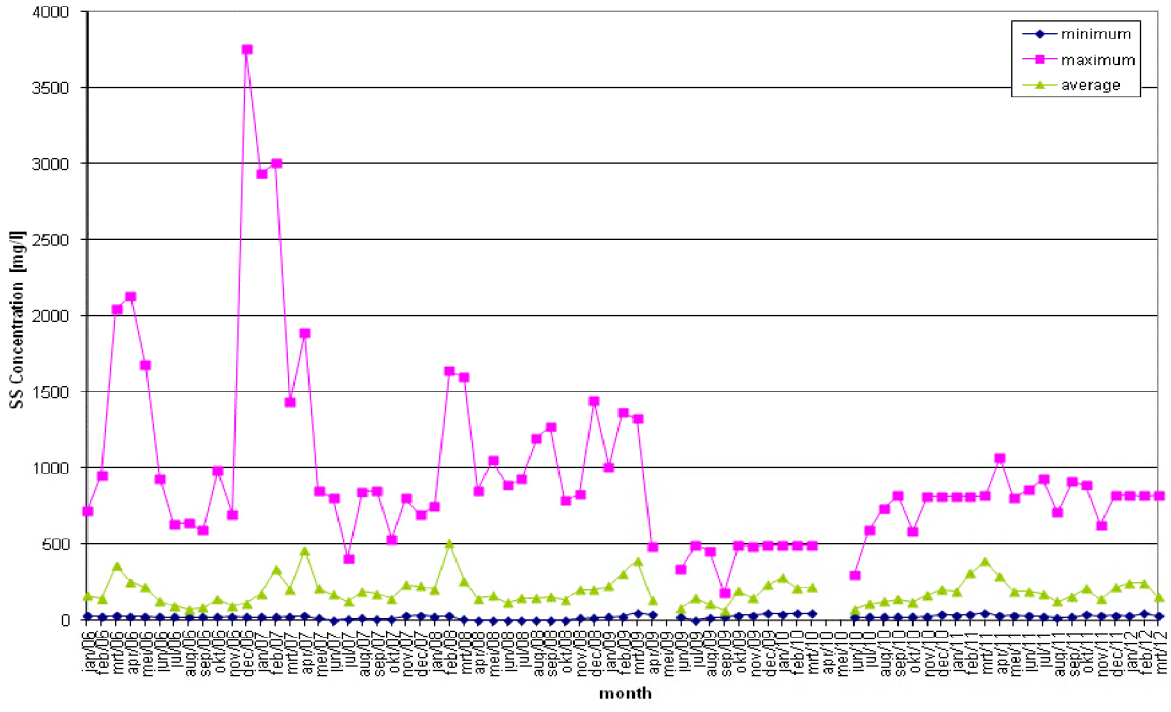
Data processed by:

In association with:

I/RA/11354/10.104/MBO/ANF

Salinity & SS Concentration





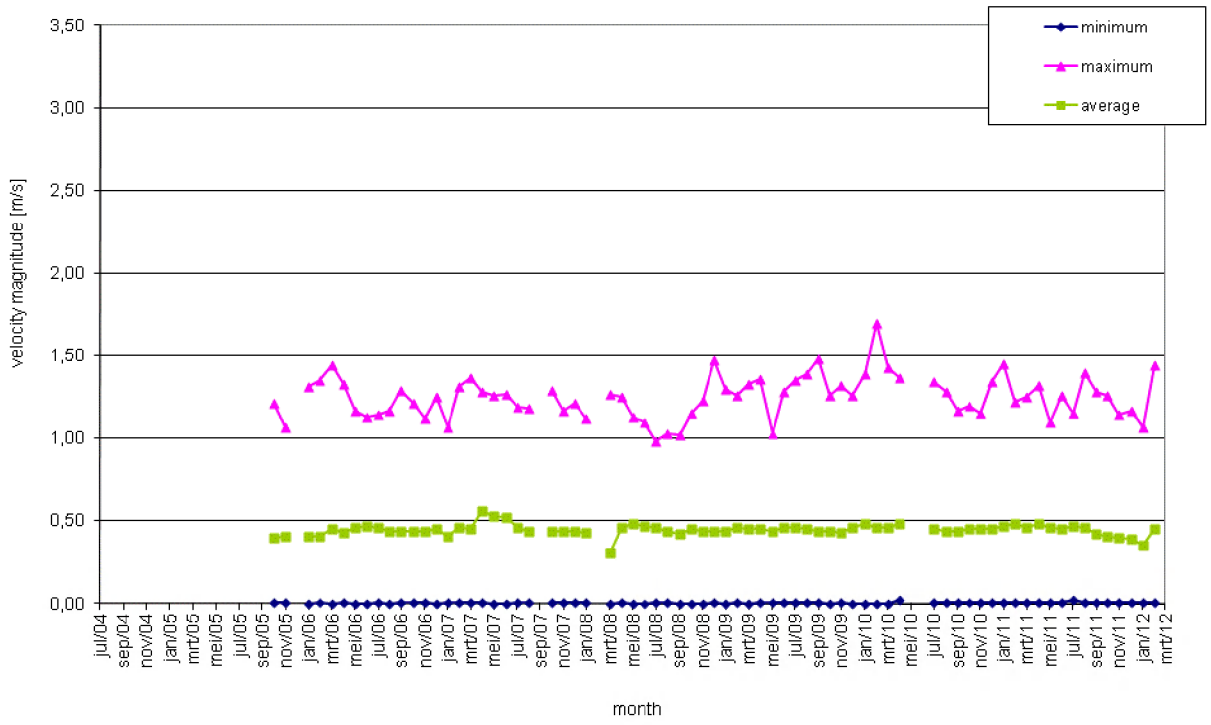
Buoy 84
3.3m above bottom (-4.8m TAW)

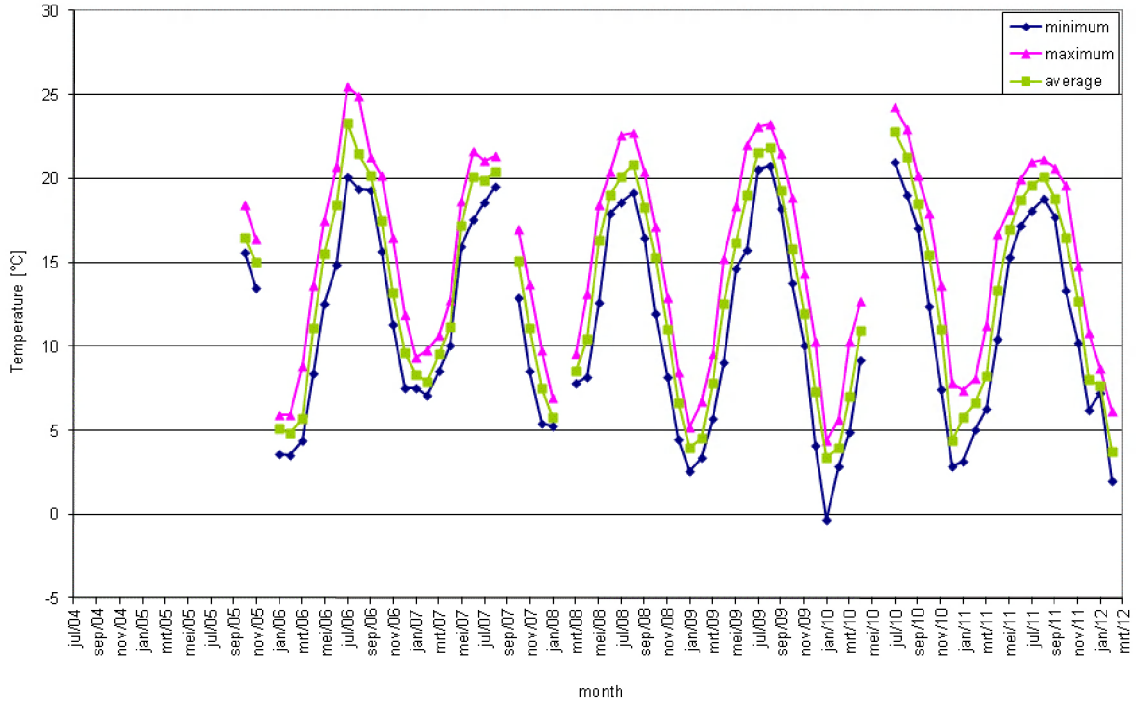
Data processed by: IMDC International Marine & Dredging Consultants

In association with: Deltares Enabling Delta Life, GEMS International

I/RA/11354/10.104/MBO/ANF

Velocity magnitude & temperature





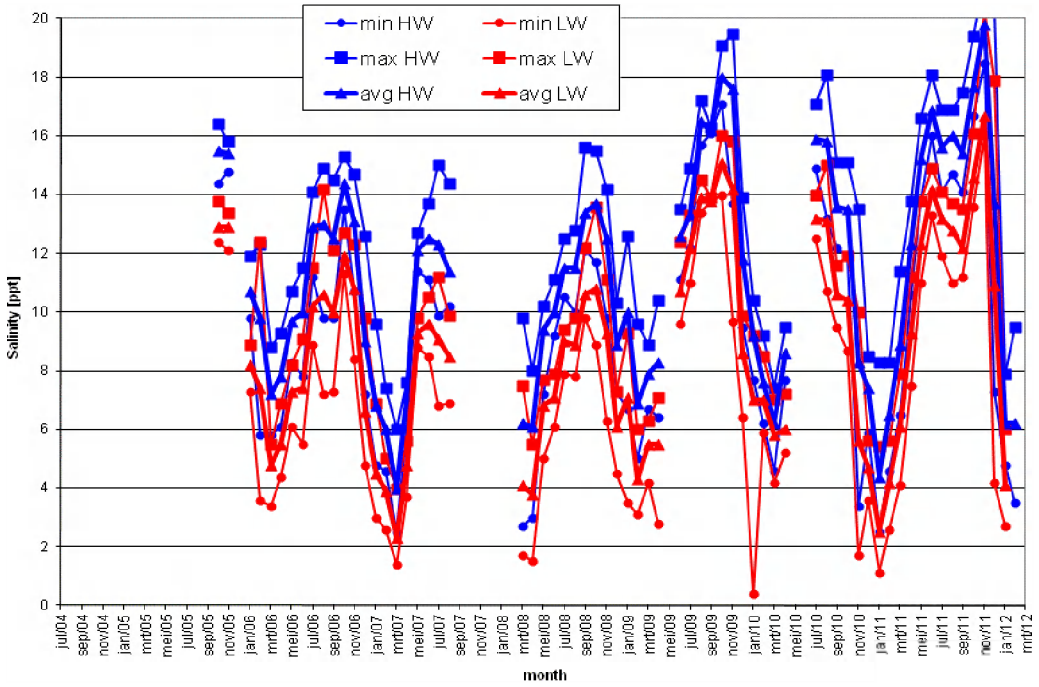
Buoy 84
0.8m above bottom (-8m TAW)

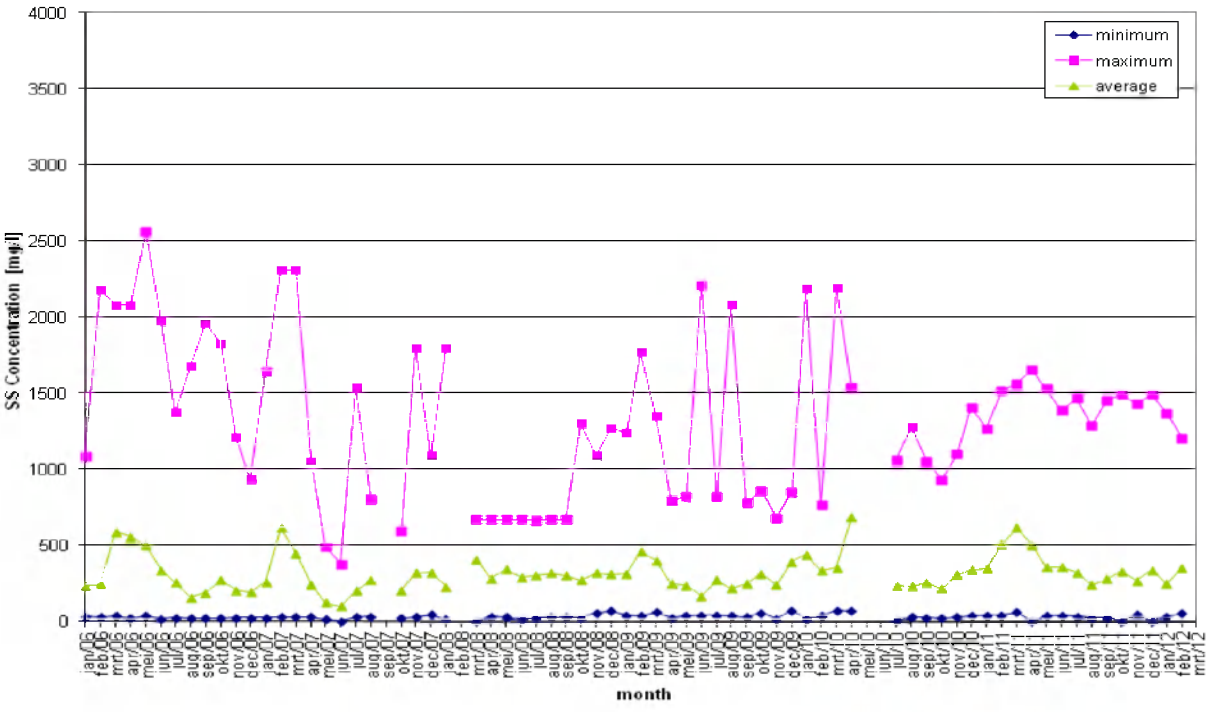
Data processed by: IMDC International Marine & Dredging Consultants

In association with: Deltares Enabling Delta Life, GEMS International

I/RA/11354/10.104/MBO/ANF

Salinity & SS Concentration





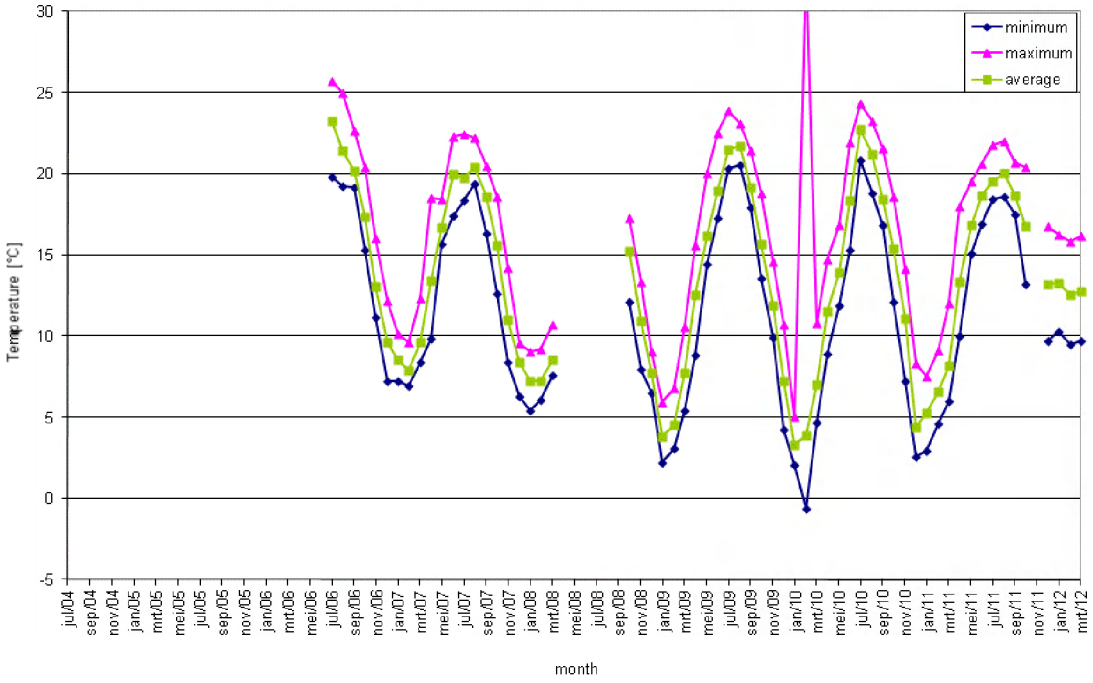
Buoy 84
0.8m above bottom (-8m TAW)

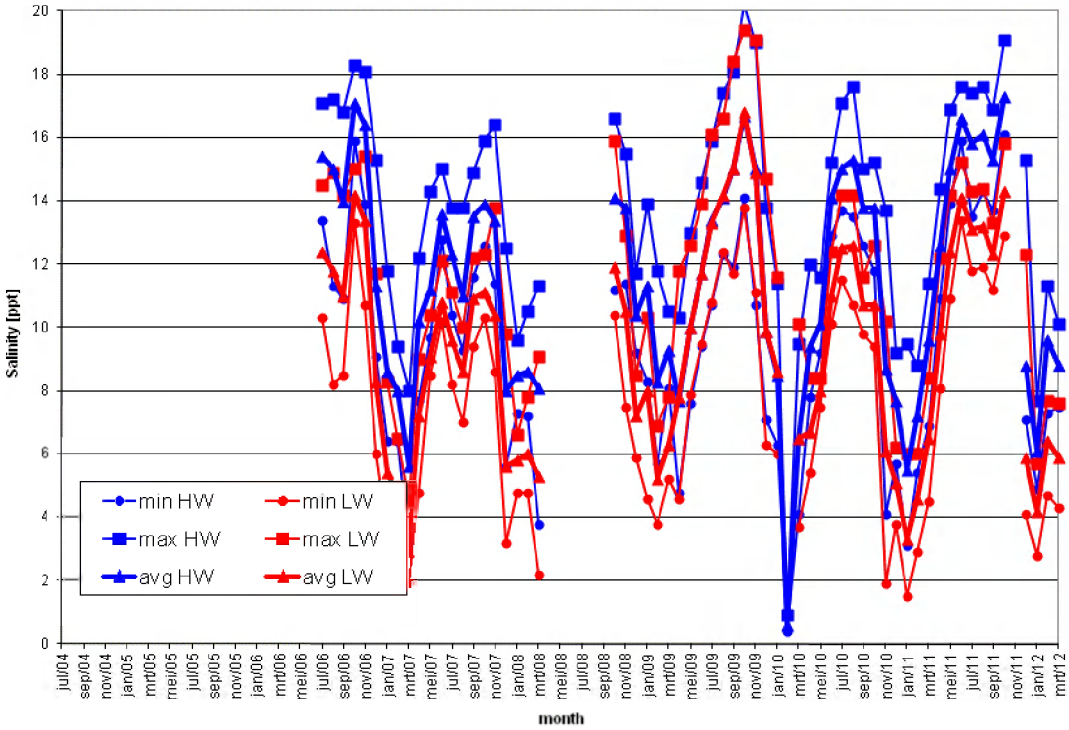
Data processed by:

In association with:

I/RA/11354/10.104/MBO/ANF

Temperature & Salinity





Propsperpolder
2.5m above bottom (-1.5m TAW)

Data processed by:

In association with:

I/RA/11354/10.104/MBO/ANF

A.4 Total result from April 2011 till March 2012 of velocity magnitude. temperature. salinity and suspended sediment concentration

Averages for the whole deployment period of each instrument [April 2011 – March 2012]

Location	Depth [m TAW]	Velocity [m/s]			Temperature [°C]			SS concentration [mg/l]		
		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
Oosterweel left bank	-2.0	0.01	1.49	0.66	0.68	20.74	13.56	14.07	1197.23	336.50
Oosterweel left bank	-5.5	0.01	1.21	0.50	0.25	20.78	13.43	47.07	961.03	370.68
Buoy84 top	-6.0	0.01	1.55	0.50	1.97	21.48	14.42	19.23	1068.15	195.27
Buoy84 bottom	-8.0	0.01	1.44	0.43	1.96	21.15	15.24	2.72	1653.47	330.34
Prosperpolder	-1.5	-	-	-	1.66	22.00	14.49	_	-	-

Salinity [ppt]

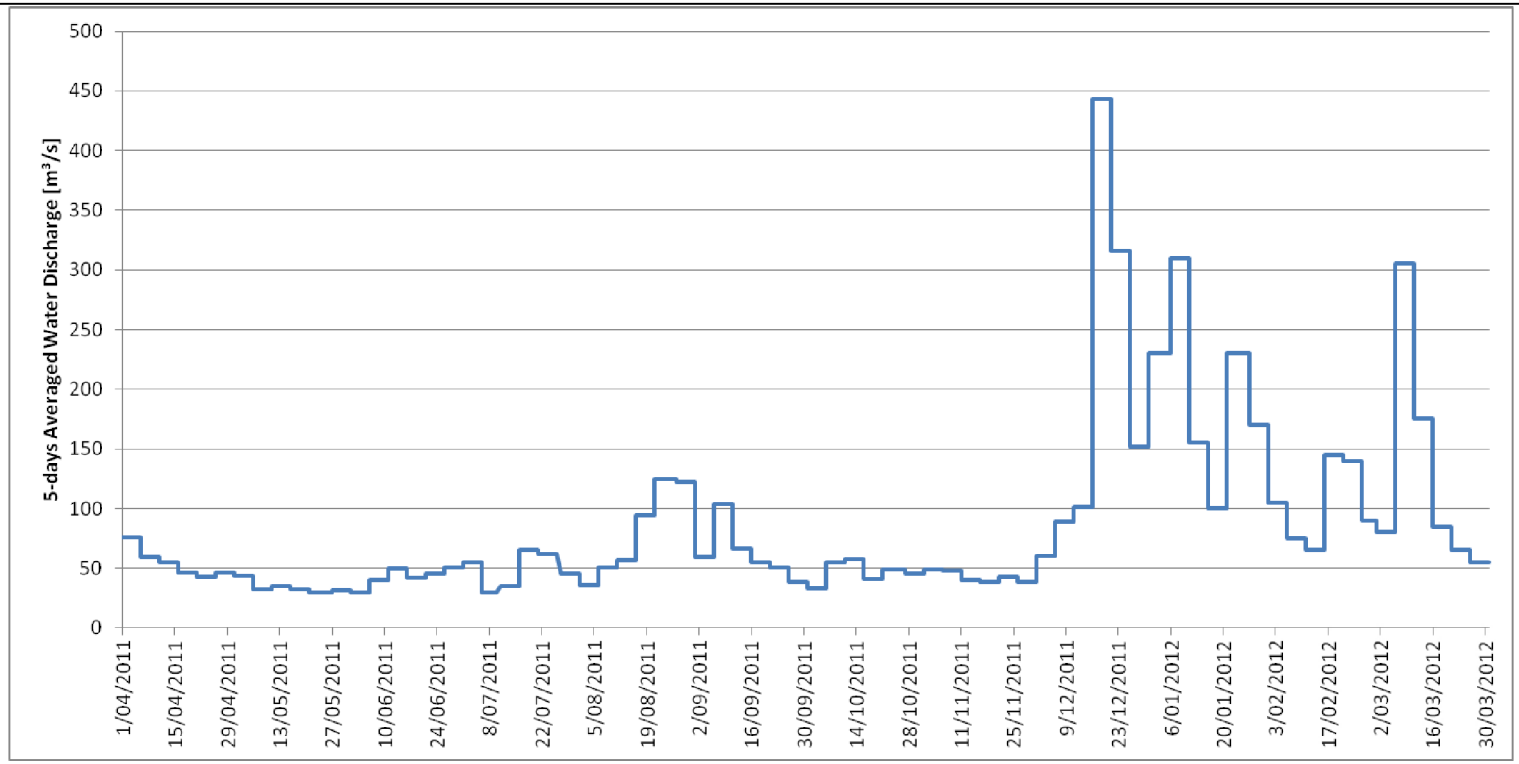
Location	Depth [m TAW]	Minimum		Maximum		Average	
		Slack HW	Slack LW	Slack HW	Slack LW	Slack HW	Slack LW
Oosterweel left bank	-2.0	0.2	0.2	14.6	5.3	8.2	2.5
Oosterweel left bank	-5.5	0.2	3.6	14.6	5.5	5.6	4.5
Buoy84 top	-6.0	2.1	3.4	17.2	13.7	10.5	12.7
Buoy84 bottom	-8.0	3.5	2.7	21.4	17.7	14.7	12.6
Prosperpolder	-1.5	4.9	2.8	19.1	15.8	13.4	10.6

-: No data or less than 30% of the monthly data available.
*: Less than 70% of the monthly data available.

Annex B

Fresh water discharge

11354 Evaluatie aanslibbing Deurganckdok – Boundary conditions April '11- March '12



5-days averaged water discharge

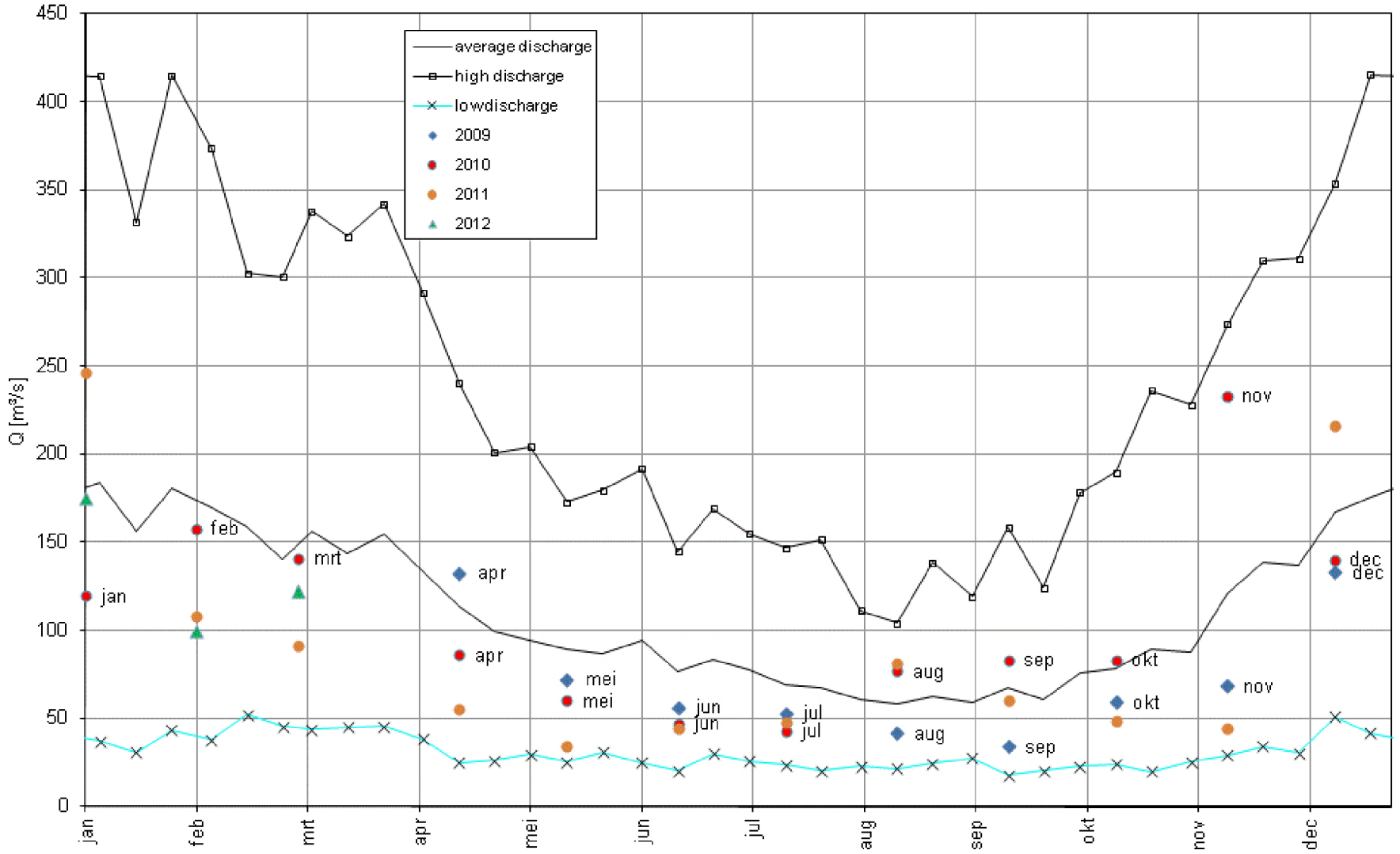
Location:	Date:	*Data reported by:*
Schelle	01/04/2011 – 27/03/2012	*In association with:*

I/RA/11354/10.104/MBO/ANF

Decade averages of the fresh water discharge [m³/s] of the Scheldt at Schelle (April 2011 – March 2012)

	First Decade	*Second Decade*	*Third Decade*
April 2011	67	49	44
May 2011	38	33	30
June 2011	35	46	48
July 2011	42	50	53
August 2011	43	75	123
September 2011	81	60	44
October 2011	44	49	46
November 2011	48	39	41
December 2011	74	272	234
January 2012	270	127	200
February 2012	90	105	115
March 2012	192	130	60

Average monthly discharge during project period compared to the long-term discharge curve (based on a long-term simulation over a period of 30 year; 1971-2000)



Annex C Monthly results

meteorological measurements at Deurne

Terminology

Nederlands:	*English:*
Druk:	Pressure
Bewolking:	Cloudiness
Zon duur:	Duration of Sunshine
Temperaturen:	Temperatures
Lucht:	Air
Gras:	Grass
Minimum onder naakte grond:	Minimum under bare soil
Bewolking: 9 = bovenlucht niet zichtbaar	Cloudiness 9 = upper atmosphere invisible
Ontbrekend gegeven:	Missing data
Gem.:	Average
Min. :	Minimum
Max.:	Maximum
Rel. vocht.:	Relative Humidity
Mist:	Fog
Duur in minuten:	Duration in minutes
Neerslag:	Precipitation
Dag met:	Day with
Wind:	Wind
Snelheid (km/h) en richting:	Velocity (km/h) and direction
* = Sneeuw:	* = Snow
▲ = Hagel:	▲ = Hail
ק = Onweer:	ק = thunderstorm
Neerslag te wijten aan mist of dauw:	Precipitation due to fog or dew

DEURNE(RLW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. april 2011

	Druk hPa	Bewolking Octas				Zon	Temperaturen °C									
						Duur	Lucht			Gras	Minimum onder naakte grond					
	Gem.	0h	6	12	18	h min	Gem.	Max.	Min.	Min.	-2cm	-5cm	-10cm	-20cm	-50cm	-100cm
1	1021.2	8	8	7	7	/	14.0	16.3	8.6	9.5	10.6	10.5	10.5	10.5	9.4	8.6
2	1013.9	0	2	5	7	/	15.4	24.1	5.8	7.2	9.6	9.8	9.7	9.9	9.8	8.8
3	1014.4	8	4	6	6	/	12.2	15.3	10.2	9.9	11.7	11.6	11.7	11.7	10.1	8.9
4	1021.7	0	7	4	2	/	11.0	15.4	8.1	7.5	11.0	11.1	11.1	11.2	10.6	9.1
5	1024.8	0	8	8	8	/	9.9	12.8	7.3	7.0	10.2	10.4	10.3	10.6	10.5	9.3
6	**1026.8**	8	6	6	3	/	16.7	22.3	11.9	10.4	10.6	10.7	10.7	10.7	10.4	9.5
7	1026.5	0	2	4	6	/	14.7	18.1	9.6	9.6	12.1	12.2	12.2	12.2	10.8	9.6
8	1026.6	8	4	3	0	/	12.6	17.5	8.0	8.8	12.2	12.3	12.3	12.4	11.5	9.7
9	1026.0	0	1	1	0	/	11.2	17.4	6.6	7.7	11.4	11.7	11.6	11.8	11.7	10.0
10	1024.3	0	1	1	5	/	13.1	20.5	5.6	6.1	11.1	11.4	11.4	11.6	11.8	10.2
11	1020.8	0	4	5	5	/	14.2	21.9	5.9	7.7	11.4	11.7	11.7	11.9	11.9	10.4
12	1025.9	6	7	5	1	/	9.4	11.7	6.3	7.6	11.7	12.1	12.0	12.3	12.2	10.6
13	1023.8	0	2	5	5	/	**8.8**	13.4	4.4	5.7	10.1	10.6	10.5	10.9	11.8	10.7
14	1019.9	/	8	8	7	/	9.6	13.1	4.9	6.6	10.6	10.9	10.8	11.1	11.6	10.8
15	1021.1	8	3	4	7	/	10.9	15.6	5.2	6.2	11.1	11.3	11.2	11.4	11.6	10.8
16	1022.8	8	6	5	6	/	11.5	16.6	5.3	7.0	11.0	11.2	11.2	11.4	11.7	10.8
17	1024.6	6	7	3	6	/	13.0	17.6	8.7	8.7	11.9	12.0	12.0	12.1	11.9	10.9
18	1019.3	4	1	1	1	/	13.3	20.1	**3.3**	**4.1**	11.3	11.6	11.6	11.9	12.2	11.0
19	1014.9	0	0	1	1	/	15.9	24.1	6.2	5.8	11.6	11.9	11.9	12.1	12.4	11.1
20	1015.3	0	1	1	0	/	16.1	24.1	7.2	6.7	12.4	12.7	12.7	12.8	12.7	11.2
21	1014.0	0	2	2	2	/	16.4	25.2	6.1	6.6	12.9	13.1	13.1	13.3	13.1	11.4
22	1010.3	0	2	2	5	/	17.5	26.1	7.7	8.0	13.4	13.7	13.7	13.9	13.5	11.7
23	1011.4	0	1	1	1	/	19.6	26.6	11.7	9.9	14.3	14.5	14.5	14.6	13.9	11.9
24	1016.1	0	3	0	1	/	**20.4**	**26.7**	12.9	11.9	15.2	15.3	15.4	15.4	14.3	12.2
25	1019.9	0	0	0	0	/	18.1	24.6	11.0	9.0	14.9	15.2	15.2	15.4	14.8	12.4
26	1021.0	0	0	6	5	/	16.5	22.5	10.5	8.4	14.7	15.0	15.1	15.3	15.1	12.7
27	1020.5	0	4	6	7	/	12.2	17.2	9.2	8.3	14.9	15.1	15.1	15.3	15.2	13.0
28	1014.9	0	8	7	5	/	13.0	17.2	9.6	8.9	14.8	14.9	14.9	15.0	15.0	13.2
29	1010.8	0	4	4	7	/	14.8	23.2	8.3	8.0	13.4	13.8	13.8	14.1	14.7	13.4
30	**1008.9**	0	1	1	1	/	16.7	22.3	11.6	10.1	14.0	14.3	14.2	14.5	14.7	13.4
M	1019.4					/	14.0	19.7	7.9							

Bewolking : 9 = Bovenlucht niet zichtbaar / = Ontbrekend gegeven

DEURNE(RLW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. april 2011

	Rel.Vocht.		Mist			Neerslag								Wind						
	%		Duur in minuten				Duur		* (cm)		Dag met			Snelheid (km/h) en richting						
	Gem.	Min.	<1000m	<500m	<200m	l/m²	h min	%	6h	18h	*	^	R	Gem.	Max.		0h	6h	12h	18h
1	79	69	-	-	-	<0.1	0 15	1	/	/	-	-	-	18	50	WSW	WSW	SW	SW	SSW
2	69	34	-	-	-	0.3	1 29	6	/	/	-	-	-	14	40	S	SSE	ESE	SSE	SW
3	71	48	-	-	-	1.1	1 25	6	/	/	-	-	-	11	32	NW	WNW	W	WNW	NW
4	65	42	-	-	-	-	-	-	/	/	-	-	-	18	43	W	WSW	WSW	W	W
5	69	46	-	-	-	0.9	6 25	27	/	/	-	-	-	14	43	SW	SSW	SSW	SW	SW
6	65	47	-	-	-	-	-	-	/	/	-	-	-	11	36	WSW	WSW	SW	W	S
7	70	54	-	-	-	-	-	-	/	/	-	-	-	14	36	NW	SW	W	WNW	NW
8	69	45	-	-	-	-	-	-	/	/	-	-	-	11	29	NNW	WNW	-	NNW	NNW
9	68	38	-	-	-	-	-	-	/	/	-	-	-	7	25	ENE	N	N	ENE	NE
10	57	34	-	-	-	-	-	-	/	/	-	-	-	11	25	E	ENE	NE	ENE	ENE
11	64	38	-	-	-	1.8	2 49	12	/	/	-	-	-	11	61	NW	-	SSE	WSW	WNW
12	68	47	-	-	-	1.7	0 20	1	/	/	-	X	-	**22**	50	NW	W	NW	NW	NW
13	65	39	-	-	-	<0.1	0 12	1	/	/	-	-	-	11	36	WNW	W	WSW	WNW	W
14	67	44	-	-	-	-	-	-	/	/	-	-	-	7	**18**	WNW	-	W	VAR	N
15	60	36	-	-	-	-	-	-	/	/	-	-	-	7	22	ESE	ENE	ENE	ESE	E
16	56	32	-	-	-	-	-	-	/	/	-	-	-	**4**	25	NNW	ESE	SSE	E	NNW
17	58	37	-	-	-	-	-	-	/	/	-	-	-	7	22	E	NNE	N	VAR	E
18	54	30	-	-	-	-	-	-	/	/	-	-	-	11	32	ESE	ESE	ENE	E	E
19	54	30	-	-	-	-	-	-	/	/	-	-	-	7	22	ENE	E	E	VAR	NE
20	54	26	-	-	-	-	-	-	/	/	-	-	-	**4**	22	ESE	ESE	E	VAR	ESE
21	55	24	-	-	-	-	-	-	/	/	-	-	-	**4**	25	SSE	-	E	SE	S
22	56	28	-	-	-	0.1	0 27	2	/	/	-	-	X	7	47	E	-	E	SE	VAR
23	50	28	-	-	-	-	-	-	/	/	-	-	-	7	25	NNE	ENE	NNE	ENE	NE
24	48	23	-	-	-	<0.1	0 20	1	/	/	-	-	-	11	32	NNE	N	-	NE	NE
25	**45**	**23**	-	-	-	-	-	-	/	/	-	-	-	11	32	ENE	NE	NNE	E	NE
26	55	33	-	-	-	-	-	-	/	/	-	-	-	11	40	NNE	NE	NNE	NE	NNE
27	69	46	-	-	-	0.3	1 42	7	/	/	-	-	-	18	32	NW	NNE	N	N	NNW
28	**81**	58	53	47	15	**3.8**	5 04	21	/	/	-	-	-	11	29	NNE	NNW	N	NNE	N
29	70	39	-	-	-	3.0	2 10	9	/	/	-	X	X	14	**65**	E	N	E	E	NE
30	55	39	-	-	-	-	-	-	/	/	-	-	-	**22**	47	ENE	ENE	ENE	E	ENE
M	62		53	47	15	13.0	22 38				0	2	2	11						

* = Sneeuw ^ = Hagel R = Onweer <0.1 : Neerslag te wijten aan mist of dauw

I/RA/11354/10.104/MBO/ANF
version 2.0 - 21/12/2012

IMDC NV
i. c. w. Deltares & Gems

DEURNE(RLW) 4° 27' 11" E 51° 11' 32" t 14m Periode 00-24 h W.T. mei 2011

	Druk	Bewolking				Zon	Temperaturen °C									
	hPa	Octas				Duur	Lucht			Gras	Minimum onder naakte grond					
	Gem.	0h	6	12	18	h min	Gem.	Max.	Min.	Min.	-2cm	-5cm	-10cm	-20cm	-50cm	-100cm
1	**1010.4**	0	0	0	1	/	14.8	20.5	9.4	8.2	13.8	14.1	14.1	14.4	14.8	13.5
2	1011.1	0	1	1	0	/	11.6	16.7	7.0	6.1	13.6	14.0	13.9	14.2	14.8	13.5
3	1016.5	0	0	1	1	/	**9.8**	15.1	4.4	3.7	12.5	13.0	13.0	13.4	14.5	13.6
4	1022.1	0	1	4	4	/	**9.8**	15.3	3.3	2.5	12.1	12.7	12.7	13.1	14.4	13.6
5	1022.4	0	5	7	5	/	12.4	19.7	**2.9**	**2.0**	11.9	12.5	12.4	12.9	14.3	13.6
6	1018.6	0	8	7	4	/	16.2	24.8	6.1	5.0	12.9	13.3	13.3	13.6	14.4	13.6
7	1015.4	0	4	4	5	/	19.4	27.8	10.3	8.2	14.0	14.3	14.3	14.6	14.7	13.6
8	1016.9	0	5	3	7	/	**20.5**	26.4	15.5	14.1	15.7	15.8	15.9	15.9	15.1	13.7
9	1022.7	7	7	7	1	/	17.6	22.3	14.1	12.8	16.6	16.7	16.7	16.8	15.7	13.8
10	1025.1	0	7	2	7	/	17.2	23.4	12.4	12.6	16.3	16.4	16.4	16.5	16.1	14.1
11	1023.3	5	2	4	6	/	15.9	20.4	11.8	10.5	16.1	16.5	16.4	16.7	16.4	14.3
12	1019.9	/	5	4	2	/	14.2	17.6	11.1	10.7	16.2	16.5	16.4	16.7	16.5	14.5
13	1020.8	0	1	4	5	/	14.3	20.1	8.3	8.2	15.0	15.4	15.4	15.8	16.4	14.7
14	1018.0	0	4	2	4	/	12.9	16.5	8.4	8.2	15.3	15.7	15.7	16.0	16.3	14.9
15	1023.1	7	3	7	6	/	12.2	15.8	9.3	9.1	15.5	15.8	15.8	16.0	16.3	14.9
16	1022.9	8	6	8	7	/	13.5	16.6	11.3	11.3	15.2	15.5	15.5	15.7	16.0	15.0
17	1020.6	/	7	5	7	/	14.8	18.7	12.0	11.4	15.0	15.2	15.2	15.4	15.8	15.0
18	1016.9	0	7	6	3	/	15.5	21.3	10.2	9.8	14.9	15.2	15.1	15.4	15.8	15.0
19	1018.0	/	8	8	7	/	14.1	17.0	10.3	9.8	16.3	16.4	16.4	16.5	16.1	15.0
20	1019.3	0	7	7	2	/	14.8	21.4	7.0	7.2	14.7	15.1	15.0	15.4	16.0	15.0
21	1020.6	0	1	1	1	/	16.2	23.6	5.3	5.7	14.3	14.8	14.8	15.2	16.1	15.1
22	1017.8	0	5	5	3	/	16.4	19.7	11.9	11.4	16.8	17.2	17.2	17.3	16.5	15.1
23	1022.6	0	5	4	5	/	16.5	23.6	9.9	9.5	15.3	15.7	15.7	16.0	16.6	15.2
24	**1025.4**	0	7	4	1	/	14.6	17.9	9.4	8.1	16.7	16.9	16.9	17.1	16.9	15.3
25	1024.3	0	0	0	1	/	15.9	23.3	4.6	5.9	15.2	15.7	15.7	16.1	16.9	15.5
26	**1010.4**	/	7	7	6	/	14.4	17.7	9.9	9.6	16.2	16.6	16.6	16.9	17.1	15.6
27	1016.0	7	6	7	7	/	12.5	15.2	10.5	10.9	16.1	16.3	16.4	16.5	16.9	15.7
28	1016.5	8	6	7	8	/	13.5	17.8	9.2	9.0	14.8	15.2	15.2	15.5	16.5	15.8
29	1014.7	8	7	4	1	/	17.0	22.8	12.6	12.9	15.8	16.0	15.9	16.1	16.5	15.7
30	1011.8	0	1	1	7	/	19.8	**29.4**	9.7	10.8	16.1	16.4	16.4	16.6	16.7	15.7
31	1017.7	8	8	8	5	/	13.2	15.8	10.7	9.7	15.7	16.3	16.2	16.6	17.2	15.7
M	1018.8					/	14.9	20.1	9.3							

Bewolking : 9 = Bovenlucht niet zichtbaar / = Ontbrekend gegeven

10

DEURNE(RLW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. mei 2011

	Rel.Vocht.		Mist			Neerslag								Wind						
	%		Duur in minuten				Duur		* (cm)		Dag met			Snelheid (km/h) en richting						
	Gem.	Min.	<1000m	<500m	<200m	l/m²	h min	%	6h	18h	*	^	R	Gem.	Max.		0h	6h	12h	18h
1	**44**	33	-	-	-	-	-	-	/	/	-	-	-	18	43	ENE	ENE	ENE	ENE	ENE
2	45	31	-	-	-	-	-	-	/	/	-	-	-	**22**	43	NE	ENE	NE	ENE	NE
3	45	20	-	-	-	-	-	-	/	/	-	-	-	14	40	NE	NE	NE	ENE	ENE
4	57	36	-	-	-	-	-	-	/	/	-	-	-	**7**	25	NE	NE	ENE	SE	NNE
5	53	26	-	-	-	-	-	-	/	/	-	-	-	**7**	29	SE	E	ESE	SE	E
6	49	22	-	-	-	-	-	-	/	/	-	-	-	**7**	29	SE	-	E	SSE	SSE
7	50	26	-	-	-	-	-	-	/	/	-	-	-	14	50	SSE	E	SE	SSE	SSE
8	50	35	-	-	-	0.1	1 06	5	/	/	-	-	-	14	43	S	ESE	SSE	SSE	NW
9	67	55	-	-	-	0.1	0 38	3	/	/	-	-	-	**7**	**22**	NNW	N	NW	E	NE
10	69	47	-	-	-	2.4	3 48	16	/	/	-	-	-	11	29	NNW	N	NNW	VAR	NNW
11	60	40	-	-	-	-	-	-	/	/	-	-	-	11	29	W	W	W	W	NNW
12	63	37	-	-	-	-	-	-	/	/	-	-	-	14	43	WNW	W	WSW	NW	WNW
13	59	33	-	-	-	-	-	-	/	/	-	-	-	11	32	SSW	WSW	SSW	SW	NNW
14	57	34	-	-	-	-	-	-	/	/	-	-	-	18	47	NW	SE	W	WNW	WNW
15	66	46	-	-	-	0.6	3 03	13	/	/	-	-	-	18	43	WNW	W	W	NW	W
16	74	63	-	-	-	0.3	4 16	18	/	/	-	-	-	18	36	WSW	WSW	SW	W	WSW
17	68	50	-	-	-	0.1	1 11	5	/	/	-	-	-	14	32	WSW	SW	WSW	WSW	WSW
18	67	45	-	-	-	-	-	-	/	/	-	-	-	14	36	WSW	SW	SW	SW	WNW
19	**78**	61	-	-	-	0.3	3 26	14	/	/	-	-	-	**7**	**22**	WNW	W	W	N	NNE
20	66	40	56	7	-	-	-	-	/	/	-	-	-	**7**	32	NW	-	SE	W	WNW
21	56	31	-	-	-	-	-	-	/	/	-	-	-	**7**	25	SSE	SSE	SSW	VAR	SSE
22	58	31	-	-	-	2.1	0 48	3	/	/	-	-	-	18	58	WSW	ESE	SSW	WSW	WSW
23	56	33	-	-	-	-	-	-	/	/	-	-	-	18	43	SW	SW	SW	SW	SW
24	52	31	-	-	-	-	-	-	/	/	-	-	-	18	50	WNW	WSW	W	WNW	NW
25	48	**19**	-	-	-	-	-	-	/	/	-	-	-	11	29	SSE	SW	SW	VAR	SE
26	57	41	-	-	-	0.5	0 56	4	/	/	-	-	-	**22**	58	SW	SE	SSW	WSW	SW
27	75	58	-	-	-	4.6	4 01	17	/	/	-	-	-	18	40	SW	WSW	W	NW	NW
28	67	48	-	-	-	0.1	1 32	6	/	/	-	-	-	18	47	WSW	SSW	SW	SW	W
29	64	40	-	-	-	-	-	-	/	/	-	-	-	18	50	WSW	WSW	SW	WSW	WSW
30	58	24	-	-	-	0.1	1 33	6	/	/	-	-	-	14	**65**	WNW	WSW	SE	S	WNW
31	**78**	56	-	-	-	**9.4**	9 10	38	/	/	-	-	-	18	40	WNW	WSW	WNW	WNW	NNW
M	60		56	7	0	20.7	35 28				0	0	0	14						

* = Sneeuw ^ = Hagel R = Onweer <0.1 : Neerslag te wijten aan mist of dauw

DEURNE (RLW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. juni 2011

	Druk hPa	Bewolking Octas				Zon	Temperaturen °C									
						Duur	Lucht			Gras	Minimum onder naakte grond					
	Gem.	0h	6	12	18	h min	Gem.	Max.	Min.	Min.	-2cm	-5cm	-10cm	-20cm	-50cm	-100cm
1	1029.8	0	2	3	1	/	14.8	20.2	7.9	**8.1**	14.1	14.7	14.6	15.2	16.7	15.9
2	**1032.2**	0	5	3	1	/	17.5	24.1	9.2	8.8	14.7	15.2	15.1	15.6	16.7	15.9
3	1028.1	0	1	1	1	/	20.7	26.4	13.2	12.9	16.6	16.9	16.9	17.1	16.9	15.9
4	1017.8	/	4	6	6	/	23.5	30.1	16.3	15.9	18.2	18.3	18.3	18.3	17.4	16.0
5	1008.5	/	7	5	7	/	19.3	24.2	14.2	15.0	19.0	19.1	19.2	19.2	18.0	16.1
6	1003.7	/	7	7	7	/	17.3	23.4	12.2	13.3	19.3	19.4	19.4	19.5	18.6	16.4
7	1005.8	8	7	7	7	/	15.2	20.9	11.4	12.1	18.4	18.5	18.6	18.8	18.5	16.7
8	1008.3	8	6	6	6	/	14.6	19.1	11.0	11.0	17.4	17.8	17.8	18.0	18.3	16.9
9	1014.9	0	1	4	0	/	14.9	19.8	10.2	10.0	16.0	16.5	16.4	16.9	18.0	17.0
10	1015.5	8	7	6	7	/	13.4	20.1	8.7	10.6	16.6	17.1	17.1	17.5	17.9	16.9
11	1017.2	0	7	6	4	/	**12.2**	17.2	8.2	9.2	15.0	15.6	15.5	16.0	17.5	16.9
12	1018.3	8	0	7	8	/	14.7	18.5	**6.4**	8.5	14.9	15.4	15.3	15.8	17.3	16.8
13	1014.7	1	8	8	7	/	17.3	21.1	14.2	13.7	16.7	16.9	16.9	17.1	17.4	16.8
14	1018.6	4	8	5	1	/	17.7	22.0	12.9	12.6	17.2	17.3	17.3	17.5	17.5	16.8
15	1016.4	0	6	7	1	/	18.5	23.8	12.6	12.6	18.0	18.2	18.2	18.3	18.0	16.8
16	1012.2	8	8	5	5	/	16.4	20.2	12.2	11.4	18.0	18.4	18.3	18.7	18.3	16.9
17	1010.7	0	1	8	7	/	14.3	19.0	10.6	10.7	16.3	16.8	16.7	17.1	18.0	17.0
18	**1003.3**	8	8	7	6	/	15.1	18.0	12.6	12.5	16.7	16.9	16.8	17.1	17.7	17.1
19	1010.6	7	7	7	6	/	14.6	18.7	11.8	11.0	16.2	16.5	16.4	16.7	17.4	17.0
20	1013.7	0	6	8	7	/	14.0	16.8	10.0	9.9	15.3	15.7	15.6	16.0	17.1	16.9
21	1013.0	7	5	5	6	/	18.3	21.5	14.9	15.3	16.9	17.0	16.9	17.0	17.1	16.8
22	1012.1	8	7	7	7	/	16.7	19.2	14.2	13.2	17.0	17.3	17.3	17.5	17.4	16.7
23	1015.8	0	8	6	6	/	15.0	18.9	12.5	12.9	16.4	16.6	16.5	16.8	17.3	16.8
24	1022.3	/	8	7	4	/	14.6	18.5	12.1	12.7	16.2	16.4	16.4	16.6	17.2	16.8
25	1023.4	0	8	8	8	/	14.5	18.0	11.1	12.5	16.2	16.4	16.3	16.5	17.0	16.7
26	1023.1	8	8	8	0	/	18.8	24.2	15.3	15.9	16.7	16.8	16.8	16.8	16.9	16.6
27	1016.8	0	1	4	4	/	24.4	31.6	14.9	14.7	18.0	18.1	18.1	18.2	17.3	16.6
28	1014.0	/	5	4	8	/	**24.5**	**33.2**	18.0	18.7	20.9	20.8	20.8	20.8	18.3	16.7
29	1019.6	0	7	5	3	/	17.2	20.1	14.1	15.1	20.3	20.6	20.6	20.7	19.4	17.0
30	1023.9	0	7	6	7	/	15.6	20.4	10.1	12.6	18.9	19.2	19.2	19.4	19.3	17.4
M	1016.1					/	16.9	21.6	12.1							

Bewolking : 9 = Bovenlucht niet zichtbaar / = Ontbrekend gegeven

DEURNE(RLW) 4° 27' 11" E 51° 11' 32" I 14m Periode 00-24 h W.T. juni 2011

	Rel.Vocht.		Mist			Neerslag								Wind						
	%		Duur in minuten				Duur		* (cm)		Dag met			Snelheid (km/h) en richting						
	Gem.	Min.	<1000m	<500m	<200m	l/m²	h min	%	6h	18h	*	^	R	Gem.	Max.		0h	6h	12h	18h
1	57	36	-	-	-	-	-	-	/	/	-	-	-	11	36	NW	NNW	N	NNE	N
2	**52**	**28**	-	-	-	-	-	-	/	/	-	-	-	14	40	NE	NE	ENE	NE	NE
3	58	40	-	-	-	-	-	-	/	/	-	-	-	18	43	NE	NE	ENE	ENE	ENE
4	56	34	-	-	-	-	-	-	/	/	-	-	-	10	40	ENE	NE	ENE	NE	ENE
5	74	61	-	-	-	3.6	2 25	10	/	/	-	-	X	11	25	NNE	NE	N	VAR	NNE
6	83	64	-	-	-	2.2	4 25	18	/	/	-	-	X	11	32	SW	NNE	SSW	WSW	WNW
7	78	60	-	-	-	9.6	5 40	24	/	/	-	-	-	11	36	WNW	W	SSW	VAR	E
8	63	40	-	-	-	1.3	1 41	7	/	/	-	-	-	14	36	SW	W	WSW	WSW	WSW
9	58	29	-	-	-	-	-	-	/	/	-	-	-	14	36	W	SW	SW	VAR	NW
10	75	42	-	-	-	7.0	4 31	19	/	/	-	-	-	**7**	54	SSW	-	SSE	SE	NW
11	75	53	-	-	-	2.4	1 22	6	/	/	-	-	-	11	43	WNW	S	SSW	WSW	WNW
12	58	38	-	-	-	-	-	-	/	/	-	-	-	11	32	SW	W	SW	SSW	SSE
13	71	57	-	-	-	<0.1	2 59	12	/	/	-	-	-	14	36	SSW	SSW	SSW	SSW	SW
14	67	49	-	-	-	-	-	-	/	/	-	-	-	**7**	**22**	WNW	WSW	W	N	N
15	67	45	-	-	-	-	-	-	/	/	-	-	-	11	36	SW	E	VAR	SW	WNW
16	74	59	-	-	-	9.4	2 56	12	/	/	-	-	-	14	50	W	SSE	SSW	SW	W
17	71	45	-	-	-	1.6	5 43	24	/	/	-	-	-	14	40	SSW	WSW	SW	SSE	E
18	68	50	-	-	-	1.7	2 36	11	/	/	-	-	-	**25**	58	WSW	S	SW	WSW	WSW
19	71	51	-	-	-	2.2	6 32	27	/	/	-	-	-	22	50	WSW	WSW	WSW	W	W
20	83	73	-	-	-	2.2	7 58	33	/	/	-	-	-	**7**	29	SW	SW	SSW	SE	SW
21	69	48	-	-	-	<0.1	1 05	5	/	/	-	-	-	14	47	WSW	SW	WSW	WSW	WSW
22	63	48	-	-	-	<0.1	1 41	7	/	/	-	-	-	14	61	WSW	WSW	W	SW	WSW
23	70	54	-	-	-	7.7	2 42	11	/	/	-	-	X	18	50	WSW	SW	SW	SW	W
24	72	48	-	-	-	6.7	5 17	22	/	/	-	-	X	11	40	WNW	WSW	WSW	WSW	NW
25	**84**	66	-	-	-	5.8	9 38	40	/	/	-	-	-	14	32	WSW	WSW	SSW	SW	WSW
26	81	66	-	-	-	-	-	-	/	/	-	-	-	**7**	**22**	SW	SW	W	VAR	E
27	67	41	-	-	-	-	-	-	/	/	-	-	-	11	29	SE	E	ESE	SE	E
28	71	44	-	-	-	**48.4**	3 36	15	/	/	-	-	X	11	**68**	WSW	ESE	ESE	E	S
29	75	48	-	-	-	0.4	1 54	8	/	/	-	-	-	18	40	NW	WSW	WNW	NW	NNW
30	68	47	-	-	-	1.7	1 13	5	/	/	-	-	-	11	36	WNW	NNW	-	WSW	NW
M	69		0	0	0	113.9	75 54				0	0	5	13						

* = Sneeuw ^ = Hagel R = Onweer <0.1 : Neerslag te wijten aan mist of dauw

DEURNE (RLW) 4° 27' 11" E 51° 11' 32" I 14m Periode 00-24 h W.T. juli 2011

	Druk hPa	Bewolking Octas				Zon	Temperaturen °C									
						Duur	Lucht			Gras	Minimum onder naakte grond					
	Gem.	0h	6	12	18	h min	Gem.	Max.	Min.	Min.	-2cm	-5cm	-10cm	-20cm	-50cm	-100cm
1	**1024.2**	8	8	3	3	/	14.9	18.8	10.4	**9.9**	17.2	17.7	17.7	18.1	18.8	17.7
2	1019.9	0	4	5	1	/	14.8	18.9	11.2	11.2	17.2	17.6	17.6	17.9	18.5	17.7
3	1017.6	0	4	4	1	/	15.7	20.4	9.5	10.7	16.7	17.1	17.1	17.4	18.3	17.7
4	1017.3	0	1	1	1	/	16.6	22.2	9.6	10.4	16.9	17.3	17.2	17.5	18.3	17.6
5	1013.2	0	4	3	6	/	**19.5**	**26.1**	11.2	13.2	18.1	18.4	18.4	18.6	18.6	17.6
6	1008.6	6	6	5	0	/	18.5	21.7	12.8	14.9	20.1	20.4	20.3	20.4	19.1	17.7
7	1008.3	/	2	6	5	/	18.5	22.5	13.2	13.7	18.9	19.2	19.2	19.4	19.4	17.9
8	1009.6	1	3	6	6	/	18.1	21.7	12.2	12.6	18.9	19.1	19.1	19.3	19.4	18.0
9	1014.0	/	8	7	4	/	17.6	21.7	14.7	13.4	19.0	19.2	19.2	19.3	19.4	18.2
10	1019.1	0	5	7	5	/	17.3	22.0	12.9	11.4	18.2	18.5	18.5	18.8	19.2	18.2
11	1019.8	7	6	4	1	/	19.3	23.8	13.0	13.9	18.8	18.9	18.9	19.1	19.2	18.3
12	1013.7	2	4	6	7	/	19.0	25.1	15.0	14.5	19.3	19.5	19.5	19.6	19.4	18.3
13	1013.4	8	7	7	7	/	14.3	15.4	12.8	12.8	17.9	18.2	18.1	18.4	19.2	18.4
14	1014.6	8	8	8	8	/	**13.2**	14.1	12.4	12.4	16.9	17.1	17.0	17.3	18.5	18.4
15	1017.4	8	6	3	4	/	18.2	23.7	12.3	11.7	16.4	16.7	16.6	16.9	18.1	18.2
16	1005.6	/	7	7	8	/	16.8	21.7	13.2	14.0	18.2	18.4	18.3	18.5	18.3	18.0
17	**997.9**	8	1	5	6	/	16.1	20.0	13.3	12.7	17.8	17.9	17.9	18.1	18.4	18.0
18	1000.5	1	8	8	7	/	15.2	17.9	13.5	12.8	17.6	17.7	17.7	17.9	18.2	18.0
19	1004.4	/	5	6	7	/	15.9	19.6	10.9	11.9	16.7	17.0	17.0	17.2	18.0	17.9
20	1009.3	8	6	7	7	/	16.1	20.8	14.0	14.0	17.7	17.9	17.9	18.0	18.1	17.8
21	1010.8	0	5	7	7	/	16.4	20.9	11.0	12.8	17.5	17.8	17.7	17.9	18.2	17.8
22	1013.7	8	7	6	4	/	15.2	17.8	12.0	12.0	17.9	18.3	18.1	18.5	18.4	17.8
23	1011.7	1	6	6	5	/	13.4	17.6	11.3	11.0	17.2	17.5	17.4	17.6	18.1	17.8
24	1009.3	8	7	7	3	/	14.4	18.4	9.6	10.6	16.7	17.1	16.9	17.3	17.8	17.7
25	1009.3	8	6	6	7	/	15.5	20.7	**9.4**	10.0	15.9	16.3	16.2	16.5	17.6	17.6
26	1013.6	0	7	7	8	/	14.9	16.7	13.6	13.1	17.4	17.5	17.5	17.6	17.7	17.5
27	1018.2	8	5	7	4	/	17.4	20.7	13.8	14.1	16.9	17.1	17.1	17.3	17.7	17.5
28	1020.0	7	7	7	6	/	18.1	22.6	15.4	16.2	18.2	18.2	18.2	18.3	17.8	17.5
29	1021.6	/	7	8	7	/	16.4	19.8	14.1	14.2	18.5	18.7	18.6	18.8	18.1	17.5
30	1020.3	8	8	8	7	/	14.7	16.0	13.3	14.0	17.4	17.6	17.5	17.7	18.1	17.6
31	1018.0	8	7	7	2	/	15.4	19.7	9.8	10.4	17.1	17.3	17.2	17.4	17.8	17.6
M	1013.4					/	16.4	20.3	12.3							

Bewolking : 9 = Bovenlucht niet zichtbaar / = Ontbrekend gegeven

DEURNE(RLW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. juli 2011

	Rel.Vocht.		Mist			Neerslag								Wind						
	%		Duur in minuten				Duur		* (cm)		Dag met			Snelheid (km/h) en richting						
	Gem.	Min.	<1000m	<500m	<200m	l/m²	h min	%	6h	18h	*	^	R	Gem.	Max.		0h	6h	12h	18h
1	68	46	-	-	-	0.8	1 05	5	/	/	-	X	X	14	47	NW	-	W	NW	NW
2	65	47	-	-	-	-	-	-	/	/	-	-	-	14	36	NNW	NNW	NNW	NNW	NW
3	65	50	-	-	-	-	-	-	/	/	-	-	-	11	36	NNW	NNW	W	NNW	N
4	66	45	-	-	-	-	-	-	/	/	-	-	-	**7**	25	NE	N	NE	VAR	NE
5	64	40	-	-	-	-	-	-	/	/	-	-	-	**7**	25	S	NE	ESE	VAR	E
6	64	40	-	-	-	1.5	2 18	10	/	/	-	-	-	14	47	SSW	ESE	SW	S	WSW
7	**58**	39	-	-	-	<0.1	0 38	3	/	/	-	-	-	14	47	SSW	ESE	S	SSW	S
8	62	41	-	-	-	0.7	1 27	6	/	/	-	-	-	18	47	SW	E	SSW	SSW	S
9	69	43	-	-	-	3.9	4 41	20	/	/	-	-	-	14	40	WSW	SE	SSE	WSW	WSW
10	64	44	-	-	-	0.1	1 10	5	/	/	-	-	-	**7**	**18**	NW	SSW	SW	WSW	E
11	64	48	-	-	-	-	-	-	/	/	-	-	-	**7**	22	NNE	N	W	VAR	N
12	73	51	-	-	-	14.4	9 08	38	/	/	-	-	-	14	47	NNW	NNE	NE	NE	NNW
13	83	66	-	-	-	4.1	10 12	43	/	/	-	-	-	**22**	43	NNW	NNW	NNW	NNW	NNW
14	**88**	83	-	-	-	**23.6**	19 12	80	/	/	-	-	-	**22**	50	W	W	W	W	W
15	65	**39**	-	-	-	-	-	-	/	/	-	-	-	11	29	WSW	W	WSW	WNW	S
16	77	53	-	-	-	16.0	11 10	47	/	/	-	-	-	14	54	SSW	WSW	SE	SSW	S
17	74	51	-	-	-	0.1	1 28	6	/	/	-	-	-	**22**	**61**	SSW	SW	SW	SSW	SSW
18	77	61	-	-	-	0.7	5 07	21	/	/	-	-	-	**22**	54	SW	SSW	SSW	SSW	SW
19	74	56	-	-	-	0.3	6 42	28	/	/	-	-	-	**7**	**18**	ENE	SSW	SSE	ENE	N
20	79	63	23	23	12	0.1	2 38	11	/	/	-	-	-	**7**	32	WSW	NW	SW	SW	W
21	79	63	272	243	161	1.1	3 35	15	/	/	-	-	X	**7**	29	NE	WSW	NNE	NE	NE
22	74	51	-	-	-	2.0	5 28	23	/	/	-	-	-	11	40	NW	N	NE	N	NNW
23	75	54	-	-	-	1.9	7 43	32	/	/	-	-	-	18	47	NW	W	W	W	WNW
24	71	47	-	-	-	2.2	4 17	18	/	/	-	-	-	18	47	WNW	SW	WSW	WNW	WNW
25	77	58	-	-	-	1.1	0 56	4	/	/	-	-	-	**7**	43	NW	E	S	W	SW
26	84	76	-	-	-	4.5	8 30	35	/	/	-	-	-	**7**	22	WNW	N	WNW	WNW	NNW
27	76	59	-	-	-	<0.1	0 43	3	/	/	-	-	-	**7**	22	SE	W	WSW	S	-
28	82	69	-	-	-	6.6	6 51	29	/	/	-	-	-	11	29	WNW	ENE	NNW	NNW	NW
29	78	60	-	-	-	0.2	1 59	8	/	/	-	-	-	14	32	NNW	N	N	N	NNW
30	76	67	-	-	-	-	-	-	/	/	-	-	-	11	25	NNW	N	N	NNW	NNW
31	67	48	-	-	-	-	-	-	/	/	-	-	-	**7**	25	WNW	NNW	W	VAR	-
M	72		295	266	173	85.9	116 58				0	1	2	13						

* = Sneeuw ^ = Hagel R = Onweer <0.1 : Neerslag te wijten aan mist of dauw

DEURNE(RLW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. augustus 2011

	Druk hPa	Bewolking Octas				Zon	Temperaturen °C									
						Duur	Lucht			Gras	Minimum onder naakte grond					
	Gem.	0h	6	12	18	h min	Gem.	Max.	Min.	Min.	-2cm	-5cm	-10cm	-20cm	-50cm	-100cm
1	1016.4	0	1	4	0	/	16.2	23.0	7.9	8.7	16.0	16.3	16.3	16.6	17.7	17.5
2	1015.1	0	1	3	7	/	20.9	27.8	11.4	12.5	17.4	17.6	17.6	17.8	17.9	17.5
3	1014.4	/	7	8	7	/	19.3	21.6	14.2	14.9	19.5	19.6	19.7	19.6	18.4	17.5
4	1013.7	0	1	5	8	/	19.7	27.1	13.2	14.3	18.7	18.8	18.9	18.9	18.9	17.7
5	1012.7	0	8	7	7	/	18.7	23.2	15.6	16.7	19.9	19.9	19.9	19.9	19.0	17.8
6	**1004.6**	8	5	5	8	/	18.7	23.3	14.2	15.3	20.1	20.1	20.1	20.1	19.3	18.0
7	1005.3	8	3	4	7	/	16.7	21.1	12.9	13.8	19.2	19.4	19.4	19.5	19.3	18.1
8	1006.4	3	8	2	5	/	15.4	19.5	12.8	14.1	18.7	18.8	18.8	19.0	19.0	18.2
9	1019.6	8	1	6	6	/	14.6	17.3	12.0	12.1	17.4	17.8	17.6	18.0	18.6	18.3
10	**1022.6**	7	4	5	6	/	17.2	21.8	11.4	11.5	16.8	17.1	17.0	17.4	18.3	18.1
11	1012.9	8	7	6	7	/	18.7	24.3	14.9	14.5	17.7	17.9	17.8	18.0	18.3	18.0
12	1011.1	8	8	7	6	/	18.2	21.3	16.4	17.1	18.8	18.8	18.8	18.8	18.4	18.0
13	1009.1	3	6	7	7	/	18.1	19.7	15.8	16.9	19.0	19.0	19.0	19.1	18.6	18.0
14	1007.5	8	8	7	5	/	16.9	19.6	14.1	14.1	18.5	18.7	18.7	18.9	18.8	18.0
15	1015.8	0	2	7	4	/	16.2	20.7	11.6	12.1	17.8	18.0	17.9	18.2	18.6	18.1
16	1018.1	/	8	5	6	/	18.0	22.8	12.9	13.8	17.9	18.0	18.0	18.2	18.5	18.1
17	1016.8	4	7	4	6	/	18.6	23.8	15.0	15.1	18.7	18.7	18.7	18.8	18.6	18.1
18	1013.2	8	7	4	7	/	17.8	24.0	14.1	13.9	19.0	19.2	19.2	19.3	18.9	18.1
19	1018.0	8	7	4	2	/	17.5	20.7	12.3	13.2	19.3	19.6	19.5	19.7	19.1	18.2
20	1020.3	0	1	5	4	/	18.9	25.1	11.7	12.3	18.3	18.6	18.5	18.8	19.1	18.3
21	1014.6	8	8	7	6	/	**21.8**	**29.0**	14.8	15.0	19.2	19.3	19.3	19.4	19.2	18.3
22	1018.5	0	6	8	8	/	18.5	22.1	16.0	16.3	19.8	19.9	19.9	20.0	19.5	18.4
23	1013.3	/	8	4	5	/	19.9	25.7	16.5	16.8	19.3	19.5	19.4	19.6	19.5	18.5
24	1014.8	0	8	7	7	/	18.3	20.7	12.8	13.8	19.3	19.6	19.5	19.8	19.5	18.6
25	1013.0	0	7	5	7	/	18.4	25.3	9.8	11.7	18.4	18.6	18.6	18.8	19.4	18.7
26	1005.5	0	8	8	7	/	17.9	20.2	15.2	15.2	19.2	19.3	19.3	19.4	19.4	18.7
27	1012.4	4	7	7	6	/	15.2	18.5	12.4	13.0	18.4	18.6	18.5	19.8	19.1	18.7
28	1016.6	8	5	7	6	/	14.7	17.2	12.3	12.5	17.8	18.0	17.9	18.2	18.7	18.6
29	1016.4	0	5	7	7	/	14.4	17.7	11.8	11.9	17.2	17.4	17.3	17.6	18.3	18.4
30	1016.6	8	8	8	5	/	13.5	15.6	8.2	9.0	16.2	16.6	16.5	16.9	18.0	18.3
31	1015.7	0	7	7	6	/	**13.3**	18.8	**6.2**	**7.9**	15.3	15.7	15.6	16.0	17.6	18.1
M	1013.9					/	17.5	21.9	12.9							

Bewolking : 9 = Bovenlucht niet zichtbaar / = Ontbrekend gegeven

DEURNE(RLW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. augustus 2011

	Rel.Vocht.		Mist			Neerslag								Wind						
	%		Duur in minuten				Duur		* (cm)		Dag met			Snelheid (km/h) en richting						
	Gem.	Min.	<1000m	<500m	<200m	l/m²	h min	%	6h	18h	*	^	R	Gem.	Max.		0h	6h	12h	18h
1	68	46	-	-	-	-	-	-	/	/	-	-	-	7	22	ESE	ESE	ESE	ESE	E
2	64	41	-	-	-	-	-	-	/	/	-	-	-	7	22	NNE	-	ESE	E	NNE
3	80	65	2	2	-	8.4	10 19	43	/	/	-	-	-	7	22	WNW	NNE	NNW	W	NNW
4	76	47	79	69	43	3.0	5 17	22	/	/	-	-	-	11	36	SSW	SSW	SW	SSW	S
5	75	55	-	-	-	-	-	-	/	/	-	-	-	11	32	WSW	WSW	SW	SSW	SE
6	81	65	-	-	-	2.6	1 49	8	/	/	-	-	-	11	40	WNW	SSE	E	SSW	WNW
7	70	46	-	-	-	0.1	0 29	2	/	/	-	-	-	18	47	SSW	WSW	SW	SW	SW
8	77	50	-	-	-	9.3	7 38	32	/	/	-	-	-	22	47	WSW	SSW	SW	W	WSW
9	74	55	-	-	-	10.0	5 14	22	/	/	-	-	-	18	54	WNW	WSW	W	WNW	NW
10	61	42	-	-	-	-	-	-	/	/	-	-	-	18	50	SW	W	SSW	WSW	WSW
11	63	38	-	-	-	0.1	1 25	6	/	/	-	-	-	22	50	SW	SW	SW	SW	WSW
12	81	69	-	-	-	0.4	2 24	10	/	/	-	-	-	11	29	W	WSW	WSW	WSW	SW
13	85	76	-	-	-	9.6	5 21	22	/	/	-	-	-	11	32	SSW	SSW	SSW	SSW	SW
14	82	69	-	-	-	16.6	9 27	39	/	/	-	-	-	11	29	WSW	S	W	W	WSW
15	69	36	-	-	-	-	-	-	/	/	-	-	-	7	29	WNW	SW	WSW	NNW	W
16	66	46	-	-	-	0.2	1 14	5	/	/	-	-	-	7	32	WSW	E	SW	WSW	SSW
17	70	51	-	-	-	0.1	0 30	2	/	/	-	-	-	11	29	NE	WSW	SW	ESE	N
18	80	67	-	-	-	2.3	6 23	27	/	/	-	-	X	11	29	ENE	NE	NE	ENE	ENE
19	70	46	-	-	-	0.1	0 38	3	/	/	-	-	-	14	32	NNW	WNW	NNW	WNW	W
20	66	42	-	-	-	-	-	-	/	/	-	-	-	7	25	SSW	SSE	SW	SSW	SSW
21	73	52	-	-	-	0.1	2 10	9	/	/	-	-	-	14	40	SW	ESE	S	SW	W
22	78	63	-	-	-	4.3	4 17	18	/	/	-	-	-	11	47	E	W	WSW	S	NE
23	82	58	-	-	-	15.0	5 57	25	/	/	-	-	X	14	58	E	E	W	SE	SSW
24	83	70	-	-	-	0.1	1 32	6	/	/	-	-	-	11	36	SW	S	SSE	SW	W
25	73	54	-	-	-	-	-	-	/	/	-	-	-	11	32	S	SW	ESE	SSW	W
26	82	69	-	-	-	4.4	3 05	13	/	/	-	-	X	14	43	SW	E	SW	SW	SW
27	78	57	-	-	-	1.0	4 10	17	/	/	-	-	X	14	47	W	SW	S	W	WSW
28	78	68	-	-	-	0.1	1 58	8	/	/	-	-	-	18	40	SW	SW	SSW	SW	SW
29	69	44	-	-	-	<0.1	0 16	1	/	/	-	-	-	18	47	W	SW	SW	W	W
30	77	64	-	-	-	0.9	3 23	14	/	/	-	-	-	7	25	W	WSW	WSW	SW	WSW
31	78	54	102	61	20	-	-	-	/	/	-	-	-	7	22	NNW	SSW	WSW	WSW	N
M	74		183	132	63	88.7	84 56				0	0	4	12						

* = Sneeuw ^ = Hagel R = Onweer <0.1 : Neerslag te wijten aan mist of dauw

DEURNE(RLW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. september 2011

	Druk hPa	Bewolking Octas				Zon	Temperaturen °C									
						Duur	Lucht			Gras	Minimum onder naakte grond					
	Gem.	0h	6	12	18	h min	Gem.	Max.	Min.	Min.	-2cm	-5cm	-10cm	-20cm	-50cm	-100cm
1	1015.3	0	2	1	0	/	15.2	20.3	9.6	10.2	15.7	16.0	15.9	16.3	17.4	17.9
2	1012.4	/	1	4	6	/	18.6	26.7	10.4	11.9	16.2	16.4	16.4	16.7	17.5	17.8
3	1010.2	7	6	1	5	/	**21.8**	**29.1**	13.4	14.8	17.7	17.8	17.8	17.9	17.8	17.7
4	1008.9	8	8	7	5	/	18.8	22.9	13.3	15.0	19.4	19.4	19.5	19.5	18.3	17.8
5	1014.4	0	7	7	2	/	15.7	18.9	12.7	13.7	18.2	18.5	18.4	18.6	18.8	17.9
6	1013.3	8	7	8	8	/	15.7	17.9	14.0	13.5	17.4	17.6	17.6	17.8	18.4	18.1
7	1011.1	/	7	6	7	/	15.2	18.4	13.0	11.9	16.6	16.9	16.8	17.1	17.9	18.0
8	1010.4	8	8	8	8	/	14.5	15.8	13.1	13.5	16.5	16.7	16.6	16.9	17.6	17.9
9	1011.5	8	8	8	7	/	17.8	20.8	14.3	14.7	16.5	16.6	16.6	16.8	17.4	17.7
10	1008.1	0	7	7	7	/	21.5	27.8	14.8	14.7	17.3	17.4	17.4	17.5	17.5	17.6
11	1009.5	8	7	8	6	/	17.7	19.8	14.8	14.5	18.3	18.5	18.4	18.6	17.9	17.6
12	1009.6	0	7	8	1	/	17.5	22.6	14.1	13.9	17.6	17.8	17.7	17.9	18.0	17.7
13	1013.2	0	1	7	4	/	16.2	19.9	13.6	13.3	16.8	17.1	17.0	17.3	17.8	17.7
14	1018.1	8	1	3	5	/	14.8	18.7	10.9	11.1	16.2	16.5	16.4	16.7	17.5	17.6
15	1021.1	0	2	4	2	/	14.1	19.0	9.5	10.9	15.7	16.1	16.0	16.3	17.3	17.5
16	1015.5	0	3	7	6	/	15.1	20.0	8.7	10.2	15.6	15.9	15.8	16.1	17.2	17.4
17	1009.4	0	6	8	8	/	15.3	17.7	11.5	13.2	16.3	16.5	16.4	16.6	17.2	17.4
18	**1004.3**	7	3	5	5	/	**12.1**	16.6	6.9	9.5	15.8	16.1	16.0	16.3	17.1	17.3
19	1013.1	0	3	4	1	/	13.1	18.2	**5.6**	**8.5**	14.9	15.2	15.1	15.5	16.7	17.2
20	1021.5	0	5	7	7	/	16.1	19.2	12.5	12.6	15.5	15.6	15.6	15.8	16.6	17.0
21	1019.3	8	7	7	8	/	16.3	19.1	13.7	13.2	16.3	16.3	16.3	16.5	16.7	17.0
22	1019.9	/	7	7	3	/	14.9	18.7	12.1	12.8	16.0	16.2	16.1	16.3	16.8	16.9
23	1019.4	0	7	5	5	/	13.4	18.9	8.3	10.1	15.7	15.9	15.8	16.1	16.7	16.9
24	1016.2	0	4	4	2	/	14.0	21.4	6.2	8.7	14.6	15.0	14.9	15.2	16.5	16.8
25	1018.5	0	3	0	4	/	16.1	23.6	8.4	9.9	14.9	15.2	15.1	15.4	16.5	16.8
26	1022.9	/	4	4	7	/	18.2	24.4	11.6	13.1	15.9	16.1	16.1	16.3	16.6	16.7
27	**1029.5**	0	6	4	4	/	17.2	22.3	12.4	12.7	16.6	16.7	16.7	16.8	16.8	16.8
28	1028.7	0	1	0	0	/	17.6	25.0	9.4	11.2	16.0	16.3	16.2	16.5	17.1	16.8
29	1026.3	0	1	1	1	/	18.3	26.1	10.9	11.7	16.2	16.4	16.4	16.6	17.1	16.9
30	1025.3	0	2	0	0	/	17.5	25.6	10.5	11.8	16.1	16.4	16.3	16.6	17.2	16.9
M	1015.9					/	16.3	21.2	11.3							

Bewolking : 9 = Bovenlucht niet zichtbaar / = Ontbrekend gegeven

DEURNE (KNMI) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. september 2011

	Rel.Vocht.		Mist			Neerslag								Wind						
	%		Duur in minuten				Duur		* (cm)		Dag met			Snelheid (km/h) en richting						
	Gem.	Min.	<1000m	<500m	<200m	1/m²	h min	%	6h	18h	*	^	R	Gem.	Max.		0h	6h	12h	18h
1	72	54	-	-	-	-	-	-	/	/	-	-	-	11	25	E	NNE	NE	E	ENE
2	74	55	37	9	1	-	-	-	/	/	-	-	-	7	25	SW	ENE	ESE	SW	NW
3	74	47	296	160	69	8.8	2 05	9	/	/	-	-	-	7	58	SSW	SSE	ENE	VAR	ESE
4	81	65	-	-	-	8.0	4 15	18	/	/	-	-	-	11	50	SW	NW	SW	SSW	S
5	70	54	-	-	-	0.2	1 54	8	/	/	-	-	-	18	50	SW	SW	SSW	SW	WSW
6	79	65	-	-	-	**18.7**	12 41	53	/	/	-	-	-	**25**	**68**	W	SW	SSW	SSW	SSW
7	72	55	-	-	-	0.2	1 07	5	/	/	-	-	-	22	54	W	WSW	WSW	W	WSW
8	**88**	77	-	-	-	7.1	15 17	64	/	/	-	-	-	18	43	WSW	WSW	SW	WSW	SW
9	87	79	158	95	2	0.6	1 45	7	/	/	-	-	-	11	25	WSW	SW	SSW	W	WSW
10	79	60	69	57	14	-	-	-	/	/	-	-	-	11	32	WNW	ESE	SSE	SSE	SE
11	79	65	-	-	-	0.1	6 04	25	/	/	-	-	-	14	36	SW	WSW	S	SW	SSW
12	76	60	-	-	-	<0.1	0 32	2	/	/	-	-	-	**25**	61	SW	SSW	SSW	SSW	WSW
13	**68**	**46**	-	-	-	-	-	-	/	/	-	-	-	22	47	W	WSW	SW	W	WSW
14	**68**	46	-	-	-	-	-	-	/	/	-	-	-	18	47	WSW	WSW	SW	W	W
15	80	55	-	-	-	-	-	-	/	/	-	-	-	7	22	SSE	WSW	SW	SSE	ENE
16	78	60	-	-	-	<0.1	0 05	0	/	/	-	-	-	11	29	SSE	ENE	E	ESE	SE
17	77	63	-	-	-	5.3	3 00	13	/	/	-	-	-	14	40	SSW	SW	SSW	SSW	SSW
18	81	56	118	114	34	4.8	1 44	7	/	/	-	-	X	14	36	SW	S	SW	SW	S
19	76	52	281	218	31	0.5	0 17	1	/	/	-	-	-	11	32	W	-	WSW	W	WSW
20	74	57	-	-	-	<0.1	0 15	1	/	/	-	-	-	14	40	SW	S	SSW	SW	SSW
21	73	58	-	-	-	<0.1	0 29	2	/	/	-	-	-	14	47	WSW	S	SSW	SW	SW
22	75	57	-	-	-	-	-	-	/	/	-	-	-	14	29	W	WSW	SW	W	WNW
23	82	53	47	-	-	-	-	-	/	/	-	-	-	7	22	SSW	SW	SW	SW	SSE
24	76	50	62	35	-	-	-	-	/	/	-	-	-	**4**	**18**	SSW	E	ESE	WSW	WNW
25	76	50	62	55	45	-	-	-	/	/	-	-	-	7	25	SSW	-	ESE	S	SSE
26	76	50	-	-	-	-	-	-	/	/	-	-	-	7	29	SW	E	SSW	SW	NNW
27	80	62	82	79	57	-	-	-	/	/	-	-	-	**4**	**18**	WNW	SE	-	VAR	NNE
28	79	55	335	233	144	-	-	-	/	/	-	-	-	7	**18**	E	NNE	E	ESE	ENE
29	76	48	196	169	113	-	-	-	/	/	-	-	-	7	25	ESE	E	E	ESE	E
30	77	50	84	22	-	-	-	-	/	/	-	-	-	**4**	**18**	SSW	ESE	E	SSE	-
M	77		1827	1246	510	54.3	51 30				0	0	1	12						

* = Sneeuw ^ = Hagel R = Onweer <0.1 : Neerslag te wijten aan mist of dauw

DEURNE(RLW) 4° 27' 11" E 51° 11' 32" I 14m Periode 00-24 h W.T. oktober 2011

	Druk	Bewolking				Zon	Temperaturen °C									
	hPa	Octas				Duur	Lucht			Gras	Minimum onder naakte grond					
	Gem.	0h	6	12	18	h min	Gem.	Max.	Min.	Min.	-2cm	-5cm	-10cm	-20cm	-50cm	-100cm
1	1026.2	0	0	0	1	/	17.1	25.4	9.4	11.8	16.1	16.4	16.3	16.6	17.2	17.0
2	1025.2	0	1	0	0	/	17.0	**26.2**	9.3	10.8	15.9	16.3	16.2	16.5	17.2	17.0
3	1021.3	0	1	1	1	/	**18.8**	25.7	10.6	11.4	16.0	16.3	16.2	16.5	17.2	17.0
4	1020.8	0	8	8	7	/	17.3	20.0	15.5	14.9	16.8	17.0	16.9	17.1	17.2	17.0
5	1019.5	8	7	6	7	/	17.3	19.1	16.1	16.0	17.1	17.1	17.1	17.2	17.3	17.0
6	1010.1	8	7	6	2	/	14.3	17.4	10.0	9.7	15.6	16.0	15.9	16.2	17.2	17.0
7	1013.7	0	6	3	6	/	11.4	14.8	8.5	8.3	14.6	14.9	14.8	15.2	16.5	17.0
8	1018.4	7	7	6	7	/	10.2	11.3	8.9	9.7	14.1	14.4	14.2	14.5	16.0	16.8
9	1019.0	8	7	8	8	/	12.4	16.7	10.0	11.3	14.0	14.2	14.1	14.4	15.6	16.6
10	1017.4	8	7	5	5	/	17.3	20.1	16.4	15.0	14.7	14.7	14.7	14.8	15.5	16.3
11	1018.6	8	8	8	7	/	16.5	17.9	14.7	14.5	15.6	15.6	15.6	15.7	15.7	16.3
12	1020.1	7	7	7	8	/	14.8	15.8	11.7	13.2	15.6	15.7	15.7	15.8	15.9	16.2
13	1029.2	8	6	5	1	/	11.2	15.1	6.7	5.3	13.8	14.2	14.1	14.5	15.8	16.2
14	**1032.4**	0	0	1	4	/	8.8	14.5	3.6	2.4	12.4	12.9	12.8	13.2	15.2	16.1
15	1027.8	0	1	1	1	/	7.5	14.5	1.7	1.7	11.1	11.7	11.5	12.0	14.4	15.9
16	1024.3	0	1	1	1	/	7.7	15.7	0.8	1.5	10.2	10.8	10.6	11.1	13.8	15.6
17	1020.2	8	7	4	7	/	12.0	15.9	5.3	5.1	11.0	11.4	11.3	11.6	13.6	15.3
18	1010.8	8	8	7	6	/	10.7	13.4	8.3	7.3	11.8	12.1	12.1	12.3	13.6	15.1
19	1016.2	0	4	5	2	/	8.7	12.9	6.3	4.8	11.0	11.3	11.2	11.5	13.4	14.9
20	1025.9	8	2	6	3	/	6.8	11.2	1.5	1.7	9.9	10.4	10.2	10.7	12.9	14.7
21	1027.0	0	0	2	1	/	5.6	12.3	0.0	0.3	8.8	9.4	9.2	9.7	12.4	14.4
22	1020.5	0	1	2	2	/	**5.2**	11.5	**-0.2**	0.8	8.4	8.9	8.7	9.2	11.9	14.2
23	1014.1	0	2	1	1	/	6.9	16.1	0.1	**0.0**	8.0	8.4	8.3	8.7	11.5	13.8
24	1004.6	0	0	0	1	/	7.8	13.1	2.9	1.5	8.3	8.7	8.6	9.0	11.3	13.6
25	**1001.6**	8	8	8	7	/	10.2	11.7	8.4	8.1	9.3	9.5	9.4	9.6	11.3	13.3
26	1010.2	7	7	2	0	/	10.2	14.6	4.8	3.9	9.9	10.2	10.1	10.3	11.4	13.2
27	1012.5	0	6	7	7	/	10.1	17.1	4.4	3.0	9.4	9.7	9.5	9.9	11.5	13.1
28	1021.8	/	4	1	6	/	13.3	19.3	7.9	7.1	10.2	10.3	10.3	10.5	11.5	13.0
29	1022.9	0	7	7	7	/	13.7	17.6	8.7	7.8	11.2	11.3	11.3	11.4	11.7	13.0
30	1021.7	0	2	7	7	/	14.0	15.8	11.8	10.3	11.8	11.9	11.9	12.0	12.1	13.0
31	1017.9	8	6	3	1	/	12.7	17.0	7.2	7.0	11.9	12.2	12.1	12.3	12.5	13.1
M	1019.1					/	11.9	16.4	7.5							

Bewolking : 9 = Bovenlucht niet zichtbaar / = Ontbrekend gegeven

DEURNE(RLW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. oktober 2011

	Rel.Vocht.		Mist			Neerslag					Wind							
	%		Duur in minuten				Duur		* (cm)		Dag met			Snelheid (km/h) en richting					
	Gem.	Min.	<1000m	<500m	<200m	1/m²	h min	%	6h	18h	*	^	R	Gem.	Max.		0h	6h	12h	18h
1	79	46	488	270	116	-	-	-	/	/	-	-	-	**4**	14	SE	-	ESE	SE	ESE
2	76	**39**	269	118	77	-	-	-	/	/	-	-	-	**4**	14	WNW	SSE	E	VAR	NNE
3	**65**	43	-	-	-	-	-	-	/	/	-	-	-	11	29	SW	SSE	SSW	SW	SSW
4	76	61	-	-	-	0.1	2 42	11	/	/	-	-	-	14	40	W	SW	SW	W	WSW
5	78	65	-	-	-	0.3	0 56	4	/	/	-	-	-	18	43	SW	WSW	SW	WSW	WSW
6	70	48	-	-	-	4.0	2 11	9	/	/	-	-	-	**25**	**58**	W	SSW	SSW	WNW	WSW
7	73	41	-	-	-	**11.9**	7 10	30	/	/	-	-	-	22	50	WNW	SW	W	WNW	W
8	85	72	-	-	-	11.3	9 22	39	/	/	-	-	-	14	40	WNW	W	WNW	W	NNW
9	**90**	86	-	-	-	2.6	6 42	28	/	/	-	-	-	14	36	WSW	WSW	S	S	SW
10	79	65	-	-	-	0.1	0 30	2	/	/	-	-	-	**25**	54	WSW	W	WSW	WSW	WSW
11	79	73	-	-	-	0.1	1 28	6	/	/	-	-	-	**25**	**58**	WSW	WSW	WSW	WSW	WSW
12	89	85	-	-	-	4.2	10 44	45	/	/	-	-	-	14	43	W	WSW	WSW	W	W
13	77	53	-	-	-	<0.1	0 16	1	/	/	-	-	-	11	25	NE	E	ENE	ENE	ENE
14	74	48	-	-	-	-	-	-	/	/	-	-	-	11	32	ESE	ENE	ENE	E	E
15	74	43	-	-	-	-	-	-	/	/	-	-	-	7	22	ESE	E	ENE	ESE	E
16	77	55	15	1	-	-	-	-	/	/	-	-	-	**4**	18	WSW	ESE	ESE	SSW	WSW
17	81	70	-	-	-	-	-	-	/	/	-	-	-	14	40	SSW	SSW	SSW	SSW	S
18	78	69	-	-	-	4.3	4 03	17	/	/	-	-	-	18	47	SW	SSW	SSW	SW	SSW
19	75	56	-	-	-	4.3	2 34	11	/	/	-	X	X	14	47	W	SW	SW	WSW	W
20	76	47	-	-	-	1.4	1 48	8	/	/	-	-	-	7	25	W	W	NNW	N	WSW
21	77	54	-	-	-	-	-	-	/	/	-	-	-	7	25	SSW	S	SSE	SSW	S
22	77	51	-	-	-	-	-	-	/	/	-	-	-	11	32	SSE	SE	E	SSE	SSE
23	80	57	-	-	-	-	-	-	/	/	-	-	-	11	29	SE	ESE	E	SE	ESE
24	77	62	-	-	-	-	-	-	/	/	-	-	-	18	40	E	ESE	ESE	ESE	ESE
25	87	69	-	-	-	6.6	13 25	56	/	/	-	-	-	11	25	ESE	ESE	ESE	ESE	ESE
26	79	57	-	-	-	0.1	0 51	4	/	/	-	-	-	14	36	SSW	S	SSW	S	SE
27	77	53	-	-	-	<0.1	0 22	2	/	/	-	-	-	11	36	SE	ESE	E	SE	SE
28	80	63	29	11	-	<0.1	0 40	3	/	/	-	-	-	**4**	**11**	S	ESE	ESE	SSE	SE
29	84	70	182	150	49	-	-	-	/	/	-	-	-	7	25	SSW	ESE	-	SSE	SSW
30	83	67	-	-	-	<0.1	0 46	3	/	/	-	-	-	11	29	SSW	SW	SSW	SW	SW
31	81	62	73	42	3	-	-	-	/	/	-	-	-	7	29	SSW	S	SSE	S	SE
M	78		1056	592	245	51.3	66 30				0	1	1	13						

* = Sneeuw ^ = Hagel R = Onweer <0.1 : Neerslag te wijten aan mist of dauw

IRA/11354/10.104/MBO/ANF
version 2.0 - 21/12/2012

IMDC NV
i. c. w. Deltares & Gems

DEURNE(RLW) 4° 27' 11" E 51° 11' 32" t 14m Periode 00-24 h W.T. november 2011

	Druk	Bewolking				Zon	Temperaturen °C									
	hPa	Octas				Duur	Lucht			Gras	Minimum onder naakte grond					
	Gem.	0h	6	12	18	h min	Gem.	Max.	Min.	Min.	-2cm	-5cm	-10cm	-20cm	-50cm	-100cm
1	1012.8	0	2	2	8	/	12.3	17.2	6.9	5.9	11.0	11.4	11.3	11.5	12.6	13.2
2	1010.7	7	6	4	5	/	11.7	15.1	8.9	7.8	12.1	12.2	12.2	12.3	12.6	13.2
3	**1000.6**	/	7	8	7	/	13.9	17.8	8.6	7.9	11.6	11.8	11.8	12.0	12.7	13.2
4	**1000.6**	8	7	1	7	/	**15.3**	**19.1**	11.2	9.9	12.5	12.5	12.5	12.6	12.7	13.3
5	1005.6	7	8	7	5	/	13.4	16.9	10.5	9.6	12.5	12.6	12.5	12.6	12.9	13.3
6	1016.7	8	7	7	7	/	12.2	12.9	10.9	10.6	12.4	12.5	12.5	12.6	13.0	13.3
7	1018.8	8	7	8	8	/	9.7	10.9	8.5	8.1	11.7	11.9	11.8	12.0	12.9	13.4
8	1016.9	8	8	5	3	/	9.2	12.0	7.1	6.5	11.2	11.4	11.4	11.6	12.6	13.4
9	1019.7	8	8	6	2	/	11.1	15.0	5.9	5.3	11.1	11.4	11.3	11.6	12.4	13.3
10	1020.7	0	1	0	7	/	7.6	13.9	3.0	3.5	10.0	10.4	10.3	10.6	12.2	13.2
11	1021.2	8	7	6	0	/	5.9	10.8	2.0	1.3	9.4	9.7	9.6	10.0	11.8	13.0
12	1028.2	0	1	5	5	/	6.7	12.7	1.4	1.2	8.6	9.0	8.9	9.3	11.3	12.8
13	**1031.0**	0	8	8	8	/	5.6	6.6	3.3	2.7	8.8	9.1	9.0	9.3	11.0	12.7
14	1025.3	8	/	4	1	/	5.1	9.4	1.7	0.9	8.2	8.6	8.5	8.9	10.8	12.5
15	1020.6	0	1	0	1	/	2.3	7.5	-2.4	**-3.1**	6.8	7.3	7.2	7.6	10.2	12.3
16	1020.1	0	1	3	2	/	**1.4**	7.7	**-2.9**	-2.6	5.8	6.4	6.1	6.7	9.5	12.0
17	1021.8	0	8	5	8	/	5.7	9.4	-2.2	-1.8	5.7	6.2	6.0	6.5	9.1	11.6
18	1022.5	8	8	4	2	/	7.6	11.5	1.5	2.3	7.7	7.7	7.7	7.8	9.1	11.4
19	1019.6	7	/	6	4	/	4.4	10.3	-0.5	0.6	7.0	7.4	7.3	7.6	9.3	11.2
20	1020.2	0	4	1	1	/	3.5	12.2	-2.1	-0.4	6.2	6.6	6.5	6.9	9.0	11.1
21	1017.5	/	8	8	8	/	**1.4**	4.0	0.0	0.0	6.3	6.6	6.5	6.8	8.7	10.9
22	1019.0	7	5	4	4	/	6.1	13.8	1.3	1.9	6.5	6.7	6.7	6.9	8.6	10.7
23	1026.9	0	8	7	4	/	10.2	12.3	5.3	4.3	7.1	7.3	7.2	7.4	8.7	10.6
24	1030.7	8	/	8	7	/	8.0	10.2	4.5	4.9	7.9	8.1	8.0	8.2	8.9	10.5
25	1026.2	8	8	8	2	/	7.4	8.9	6.3	4.7	8.0	8.2	8.2	8.3	9.2	10.5
26	1027.9	0	2	7	7	/	8.0	11.1	5.0	3.8	7.5	7.7	7.6	7.9	9.1	10.5
27	1021.9	0	8	8	1	/	9.1	12.5	2.9	1.7	7.9	8.1	8.1	8.3	9.2	10.5
28	1026.3	1	1	2	1	/	4.8	9.7	-0.6	-0.6	6.5	6.9	6.8	7.2	8.9	10.4
29	1016.0	3	7	5	7	/	7.3	10.5	3.6	2.4	6.7	7.0	6.9	7.1	8.7	10.3
30	1023.8	0	2	3	1	/	7.8	11.5	5.0	3.2	6.9	7.2	7.1	7.3	8.7	10.2
M	1019.7					/	7.8	11.8	3.8							

Bewolking : 9 = Bovenlucht niet zichtbaar / = Ontbrekend gegeven

DEURNE(RIW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. november 2011

	Rel.Vocht.		Mist			Neerslag								Wind						
	%		Duur in minuten				Duur		* (cm)		Dag met			Snelheid (km/h) en richting						
	Gem.	Min.	<1000m	<500m	<200m	l/m²	h min	%	6h	18h	*	^	R	Gem.	Max.		0h	6h	12h	18h
1	85	68	2	-	-	**4.7**	6 50	28	/	/	-	-	-	11	29	SSW	SE	SE	SSW	SSW
2	87	76	21	2	-	-	-	-	/	/	-	-	-	11	25	SE	SW	E	SE	ESE
3	81	55	-	-	-	0.2	5 34	23	/	/	-	-	-	14	43	SSE	ESE	SE	SE	SE
4	**68**	**49**	-	-	-	<0.1	0 43	3	/	/	-	-	-	18	**65**	SSE	SE	SSE	S	E
5	85	73	-	-	-	0.4	3 37	15	/	/	-	-	-	7	22	E	E	ENE	SE	-
6	83	77	-	-	-	-	-	-	/	/	-	-	-	14	36	NNE	NNW	N	NNE	NNE
7	87	82	-	-	-	<0.1	0 52	4	/	/	-	-	-	14	32	NE	NNE	NE	ENE	E
8	87	80	-	-	-	-	-	-	/	/	-	-	-	11	22	E	ENE	E	E	SSE
9	81	57	55	4	-	-	-	-	/	/	-	-	-	7	25	SSW	ESE	ESE	SSW	ESE
10	87	68	255	220	118	-	-	-	/	/	-	-	-	11	32	ESE	ESE	ESE	E	E
11	87	76	-	-	-	-	-	-	/	/	-	-	-	14	32	SE	ESE	SE	SSE	SE
12	85	71	-	-	-	-	-	-	/	/	-	-	-	7	14	ESE	ESE	ESE	SE	NE
13	93	88	1088	690	-	-	-	-	/	/	-	-	-	11	25	ESE	ESE	E	E	E
14	90	76	689	594	34	-	-	-	/	/	-	-	-	7	18	E	SE	SE	ESE	ENE
15	84	66	10	-	-	-	-	-	/	/	-	-	-	7	22	ESE	ENE	E	E	ENE
16	85	65	109	74	33	-	-	-	/	/	-	-	-	7	14	SE	E	E	SSE	W
17	89	80	256	199	-	-	-	-	/	/	-	-	-	11	22	SSW	SSE	S	SSW	SW
18	89	78	300	287	225	<0.1	0 22	2	/	/	X	-	-	7	18	SSW	S	SSW	S	ESE
19	92	77	624	577	212	-	-	-	/	/	-	-	-	**4**	11	SSE	ESE	E	SSE	-
20	90	70	356	320	284	-	-	-	/	/	-	-	-	**4**	11	NE	ESE	NNW	ENE	E
21	**97**	91	1387	1362	1260	-	-	-	/	/	-	-	-	**4**	11	ESE	E	E	ESE	NNE
22	90	74	240	75	38	-	-	-	/	/	-	-	-	**4**	**7**	SSW	E	-	N	NE
23	88	76	548	331	207	<0.1	0 03	0	/	/	-	-	-	7	22	SW	WNW	VAR	W	SW
24	90	82	426	175	38	-	-	-	/	/	-	-	-	11	32	SW	SW	SSW	S	SSW
25	89	83	-	-	-	<0.1	1 50	8	/	/	-	-	-	18	40	SSW	SW	SSW	SSW	SW
26	83	72	-	-	-	-	-	-	/	/	-	-	-	18	47	SW	WSW	SW	SW	SSW
27	80	69	-	-	-	1.5	1 40	7	/	/	-	-	-	**22**	50	SW	SW	SW	WSW	W
28	85	68	-	-	-	-	-	-	/	/	-	-	-	7	32	SSW	W	S	SE	S
29	83	73	-	-	-	2.6	1 18	5	/	/	-	-	-	18	54	SSW	S	SSE	S	SSW
30	76	65	-	-	-	-	-	-	/	/	-	-	-	14	29	SW	W	SW	SSW	S
M	86		6366	4910	2449	9.4	22 49				1	0	0	11						

* = Sneeuw ^ = Hagel R = Onweer <0.1 : Neerslag te wijten aan mist of dauw

DEURNE(RLW) 4° 27' 11" E 51° 11' 32" I 14m Periode 00-24 h W.T. december 2011

	Druk	Bewolking				Zon	Temperaturen °C									
	hPa	Octas				Duur	Lucht			Gras	Minimum onder naakte grond					
	Gem.	0h	6	12	18	h min	Gem.	Max.	Min.	Min.	-2cm	-5cm	-10cm	-20cm	-50cm	-100cm
1	1011.3	0	8	8	8	/	**10.4**	**13.0**	3.4	3.3	6.9	7.1	7.0	7.2	8.6	10.1
2	1011.5	8	8	1	4	/	7.7	12.6	5.6	3.6	7.7	7.9	7.8	8.0	8.7	10.1
3	1005.5	8	8	8	4	/	8.3	11.3	6.5	4.8	7.6	7.7	7.7	7.9	8.9	10.1
4	1000.3	8	3	8	6	/	8.7	9.6	6.2	5.3	7.7	7.9	7.8	8.0	8.8	10.0
5	1004.1	8	6	4	6	/	5.4	7.0	3.4	2.4	6.8	7.0	6.9	7.2	8.6	10.0
6	1007.1	6	5	3	7	/	4.5	6.9	2.9	1.6	6.1	6.3	6.2	6.5	8.2	9.9
7	1006.2	8	8	2	6	/	7.4	9.3	5.3	4.1	6.1	6.3	6.2	6.5	7.9	9.7
8	1014.4	4	3	6	8	/	7.8	11.8	3.5	1.7	5.7	6.0	5.9	6.2	7.8	9.5
9	1009.5	8	1	1	0	/	6.8	10.1	4.3	2.2	6.3	6.5	6.4	6.6	7.8	9.4
10	1015.1	0	1	3	5	/	4.0	6.6	1.7	0.1	5.4	5.7	5.6	6.0	7.6	9.3
11	1012.6	0	1	8	8	/	4.2	6.9	1.6	**-0.3**	4.8	5.2	5.0	5.4	7.3	9.2
12	1005.8	8	8	1	5	/	7.5	8.9	6.3	4.8	5.6	5.7	5.6	5.8	7.2	9.0
13	996.1	0	8	7	6	/	8.1	11.1	4.2	3.5	6.1	6.2	6.1	6.3	7.3	8.9
14	998.4	4	8	8	6	/	5.2	7.0	2.7	2.2	5.9	6.1	6.0	6.2	7.4	8.8
15	1000.9	8	7	7	5	/	6.0	7.9	5.1	3.9	5.8	6.0	5.9	6.1	7.2	8.7
16	**982.8**	0	8	7	7	/	3.8	6.3	0.6	0.2	4.9	5.2	5.1	5.4	7.0	8.5
17	1004.5	2	3	3	8	/	4.5	7.4	2.1	1.0	4.6	4.8	4.8	5.0	6.6	8.3
18	1011.9	8	6	6	8	/	2.5	4.9	**0.5**	0.2	4.3	4.5	4.4	4.7	6.3	8.1
19	1015.9	2	4	5	8	/	**1.9**	3.7	0.8	0.1	3.8	4.1	4.0	4.3	5.9	7.9
20	1011.4	8	8	7	7	/	5.6	8.2	2.3	2.0	3.9	4.1	4.1	4.3	5.8	7.7
21	1018.1	/	7	7	7	/	5.7	6.8	4.3	3.0	4.7	4.9	4.8	4.9	5.9	7.6
22	1023.1	8	8	8	7	/	9.6	10.9	6.8	6.6	5.5	5.5	5.5	5.6	6.1	7.6
23	1018.9	8	6	5	7	/	9.3	10.4	6.2	5.7	6.9	6.7	6.8	6.7	6.5	7.6
24	1025.8	8	7	1	8	/	6.1	7.7	4.0	3.6	6.3	6.4	6.4	6.5	7.0	7.7
25	1030.3	8	8	8	8	/	8.6	10.6	6.2	4.9	6.2	6.3	6.3	6.4	7.0	7.8
26	1035.2	8	8	8	8	/	9.6	10.3	8.8	8.5	7.2	7.1	7.1	7.1	7.1	7.9
27	**1035.3**	8	8	8	8	/	8.6	10.0	7.2	6.4	7.6	7.7	7.6	7.7	7.4	8.0
28	1024.1	8	8	8	8	/	6.2	7.2	5.0	3.4	6.9	7.0	7.0	7.1	7.8	8.1
29	1018.5	0	2	8	8	/	6.1	8.7	3.6	3.0	6.2	6.4	6.3	6.5	7.5	8.2
30	1015.2	7	2	6	6	/	5.7	7.4	4.2	1.6	5.8	6.0	5.9	6.1	7.2	8.2
31	1010.9	8	8	8	8	/	8.9	11.7	4.2	4.2	5.8	6.0	5.9	6.1	7.1	8.2
M	1012.3					/	6.6	8.8	4.2							

Bewolking : 9 = Bovenlucht niet zichtbaar / = Ontbrekend gegeven

DEURNR(RLW) 4° 27' 11" E 51° 11' 32" I 14m Periode 00-24 h W.T. december 2011

	Rel.Vocht.		Mist			Neerslag								Wind						
	%		Duur in minuten				Duur		* (cm)		Dag met			Snelheid (km/h) en richting						
	Gem.	Min.	<1000m	<500m	<200m	1/m²	h min	%	6h	18h	*	^	R	Gem.	Max.		0h	6h	12h	18h
1	86	80	-	-	-	25.2	10 17	43	/	/	-	-	-	22	43	SSW	SSE	SSW	SSW	SSW
2	81	64	-	-	-	2.9	6 43	28	/	/	-	-	-	14	61	SSW	SSW	NNW	W	SW
3	82	71	-	-	-	8.7	5 44	24	/	/	-	-	-	22	65	SSW	SSW	SSW	WSW	WSW
4	78	69	-	-	-	1.6	2 08	9	/	/	-	-	-	18	47	WNW	SW	W	WSW	SW
5	75	64	-	-	-	4.3	7 26	31	/	/	-	-	-	18	54	WSW	WNW	W	WSW	WSW
6	81	70	-	-	-	8.7	7 36	32	/	/	-	X	X	18	50	WNW	WSW	SW	WSW	WSW
7	71	**52**	-	-	-	3.4	5 15	22	/	/	-	X	X	**29**	79	W	SW	SW	W	W
8	76	62	-	-	-	2.6	2 20	10	/	/	-	-	-	25	68	SW	WNW	SW	SSW	SSW
9	**68**	55	-	-	-	1.5	1 54	8	/	/	-	-	-	22	61	W	W	WSW	WSW	SW
10	75	64	-	-	-	<0.1	0 29	2	/	/	-	-	-	14	36	WSW	WSW	SW	WSW	SW
11	79	63	-	-	-	0.4	1 39	7	/	/	-	-	-	14	36	SSW	SSW	SSW	SSW	SE
12	79	64	-	-	-	0.4	3 31	15	/	/	-	-	-	18	61	S	S	W	WSW	SSW
13	78	60	-	-	-	17.9	12 14	51	/	/	-	-	-	**29**	72	S	SSW	SSW	W	SW
14	83	74	-	-	-	18.4	9 39	40	/	/	-	-	-	22	50	SW	SW	S	WSW	SW
15	79	69	-	-	-	3.8	4 45	20	/	/	-	-	-	25	58	SSW	SSW	SSW	SSW	SW
16	89	77	-	-	-	**44.8**	19 12	80	/	/	X	-	-	22	54	W	S	E	NW	W
17	82	66	-	-	-	4.4	4 12	18	/	/	X	-	-	14	43	NW	W	WNW	W	WSW
18	86	67	-	-	-	9.0	8 35	36	/	/	X	-	-	11	43	WNW	SW	W	NW	W
19	86	72	-	-	-	5.3	9 51	41	/	/	X	-	-	14	43	SSW	SW	W	SSW	S
20	84	74	-	-	-	3.0	9 43	40	/	/	X	-	-	18	50	NW	SSW	W	NW	WNW
21	89	81	-	-	-	3.2	7 32	31	/	/	-	-	-	7	**22**	SW	W	SW	SW	SW
22	88	83	-	-	-	0.4	2 46	12	/	/	-	-	-	14	29	W	SSW	W	WNW	W
23	86	81	-	-	-	3.9	7 09	30	/	/	-	-	-	18	65	WNW	SW	SW	SW	SSW
24	81	69	-	-	-	16.4	8 04	34	/	/	-	-	-	25	65	NW	WNW	WNW	WNW	SW
25	86	79	-	-	-	<0.1	1 21	6	/	/	-	-	-	18	40	SW	SW	SW	SW	SW
26	**90**	85	-	-	-	0.9	16 40	69	/	/	-	-	-	14	29	SW	SW	SW	SW	SW
27	79	71	-	-	-	-	-	-	/	/	-	-	-	11	29	SW	SW	SW	SSW	SSW
28	85	77	-	-	-	0.5	1 43	7	/	/	-	-	-	22	47	SW	S	SSW	SW	SW
29	80	68	-	-	-	4.6	4 21	18	/	/	-	-	X	25	**90**	WNW	WSW	WSW	SW	WSW
30	72	63	-	-	-	0.3	4 36	19	/	/	-	-	-	22	58	WNW	W	WNW	WNW	SW
31	**90**	86	-	-	-	2.9	13 26	56	/	/	-	-	-	14	32	SW	S	SW	WSW	SW
M	81		0	0	0	199.4	200 51				5	2	3	19						

* = Sneeuw ^ = Hagel R = Onweer <0.1 : Neerslag te wijten aan mist of dauw

Annex D Overview of maintenance - dredging activities

Dredging and dumping volumes [10^3 m^3] from April '11 till March '12

Dredging locations									
	Week 14	*Week 15*	*Week 16*	*Week 17*	*Week 18*	*Week 19*	*Week 20*	*Week 21*	*Week 22*
Drempel van Vlissingen	-	-	-	-	-	-	-	-	-
Drempel van Borssele	-	-	-	-	-	74 335	91 723	62 311	1 042
Pas van Terneuzen	-	-	-	-	-	-	-	-	-
Put van Terneuzen	-	-	-	-	-	-	-	-	-
Gat van Ossenisse	80 735	87 581	-	-	-	25 347	-	-	-
Overloop Hansweert	-	171 233	5 213	-	-	-	-	41 185	-
Drempel van Hansweert	-	71 716	98 503	164 589	148 149	9 216	-	-	-
Drempel van Walsoorden	-	80 632	50 820	-	-	3 999	-	-	-
Drempel van Valkenisse	75 831	4 504	-	-	-	31 837	20 168	16 808	220 061
Overloop van Valkenisse	-	-	-	-	-	-	184 510	205 240	7 900
Drempel van Bath	-	-	-	-	-	23 534	80 483	74 720	42 187
Nauw van Bath	-	-	-	-	-	-	7 571	-	67 735
Vaarwater Bath + Afwaarts Zandvliet	-	-	-	-	-	11 656	-	-	-
Drempel van Zandvliet	12 123	35 122	99 477	69 980	82 228	13 795	-	-	-
Noordzeeterminal (Containerkaai N)	-	-	-	-	-	-	-	-	-
Toeg Zandvliet+Berendrechtsluis	-	14 964	-	19 144	966	-	-	-	-
Europaterminal (Containerkaai Z)	-	-	-	-	-	-	-	-	-
Drempel van Frederik	104 063	53 784	46 867	25 926	58 014	72 571	68 239	-	44 763
Lillo vaarwater plaat	-	-	-	-	46 400	37 495	21 286	-	-
Deurganckdok	15 703	40 344	38 847	21 602	75 038	88 837	96 200	6 012	-
Drempel van Lillo	-	-	-	-	-	-	-	51 558	4 900
Toeg Boudewijn+VanCauwelaertsluis	-	-	-	-	-	-	-	-	-
Drempel van de Parel	-	-	-	-	-	-	-	-	-
Toeg Kallosluis	22 611	2 653	-	-	-	-	-	-	55 819
Drempel van Krankeloon	-	-	-	-	-	-	-	25 776	-
Kaaien 23-27	-	-	1 128	3 982	-	-	-	-	-

Dumping locations									
	Week 14	*Week 15*	*Week 16*	*Week 17*	*Week 18*	*Week 19*	*Week 20*	*Week 21*	*Week 22*
Hoge Platen (HP1)-storten	-	-	-	-	-	48 385	42 874	11 895	-
Hoge Platen (HP1)- sproeien	-	-	-	-	-	-	-	-	-
Hoge Platen (HP3) - storten	-	-	-	-	-	51 297	48 849	50 416	1 042
Hoge Platen (HP3) - sproeien	-	-	-	-	-	-	-	-	-
SN 11	-	-	-	-	-	-	-	-	-
SN 31	56 385	26 949	-	-	-	-	-	-	-
Rug van Baarland	40 885	31 045	30 633	33 281	40 018	19 343	15 775	20 328	30 634
SH 41	7 052	231 865	5 213	-	-	23 937	157 151	235 072	227 961
Plaat van Walsoorden - storten	-	-	-	-	-	-	-	-	-
Plaat van walsoorden - sproeien	-	-	-	-	-	-	-	-	-
SH 51	-	76 264	67 049	93 556	70 209	13 841	47 527	61 508	39 712
SN 51	52 244	49 543	51 641	37 752	37 922	10 131	1 350	-	-
SH 61	-	-	-	-	-	12 990	70 929	21 045	39 576
Schaar Ouden Doel	3 707	34 003	90 482	73 962	128 628	51 290	21 286	75 623	4 900
Putten Ketelplaat	-	-	-	-	-	-	-	-	-
Oosterweel - Plaat van Boomke	68 760	58 029	46 186	36 039	66 606	62 298	75 966	3 097	49 254
Punt van Melsele	82 033	54 835	49 651	30 633	67 412	99 110	88 473	4 626	51 328
Opspuitingen Prosperpolder	-	-	-	-	-	-	-	-	-
Opspuitingen Doeldok	-	-	-	-	-	-	-	-	-

Dredging locations									
	Week 23	*Week 24*	*Week 25*	*Week 26*	*Week 27*	*Week 28*	*Week 29*	*Week 30*	*Week 31*
Drempel van Vlissingen	-	-	-	-	-	-	-	-	-
Drempel van Borssele	-	51 739	113 408	100 632	115 538	100 977	2 785	-	-
Pas van Terneuzen	-	-	15 980	126 379	162 597	10 477	-	-	-
Put van Terneuzen	-	-	-	-	-	-	-	-	-
Gat van Ossenisse	-	-	-	-	-	-	128 632	108 101	9 042
Overloop Hansweert	-	-	-	-	-	179 377	20 020	-	-
Drempel van Hansweert	-	-	12 049	269 409	373 649	26 705	-	-	139 966
Drempel van Walsoorden	-	-	-	-	-	175 764	-	-	-
Drempel van Valkenisse	137 322	152 380	16 685	-	-	-	-	-	-
Overloop van Valkenisse	-	-	114 444	-	-	-	-	-	-
Drempel van Bath	152 209	116 139	4 745	-	-	186 934	180 311	3 846	-
Nauw van Bath	2 269	-	-	-	-	-	-	-	-
Vaarwater Bath + Afwaarts Zandvliet	45 864	126 061	-	-	-	-	-	-	-
Drempel van Zandvliet	-	-	1 044	152 848	7 603	-	-	-	85 331
Noordzeeterminal (Containerkaai N)	-	-	-	-	-	-	-	-	-
Toeg Zandvliet+Berendrechtsluis	-	85 573	54 684	-	740	15 443	14 183	35 028	2 093
Europaterminal (Containerkaai Z)	-	-	-	-	-	-	-	-	-
Drempel van Frederik	187 001	39 003	-	-	-	10 383	19 651	37 878	4 423
Lillo vaarwater plaat	-	-	80 944	69 177	-	-	-	-	65 947
Deurganckdok	-	17 696	29 424	65 963	52 250	20 460	17 927	3 020	-
Drempel van Lillo	-	23 426	29 338	-	-	-	-	-	-
Toeg Boudewijn+VanCauwelaertsluis	-	-	31 697	-	-	-	-	-	-
Drempel van de Parel	-	-	75 496	-	-	-	-	-	-
Toeg Kallosluis	18 160	1 856	-	-	-	-	-	-	-
Drempel van Krankeloon	-	-	-	-	-	-	-	-	-
Kaaien 23-27	-	-	-	-	-	-	-	14 628	-

Dumping locations									
	Week 23	*Week 24*	*Week 25*	*Week 26*	*Week 27*	*Week 28*	*Week 29*	*Week 30*	*Week 31*
Hoge Platen (HP1)-storten	-	15 245	70 450	57 038	97 454	59 785	2 785	-	-
Hoge Platen (HP1)- sproeien	-	-	-	-	-	-	-	-	-
Hoge Platen (HP3) - storten	-	36 494	58 938	169 973	180 681	51 669	-	-	-
Hoge Platen (HP3) - sproeien	-	-	-	-	-	-	-	-	-
SN 11	-	-	-	-	-	-	-	-	-
SN 31	-	-	-	-	-	-	128 632	108 101	9 042
Rug van Baarland	30 840	28 846	2 407	-	-	-	-	-	36 580
SH 41	137 322	170 810	141 431	198 048	373 649	476 283	134 728	3 846	84 200
Plaat van Walsoorden - storten	-	-	-	-	-	-	-	-	-
Plaat van walsoorden - sproeien	-	-	-	-	-	-	-	-	-
SH 51	35 449	4 710	4 085	71 361	-	-	-	-	-
SN 51	-	-	-	-	-	-	-	-	19 186
SH 61	88 189	64 153	-	-	-	92 497	65 603	-	-
Schaar Ouden Doel	45 864	149 487	105 878	179 381	7 603	-	-	14 628	85 331
Putten Ketelplaat	-	-	-	-	-	-	-	-	-
Oosterweel - Plaat van Boomke	103 183	66 424	94 404	62 672	23 486	25 051	24 502	43 484	36 988
Punt van Melsele	101 978	77 704	102 345	45 935	29 504	21 235	27 259	32 442	35 475
Opspuitingen Prosperpolder	-	-	-	-	-	-	-	-	-
Opspuitingen Doeldok	-	-	-	-	-	-	-	-	-

Dredging locations									
	Week 32	*Week 33*	*Week 34*	*Week 35*	*Week 36*	*Week 37*	*Week 38*	*Week 39*	*Week 40*
Drempel van Vlissingen	-	-	-	-	-	-	-	-	-
Drempel van Borssele	52 783	2 293	-	3 481	2 051	57 439	1 476	-	-
Pas van Terneuzen	-	44 328	26 978	13 594	44 591	2 720	-	-	-
Put van Terneuzen	-	2 529	33 329	52 948	-	-	-	50 854	-
Gat van Ossenisse	-	-	-	-	-	-	-	-	73870
Overloop Hansweert	-	-	-	112 447	-	-	-	-	-
Drempel van Hansweert	16 675	183 537	-	-	-	-	-	-	-
Drempel van Walsoorden	-	-	-	-	-	-	-	-	-
Drempel van Valkenisse	-	4 006	179 884	12 064	-	-	-	-	-
Overloop van Valkenisse	14 577	-	-	-	-	65 416	120 820	12 261	-
Drempel van Bath	-	-	-	-	-	-	-	-	-
Nauw van Bath	-	-	-	-	-	-	-	-	-
Vaarwater Bath + Afwaarts Zandvliet	-	-	-	-	5 439	3 959	-	-	-
Drempel van Zandvliet	2 949	-	-	-	114 548	54 893	-	-	-
Noordzeeterminal (Containerkaai N)	-	-	-	-	-	-	-	-	-
Toeg Zandvliet+Berendrechtsluis	-	-	-	27 916	18 446	-	-	-	27 416
Europaterminal (Containerkaai Z)	-	-	-	-	-	-	-	-	-
Drempel van Frederik	47 045	54 597	72 081	32 860	19 872	-	-	-	34 978
Lillo vaarwater plaat	18 136	-	-	-	-	-	-	-	47 849
Deurganckdok	-	-	-	31 483	21 126	28 426	100 812	96 089	25 872
Drempel van Lillo	-	-	-	-	-	-	-	-	-
Toeg Boudewijn+VanCauwelaertsluis	-	-	-	-	-	-	-	-	-
Drempel van de Parel	-	-	-	-	-	-	-	15 355	-
Toeg Kallosluis	-	-	-	-	-	-	-	-	-
Drempel van Krankeloon	-	-	-	-	-	-	-	-	-
Kaaien 23-27	-	-	-	-	-	-	-	-	-

Dumping locations									
	Week 32	*Week 33*	*Week 34*	*Week 35*	*Week 36*	*Week 37*	*Week 38*	*Week 39*	*Week 40*
Hoge Platen (HP1)-storten	-	-	-	-	-	-	-	-	-
Hoge Platen (HP1)- sproeien	-	-	-	-	-	-	-	-	-
Hoge Platen (HP3) - storten	-	-	-	-	-	-	-	-	-
Hoge Platen (HP3) - sproeien	-	-	-	-	-	-	-	-	-
SN 11	52 783	46 621	26 978	17 075	46 642	60 159	1 476	-	-
SN 31	-	2 529	33 329	52 948	-	-	-	50 854	-
Rug van Baarland	9 626	-	-	-	-	-	-	-	20 932
SH 41	14 440	167 645	159 983	124 511	-	52 245	104 776	7 611	52 938
Plaat van Walsoorden - storten	-	-	-	-	-	-	-	-	-
Plaat van walsoorden - sproeien	-	-	-	-	-	-	-	-	-
SH 51	-	-	-	-	-	-	-	-	-
SN 51	7 186	19 898	19 901	-	-	13 171	16 044	4 650	-
SH 61	-	-	-	-	5 439	3 959	-	-	-
Schaar Ouden Doel	32 574	2 220	-	-	106 972	54 893	-	15 355	47 849
Putten Ketelplaat	-	-	-	-	-	-	-	-	-
Oosterweel - Plaat van Boomke	13 621	25 623	37 816	48 811	32 943	13 635	46 864	52 398	38 963
Punt van Melsele	21 935	26 754	34 265	43 448	34 077	14 791	53 948	43 691	49 303
Opspuitingen Prosperpolder	-	-	-	-	-	-	-	-	-
Opspuitingen Doeldok	-	-	-	-	-	-	-	-	-

Dredging locations									
	Week 41	*Week 42*	*Week 43*	*Week 44*	*Week 45*	*Week 46*	*Week 47*	*Week 48*	*Week 49*
Drempel van Vlissingen	-	-	-	-	-	-	-	-	-
Drempel van Borssele	27 724	53060	57 199	54 795	67 294	69 784	81 798	2 581	-
Pas van Terneuzen	-	-	-	-	-	-	-	-	-
Put van Terneuzen	-	-	-	-	-	-	-	157 548	12 874
Gat van Ossenisse	40 268	-	8 153	16 288	-	19 392	81 591	76 157	44 468
Overloop Hansweert	-	-	-	-	-	-	-	-	-
Drempel van Hansweert	4 889	118854	16 484	-	23 002	130 992	137 876	3 838	-
Drempel van Walsoorden	-	-	-	-	-	-	-	-	-
Drempel van Valkenisse	-	2 593	171 626	43 194	84 111	15 159	-	-	-
Overloop van Valkenisse	-	-	-	148 964	-	-	-	-	29 444
Drempel van Bath	-	-	-	-	67 803	41 536	15 051	149 018	2 291
Nauw van Bath	-	-	-	-	-	-	-	-	-
Vaarwater Bath + Afwaarts Zandvliet	-	-	-	-	-	-	-	-	-
Drempel van Zandvliet	-	-	-	-	-	70 314	98 144	9 903	-
Noordzeeterminal (Containerkaai N)	-	-	-	-	-	-	49 605	4 552	26 236
Toeg Zandvliet+Berendrechtsluis	37 605	-	-	45 064	14 468	-	-	-	-
Europaterminal (Containerkaai Z)	-	-	-	-	-	-	-	-	-
Drempel van Frederik	105 046	78274	4 364	-	-	-	-	-	43 742
Lillo vaarwater plaat	-	-	-	-	26 096	87 082	-	16 503	-
Deurganckdok	25 707	-	-	-	-	-	-	-	919
Drempel van Lillo	-	-	-	21 038	55 867	-	-	-	-
Toeg Boudewijn+VanCauwelaertsluis	-	-	-	-	-	-	-	-	-
Drempel van de Parel	-	-	-	46 756	-	-	-	-	-
Toeg Kallosluis	2 429	-	91 879	19 278	-	-	-	-	-
Drempel van Krankeloon	-	-	-	14 060	-	-	-	-	-
Kaaien 23-27	-	-	-	-	-	-	-	-	-

Dumping locations									
	Week 41	*Week 42*	*Week 43*	*Week 44*	*Week 45*	*Week 46*	*Week 47*	*Week 48*	*Week 49*
Hoge Platen (HP1)-storten	-	-	-	-	-	-	-	-	-
Hoge Platen (HP1)- sproeien	-	-	-	-	-	-	-	-	-
Hoge Platen (HP3) - storten	-	-	-	-	-	-	-	-	-
Hoge Platen (HP3) - sproeien	-	-	-	-	-	-	-	-	-
SN 11	27 724	53 060	57 199	54 795	67 294	69 784	81 798	2 581	-
SN 31	-	-	8 153	16 288	-	-	-	157 548	12 874
Rug van Baarland	13 041	-	-	-	16 435	7 827	25 466	13 143	24 815
SH 41	27 227	-	-	-	-	16 863	56 125	63 014	49 097
Plaat van Walsoorden - storten	-	123	9 440	-	-	-	-	44	-
Plaat van walsoorden - sproeien	4 889	121 324	178 670	192 158	107 113	148 839	152 927	3 794	-
SH 51	-	-	-	-	-	-	-	-	-
SN 51	-	-	-	-	16 263	6 375	-	48 204	2 291
SH 61	-	-	-	-	35 105	27 175	-	100 814	-
Schaar Ouden Doel	-	-	-	60 816	-	70 314	98 144	9 903	25 301
Putten Ketelplaat	-	-	-	-	-	-	-	-	-
Oosterweel - Plaat van Boomke	80 522	38 904	43 183	43 690	52 321	44 024	28 940	8 487	22 317
Punt van Melsele	90 265	39 370	53 060	41 690	44 110	43 058	20 665	12 568	23 279
Opspuitingen Prosperpolder	-	-	-	-	-	-	-	-	-
Opspuitingen Doeldok	-	-	-	-	-	-	-	-	-

Dredging locations									
	Week 50	*Week 51*	*Week 52*	*Week 01*	*Week 02*	*Week 03*	*Week 04*	*Week 05*	*Week 06*
Drempel van Vlissingen	-	-	-	-	-	65 431	73 917	-	-
Drempel van Borssele	-	46 788	-	-	-	50 743	-	-	-
Pas van Terneuzen	-	-	-	-	-	2 859	57 831	4 830	-
Put van Terneuzen	-	20 496	-	-	-	-	-	-	-
Gat van Ossenisse	15 797	5 516	-	-	-	18 367	-	191 284	118 363
Overloop Hansweert	-	-	-	-	-	-	-	6 568	108 010
Drempel van Hansweert	-	-	-	28 226	249 858	7 996	-	-	-
Drempel van Walsoorden	-	-	-	-	-	-	-	-	-
Drempel van Valkenisse	-	-	-	-	-	-	62 658	62 837	-
Overloop van Valkenisse	54 574	34 811	-	-	-	-	-	-	-
Drempel van Bath	-	-	-	-	-	-	-	-	-
Nauw van Bath	-	-	-	-	-	-	-	-	-
Vaarwater Bath + Afwaarts Zandvliet	-	-	-	-	-	-	-	-	-
Drempel van Zandvliet	10 594	-	-	-	-	-	-	-	-
Noordzeeterminal (Containerkaai N)	126 333	93 923	-	2 314	12 674	11 958	3 616	1 000	-
Toeg Zandvliet+Berendrechtsluis	-	-	-	-	-	-	-	10 876	29 338
Europaterminal (Containerkaai Z)	-	-	-	-	-	-	-	-	-
Drempel van Frederik	80 809	51 028	-	25 330	70 818	43 464	-	29 779	58 342
Lillo vaarwater plaat	-	-	-	-	-	-	-	-	-
Deurganckdok	111 873	64 916	-	68 440	167 059	6 947	-	-	-
Drempel van Lillo	-	-	-	-	-	-	-	-	-
Toeg Boudewijn+VanCauwelaertsluis	-	-	-	-	-	-	-	-	-
Drempel van de Parel	-	-	-	-	-	-	-	-	-
Toeg Kallosluis	-	-	-	-	-	-	-	-	-
Drempel van Krankeloon	-	-	-	-	-	-	-	-	-
Kaaien 23-27	-	-	-	-	-	-	-	-	-

Dumping locations									
	Week 50	*Week 51*	*Week 52*	*Week 01*	*Week 02*	*Week 03*	*Week 04*	*Week 05*	*Week 06*
Hoge Platen (HP1)-storten	-	-	-	-	-	-	-	-	-
Hoge Platen (HP1)- sproeien	-	-	-	-	-	-	-	-	-
Hoge Platen (HP3) - storten	-	-	-	-	-	-	-	-	-
Hoge Platen (HP3) - sproeien	-	-	-	-	-	-	-	-	-
SN 11	-	-	-	-	-	65 431	73 917	-	-
SN 31	-	67 284	-	-	-	71 969	57 831	23 230	118 363
Rug van Baarland	15 656	10 681	-	-	-	-	15 758	11 861	15 440
SH 41	54 715	29 646	-	28 226	249 858	7 996	-	179 452	92 570
Plaat van Walsoorden - storten	-	-	-	-	-	-	-	-	-
Plaat van walsoorden - sproeien	-	-	-	-	-	-	-	-	-
SH 51	-	-	-	-	-	-	46 900	50 976	-
SN 51	-	-	-	-	-	-	-	-	-
SH 61	-	-	-	-	-	-	-	-	-
Schaar Ouden Doel	71	93 923	-	2 314	12 674	11 958	3 616	1 000	-
Putten Ketelplaat	-	-	-	-	-	-	-	-	-
Oosterweel - Plaat van Boomke	90 987	53 472	-	46 651	115 948	24 982	-	23 574	42 428
Punt van Melsele	112 289	62 472	-	47 119	121 929	25 429	-	17 081	45 252
Opspuitingen Prosperpolder	126 262	-	-	-	-	-	-	-	-
Opspuitingen Doeldok	-	-	-	-	-	-	-	-	-

Dredging locations							
	Week 07	*Week 08*	*Week 09*	*Week 10*	*Week 11*	*Week 12*	*Week 13*
Drempel van Vlissingen	-	-	-	-	-	-	-
Drempel van Borssele	97 101	71 858	-	-	-	-	-
Pas van Terneuzen	-	-	-	-	-	-	-
Put van Terneuzen	-	-	-	-	-	-	-
Gat van Ossenisse	50 996	-	-	-	-	-	-
Overloop Hansweert	2 304	78 847	136 097	13 719	-	-	-
Drempel van Hansweert	-	-	-	106 829	154 587	158 714	11 724
Drempel van Walsoorden	-	-	-	-	-	-	-
Drempel van Valkenisse	-	35 237	107 697	45 695	-	-	-
Overloop van Valkenisse	-	-	-	83 895	28 114	-	82 247
Drempel van Bath	-	58 104	79 526	65 320	-	-	-
Nauw van Bath	-	-	-	-	-	-	-
Vaarwater Bath + Afwaarts Zandvliet	-	-	-	-	-	-	-
Drempel van Zandvliet	82 607	110 839	-	-	-	-	5 622
Noordzeeterminal (Containerkaai N)	-	-	-	-	-	-	-
Toeg Zandvliet+Berendrechtsluis	39 273	24 689	-	-	-	-	-
Europaterminal (Containerkaai Z)	-	-	-	-	-	-	-
Drempel van Frederik	30 938	7 098	-	-	-	-	-
Lillo vaarwater plaat	-	-	-	-	-	-	84 387
Deurganckdok	-	-	-	-	-	-	-
Drempel van Lillo	-	-	-	-	-	-	-
Toeg Boudewijn+VanCauwelaertsluis	-	-	-	-	-	-	-
Drempel van de Parel	-	-	-	-	3 208	-	-
Toeg Kallosluis	-	-	-	-	48 808	79 380	-
Drempel van Krankeloon	-	-	-	-	32 233	-	-
Kaaien 23-27	-	-	-	-	-	-	-

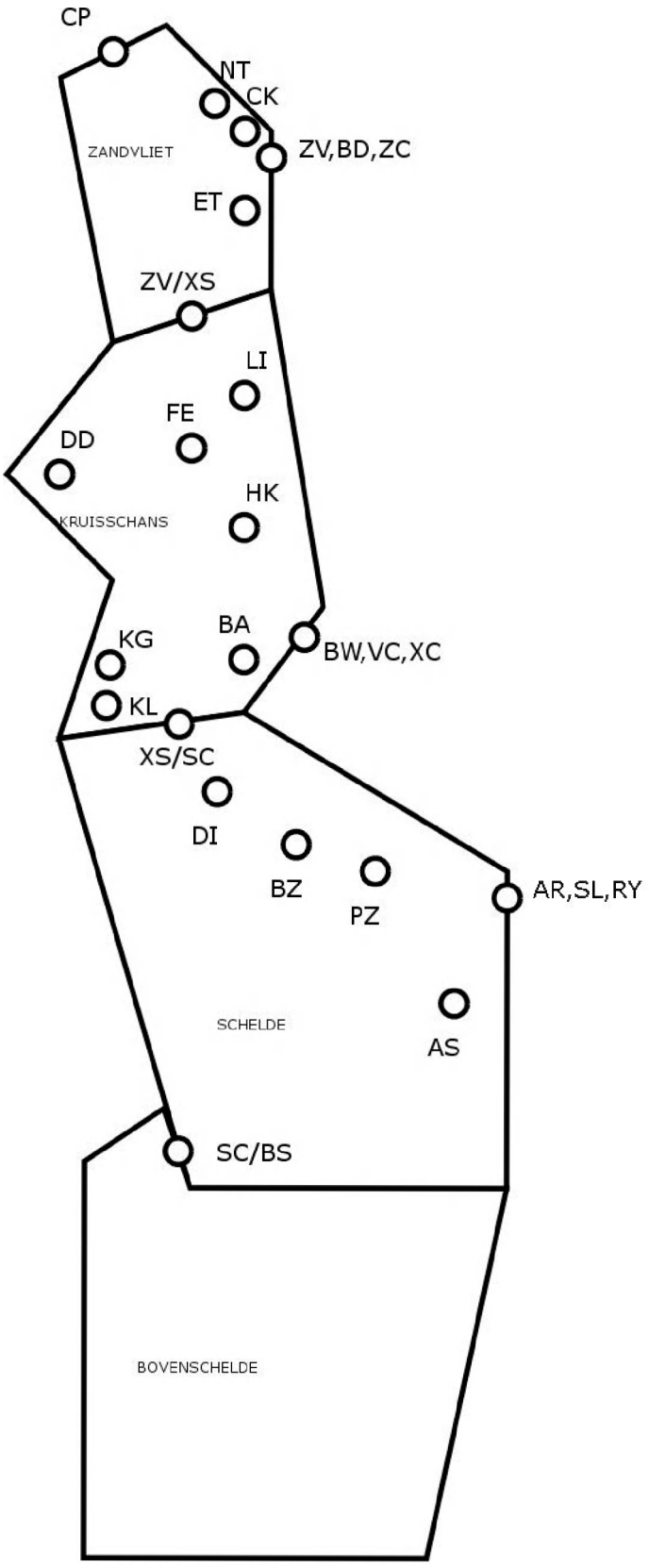
Dumping locations							
	Week 07	*Week 08*	*Week 09*	*Week 10*	*Week 11*	*Week 12*	*Week 13*
Hoge Platen (HP1)-storten	-	-	-	-	-	-	-
Hoge Platen (HP1)- sproeien	-	-	-	-	-	-	-
Hoge Platen (HP3) - storten	-	-	-	-	-	-	-
Hoge Platen (HP3) - sproeien	-	-	-	-	-	-	-
SN 11	97 101	71 858	-	-	-	-	-
SN 31	50 996	-	-	-	-	-	-
Rug van Baarland	-	-	-	-	-	-	-
SH 41	2 304	78 847	136 097	53 149	13 365	-	-
Plaat van Walsoorden - storten	-	-	-	-	-	-	-
Plaat van walsoorden - sproeien	-	-	-	-	-	-	-
SH 51	-	49 650	74 346	95 002	14 749	-	-
SN 51	-	5 391	24 261	109 605	154 587	158 714	93 971
SH 61	-	38 300	88 616	57 702	-	-	-
Schaar Ouden Doel	80 211	110 839	-	-	35 441	-	74 645
Putten Ketelplaat	-	-	-	-	-	-	-
Oosterweel - Plaat van Boomke	35 828	16 711	-	-	21 444	39 069	6 888
Punt van Melsele	36 779	15 076	-	-	27 364	40 311	8 476
Opspuitingen Prosperpolder	-	-	-	-	-	-	-
Opspuitingen Doeldok	-	-	-	-	-	-	-

Annex E Navigation

E.1 Description of the areas

Area	*Global description*	*Detailed description*
1	Belgian border → Locks of Zandvliet – Berendrecht	Transit point CP → exit/entry point ZC. BD. ZV. NT. CK. ET or transit point ZV/XS
2	Locks of Zandvliet – Berendrecht → Deurganckdok	Transit point CP or entry/exit point ZC. BD. ZV. NT. CK. ET → transit point ZV/XS
3	Deurganckdok → Lock of Kallo	Transit point ZV/XS or entry/exit point DD → exit/entry point BA. BW. FE. HK. KG. KL. LI. VC. XC or transit point XS/SC
4	Lock of Kallo → Lock of Royers	Transit point XS/SC or entry/exit point DD. BA. BW. FE. HK. KG. KL. LI. VC. XC → entry/exit point AR. AS. BZ. DI. KT. PZ. RY. SL or transit point SC/BS

	CID	MEANING	TYPE
GA	GEBIED ANTWERPEN		
SA	Saeftinge		
	CP	Coordinatiepunt (blokgrens SA/ZV)	P
	CP2	Coordinatiepunt (blokgrens SA/ZV)	P
SC	Schelde		
	AR	Antwerpen Rede	E
	AS	Antwerpen Scheldekade/steiger	E
	AX	Antwerpen zonder detaillering	E
	BZ	BP Zwijndrecht	E
	DI	Haven Dredging International	E
	PZ	Polysar Zwijndrecht	E
	RY	Royerssluis	E
	SC/BS	Blokgrens SC/BS (boveneinde rede Antwerpen)	P
	SL	Sluizen Antwerpen Rechteroever	E
XS	Kruisschans		
	BA	Bayer Kallo	E
	BW	Boudewijnsluis	E
	DD	Deurganckdok	E
	FE	Steiger Fenol	E
	HK	Steiger Haltermann	E
	KG	Kallo geul	E
	KL	Kallosluis	E
	LI	Steiger Lillo	E
	VC	Van Cauwelaertsluis	E
	XC	Kruisschanssluiscomplex	E
	XS/SC	Blokgrens Kruisschans / Schelde	P
	XS/SC2	Blokgrens Kruisschans / Schelde	P
ZV	Zandvliet		
	BD	Berendrechtsluis	E
	CK	Containerkade Antwerpen	E
	ET	Europaterminal	E
	NT	Noordzeeterminal	E
	ZC	Zandvliet / Berendrecht sluiszencomplex	E
	ZV	Zandvliet sluis	E
	ZV/XS	Blokgrens Zandvliet / Kruisschans	P
	ZV/XS2	Blokgrens Zandvliet / Kruisschans	P



Sketch of the different areas of navigation

E.2 Weekly data

Week 14 (28/03/2011 – 03/04/2011)						
Area	**Draught**	**Total**	**Inland navigation**	**Seagoing**	**Arrival**	**Departure**
1	Unknown	78	76	1	10	68
	0 – 8 m	911	554	355	457	449
	8 – 12 m	206	0	206	68	138
	> 12 m	39	0	39	10	29
2	Unknown	66	65	0	10	56
	0 – 8 m	697	483	212	400	294
	8 – 12 m	95	0	95	52	43
	> 12 m	13	0	13	5	8
3	Unknown	64	63	0	9	55
	0 – 8 m	657	458	198	376	277
	8 – 12 m	68	0	68	38	30
	> 12 m	0	0	0	0	0
4	Unknown	15	15	0	6	9
	0 – 8 m	216	168	48	165	50
	8 – 12 m	0	0	0	0	0
	> 12 m	0	0	0	0	0
Week 15 (04/04/2011 – 10/04/2011)						
Area	**Draught**	**Total**	**Inland navigation**	**Seagoing**	**Arrival**	**Departure**
1	Unknown	53	49	3	10	42
	0 – 8 m	1000	613	386	480	515
	8 – 12 m	217	0	217	63	154
	> 12 m	46	1	45	11	35
2	Unknown	48	45	2	8	39
	0 – 8 m	746	531	214	410	332
	8 – 12 m	79	0	79	38	41
	> 12 m	13	1	12	5	8
3	Unknown	48	46	1	8	39
	0 – 8 m	709	510	198	389	315
	8 – 12 m	46	0	46	21	25
	> 12 m	3	1	2	2	1
4	Unknown	16	13	3	5	11
	0 – 8 m	203	163	39	139	63
	8 – 12 m	2	0	2	2	0
	> 12 m	1	1	0	1	0

Week 16 (11/04/2011 – 17/04/2011)						
Area	**Draught**	**Total**	**Inland navigation**	**Seagoing**	**Arrival**	**Departure**
1	Unknown	70	64	6	16	53
	0 – 8 m	996	622	372	504	489
	8 – 12 m	198	0	198	70	128
	> 12 m	35	3	32	6	29
2	Unknown	58	54	4	14	43
	0 – 8 m	738	525	211	427	308
	8 – 12 m	85	0	85	47	38
	> 12 m	11	1	10	4	7
3	Unknown	60	56	4	16	43
	0 – 8 m	694	498	195	401	290
	8 – 12 m	53	0	53	30	23
	> 12 m	1	1	0	1	0
4	Unknown	16	15	1	7	9
	0 – 8 m	218	186	32	156	62
	8 – 12 m	0	0	0	0	0
	> 12 m	0	0	0	0	0
Week 17 (18/04/2011 – 24/04/2011)						
Area	**Draught**	**Total**	**Inland navigation**	**Seagoing**	**Arrival**	**Departure**
1	Unknown	84	82	2	17	65
	0 – 8 m	925	556	368	450	465
	8 – 12 m	236	0	236	87	149
	> 12 m	29	0	29	5	24
2	Unknown	73	70	3	18	53
	0 – 8 m	712	487	224	391	312
	8 – 12 m	97	0	97	51	46
	> 12 m	8	0	8	3	5
3	Unknown	73	70	3	18	53
	0 – 8 m	668	462	205	367	292
	8 – 12 m	60	0	60	30	30
	> 12 m	1	0	1	1	0
4	Unknown	9	8	1	3	6
	0 – 8 m	185	150	34	143	42
	8 – 12 m	2	0	2	2	0
	> 12 m	0	0	0	0	0
Week 18 (25/04/2011 – 01/05/2011)						
Area	**Draught**	**Total**	**Inland navigation**	**Seagoing**	**Arrival**	**Departure**

1	Unknown	62	61	1	12	50
	0 – 8 m	826	492	334	436	387
	8 – 12 m	202	0	202	76	126
	> 12 m	23	0	23	4	19
2	Unknown	59	56	3	13	46
	0 – 8 m	635	426	209	359	274
	8 – 12 m	84	0	84	46	38
	> 12 m	6	0	6	2	4
3	Unknown	59	56	3	13	46
	0 – 8 m	593	399	194	333	258
	8 – 12 m	50	0	50	28	22
	> 12 m	0	0	0	0	0
4	Unknown	23	22	1	7	15
	0 – 8 m	179	130	49	128	51
	8 – 12 m	1	0	1	1	0
	> 12 m	0	0	0	0	0
Week 19 (02/05/2011 – 08/05/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	115	113	2	20	94
	0 – 8 m	952	573	379	471	479
	8 – 12 m	252	0	252	86	166
	> 12 m	32	0	32	6	26
2	Unknown	104	102	2	20	83
	0 – 8 m	723	500	223	393	328
	8 – 12 m	103	0	103	43	60
	> 12 m	10	0	10	3	7
3	Unknown	100	98	2	20	79
	0 – 8 m	685	476	209	371	312
	8 – 12 m	67	0	67	25	42
	> 12 m	2	0	2	1	1
4	Unknown	27	27	0	8	19
	0 – 8 m	196	156	40	155	41
	8 – 12 m	5	0	5	2	3
	> 12 m	0	0	0	0	0
Week 20 (09/05/2011 – 15/05/11)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	86	85	0	19	65
	0 – 8 m	1038	600	437	533	497

	8 – 12 m	212	0	212	64	148
	> 12 m	26	1	25	5	21
2	Unknown	77	75	1	21	54
	0 – 8 m	775	520	254	449	320
	8 – 12 m	83	0	83	38	45
	> 12 m	9	1	8	3	6
3	Unknown	76	74	1	21	53
	0 – 8 m	740	505	234	430	303
	8 – 12 m	46	0	46	18	28
	> 12 m	1	1	0	1	0
4	Unknown	23	22	1	7	15
	0 – 8 m	191	144	47	154	36
	8 – 12 m	1	0	1	1	0
	> 12 m	0	0	0	0	0
Week 21 (16/05/2011 – 22/05/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	80	77	3	20	60
	0 – 8 m	994	597	395	495	491
	8 – 12 m	205	0	205	64	141
	> 12 m	30	1	29	8	22
2	Unknown	67	65	2	15	52
	0 – 8 m	728	505	221	414	308
	8 – 12 m	76	0	76	38	38
	> 12 m	9	1	8	5	4
3	Unknown	63	62	1	15	48
	0 – 8 m	682	474	206	387	289
	8 – 12 m	45	0	45	22	23
	> 12 m	1	1	0	1	0
4	Unknown	8	8	0	0	8
	0 – 8 m	166	127	39	112	52
	8 – 12 m	0	0	0	0	0
	> 12 m	0	0	0	0	0
Week 22 (23/05/2011 – 29/05/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	63	60	3	11	52
	0 – 8 m	990	588	396	493	494
	8 – 12 m	212	0	212	70	142
	> 12 m	29	0	29	5	24

2	Unknown	47	45	1	9	38
	0 – 8 m	742	505	233	431	309
	8 – 12 m	84	0	84	41	43
	> 12 m	9	0	9	4	5
3	Unknown	47	45	1	9	38
	0 – 8 m	707	485	218	412	293
	8 – 12 m	48	0	48	22	26
	> 12 m	0	0	0	0	0
4	Unknown	15	14	0	7	8
	0 – 8 m	199	144	55	143	56
	8 – 12 m	1	0	1	1	0
	> 12 m	0	0	0	0	0
Week 23 (30/05/2011 – 05/06/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	37	31	5	10	26
	0 – 8 m	889	526	361	434	450
	8 – 12 m	219	0	219	75	144
	> 12 m	35	0	35	8	27
2	Unknown	32	26	5	10	22
	0 – 8 m	631	418	211	365	261
	8 – 12 m	86	0	86	48	38
	> 12 m	11	0	11	5	6
3	Unknown	33	29	4	10	22
	0 – 8 m	601	402	197	349	247
	8 – 12 m	54	0	54	32	22
	> 12 m	1	0	1	1	0
4	Unknown	10	9	1	6	4
	0 – 8 m	174	134	40	131	43
	8 – 12 m	0	0	0	0	0
	> 12 m	0	0	0	0	0
Week 24 (06/06/2011 – 12/06/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	57	55	2	14	41
	0 – 8 m	971	594	377	496	466
	8 – 12 m	217	0	217	71	146
	> 12 m	37	1	36	6	31
2	Unknown	48	45	3	10	37
	0 – 8 m	733	513	219	415	309

	8 – 12 m	90	0	90	43	47
	> 12 m	11	1	10	5	6
3	Unknown	44	42	2	9	34
	0 – 8 m	692	489	202	394	288
	8 – 12 m	52	0	52	22	30
	> 12 m	1	1	0	1	0
4	Unknown	12	10	2	4	8
	0 – 8 m	205	154	51	151	53
	8 – 12 m	0	0	0	0	0
	> 12 m	1	1	0	1	0
Week 25 (13/06/2011 – 19/06/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	55	49	5	14	40
	0 – 8 m	909	532	375	444	458
	8 – 12 m	197	0	197	62	135
	> 12 m	27	0	27	4	23
2	Unknown	47	40	6	12	34
	0 – 8 m	679	456	221	373	302
	8 – 12 m	77	0	77	38	39
	> 12 m	6	0	6	2	4
3	Unknown	47	39	7	12	33
	0 – 8 m	639	439	198	347	288
	8 – 12 m	48	0	48	24	24
	> 12 m	1	0	1	0	1
4	Unknown	10	8	2	6	4
	0 – 8 m	166	132	34	122	43
	8 – 12 m	1	0	1	1	0
	> 12 m	0	0	0	0	0
Week 26 (20/06/2011 – 26/06/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	73	73	0	20	53
	0 – 8 m	1060	623	431	532	520
	8 – 12 m	220	0	220	74	146
	> 12 m	31	1	30	8	23
2	Unknown	62	59	3	17	45
	0 – 8 m	783	517	261	447	328
	8 – 12 m	94	0	94	46	48
	> 12 m	11	1	10	5	6

3	Unknown	60	58	2	17	42
	0 – 8 m	741	497	239	421	312
	8 – 12 m	54	0	54	24	30
	> 12 m	2	1	1	2	0
4	Unknown	18	17	1	8	10
	0 – 8 m	207	155	51	151	55
	8 – 12 m	1	0	1	1	0
	> 12 m	1	1	0	1	0
Week 27 (27/06/2010 – 03/07/2010)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	58	57	1	15	41
	0 – 8 m	972	568	404	473	493
	8 – 12 m	202	0	202	76	126
	> 12 m	36	0	36	6	30
2	Unknown	55	51	4	16	38
	0 – 8 m	703	488	215	409	290
	8 – 12 m	79	0	79	46	33
	> 12 m	14	0	14	6	8
3	Unknown	57	54	3	17	39
	0 – 8 m	662	464	198	389	269
	8 – 12 m	53	0	53	32	21
	> 12 m	0	0	0	0	0
4	Unknown	8	8	0	2	5
	0 – 8 m	196	144	52	135	59
	8 – 12 m	0	0	0	0	0
	> 12 m	0	0	0	0	0
Week 28 (04/07/2011 – 10/07/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	90	88	2	21	68
	0 – 8 m	959	588	370	465	488
	8 – 12 m	214	0	214	74	140
	> 12 m	30	0	30	4	26
2	Unknown	85	82	3	20	64
	0 – 8 m	729	501	227	401	323
	8 – 12 m	73	0	73	38	35
	> 12 m	13	0	13	4	9
3	Unknown	82	78	4	21	60
	0 – 8 m	688	478	209	375	309

	8 – 12 m	41	0	41	22	19
	> 12 m	1	0	1	0	1
4	Unknown	18	16	2	9	9
	0 – 8 m	170	130	39	130	40
	8 – 12 m	0	0	0	0	0
	> 12 m	0	0	0	0	0
Week 29 (11/07/2011 – 17/07/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	52	50	2	13	37
	0 – 8 m	881	509	370	429	445
	8 – 12 m	220	1	219	68	152
	> 12 m	28	0	28	5	23
2	Unknown	43	40	3	11	30
	0 – 8 m	658	443	213	366	286
	8 – 12 m	92	1	91	44	48
	> 12 m	11	0	11	4	7
3	Unknown	41	39	2	11	28
	0 – 8 m	619	422	195	343	270
	8 – 12 m	55	1	54	25	30
	> 12 m	0	0	0	0	0
4	Unknown	12	12	0	4	7
	0 – 8 m	175	139	36	122	51
	8 – 12 m	0	0	0	0	0
	> 12 m	0	0	0	0	0
Week 30 (18/07/2011 – 24/07/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	56	53	3	21	35
	0 – 8 m	776	443	333	402	368
	8 – 12 m	202	0	202	66	136
	> 12 m	30	0	30	5	25
2	Unknown	46	41	5	15	31
	0 – 8 m	566	369	197	333	228
	8 – 12 m	83	0	83	44	39
	> 12 m	11	0	11	4	7
3	Unknown	38	36	2	13	25
	0 – 8 m	534	348	186	314	216
	8 – 12 m	54	0	54	28	26
	> 12 m	1	0	1	1	0

4	Unknown	12	11	1	6	6
	0 – 8 m	136	102	34	98	38
	8 – 12 m	1	0	1	1	0
	> 12 m	0	0	0	0	0
Week 31 (25/07/2011 – 31/07/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	37	34	3	10	26
	0 – 8 m	841	464	376	404	435
	8 – 12 m	203	0	203	59	144
	> 12 m	26	0	26	4	22
2	Unknown	27	23	4	9	17
	0 – 8 m	600	377	222	332	266
	8 – 12 m	82	0	82	38	44
	> 12 m	8	0	8	3	5
3	Unknown	25	23	2	8	16
	0 – 8 m	559	354	204	311	246
	8 – 12 m	50	0	50	22	28
	> 12 m	0	0	0	0	0
4	Unknown	9	6	3	6	3
	0 – 8 m	147	105	42	94	53
	8 – 12 m	1	0	1	1	0
	> 12 m	0	0	0	0	0
Week 32 (01/08/2011 – 07/08/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	69	65	4	16	52
	0 – 8 m	884	512	371	457	424
	8 – 12 m	203	0	203	59	144
	> 12 m	32	0	32	6	26
2	Unknown	55	53	2	11	43
	0 – 8 m	614	419	194	376	235
	8 – 12 m	77	0	77	37	40
	> 12 m	11	0	11	4	7
3	Unknown	51	50	1	11	39
	0 – 8 m	582	400	181	358	221
	8 – 12 m	46	0	46	20	26
	> 12 m	2	0	2	1	1
4	Unknown	9	8	1	2	7
	0 – 8 m	158	115	43	123	35

	8 – 12 m	1	0	1	1	0
	> 12 m	0	0	0	0	0
Week 33 (08/08/2011 – 14/08/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	71	68	3	17	52
	0 – 8 m	879	482	397	422	448
	8 – 12 m	208	0	208	62	145
	> 12 m	28	0	28	5	23
2	Unknown	64	61	3	15	47
	0 – 8 m	635	402	233	358	272
	8 – 12 m	76	0	76	39	37
	> 12 m	13	0	13	5	8
3	Unknown	62	59	3	16	44
	0 – 8 m	602	384	218	337	260
	8 – 12 m	40	0	40	19	21
	> 12 m	1	0	1	1	0
4	Unknown	13	10	3	4	9
	0 – 8 m	148	109	39	111	37
	8 – 12 m	0	0	0	0	0
	> 12 m	0	0	0	0	0
Week 34 (15/08/2011 – 21/08/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	51	49	2	11	40
	0 – 8 m	926	576	350	499	421
	8 – 12 m	200	0	200	69	131
	> 12 m	30	1	29	8	22
2	Unknown	44	41	3	8	36
	0 – 8 m	705	501	204	430	270
	8 – 12 m	68	0	68	41	27
	> 12 m	10	1	9	5	5
3	Unknown	43	41	2	8	35
	0 – 8 m	671	483	188	409	257
	8 – 12 m	39	0	39	25	14
	> 12 m	2	1	1	2	0
4	Unknown	17	14	3	4	13
	0 – 8 m	178	143	35	133	44
	8 – 12 m	0	0	0	0	0
	> 12 m	1	1	0	1	0

Week 35 (22/08/2011 – 28/08/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	66	59	6	16	48
	0 – 8 m	881	530	350	426	449
	8 – 12 m	197	0	197	50	147
	> 12 m	31	0	31	3	28
2	Unknown	57	50	6	14	41
	0 – 8 m	673	459	213	371	297
	8 – 12 m	71	0	71	31	40
	> 12 m	7	0	7	1	6
3	Unknown	57	50	6	15	40
	0 – 8 m	637	440	196	350	282
	8 – 12 m	36	0	36	15	21
	> 12 m	0	0	0	0	0
4	Unknown	20	15	4	8	11
	0 – 8 m	178	144	33	124	54
	8 – 12 m	0	0	0	0	0
	> 12 m	0	0	0	0	0
Week 36 (29/08/2011 – 04/09/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	68	64	4	14	50
	0 – 8 m	989	618	368	524	459
	8 – 12 m	200	0	200	65	135
	> 12 m	28	0	28	3	25
2	Unknown	62	56	6	13	46
	0 – 8 m	773	539	231	449	318
	8 – 12 m	72	0	72	41	31
	> 12 m	9	0	9	2	7
3	Unknown	60	54	6	14	43
	0 – 8 m	727	514	210	420	301
	8 – 12 m	41	0	41	22	19
	> 12 m	0	0	0	0	0
4	Unknown	8	4	4	4	4
	0 – 8 m	196	156	39	142	54
	8 – 12 m	1	0	1	0	1
	> 12 m	0	0	0	0	0
Week 37 (05/09/2011 – 11/09/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***

1	Unknown	49	47	1	16	33
	0 – 8 m	868	501	365	430	434
	8 – 12 m	207	0	207	67	140
	> 12 m	27	0	27	7	20
2	Unknown	42	40	1	17	25
	0 – 8 m	648	422	224	373	272
	8 – 12 m	79	0	79	42	37
	> 12 m	11	0	11	5	6
3	Unknown	41	39	1	17	24
	0 – 8 m	616	404	211	357	256
	8 – 12 m	50	0	50	28	22
	> 12 m	1	0	1	1	0
4	Unknown	13	11	1	7	6
	0 – 8 m	186	137	48	142	44
	8 – 12 m	0	0	0	0	0
	> 12 m	0	0	0	0	0
Week 38 (12/09/2011 – 18/09/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	61	59	2	16	44
	0 – 8 m	947	573	373	476	458
	8 – 12 m	199	0	199	62	137
	> 12 m	29	0	29	5	24
2	Unknown	50	49	1	14	35
	0 – 8 m	718	496	221	413	293
	8 – 12 m	71	0	71	38	33
	> 12 m	11	0	11	4	7
3	Unknown	51	50	1	14	35
	0 – 8 m	682	474	207	394	277
	8 – 12 m	42	0	42	21	21
	> 12 m	0	0	0	0	0
4	Unknown	13	12	1	7	6
	0 – 8 m	207	160	46	145	62
	8 – 12 m	0	0	0	0	0
	> 12 m	0	0	0	0	0
Week 39 (19/09/2011 – 25/09/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	72	69	3	9	59
	0 – 8 m	943	563	380	495	439

	8 – 12 m	199	0	199	62	137
	> 12 m	33	0	33	8	25
2	Unknown	62	54	8	10	49
	0 – 8 m	724	484	240	431	286
	8 – 12 m	76	0	76	35	41
	> 12 m	14	0	14	7	7
3	Unknown	60	52	8	9	48
	0 – 8 m	687	462	225	407	272
	8 – 12 m	47	0	47	22	25
	> 12 m	0	0	0	0	0
4	Unknown	18	13	5	6	12
	0 – 8 m	179	132	47	139	40
	8 – 12 m	2	0	2	1	1
	> 12 m	0	0	0	0	0
Week 40 (26/09/2011 – 02/10/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	68	64	4	14	51
	0 – 8 m	914	564	350	455	451
	8 – 12 m	213	0	213	69	144
	> 12 m	36	0	36	5	31
2	Unknown	53	48	5	10	40
	0 – 8 m	667	460	207	399	260
	8 – 12 m	90	0	90	50	40
	> 12 m	11	0	11	3	8
3	Unknown	51	48	3	10	38
	0 – 8 m	635	446	189	378	249
	8 – 12 m	64	0	64	35	29
	> 12 m	0	0	0	0	0
4	Unknown	12	10	2	4	8
	0 – 8 m	161	126	35	119	42
	8 – 12 m	2	0	2	1	1
	> 12 m	0	0	0	0	0
Week 41 (03/10/2011 – 09/10/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	54	53	1	15	39
	0 – 8 m	849	528	320	455	390
	8 – 12 m	212	1	211	76	136
	> 12 m	32	0	32	8	24

2	Unknown	56	54	2	15	40
	0 – 8 m	647	458	188	402	242
	8 – 12 m	85	1	84	42	43
	> 12 m	14	0	14	6	8
3	Unknown	53	52	1	13	40
	0 – 8 m	620	444	175	392	226
	8 – 12 m	53	1	52	23	30
	> 12 m	2	0	2	1	1
4	Unknown	15	14	1	6	9
	0 – 8 m	174	144	30	145	29
	8 – 12 m	5	0	5	1	4
	> 12 m	0	0	0	0	0
Week 42 (10/10/2011 – 16/10/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	57	51	6	18	38
	0 – 8 m	945	574	369	471	470
	8 – 12 m	193	0	193	61	132
	> 12 m	34	0	34	4	30
2	Unknown	46	38	8	15	31
	0 – 8 m	711	490	219	415	293
	8 – 12 m	75	0	75	35	40
	> 12 m	12	0	12	4	8
3	Unknown	44	40	4	16	27
	0 – 8 m	678	470	207	394	281
	8 – 12 m	47	0	47	20	27
	> 12 m	0	0	0	0	0
4	Unknown	10	10	0	3	7
	0 – 8 m	193	152	40	154	39
	8 – 12 m	0	0	0	0	0
	> 12 m	0	0	0	0	0
Week 43 (17/10/2011 – 23/10/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	62	61	1	12	48
	0 – 8 m	841	508	331	417	414
	8 – 12 m	176	0	176	55	121
	> 12 m	30	1	29	9	21
2	Unknown	57	56	1	15	40
	0 – 8 m	627	426	199	353	265

	8 – 12 m	70	0	70	36	34
	> 12 m	9	1	8	6	3
3	Unknown	58	56	2	14	42
	0 – 8 m	599	416	181	338	252
	8 – 12 m	47	0	47	24	23
	> 12 m	1	1	0	1	0
4	Unknown	12	10	2	8	4
	0 – 8 m	148	116	32	107	40
	8 – 12 m	0	0	0	0	0
	> 12 m	0	0	0	0	0
Week 44 (25/10/2010 – 31/10/2010)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	70	68	2	22	47
	0 – 8 m	923	564	359	466	448
	8 – 12 m	179	0	179	61	118
	> 12 m	41	0	41	8	33
2	Unknown	64	62	2	22	41
	0 – 8 m	679	478	201	400	271
	8 – 12 m	76	0	76	38	38
	> 12 m	15	0	15	6	9
3	Unknown	64	62	2	23	40
	0 – 8 m	649	463	186	381	260
	8 – 12 m	51	0	51	26	25
	> 12 m	1	0	1	1	0
4	Unknown	11	9	2	7	4
	0 – 8 m	172	132	40	135	37
	8 – 12 m	2	0	2	1	1
	> 12 m	0	0	0	0	0
Week 45 (01/11/2010 – 07/11/2010)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	51	51	0	15	36
	0 – 8 m	800	457	343	402	394
	8 – 12 m	191	0	191	65	126
	> 12 m	32	1	31	10	22
2	Unknown	46	43	3	14	32
	0 – 8 m	587	391	196	333	250
	8 – 12 m	81	0	81	42	39
	> 12 m	14	1	13	8	6

3	Unknown	42	42	0	13	29
	0 – 8 m	555	372	183	312	239
	8 – 12 m	51	0	51	26	25
	> 12 m	1	1	0	1	0
4	Unknown	7	7	0	3	4
	0 – 8 m	149	120	29	108	41
	8 – 12 m	1	0	1	1	0
	> 12 m	1	1	0	1	0
Week 46 (07/11/2010 – 13/11/2010)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	81	79	1	15	66
	0 – 8 m	798	462	336	386	408
	8 – 12 m	192	0	192	65	127
	> 12 m	29	0	29	6	23
2	Unknown	75	73	1	15	60
	0 – 8 m	574	396	178	331	240
	8 – 12 m	78	0	78	40	38
	> 12 m	10	0	10	5	5
3	Unknown	75	73	1	15	60
	0 – 8 m	556	387	169	318	235
	8 – 12 m	47	0	47	25	22
	> 12 m	0	0	0	0	0
4	Unknown	10	10	0	5	5
	0 – 8 m	140	109	31	114	26
	8 – 12 m	0	0	0	0	0
	> 12 m	0	0	0	0	0
Week 47 (14/11/2011 – 20/11/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	96	93	3	21	72
	0 – 8 m	894	523	371	468	419
	8 – 12 m	190	0	190	70	120
	> 12 m	22	0	22	5	17
2	Unknown	75	72	3	19	53
	0 – 8 m	661	431	230	389	267
	8 – 12 m	84	0	84	44	40
	> 12 m	8	0	8	4	4
3	Unknown	75	72	3	19	53
	0 – 8 m	623	414	209	364	254

	8 – 12 m	63	0	63	33	30
	> 12 m	1	0	1	1	0
4	Unknown	15	15	0	7	8
	0 – 8 m	148	99	49	113	35
	8 – 12 m	2	0	2	1	1
	> 12 m	1	0	1	1	0
Week 48 (21/11/2011 – 27/11/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	78	75	3	12	65
	0 – 8 m	865	549	316	448	409
	8 – 12 m	174	0	174	57	117
	> 12 m	32	0	32	10	22
2	Unknown	64	58	6	9	54
	0 – 8 m	657	465	192	383	268
	8 – 12 m	72	0	72	38	34
	> 12 m	14	0	14	9	5
3	Unknown	63	57	6	9	53
	0 – 8 m	635	450	185	368	261
	8 – 12 m	43	0	43	24	19
	> 12 m	1	0	1	1	0
4	Unknown	9	7	2	4	4
	0 – 8 m	161	128	33	140	21
	8 – 12 m	0	0	0	0	0
	> 12 m	0	0	0	0	0
Week 49 (28/11/2011 – 04/12/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	101	98	3	18	81
	0 – 8 m	846	500	346	437	401
	8 – 12 m	196	1	195	64	132
	> 12 m	34	0	34	7	27
2	Unknown	91	87	4	14	75
	0 – 8 m	624	424	200	375	243
	8 – 12 m	69	1	68	38	31
	> 12 m	11	0	11	4	7
3	Unknown	90	88	2	16	72
	0 – 8 m	597	409	188	361	230
	8 – 12 m	45	1	44	27	18
	> 12 m	1	0	1	0	1

4	Unknown	20	20	0	7	13
	0 – 8 m	185	154	31	151	34
	8 – 12 m	1	0	1	1	0
	> 12 m	0	0	0	0	0
Week 50 (05/12/2011 – 11/12/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	72	70	2	13	56
	0 – 8 m	861	533	328	413	438
	8 – 12 m	216	0	216	67	149
	> 12 m	22	0	22	4	18
2	Unknown	59	55	4	13	44
	0 – 8 m	653	460	193	367	278
	8 – 12 m	93	0	93	45	48
	> 12 m	11	0	11	4	7
3	Unknown	60	56	4	12	46
	0 – 8 m	627	446	181	350	269
	8 – 12 m	67	0	67	31	36
	> 12 m	1	0	1	0	1
4	Unknown	13	10	3	4	9
	0 – 8 m	173	125	48	134	39
	8 – 12 m	4	0	4	2	2
	> 12 m	0	0	0	0	0
Week 51 (12/12/2011 – 18/12/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	63	61	1	20	41
	0 – 8 m	776	463	312	394	370
	8 – 12 m	193	1	192	70	123
	> 12 m	36	0	36	5	31
2	Unknown	55	53	1	18	37
	0 – 8 m	577	396	180	326	241
	8 – 12 m	80	1	79	41	39
	> 12 m	13	0	13	5	8
3	Unknown	53	52	0	19	34
	0 – 8 m	547	378	168	308	229
	8 – 12 m	51	1	50	27	24
	> 12 m	0	0	0	0	0
4	Unknown	4	4	0	4	0
	0 – 8 m	146	117	29	116	30

	8 – 12 m	5	1	4	2	3
	> 12 m	0	0	0	0	0
Week 52 (19/12/2011 – 25/12/2011)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	56	52	3	12	40
	0 – 8 m	795	478	316	388	399
	8 – 12 m	190	0	190	70	120
	> 12 m	17	0	17	5	12
2	Unknown	49	45	3	11	37
	0 – 8 m	585	402	183	328	250
	8 – 12 m	87	0	87	50	37
	> 12 m	9	0	9	5	4
3	Unknown	50	46	3	12	37
	0 – 8 m	554	381	173	310	237
	8 – 12 m	54	0	54	31	23
	> 12 m	1	0	1	1	0
4	Unknown	8	6	2	5	3
	0 – 8 m	146	104	42	109	36
	8 – 12 m	2	0	2	0	2
	> 12 m	0	0	0	0	0
Week 01 (26/12/2011 – 01/01/2012)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	37	35	2	8	25
	0 – 8 m	628	341	287	308	314
	8 – 12 m	191	0	191	64	127
	> 12 m	40	0	40	6	34
2	Unknown	29	26	3	9	17
	0 – 8 m	457	290	167	259	194
	8 – 12 m	85	0	85	40	45
	> 12 m	11	0	11	4	7
3	Unknown	29	26	3	9	17
	0 – 8 m	434	270	164	243	187
	8 – 12 m	59	0	59	27	32
	> 12 m	0	0	0	0	0
4	Unknown	4	1	3	1	3
	0 – 8 m	137	92	45	88	48
	8 – 12 m	4	0	4	2	2
	> 12 m	0	0	0	0	0

Week 02 (03/01/2011 – 09/01/2011)						
Area	**Draught**	**Total**	**Inland navigation**	**Seagoing**	**Arrival**	**Departure**
1	Unknown	38	36	2	13	25
	0 – 8 m	586	300	286	290	294
	8 – 12 m	195	0	195	64	131
	> 12 m	28	0	28	2	26
2	Unknown	29	28	1	10	19
	0 – 8 m	420	253	167	238	181
	8 – 12 m	73	0	73	37	36
	> 12 m	5	0	5	1	4
3	Unknown	29	28	1	10	19
	0 – 8 m	395	238	157	226	168
	8 – 12 m	47	0	47	22	25
	> 12 m	0	0	0	0	0
4	Unknown	3	3	0	2	1
	0 – 8 m	104	78	26	86	18
	8 – 12 m	2	0	2	1	1
	> 12 m	0	0	0	0	0
Week 03 (09/01/2012 – 15/01/2012)						
Area	**Draught**	**Total**	**Inland navigation**	**Seagoing**	**Arrival**	**Departure**
1	Unknown	55	55	0	15	39
	0 – 8 m	859	494	365	437	418
	8 – 12 m	193	0	193	59	134
	> 12 m	39	2	37	10	29
2	Unknown	49	48	1	13	35
	0 – 8 m	638	423	215	387	247
	8 – 12 m	74	0	74	37	37
	> 12 m	15	2	13	8	7
3	Unknown	49	48	1	13	35
	0 – 8 m	608	401	207	369	235
	8 – 12 m	45	0	45	21	24
	> 12 m	2	2	0	1	1
4	Unknown	12	12	0	6	5
	0 – 8 m	179	130	49	135	43
	8 – 12 m	0	0	0	0	0
	> 12 m	0	0	0	0	0
Week 04 (16/01/2012 – 22/01/2012)						
Area	**Draught**	**Total**	**Inland navigation**	**Seagoing**	**Arrival**	**Departure**

1	Unknown	39	39	0	8	31
	0 – 8 m	793	476	317	412	375
	8 – 12 m	208	0	208	64	144
	> 12 m	63	35	28	25	36
2	Unknown	33	33	0	7	26
	0 – 8 m	597	412	185	365	226
	8 – 12 m	83	0	83	42	41
	> 12 m	38	26	12	18	18
3	Unknown	33	33	0	8	25
	0 – 8 m	560	388	172	344	210
	8 – 12 m	58	0	58	30	28
	> 12 m	27	26	1	13	12
4	Unknown	11	11	0	3	8
	0 – 8 m	146	122	24	115	31
	8 – 12 m	0	0	0	0	0
	> 12 m	1	1	0	1	0
Week 05 (23/01/2012 – 29/01/2012)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	46	45	1	13	32
	0 – 8 m	911	545	366	466	440
	8 – 12 m	222	1	221	70	152
	> 12 m	71	36	35	20	51
2	Unknown	39	36	3	11	28
	0 – 8 m	685	466	219	407	275
	8 – 12 m	85	0	85	43	42
	> 12 m	41	28	13	14	27
3	Unknown	36	34	2	11	25
	0 – 8 m	643	439	204	380	260
	8 – 12 m	54	0	54	27	27
	> 12 m	29	28	1	9	20
4	Unknown	13	11	2	5	8
	0 – 8 m	179	131	48	133	45
	8 – 12 m	1	0	1	1	0
	> 12 m	1	1	0	1	0
Week 06 (30/01/2012 – 05/02/2012)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	48	45	1	13	35
	0 – 8 m	815	505	307	433	380

	8 – 12 m	203	0	203	68	135
	> 12 m	55	20	35	12	43
2	Unknown	43	41	0	11	32
	0 – 8 m	614	434	177	380	234
	8 – 12 m	80	0	80	45	35
	> 12 m	30	20	10	10	20
3	Unknown	39	37	0	12	27
	0 – 8 m	584	415	167	362	222
	8 – 12 m	57	0	57	32	25
	> 12 m	20	20	0	5	15
4	Unknown	9	9	0	4	5
	0 – 8 m	143	106	37	108	35
	8 – 12 m	1	0	1	0	1
	> 12 m	3	3	0	3	0
Week 07 (06/02/2012 – 12/02/2012)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	48	46	2	17	31
	0 – 8 m	823	457	365	402	418
	8 – 12 m	198	0	198	68	130
	> 12 m	77	39	38	15	62
2	Unknown	38	36	2	12	26
	0 – 8 m	587	376	210	346	238
	8 – 12 m	89	0	89	47	42
	> 12 m	42	30	12	12	30
3	Unknown	34	32	2	12	22
	0 – 8 m	538	349	188	316	218
	8 – 12 m	53	0	53	28	25
	> 12 m	31	31	0	7	24
4	Unknown	8	8	0	2	6
	0 – 8 m	141	110	31	104	37
	8 – 12 m	2	0	2	1	1
	> 12 m	0	0	0	0	0
Week 08 (13/02/2012 – 19/02/2012)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	64	58	5	10	52
	0 – 8 m	687	425	262	386	293
	8 – 12 m	175	0	175	67	108
	> 12 m	81	51	30	16	64

2	Unknown	52	44	7	7	43
	0 – 8 m	509	336	173	336	168
	8 – 12 m	71	0	71	36	35
	> 12 m	51	33	18	16	34
3	Unknown	48	42	5	7	39
	0 – 8 m	478	316	162	314	159
	8 – 12 m	44	0	44	22	22
	> 12 m	35	34	1	10	24
4	Unknown	9	6	3	2	7
	0 – 8 m	143	100	43	105	38
	8 – 12 m	1	0	1	1	0
	> 12 m	2	2	0	2	0
Week 09 (20/02/2012 – 26/02/2012)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	53	46	7	9	44
	0 – 8 m	879	502	375	434	444
	8 – 12 m	215	0	215	66	149
	> 12 m	56	19	37	13	43
2	Unknown	43	35	8	8	35
	0 – 8 m	635	410	223	370	265
	8 – 12 m	88	0	88	43	45
	> 12 m	28	15	13	9	19
3	Unknown	38	31	7	7	31
	0 – 8 m	598	385	212	350	248
	8 – 12 m	58	0	58	28	30
	> 12 m	15	15	0	3	12
4	Unknown	9	8	1	2	7
	0 – 8 m	178	131	47	137	41
	8 – 12 m	1	0	1	0	1
	> 12 m	0	0	0	0	0
Week 10 (27/02/2012 – 04/03/2012)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	59	56	3	11	47
	0 – 8 m	897	532	363	475	418
	8 – 12 m	201	0	201	65	136
	> 12 m	89	45	44	18	70
2	Unknown	53	47	6	11	41
	0 – 8 m	687	449	236	410	273

	8 – 12 m	83	0	83	41	42
	> 12 m	53	37	16	14	39
3	Unknown	49	46	3	12	36
	0 – 8 m	633	417	214	374	255
	8 – 12 m	57	0	57	27	30
	> 12 m	40	38	2	8	32
4	Unknown	11	11	0	4	7
	0 – 8 m	147	111	36	120	27
	8 – 12 m	3	0	3	2	1
	> 12 m	1	1	0	1	0
Week 11 (05/03/2012 – 11/03/2012)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	49	40	9	11	37
	0 – 8 m	877	506	371	428	446
	8 – 12 m	211	0	211	68	143
	> 12 m	70	41	29	17	52
2	Unknown	45	36	9	11	33
	0 – 8 m	660	447	213	365	292
	8 – 12 m	87	0	87	41	46
	> 12 m	43	34	9	12	31
3	Unknown	43	34	9	12	30
	0 – 8 m	622	428	194	346	273
	8 – 12 m	63	0	63	29	34
	> 12 m	34	34	0	8	26
4	Unknown	11	10	1	4	7
	0 – 8 m	158	126	32	120	38
	8 – 12 m	0	0	0	0	0
	> 12 m	3	3	0	3	0
Week 12 (12/03/2012 – 18/03/2012)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	46	44	2	6	40
	0 – 8 m	864	531	333	435	416
	8 – 12 m	190	0	190	55	135
	> 12 m	65	29	36	22	43
2	Unknown	38	36	2	4	34
	0 – 8 m	656	458	198	377	267
	8 – 12 m	74	0	74	33	41
	> 12 m	38	26	12	19	19

3	Unknown	39	37	2	4	34
	0 – 8 m	607	426	181	343	252
	8 – 12 m	46	0	46	20	26
	> 12 m	27	26	1	13	14
4	Unknown	10	9	1	3	7
	0 – 8 m	169	127	42	124	44
	8 – 12 m	2	0	2	2	0
	> 12 m	3	3	0	3	0
Week 13 (19/03/2012 – 25/03/2012)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	44	42	2	10	34
	0 – 8 m	920	591	326	491	422
	8 – 12 m	201	0	201	65	136
	> 12 m	55	28	27	10	45
2	Unknown	40	36	4	10	30
	0 – 8 m	694	494	198	423	268
	8 – 12 m	80	0	80	41	39
	> 12 m	32	24	8	9	23
3	Unknown	36	33	3	10	26
	0 – 8 m	650	468	180	394	253
	8 – 12 m	53	0	53	28	25
	> 12 m	25	25	0	7	18
4	Unknown	11	10	1	4	7
	0 – 8 m	181	141	39	150	31
	8 – 12 m	1	0	1	0	1
	> 12 m	2	2	0	1	1
Week 14 (26/03/2012 – 01/04/2012)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	59	57	2	13	45
	0 – 8 m	949	579	369	468	474
	8 – 12 m	226	0	226	78	148
	> 12 m	68	27	41	20	48
2	Unknown	54	51	3	14	40
	0 – 8 m	692	480	211	392	296
	8 – 12 m	101	0	101	49	52
	> 12 m	34	21	13	16	18
3	Unknown	51	48	3	13	38
	0 – 8 m	649	456	192	371	274

	8 – 12 m	71	0	71	31	40
	> 12 m	21	21	0	9	12
4	Unknown	18	16	2	8	10
	0 – 8 m	173	127	45	125	48
	8 – 12 m	1	0	1	1	0
	> 12 m	0	0	0	0	0

Annex F unesco PPs-78 formula for calculating salinity

Practical Salinity Scale (PPS 78) Salinity in the range of 2 to 42

Constants from the 19th Edition of Standard Methods

R cond.ratio	0.0117	$R = \frac{C}{42.914 mS/cm}$
C Cond at t	**0.5**	**Input conductivity in mS/cm of sample**
t deg. C	**22.00**	**Input temperature of sample solution**
P dBar	**20**	**Input pressure at which sample is measured in decibars**
Rp	1.0020845	$R_p = 1 + \frac{p(e_1 + e_2 p + e_3 p^2)}{1 + d_1 t + d_2 t^2 + (d_3 + d_4 t)R}$
rt	1.1641102	$r_t = c_0 + c_1 t + c_2 t^2 + c_3 t^3 + c_4 t^4$
Rt	0.0099879	$R_t = \frac{R}{R_p \times r_t}$
Delta S	-0.0010	$\text{Delta S} = \frac{(t-15)}{1+k(t-15)}(b_0 + b_1 R_t^{1/2} + b_2 R_t + b_3 R_t^{3/2} + b_4 R_t^2 + b_5 R_t^{5/2})$
S = Salinity	**0.257**	$S = a_0 + a_1 R_t^{1/2} + a_2 R_t + a_3 R_t^{3/2} + a_4 R_t^2 + a_5 R_t^{5/2} + \text{delta S}$

a0	0.0080	b0	0.0005	c0	0.6766097	d1	3.426E-02	e1	2.070E-04
a1	-0.1692	b1	-0.0056	c1	2.00564E-02	d2	4.464E-04	e2	-6.370E-08
a2	25.3851	b2	-0.0066	c2	1.104259E-04	d3	4.215E-01	e3	3.989E-12
a3	14.0941	b3	-0.0375	c3	-6.9698E-07	d4	-3.107E-03		
a4	-7.0261	b4	0.0636	c4	1.0031E-09				
a5	2.7081	b5	-0.0144						
		k	0.0162						

R = ratio of measured conductivity to the conductivity of the Standard Seawater Solution

Conductivity Ratio R is a function of salinity, temperature, and hydraulic pressure. So that we can factor R into three parts i.e.

R = Rt x Rp x rt

R = C(S,t,p)/C(35,15,0)

C = 42.914 mS/cm at 15 deg C and 0 dbar pressure ie C(35,15,0) where 35 is the salinity

Ocean pressure is usually measured in decibars. 1 dbar = 10^-1 bar = 10^5 dyne/cm^2 = 10^4 Pascal.

Annex G Overview of HCBS2 and aanslibbing Deurganckdok reports

Report	Description of HCBS2
Ambient Conditions Lower Sea Scheldt	
5.3	Overview of ambient conditions in the river Scheldt – January-June 2006 (I/RA/11291/06.088/MSA)
5.4	Overview of ambient conditions in the river Scheldt – July-December 2006 (I/RA/11291/06.089/MSA)
~~5.5~~	~~Overview of ambient conditions in the river Scheldt : RCM 9 Buoy 84 & 97 (1/1/2007 -31/3/2007) (I/RA/11291/06.090/MSA)~~[2]
5.6	Analysis of ambient conditions during 2006 (I/RA/11291/06.091/MSA)
Calibration	
6.1	Winter Calibration (I/RA/11291/06.092/MSA)
6.2	Summer Calibration and Final Report (I/RA/11291/06.093/MSA)
Through tide Measurements Winter 2006	
7.1	21/3 Scheldewacht – Deurganckdok – Salinity Distribution (I/RA/11291/06.094/MSA)
7.2	22/3 Parel 2 – Deurganckdok (I/RA/11291/06.095/MSA)
7.3	22/3 Laure Marie – Liefkenshoek (I/RA/11291/06.096/MSA)
7.4	23/3 Parel 2 – Schelle (I/RA/11291/06.097/MSA)
7.5	23/3 Laure Marie – Deurganckdok (I/RA/11291/06.098/MSA)
7.6	23/3 Veremans Waarde (I/RA/11291/06.099/MSA)
HCBS Near bed continuous monitoring (Frames)	
8.1	Near bed continuous monitoring winter 2006 (I/RA/11291/06.100/MSA)
INSSEV	
9	Settling Velocity - INSSEV summer 2006 (I/RA/11291/06.102/MSA)
Cohesive Sediment	
10	Cohesive sediment properties summer 2006 (I/RA/11291/06.103/MSA)
Through tide Measurements Summer 2006	
11.1	Through Tide Measurement Sediview and Siltprofiler 27/9 Stream - Liefkenshoek (I/RA/11291/06.104/MSA)
11.2	Through Tide Measurement Sediview 27/9 Veremans - Raai K (I/RA/11291/06.105/MSA)
11.3	Through Tide Measurement Sediview and Siltprofiler 28/9 Stream - Raai K (I/RA/11291/06.106/MSA)
11.4	Through Tide Measurement Sediview 28/9 Veremans - Waarde(I/RA/11291/06.107/MSA)

[2] The data, foreseen for Report 5.5 is reported in report 3.1. Boundary conditions: Three monthly report 1/1/2007 – 31/03/2007 (I/RA/11283/06.127/MSA) including HCBS 2 report 5.5 (Deurganckdok).

11.5	Through Tide Measurements Sediview 28/9 Parel 2 - Schelle (I/RA/11291/06.108/MSA)
11.6	Through Tide measurement 26/9 Scheldewacht – Deurganckdok – Salinity Distribution (I/RA/11291/06.161/MSA)
Analysis	
12	Report concerning the presence of HCBS layers in the Scheldt river (I/RA/11291/06.109/MSA)

Report	Description of Opvolging aanslibbing Deurganckdok between April 2006 till March 2008
Sediment Balance: Bathymetry surveys. Density measurements. Maintenance and construction dredging activities	
1.1	Sediment Balance: Three monthly report 1/4/2006 – 30/06/2006 (I/RA/11283/06.113/MSA)
1.2	Sediment Balance: Three monthly report 1/7/2006 – 30/09/2006 (I/RA/11283/06.114/MSA)
1.3	Sediment Balance: Three monthly report 1/10/2006 – 31/12/2006 (I/RA/11283/06.115/MSA)
1.4	Sediment Balance: Three monthly report 1/1/2007 – 31/03/2007 (I/RA/11283/06.116/MSA)
1.5	Annual Sediment Balance (I/RA/11283/06.117/MSA)
1.6	Sediment balance Bathymetry: 2005 – 3/2006 (I/RA/11283/06.118/MSA)
1.10	Sediment Balance: Three monthly report 1/4/2007 - 30/06/2007 (I/RA/11283/07.081/MSA)
1.11	Sediment Balance: Three monthly report 1/7/2007 – 30/09/2007 (I/RA/11283/07.082/MSA)
1.12	Sediment Balance: Three monthly report 1/10/2007 – 31/12/2007 (I/RA/11283/07.083/MSA)
1.13	Sediment Balance: Three monthly report 1/1/2007 – 31/03/2007 (I/RA/11283/07.084/MSA)
1.14	Annual Sediment Balance (I/RA/11283/07.085/MSA)
Factors contributing to salt and sediment distribution in Deurganckdok: Salt-Silt (OBS3A) & Frame measurements. Through tide measurements (SiltProfiling & ADCP)	
2.1	Through tide measurement Siltprofiler 21/03/2006 Laure Marie (I/RA/11283/06.087/WGO)
2.2	Through tide measurement Siltprofiler 26/09/2006 Stream (I/RA/11283/06.068/MSA)
2.3	Through tide measurement Sediview spring tide 22/03/2006 Veremans (I/RA/11283/06.110/BDC)
2.4	Through tide measurement Sediview spring tide 27/09/2006 Parel 2 (I/RA/11283/06.119/MSA)
2.5	Through tide measurement Sediview average tide 24/10/2007 Parel 2 (I/RA/11283/06.120/MSA)
2.6	Salinity-Silt distribution & Frame Measurements Deurganckdok 13/3/2006 – 31/05/2006 (I/RA/11283/06.121/MSA)
2.7	Salinity -Silt distribution & Frame Measurements Deurganckdok 15/07/2006 – 31/10/2006 (I/RA/11283/06.122/MSA)
2.8	Salinity-Silt distribution & Frame Measurements Deurganckdok 12/02/2007 – 18/04/2007 (I/RA/11283/06.123/MSA)
2.9	Calibration stationary equipment autumn (I/RA/11283/07.095/MSA)
2.10	Through tide measurement Siltprofiler 23 October 2007 (I/RA/11283/07.086/MSA)
2.11	Through tide measurement Salinity Profiling winter (I/RA/11283/07.087/MSA)
2.12	Through tide measurement Sediview winter 11 March 2008 Transect I (I/RA/11283/07.088/MSA)

Report	Description of Opvolging aanslibbing Deurganckdok between April 2006 till March 2008
2.13	Through tide measurement Sediview winter 11 March 2008 Transect K (I/RA/11283/07.089/MSA)
2.14	Through tide measurement Sediview winter 11 March 2008 Transect DGD (I/RA/11283/07.090/MSA)
2.15	Through tide measurement Siltprofiler 12 March 2008 (I/RA/11283/07.091/MSA)
2.16	Salinity-Silt distribution Deurganckdok summer (21/6/2007 – 30/07/2007) (I/RA/11283/07.092/MSA)
2.17	Salinity-Silt distribution & Frame Measurements Deurganckdok autumn (17/09/2007 - 10/12/2007) (I/RA/11283/07.093/MSA)
2.18	Salinity-Silt distribution & Frame Measurements Deurganckdok winter (18/02/2008 - 31/3/2008) (I/RA/11283/07.094/MSA)
2.19	Calibration stationary & mobile equipment winter (I/RA/11283/07.096/MSA)
Boundary Conditions: Upriver Discharge. Salt concentration Scheldt. Bathymetric evolution in access channels. dredging activities in Lower Sea Scheldt and access channels	
3.1	Boundary conditions: Three monthly report 1/1/2007 – 31/03/2007 (I/RA/11283/06.127/MSA) including HCBS 2 report 5.5
~~3.2~~	~~Boundary condtions: Annual report (I/RA/11283/06.128/MSA)~~[3]
3.10	Boundary conditions: Three monthly report 1/4/2007 – 30/06/2007 (I/RA/11283/07.097/MSA)
3.11	Boundary conditions: Three monthly report 1/7/2007 – 30/09/2007 (I/RA/11283/07.098/MSA)
3.12	Boundary conditions: Three monthly report 1/10/2007 – 31/12/2007 (I/RA/11283/07.099/MSA)
3.13	Boundary conditions: Three monthly report 1/1/2008 – 31/03/2008 (I/RA/11283/07.100/MSA)
3.14	Boundary conditions: Annual report (I/RA/11283/07.101/MSA)
Analysis	
4.1	Analysis of Siltation Processes and Factors. 4/'06 – 3/'07 (I/RA/11283/06.129/MSA)
4.10	Analysis of Siltation Processes and Factors. 4/'07 – 3/'08 (I/RA/11283/07.102/MSA)

[3] considered in report 5.6 'Analysis of ambient conditions during 2006' (I/RA/11291/06.091/MSA) in the framework of the study 'Extension of the study about density currents in the Beneden Zeeschelde'

Report	Description of Opvolging aanslibbing Deurganckdok between April 2008 till March 2010
Sediment Balance: Bathymetry surveys. Density measurements. Maintenance and construction dredging activities	
1.20	Sediment Balance: Three monthly report 1/4/2008 - 30/6/2008 (I/RA/11283/08.076/MSA)
1.21	Sediment Balance: Three monthly report 1/7/2008 – 30/9/2008 (I/RA/11283/08.077/MSA)
1.22	Sediment Balance: Three monthly report 1/10/2008 – 31/12/2008 (I/RA/11283/08.078/MSA)
1.23	Sediment Balance: Three monthly report 1/1/2009 – 31/03/2009 (I/RA/11283/08.079/MSA)
1.24	Annual Sediment Balance (I/RA/11283/08.080/MSA)
Factors contributing to salt and sediment distribution in Deurganckdok: Salt-Silt (OBS3A) & Frame measurements. Through tide measurements (SiltProfiling & ADCP) & Calibrations	
2.20	Through tide measurement Sediview DGD during average tide Spring 2008 – 19 June 2008 (I/RA/11283/08.081/MSA)
2.21	Through tide measurement Sediview DGD during average tide Spring 2008 –26 June 2008 (I/RA/11283/08.082/MSA)
2.22	Through tide measurement Sediview DGD during neap tide Summer 2008 – 24 September 2008 (I/RA/11283/08.083/MSA)
2.23	Through tide measurement Sediview DGD during spring tide Summer 2008 – 30 September 2008 (I/RA/11283/08.084/MSA)
2.24	Through tide measurement Sediview DGD during neap tide Autumn 2008 – 02 December 2008 (I/RA/11283/08.085/MSA)
2.25	Through tide measurement Sediview DGD during spring tide Autumn 2008 – 10 December 2008 (I/RA/11283/08.086/MSA)
2.26	Through tide measurement Sediview DGD during neap tide Winter 2009 – 06 March 2009 (I/RA/11283/08.087/MSA)
2.27	Through tide measurement Sediview DGD during spring tide Winter 2009 – 12 March 2009 (I/RA/11283/08.088/MSA)
2.28	Through tide measurement ADCP eddy DGD Summer 2008 – 1 October 2008 (I/RA/11283/08.089/MSA)
2.29	Through tide measurement Siltprofiler DGD Summer 2008 – 29 September 2008 (I/RA/11283/08.090/MSA)
2.30	Through tide measurement Siltprofiler DGD Winter 2009 – 13 March 2009 (I/RA/11283/08.091/MSA)
2.31	Through tide measurement Salinity Profiling DGD Winter 2009 – 11 March 2009 (I/RA/11283/08.092/MSA)
2.32	Salt-Silt distribution Deurganckdok: Six monthly report 1/4/2008 - 30/9/2008 (I/RA/11283/08.093/MSA)
2.33	Salt-Silt distribution Deurganckdok: Six monthly report 1/10/2008 – 31/3/2009 (I/RA/11283/08.094/MSA)
2.34	Calibration stationary & mobile equipment Autumn 2008 – 27 & 28 October 2008 (I/RA/11283/08.095/MSA)

Boundary Conditions: Upriver Discharge. Salt concentration Scheldt. Bathymetric evolution in access channels. dredging activities in Lower Sea Scheldt and access channels	
3.20	Boundary conditions: Six monthly report 1/4/2008 – 30/09/2008 (I/RA/11283/08.097/MSA)
3.21	Boundary conditions: Six monthly report 1/10/2008 – 31/03/2009 (I/RA/11283/08.097/MSA)
Analysis	
4.20	Analysis of Siltation Processes and Factors (I/RA/11283/08.098/MSA)