REPORT

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Maritime Access Division

Evaluation of the external effects on the siltation in Deurganckdok (2012 - 2014)

Report 1.11: Boundary conditions survey year 7: April 2012 - March 2013

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0. SUMMARY

This report presents the measurement data of long-term stationary measurements in the Lower Sea Scheldt for survey year 7, or between 01/04/2012 and 31/03/2013. Furthermore, important human activities, like navigation and dredging activities in the vicinity of Deurganckdok are also presented.

These natural and human conditions aim to provide as much insight as possible into yearly evolution in water discharge, current velocities, temperature, salinity and suspended sediment concentrations close to Deurganckdok on the Lower Sea Scheldt.

1. INTRODUCTION

1.1 THE ASSIGNMENT

This report is part of a set of reports concerning the project 'Evaluation of the external effects on the siltation in Deurganckdok (2012 - 2014)'. The terms of reference were prepared by 'Department of Mobility and Public Works of the Flemish Government, Maritime Access Division (16EF/2011/28). Part 1 of the study was awarded to International Marine and Dredging Consultants NV in association with Deltares on February 3rd 2012.

This study is a follow-up study on the study 'Evaluation of the external effects on the siltation in Deurganckdok' (2009 - 2012) and the study 'Siltation Deurganckdok (2006 -2009)'.

The data and information that are used in this project are carried out or collected by Flanders Hydraulics Research, Maritime Access Division and the Agency for Maritime Services and Coast. Flanders Hydraulics Research provided data on discharge, tide, salinity and turbidity along the river Scheldt. Maritime Access Division provided maintenance dredging data. Agency for Maritime Services and Coast – Coast Division provided depth sounding and density profile measurements.

1.2 AIM OF THE STUDY

The purpose of this study entails evaluating the external effects on the siltation in the Deurganckdok (DGD). External effects are those effects caused by recent or near-future human operations near 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 (2008 - 2010);
- The deepening of the entrance to the Deurganckdok by removing the sill at the entrance (2009 - 2010);
- The construction of the Current Deflecting Wall downstream of the entrance of the Deurganckdok (2010 - 2011);
- The change in maintenance depth or strategy;
- Construction of the second Waaslandlock at the landward end of DGD (started in 2011)

1.3 OVERVIEW OF THE STUDY

This study constitutes of 2 parts:

- Reporting and analysis of existing documents and delivered measurement data.
- Execution of specific measurement campaign to determine the siltation and salinity rates at the entrance of DGD.

Reports of the project 'Evaluation of the external effects on the siltation in the Deurganckdok (2012 -2014)' are summarized in Table 1-1. The numbering of the reports is based on the previous project that ran between 2009 and 2012.

This report establishes the boundary conditions in the river Scheldt between April 2012 and March 2013, and is a sequel to the set of Boundary condition reports.

Table 1-1: Overview of the project 'Evaluation of the external effects on the siltation in Deurganckdok (2012 - 2014)'.

Report	Description
I.	**Analysis and Reporting**
I.1 Annual Sediment Balance: Bathymetry surveys, Density measurements, Maintenance and construction dredging activities	
1.09	Annual Sediment Balance in survey year 7: 01/04/2012-31/03/2013 (I/RA/11406/13.143/JCA)
1.10	Annual Sediment Balance in survey year 8: 01/04/2013-31/03/2014 (I/RA/11406/13.144/JCA)
I.2 Boundary Conditions: Upriver Discharge, Salt concentration Scheldt, Bathymetric evolution in access channels, dredging activities in Lower Sea Scheldt and access channels	
1.11	***Boundary Conditions in survey year 7: 01/04/2012 – 31/03/2013 (I/RA/11406/13.145/JCA)***
1.12	Boundary Conditions in survey year 8: 01/04/2013 – 31/03/2014 (I/RA/11406/13.146/JCA)
I.3 Analysis of the boundary conditions	
1.13	Analysis of the boundary conditions in survey years 3 and 4: 01/04/2008 – 31/03/201 (I/RA/11406/13.054/MGO)
1.14	Analysis of the boundary conditions in survey years 5 and 6: 01/04/2010 - 31/03/2012 (I/RA/11406/13.062/MGO)
1.15	Analysis of the boundary conditions in survey years 7 and 8: 01/04/2012 – 31/03/2014 (I/RA/11406/13.147/JCA)
I.4 Analysis: evaluation of external effects on siltation in Deurganckdok	
1.16	Analysis of external effects on siltation processes and factors (I/RA/11406/13.147/JCA)
II.	**Longterm salinity and turbidity measurement campaign at the entrance Deurganckdok**
II.1 Salinity Siltation Distribution at the entrance of Deurganckdok	
2.14	Salinity-Siltation distribution Deurganckdok in survey year 7: 01/04/2012 - 31/03/2013
2.15	Salinity-Siltation distribution Deurganckdok in survey year 8: 01/04/2013 – 31/03/2014
II.5 Quality Control instruments	
2.16	Calibration stationary equipment 2012
2.17	Calibration stationary equipment 2013

1.4 STRUCTURE OF THE REPORT

This report is the factual data report for two measurement actions during the period between April 2012 and March 2013:

- Monitoring salinity and sediment concentration in the Lower Sea Scheldt taken from permanent data acquisition sites at Oosterweel, Prosperpolder and downstream (Buoy 84) of Deurganckdok.
- Monitoring dredging and disposal 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

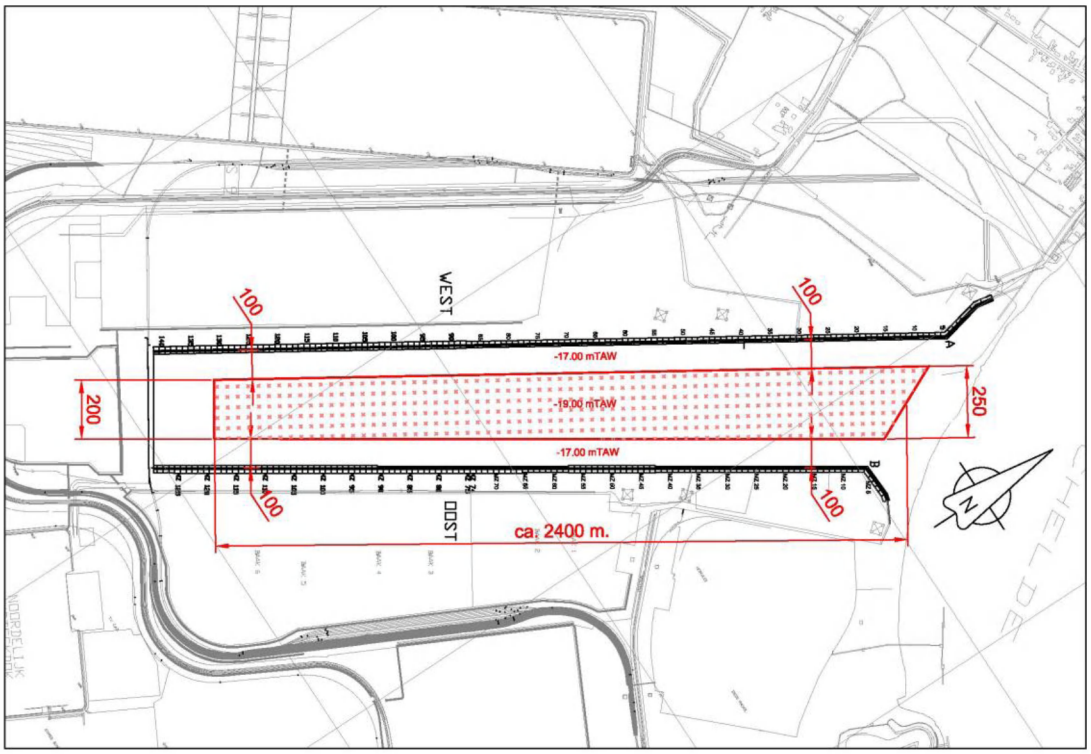

Figure 2-1: Overview of Deurganckdok

The dredging of the dock is performed in 3 phases between the start on February 2005 and finalization on February 2008. A Current Deflecting Wall (CDW) has been constructed at the entrance of Deurganckdok between 2010-2011 with the objective to reduce the yearly sedimentation in the dock. The CDW was completed in August 2011.

Other main construction works which occurred since the opening of Deurganckdok near the dock are summarized in Table 2-1.

Table 2-1 : Overview of construction works since the opening of Deurganckdok

Date	Description
18th February 2005	Deurganckdok dike between the Scheldt and the dock was opened
18th Feb 2005 – 1st Aug 2005	Dredging Phase 2 (end)
Feb 2007 – Feb 2008	Dredging Phase 3, dock extended from 1500 to 2500m
Jul 2008 – Aug 2010	Deepening and widening of the Scheldt navigation channel in Belgium (spread over a long period, exact timing not known)
Nov 2009 – Jun 2010	Dredging of the entrance sill
Apr 2010 – Aug 2011	Construction of the Current Deflecting Wall (CDW)
> Mar 2011	Change of maintenance depth -15.9m / -17.5m / -15.2m in quays / trench / entrance (included in maintenance dredging)
> Nov 2011	Construction of the 2nd Waaslandlock at the landward end of DGD

2.2 OVERVIEW OF THE STUDIED PARAMETERS

The purpose of this study entails evaluating the external effects on the siltation in the Deurganckdok (DGD) and is based on analysis and reporting of measurement data. The analysis of the measurement data contains two main components: the derivation of a yearly mass balance of the dock, and the analysis of sediment exchange mechanisms including a conceptual sedimentation model, which uses results from the mass balance, boundary conditions and measurement data at the entrance of Deurganckdock. Analysis and reporting of the natural and human conditions in the Lower Sea Scheldt would gain more insight in the mechanisms causing the siltation in Deurganckdok.

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 2-2).

A net deposition can be calculated from a comparison with a chosen initial condition t0 (Figure 2-3). 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 t0 leads to the change in mass of sediments present in the dock (mass growth). Adding cumulated dry matter mass of dredged material removed since t0 and subtracting any sediment influx due to capital dredging works leads to the total cumulated mass entered from the river Scheldt since t0.

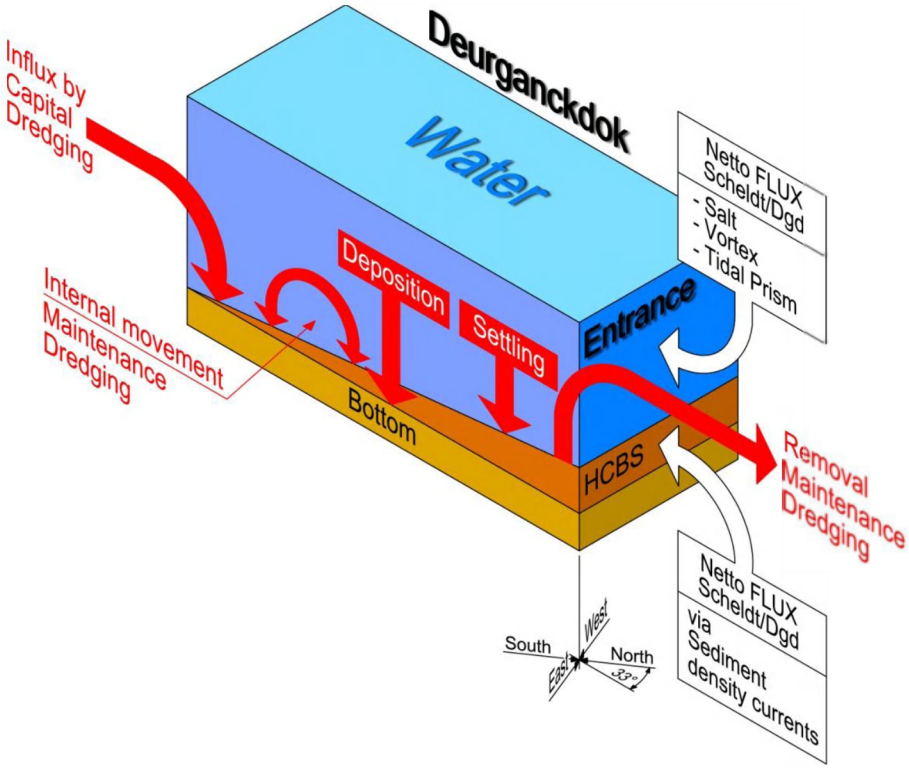

Figure 2-2: Elements of the sediment balance and transport mechanisms

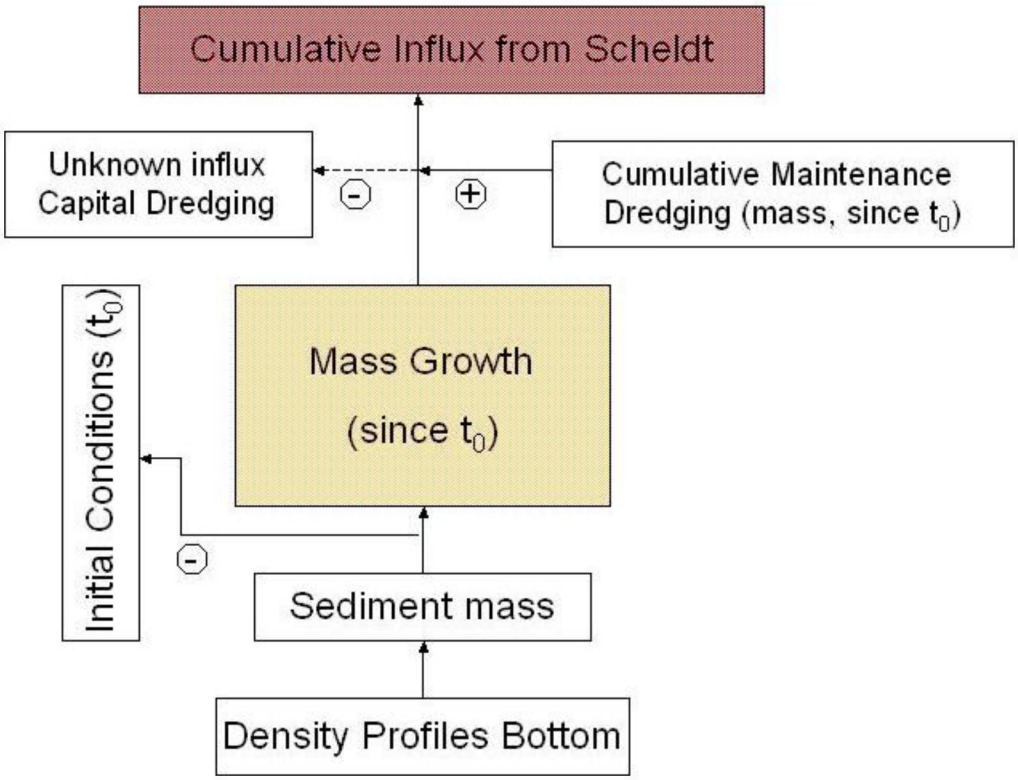

Figure 2-3: Determining a sediment balance

Concerning the sediment exchange, the following mechanisms will be aimed in this 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 salinity gradient between the Scheldt river and the dock
- Density currents due to highly concentrated benthic suspensions

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

Following data have been collected to understand these mechanisms:

- Monitoring upstream discharge in the river Scheldt.
- Monitoring salinity and sediment concentration in the Lower Sea Scheldt at permanent measurement locations at Oosterweel, up- and downstream of the Deurganckdok.
- Long-term measurements of salinity and suspended sediment distribution at the entrance of Deurganckdok.
- Monitoring dredging activities at entrance channels towards the Kallo, Zandvliet and Berendrecht locks as well as dredging and disposal 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 2012 and March 2013:

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

3. OVERVIEW OF THE MEASUREMENT CAMPAIGNS

In the scope of earlier siltation projects at Deurganckdok and this project, several measurements campaigns have been organized in the vicinity of Deurganckdok: at the entrance, down- and upstream of Deurganckdok, and in the dock itself. The measurements were performed during several tidal cycles (neap, average and spring tide) and on long-term time scale.

Table 3-1 till Table 3-3 give a global overview of all executed measurement campaigns in vincinity of Deurganckdok from the first siltation project (HCBS, 2005) till this project. Figure 3-1 shows the sailed measurement tracks and stationary measurement locations in the Deurganckdok and Figure 4-1 shows the Lower Sea Scheldt with the several stationary measurement locations and transect close to the dock.

Table 3-1: An overview of the through tide measurements on the River Scheldt in the environment of Deurganckdok since project HCBS (2005).

Through tide measurements			
Type (Location)	**Description**	**Date(s)**	**Report(s)**
SiltProfiler	Sediment and salinity measurements on 15 fixed gauging points at the entrance of DGD using the very fast IMDC vertical SiltProfiler.	21/03/2006 26/09/2006 23/10/2007 12/03/2008 29/09/2008 13/03/2009 27/09/2011 09/03/2012	IMDC (2006h) IMDC (2007n) IMDC (2008g) IMDC (2008l) IMDC (2009b) IMDC (2009j) IMDC (2012d) IMDC (2012l)
Longitudinal salinity measurements (Transect Y)	Measuring the longitudinal salinity distribution in Deurganckdok on several depths.	21/03/2006 26/09/2006 12/03/2008 11/03/2009	IMDC (2006b) IMDC (2007h) IMDC (2008h) IMDC (2009k)
Eddy measurements ([1]Transect X, Y, Z [2]Transect 1-4)	Measuring the spatial flow pattern and magnitudes of eddy currents at the entrance of Deurganckdok by using an ADCP	01/10/2008[1] 02/03/2010[2] 29/09/2011[2] 12/03/2012[2]	IMDC (2008y) IMDC (2010a) IMDC (2012c) IMDC (2012k)
Transect measurements at Deurganckdok (Transect DGD)	Measuring the spatial current and sediment distribution, water flux and sediment flux at the entrance of Deurganckdok by using ADCP and SEDIVIEW	16/02/2005* 22/03/2006 27/09/2006 24/10/2007 11/03/2008 19-26/06/2008 24/09-30/09/2008 2-10/12/2009 6-12/03/2009	IMDC (2005f) IMDC (2006i) IMDC (2007o) IMDC (2008a) IMDC (2008k) IMDC (2008u,v) IMDC (2008x,2009a) IMDC (2009e,f) IMDC (2009i,n)

Through tide measurements			
	procedure (*incl. SiltProfiles)	6-13/10/2011 8-16/03/2012	IMDC (2012a,b) IMDC (2012g,h)
Transect measurements at Waarde (Transect W)	Measuring the spatial current and sediment distribution, water flux and sediment flux at several locations on the River Scheldt by using ADCP and SEDIVIEW procedure (*incl. SiltProfiles)	23/03/2006 28/09/2006	IMDC (2006g) IMDC (2007f)
Transect measurements at Zandvliet		17/02/2005	IMDC(2005c)
Transect measurements at downstream Deurganckdok (Transect K)		17/02/2005 22-23/03/2006 27-28*/09/2006 11/03/2008	IMDC (2005b) IMDC (2006c,f) IMDC (2007d,e) IMDC (2008j)
Transect measurements at Liefkenshoek (Transect I)		17/02/2005* 22/03/2006* 27/09/2006* 11/03/2008	IMDC (2005d) IMDC (2006d) IMDC (2007c) IMDC (2008i)
Transect measurements at Kallo		18/02/2005*	IMDC (2005g)
Transect measurements at Schelle (Transect S)		17/02/2005 23/03/2006 28/09/2006	IMDC (2005e) IMDC (2006e) IMDC (2007g)

Table 3-2: An overview of in-situ settling velocity and calibration campaigns on the River Scheldt in the environment of Deurganckdok since project HCBS (2005).

Settling velocity/ calibration campaigns			
Type	**Description**	**Date(s)**	**Report(s)**
Settling velocity	Measuring the in-situ settling velocity of a sediment particle in Deurganckdok (CDW/SILL/Western qua) based on the INSSEV-protocol	17-19/02/2005 05-07/09/2006	IMDC (2005i) IMDC (2006o)
Calibration campaign	An in-situ calibration of the instruments in the environment of Deurganckdok with focus on turbidity conversion to sediment concentration (based on water samples)	15/03+14/04/2006 23/06+18/09/2006 10/09/2007 2-4/02/2008 27-28/10/2008 16/03/2011 01/06/2012 05/2012	IMDC (2006a) IMDC (2007a) IMDC (2008f) IMDC (2008o) IMDC (2009c) IMDC (2012e) IMDC (2012o) Antea Group (2013a).

Table 3-3: An overview of the long-term measurements on the River Scheldt in the environment of Deurganckdok since project HCBS (2005).

Long-term measurements				
Type	**Description**	**Location**	**Period(s)**	**Report(s)**
Near bed continuous monitoring	Measuring the tidal variation in current velocity, sediment concentration, salinity and bottom elevation near the bottom at the entrance of Deurganckdok by using an special designed frame	DGDdown, DGDup	02/2005	IMDC (2005h)
		CDW (North side)	03-04/2006	IMDC (2006j)
		CDW (North side) & SILL (South side)	04-05/2006 07-10/2006 03-04/2007 09-12/2007 02-04/2008	IMDC (2006k) IMDC (2007n) IMDC (2007q) IMDC (2008m) IMDC (2008n)
	Analogously to a near bed monitoring but extended with an ADCP to measure current and sediment pattern in the water column after the building of CDW	CDWdown (downstream CDW) CDWop (upstream CDW) SILL (South side)	09-10/2011 02-03/2012	IMDC (2012d) IMDC (2012l)
Salinity and siltation monitoring in Deurganckdok	Measuring the salinity and sediment variation on long-term scale in Deurganckdok at 2 fixed depths	PSA, P&O1 and P&O2	03-04/2006 07-10/2006 02-04/2007 06-07/2007 09-12/2007	IMDC (2006k) IMDC (2007n) IMDC (2007q) IMDC (2007v) IMDC (2008m)
		N entrance S entrance S middle S back	02-03/2008 04-09/2008 10/2008-3/2009	IMDC (2008n) IMDC (2008z) IMDC (2009l)
		N entrance S entrance	04/2009-05/2010 05/2011-05/2012 05/2012-03/2013	IMDC (2010b) IMDC (2012n) Antea Group (2013b)
Ambient condition monitoring	Measuring the ambient conditions nearby Deurganckdok: currents, salinity and sediment concentration	Lillo Oosterweel Hoboken Boerenschans	01-06/2005 07-12/2005	IMDC (2005k) IMDC (2005l)
		Prosperpolder Buoy84 Buoy97 Oosterweel	01-06/2006 07-12/2006 01-03/2007 04-06/2007 07-09/2007 10-12/2007 01-03/2008 04-09/2008	IMDC (2006l) IMDC (2007b) IMDC (2007r) IMDC (2007w) IMDC (2007u) IMDC (2008p) IMDC (2008q) IMDC (2008aa)
		Prosperpolder Buoy84 Oosterweel	10/2008-03/2009 04/2009-03/2010 04/2010-03/2011 04/2011-03/2012	IMDC (2009d,m) IMDC (2011c) IMDC (2012f) IMDC (2012p)
		Prosperpolder Buoy84 Liefkenshoek Oosterweel	**04/2012-03/2013**	**This report**

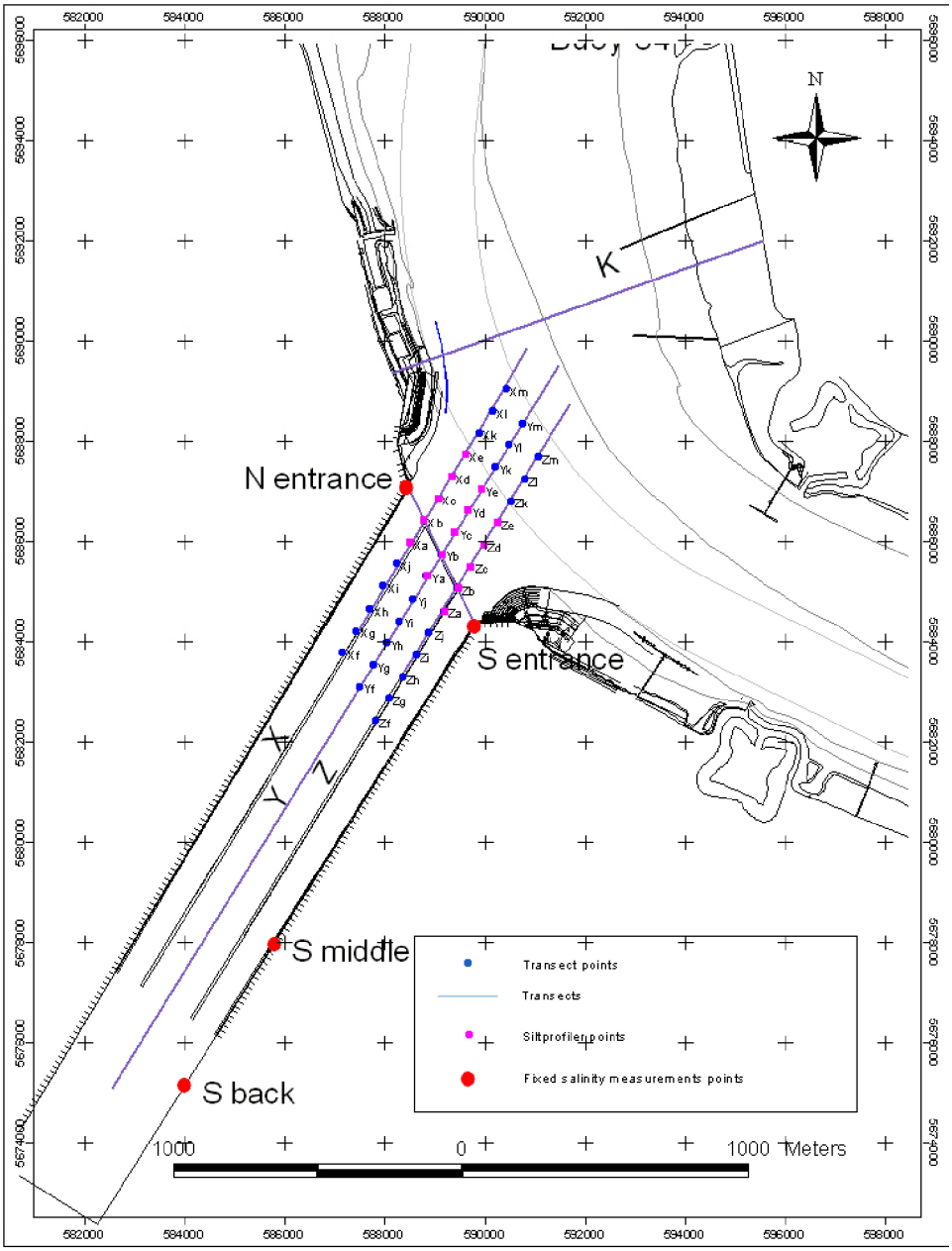

Figure 3-1: Location of measurement equipment and sailed tracks at Deurganckdok

4. AMBIENT CONDITIONS

4.1 ENVIRONMENTAL CHARACTERISTICS IN THE LOWER SEA SCHELDT

4.1.1 Long-term turbidity, salinity and current measurements

Continuous long-term measurements were executed in the Lower Sea Scheldt on fixed locations at Oosterweel (left bank), Liefkenshoek, Buoy 84 and Prosperpolder (Figure 4-1). In the past other locations were maintained at Boerenschans, Buoy 97 and Lillo (Table 3-3). Boerenschans and Lillo are respectively removed in 2005 and Buoy 97 in 2008.

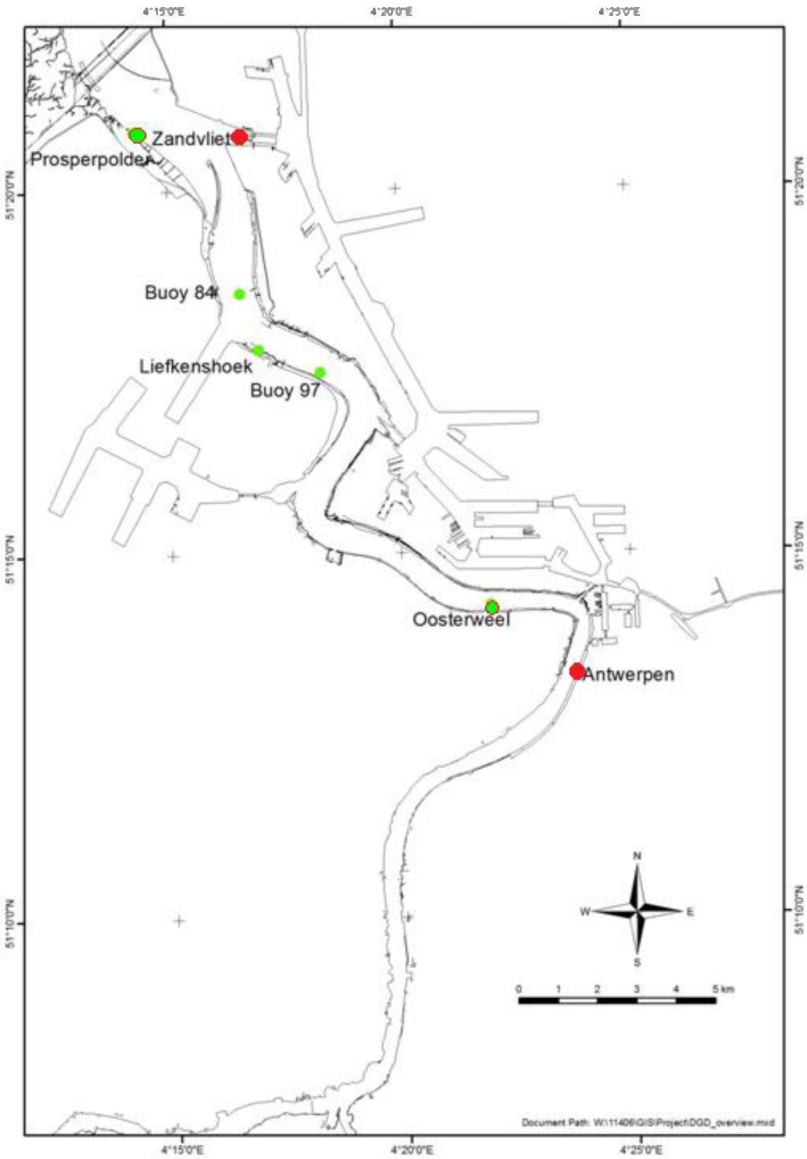

Figure 4-1: Continuous long-term measurement locations (green dots) on the Lower Sea Scheldt since 2006.

On the river Scheldt nearby Oosterweel and Buoy84, measurements were conducted by 2 AADI instruments per location measuring current velocity, current direction, temperature, pressure, conductivity and turbidity. At Oosterweel location, both instruments were suspended from a mooring at fixed heights above the bottom (Table 4-1). The set-up at Buoy 84 (and previously Buoy 97) was devised by IMDC where a steel frame was placed on the river bed. On the steel frame 2 AADI instruments were 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: Overview of the long-term measurement locations.

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
Liefkenshoek	2m above bottom (-1.5m TAW)	589 731	5 683 787
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

Between 2009 and 2012, the AADI RCM-9 were replaced by the new generation AADI instrument Seaguard RCM which has his influence on the turbidity data. Since installing the Seaguard RCM several times the maximum level of the turbidity sensor of 500 FTU was reached. If the sediment concentrations will be larger than saturation value the actual turbidity value will be unknown. Due to this reason the turbidity sensors of 500FTU were replaced by a turbidity sensors of 2500FTU between 2012 and 2013. An overview of the replacement dates is given in Table 4-2.

Table 4-2: Overview of the replacement date of a instrument per location (Note: At Oosterweel bottom RCM-9 was installed for short period between 15-22/01/2009)*

Location	Seaguard RCM 500FTU	Seaguard RCM 2500FTU
Oosterweel (top)	17/02/2012	06/12/2012
Oosterweel (bottom)*	17/12/2010	30/08/2012
Buoy 84 (top)	04/03/2009	19/12/2012
Buoy 84 (bottom)	12/01/2012	19/12/2012

Valeport CTD –instruments were installed at the tidal gauges of Prosperpolder and Liefkenshoek (Table 4-1) to measure temperature, conductivity and pressure. Since 2005, an AADI instrument was used at Prosperpolder which was replaced on 15 December 2011. The measurements at Liefkenshoek was started up in July 2009 and is reported for the first time in the series of boundary conditions reports.

The instruments on these locations are set up to measure every 10 minutes. At Oosterweel and Buoy 84 were only interrupted during calibration campaigns (Table 3-2). More information of the instruments can be found in Annex A.

4.1.1.1 Methodology of Processing

The data of these measurements was provided by Flanders Hydraulics Research and processed by IMDC. 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 4-3.

Salinity was calculated using the temperature, conductivity and pressure in the PSS-78 formula (Unesco, 1991; see Annex G).

Turbidity values were converted to suspended sediment concentration (SSC) using an equation of calibration curve. The calibration conversion was set up by Flanders Hydraulics Research and were based on water samples collected during calibration and through-tide campaigns. The calibration curves of turbidity sensors of RCM-9 (500NTU) and Seaguard till 500FTU are reported in IMDC (2012e) and the calibration curve of the Seaguard 2500FTU in Annex H.

The final results are presented in Annex B.

Table 4-3: Chronological overview of missing and faulty data for period 01/04/2012 - 31/03/2013 at measurement locations Oosterweel, Liefkenshoek, Buoy 84 and Prosperpolder.

Oosterweel left bank – 4.5 m above bottom				
Period	***Instrument Type***	***No data***	***Faulty data***	***Comment***
06/12/2012	Seaguard 2500FTU			Replacing the turbidity sensor from 500 to 2500FTU.
07/02/2013 – 14/02/2013		x		No data available
Oosterweel left bank – 1 m above bottom				
Period	***Instrument Type***	***No data***	***Faulty data***	***Comment***
23/04/2012 – 01/06/2012	Seaguard 500FTU	x		No data available
06/08/2012 – 30/08/2012		x		No data available
30/08/2012	Seaguard 2500FTU			Replacing the turbidity sensor from 500 to 2500FTU
22/11/2012 – 28/11/2012		x		No data available
07/02/2013 – 07/03/2013		x		No data available

Liefkenshoek – 2.0 m above bottom				
Period	***Instrument Type***	***No data***	***Faulty data***	***Comment***
01/04/2012 – 31/03/2013	Valeport CTD			No specific problem
Buoy 84 top – 3.3 m above bottom				
Period	***Instrument Type***	***No data***	***Faulty data***	***Comment***
01/04/2012 - 02/04/2012	Seaguard 500FTU	x		No data available
02/04/2012 - 25/04/2012			x	Wrong time settings (subtracting 1h)
29/05/2012 – 04/06/2012		x		No data available
07/08/2012 – 08/08/2012		x		No data available
20/08/2012 – 22/08/2012		x		No data available
18/11/2012 – 30/11/2012		x		No data available
19/12/2012	Seaguard 2500FTU			Replacing the turbidity sensor from 500 to 2500FTU.
Buoy 84 bottom – 0.8 m above bottom				
Period	***Instrument Type***	***No data***	***Faulty data***	***Comment***
01/04/2012 - 02/04/2012	Seaguard 500FTU	x		No data available
15/04/2012 – 25/04/2012		x		No data available
30/05/2012 – 04/06/2012		x		No data available
20/08/2012 – 22/08/2012		x		No data available
19/12/2012	Seaguard 2500FTU			Replacing the turbidity sensor from 500 to 2500FTU.
19/12/2012 – 01/01/2013		x		No data available
02/01/2013 – 09/01/2013		x		No data available
Prosperpolder – 2.5 m above bottom				
Period	***Instrument Type***	***No data***	***Faulty data***	***Comment***
25/02/2013 – 04/03/2013	Valeport CTD	x		No data available
31/03/2013		x		No data available

4.1.1.2 Results (weekly)

The data gathered during these long-term measurements are visualized week plots:

- The title shows the week number followed by the year
- The first graph shows the current velocity scaled from 0 till 2m/s
- The second graph shows current direction scaled from 0 to 360°
- The fourth graph depicts the salinity
- The third and last graph shows the water level at the nearest tidal gauge and the daily water discharge at Schelle

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

4.1.1.3 Monthly results

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

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 B. The dredging and disposal volumes nearby Buoy84 and Oosterweel are also given on these graphs (see §4.4.1).

For salinity the minimum, maximum and mean are given for both high water slack and low water slack. On these graphs the monthly water discharge at Schelle is also shown (see §4.2).

4.1.1.4 Total yearly results (April 2012 – March 2013)

The results for the whole deployment period are also given in Annex B. The minimum, maximum and average value for velocity magnitude, temperature and suspended sediment concentration are given for the period from April 2012 till March 2013. 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

The tidal data was provided by Flanders Hydraulics Research. It is reported together with the processed data of the long-term measurement campaigns and those at Antwerp (Oosterweel) and Prosperpolder in Annex B.

4.2 FRESH WATER INFLOW

The fresh water discharge of the Kleine Nete (Grobbendonk), the Grote Nete (Hulshout), the Dijle (Wilsele-Wijgmaal), the Demer (Aarschot), the Dender (Appels, Dendermonde), the Zenne (Eppegem) and the Scheldt (Melle) are provided by Flanders Hydraulics Research. These gauging stations are not influenced by the tide. The calculated discharges at the gauging stations are converted to discharges at the mouth of the tributaries and then to a total fresh water discharge at Schelle. This procedure is described in AZ (1974) and is based on the use of correction coefficients that take in account the surface of the hydrological basins.

In Annex C 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 reporting period is presented in Annex D. This data have been obtained from the KMI (Royal Meteorological Institute of Belgium). The meteorological conditions for the period 01/03/2013 – 31/03/2013 is not available yet.

4.4 HUMAN ACTIVITIES

4.4.1 Dredging activities

Maritime Access Division provided information about the dates, times, volumes and locations of dredging activities. In Annex E an overview is given of all the dredging activities from 01/04/2012 till 31/03/2013. Weekly volumes are given per location.

In IMDC (2013d) is demonstrated that there is strong relation between the sediment concentration and the dredging activities on the Lower Sea Scheldt. The dredging and disposal activities close to the measurement locations Oosterweel and Buoy84 are also visualized in Annex B on a long-term scale. The disposal volumes near Oosterweel is a summation of disposal locations: Plaat van Boomke, Oosterweel and Punt van Mesele; the dredging volumes near Buoy84: Europa-terminal, Drempel van Frederik, Lillovaarwater, Deurganckdok and Drempel van Lillo.

4.4.2 Navigation

Weekly data of navigation was delivered by Shipping Assistance Division (ScheldeRaderKeten) for the period of 01/04/2012 till 31/03/2013. To order the data a splitting up of the Lower Sea Scheldt was done in 4 areas. The first area is from de Belgian border up to locks of 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 F. Also a distinction is made between the draughts. In Annex F a total number is given which refers to the total of passing ships registered by Shipping Assistance Division (ScheldeRadarKeten). 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.

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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)

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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 (18/02/2008-31/03/2008) (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 – 31/3/2008 (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)

IMDC (2008v) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.21: Through tide measurement Sediview during average tide Spring 2008 – 26 June 2008 (I/RA/11283/08.082/MSA)

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)

IMDC (2008x) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.22: Through tide measurement Sediview during neap tide Summer 2008 – 24 September 2008 (I/RA/11283/08.083/MSA)

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)

IMDC (2009d) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing Deelrapport 1.22: Sediment Balance: Three monthly report 1/10/2008 – 31/12/2008 (I/RA/11283/08.078/MSA)

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)

IMDC (2009l) Langdurige metingen Deurganckdok: Opvolging en analyse aanslibbing. Deelrapport 2.33: Salt-Silt distribution Deurganckdok: six monthly report 1/10/2008 – 31/3/2009 (I/RA/11283/08.094/MSA)

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)

IMDC (2011b) Evaluatie externe effecten aanslibbing Deurganckdok. Deelrapport 1.2 Annual Sediment Balance year 2: 1/04/2009 – 31/03/2010 (I/RA/11354/10.100/MBO/ANF)

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)

IMDC (2012a) Evaluatie externe effecten aanslibbing Deurganckdok. Deelrapport 2.1 Through Tide Sediview measurement: entrance DGD during spring tide in Autumn 2011 (I/RA/11354/10.106/MBO/ANF)

IMDC (2012b) Evaluatie externe effecten aanslibbing Deurganckdok. Deelrapport 2.1 Through Tide Sediview measurement: entrance DGD during neap tide in Autumn 2011 (I/RA/11354/10.107/MBO/ANF)

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/11354/10.113/MBO/ANF)

IMDC (2012f) Evaluatie externe effecten aanslibbing Deurganckdok. Deelrapport 1.5 Boundary conditions year 2: 01/04/2010 – 31/03/2011 (I/RA/11354/10.103/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/11354/10.114/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 01/06/2011 – 31/05/2012 (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/11354/10.104/MBO/ANF)

IMDC (2013a) Evaluatie externe effecten aanslibbing Deurganckdok. Deelrapport 1.8 Analysis of external effects on siltation processes and factors (I/RA/11354/10.105/MBO/ANF)

IMDC (2013b) Evaluatie externe effecten aanslibbing Deurganckdok (2012-2014). Deelrapport 1.13 Analysis of boundary conditions of survey years 3 and 4: 01/04/2008 – 31/03/2010 (I/RA/11406/13.054/MGO).

IMDC (2013b) Evaluatie externe effecten aanslibbing Deurganckdok (2012-2014). Deelrapport 1.14 Analysis of boundary conditions of survey years 5 and 6: 01/04/2010– 31/03/2012 (I/RA/11406/13.062/MGO).

IMDC (2013c) Evaluatie externe effecten aanslibbing Deurganckdok (2012-2014). Deelrapport 1.09 Annual sediment balance in survey year 7: 01/04/2012-31/03/2013 (I/RA/11406/13.143/JCA).

IMDC (2013d) Monitoringsprogramma flexibel storten – Fase 2, Deelopdracht 1 – Analyse slibconcentratiemetingen in de Zeeschede, in opdracht van Afdeling Maritieme Toegang (I/RA/11353/13.169/DPP)

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 Instrument specifications

A.1 Valeport Monitor CTD

MONITOR CTD

The MONITOR CTD has been developed from Valeport's MIDAS CTD, utilising the same accurate, robust sensors and synchronised sampling technique, but packaged as a smaller, lightweight unit to suit small boat or shallow water applications.

Sensors
The MONITOR CTD is fitted with Valeport's high stability conductivity sensor, a high accuracy temperature compensated piezo-resistive pressure transducer, and a fast response PRT temperature sensor.

Conductivity

Range:	0 - 80 mS/cm
Resolution:	0.002mS/cm
Accuracy:	±0.01mS/cm

Temperature

Range:	-5°C to +35°C
Resolution:	0.005°C
Accuracy:	±0.01°C

Pressure

Range:	50 Bar standard, others available
Resolution:	0.005% range
Accuracy:	±0.1% range

Data Acquisition
The MONITOR CTD uses the concept of distributed processing, where each sensor has its own microprocessor controlling sampling and calibration of readings. Each of these is then controlled by a central processor, which issues global commands and handles all the data. This means that all data is sampled at precisely the same instant, giving superior quality profile data.

Sampling Modes

Continuous:	Regular output from all sensors at 1, 2, 4 or 8Hz.
Burst:	Regular sampling pattern, where instrument takes a number of readings, then sleeps for a defined time
Trip/Profile:	Data is output as a chosen parameter changes by a set value, usually Pressure for profiling.
Conditional:	Instrument sleeps until a selected parameter reaches a set value.
Delay:	Instrument sleeps until predefined start time

Communications
The instrument will operate autonomously, with setup and data extraction performed by direct communications with PC before and after deployment. It also operates in real time, with a choice of communication protocols for a variety of cable lengths, all fitted as standard and selected by pin choice on the output connector.

Standard

RS232	Up to 200m cable, direct to serial port via USB adaptor
RS485	Up to 1000m cable, addressable half duplex comms
Baud Rate:	2400 - 115200 (FSK fixed at 19200, USB 460800)
Protocol:	8 data bits, 1 stop bit, No parity, No flow control

Memory
The MONITOR CTD is fitted with 16Mb solid state non-volatile FLASH memory. Total capacity depends on sampling mode; continuous & burst modes have a single time stamp at the start of the file, trip mode (profiling) stores a time stamp with each reading. A single line of CTD data uses 6 bytes, and a time stamp uses 7 bytes.

Continuous:	>2,750,000 data points
Profile:	>1,200,000 data points (>600 profiles to 500m).

Electrical

Internal:	8 x C cells, 1.5v alkaline or 3.6v lithium
External:	9 - 30vDC
Power:	0.6W (sampling), <1mW (sleeping)
Battery Life:	<100 hours operation (alkaline) <250 hours operation (lithium)
Connector:	Subconn MCBH10F

Physical

Materials:	Acetal housing, polyurethane and titanium sensor components, stainless steel (316) cage
Depth Rating:	500m
Instrument Size:	88mmØ x 540mm long
Cage Size:	640 x 140 x 120mm
Weight (in cage):	7.5kg (in air), 4.5kg (in water)
Shipping:	74 x 35 x 27cm, 17kg

Software
System is supplied with DataLog Express Windows based PC software, for instrument setup, data extraction and display. DataLog Express is licence free.

Ordering

0650003	MONITOR CTD Profiler, supplied with deployment cage, Subcon switch plug, 3m communications lead, USB adaptor, DataLog Express software, manual , tool kit and transit case.
0400002	16 Mbyte memory upgrade (max 64 Mbyte)
0400EA9	RS485 communications adaptor
0400EA6	Advanced Y lead for RS485 operation

Datasheet Reference: MONITOR CTD version 2A, Feb 2011

As part of our policy of continuing development, we reserve the right to alter at any time, without notice, all specifications, designs, prices and conditions of supply of all equipment

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A.2 AADI Seaguard RCM

AANDERAA
a xylem brand

SEAGUARD® Recording Current Meter

The SeaGuard RCM series is a completely new generation of current meters based on the SeaGuard data logger platform and the ZPulse Doppler Current Sensor. Modern computer technology combined with advanced digital signal processing provides accurate and detailed measurements with almost unlimited resolution. Optional parameters are available through a new range of smart sensors that include temperature, pressure, conductivity, oxygen, wave and tide. The new SeaGuard RCM series come in 300m, 2000m and 6000m depth ranges.

Advantages:

- *Large storage capacity on SD card*
- *Broadband ZPulse multi-frequency technology reduces power consumption and improves quality*
- *Down to 2 second recording interval*
- *Low current drain*
- *Smart sensor topology based on a reliable semi-high speed CANbus interface (AiCaP)*
- *Up to 4 Analog sensor input (0-5V)*
- *Windows CE based datalogger with TFT based color touch panel for local configuration*
- *SeaGuard Studio visualization software*
- *For use in sea and fresh water*
- *Real-Time XML Output (optiona*

The new SeaGuard RCM series replaces the industry standard RCM 9 and RCM 11 series. It has been completely redesigned from bottom up and employs modern technology in the datalogger section and in the different sensor solutions.

The SeaGuard architecture is based on a general data logger unit and a set of autonomous smart sensors. The data logger and the smart sensors are interfaced by means of a reliable CANbus interface(AiCaP), using XML for plug and play capabilities. During power-up, each of the sensors that are connected to the bus will report their capabilities and specifications to the data logger. The data logger then assembles the information and provides the user with the possibility to configure the instrument based on the present nodes. The solution provides for great flexibility in both use and design of the different elements within the system.

The autonomous sensor topology also gives the sensor designer flexibility and opportunities where each sensor type may be optimized with regard to its operation, each sensor may now provide several parameters without increasing the total system load. Data storage takes place on a Secure Digital (SD) card. The current capacity for this card type is up to 2GBytes, is more than adequate for most applications.The SeaGuard also has a built-in power calculator which gives an etsimated deployment lenght bases on selected interval, battery type and current drain information, obtained from each smart sensor.

The SeaGuard RCM comes standard with the ZPulse multi-frequency Doppler current sensor. The new current sensor comprises acoustic pulses of several frequency components to lower the statistical variance in the Doppler shift estimate. The advantage of this is reduced statistical error with fewer pings, providing increased sampling speed and lower power consumption.

The new Doppler Current Sensor also incorporates a robust fully electronic compass and a tilt sensor. The SeaGuard RCM may also be delivered with new smart sensor solutions for Temperature, Pressure, Conductivity and Oxygen. All sensors have increased resolution compared with the older models. The temperature sensor also has decreased settling time to utilize the increased sampling speed provided by the SeaGuard platform. There is also an analog Turbidity Sensor available for direct connection on the top end plate.

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Specifications

Top-end Plate capability:	Up to 6 sensors can be fitted onto the Top-end Plate, of which 4 can be analog sensors (0-5V)
Recording System:	Data Storage on SD card
Storage Capacity:	≥ 2GB
Battery:	
Alkaline 3988:	9V, 15Ah (nominal 12.5Ah; 20W down to 6V at 4°C)
or Lithium 3908:	7V, 35Ah
Recording Interval:	From 2s, depending on the node configuration for each instrument
Recording settings:	Fixed interval settings or Customized Sequence setting
Protocol:	AiCaP CANbus based protocol
Depth Capacity:	300m/2000m/6000m
Platform Dimensions:	
300m version (SW):	H: 356mm OD: 139mm
2000m version (IW):	H: 352mm OD: 140mm
6000m version (DW):	H: 368mm OD: 143mm
External Materials:	
300m version:	PET, Titanium, Stainless Steel 316, Durotong DT322 polyurethane
2000/6000m version:	Titanium, Stainless steel 316, OSNISIL, Durotong DT322 polyurethane

Weight:	In Air	In Water
300m version (SW):	7.6 kg	2.0 kg
2000m version (IW):	14.8 kg	8.5 kg
6000m version (DW):	15.7 kg	10.5 kg

Supply Voltage:	6- 14 Volts
Operating Temperature:	-5 to +50°C

ZPulse Doppler Current Sensor (DCS) Specifications

Current Speed:	(Vector averaged)
Range:	0-300 cm/s
Resolution:	0.1 mm/s
Mean Accuracy:	± 0.15 cm/s
Relative:	± 1% of reading
Statistic variance (std):	0.3 cm/s (ZPulse mode), 0.45 cm/s [1]
Current Direction:	
Range:	0 – 360° magnetic
Resolution:	0.01°
Accuracy:	±5° for 0-15° tilt ±7.5° for 15-35° tilt
Tilt Circuitry:	
Range:	0-35°
Resolution:	0.01°
Accuracy:	±1.5°
Compass Circuitry:	
Resolution:	0.01°
Accuracy:	±3°
Acoustics:	
Frequency:	1.9 to 2.0 MHz
Power:	25 Watts in 1ms pulses
Beam angle (main lobe):	2°
Installation distance:	
From surface:	0.75m
From bottom:	0.5m
Accessories Included:	SeaGuard Studio SD card: 2 GB Alkaline Battery 3988 Documentation on CD Carry handle 4132

Optional Accessories:	Carry handle 4032,3965
Mooring frame:	In-line 4044[2]/3824A Bottom 3448R Protecting Rods 3783 Sub-surface floats 2211,2212
Battery/Power:	Internal Lithium 3908 Internal Alkaline 3988 Internal Battery Shell 4513 Electrical terminal 4784C AC/DC adapter, lab. use 4908
Other:	Real Time licence and collector Offline Configuration 4811 Analog cable/license 4564/4802 Maintenance Kit 3813/3813A Tools kit 3986A Vane Plate 3781,3681 Hardcopy Documentation

Optional Sensors:

Temperature Sensor 4060/4880	
Range:	-4-36°C (32-96.8°F)[3]
Resolution:	0.001°C (0.0018°F)
Accuracy:	±0.03°C (0.054°F)
Response Time 63%):	< 2 seconds
Conductivity Sensor 4319	
Range:	0-7.5 S/m
Resolution:	0.0002 S/m
Accuracy	
4319 A:	±0.005 S/m
4319 B:	±0.0018 S/m
Response Time:	<3s[5]
Wave and Tide Sensor 4648A	
Pressure:	Range: 0-400kPa (0-58psia) Resolution : <0,002% FSO Accuracy: ±0,04% FSO
Wave:	Sampling rate: 2Hz, 4Hz No. of samples: 256, 512, 1024, 2048
Pressure Sensor 4117	
Resolution:	<0.002% FSO
Accuracy:	±0.02° FSO
4117A Range:	0 - 1000kPa (0 - 145 psia)[4]
4117B Range:	0 - 4000kPa (0 - 580 psia)
4117C Range:	0 - 10000kPa (0 - 1450 psia)[4]
4117D Range:	0 - 20000kPa (0 - 2900 psia)
4117E Range:	0 - 40000kPa (0 - 5800 psia)[4]
4117F Range:	0 - 60000kPa (0 - 8700 psia)
Turbidity Sensor 4112:	0-5V Analog Output
4112 Range:	0-25 FTU
4112A Range:	0-125 FTU
4112B Range:	0-500 FTU
4112C Range:	0-2000 FTU[6]

Oxygen Optode 4835/4330:

	O_2-Concentration	Air Saturation
Measurement Range:	0 - 500 mM	0 - 150%
Resolution:	< 1 mM	0.4 %
Accuracy:	<8 mM or 5%[7] whichever is greater	<5 %[8]

Response Time (63%):	4330F (with fast response foil) <8 sec 4835/4330 (with standard foil) <25 sec

[1] Based on 300 pings
[2] In-line Mooring Frame 4044: breaking strength 800 kg
[3] Extended range available on request.
[4] Available on request
[5] Dependent on flow through cell bore
[6] Sensor is non-linear above 750 FTU
[7] Requires salinity compensation for salinity < 1mS/cm
[8] Within calibrated range 0-120%

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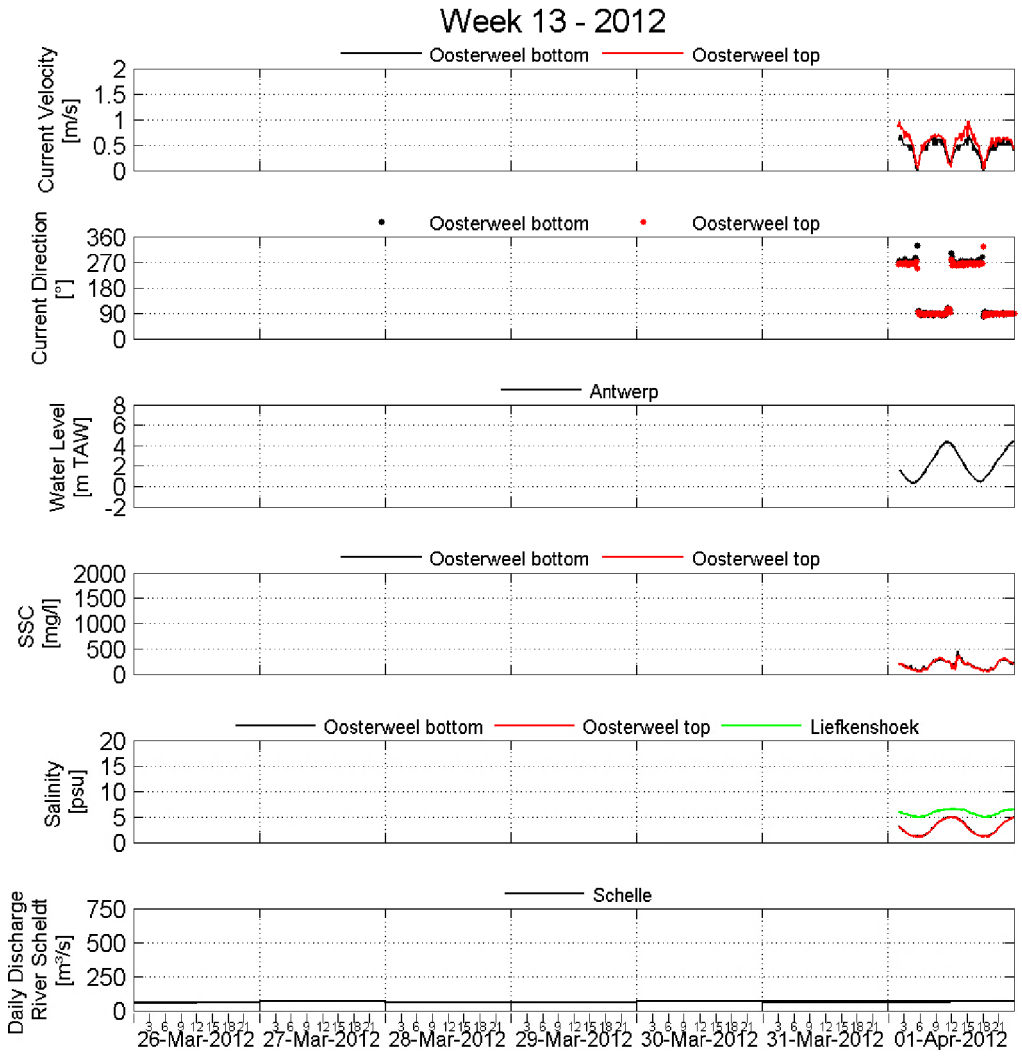
Annex B Long-term measurements at Prosperpolder, Buoy 84, Liefkenshoek and Oosterweel

B.1 Datasheets week series

B.1.1 Oosterweel & Liefkenshoek

11406 - Boundary conditions report 01/04/2012 - 31/03/2013



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

Processed by: IMDC

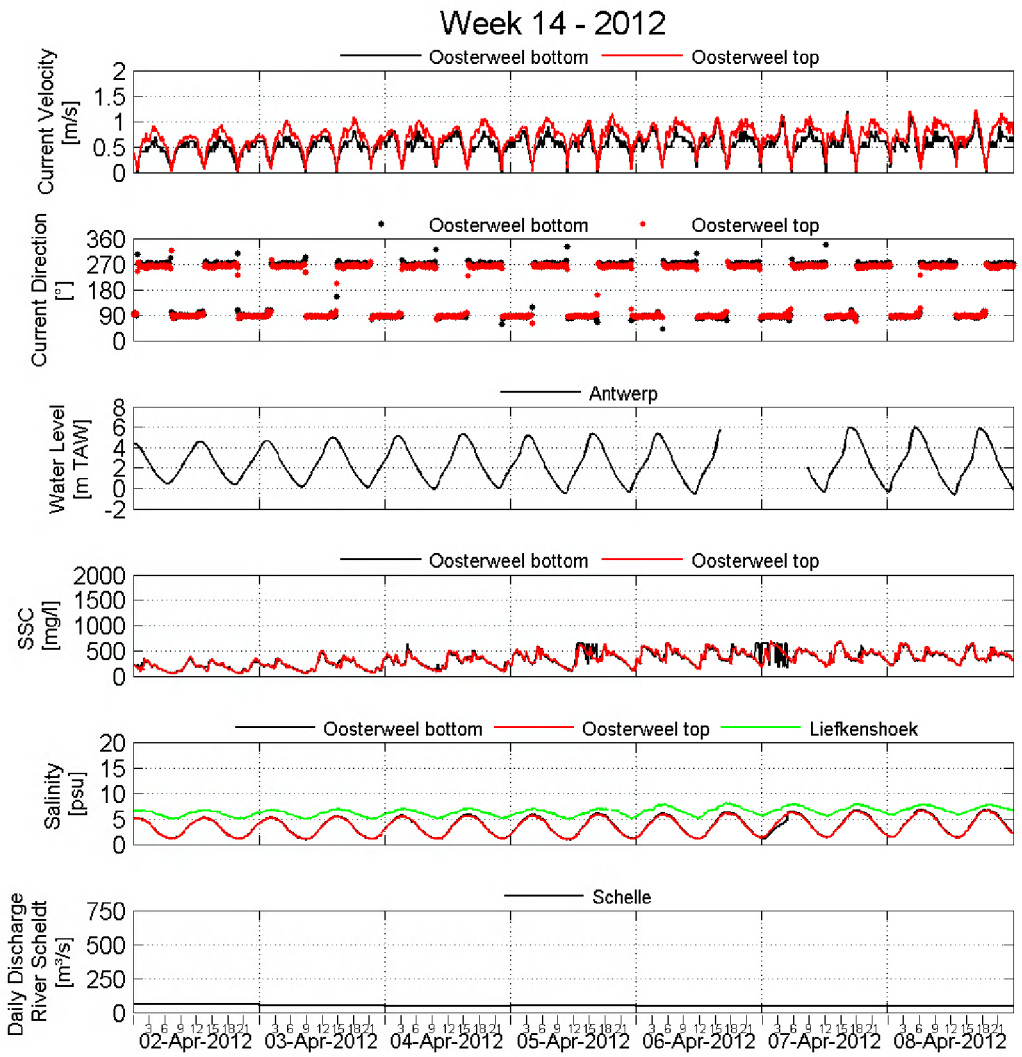
Location:

Liefkenshoek & Oosterweel (top & bottom)

In Association with: Deltares

I/RA/11406/13.145/JCA

11406 - Boundary conditions report 01/04/2012 - 31/03/2013



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

Processed by: IMDC

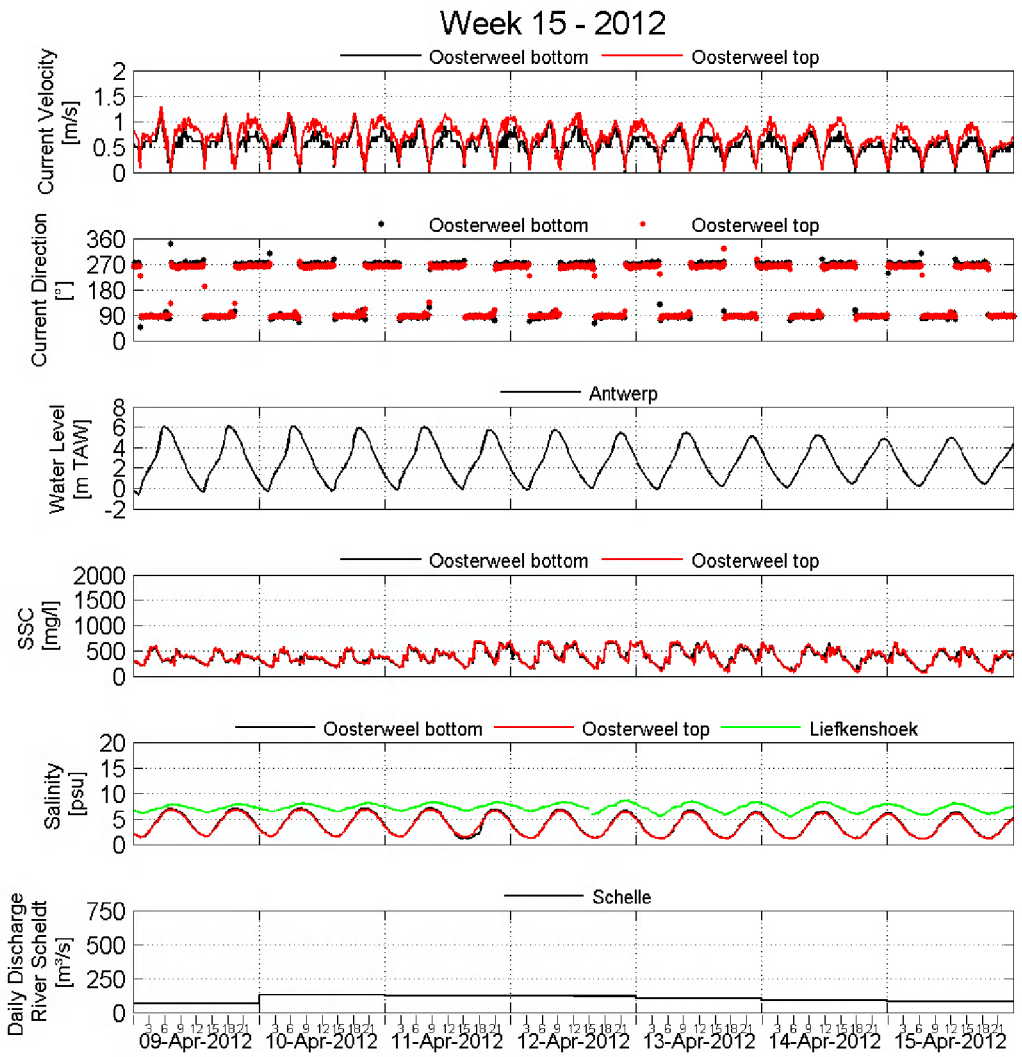
Location:

Liefkenshoek & Oosterweel (top & bottom)

In Association with: Deltares

I/RA/11406/13.145/JCA

11406 - Boundary conditions report 01/04/2012 - 31/03/2013



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

Processed by: IMDC

Location:

Liefkenshoek & Oosterweel (top & bottom)

In Association with: Deltares

I/RA/11406/13.145/JCA

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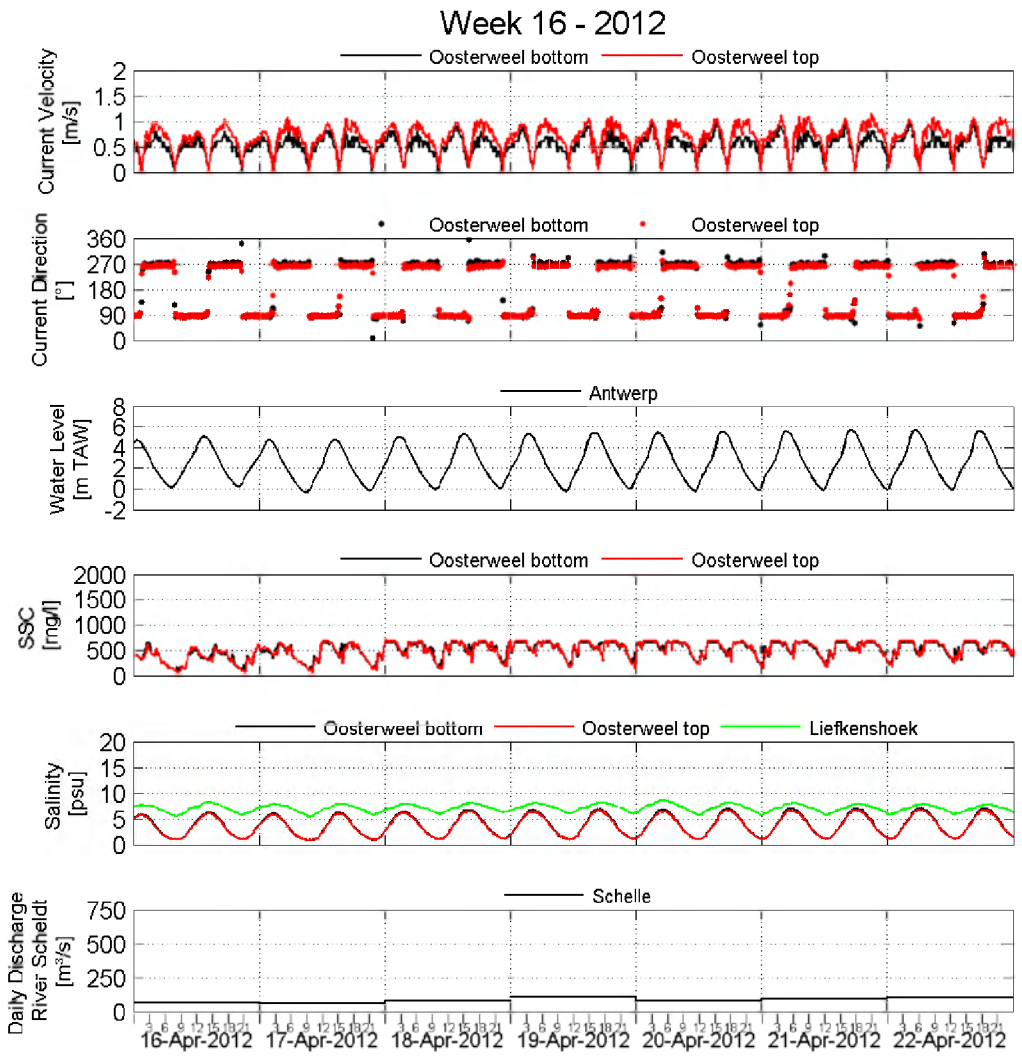

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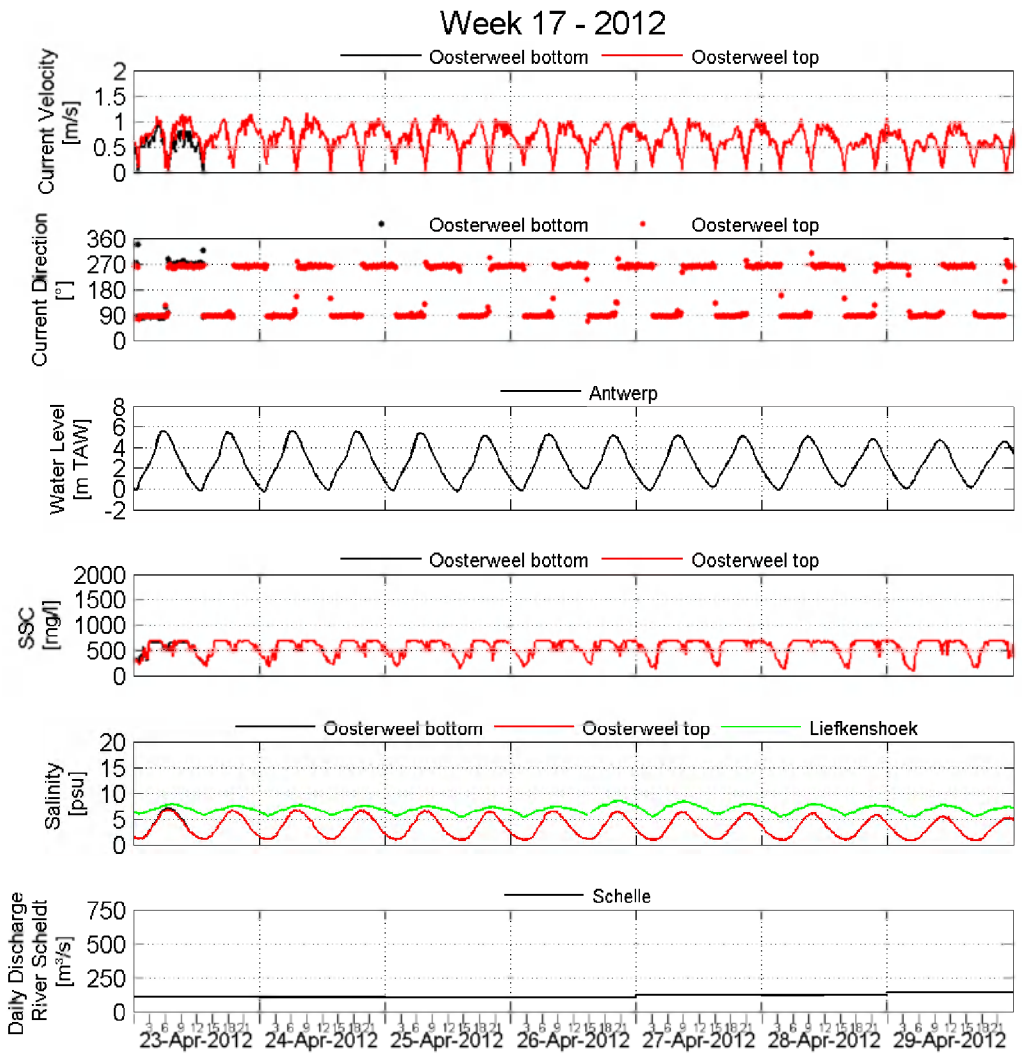

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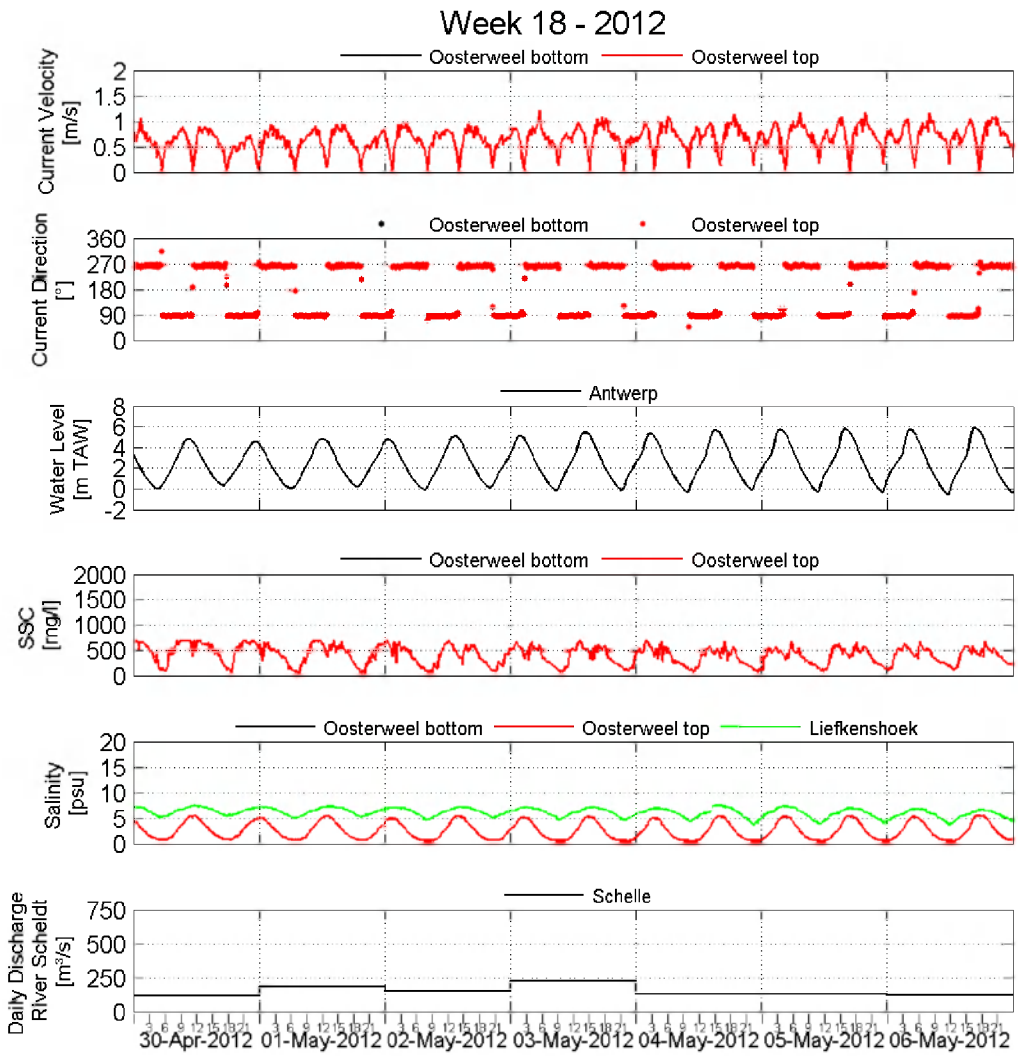

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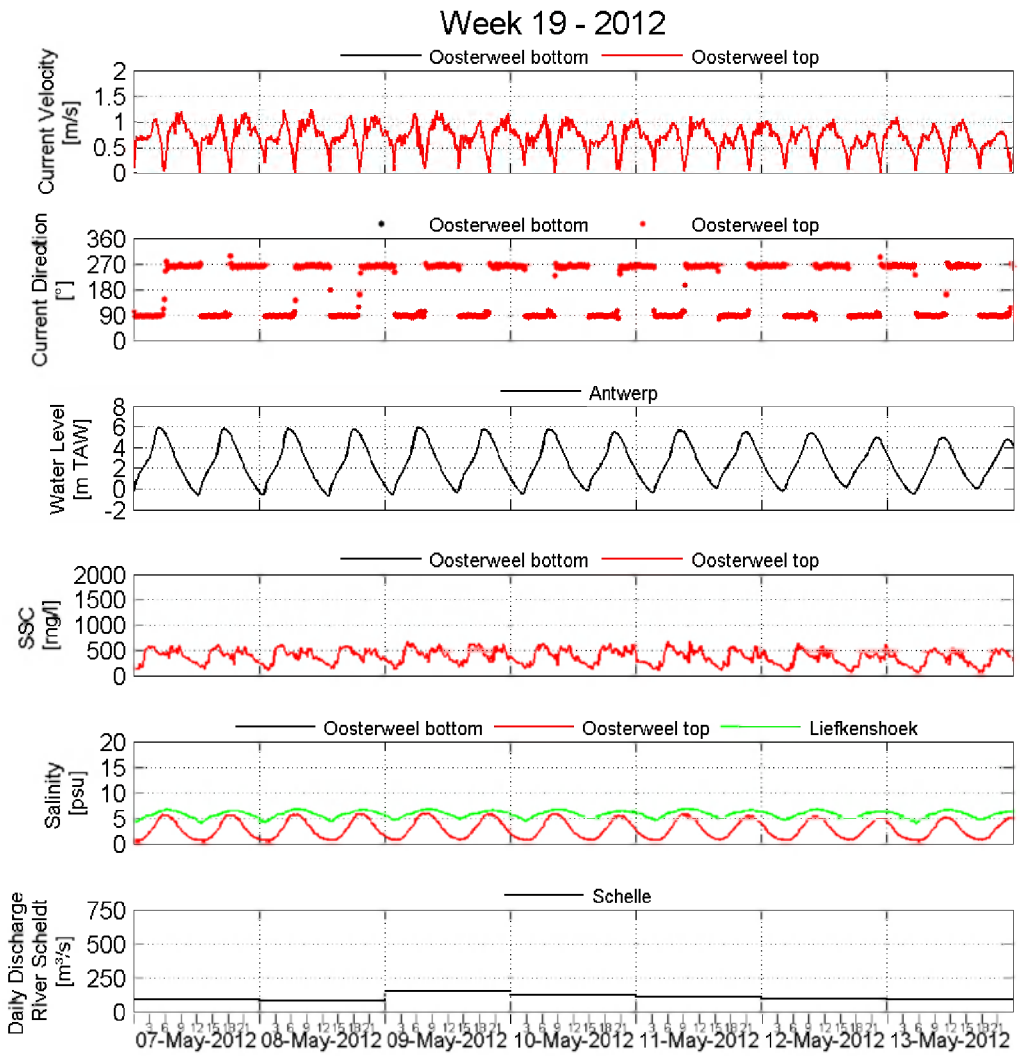

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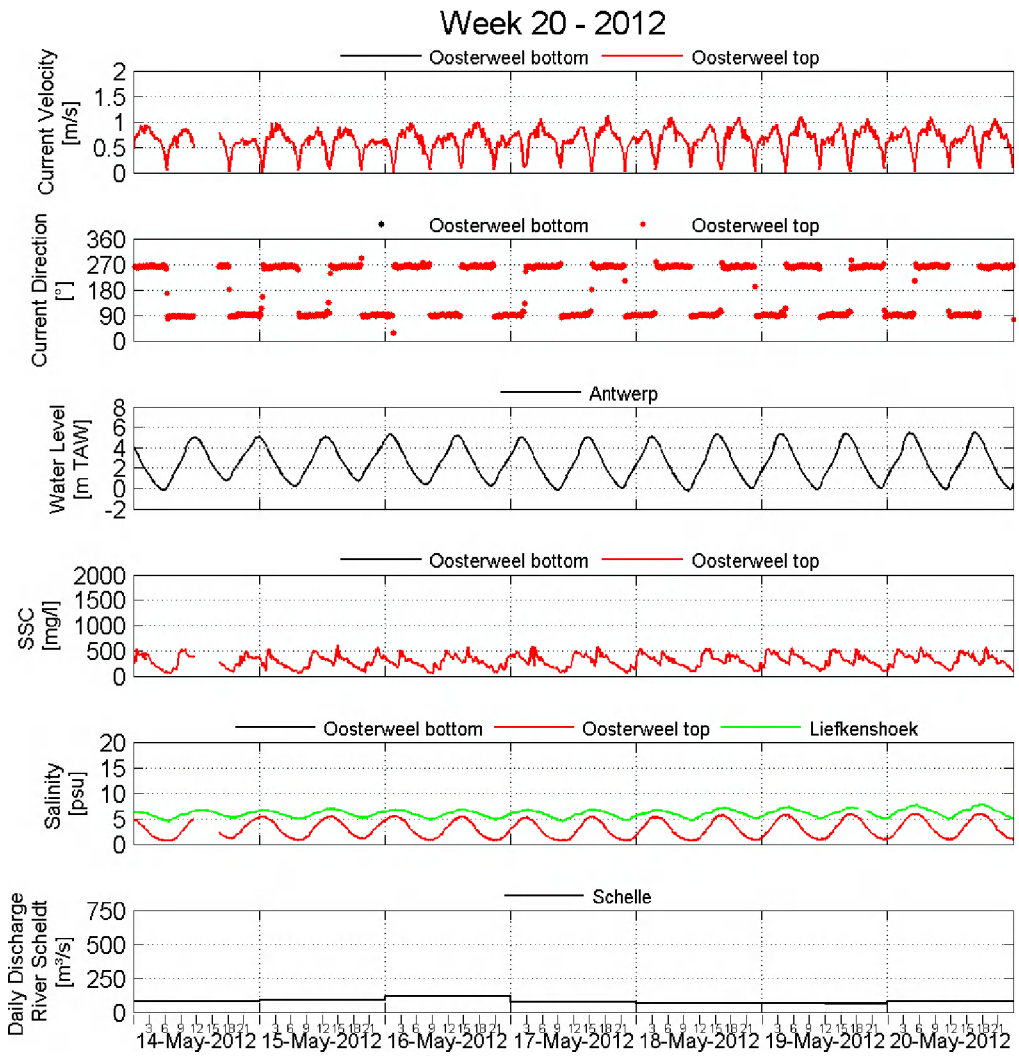

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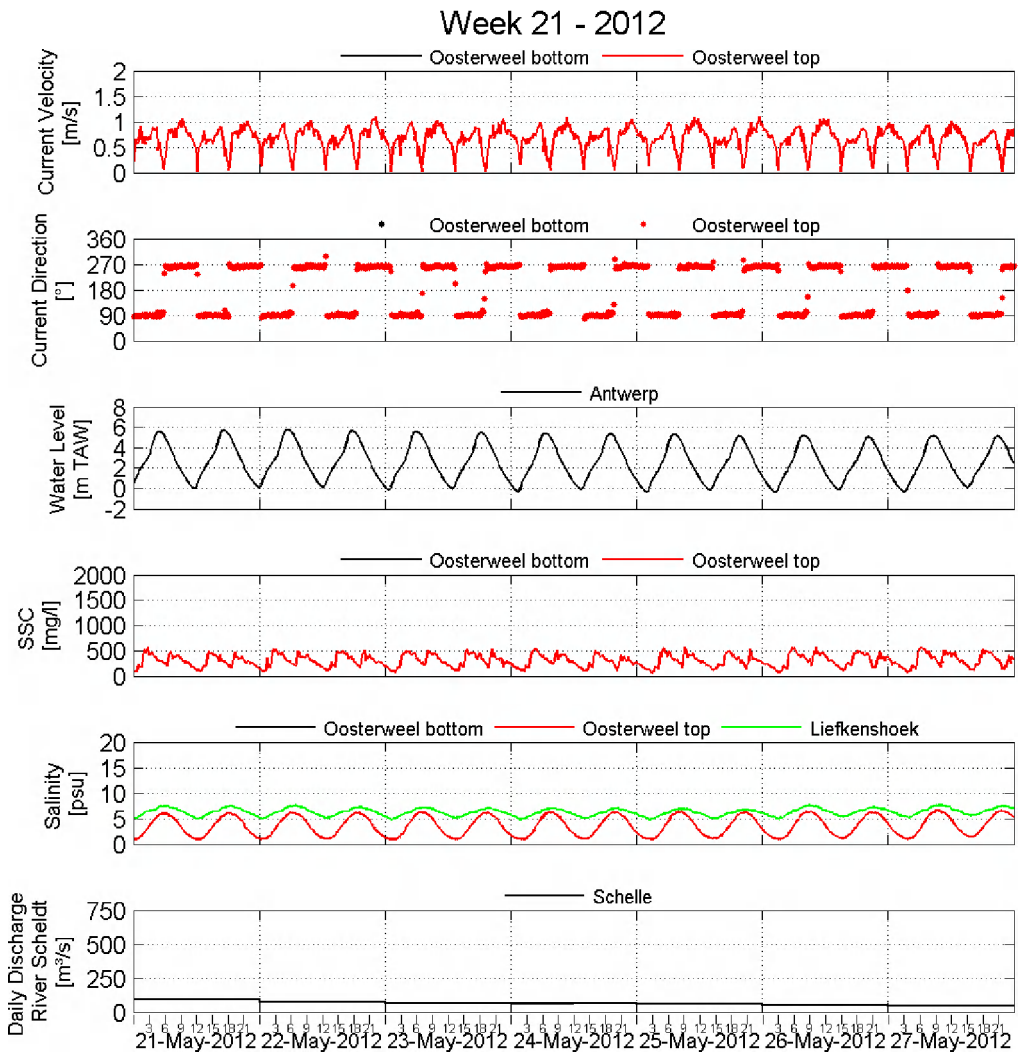

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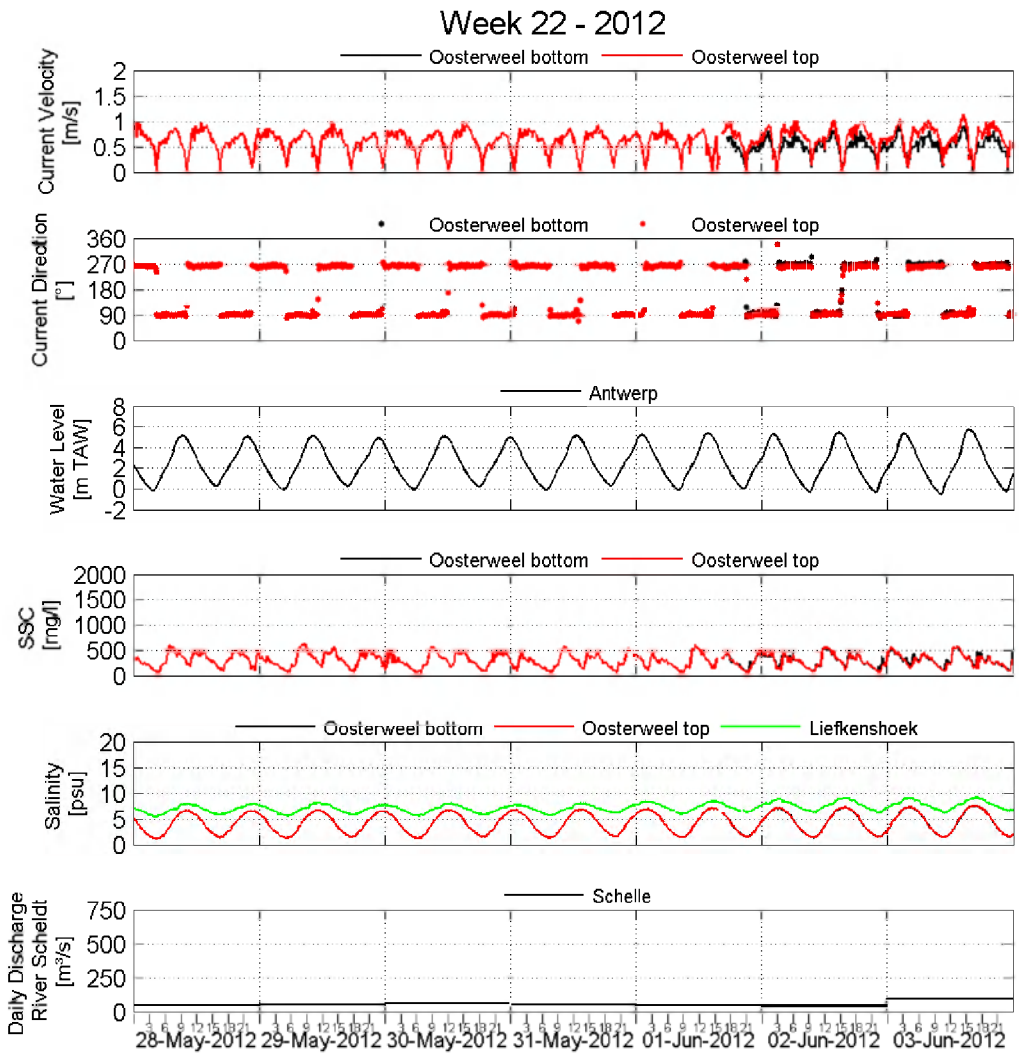

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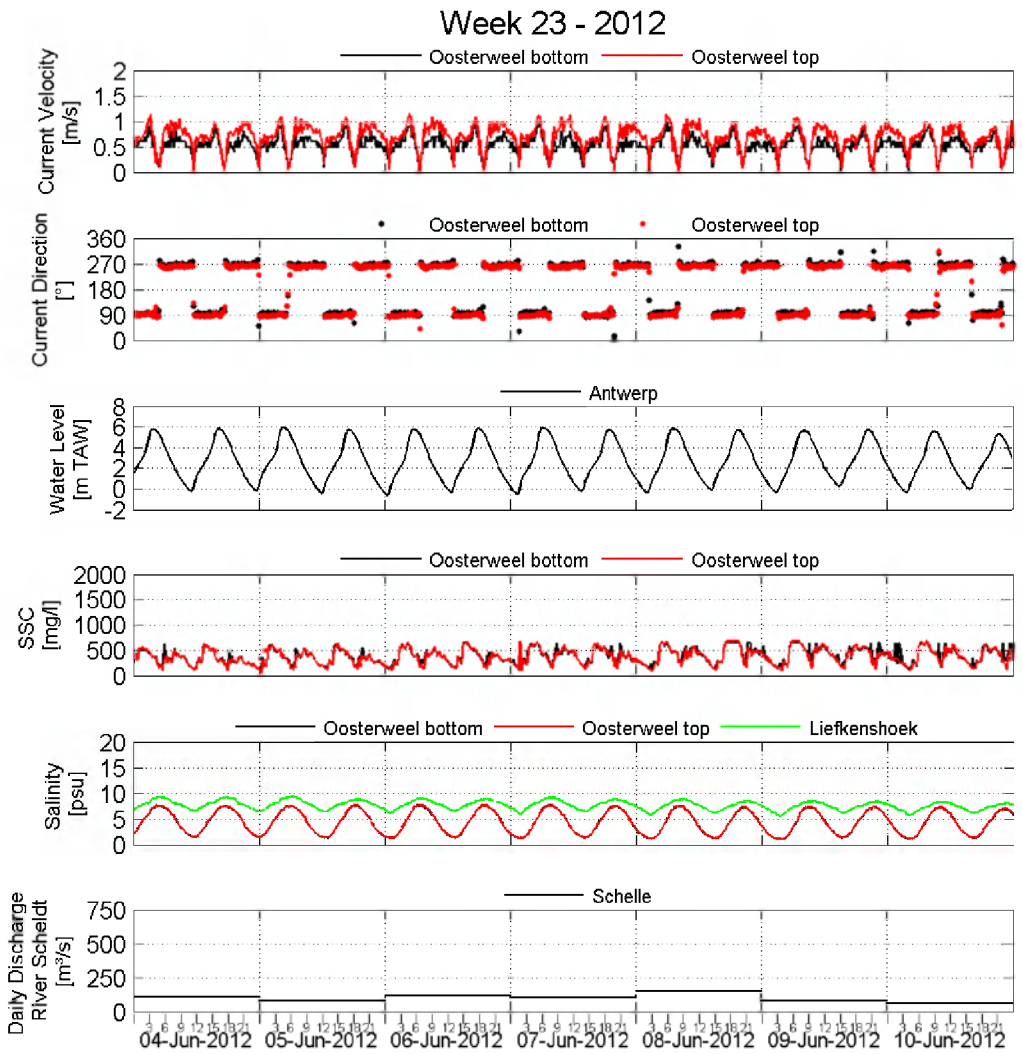

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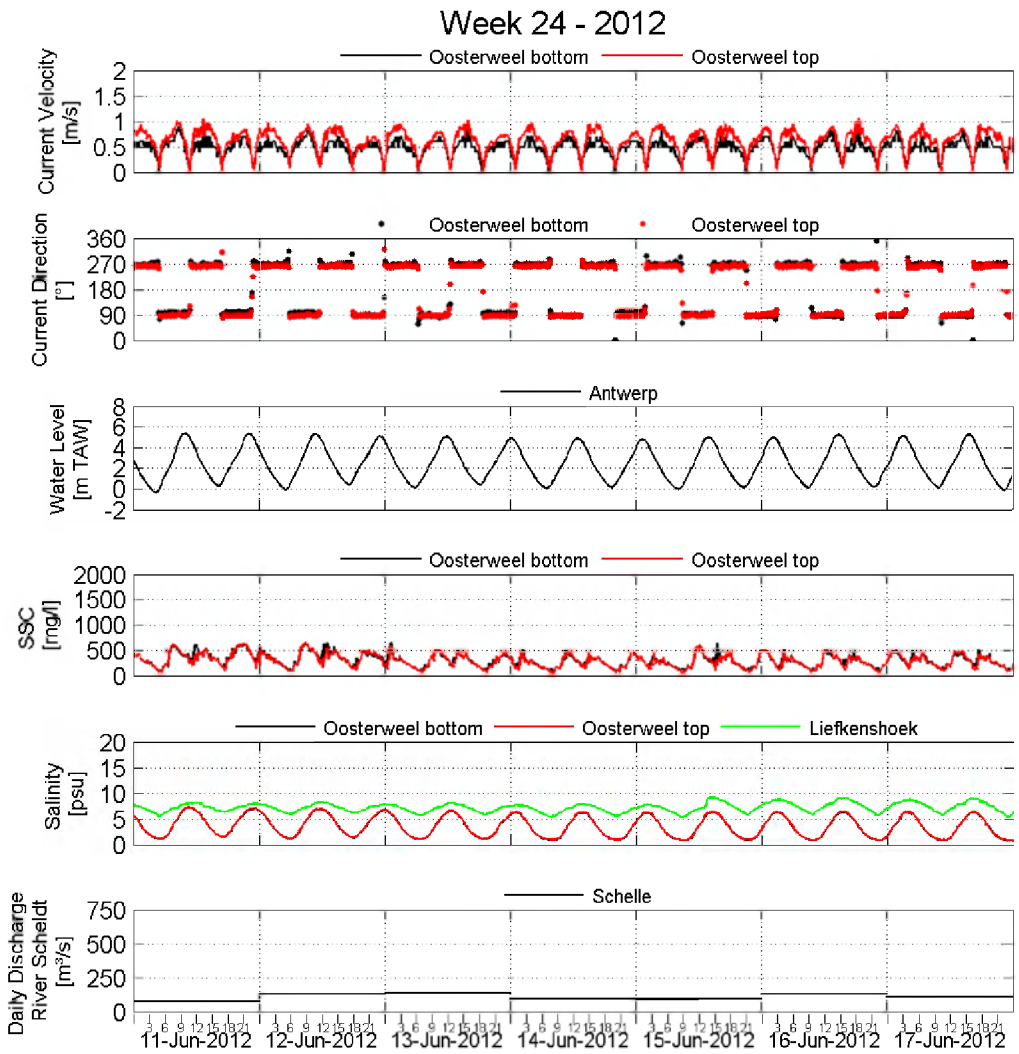

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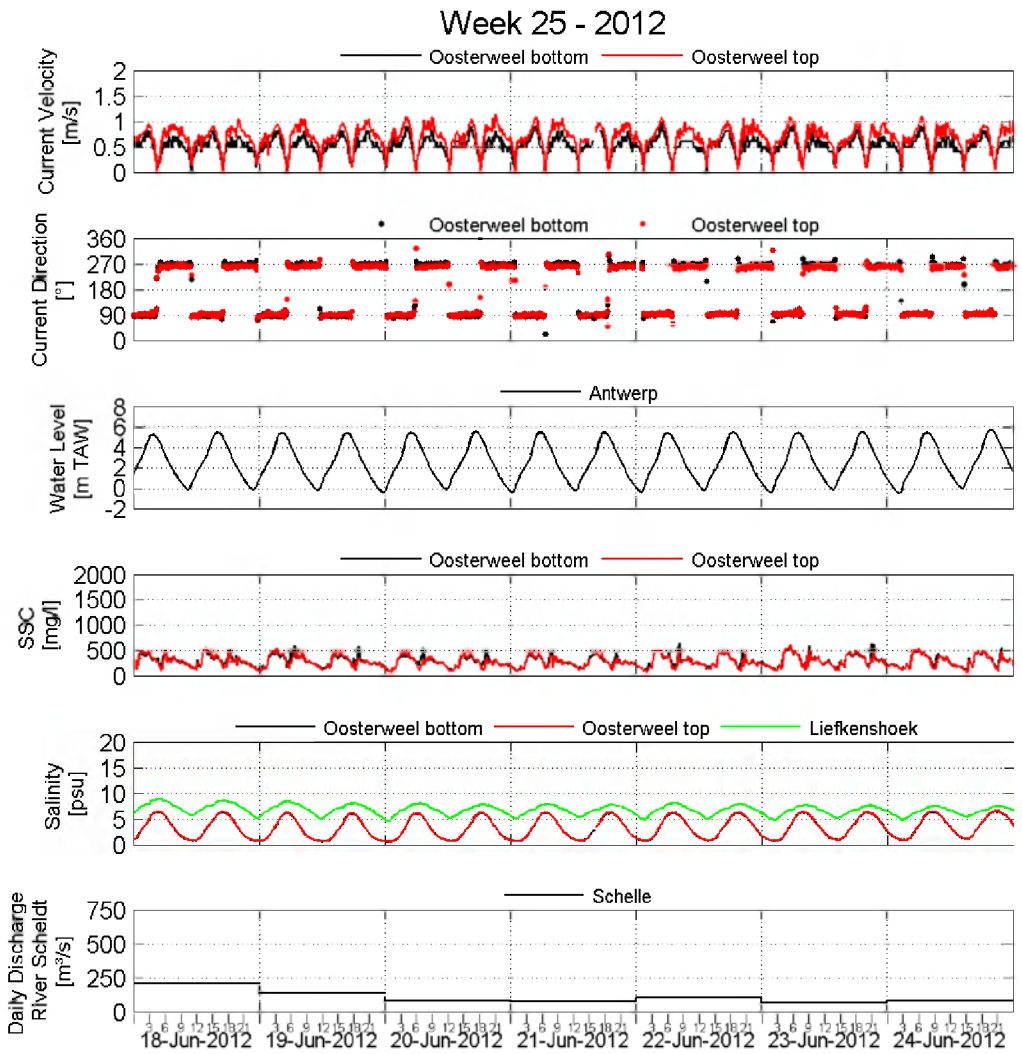

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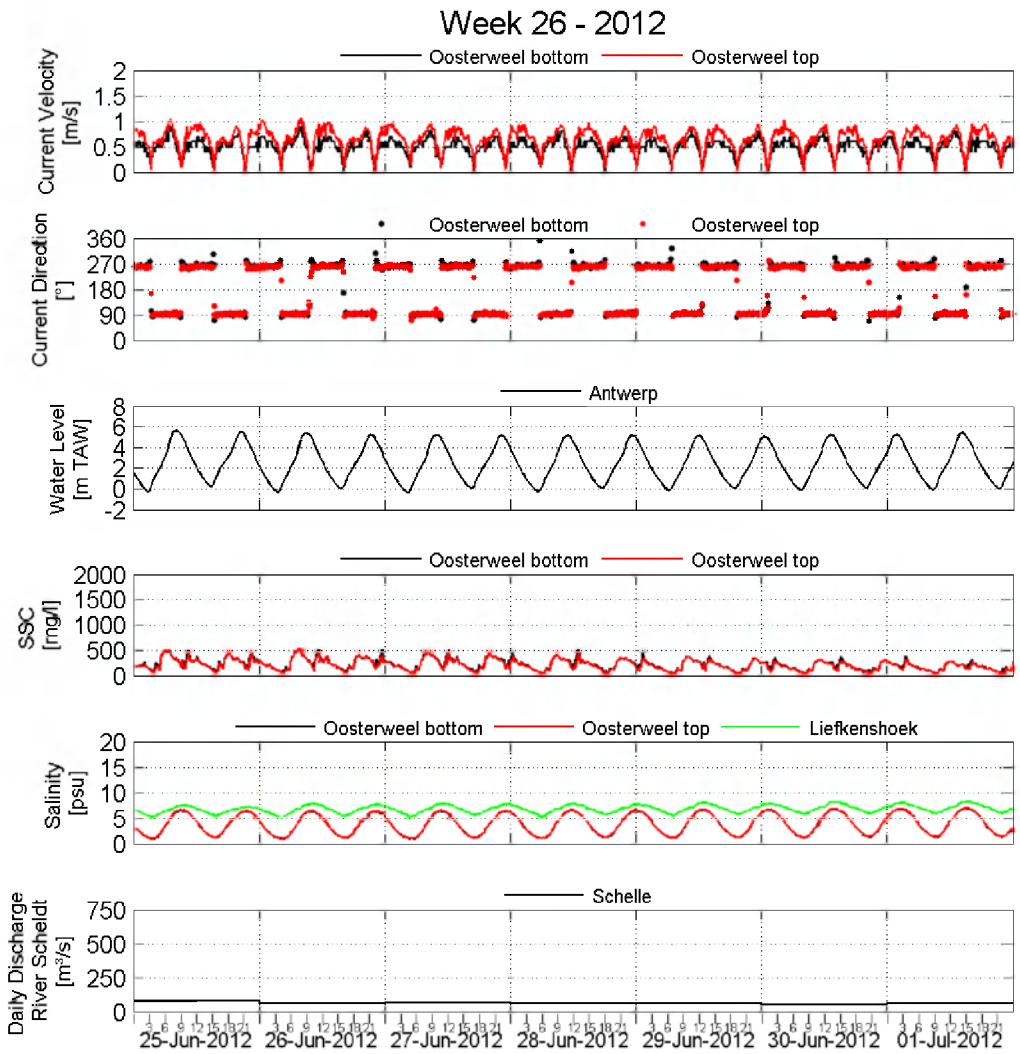

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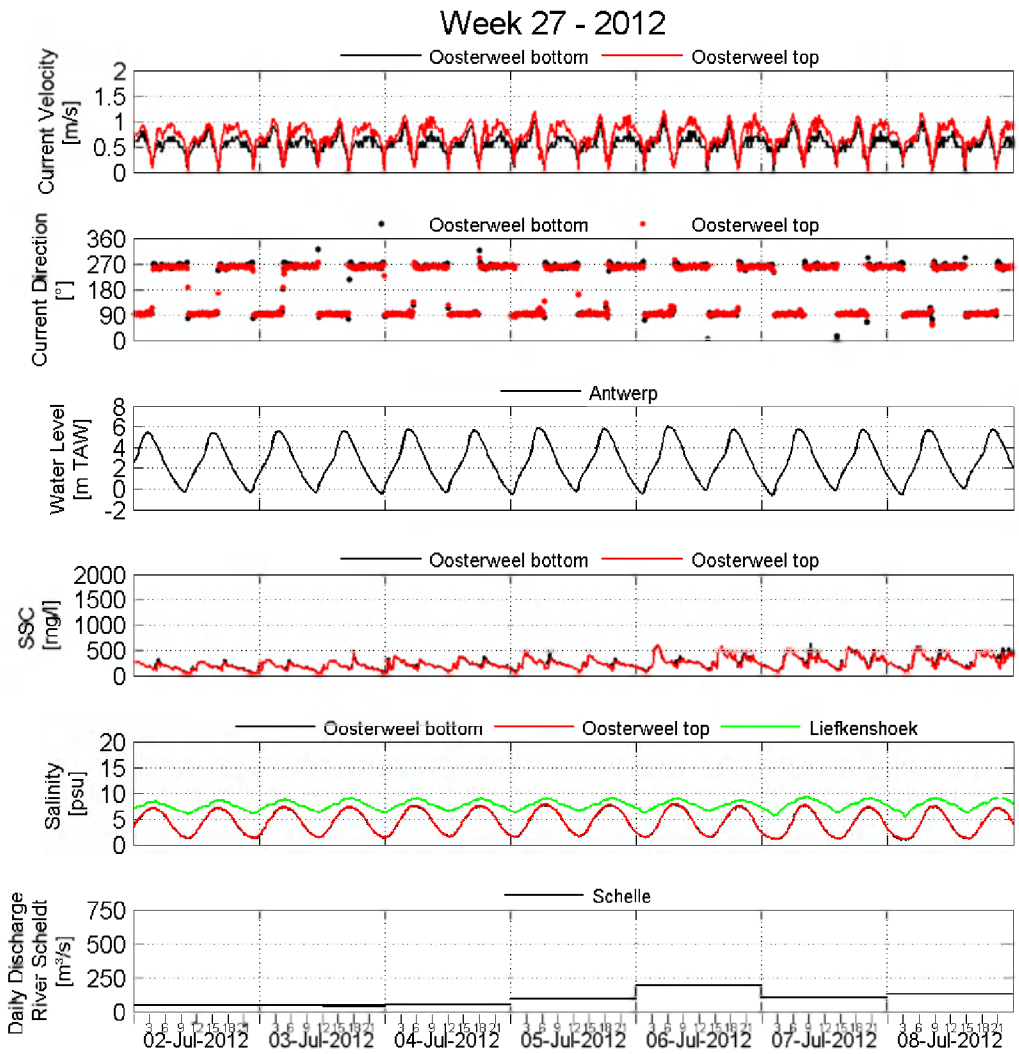

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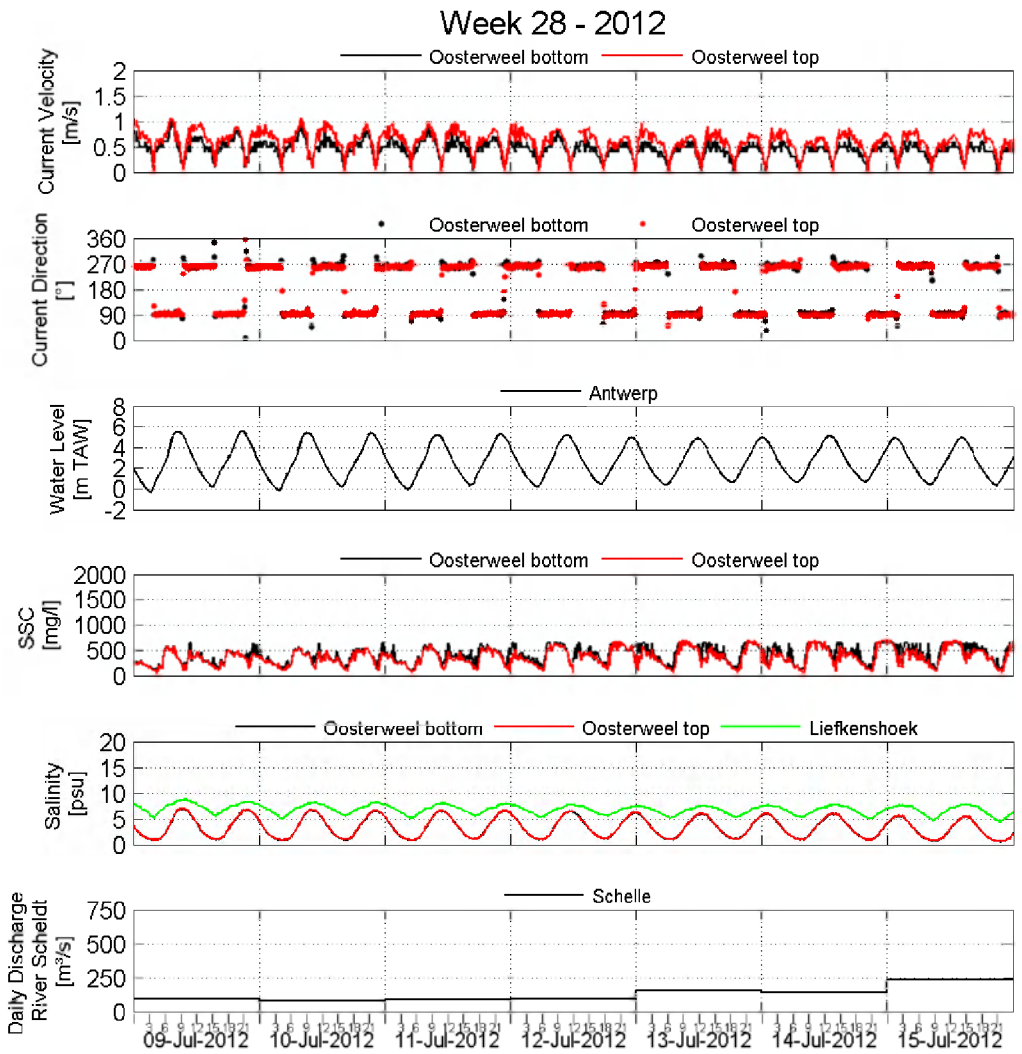

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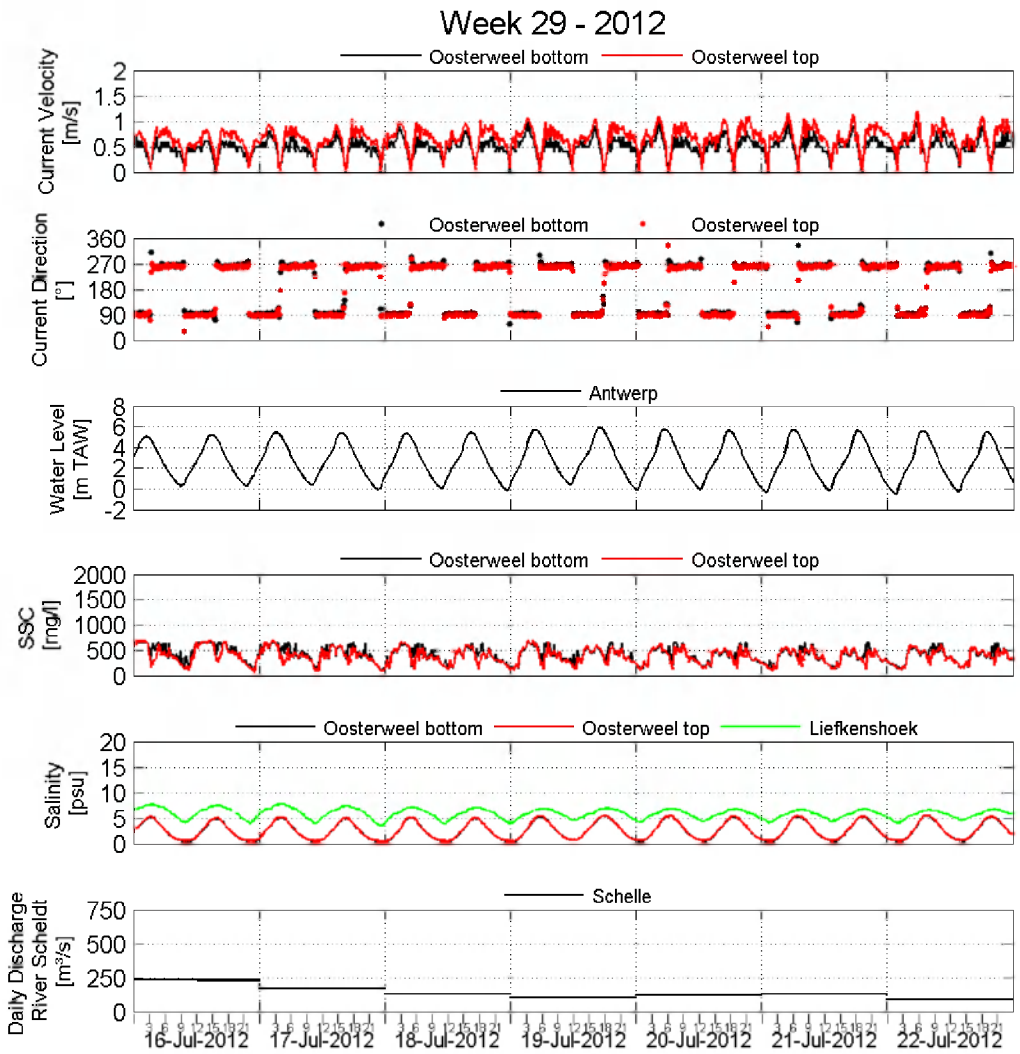

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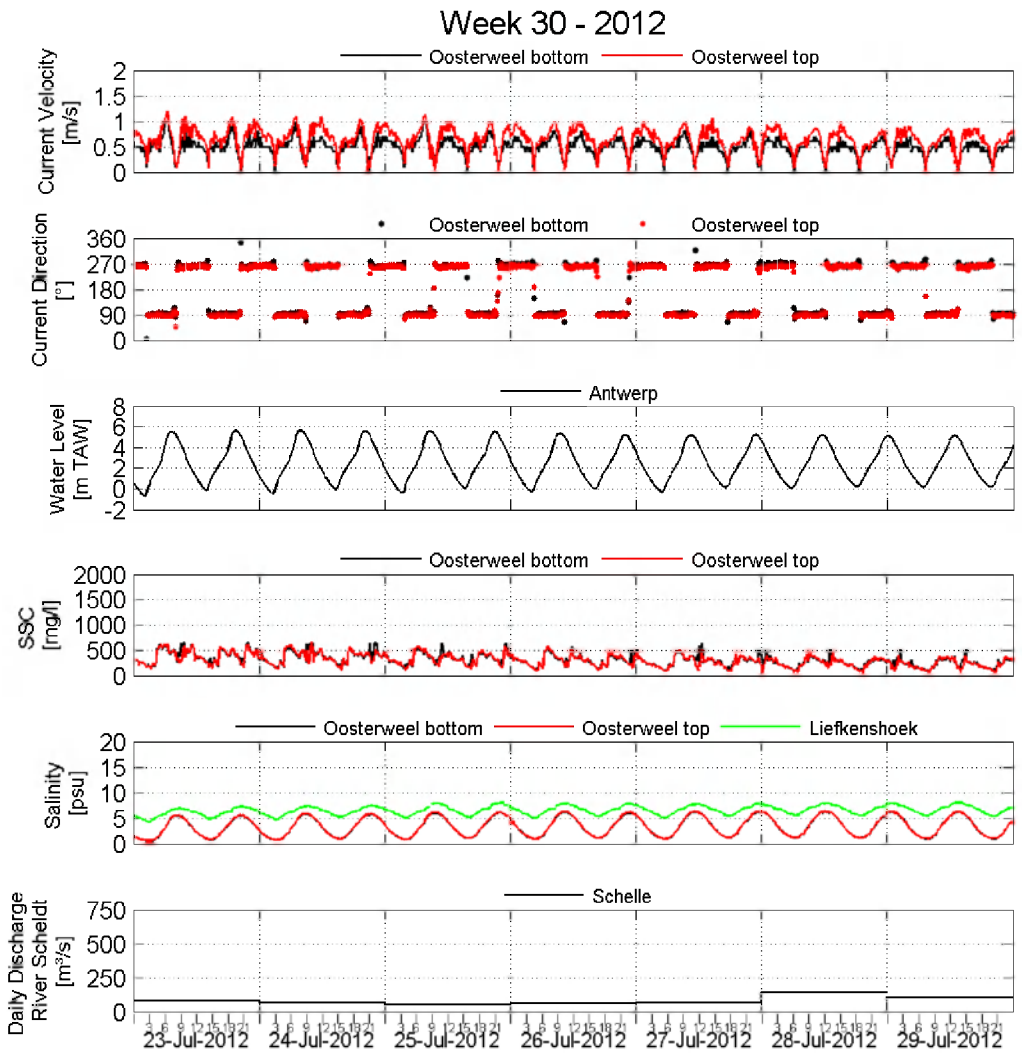

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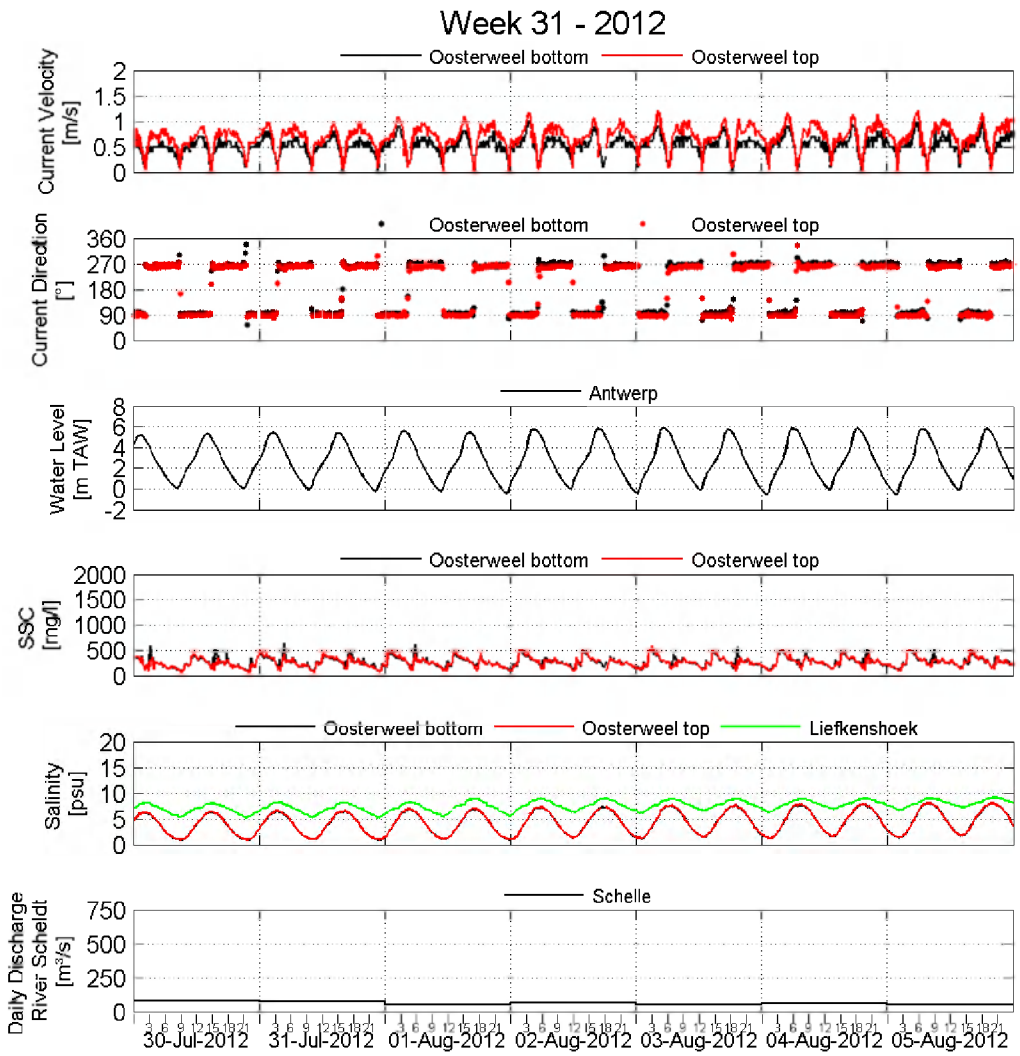

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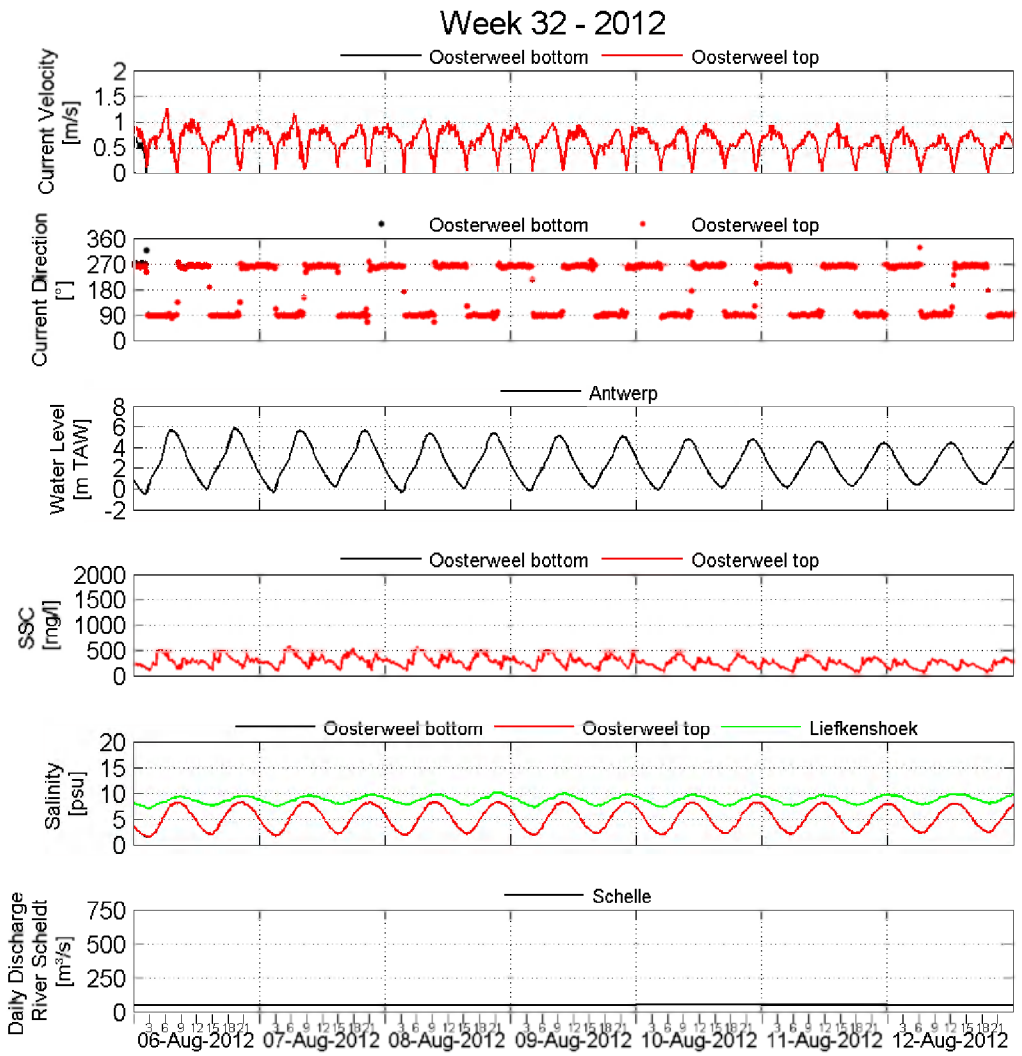

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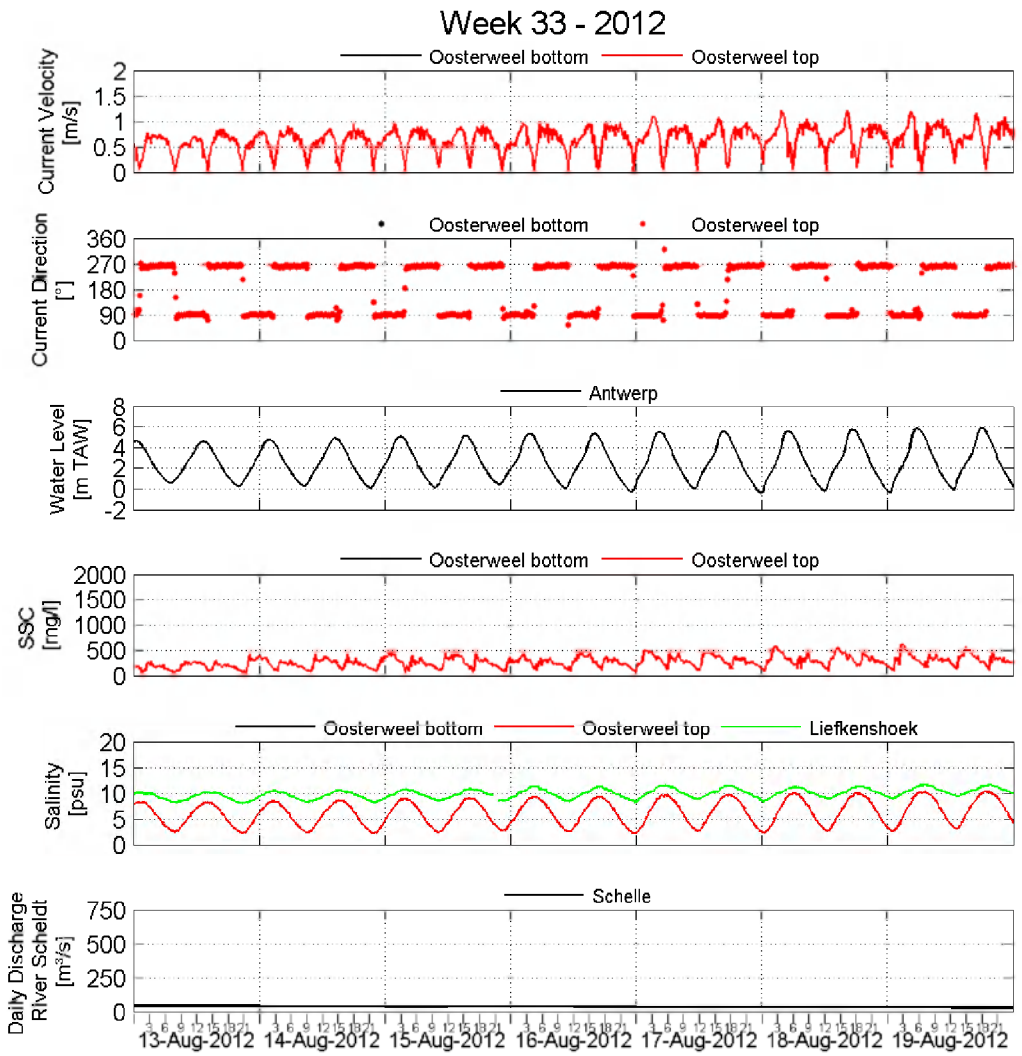

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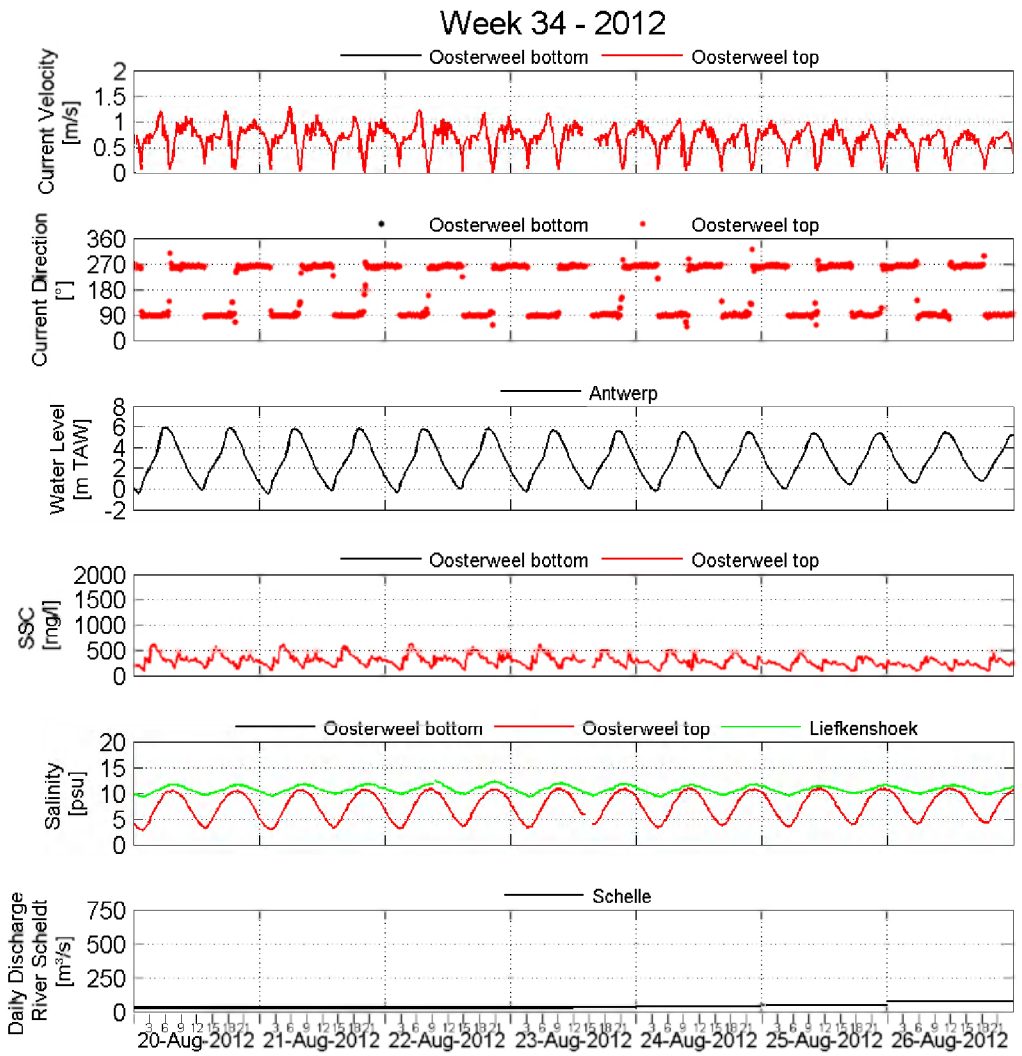

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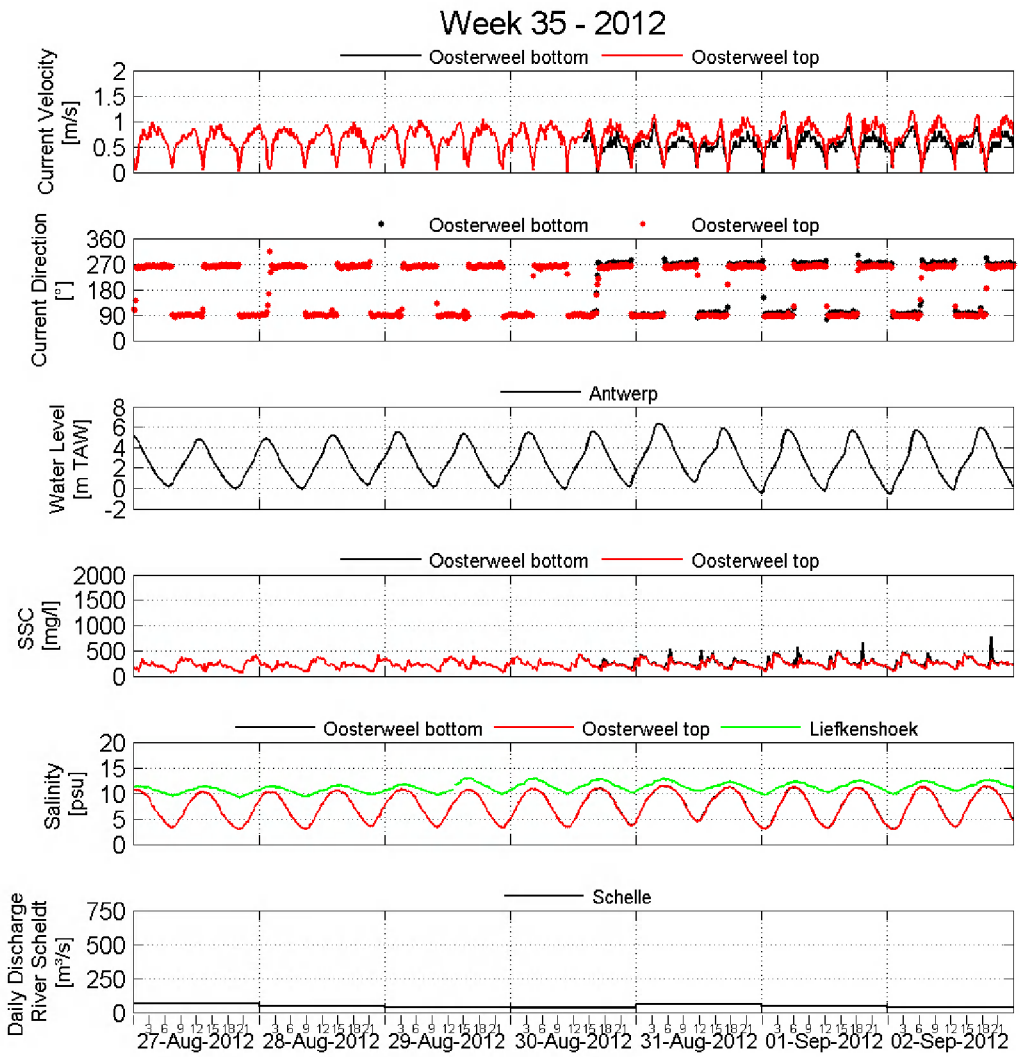

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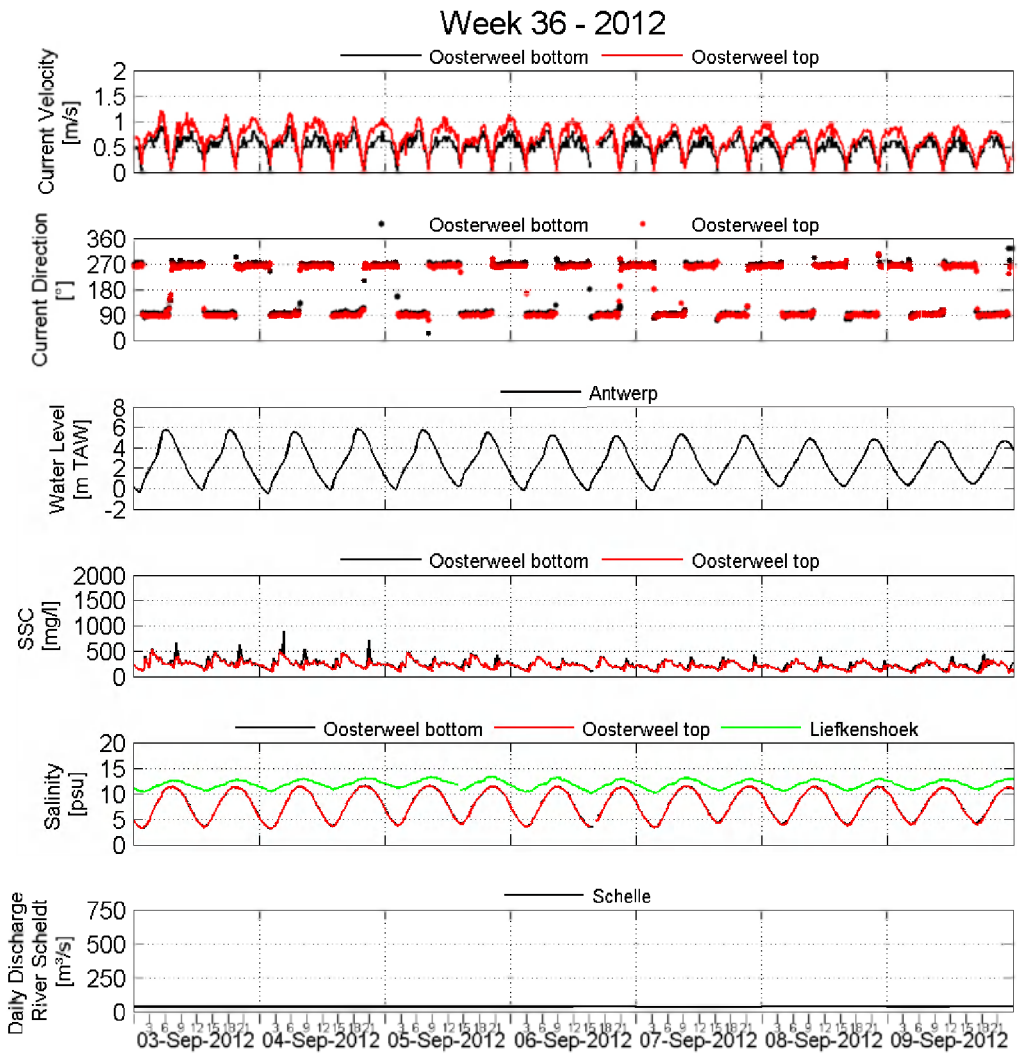

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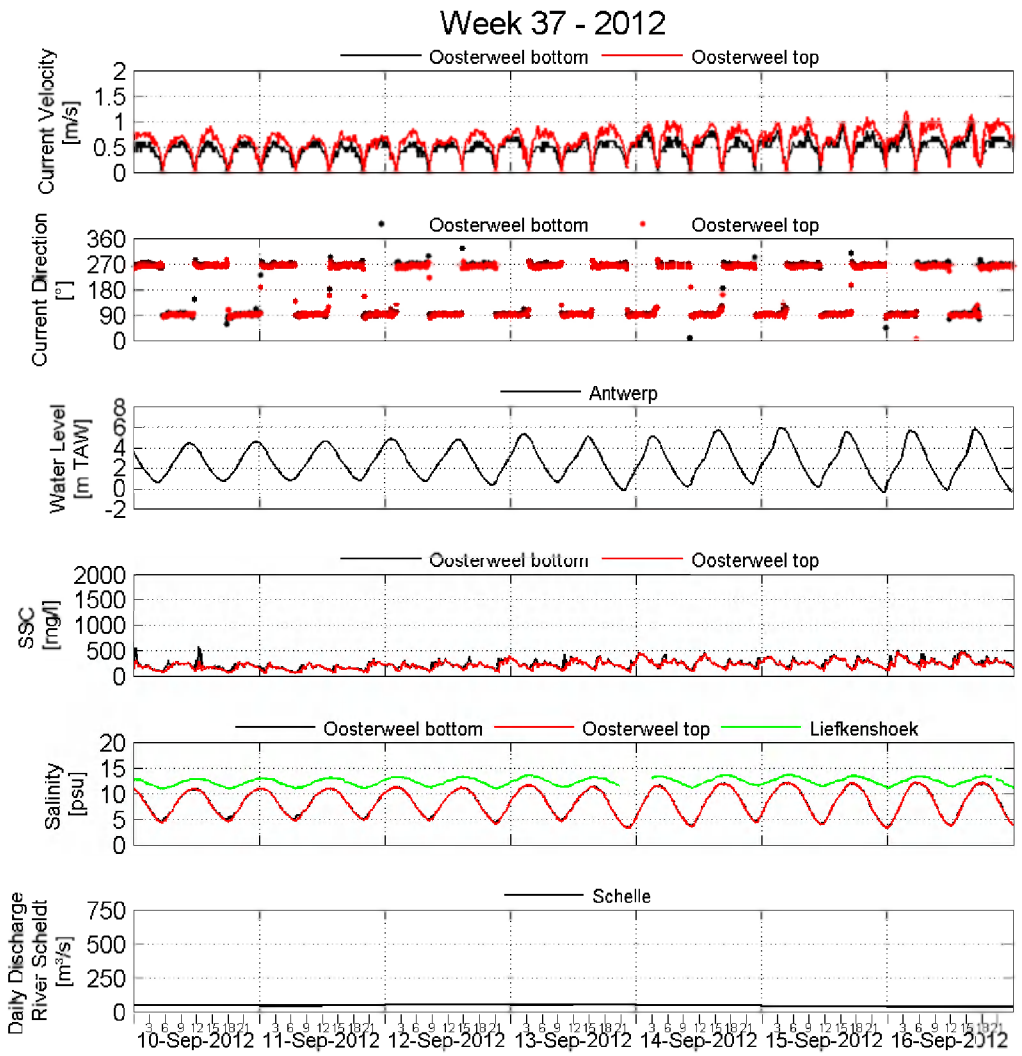

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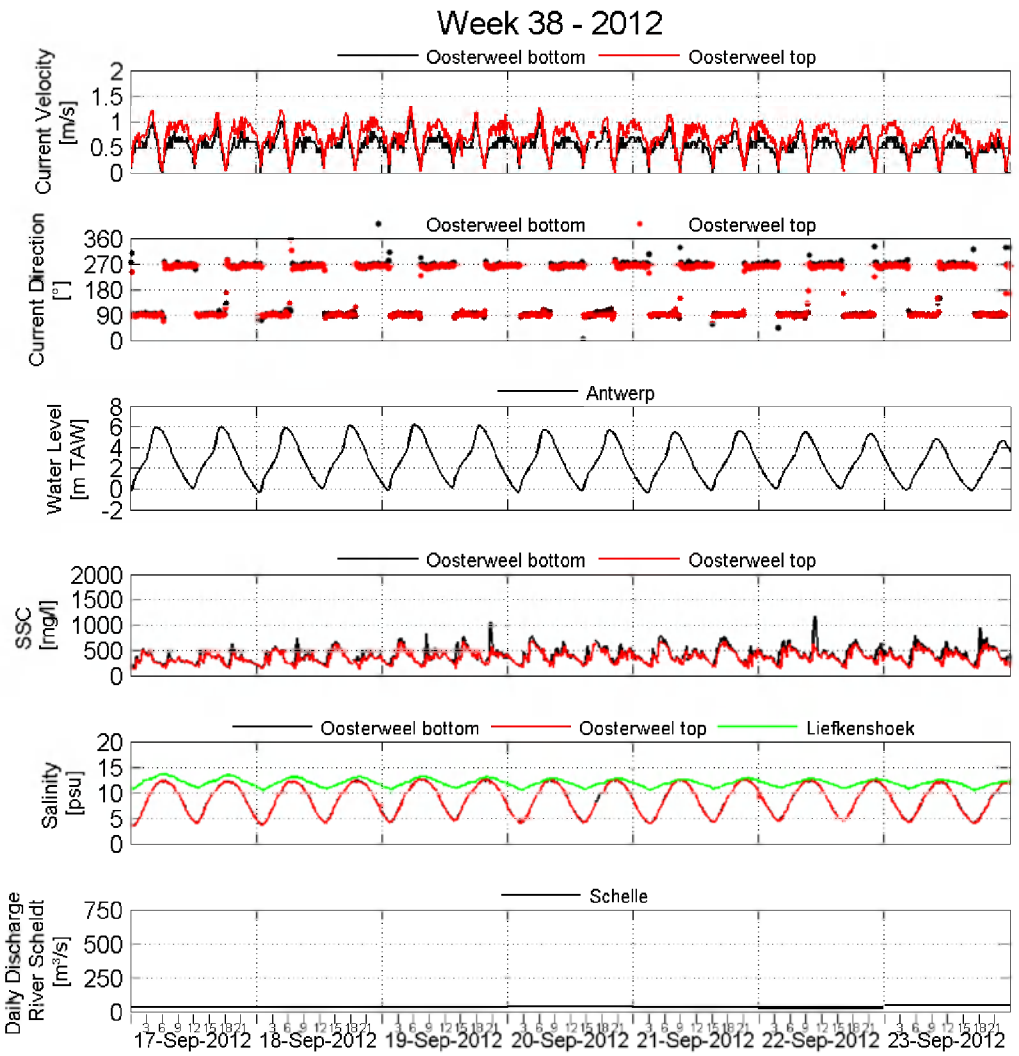

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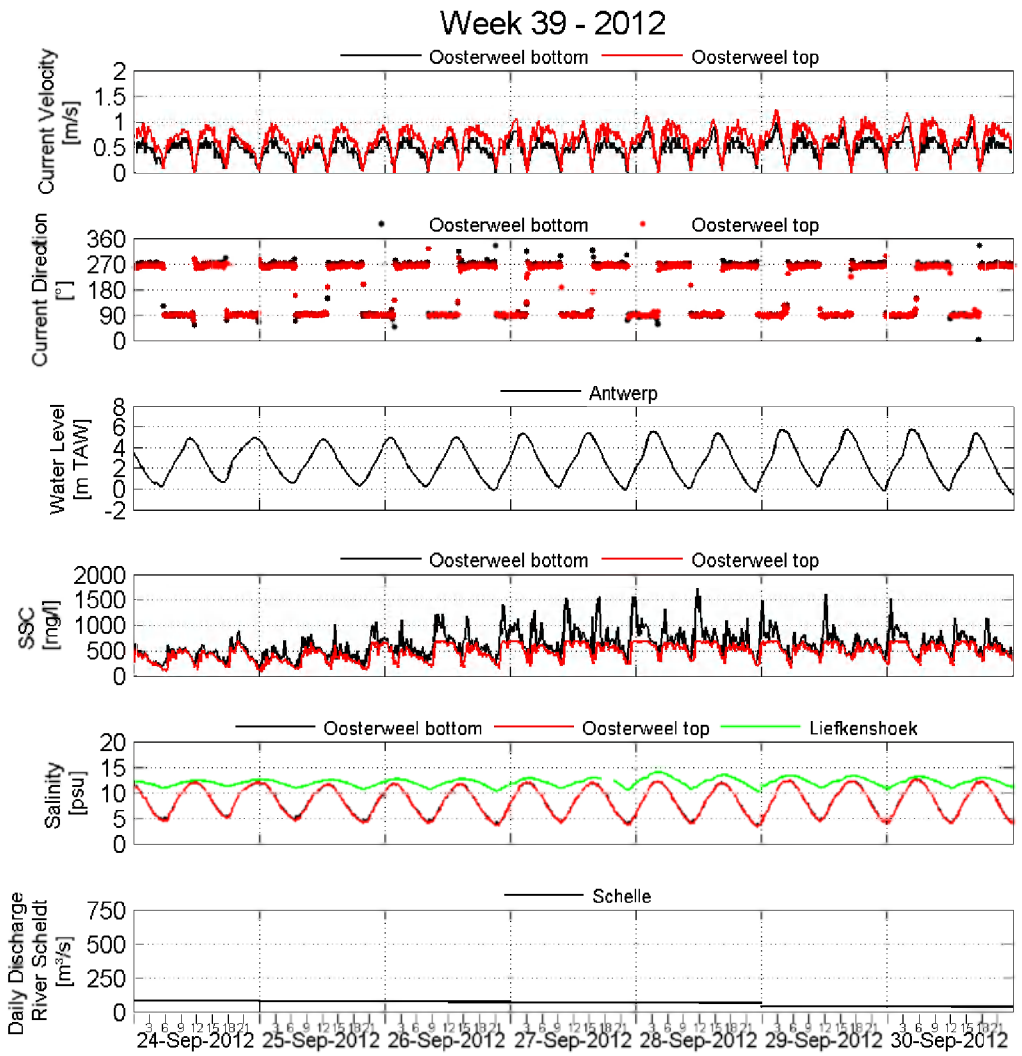

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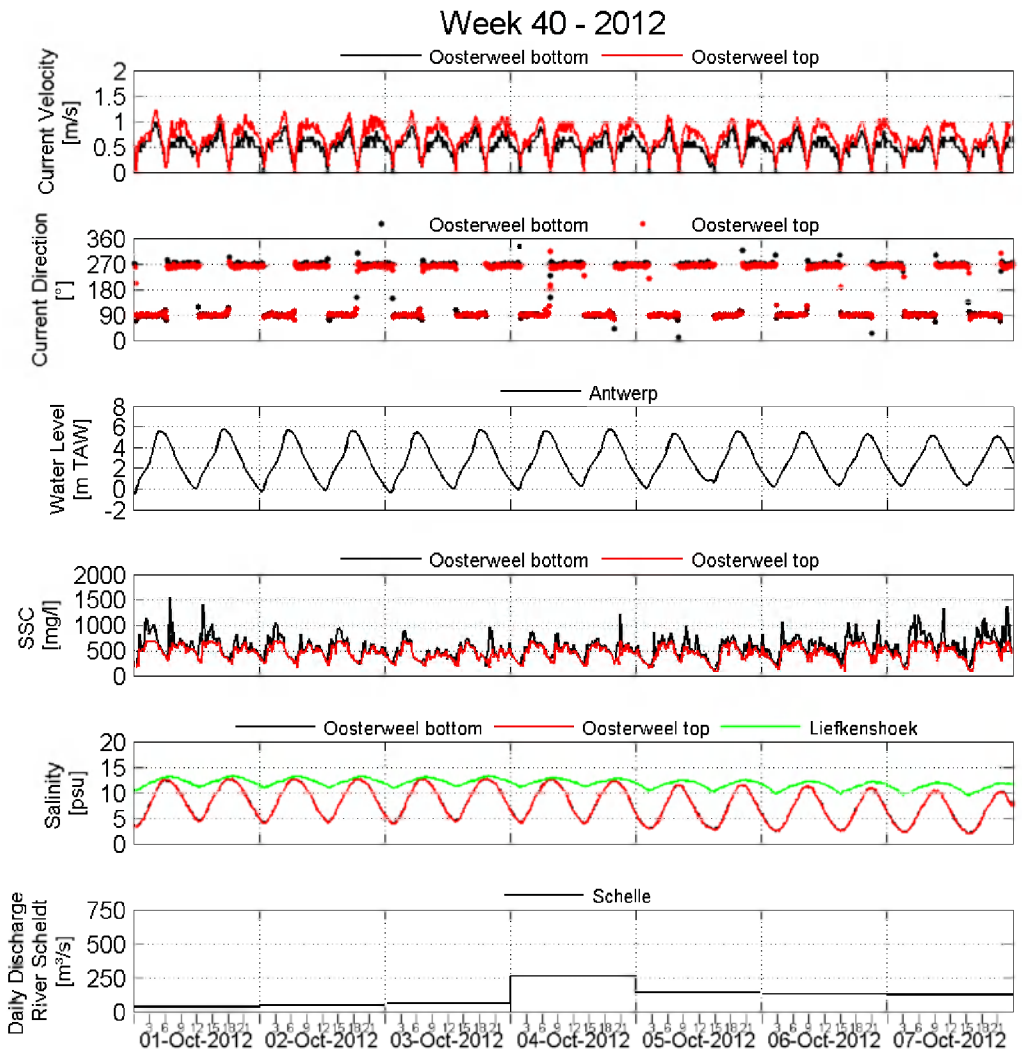

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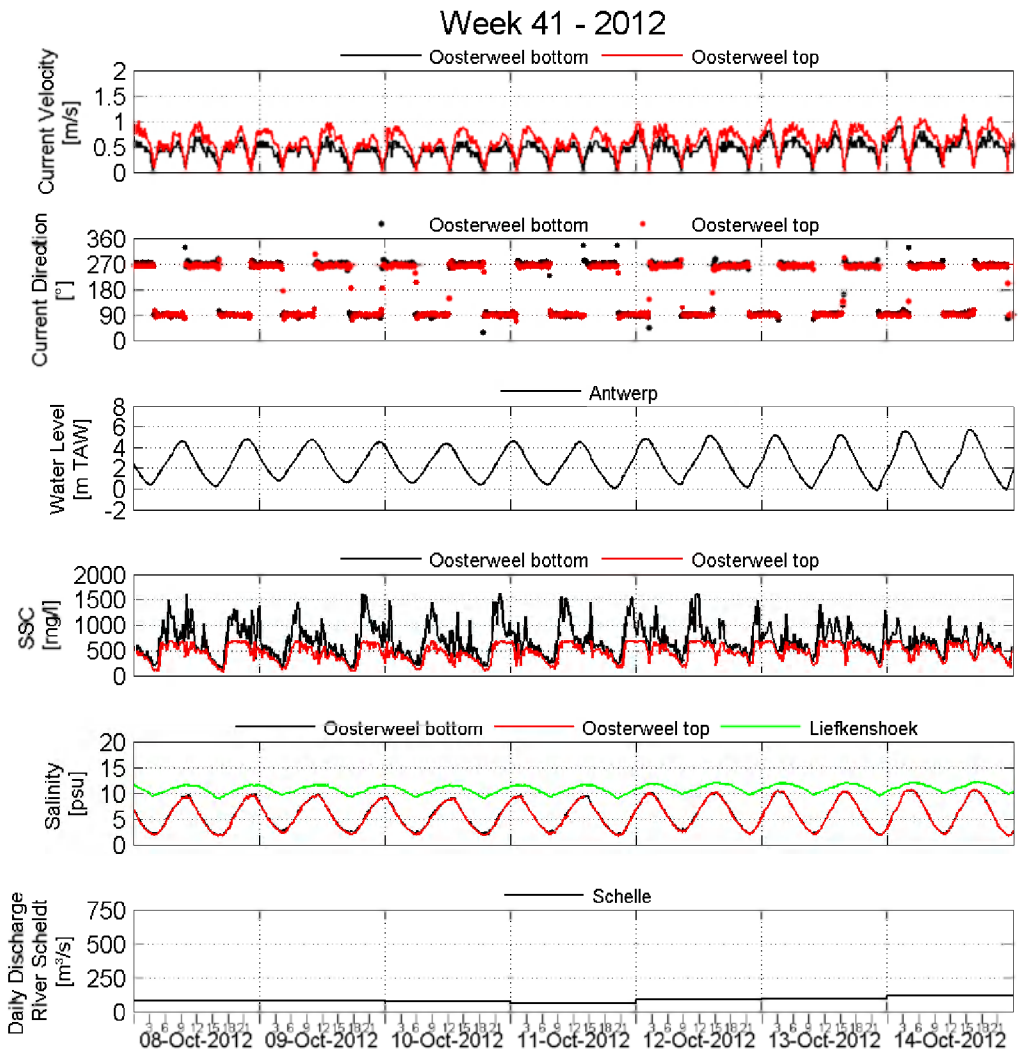

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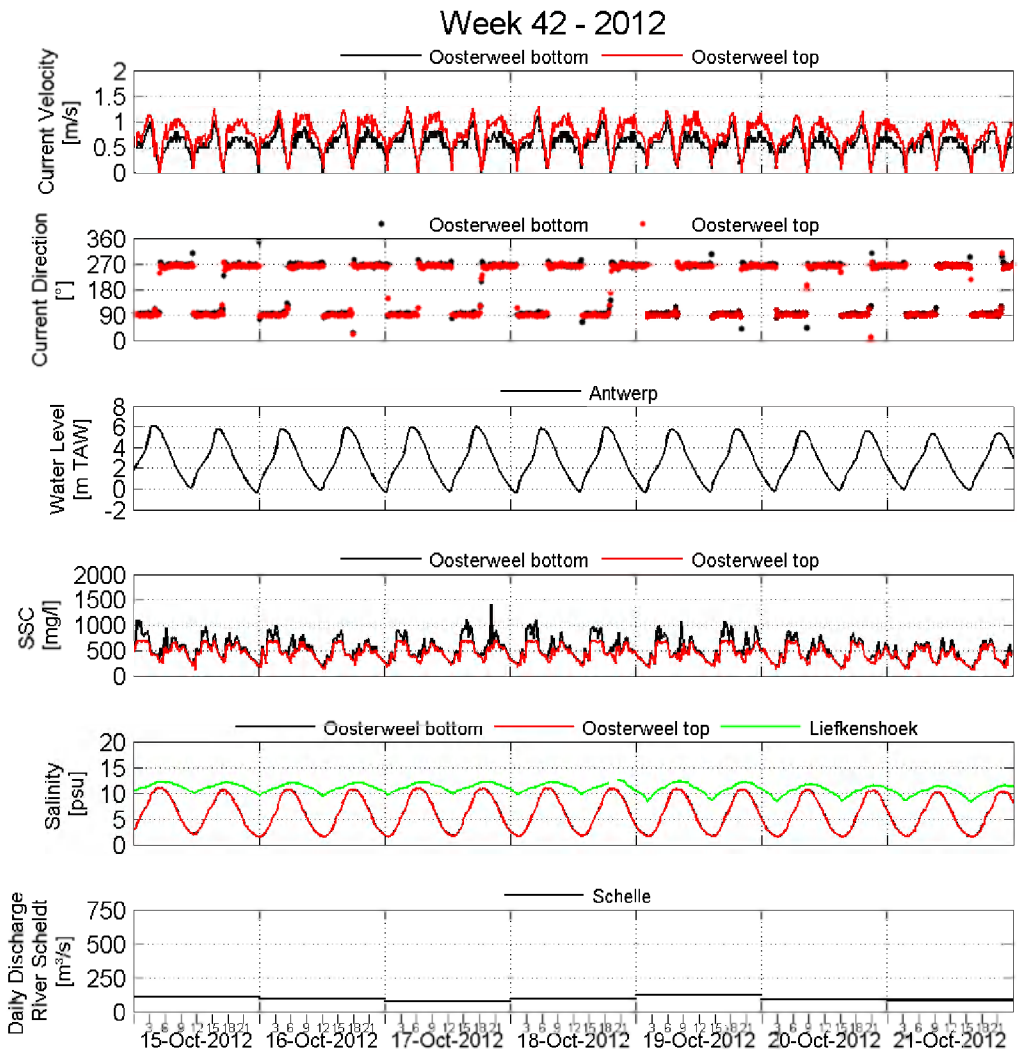

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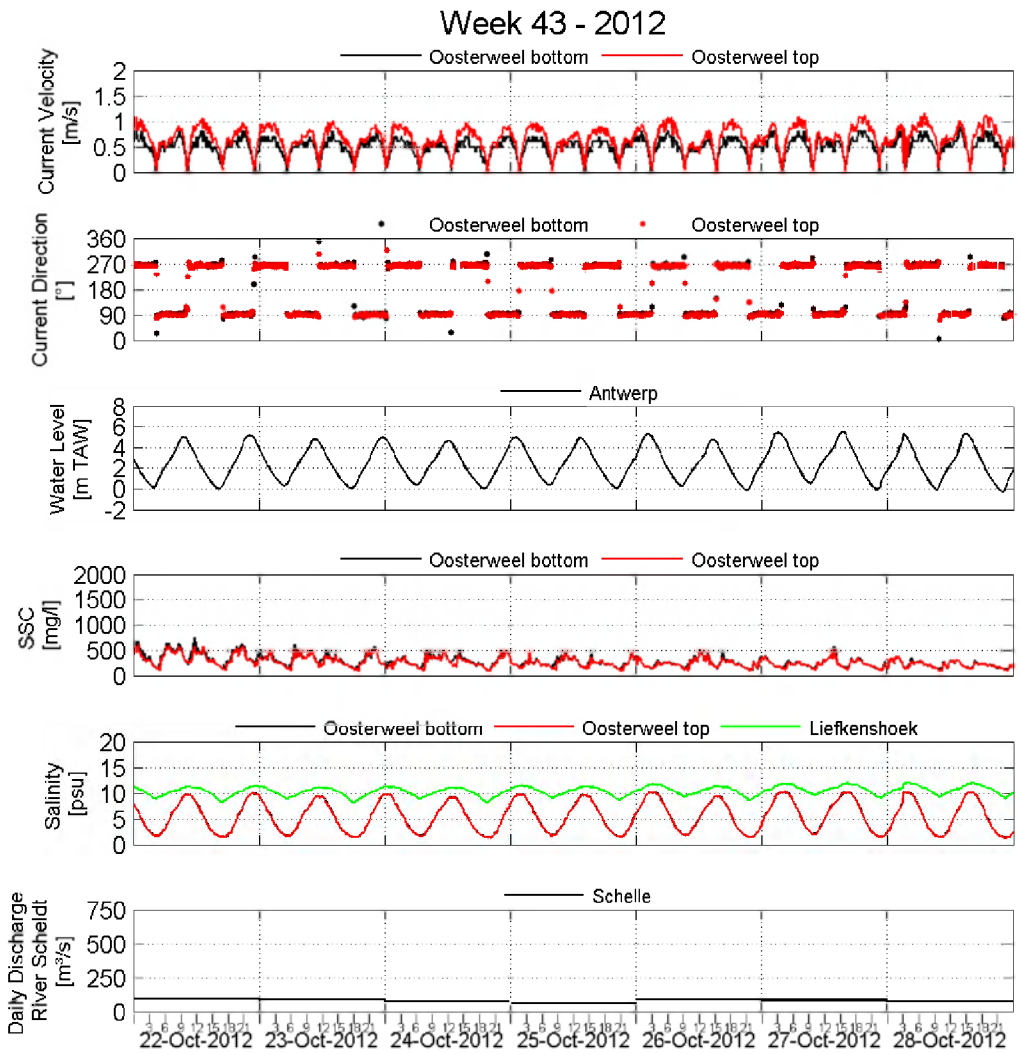

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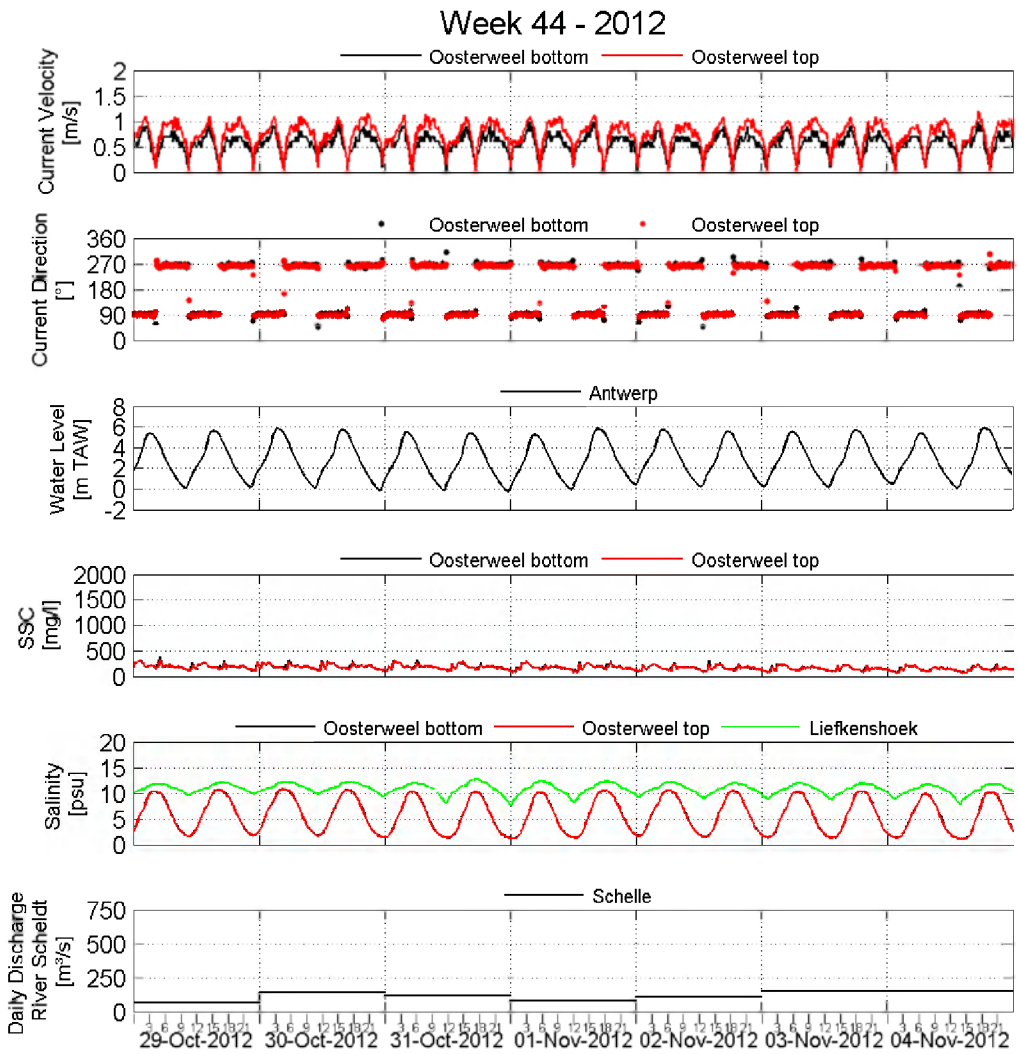

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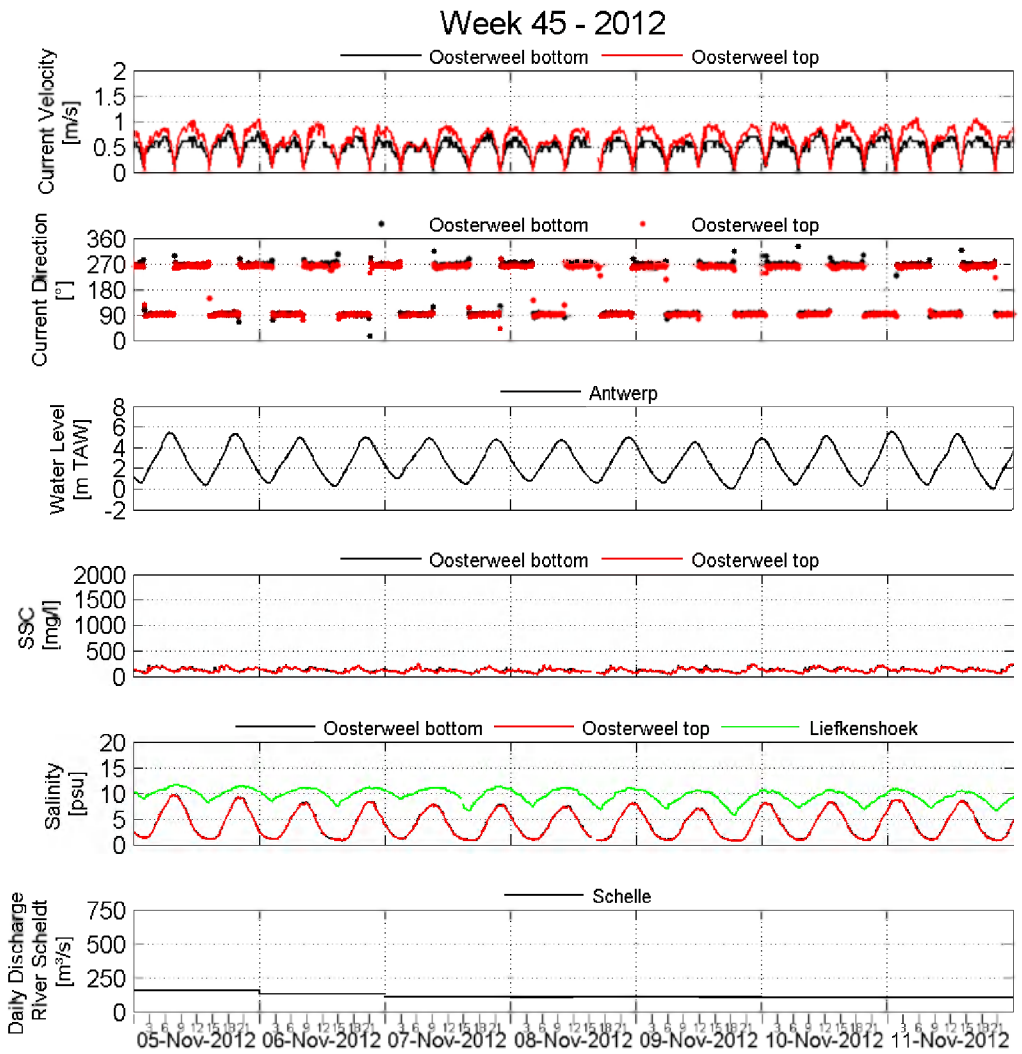

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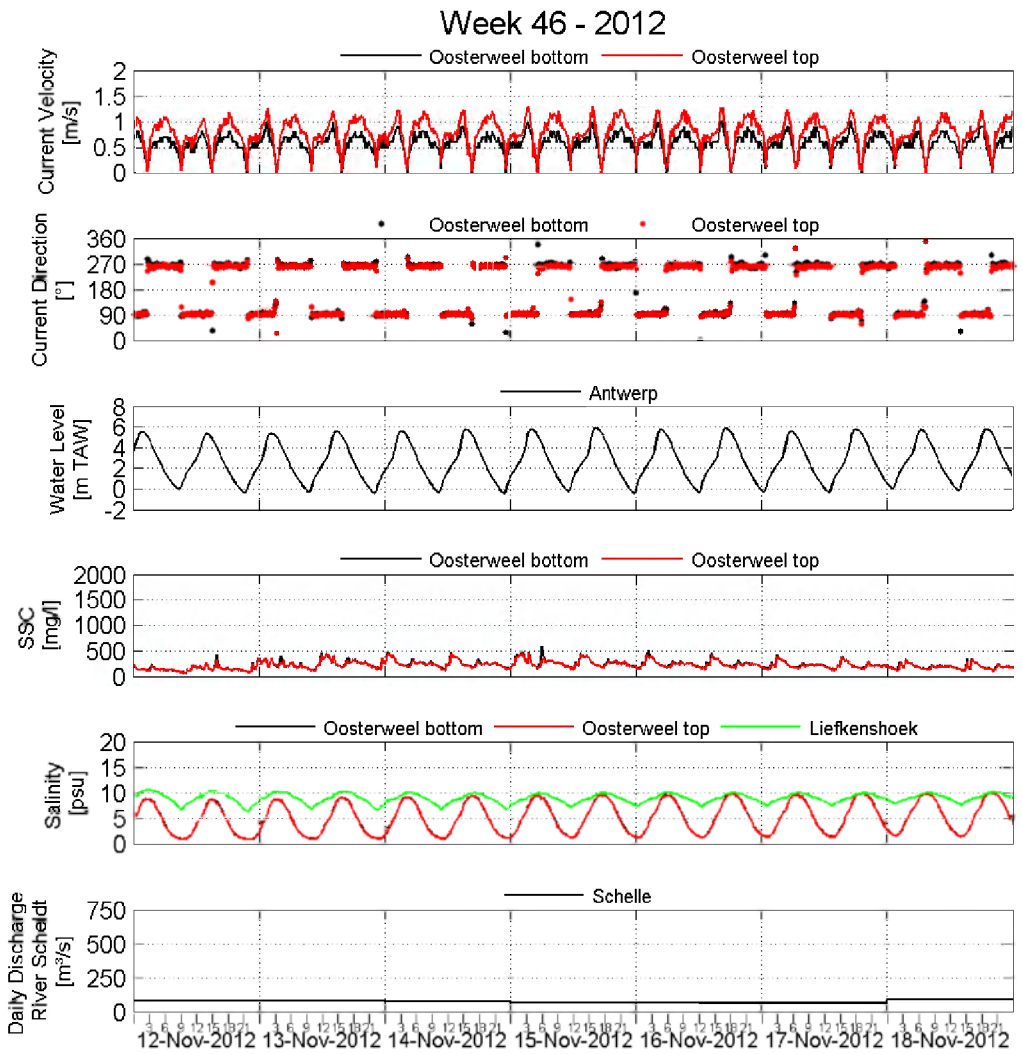

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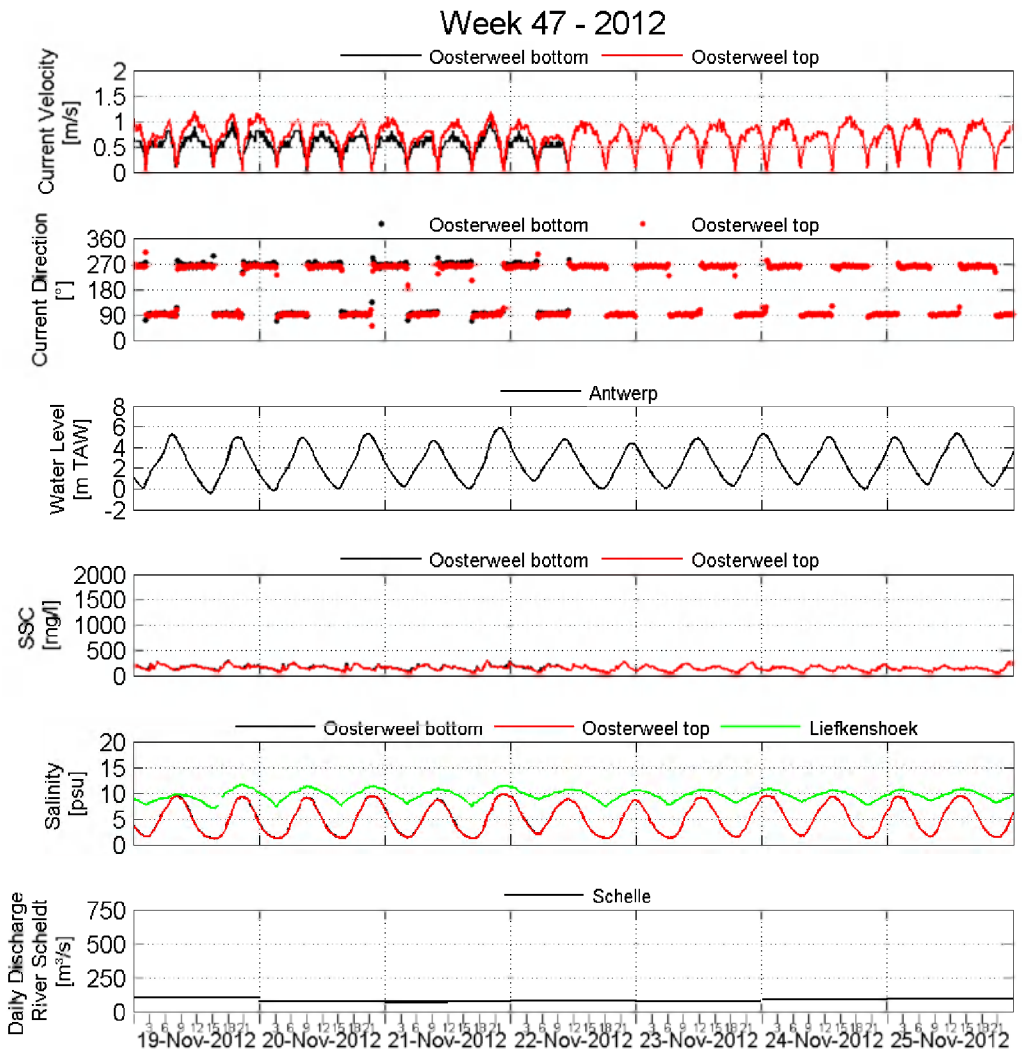

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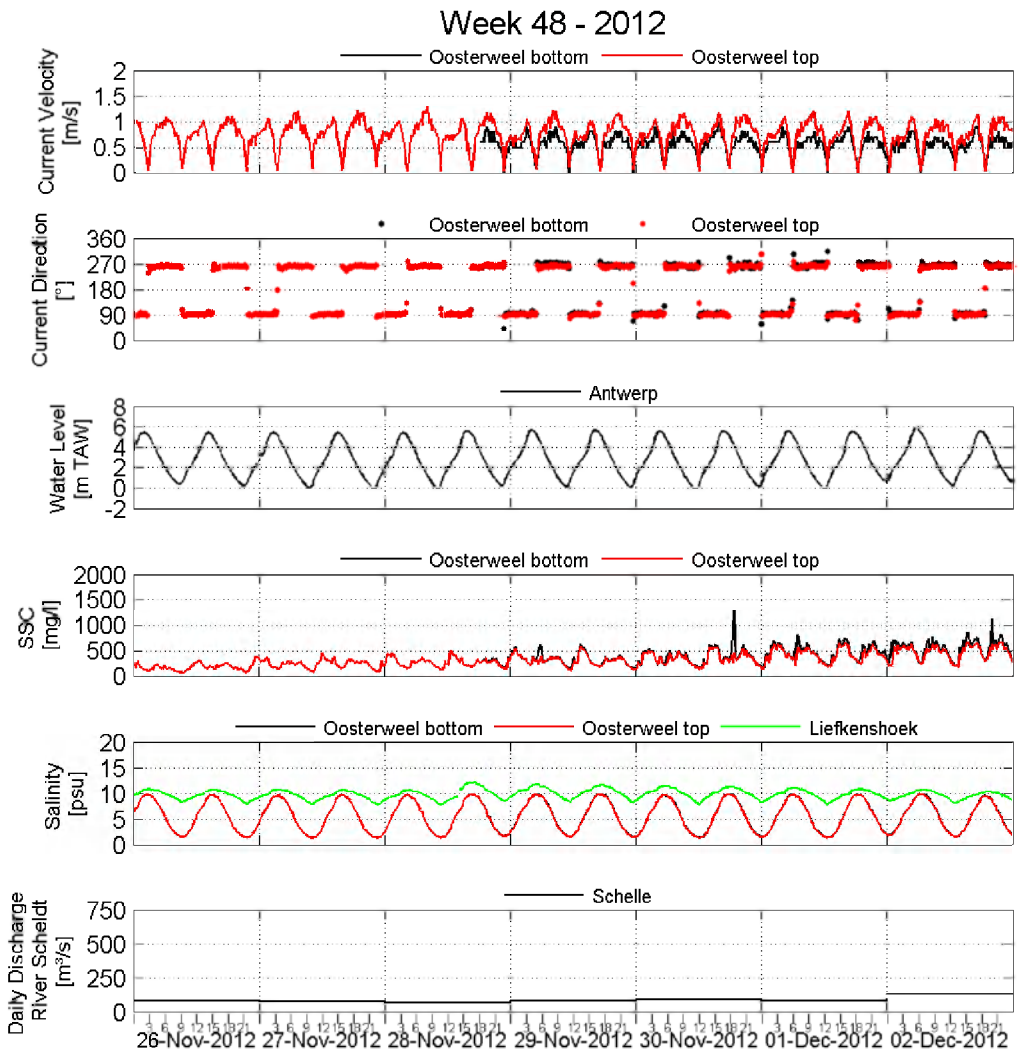

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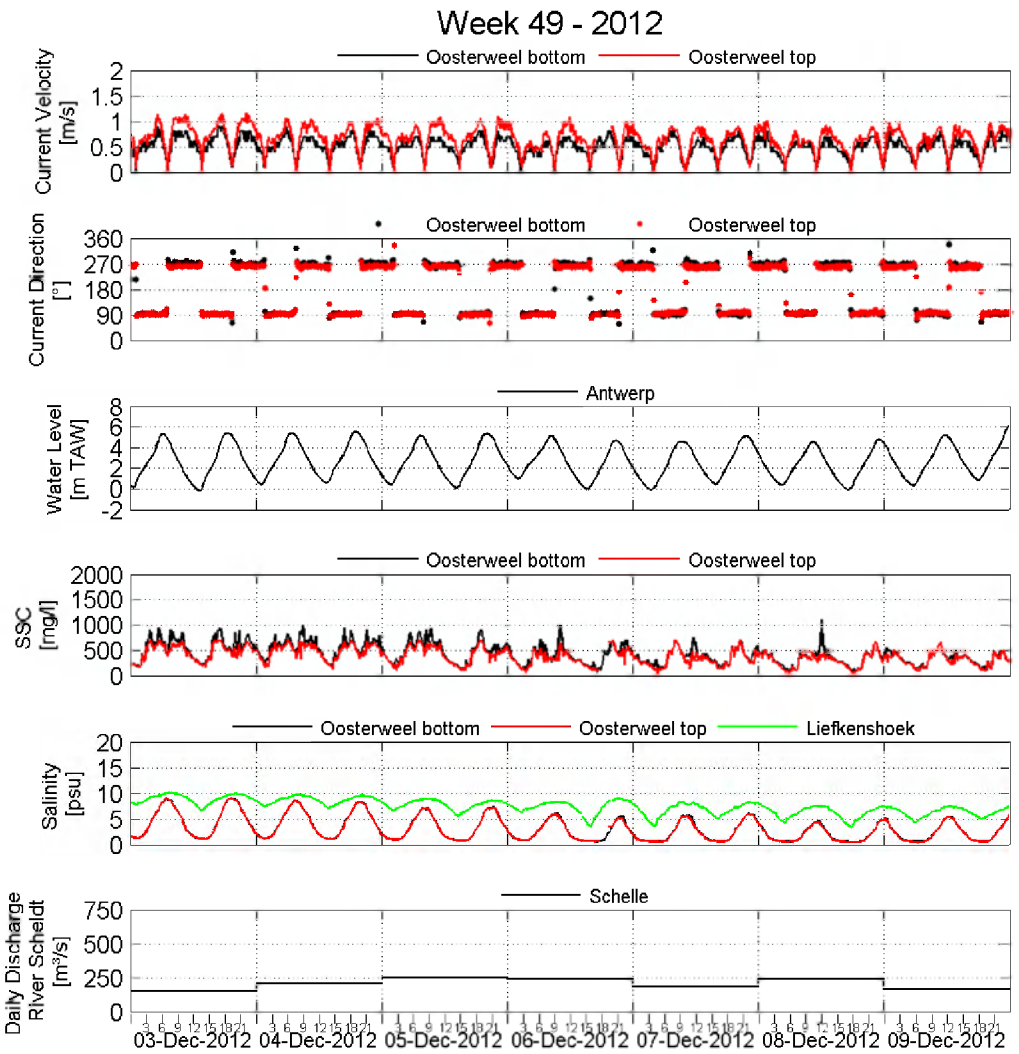

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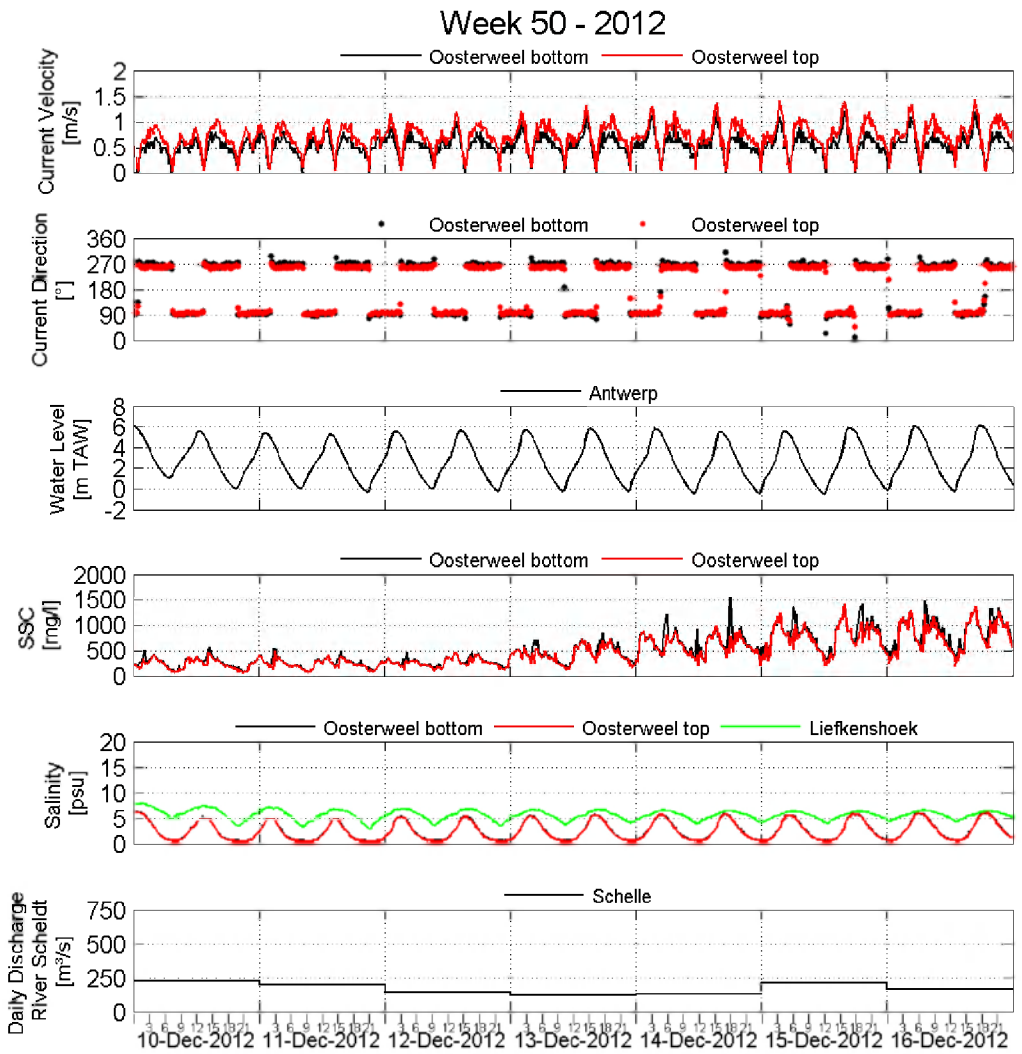


Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

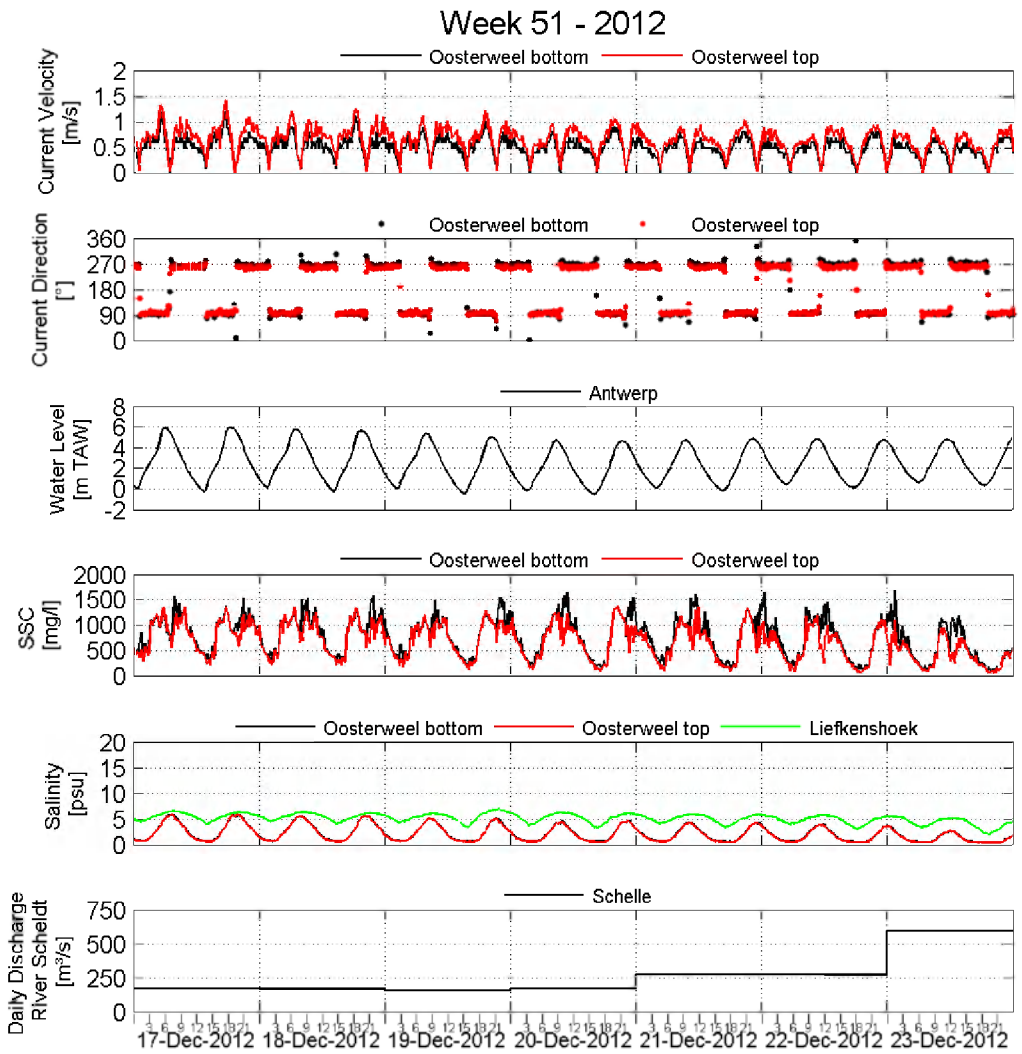
Location:

Liefkenshoek & Oosterweel (top & bottom)

In Association with: Deltares

I/RA/11406/13.145/JCA

11406 - Boundary conditions report 01/04/2012 - 31/03/2013



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

Processed by: IMDC

Location:

Liefkenshoek & Oosterweel (top & bottom)

In Association with: Deltares

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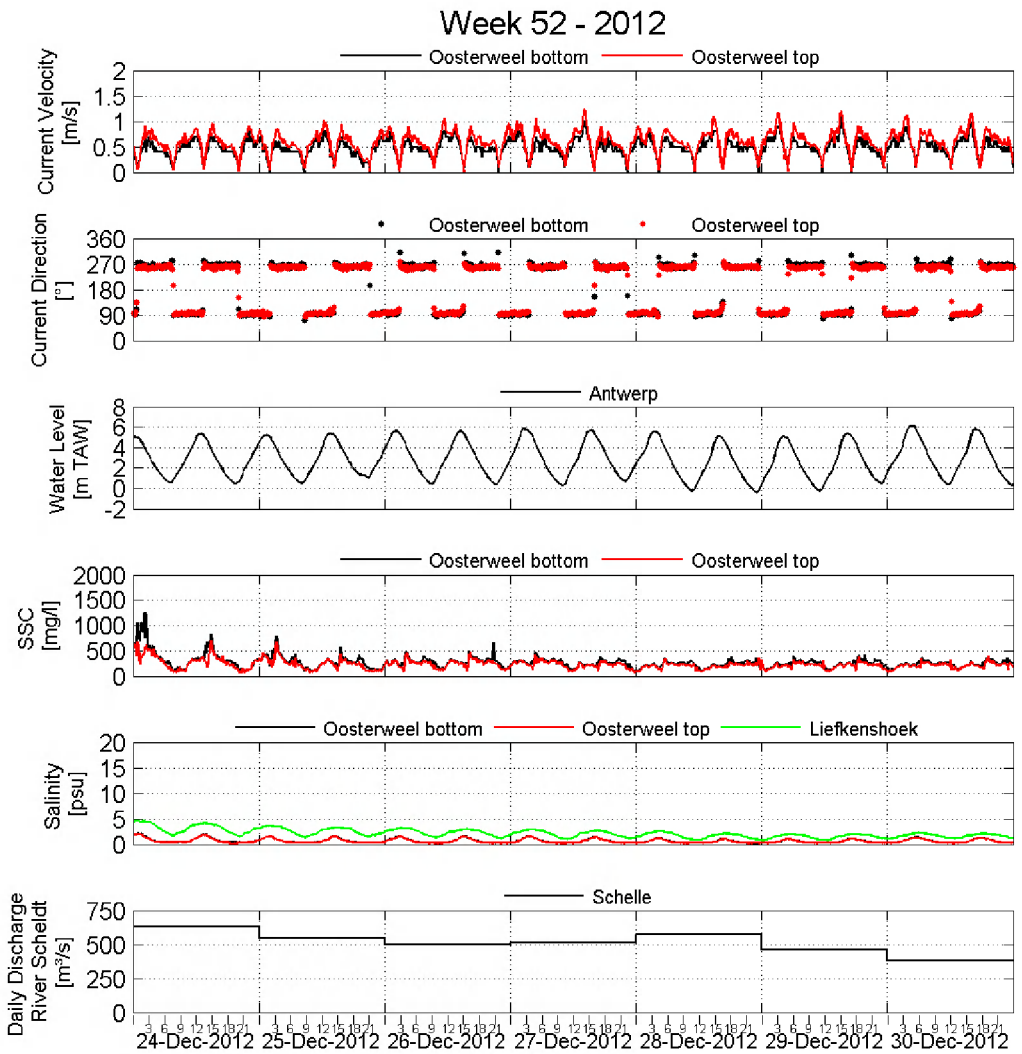

Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge

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Location:

Liefkenshoek & Oosterweel (top & bottom)

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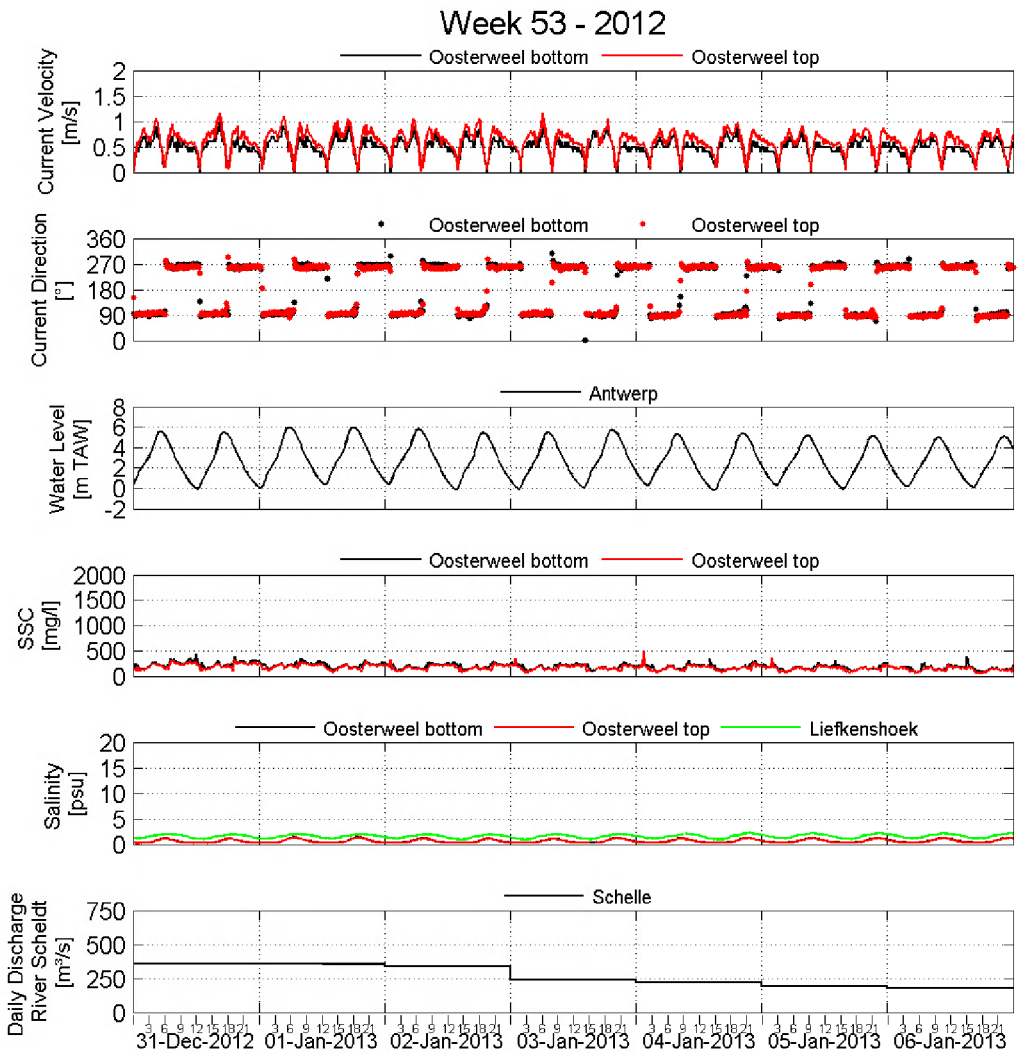

Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge

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Liefkenshoek & Oosterweel (top & bottom)

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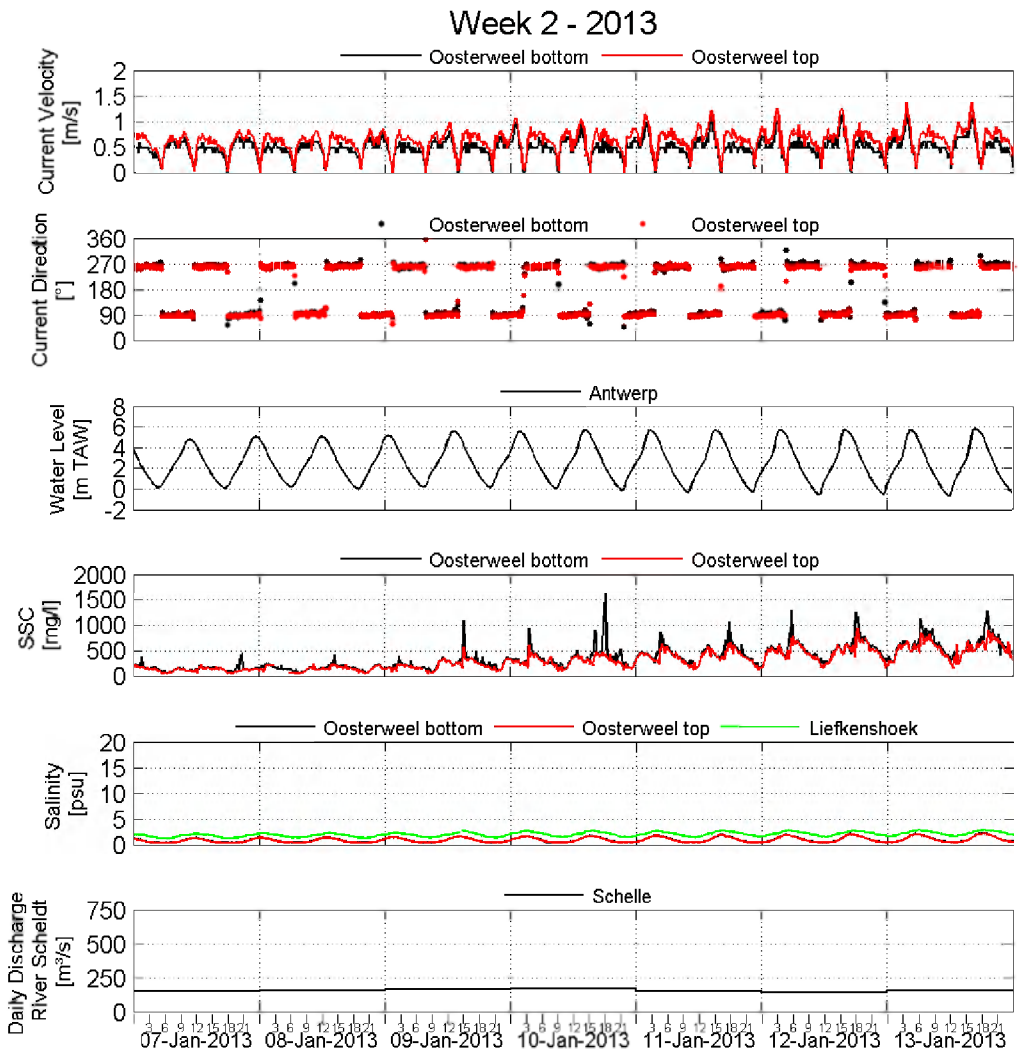

Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge

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Location:

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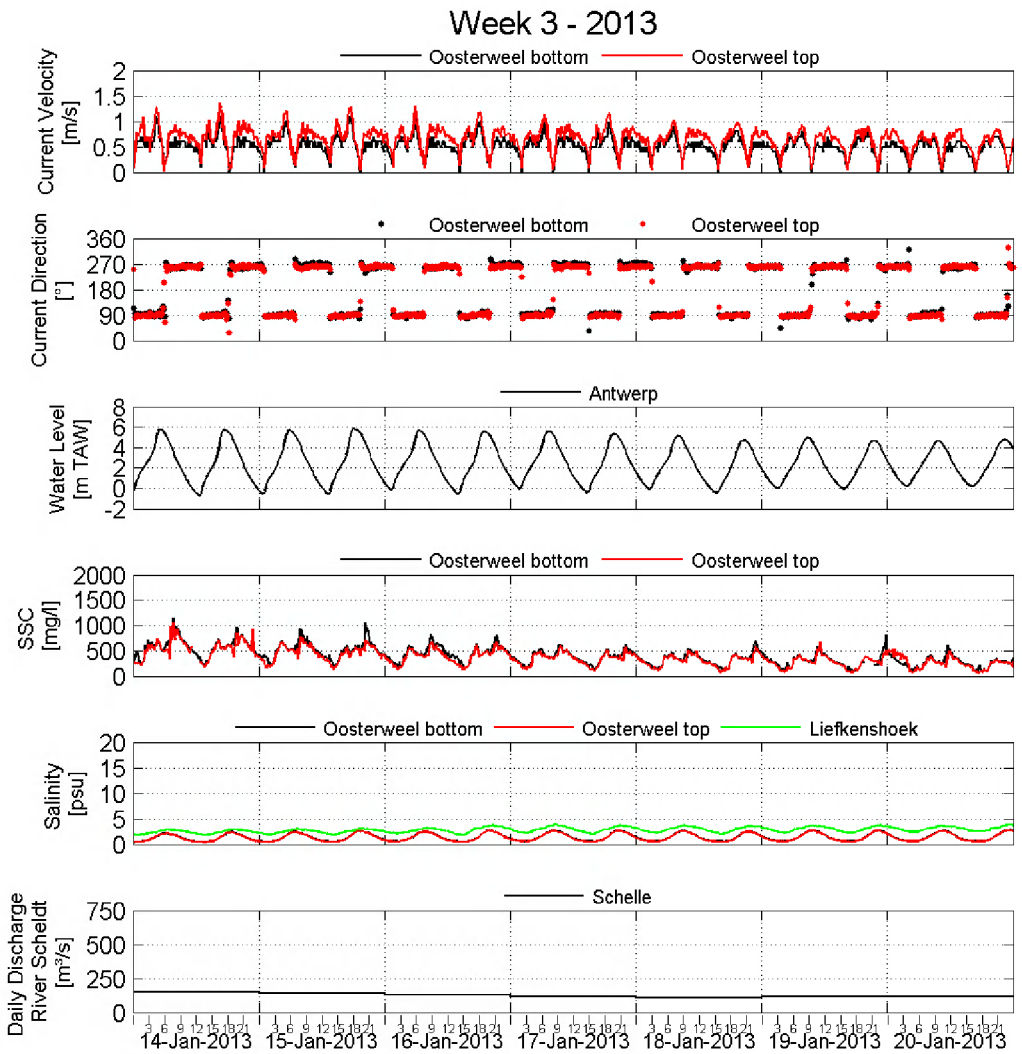

Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge

Processed by:

IMDC

In Association with:

Deltares

Location:

Liefkenshoek & Oosterweel (top & bottom)

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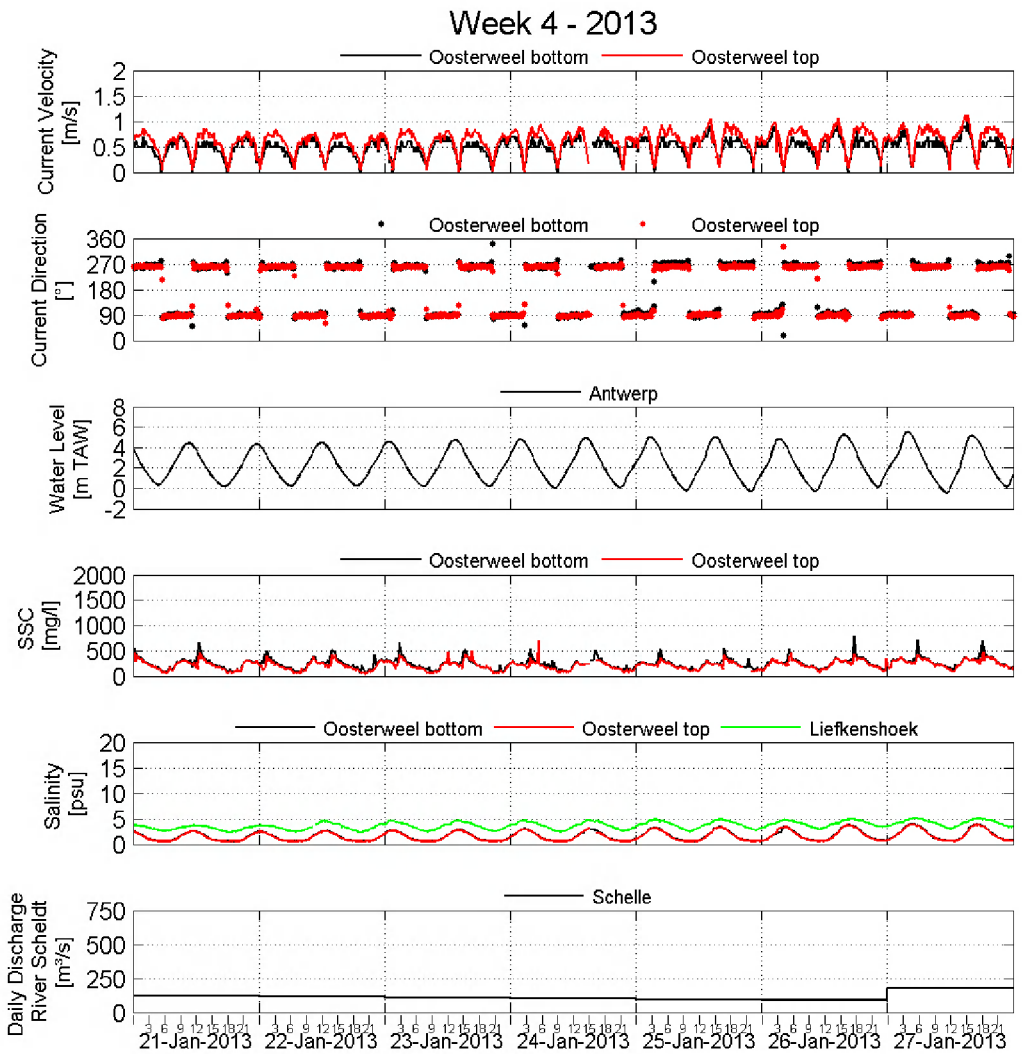

Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge

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Location:

Liefkenshoek & Oosterweel (top & bottom)

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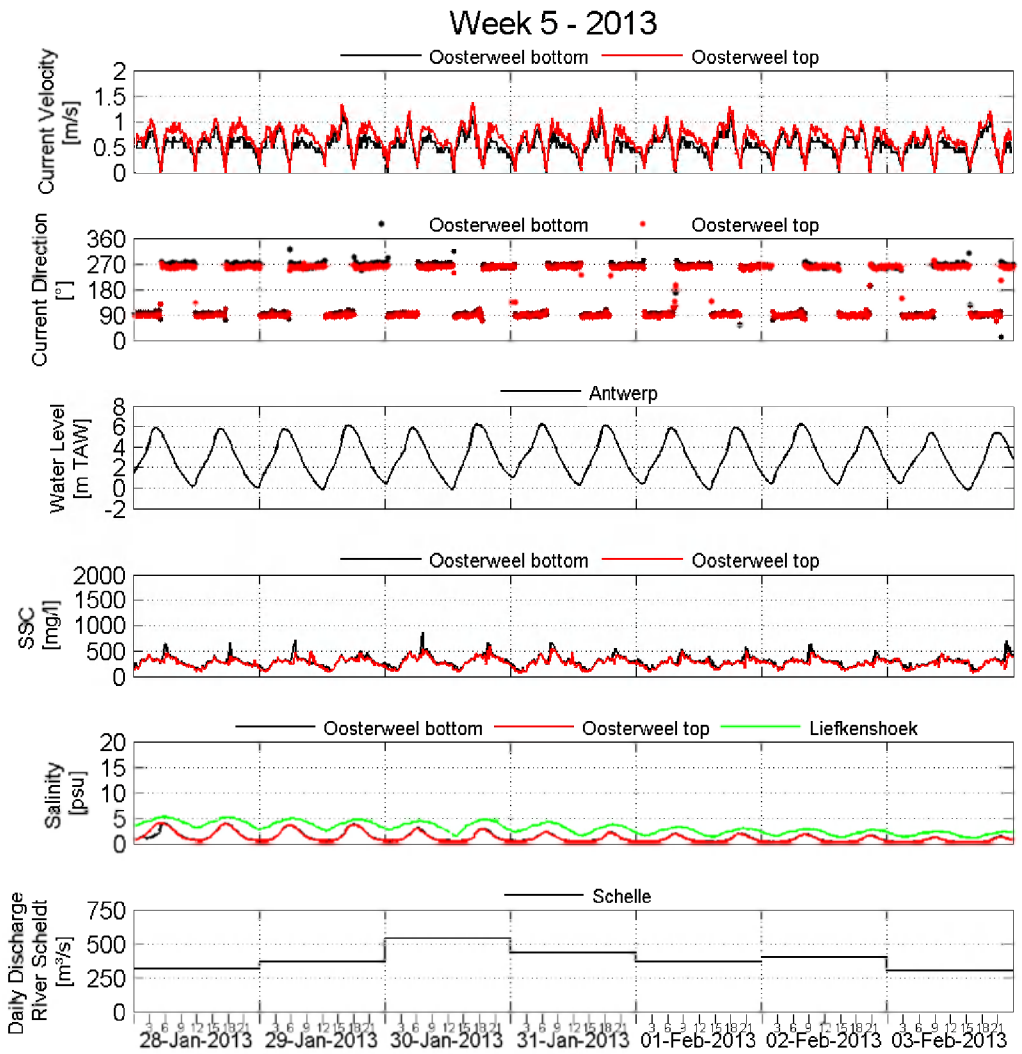

Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge

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Location:

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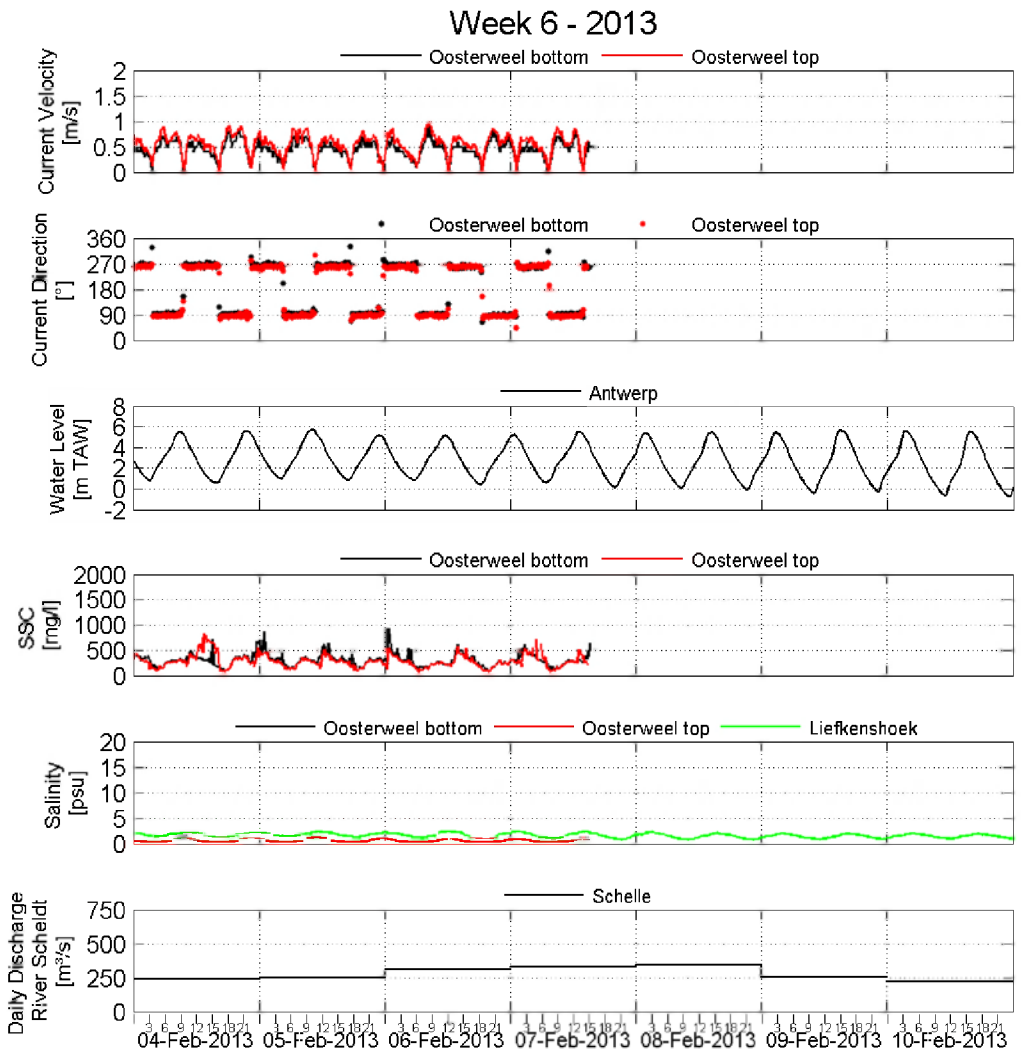

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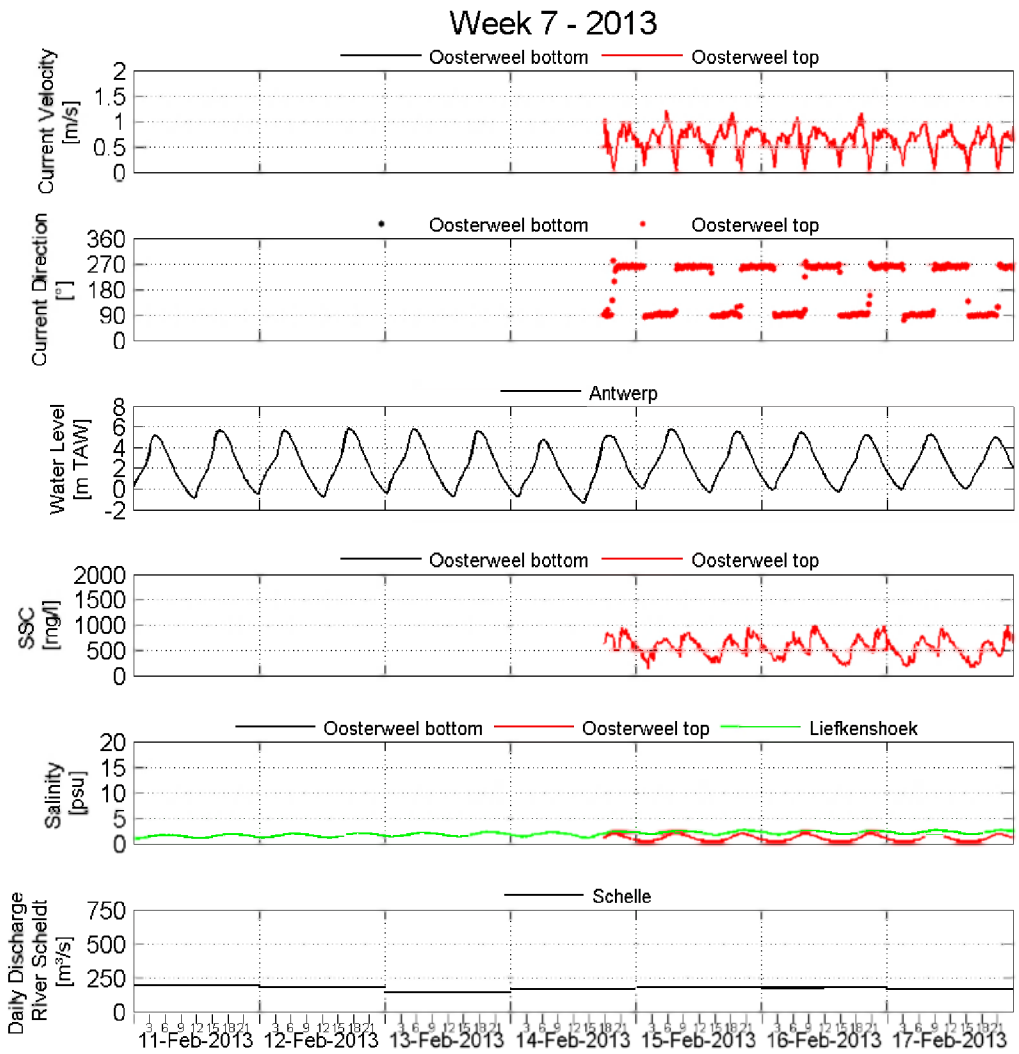

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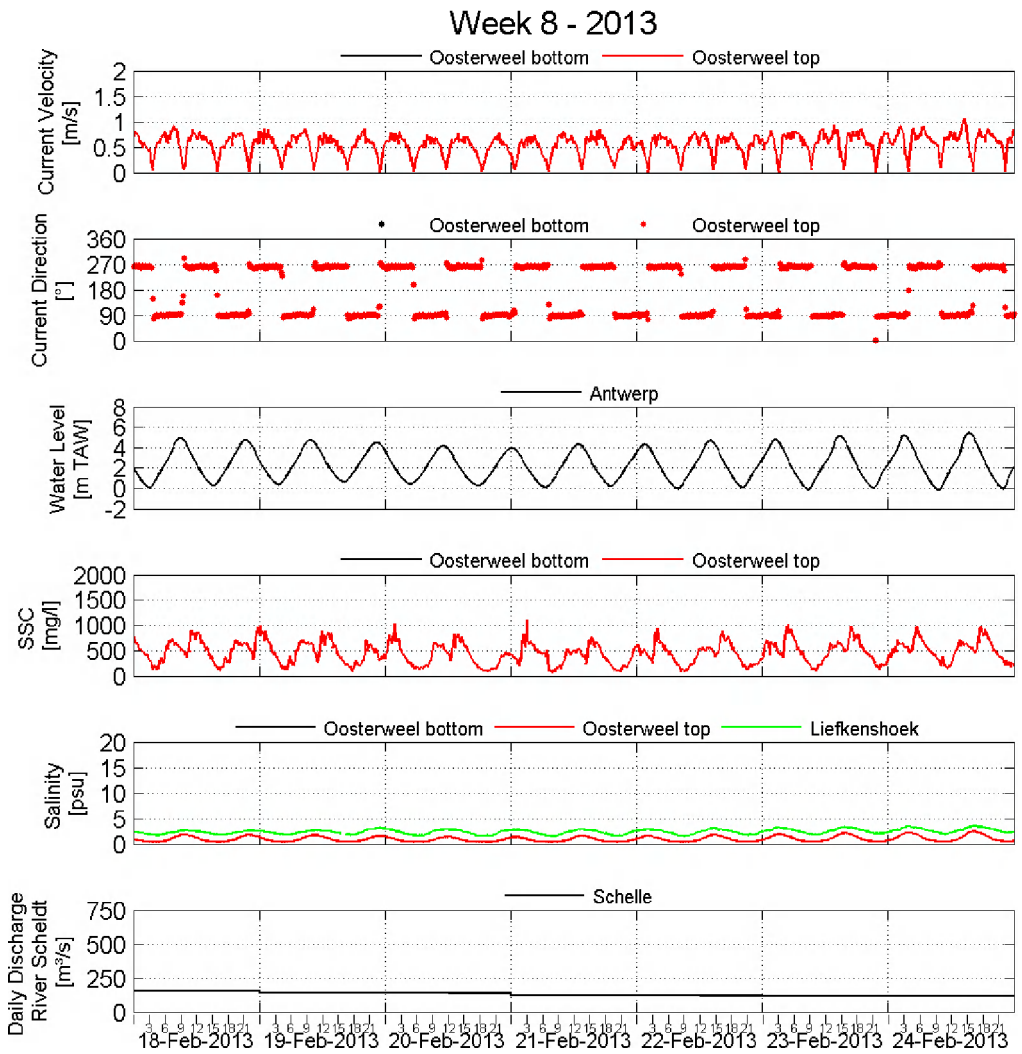

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Location:

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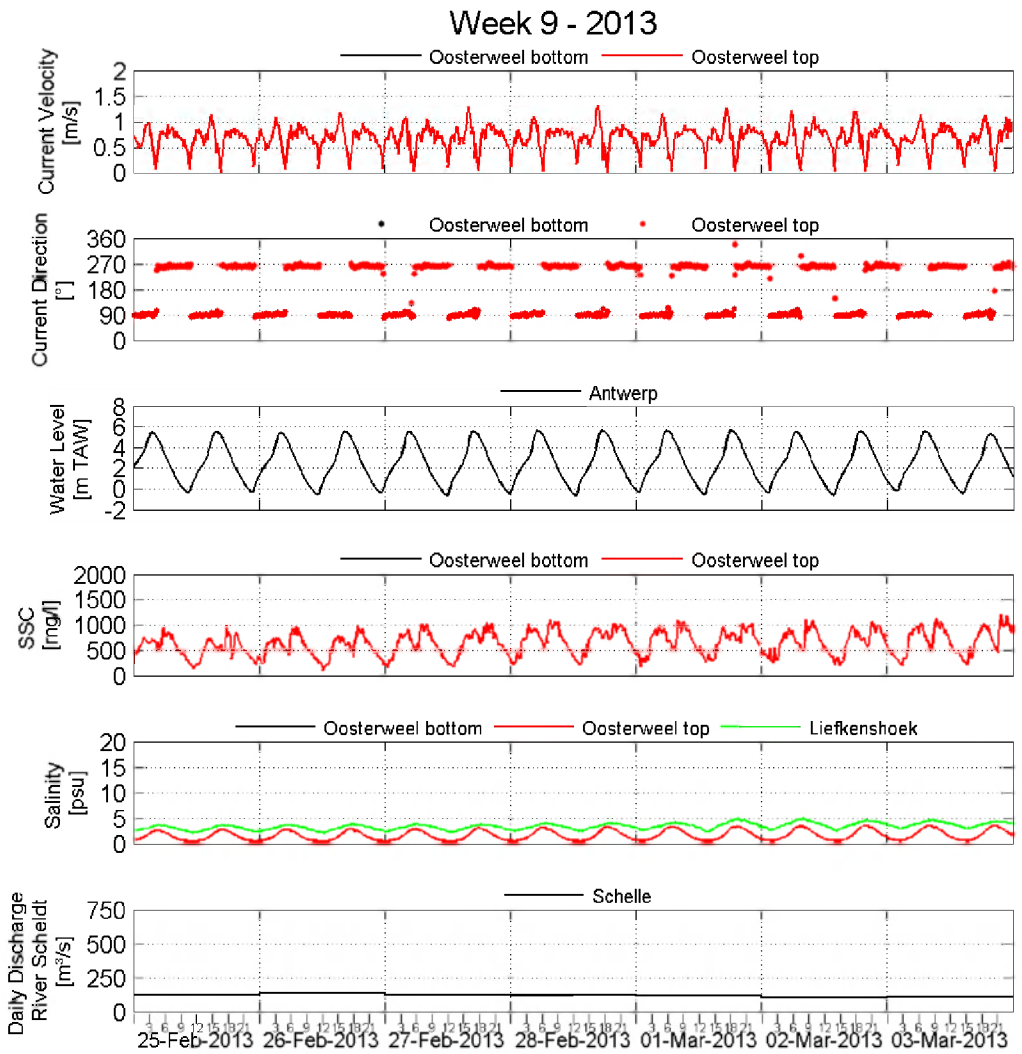

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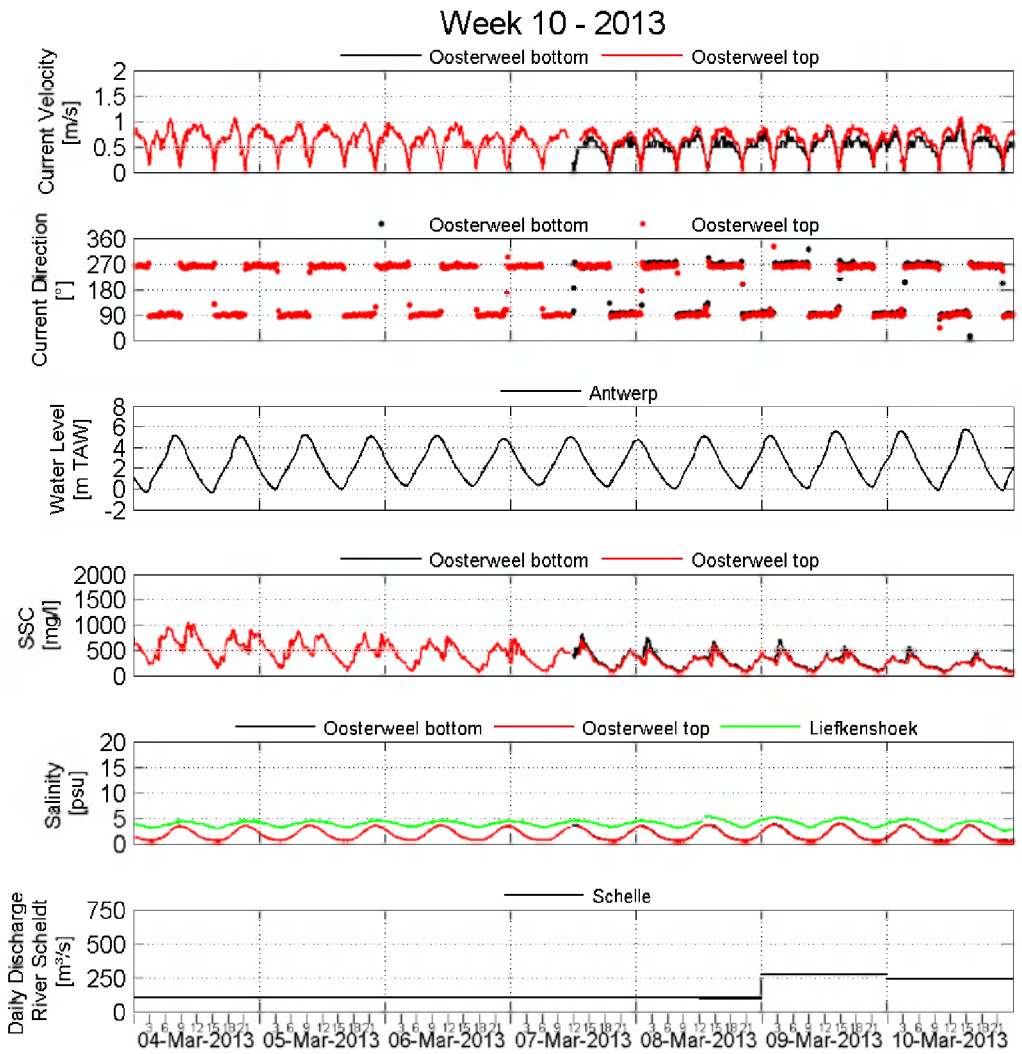

Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge

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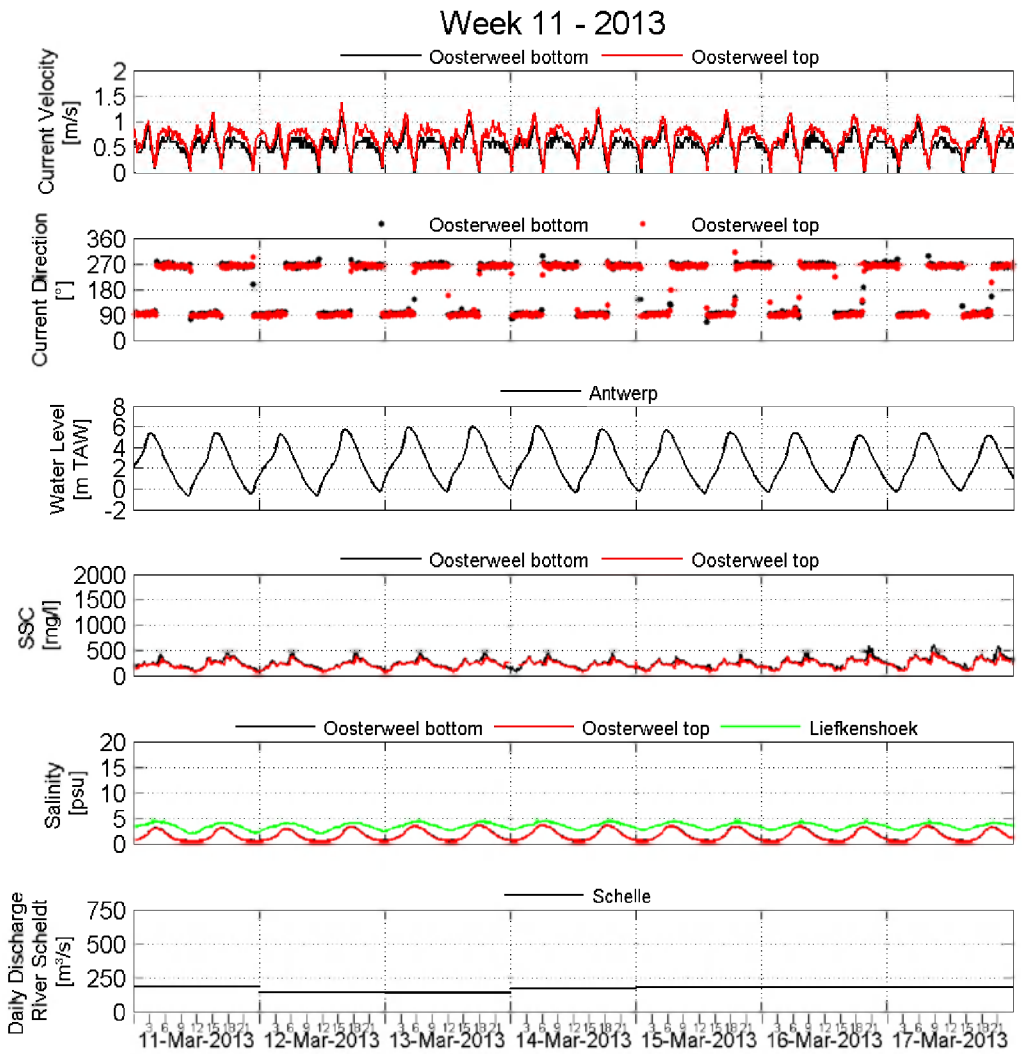

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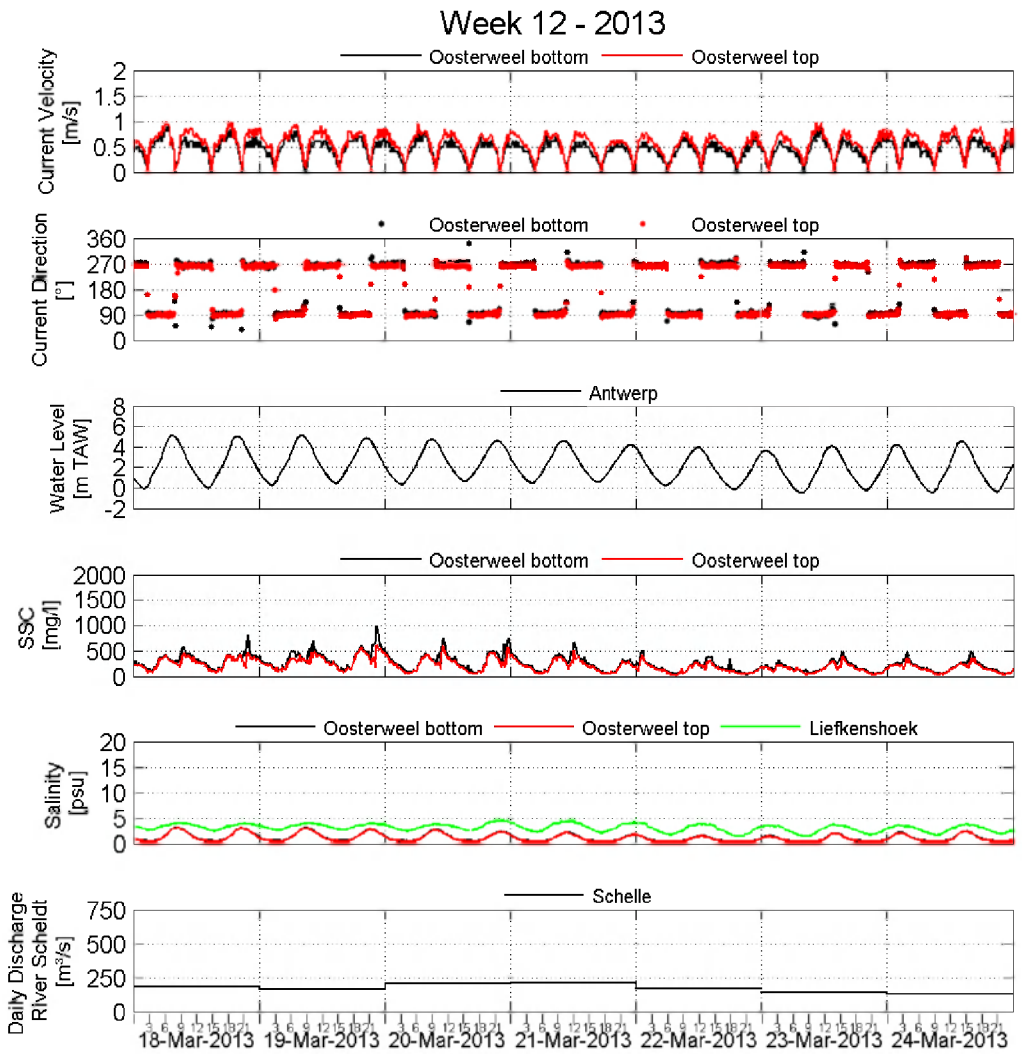

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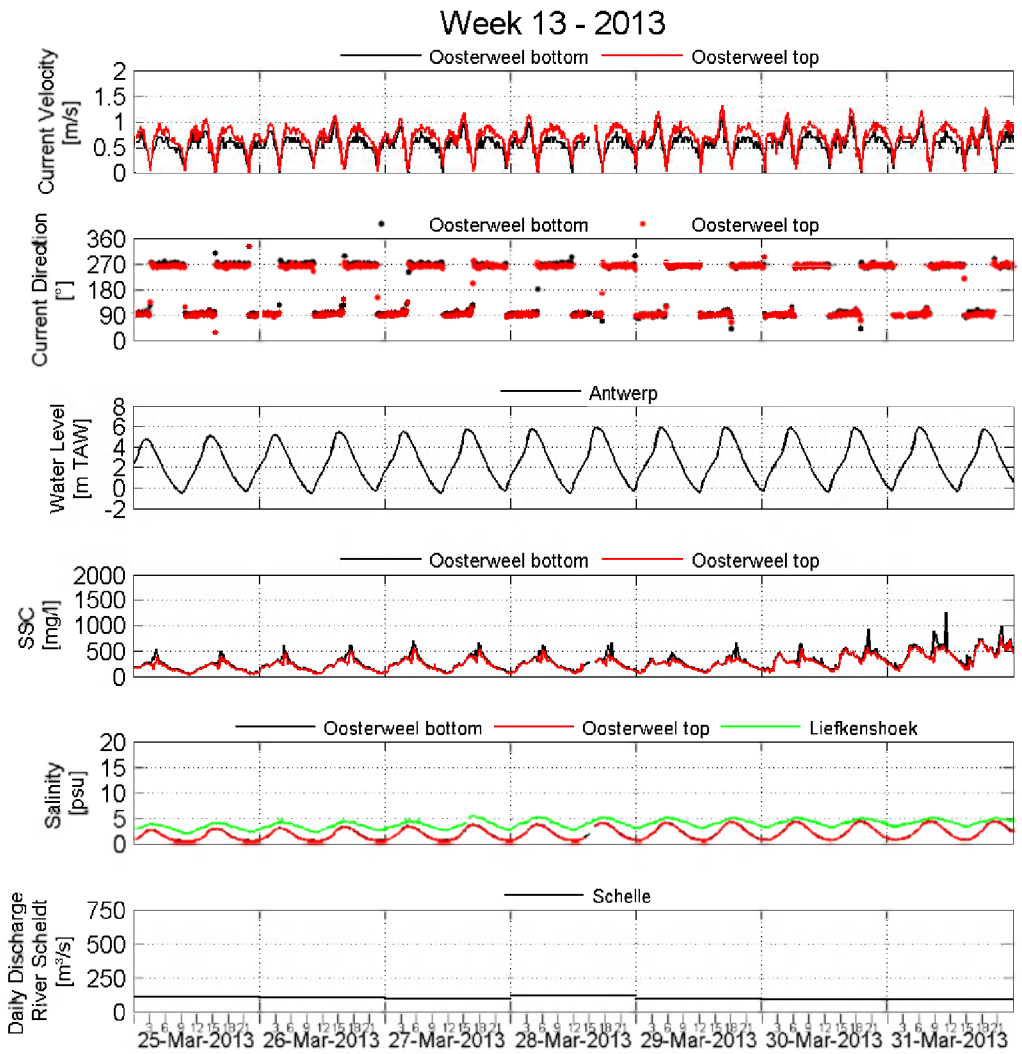

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Location:

Liefkenshoek & Oosterweel (top & bottom)

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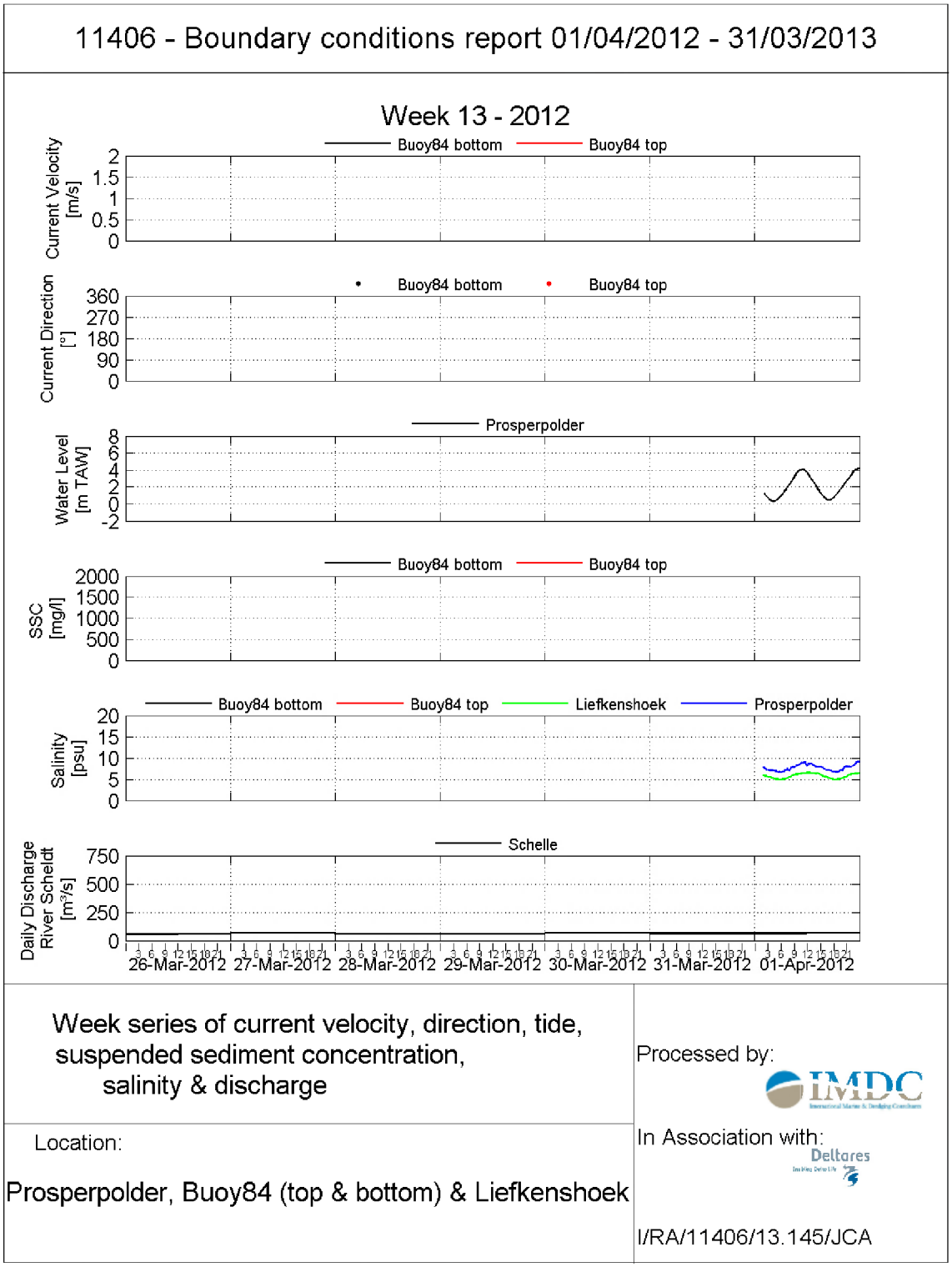
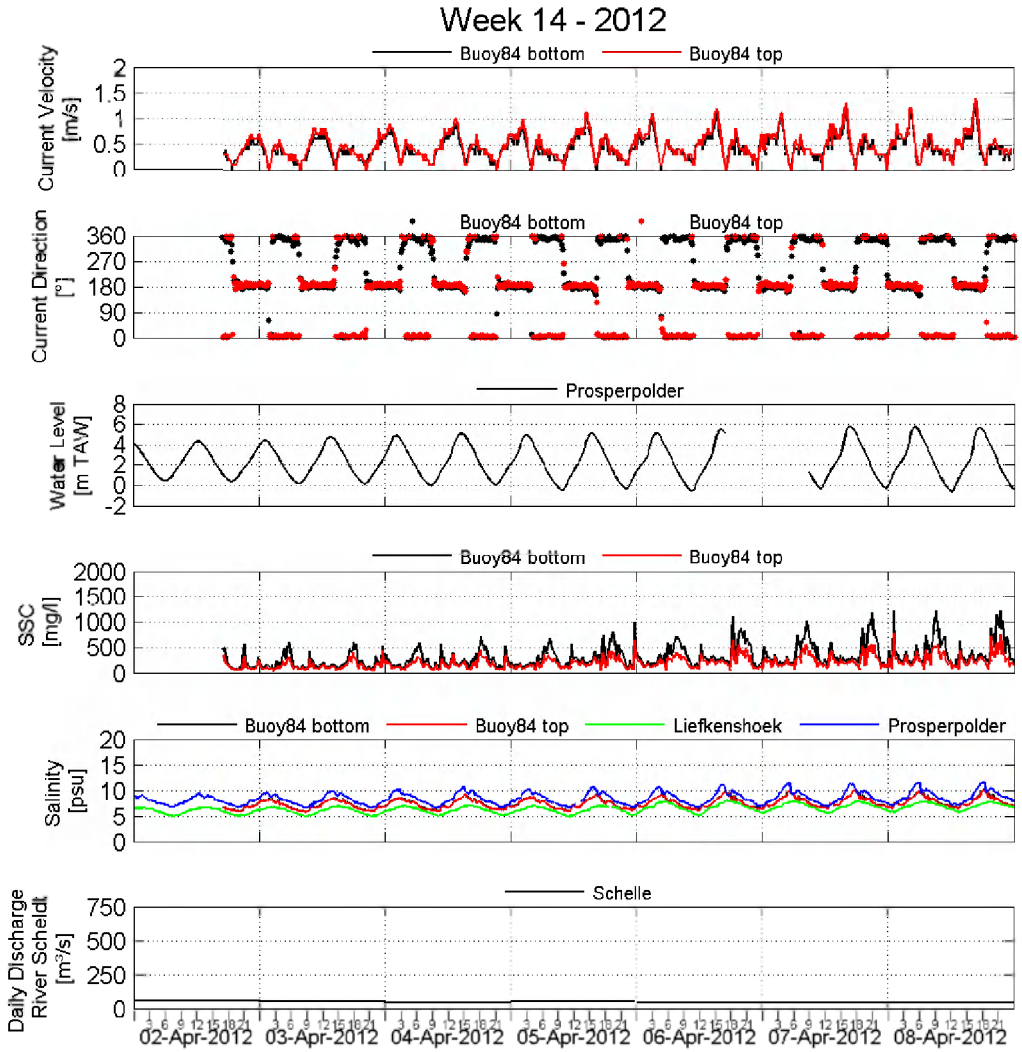
I/RA/11406/13.145/JCA

B.1.2 Liefkenshoek, Buoy84 & Prosperpolder

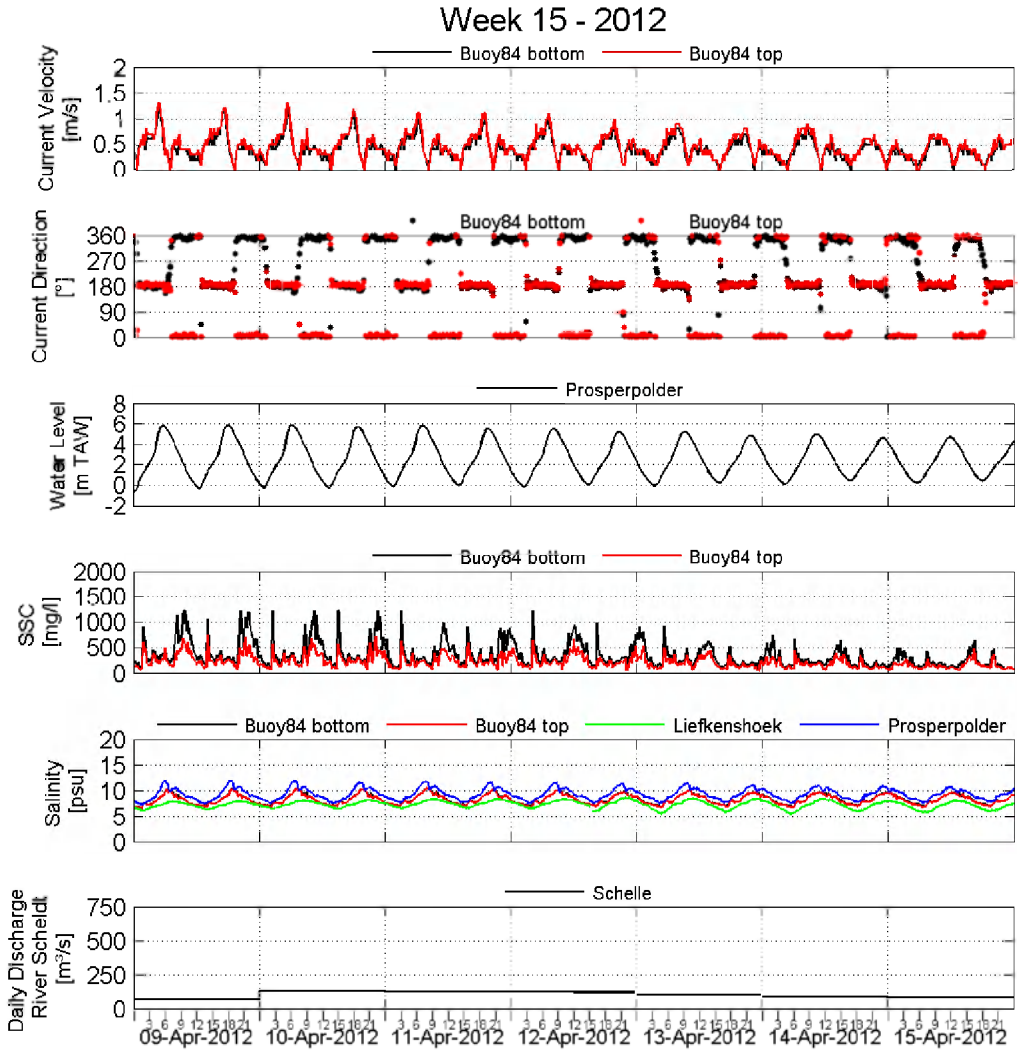


11406 - Boundary conditions report 01/04/2012 - 31/03/2013



Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge	Processed by: IMDC
Location: Prosperpolder, Buoy84 (top & bottom) & Liefkenshoek	In Association with: Deltares I/RA/11406/13.145/JCA

11406 - Boundary conditions report 01/04/2012 - 31/03/2013



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

Processed by: IMDC

Location:

Prosperpolder, Buoy84 (top & bottom) & Liefkenshoek

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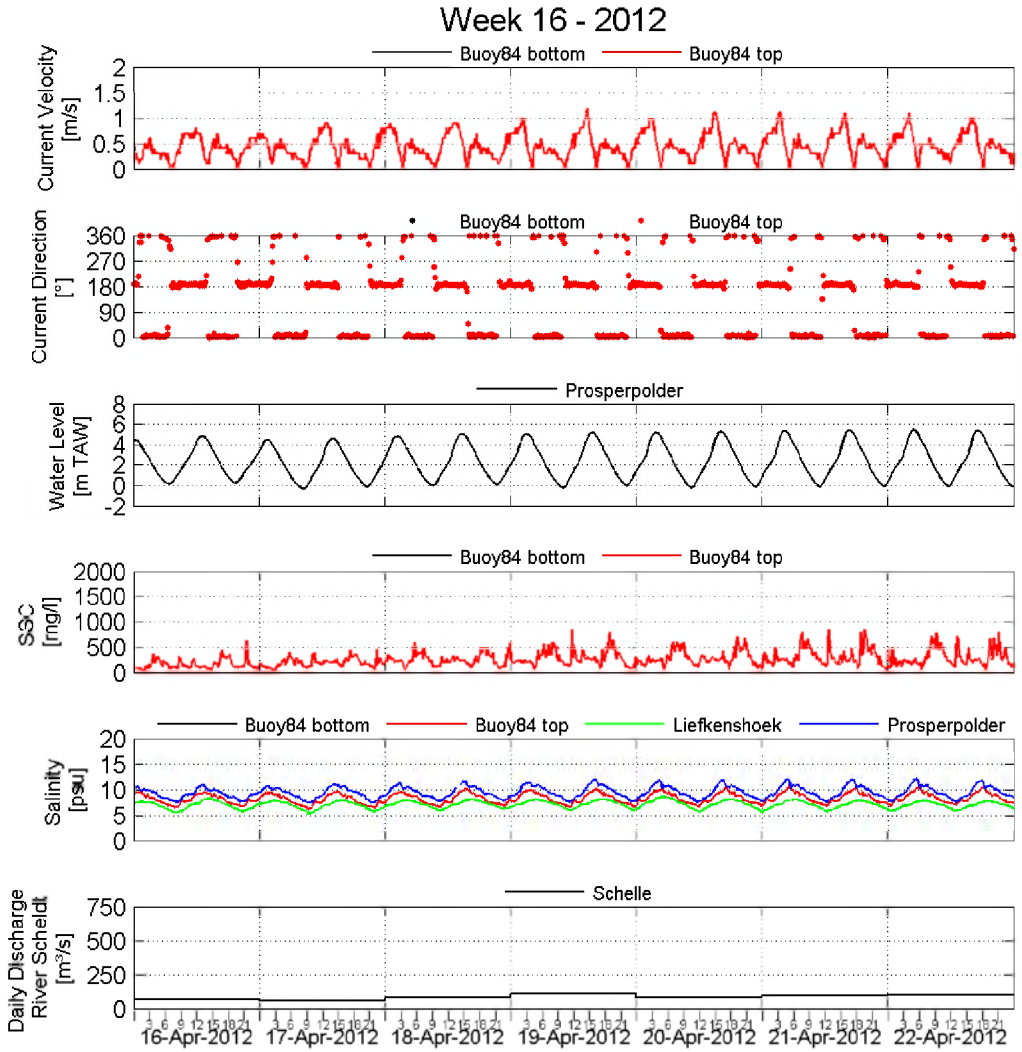
I/RA/11406/13.145/JCA

11406 - Boundary conditions report 01/04/2012 - 31/03/2013



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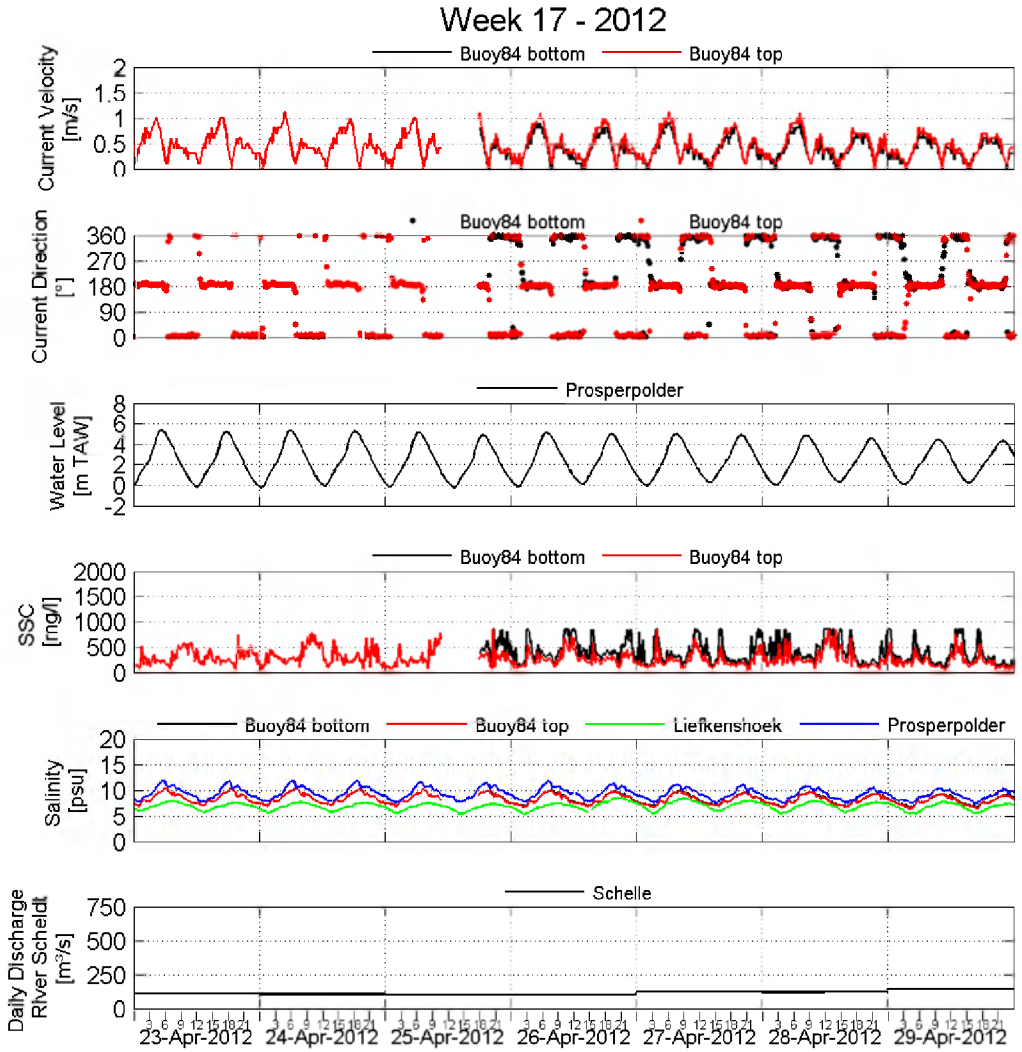

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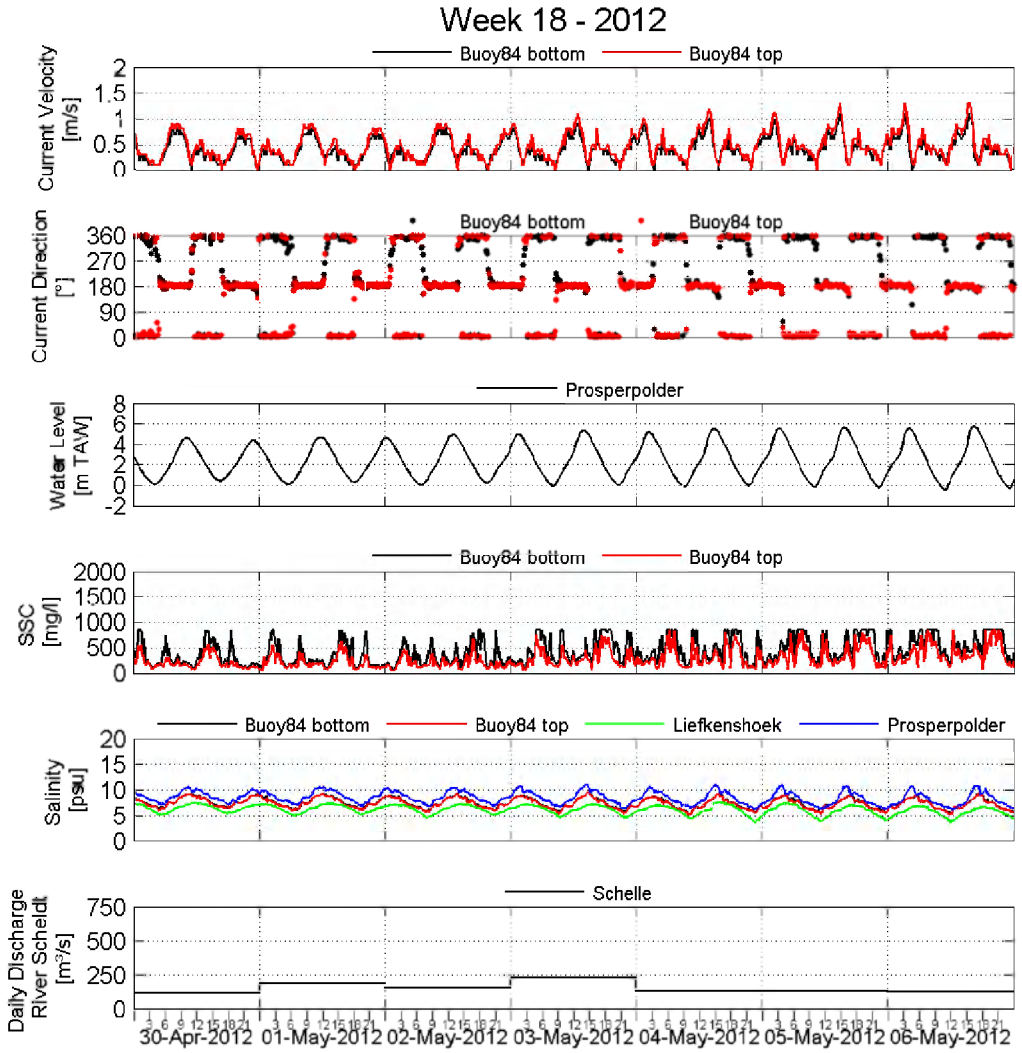

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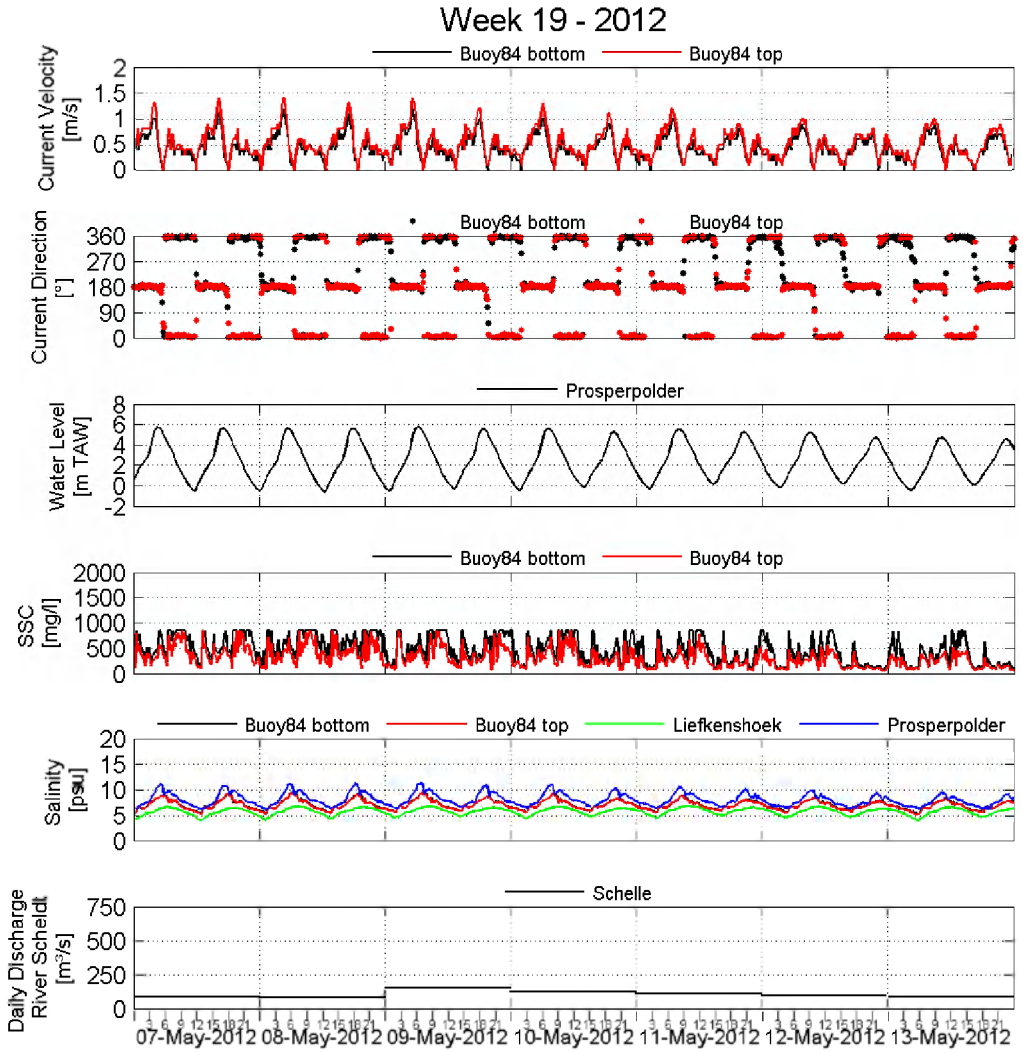

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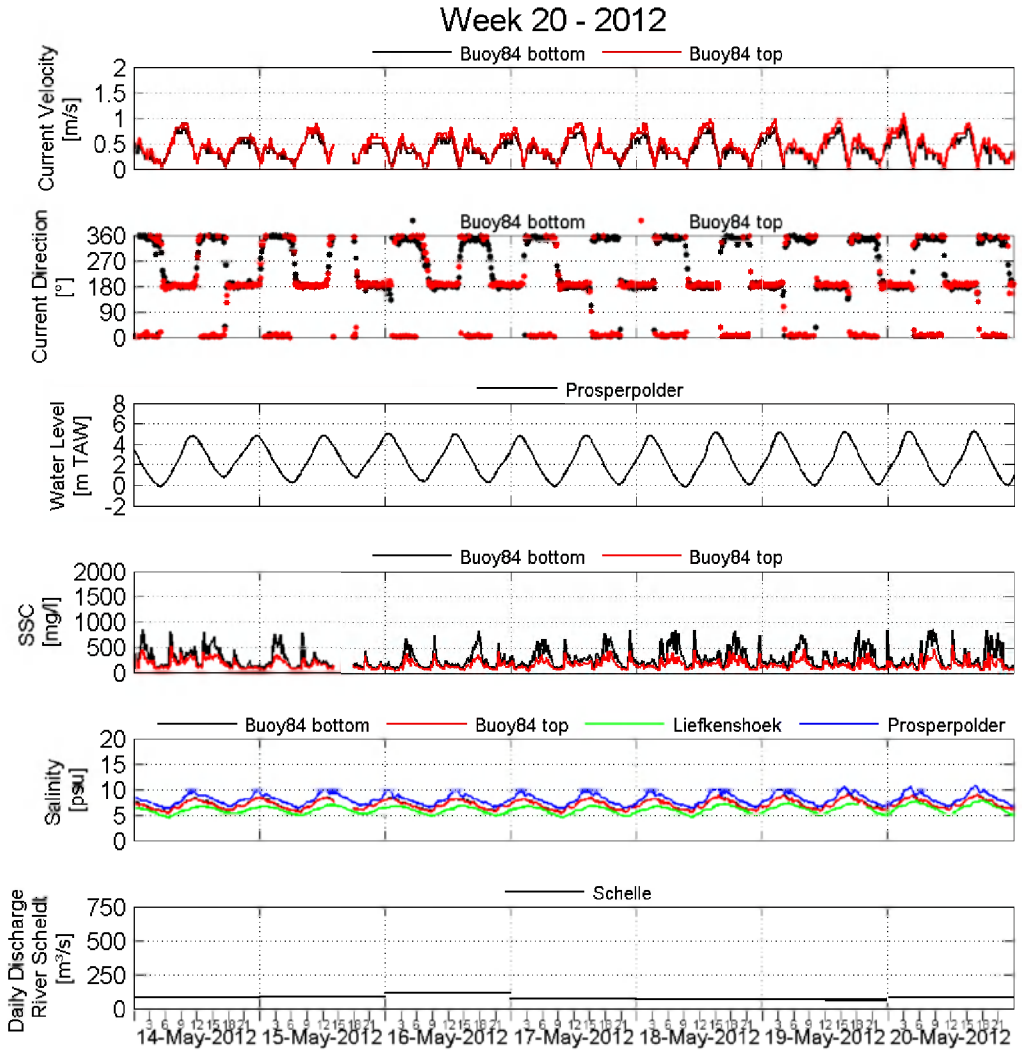

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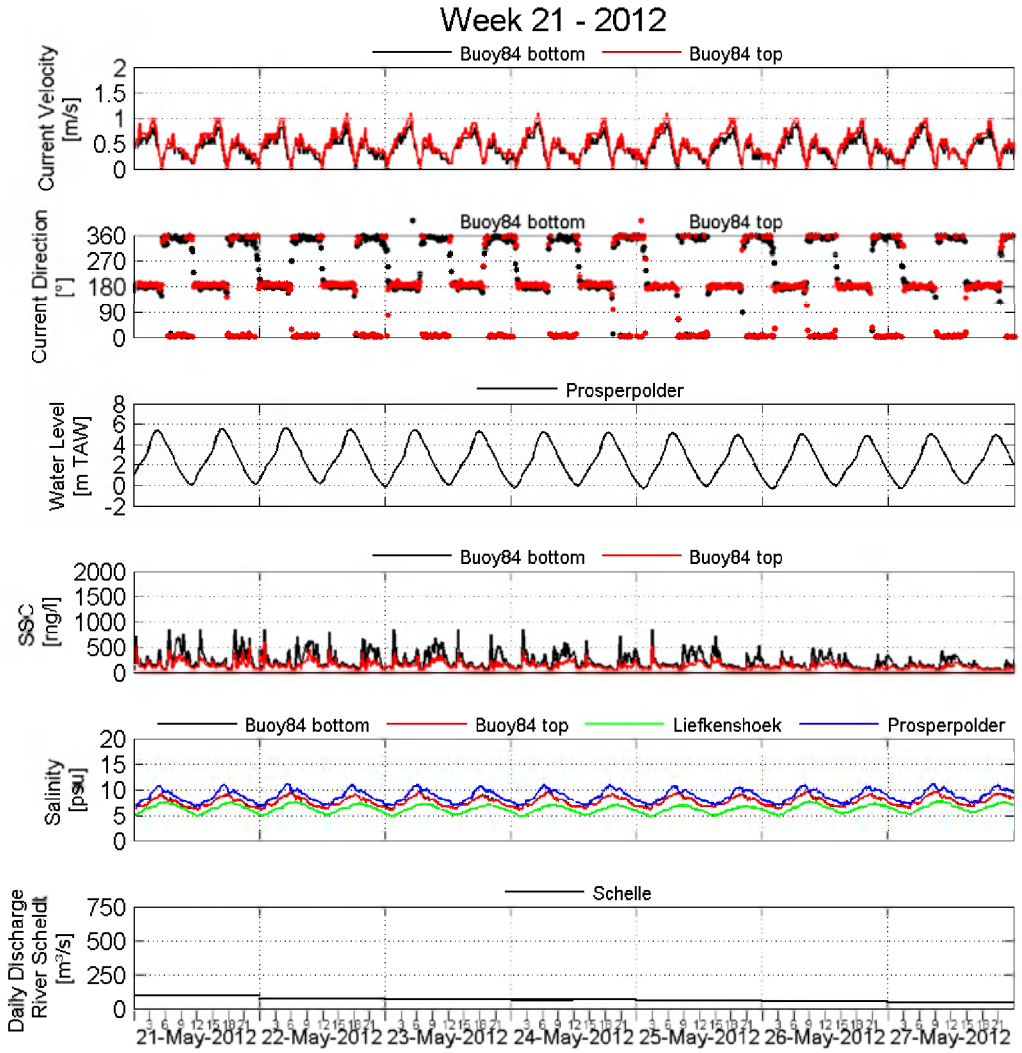

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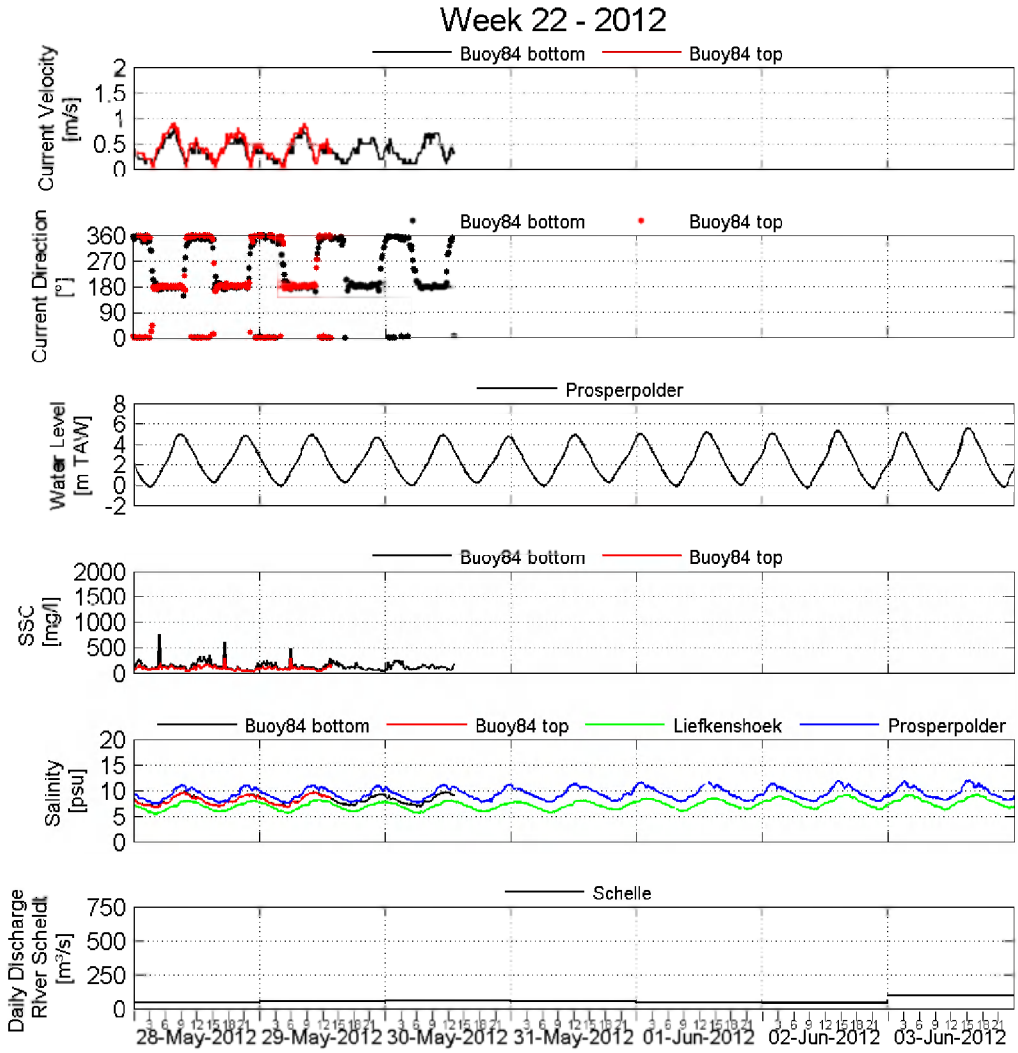

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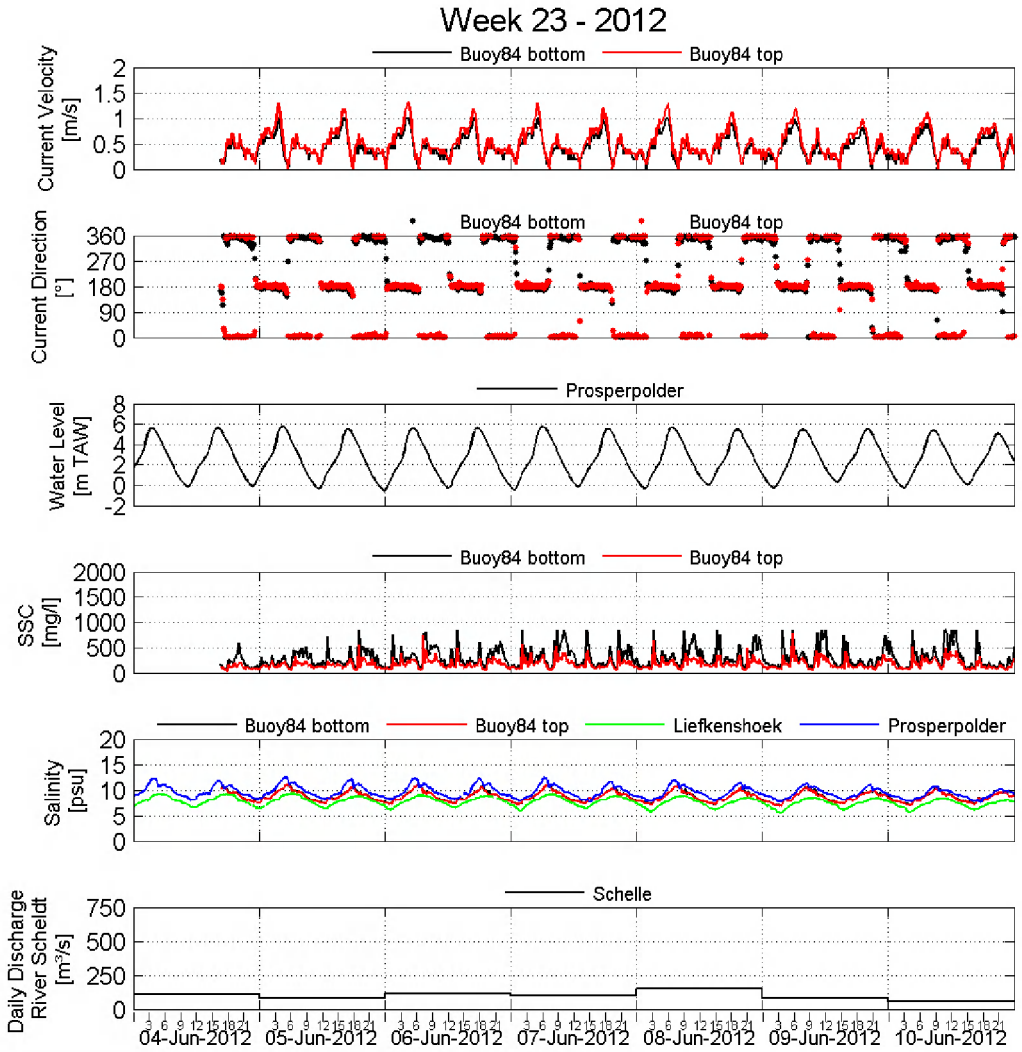

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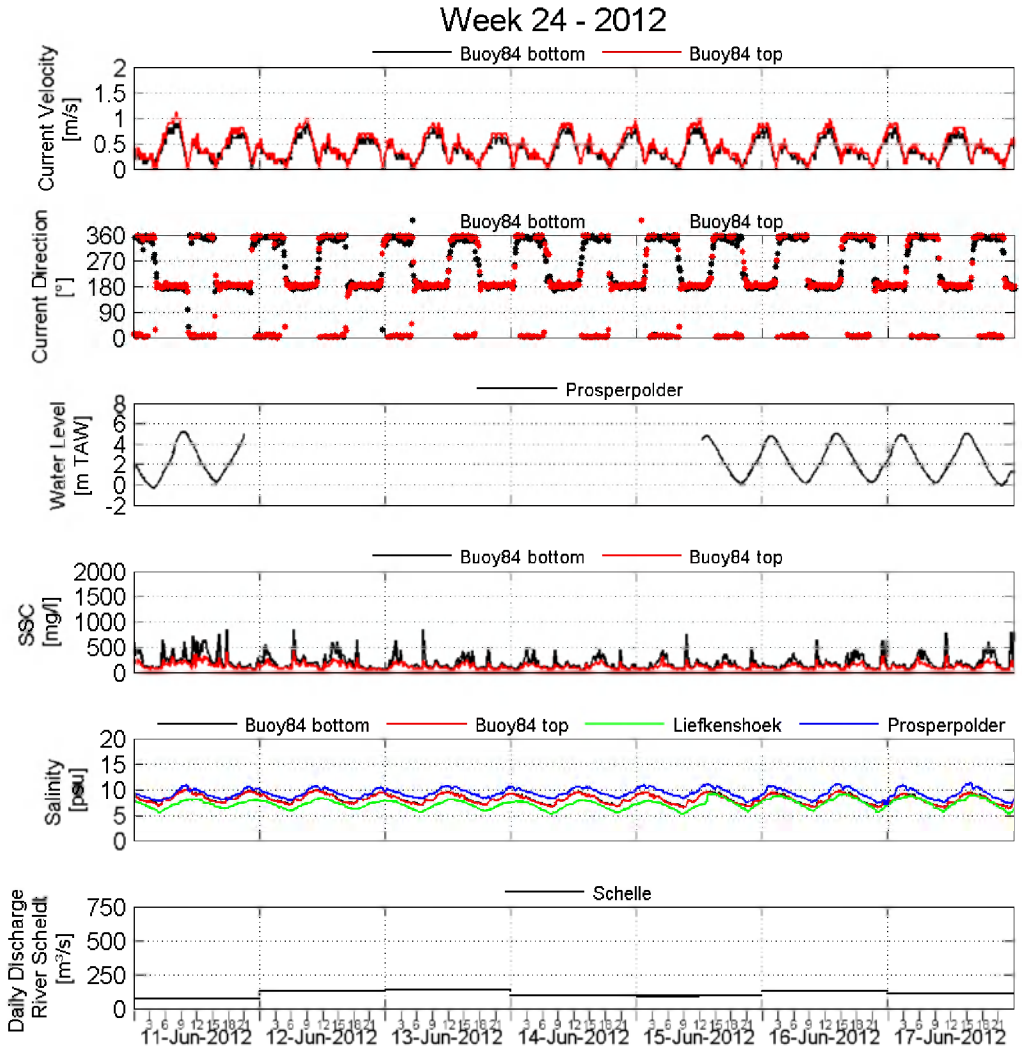

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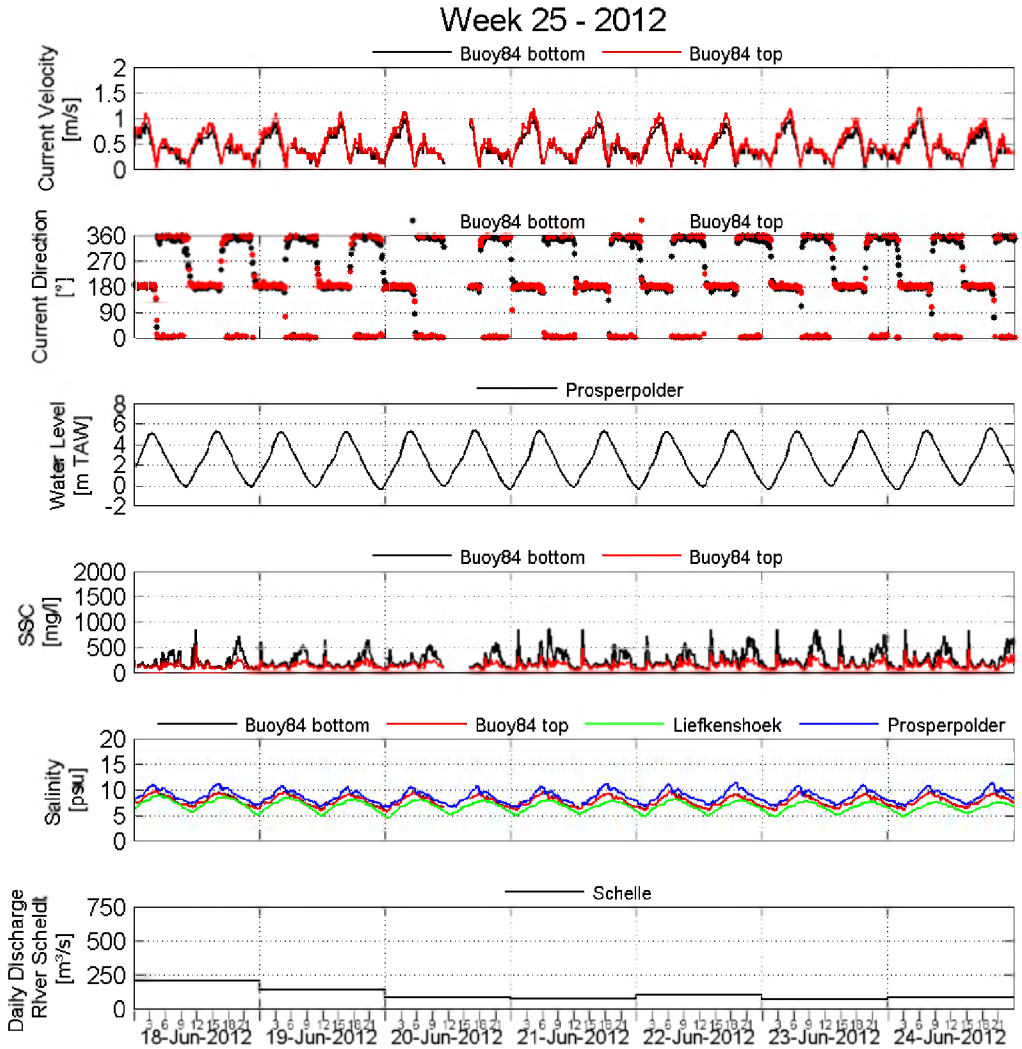

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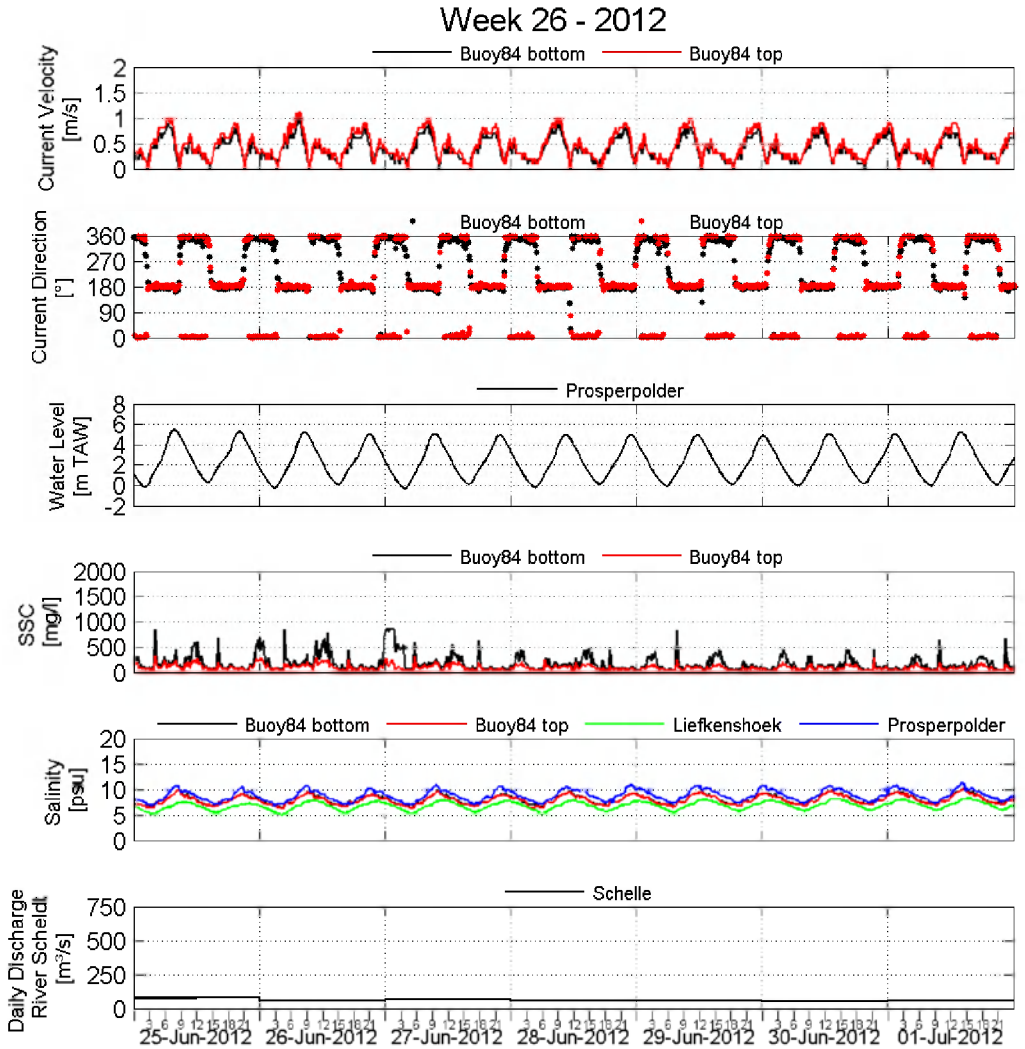

Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge	Processed by: IMDC
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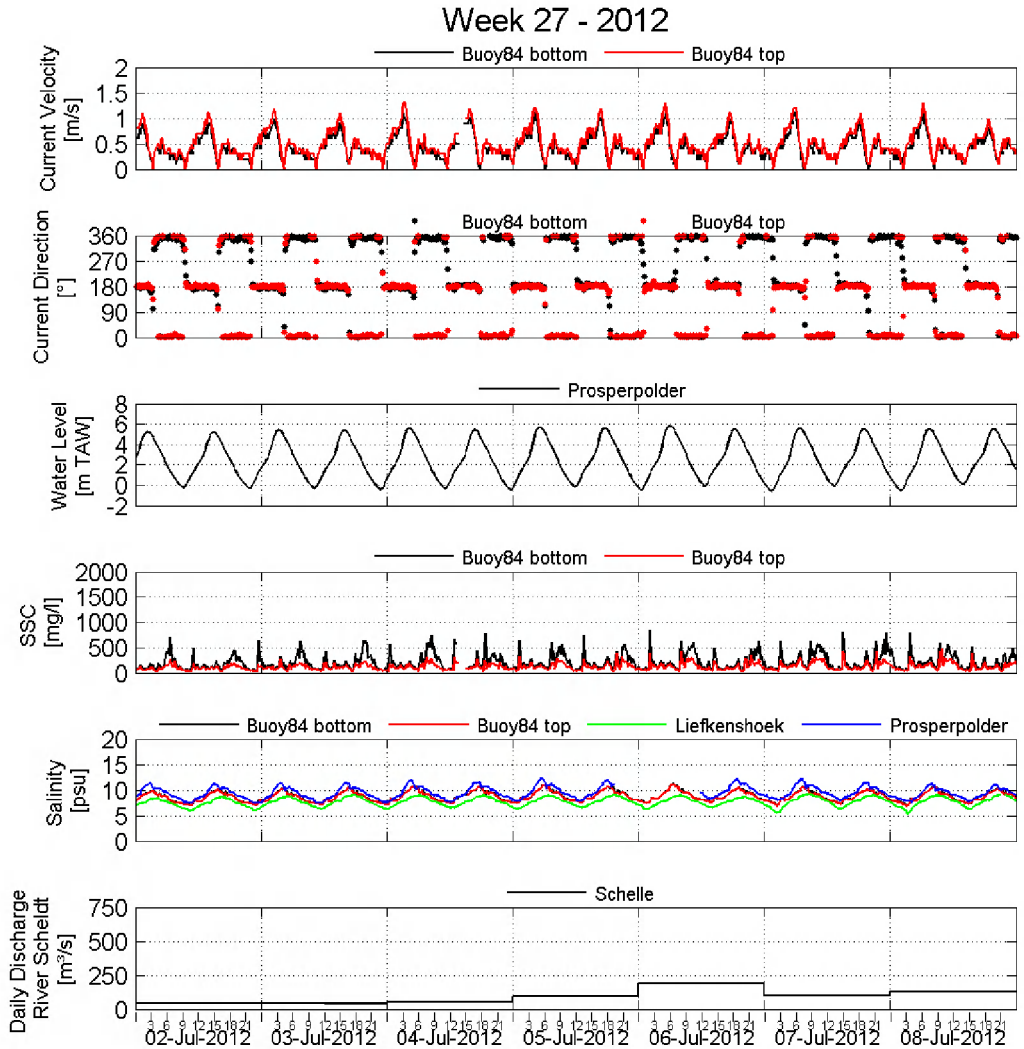

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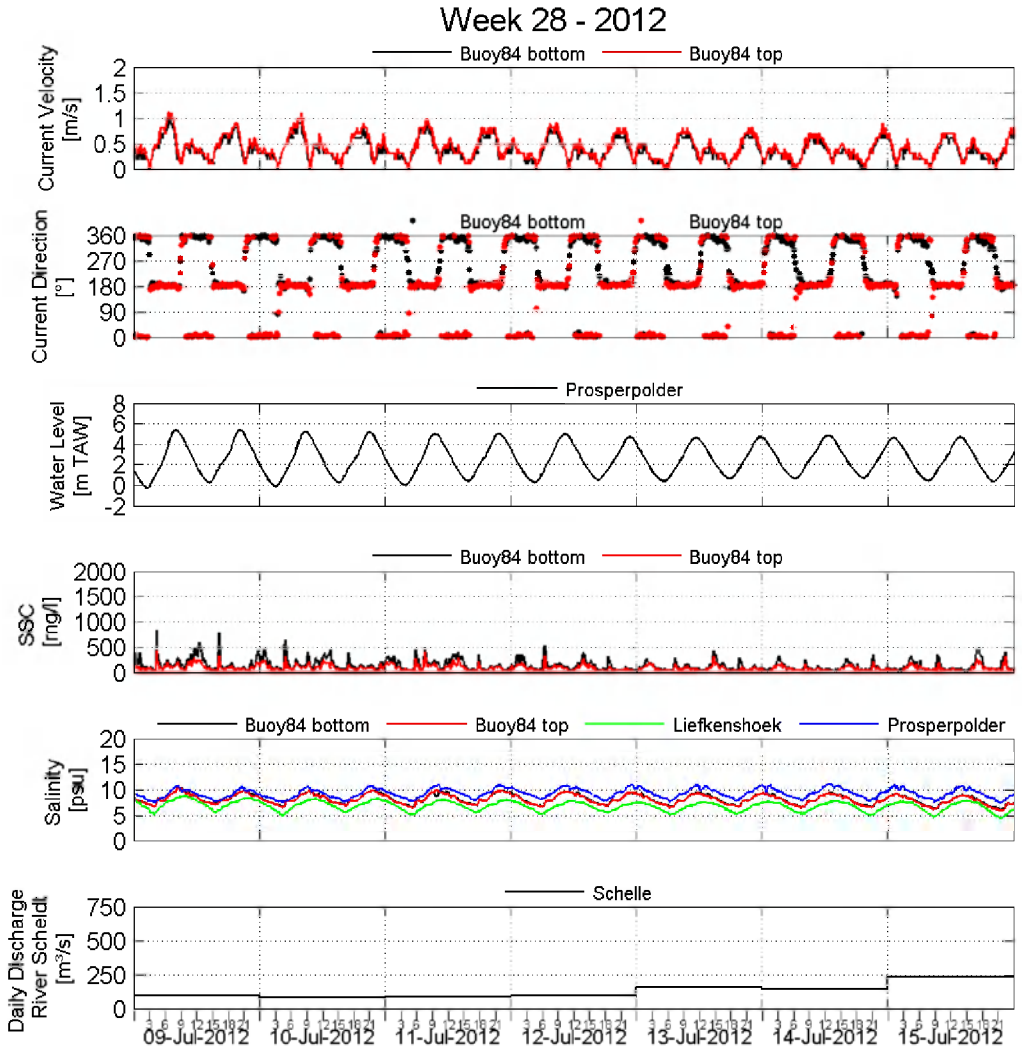

Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge	Processed by: IMDC
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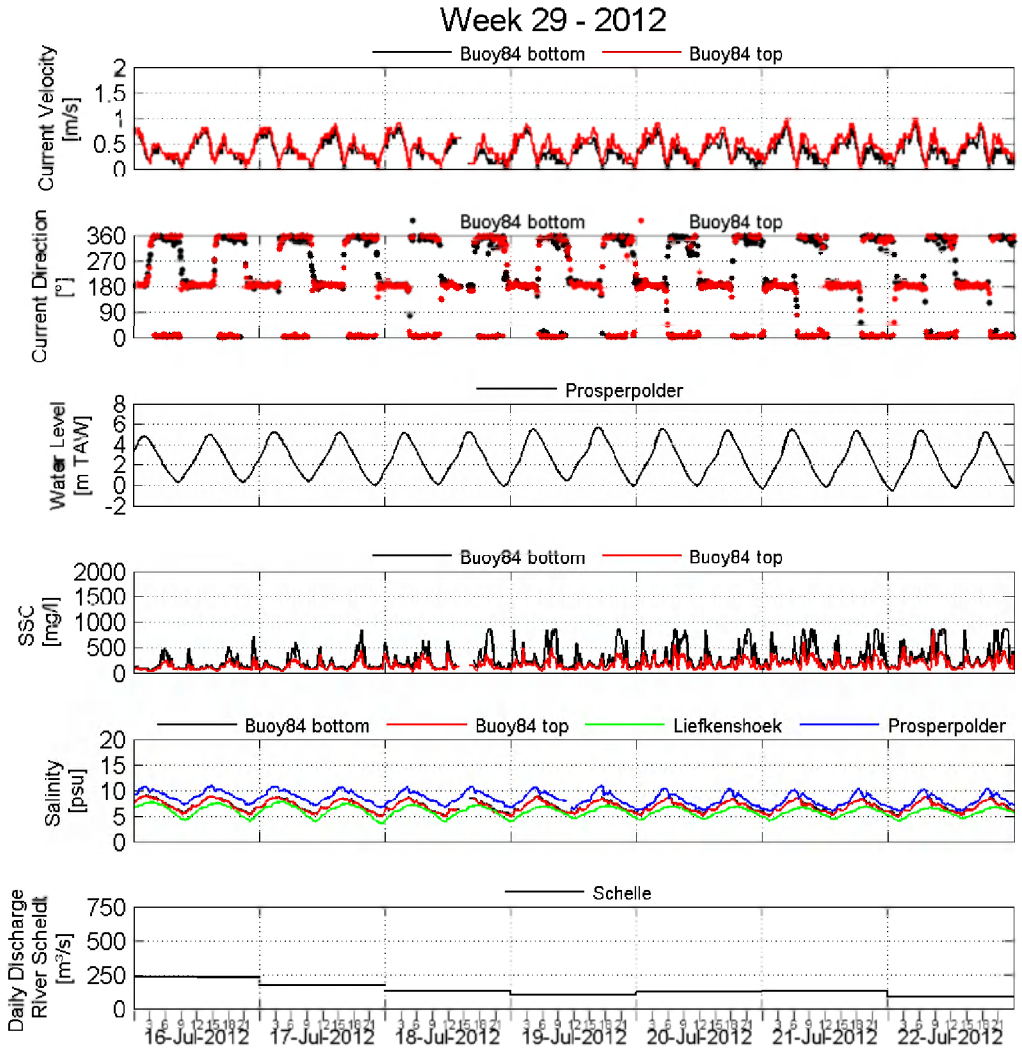

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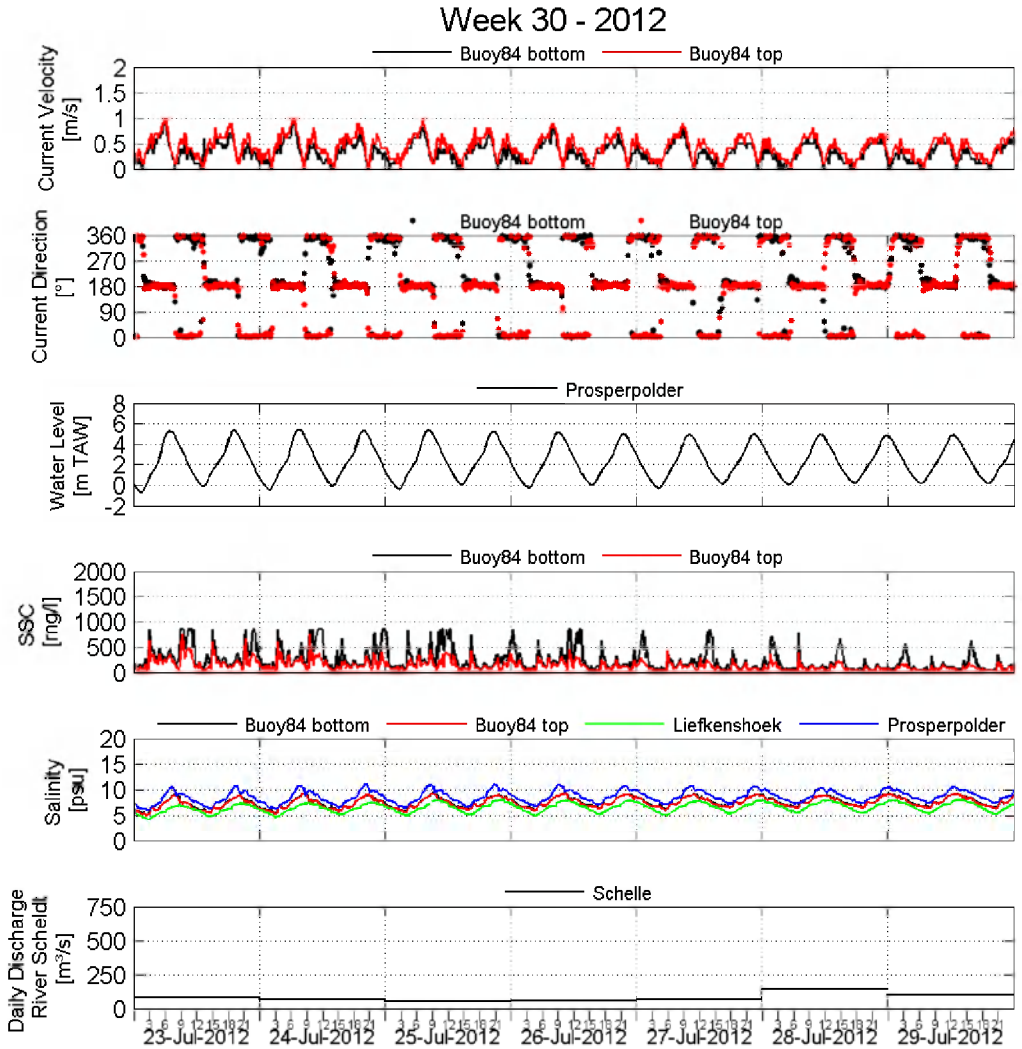

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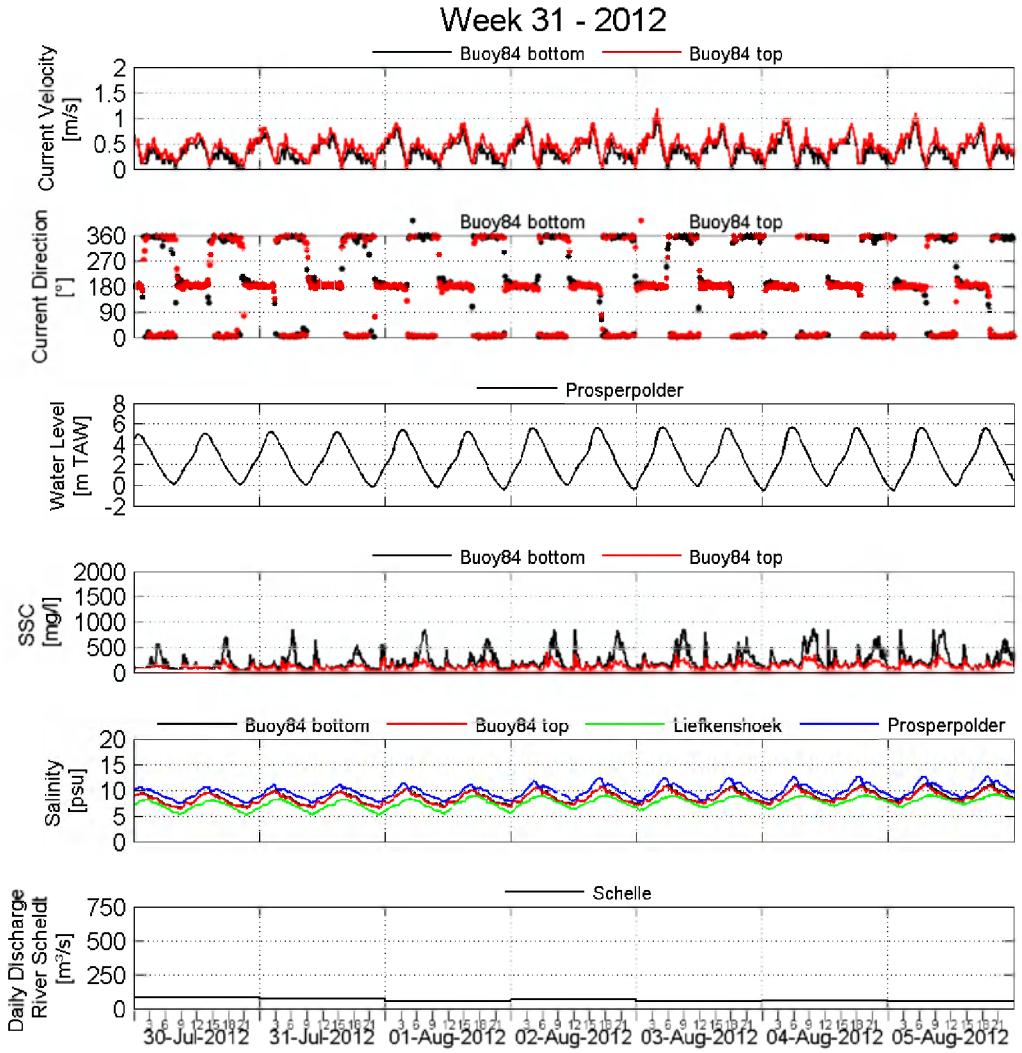

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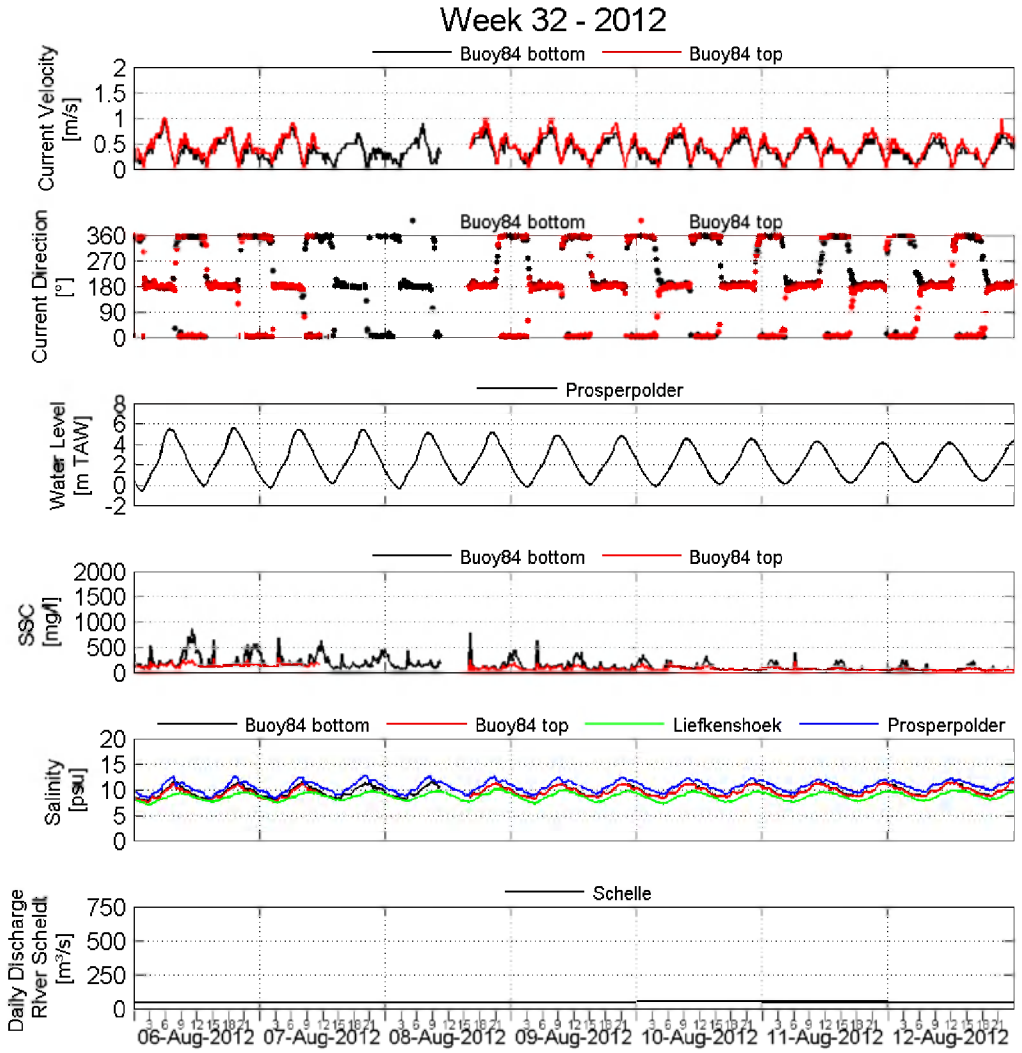


Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge

Processed by: IMDC

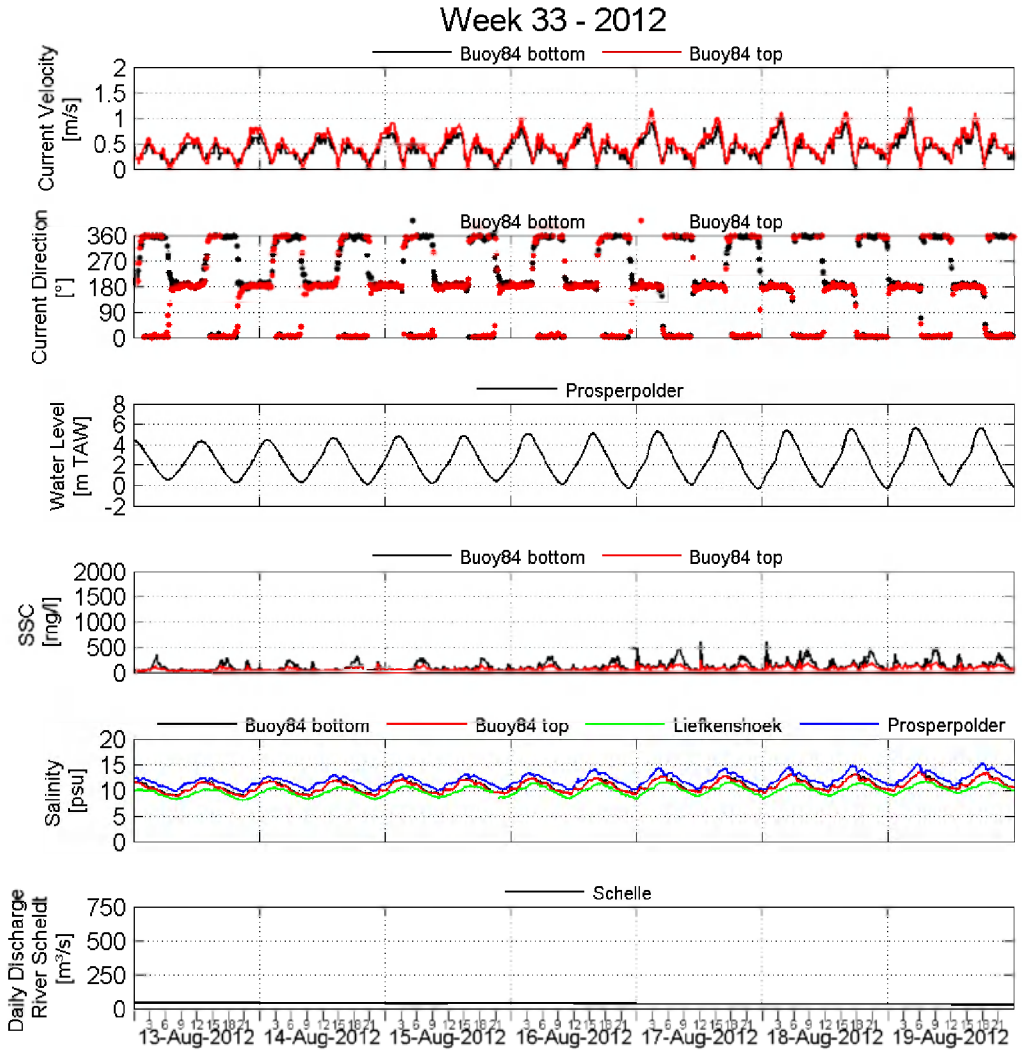
Location:

Prosperpolder, Buoy84 (top & bottom) & Liefkenshoek

In Association with: Deltares

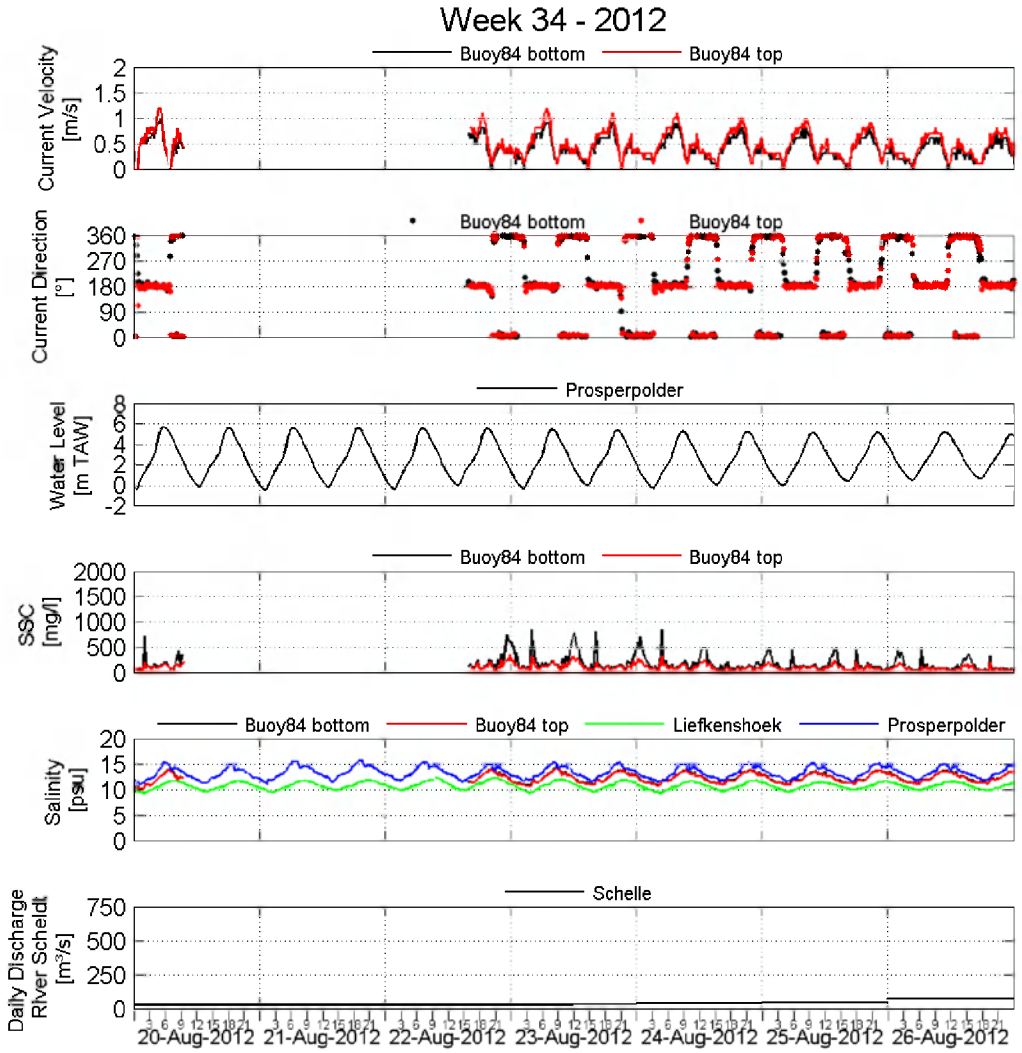
I/RA/11406/13.145/JCA

11406 - Boundary conditions report 01/04/2012 - 31/03/2013



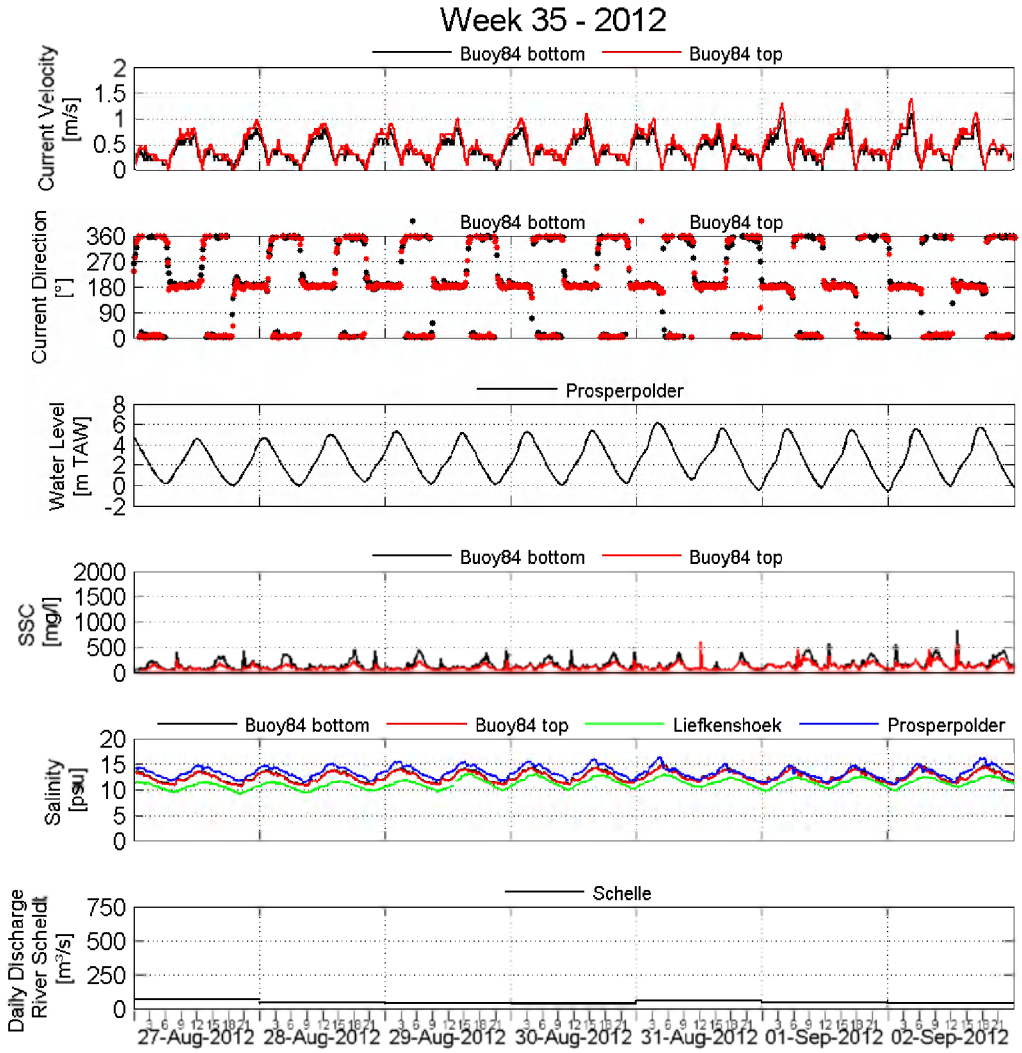
Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge	Processed by: IMDC
Location: Prosperpolder, Buoy84 (top & bottom) & Liefkenshoek	In Association with: Deltares I/RA/11406/13.145/JCA

11406 - Boundary conditions report 01/04/2012 - 31/03/2013



Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge	Processed by: IMDC
Location: Prosperpolder, Buoy84 (top & bottom) & Liefkenshoek	In Association with: Deltares I/RA/11406/13.145/JCA

11406 - Boundary conditions report 01/04/2012 - 31/03/2013



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

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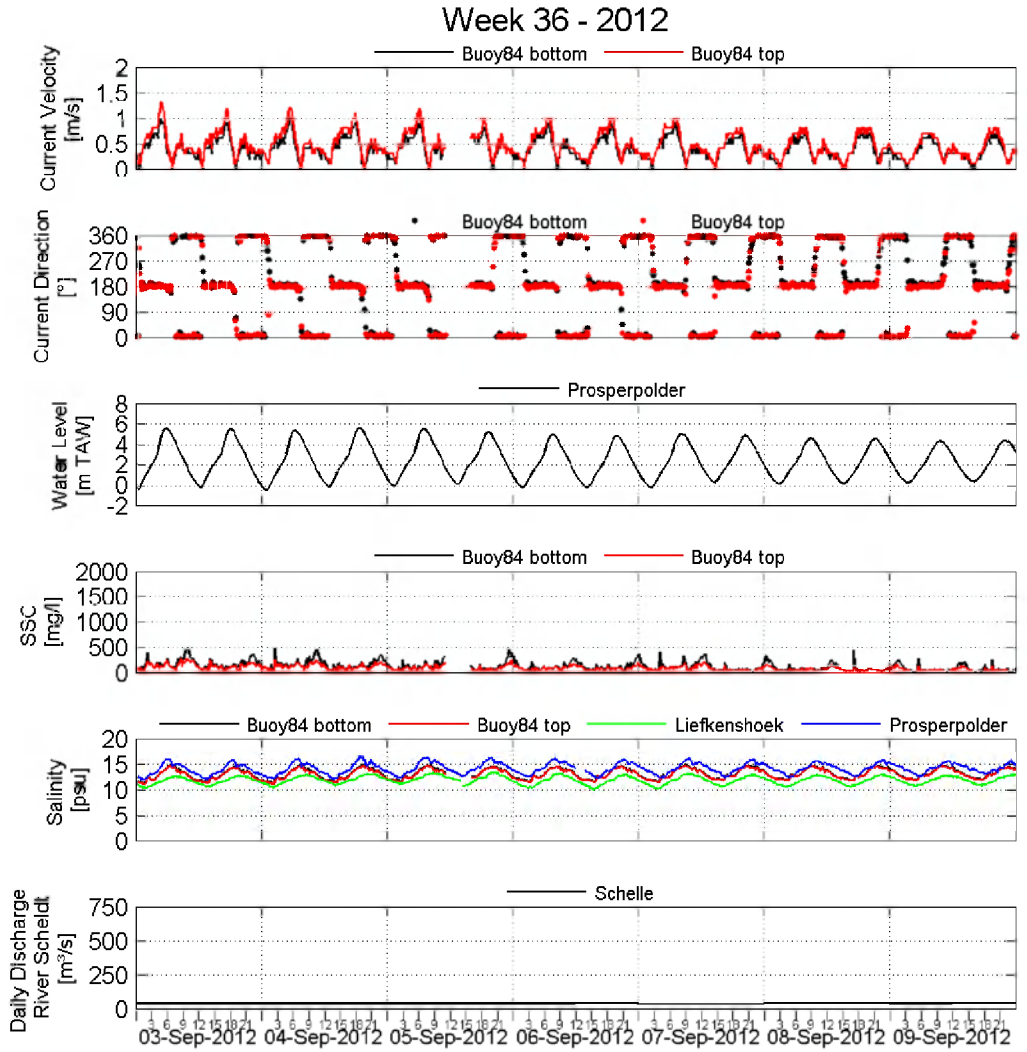
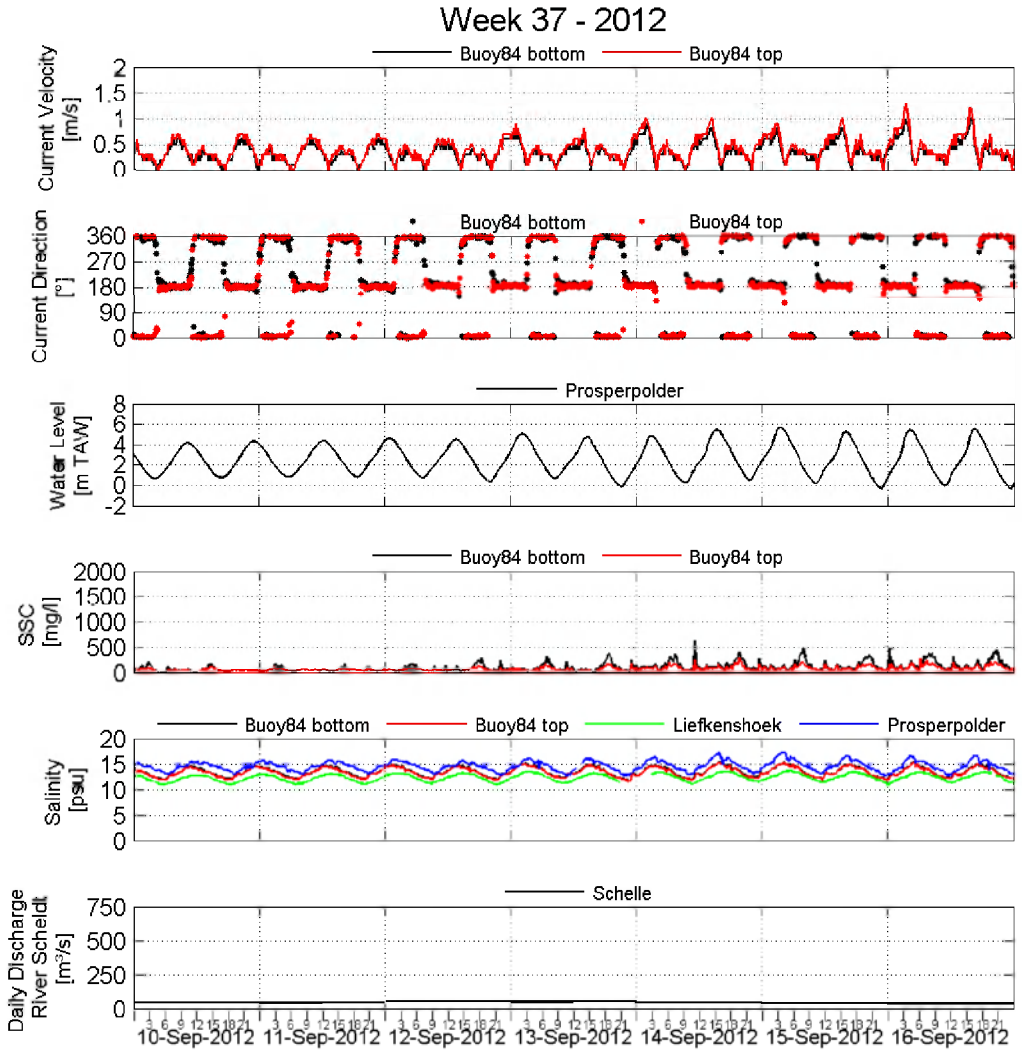


Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge	Processed by: IMDC
Location: Prosperpolder, Buoy84 (top & bottom) & Liefkenshoek	In Association with: Deltares I/RA/11406/13.145/JCA

11406 - Boundary conditions report 01/04/2012 - 31/03/2013



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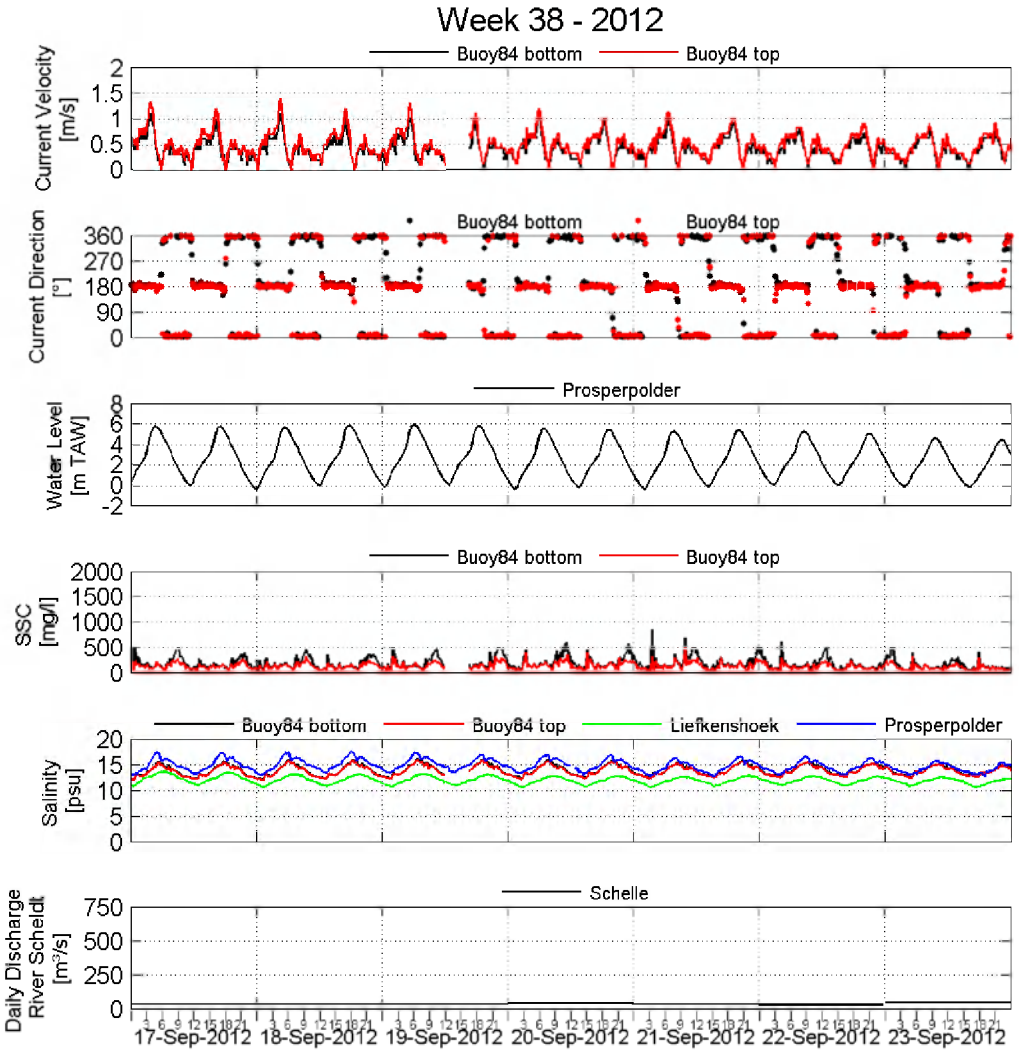

Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge	Processed by: IMDC
Location: Prosperpolder, Buoy84 (top & bottom) & Liefkenshoek	In Association with: Deltares I/RA/11406/13.145/JCA

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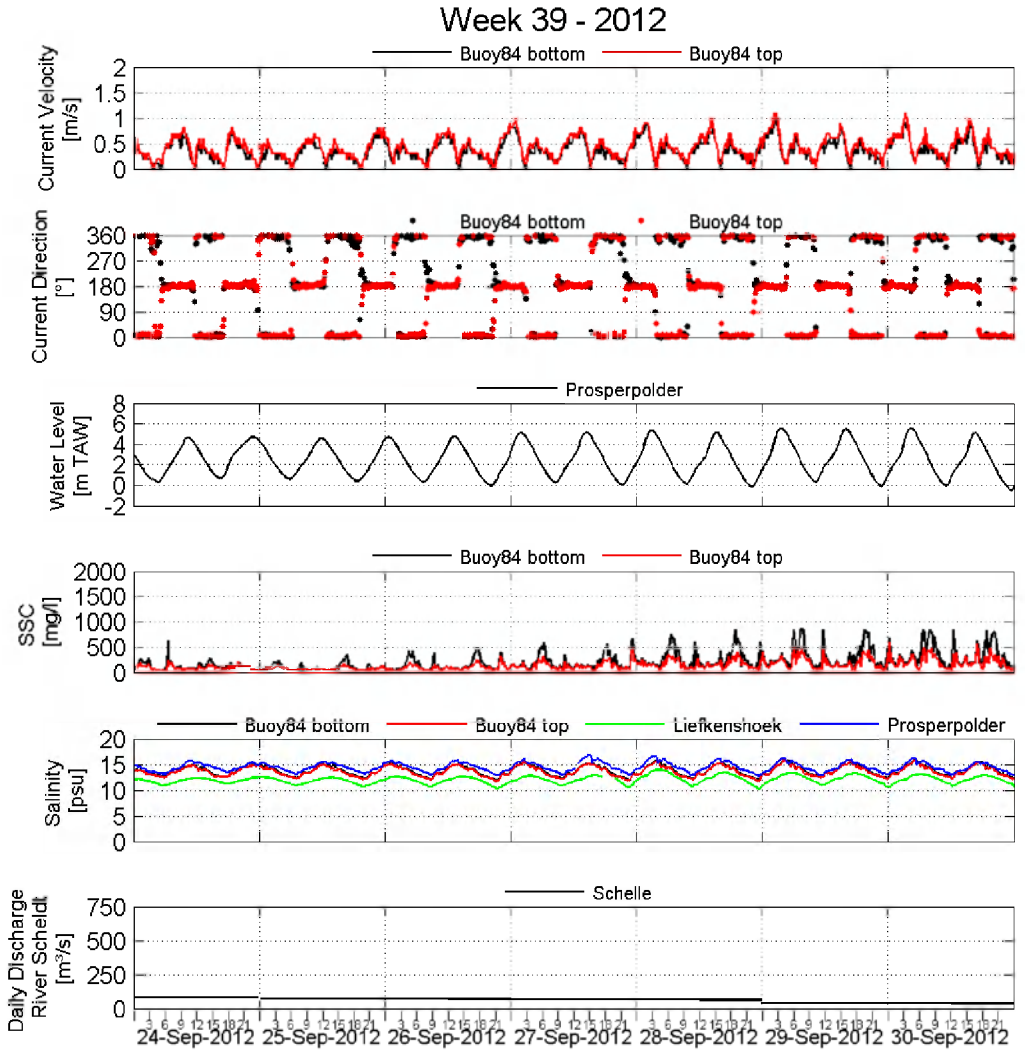

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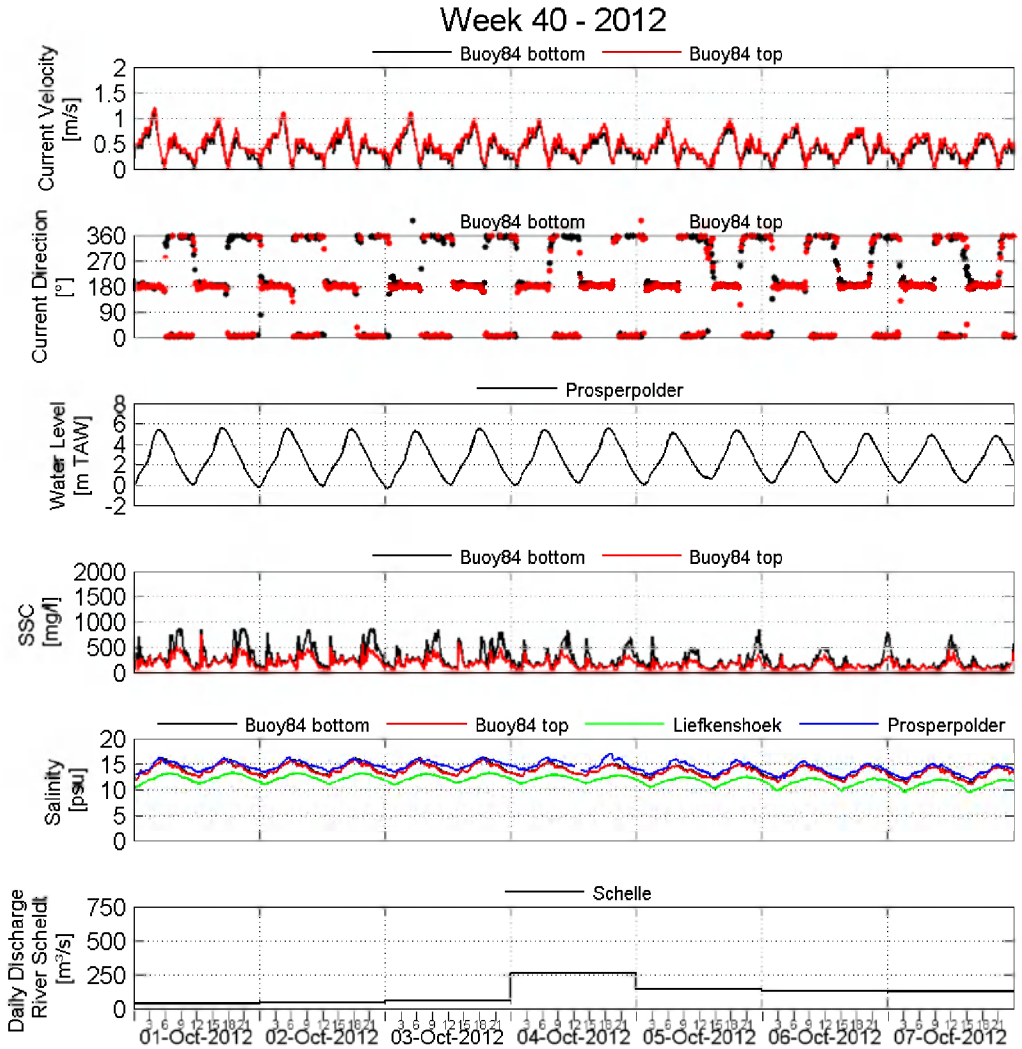

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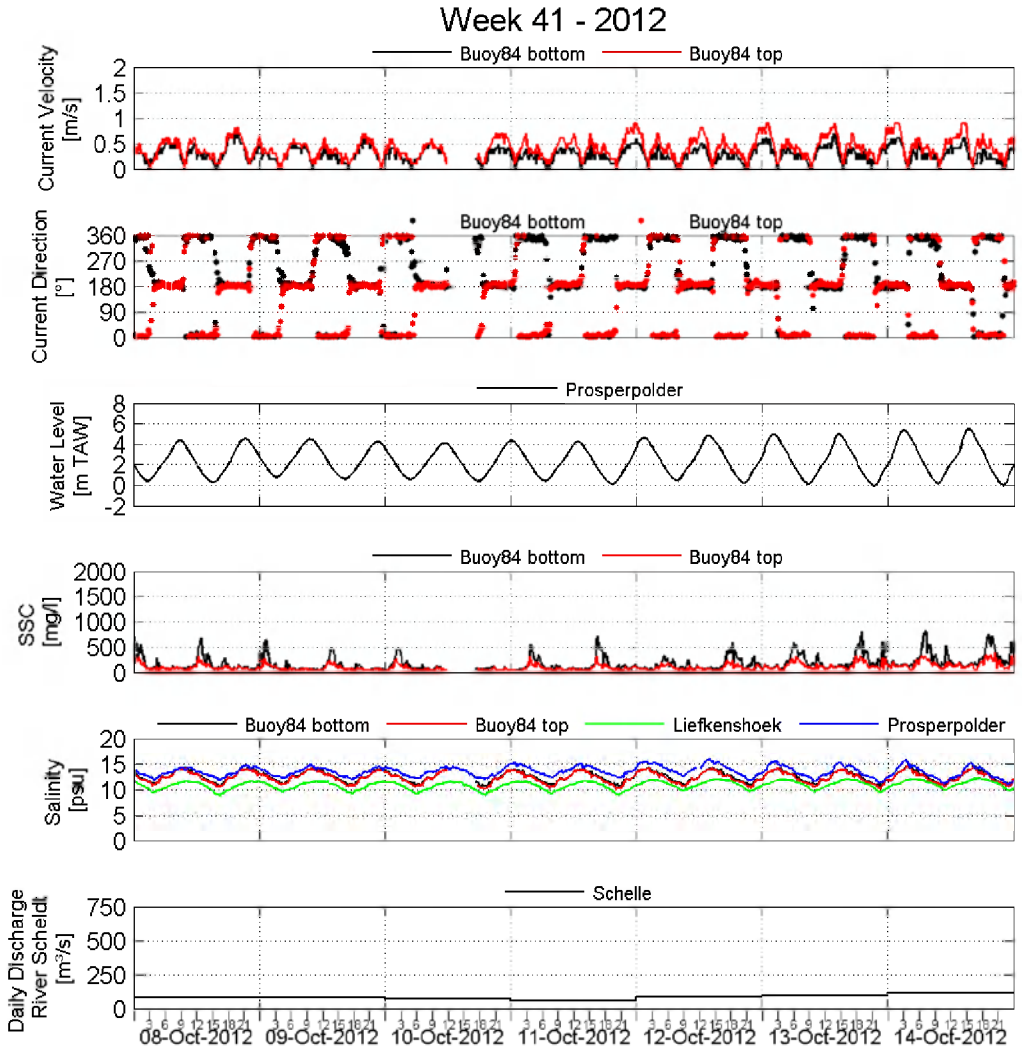

Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge	Processed by: IMDC
Location: Prosperpolder, Buoy84 (top & bottom) & Liefkenshoek	In Association with: Deltares I/RA/11406/13.145/JCA

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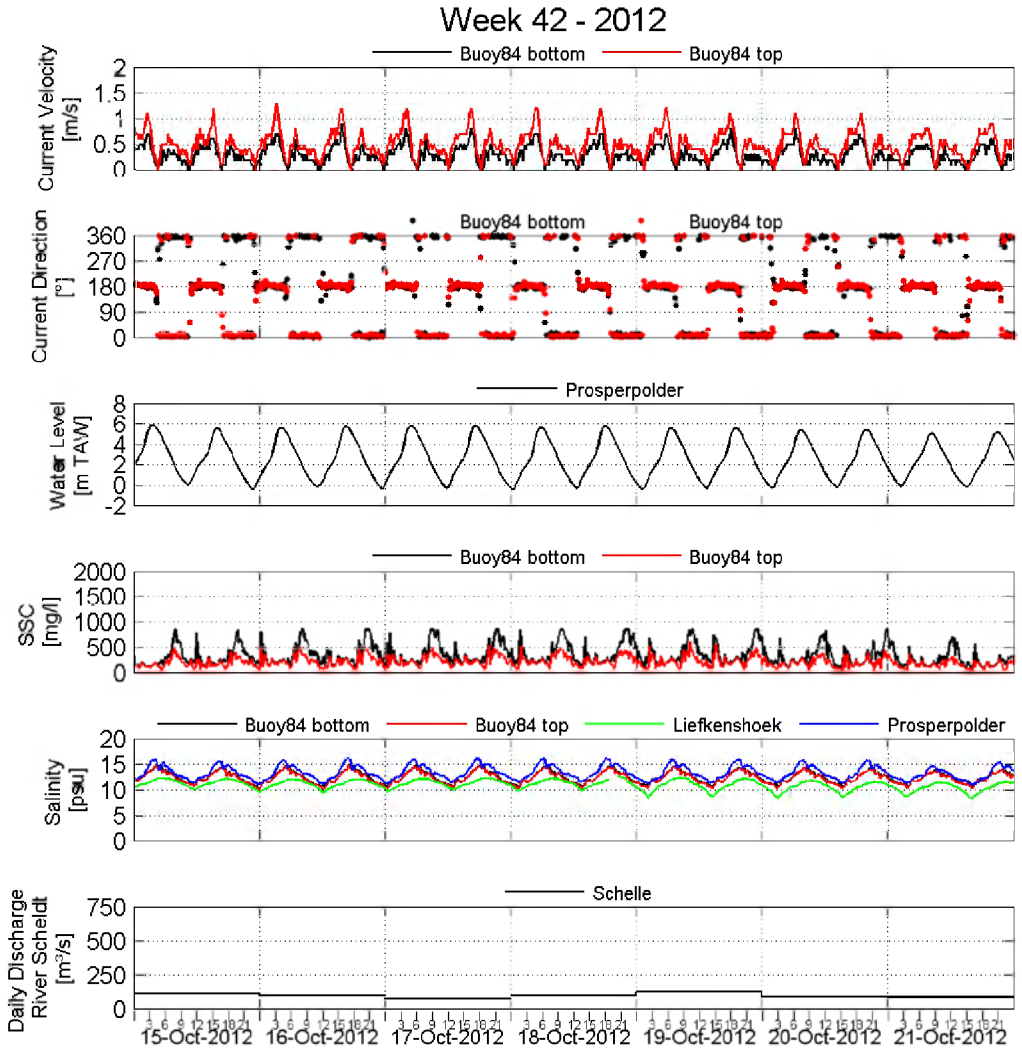

Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge	Processed by: IMDC
Location: Prosperpolder, Buoy84 (top & bottom) & Liefkenshoek	In Association with: Deltares I/RA/11406/13.145/JCA

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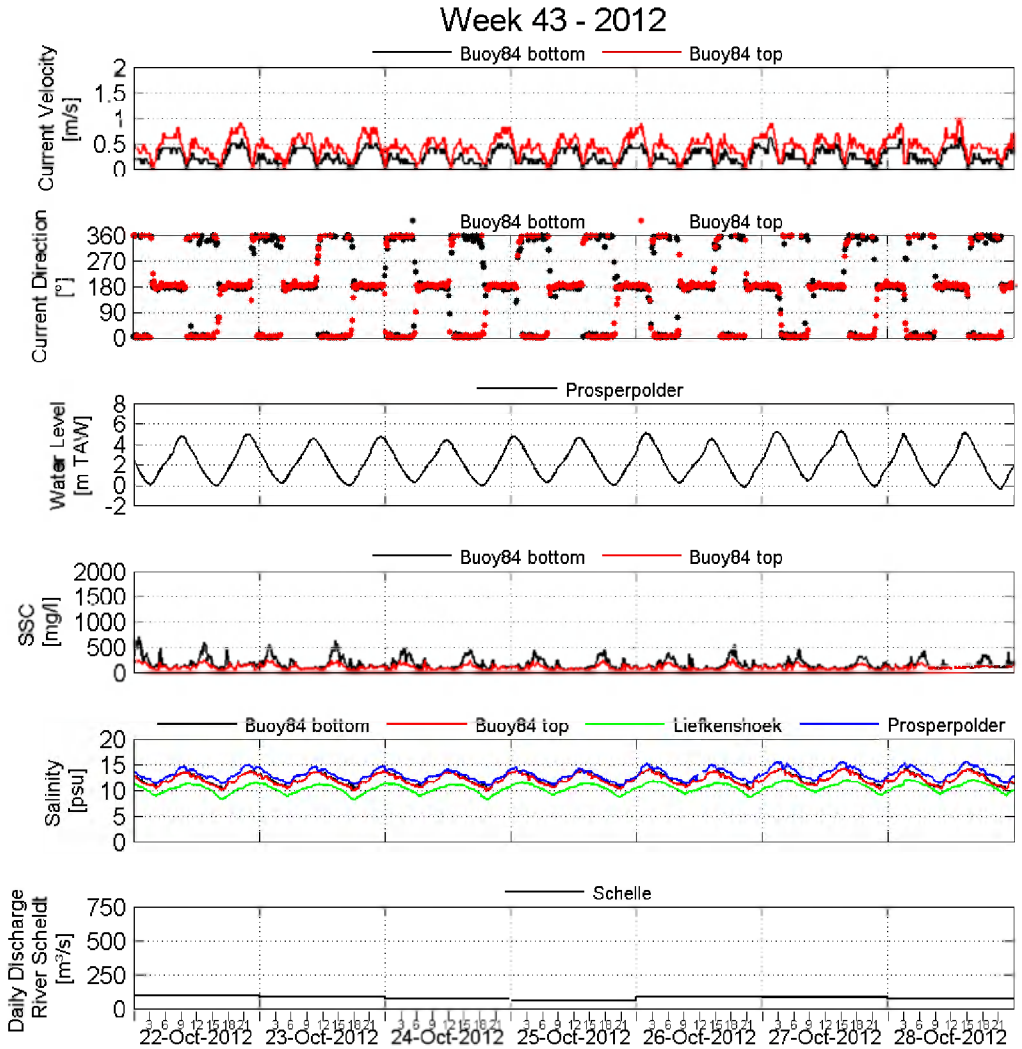

Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge

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Location:

Prosperpolder, Buoy84 (top & bottom) & Liefkenshoek

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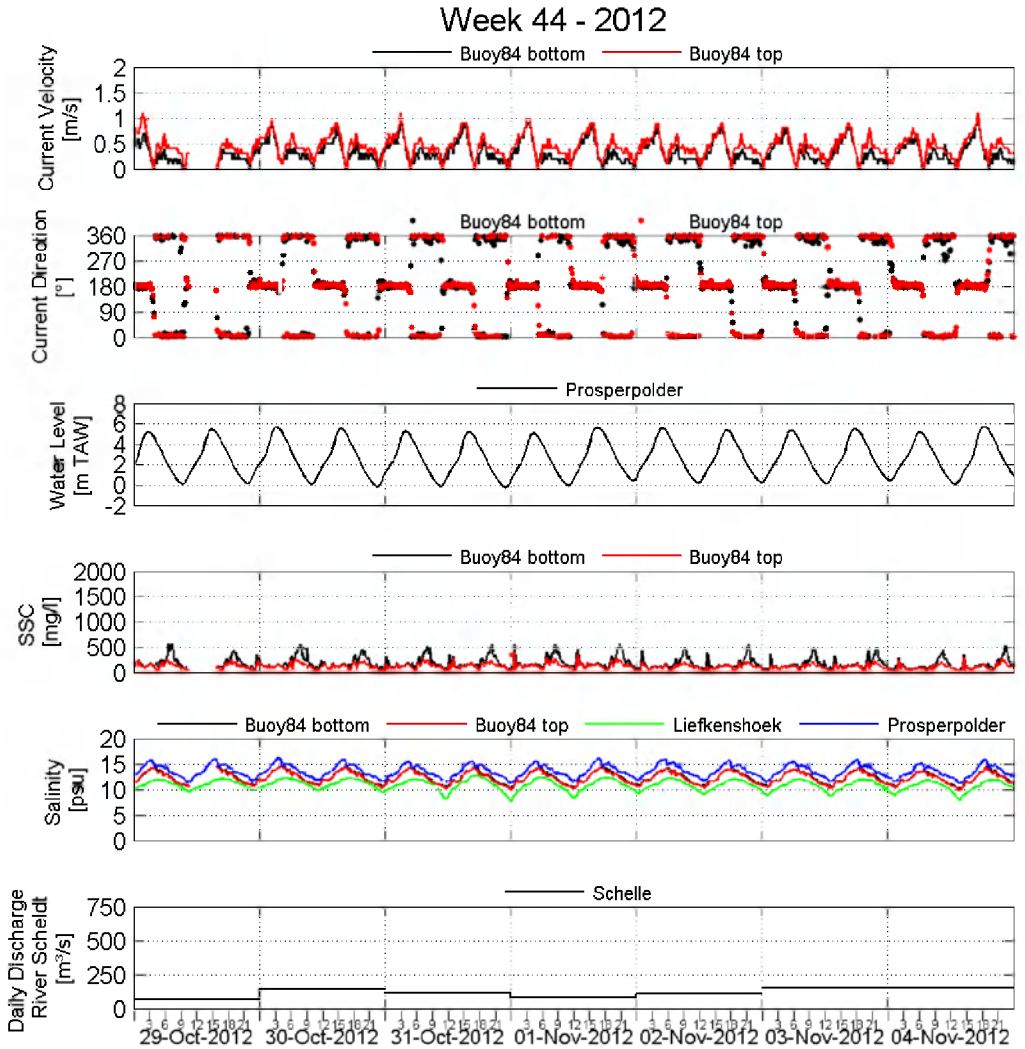

Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge

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Location:

Prosperpolder, Buoy84 (top & bottom) & Liefkenshoek

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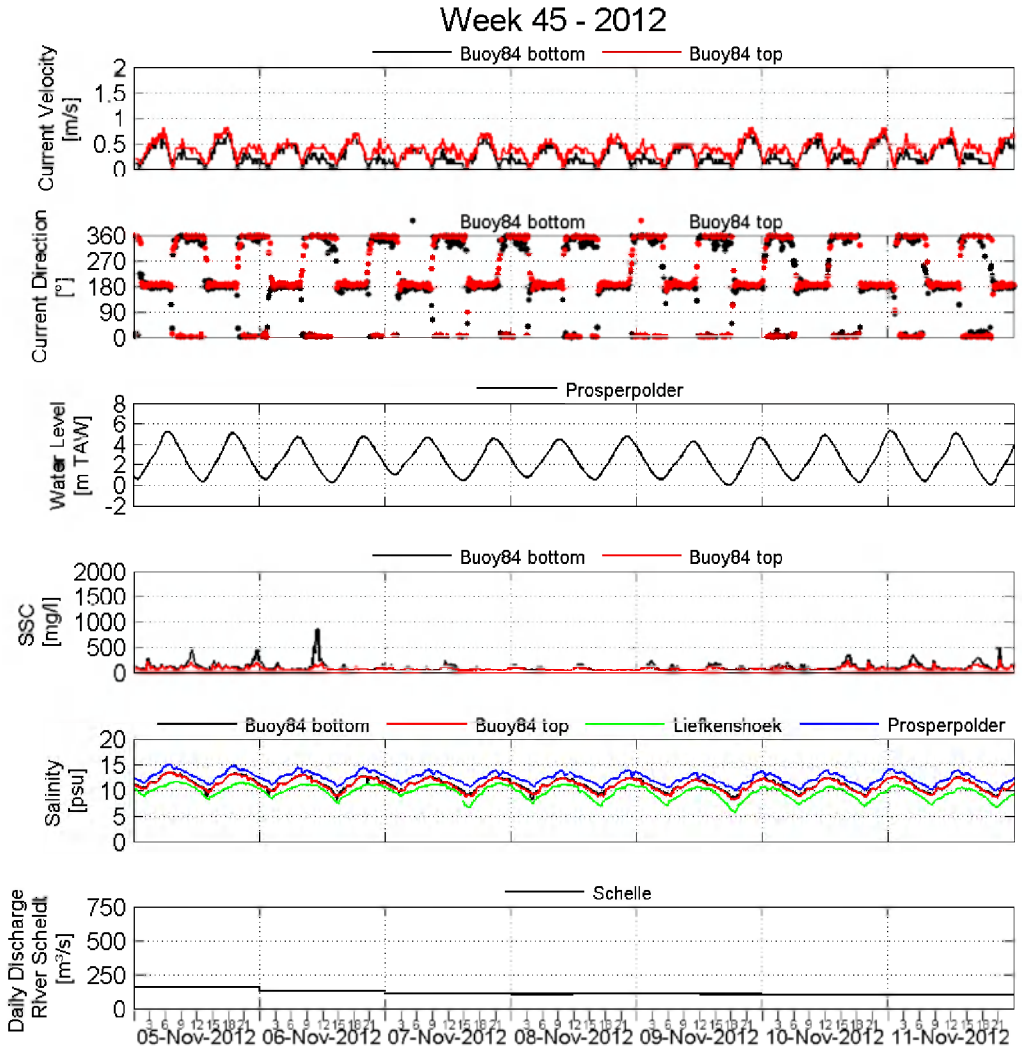
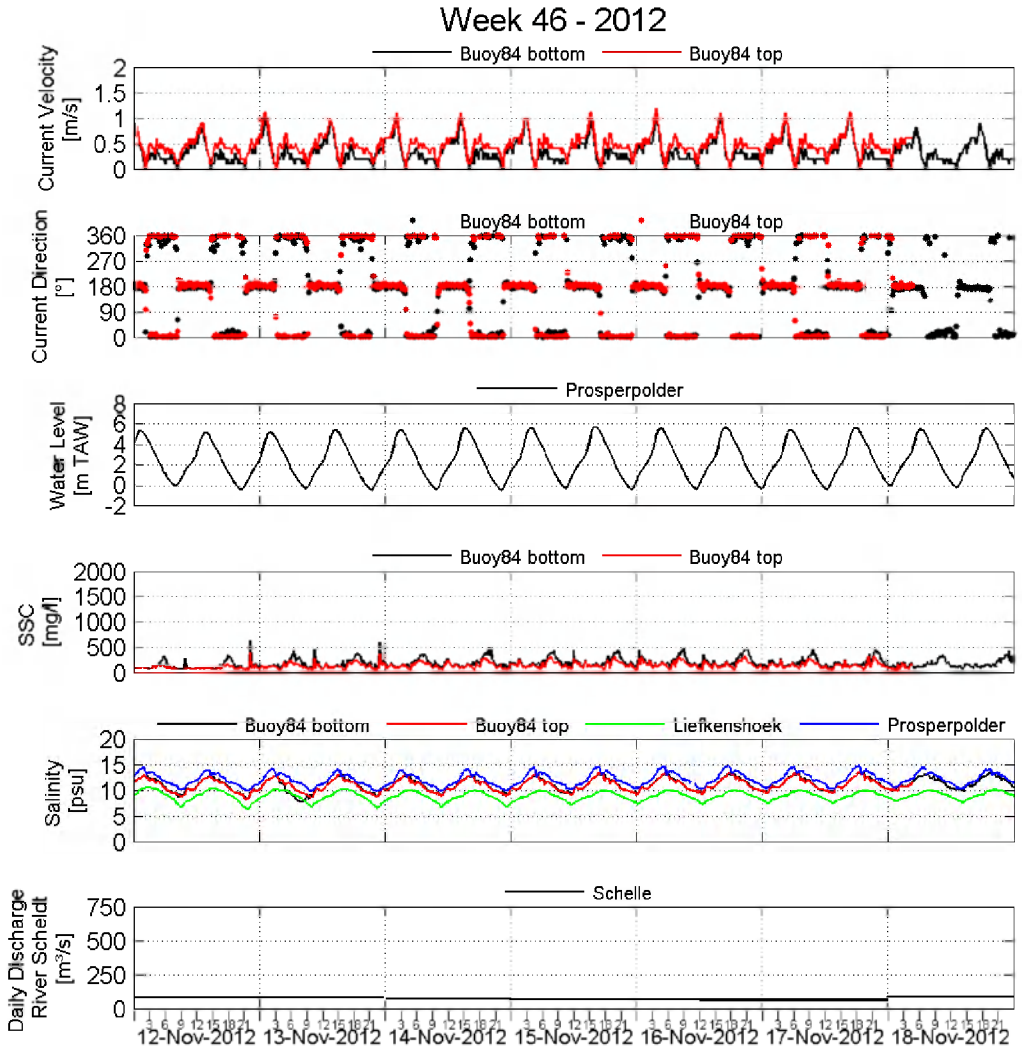


Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge	Processed by: IMDC
Location: Prosperpolder, Buoy84 (top & bottom) & Liefkenshoek	In Association with: Deltares I/RA/11406/13.145/JCA

11406 - Boundary conditions report 01/04/2012 - 31/03/2013



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

Processed by: IMDC

Location:

Prosperpolder, Buoy84 (top & bottom) & Liefkenshoek

In Association with: Deltares

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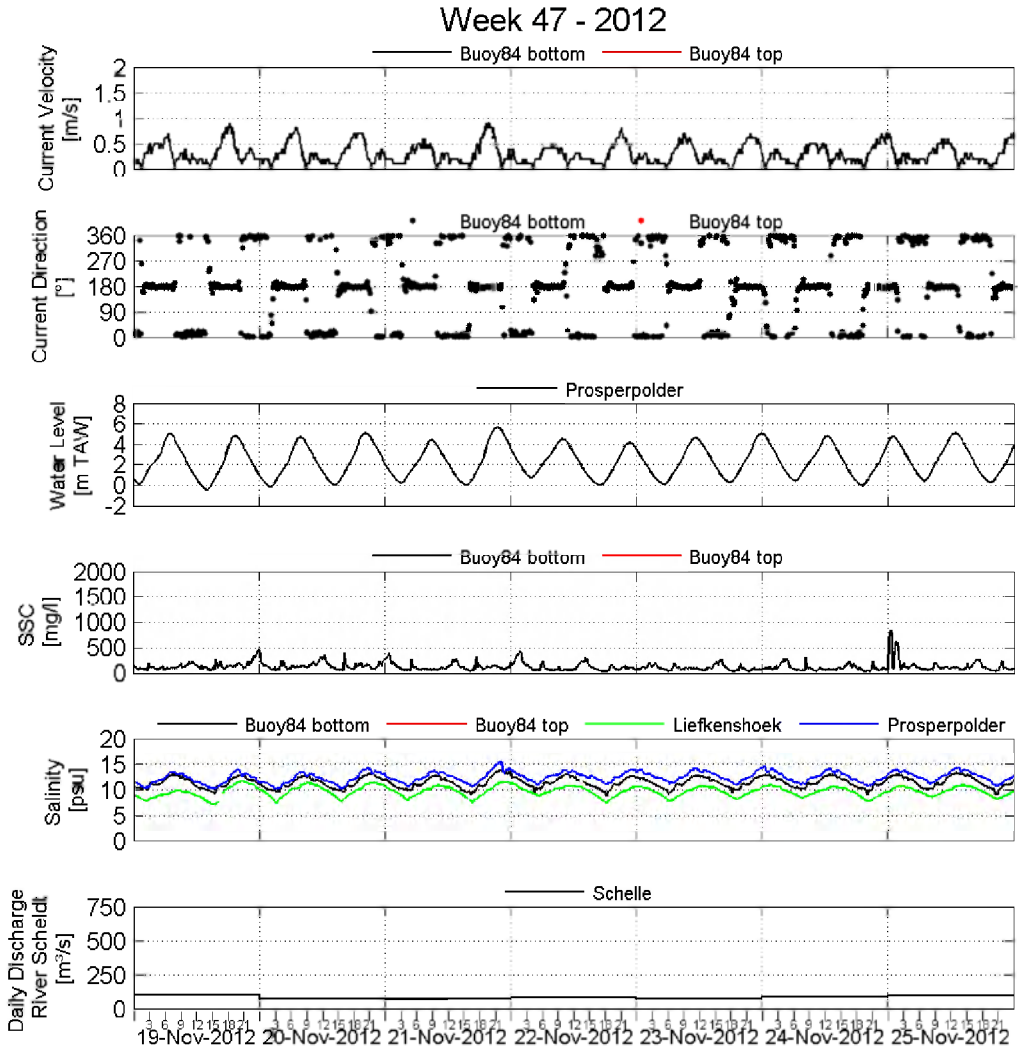
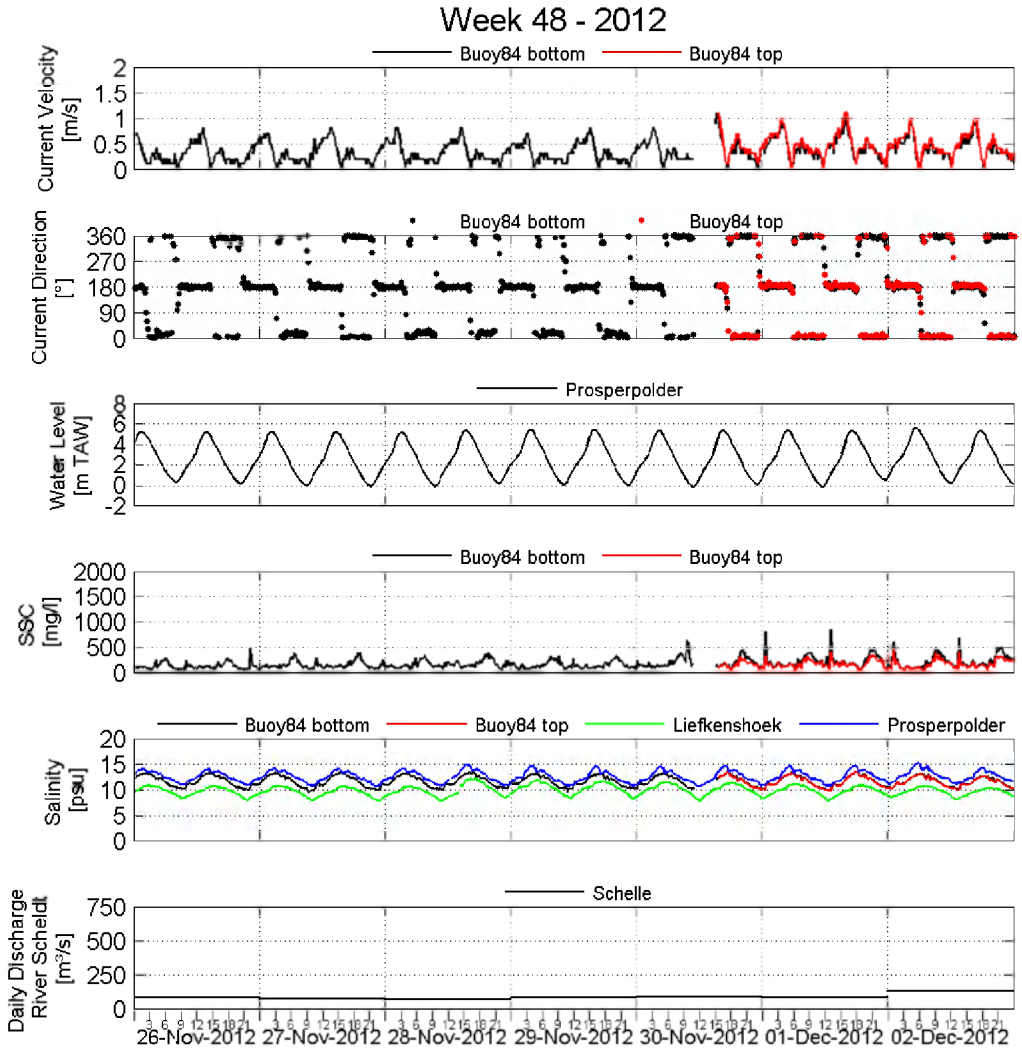


Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge	Processed by: IMDC
Location: Prosperpolder, Buoy84 (top & bottom) & Liefkenshoek	In Association with: Deltares I/RA/11406/13.145/JCA

11406 - Boundary conditions report 01/04/2012 - 31/03/2013



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

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Location:

Prosperpolder, Buoy84 (top & bottom) & Liefkenshoek

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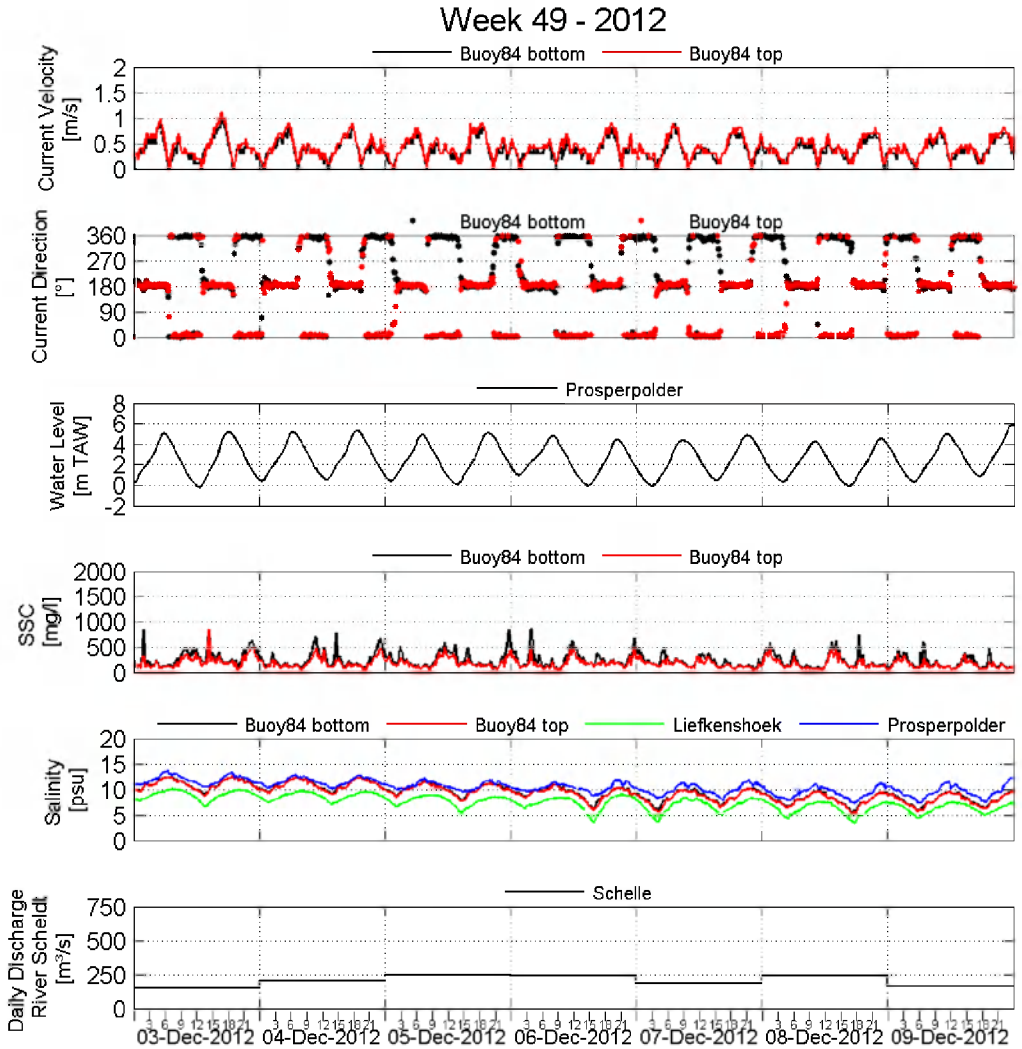

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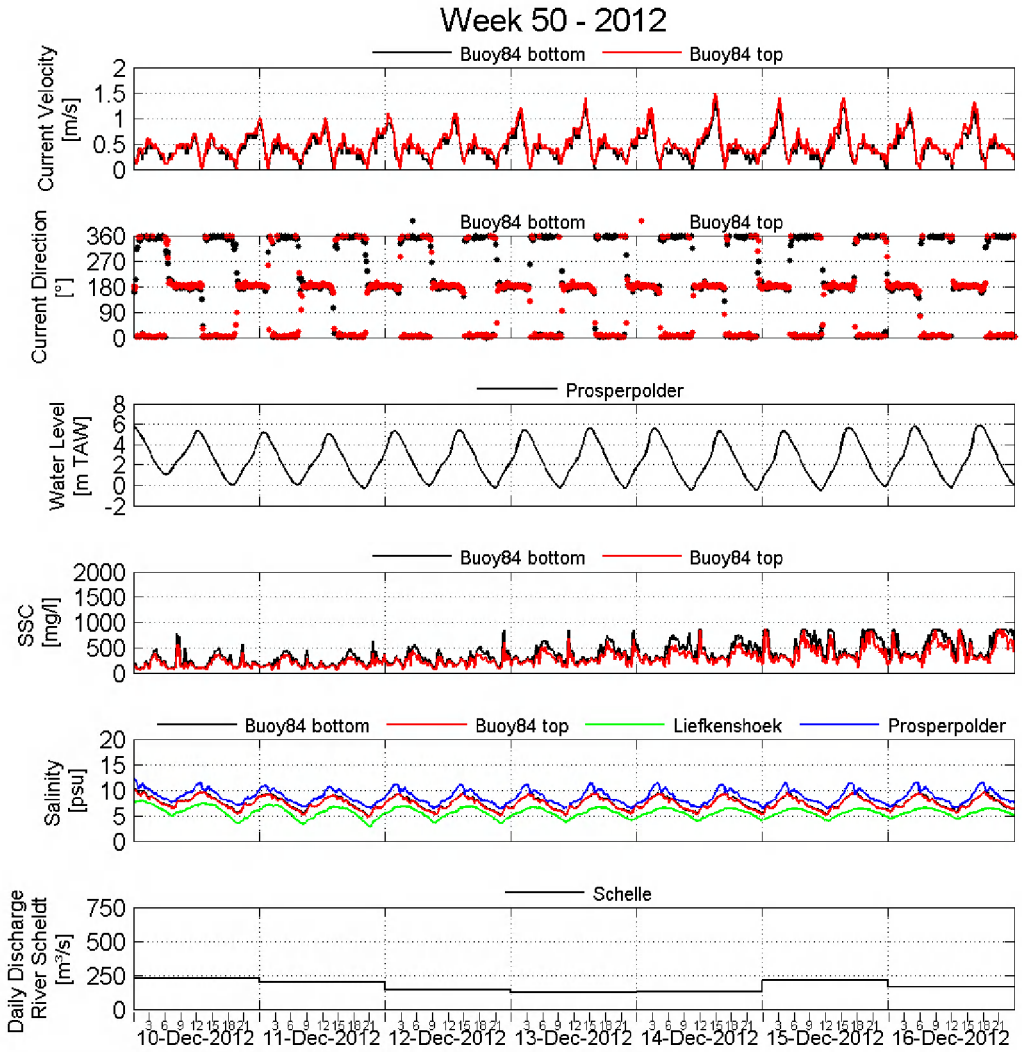

Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge	Processed by: IMDC
Location: Prosperpolder, Buoy84 (top & bottom) & Liefkenshoek	In Association with: Deltares I/RA/11406/13.145/JCA

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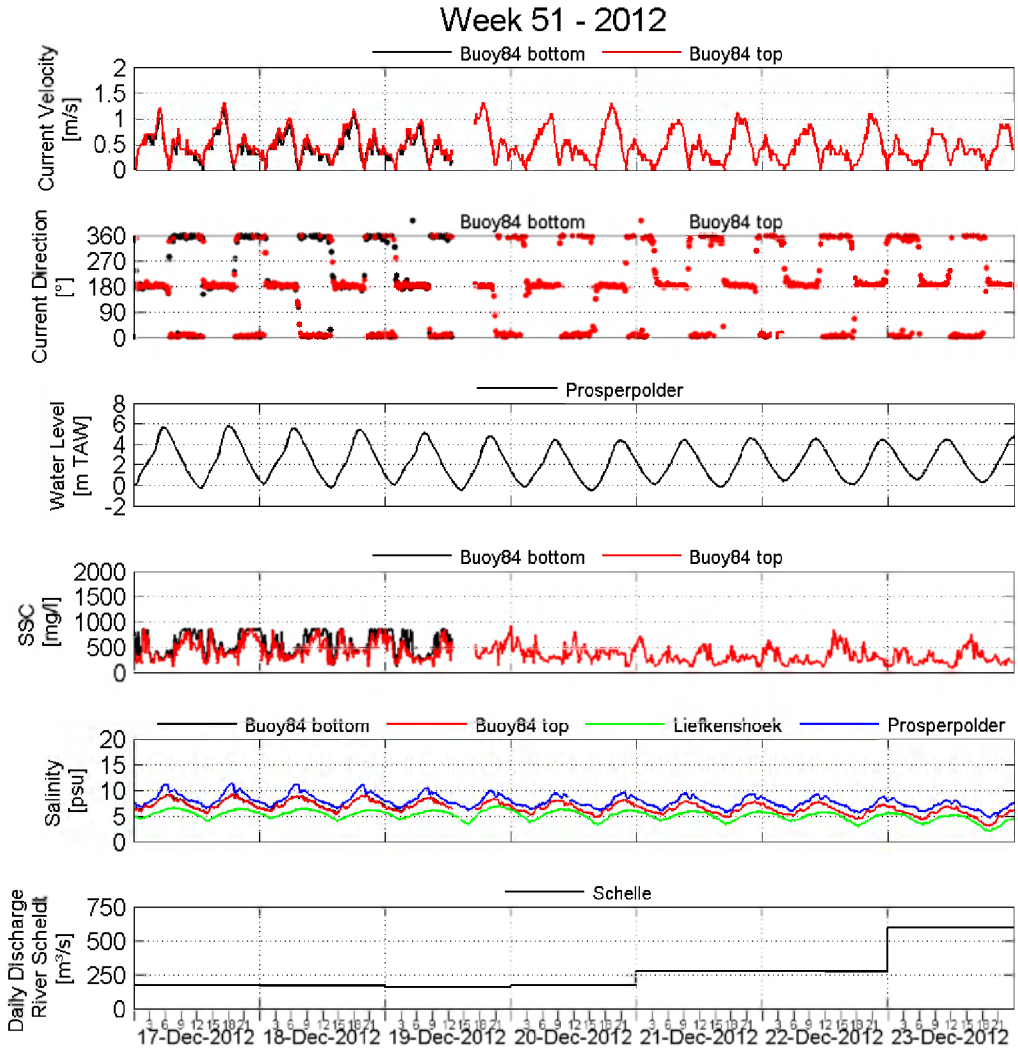

Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge	Processed by: IMDC
Location: Prosperpolder, Buoy84 (top & bottom) & Liefkenshoek	In Association with: Deltares I/RA/11406/13.145/JCA

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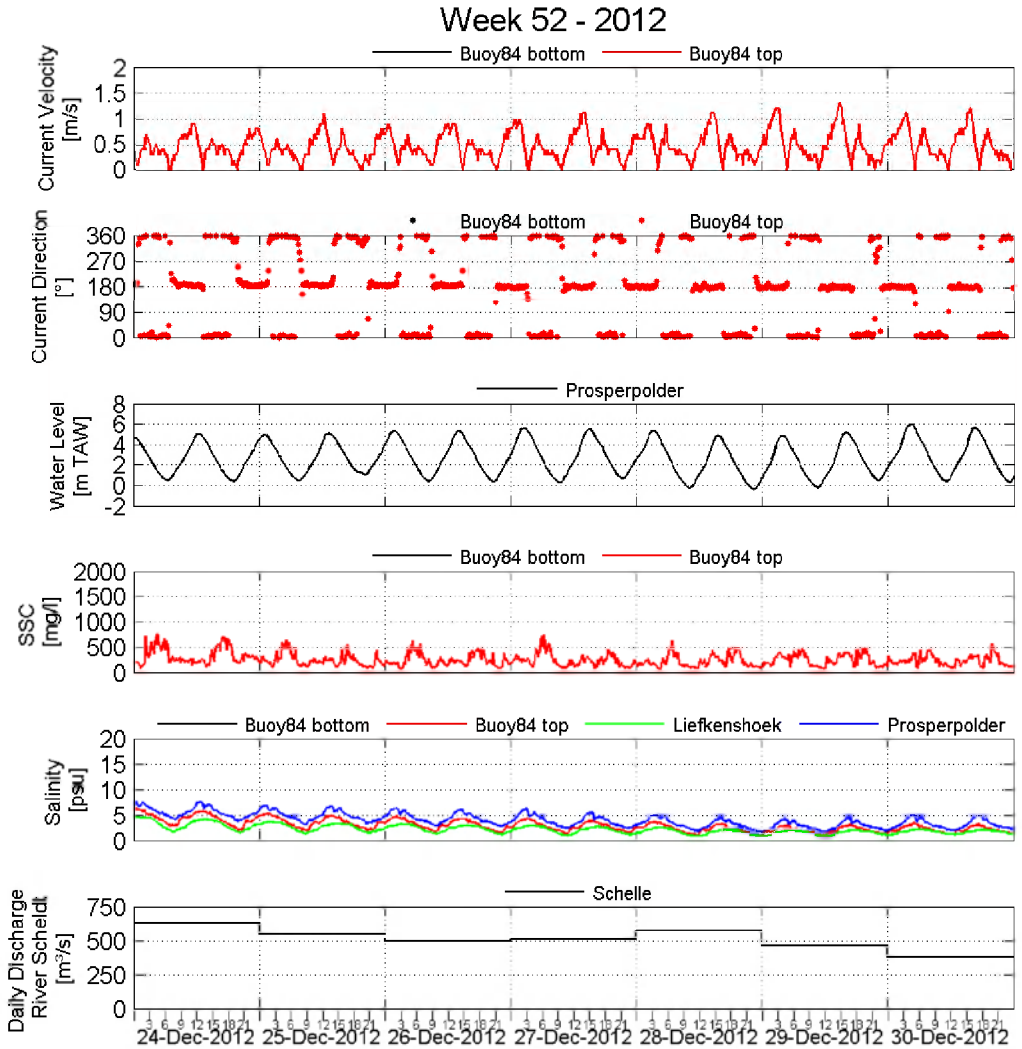

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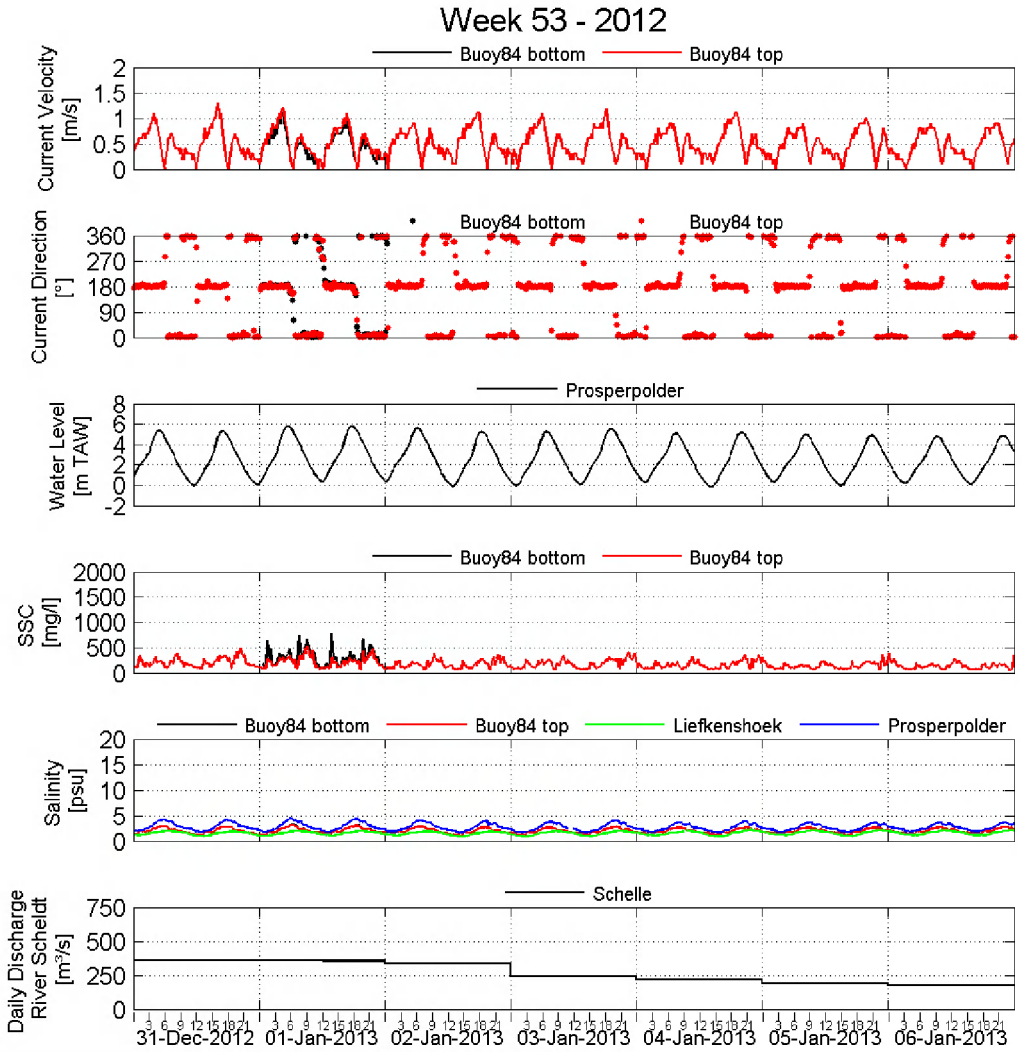

Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge

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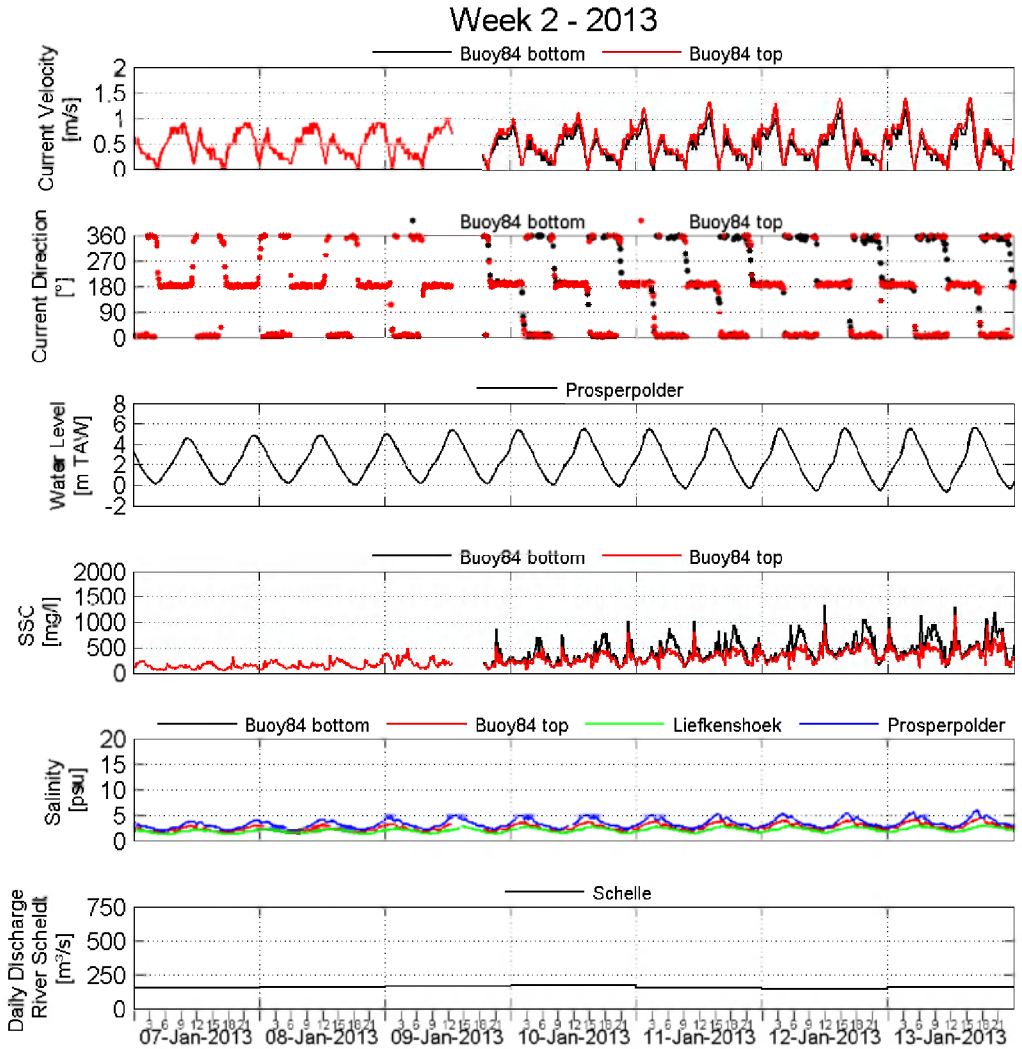

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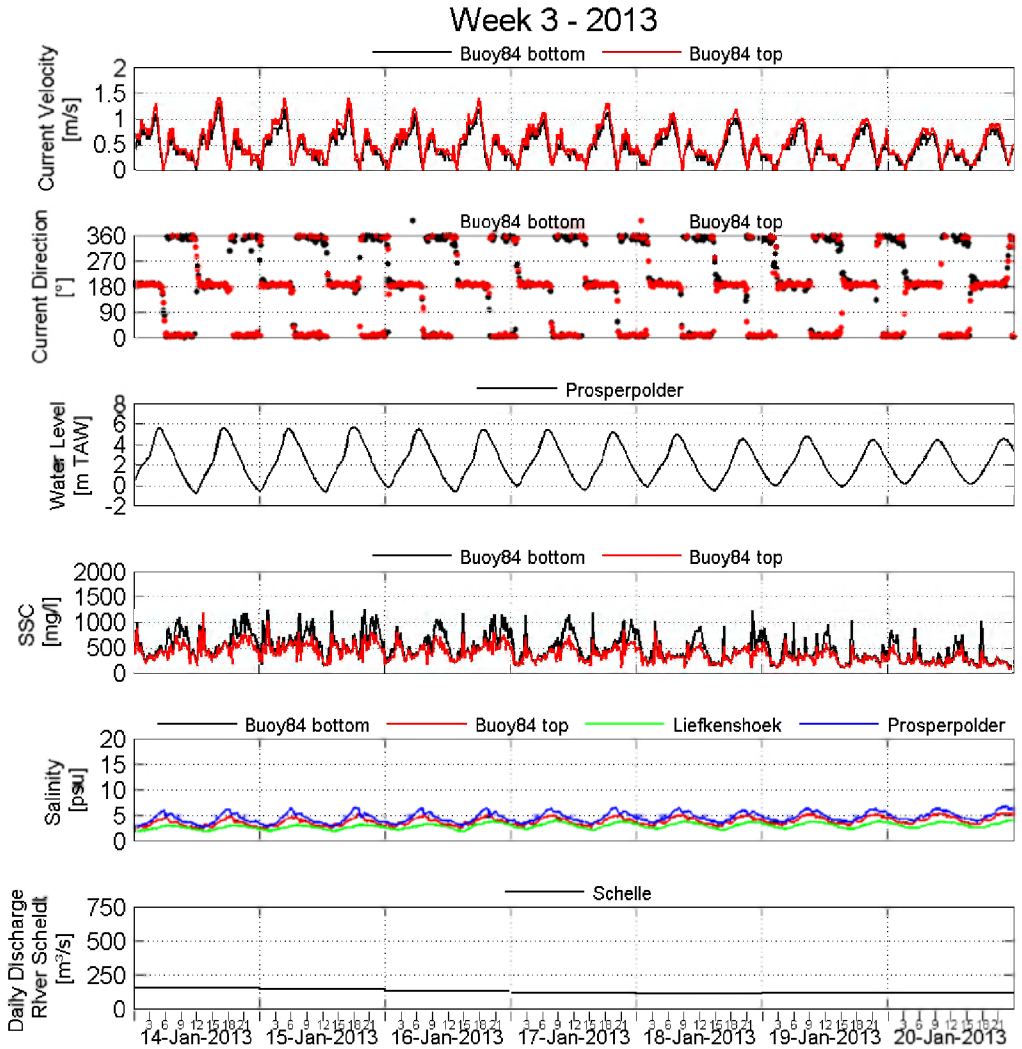

Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge	Processed by: IMDC
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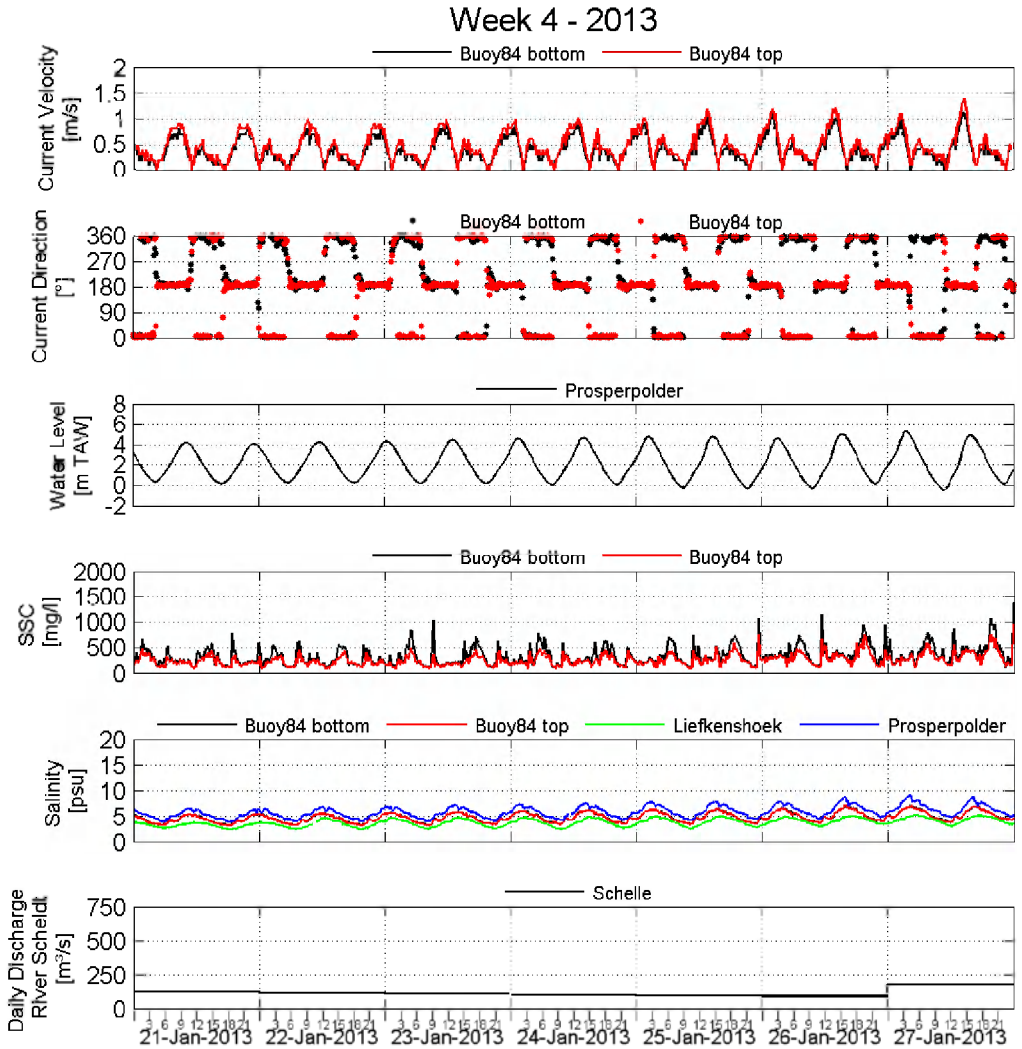
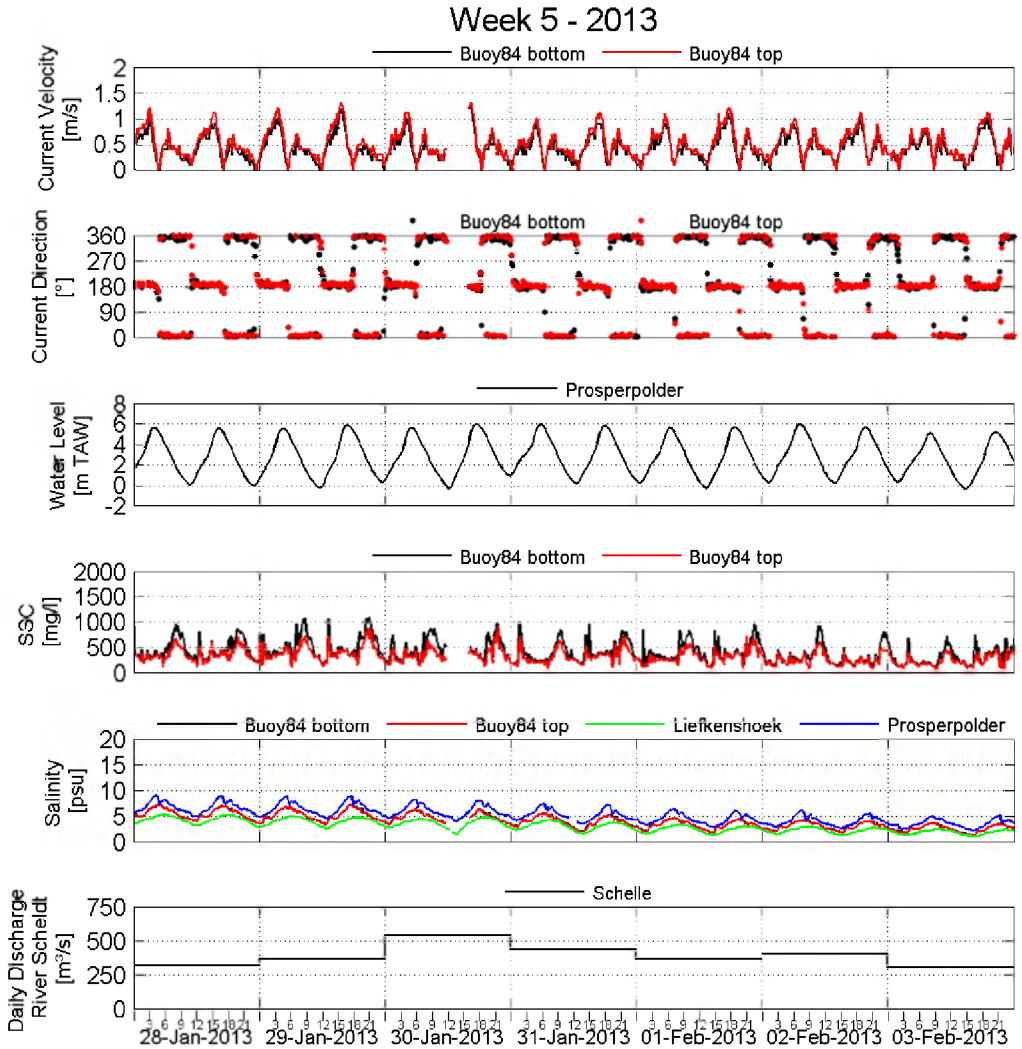


Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge	Processed by: IMDC
Location: Prosperpolder, Buoy84 (top & bottom) & Liefkenshoek	In Association with: Deltares I/RA/11406/13.145/JCA

11406 - Boundary conditions report 01/04/2012 - 31/03/2013



Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge	Processed by: IMDC
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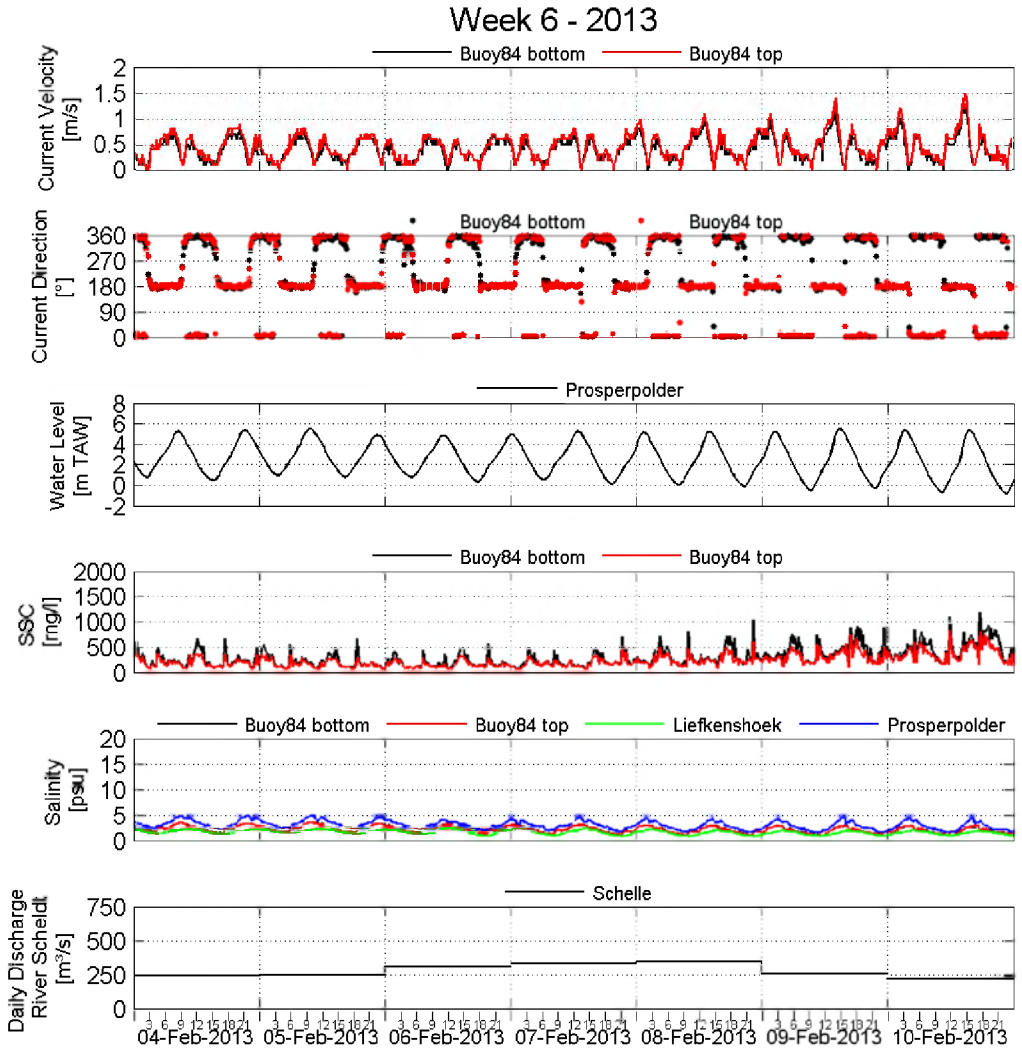

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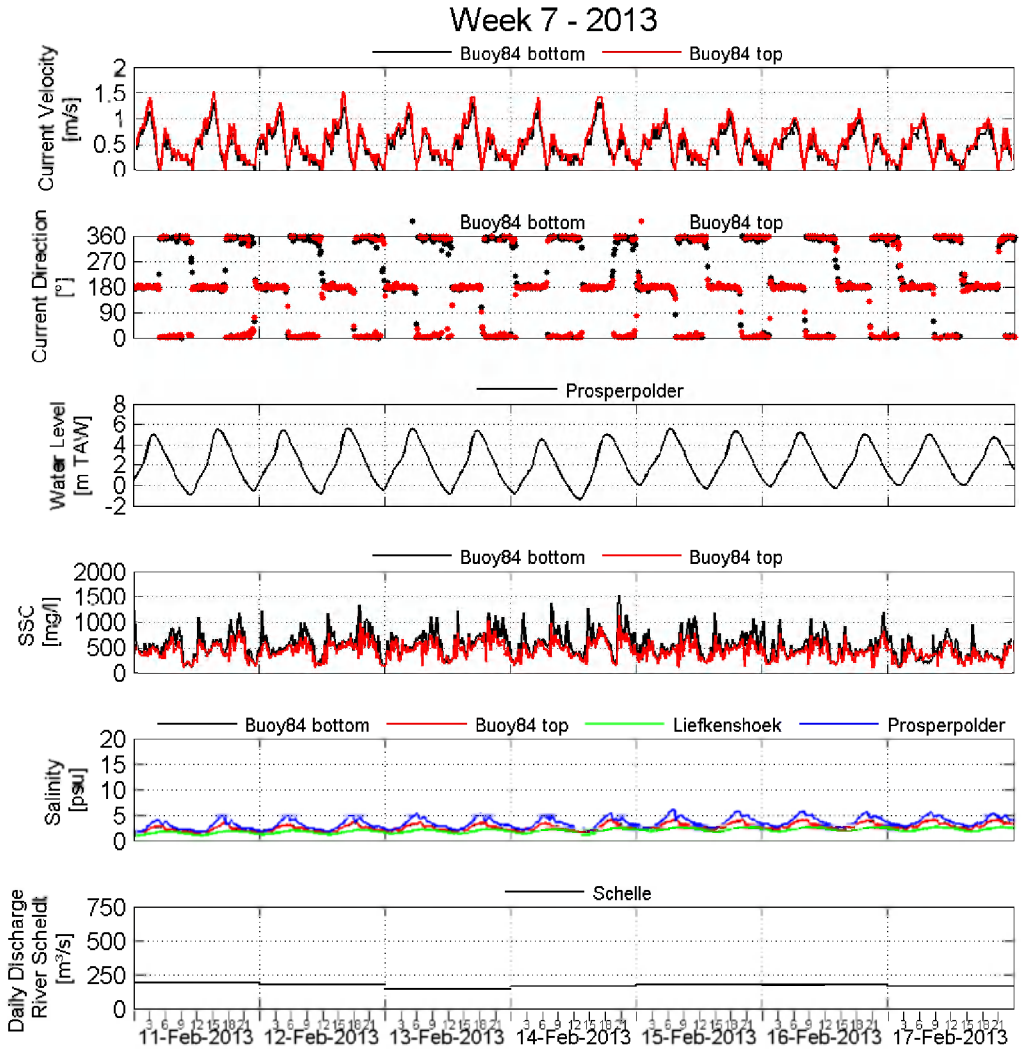

Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge	Processed by: IMDC
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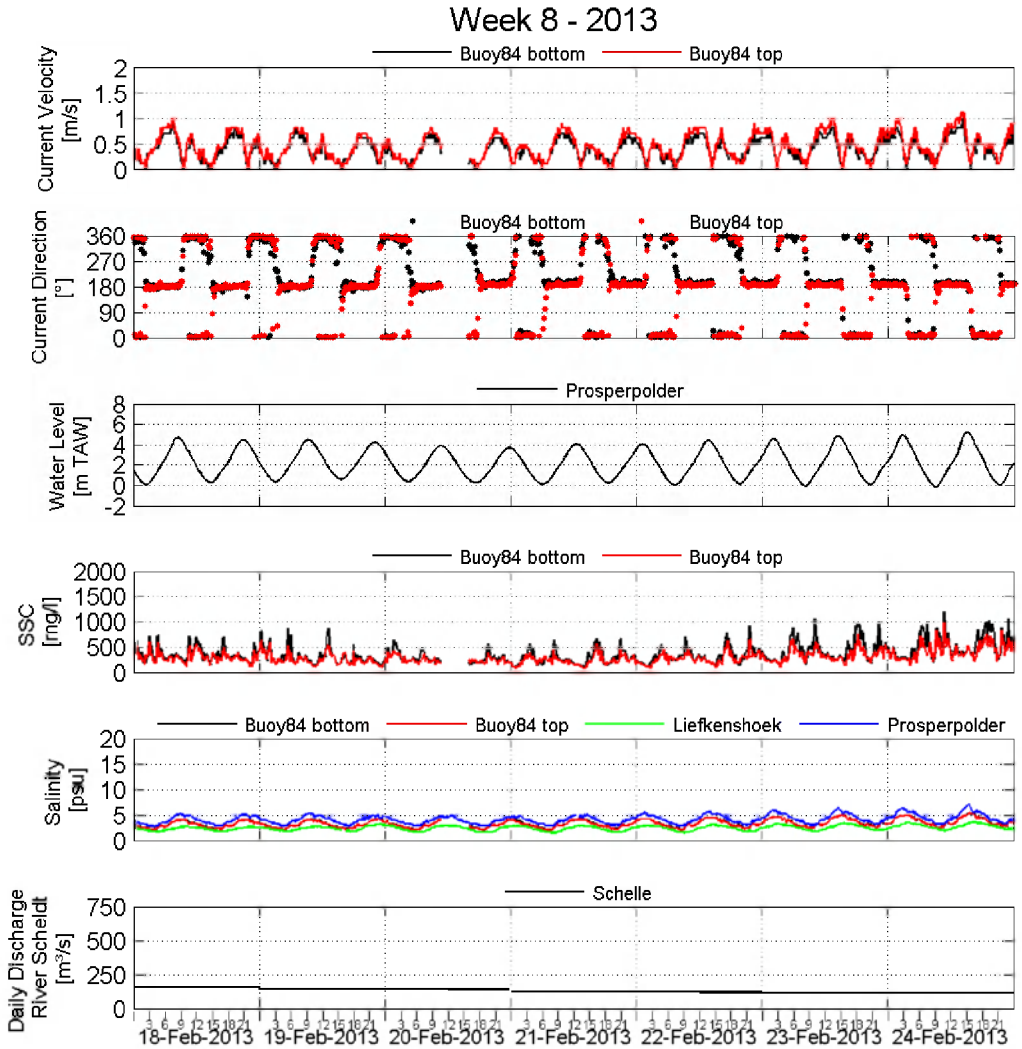

Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge

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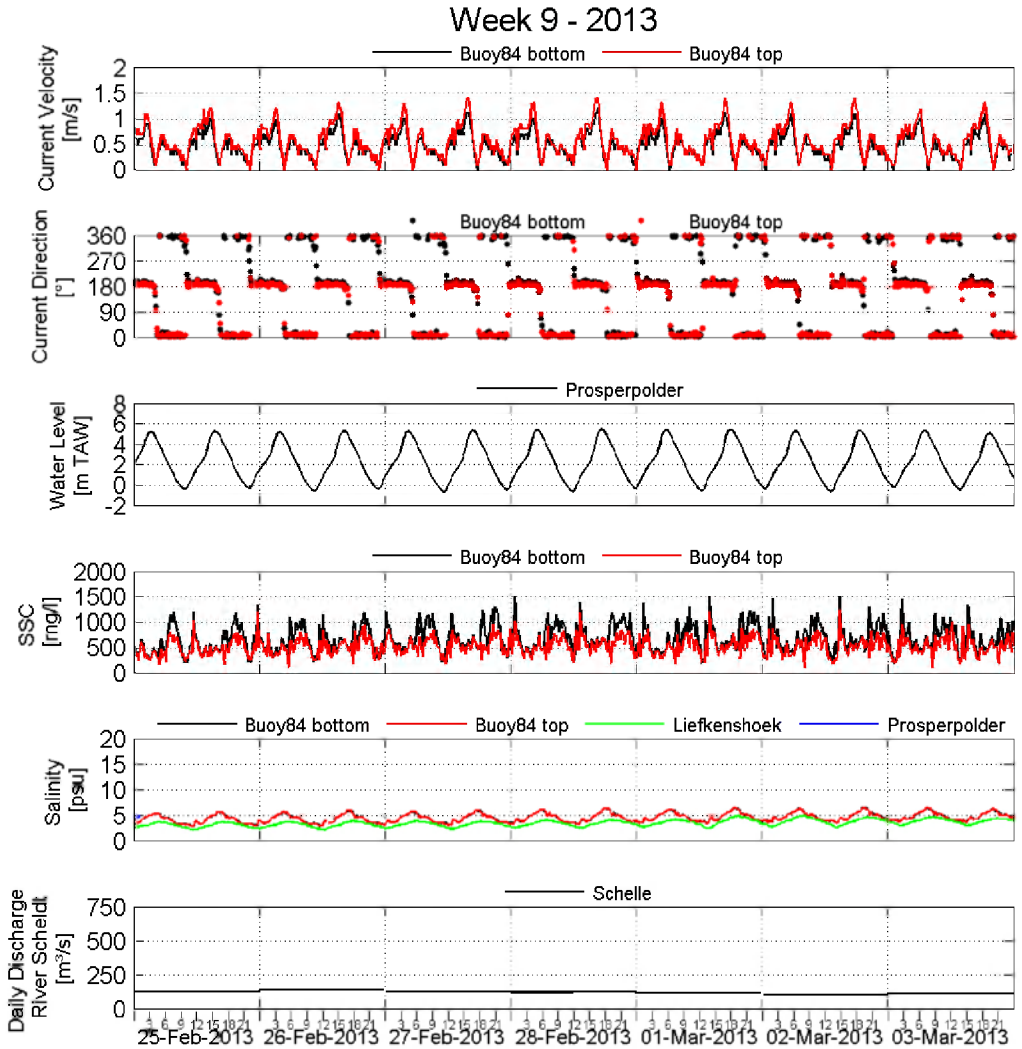

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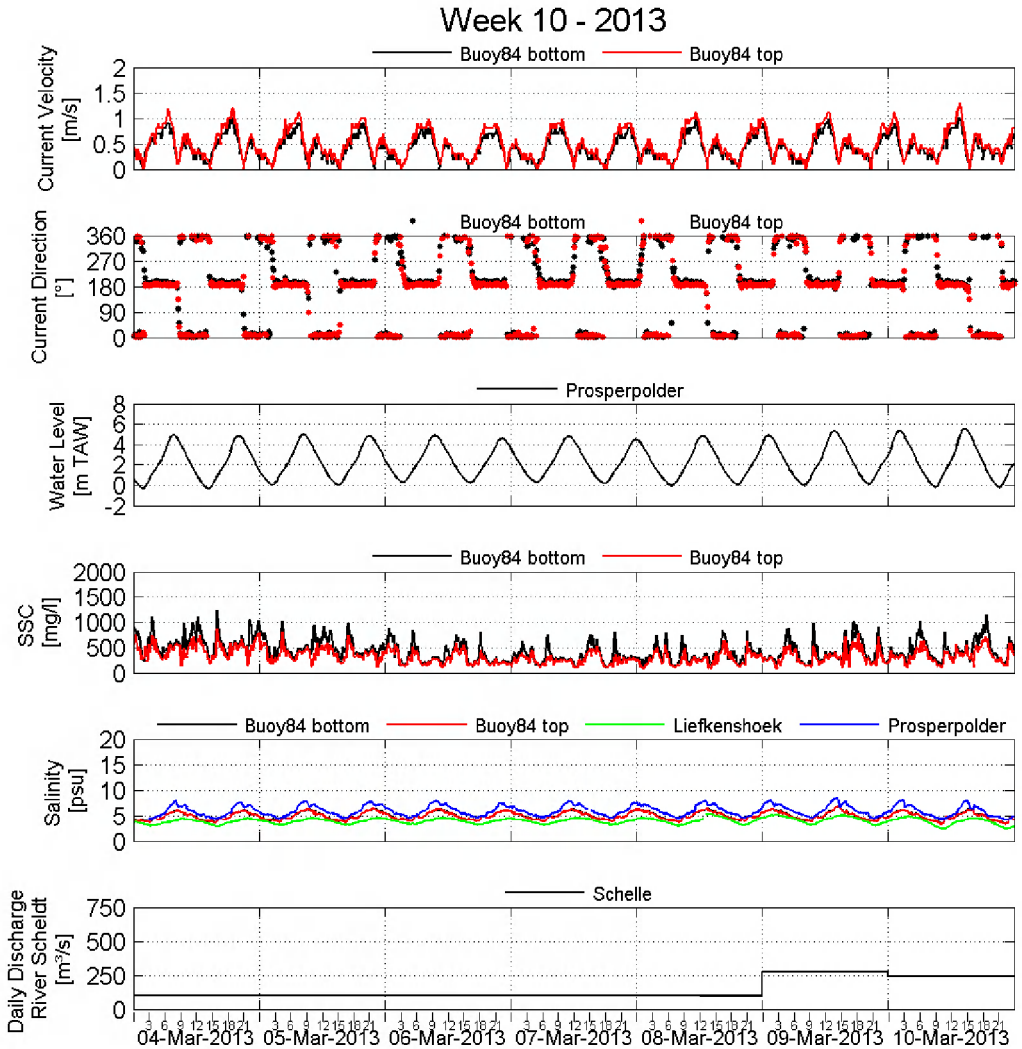

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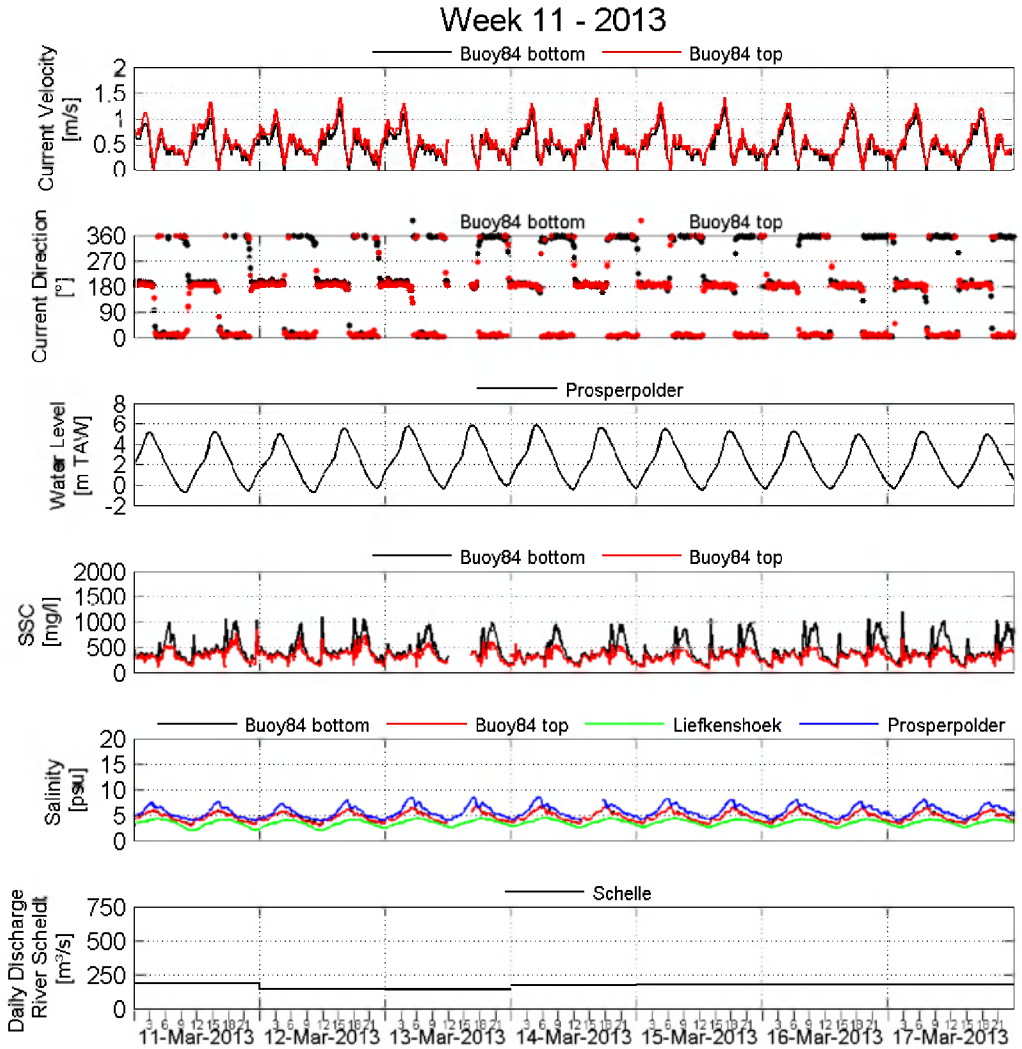

Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge	Processed by: IMDC
Location: Prosperpolder, Buoy84 (top & bottom) & Liefkenshoek	In Association with: Deltares I/RA/11406/13.145/JCA

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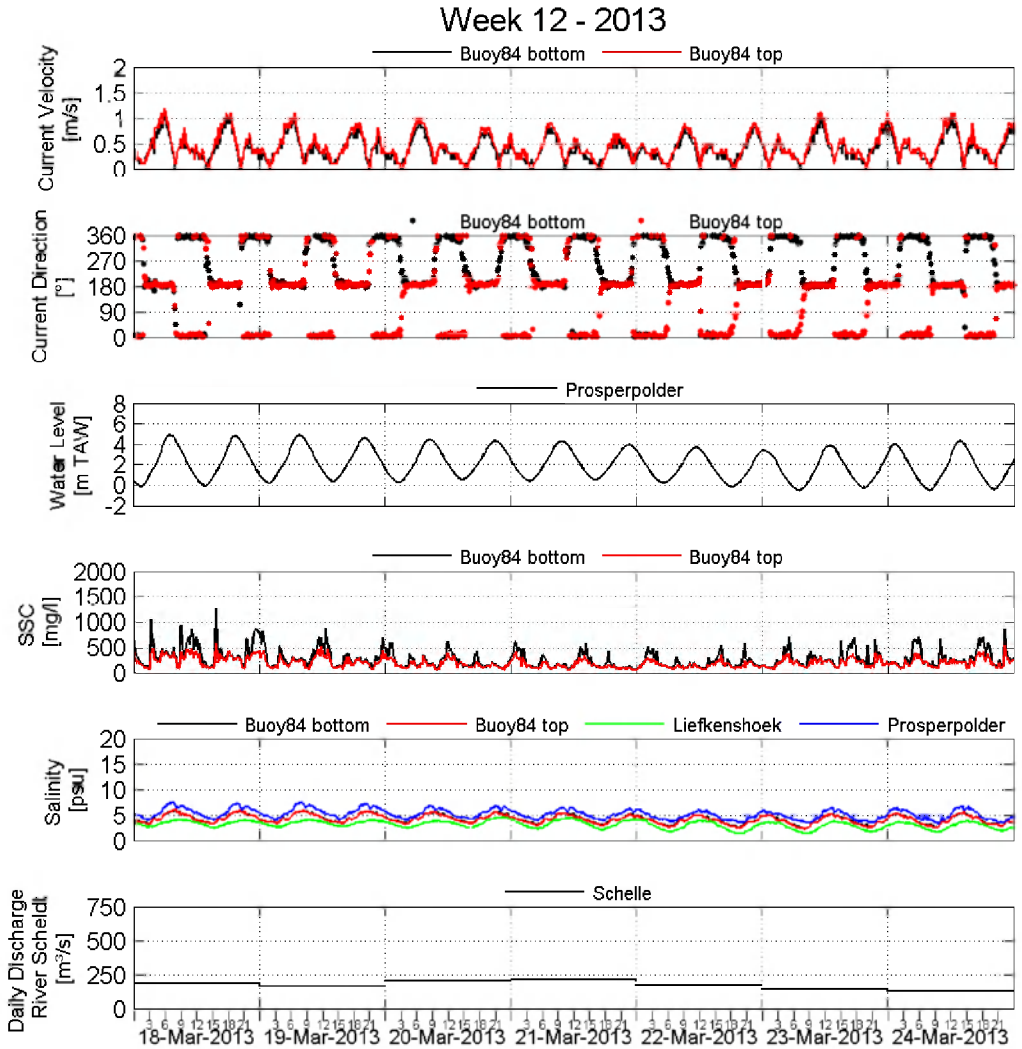

Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge	Processed by: IMDC
Location: Prosperpolder, Buoy84 (top & bottom) & Liefkenshoek	In Association with: Deltares I/RA/11406/13.145/JCA

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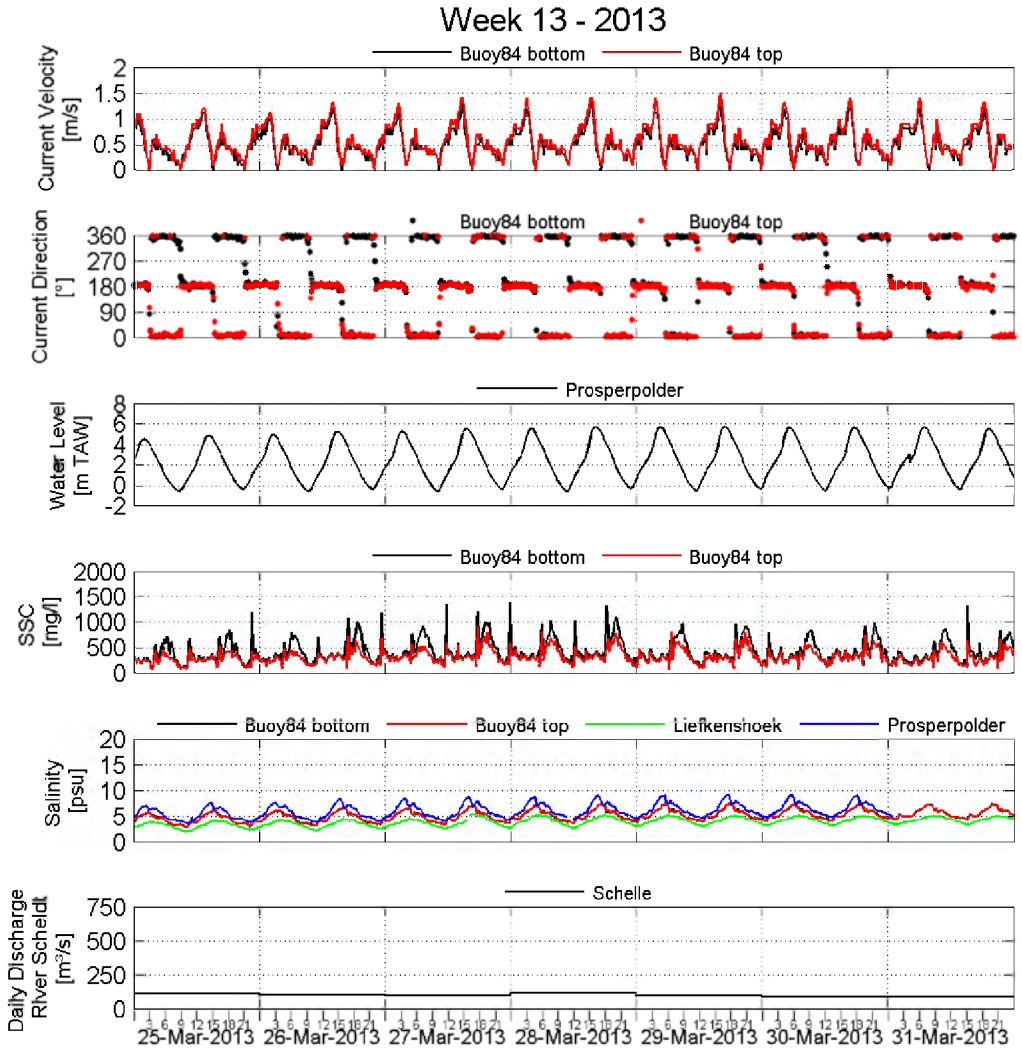


Week series of current velocity, direction, tide, suspended sediment concentration, salinity & discharge	Processed by: IMDC
Location: Prosperpolder, Buoy84 (top & bottom) & Liefkenshoek	In Association with: Deltares I/RA/11406/13.145/JCA

B.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 2012	0.00	1.28	0.67
May 2012	0.00	1.25	0.66
June 2012	0.00	1.14	0.65
July 2012	0.00	1.20	0.65
August 2012	0.00	1.29	0.66
September 2012	0.00	1.28	0.66
October 2012	0.00	1.29	0.68
November 2012	0.00	1.30	0.72
December 2012	0.00	1.44	0.65
January 2013	0.00	1.37	0.63
February 2013	0.00	1.33	0.60
March 2013	0.01	1.37	0.64
Temperature [°C]			
Month	***Minimum***	***Maximum***	***Average***
April 2012	10	12	11
May 2012	12	20	15
June 2012	17	20	18
July 2012	18	21	20
August 2012	21	23	22
September 2012	16	21	19
October 2012	12	17	14
November 2012	8	13	10
December 2012	4	9	7
January 2013	2	9	6
February 2013	3	7	5
March 2013	3	6	5

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

Salinity [psu]						
Month	***Minimum***		***Maximum***		***Average***	
	HW	***LW***	***HW***	***LW***	***HW***	***LW***
April 2012	4.8	0.8	6.8	1.6	6.1	1.1
May 2012	4.9	0.6	6.7	1.6	5.7	0.9
June 2012	5.9	0.7	7.7	1.6	6.7	1.1
July 2012	4.8	0.5	7.8	1.6	6.2	1.0
August 2012	6.8	1.1	11.3	4.4	9.2	2.6
September 2012	10.9	2.9	12.6	5.0	11.7	3.9
October 2012	8.7	1.3	12.5	4.3	10.5	2.1
November 2012	6.9	0.8	10.5	2.0	9.2	1.2
December 2012	1.0	0.3	9.7	1.8	4.7	0.6
January 2013	1.0	0.3	4.0	0.7	2.2	0.5
February 2013	1.0	0.3	3.3	0.6	1.9	0.4
March 2013	1.3	0.5	4.3	0.8	3.2	0.6

Suspended sediment concentration [mg/l]			
Month	**Minimum**	**Maximum**	**Average**
April 2012	46	675**	435
May 2012	42	675**	331
June 2012	38	675**	290
July 2012	34	675**	307
August 2012	55	648	264
September 2012	58	675**	311
October 2012	70	675**	390
November 2012	35	573	176
December 2012	49	1425	427
January 2013	43	1060	268
February 2013	71	1113	443
March 2013	25	1203	300

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

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

Velocity magnitude [m/s]			
Month	***Minimum***	***Maximum***	***Average***
April 2012	0.00	1.20	0.53
May 2012	-	-	-
June 2012	0.00	1.00	0.50
July 2012	0.00	1.10	0.49
August 2012	-	-	-
September 2012	0.00	1.10	0.49
October 2012	0.00	1.10	0.51
November 2012	0.00	1.00	0.54
December 2012	0.00	1.20	0.51
January 2013	0.00	1.20	0.50
February 2013	-	-	-
March 2013	0.00	1.10	0.51
Temperature [°C]			
Month	***Minimum***	***Maximum***	***Average***
April 2012	10	12	11
May 2012	-	-	-
June 2012	17	20	18
July 2012	18	21	20
August 2012	-	-	-
September 2012	16	21	19
October 2012	12	17	14
November 2012	8	13	10
December 2012	4	9	7
January 2013	2	9	6
February 2013	-	-	-
March 2013	5	6	5

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

Salinity [psu]						
Month	***Minimum***		***Maximum***		***Average***	
	HW	***LW***	***HW***	***LW***	***HW***	***LW***
April 2012	5.0	0.9	7.0	1.6	6.4	1.2
May 2012	-	-	-	-	-	-
June 2012	5.8	0.6	7.6	1.6	6.6	1.1
July 2012	4.8	0.5	7.8	1.6	6.2	1.0
August 2012	-	-	-	-	-	-
September 2012	10.8	3.0	12.5	5.5	11.6	4.0
October 2012	8.7	1.4	12.6	4.5	10.5	2.2
November 2012	7.0	0.8	10.5	2.0	9.1	1.2
December 2012	1.0	0.3	9.8	1.8	4.7	0.6
January 2013	1.1	0.3	3.9	0.8	2.3	0.5
February 2013	-	-	-	-	-	-
March 2013	1.4	0.5	4.3	0.8	3.2	0.6

Suspended sediment concentration [mg/l]			
Month	***Minimum***	***Maximum***	***Average***
April 2012	50	648**	394
May 2012	-	-	-
June 2012	47	649**	301
July 2012	43	649**	332
August 2012	-	-	-
September 2012	63	1756	364
October 2012	100	1643	481
November 2012	42	1308	184
December 2012	79	1688	486
January 2013	59	1639	300
February 2013	-	-	-
March 2013	44	1257	263

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

Location: Liefkenshoek[1]

2.0 meter above bottom [-1.5 m TAW]

Temperature [°C]			
Month	***Minimum***	***Maximum***	***Average***
April 2012	11	12	11
May 2012	12	19	15
June 2012	17	20	18
July 2012	19	22	20
August 2012	21	23	22
September 2012	17	22	20
October 2012	13	17	15
November 2012	9	13	11
December 2012	5	9	7
January 2013	3	9	7
February 2013	4	7	5
March 2013	4	7	5

Salinity [psu]						
Month	***Minimum***		***Maximum***		***Average***	
	HW	***LW***	***HW***	***LW***	***HW***	***LW***
April 2012	6.4	5.1	8.3	6.9	7.4	6.1
May 2012	6.0	4.4	7.9	6.4	6.8	5.3
June 2012	7.0	5.1	8.9	7.0	7.9	6.2
July 2012	6.2	4.0	8.6	6.9	7.6	5.7
August 2012	7.8	6.0	12.6	10.7	10.3	8.8
September 2012	11.8	10.3	13.7	11.8	12.6	11.2
October 2012	10.8	8.6	12.8	11.7	11.6	10.0
November 2012	9.2	6.6	11.8	9.9	10.5	8.4
December 2012	1.6	1.0	10.6	9.0	5.9	4.2
January 2013	1.7	1.1	4.9	3.7	3.1	2.2
February 2013	1.5	1.0	3.6	2.8	2.4	1.7
March 2013	3.3	1.6	4.9	3.7	4.0	2.9

-: 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 Liefkenshoek.

Location: Buoy 84
3.3 meter above bottom [-6.0 m TAW]

Velocity magnitude [m/s]			
Month	***Minimum***	***Maximum***	***Average***
April 2012	0.00	1.40	0.45
May 2012	0.00	1.40	0.47
June 2012	0.00	1.30	0.46
July 2012	0.00	1.30	0.44
August 2012	0.00	1.20	0.46
September 2012	0.00	1.40	0.45
October 2012	0.00	1.30	0.44
November 2012*	0.00	1.20	0.42
December 2012	0.00	1.50	0.46
January 2013	0.00	1.40	0.50
February 2013	0.00	1.50	0.49
March 2013	0.00	1.50	0.52
Temperature [°C]			
Month	***Minimum***	***Maximum***	***Average***
April 2012	10	12	11
May 2012	12	18	14
June 2012	17	20	18
July 2012	19	22	20
August 2012	21	23	22
September 2012	16	22	19
October 2012	13	17	15
November 2012*	9	13	11
December 2012	6	9	7
January 2013	4	9	7
February 2013	4	6	5
March 2013	4	6	5

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

Salinity [psu]						
Month	***Minimum***		***Maximum***		***Average***	
	HW	***LW***	***HW***	***LW***	***HW***	***LW***
April 2012	8.1	6.0	10.4	7.5	9.6	8.1
May 2012	7.5	5.4	9.6	7.0	8.8	7.5
June 2012	8.7	6.2	10.8	7.8	9.6	8.7
July 2012	8.0	5.1	10.9	8.0	9.4	8.0
August 2012	10.0	6.9	14.5	11.9	12.2	10.0
September 2012	13.9	11.1	15.7	12.9	14.8	13.9
October 2012	13.4	10.2	15.9	13.0	14.2	13.4
November 2012	12.1	8.3	14.4	11.0	13.1	12.1
December 2012	2.7	1.2	13.5	10.5	8.2	2.7
January 2013	2.6	1.2	7.1	4.5	4.6	2.6
February 2013	2.7	1.2	6.2	3.6	4.0	2.7
March 2013	4.9	2.5	7.2	4.6	6.1	4.9

Suspended sediment concentration [mg/l]			
Month	***Minimum***	***Maximum***	***Average***
April 2012	39	848**	232
May 2012	24	849**	212
June 2012	28	771	129
July 2012	25	849**	119
August 2012	21	606	92
September 2012	20	594	105
October 2012	29	735	143
November 2012*	25	390	102
December 2012	44	931	261
January 2013	56	1189	278
February 2013	63	1204	341
March 2013	74	1242	314

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

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

Velocity magnitude [m/s]			
Month	***Minimum***	***Maximum***	***Average***
April 2012*	0.00	1.30	0.40
May 2012	0.00	1.20	0.40
June 2012	0.00	1.00	0.40
July 2012	0.00	1.10	0.36
August 2012	0.00	1.00	0.38
September 2012	0.00	1.10	0.38
October 2012	0.00	1.10	0.30
November 2012	0.00	1.10	0.30
December 2012*	0.00	1.40	0.41
January 2013	0.00	1.30	0.42
February 2013	0.00	1.30	0.43
March 2013	0.00	1.30	0.45
Temperature [°C]			
Month	***Minimum***	***Maximum***	***Average***
April 2012*	11	12	11
May 2012	12	19	15
June 2012	17	20	18
July 2012	19	22	20
August 2012	21	23	22
September 2012	16	22	19
October 2012	13	17	15
November 2012	9	13	11
December 2012*	6	9	7
January 2013	4	9	6
February 2013	4	6	5
March 2013	4	6	5

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

Salinity [psu]						
Month	***Minimum***		***Maximum***		***Average***	
	HW	***LW***	***HW***	***LW***	***HW***	***LW***
April 2012*	8.2	6.2	10.4	7.5	9.5	6.9
May 2012	7.7	5.8	9.6	7.5	8.9	6.4
June 2012	8.8	6.3	10.9	7.9	9.7	7.1
July 2012	8.1	5.7	11.2	8.0	9.4	6.9
August 2012	9.9	7.3	14.7	11.9	12.2	9.7
September 2012	14.1	11.2	15.9	13.1	15.0	12.4
October 2012	13.4	10.7	16.1	13.1	14.3	11.5
November 2012	12.1	7.8	14.2	11.3	13.0	10.2
December 2012*	8.5	5.6	13.4	10.7	10.2	7.4
January 2013	3.0	1.7	7.1	4.5	5.1	3.2
February 2013	2.6	1.2	6.1	3.8	4.0	2.3
March 2013	4.9	2.7	7.2	4.6	6.2	3.8

Suspended sediment concentration [mg/l]			
Month	***Minimum***	***Maximum***	***Average***
April 2012*	52	1232	339
May 2012	36	855**	328
June 2012	37	855**	220
July 2012	29	855**	205
August 2012	24	855**	153
September 2012	25	848**	151
October 2012	42	848**	225
November 2012	29	848**	141
December 2012*	55	847**	327
January 2013	79	1383	414
February 2013	68	1517	427
March 2013	78	1513	414

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

Location: Prosperpolder[2]
2.5 meter above bottom [-1.5 m TAW]

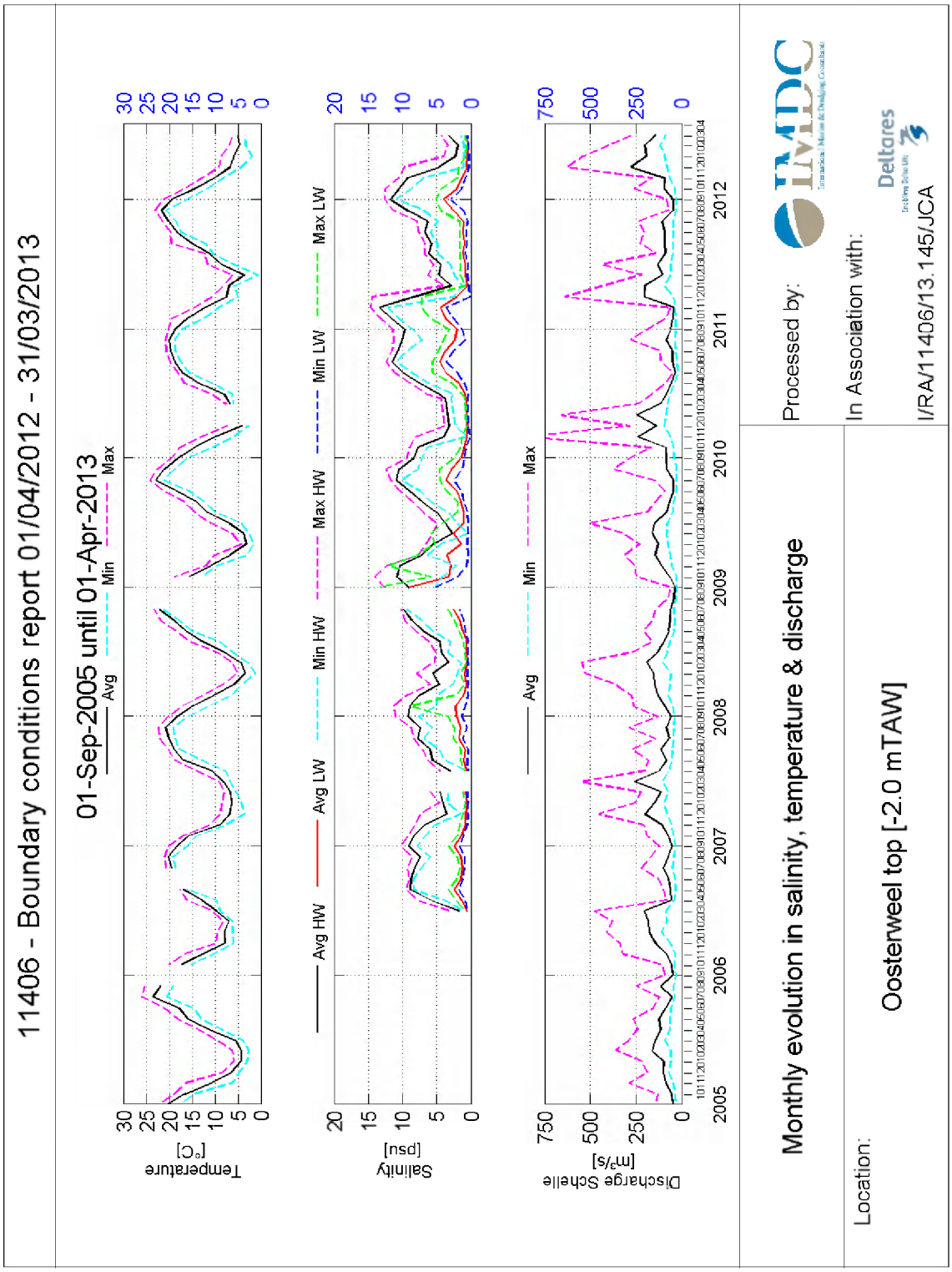
Temperature [°C]			
Month	***Minimum***	***Maximum***	***Average***
April 2012	10	13	11
May 2012	12	20	15
June 2012	17	20	18
July 2012	19	23	20
August 2012	20	24	22
September 2012	16	22	19
October 2012	12	17	15
November 2012	9	13	11
December 2012	6	9	7
January 2013	3	9	7
February 2013	4	7	5
March 2013	4	8	5

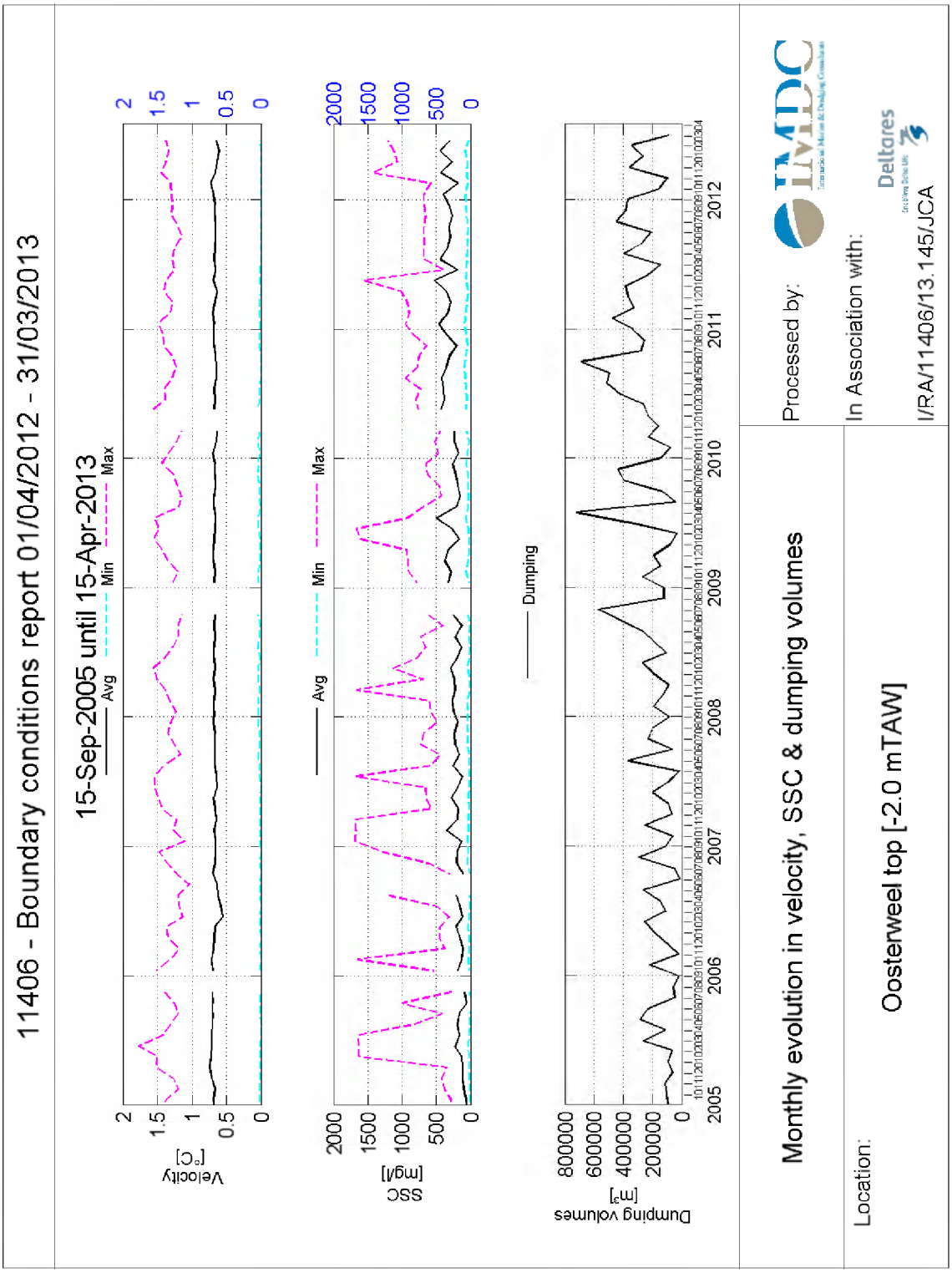
Salinity [psu]						
Month	***Minimum***		***Maximum***		***Average***	
	HW	***LW***	***HW***	***LW***	***HW***	***LW***
April 2012	9.0	6.9	11.8	8.7	10.9	7.9
May 2012	9.0	6.6	11.2	8.5	10.3	7.3
June 2012	10.0	6.8	12.2	8.7	10.9	7.9
July 2012	9.9	6.3	12.0	8.7	10.7	7.7
August 2012	10.8	8.2	15.8	12.6	13.6	10.7
September 2012	14.4	11.4	17.2	14.2	15.8	13.4
October 2012	13.9	11.5	16.6	14.4	15.2	12.4
November 2012	13.1	10.1	16.0	12.5	14.2	11.3
December 2012	3.8	2.0	14.9	11.9	9.6	6.9
January 2013	3.5	1.8	8.9	5.6	5.8	3.5
February 2013	3.7	1.7	6.8	3.9	4.9	2.8
March 2013	5.5	3.8	8.7	5.2	7.4	4.6

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

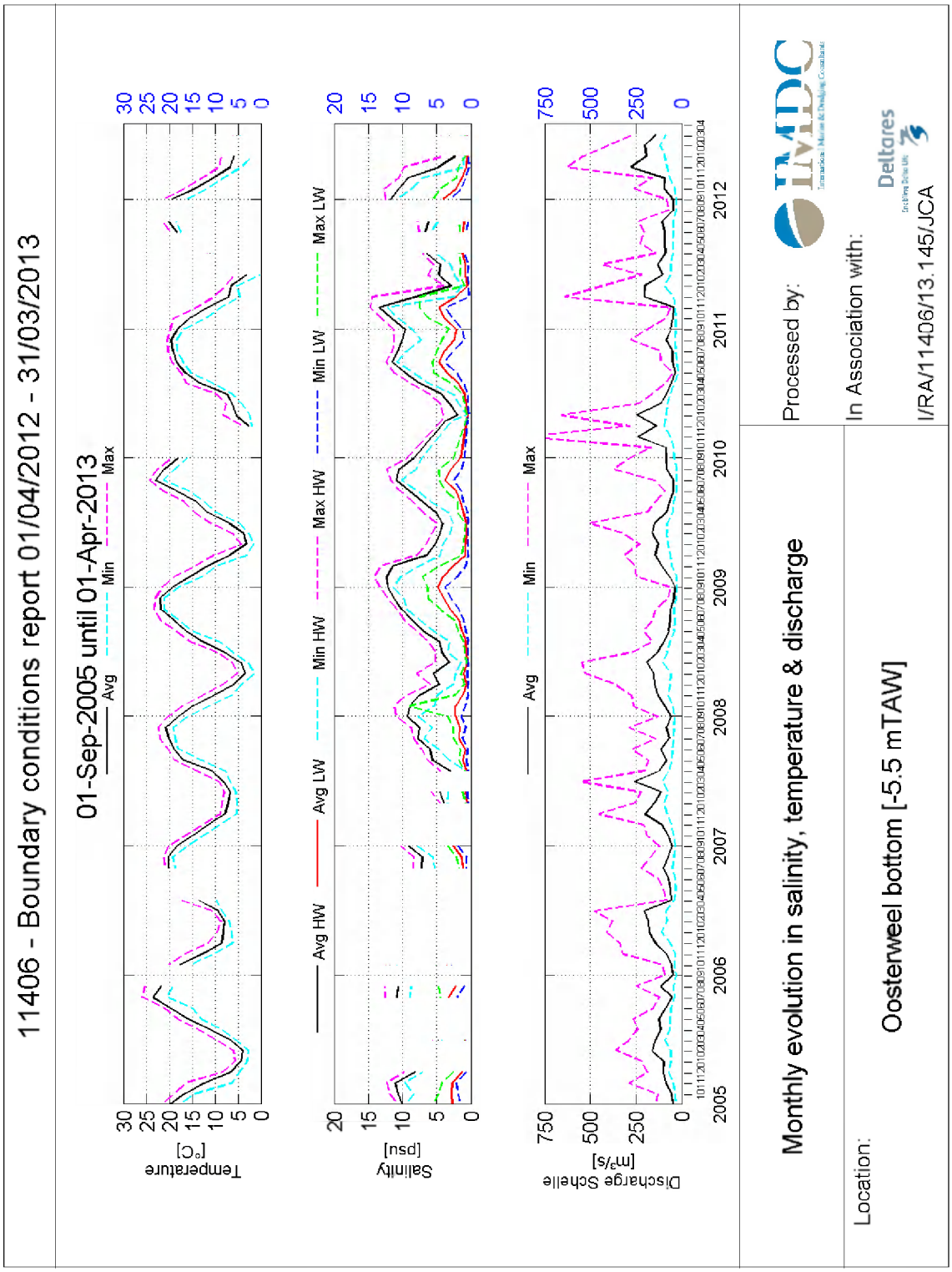
[2] Current velocity and suspended sediment were not measured at Prosperpolder.

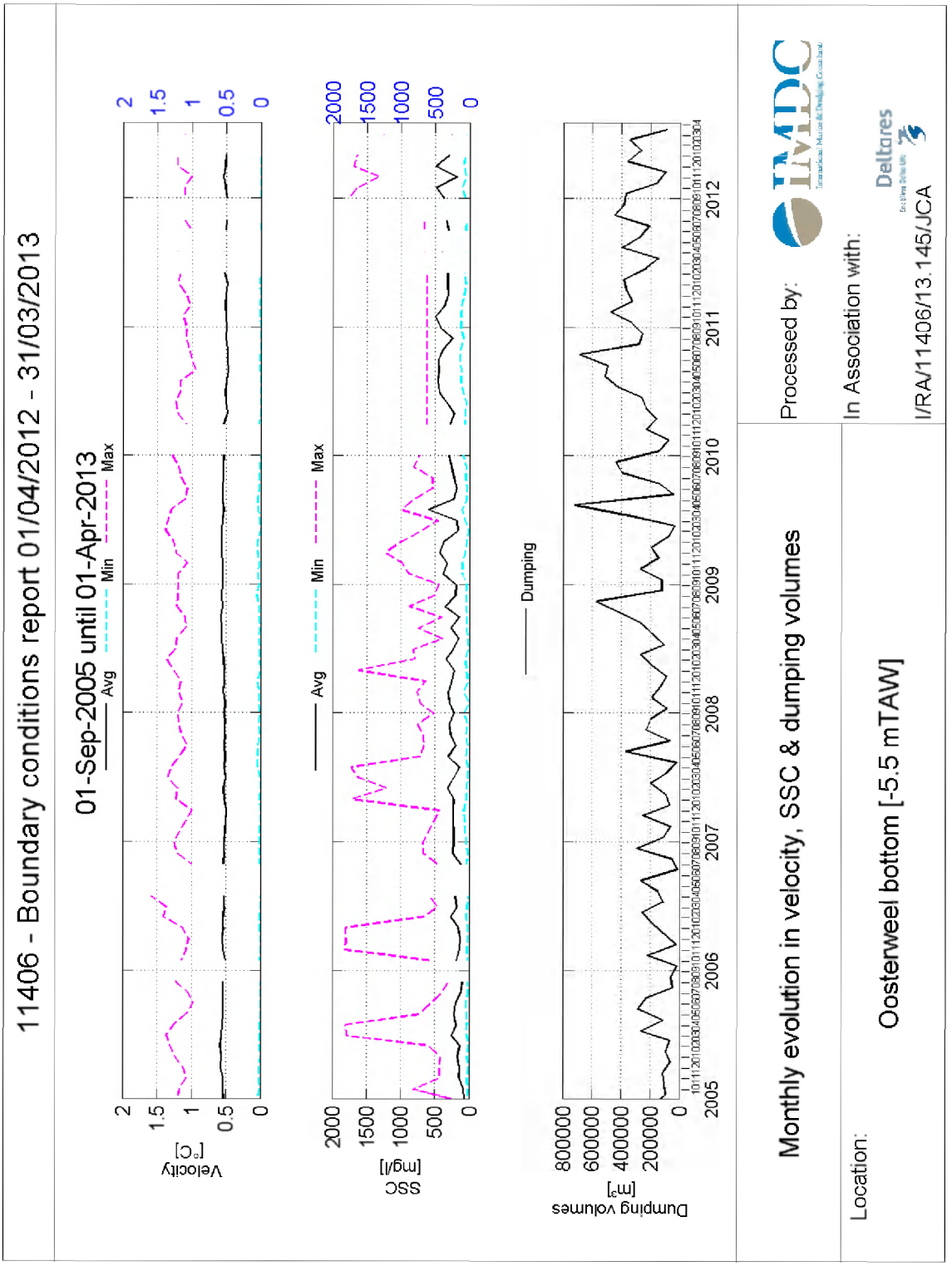
B.3 Long-term evolution based on monthly results



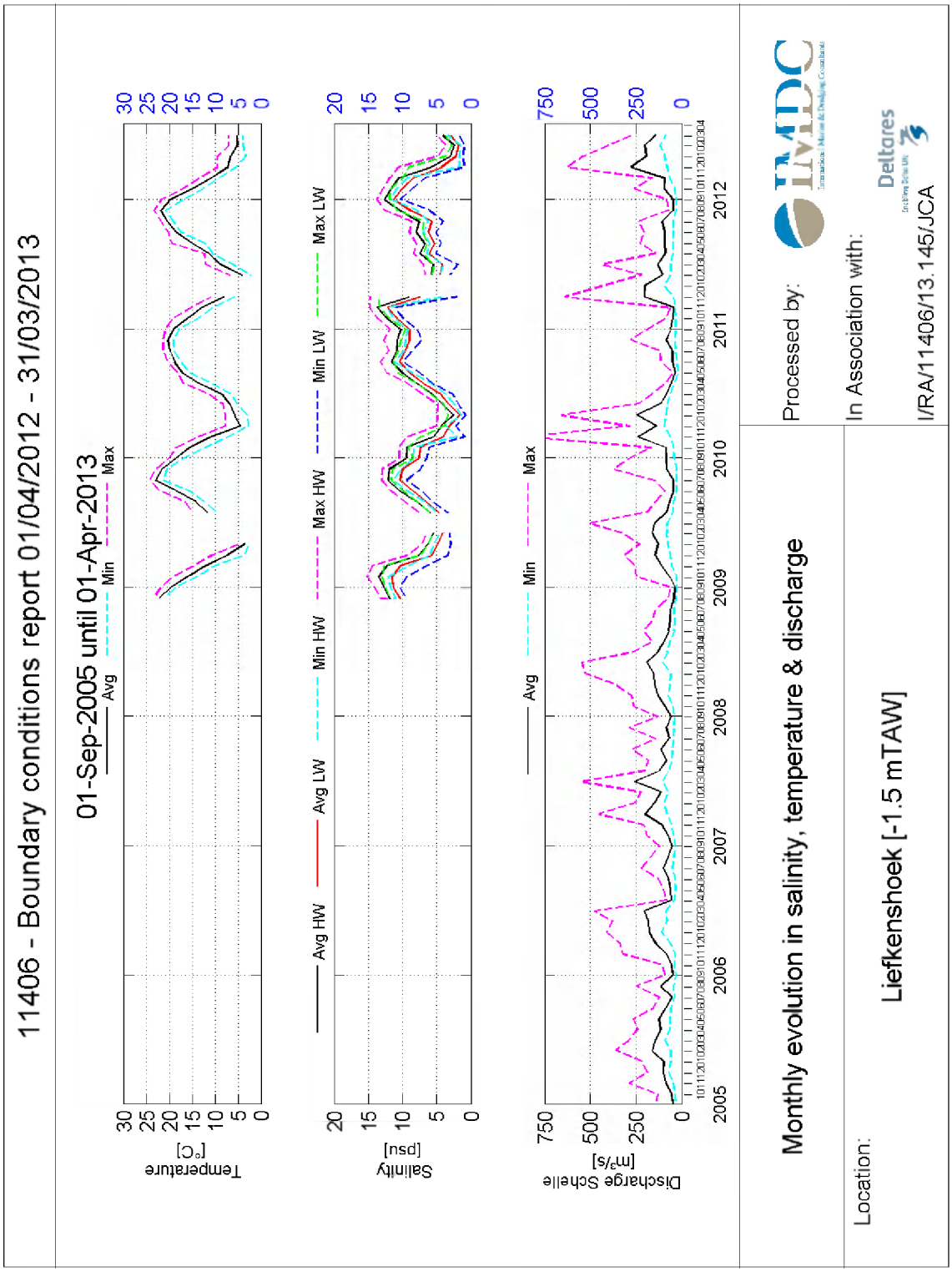


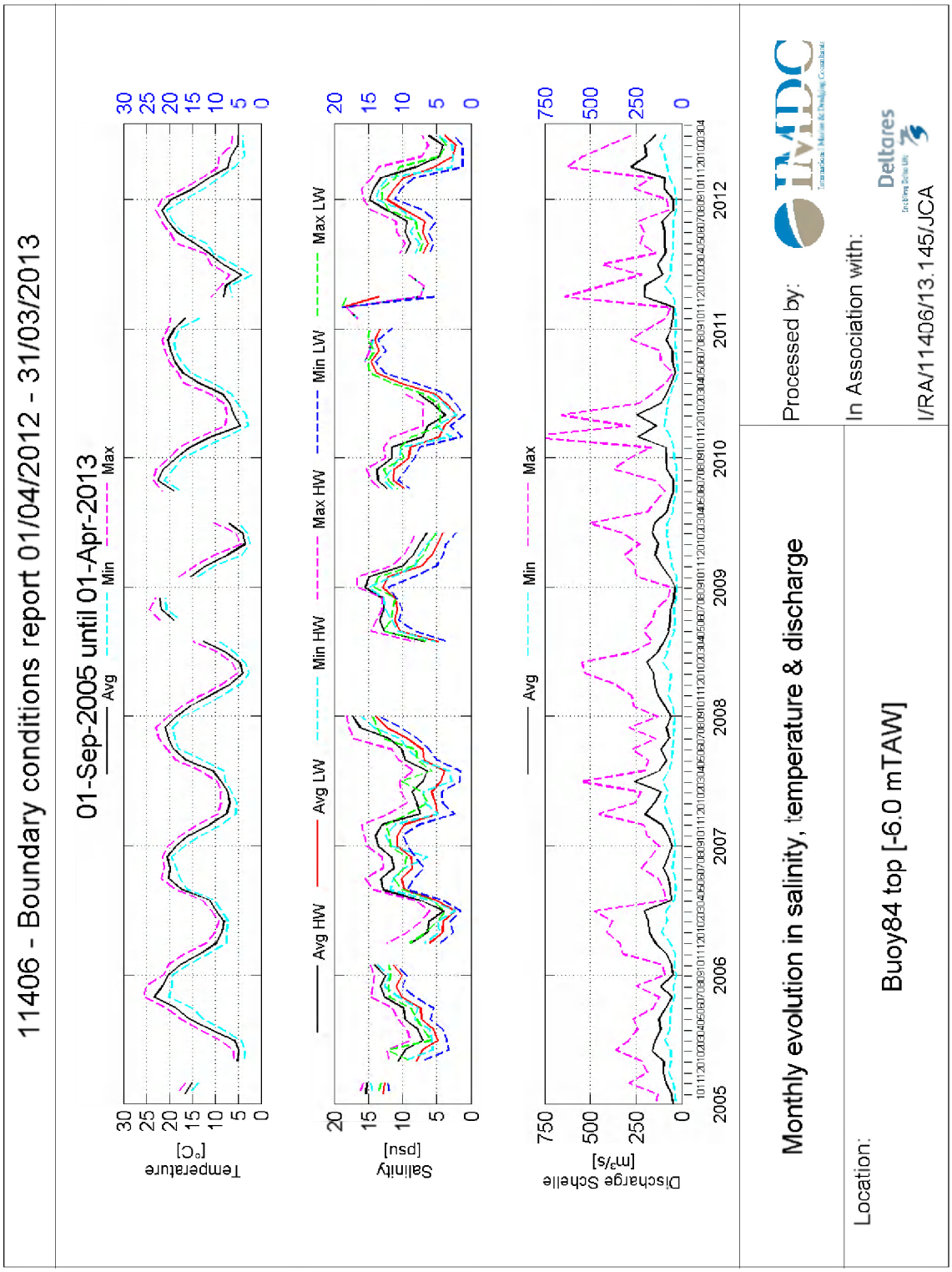
[Note: The disposal volumes are based on disposal locations close to Oosterweel: Plaat van Boomke, Oosterweel and Punt van Melsele]

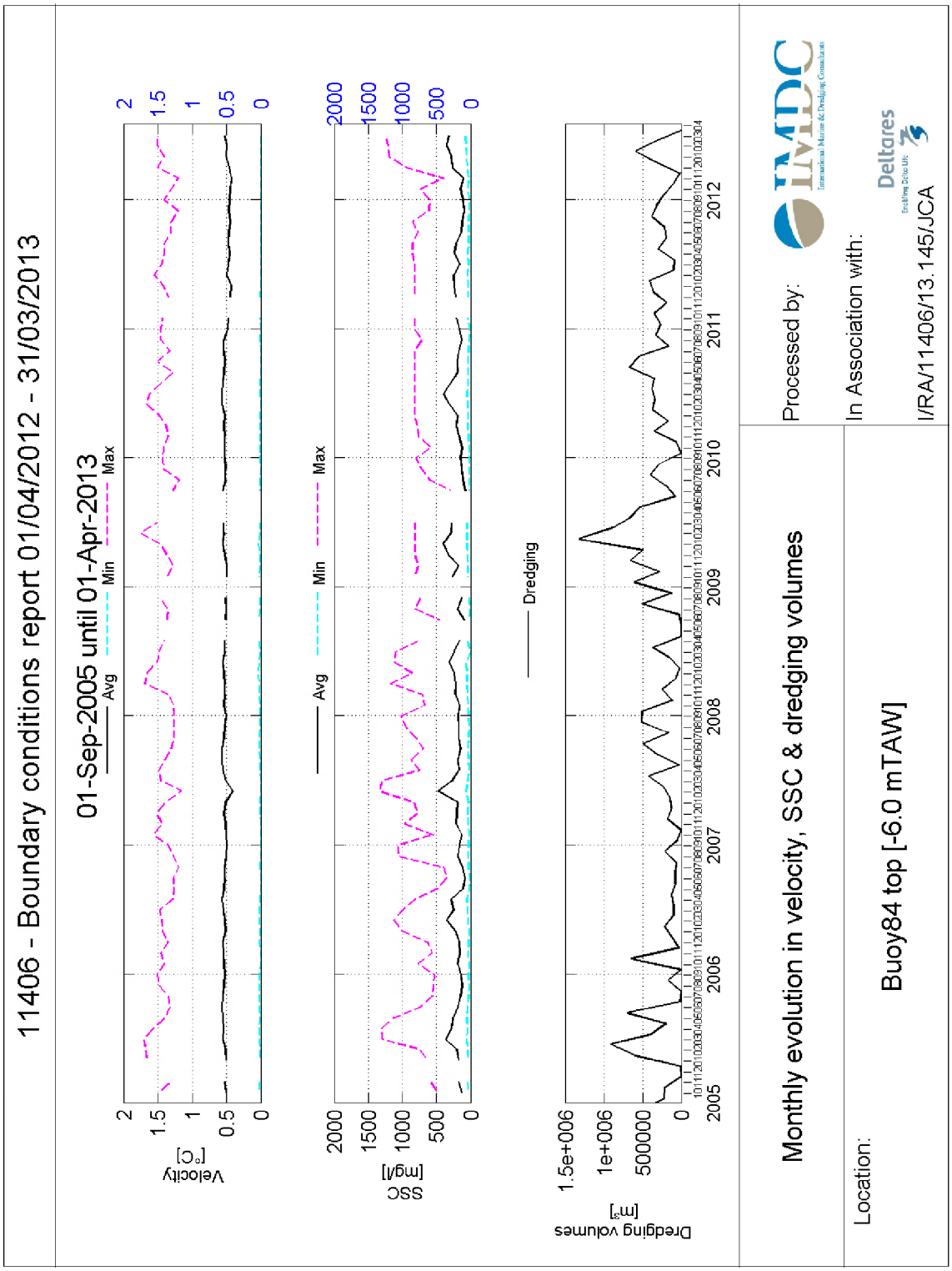

11406 - Boundary conditions report 01/04/2012 - 31/03/2013
01-Sep-2005 until 01-Apr-2013
Avg
Min
Max
Temperature [°C]
Avg HW
Avg LW
Min HW
Max HW
Min LW
Max LW
Salinity [psu]
Discharge Schelle [m³/s]
2005
2006
2007
2008
2009
2010
2011
2012
Monthly evolution in salinity, temperature & discharge
Location:
Oosterweel bottom [-5.5 mTAW]
Processed by:
In Association with:
Deltares
I/RA/11406/13.145/JCA



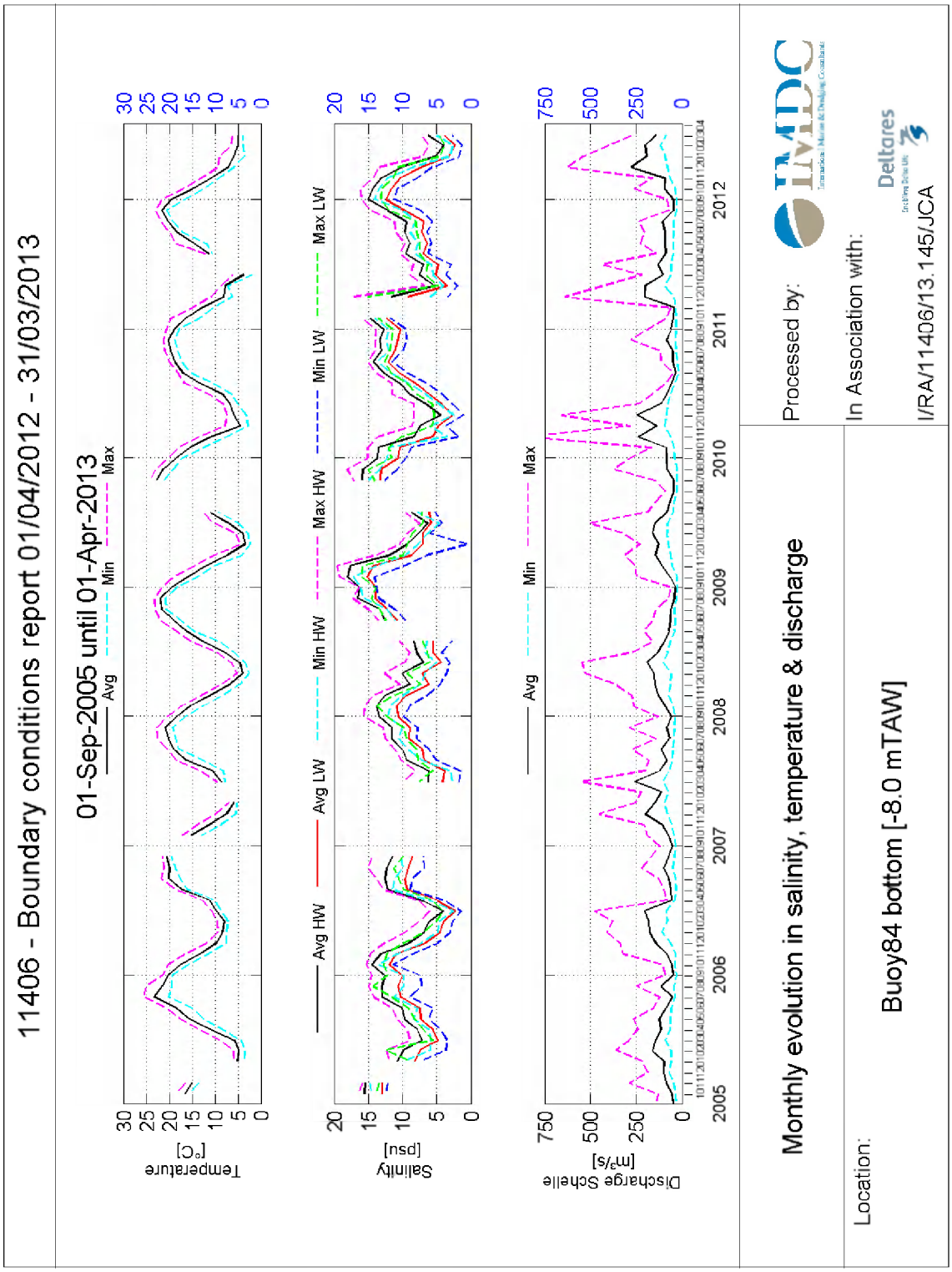
[Note: The disposal volumes are based on disposal locations close to Oosterweel: Plaat van Boomke, Oosterweel and Punt van Melsele]

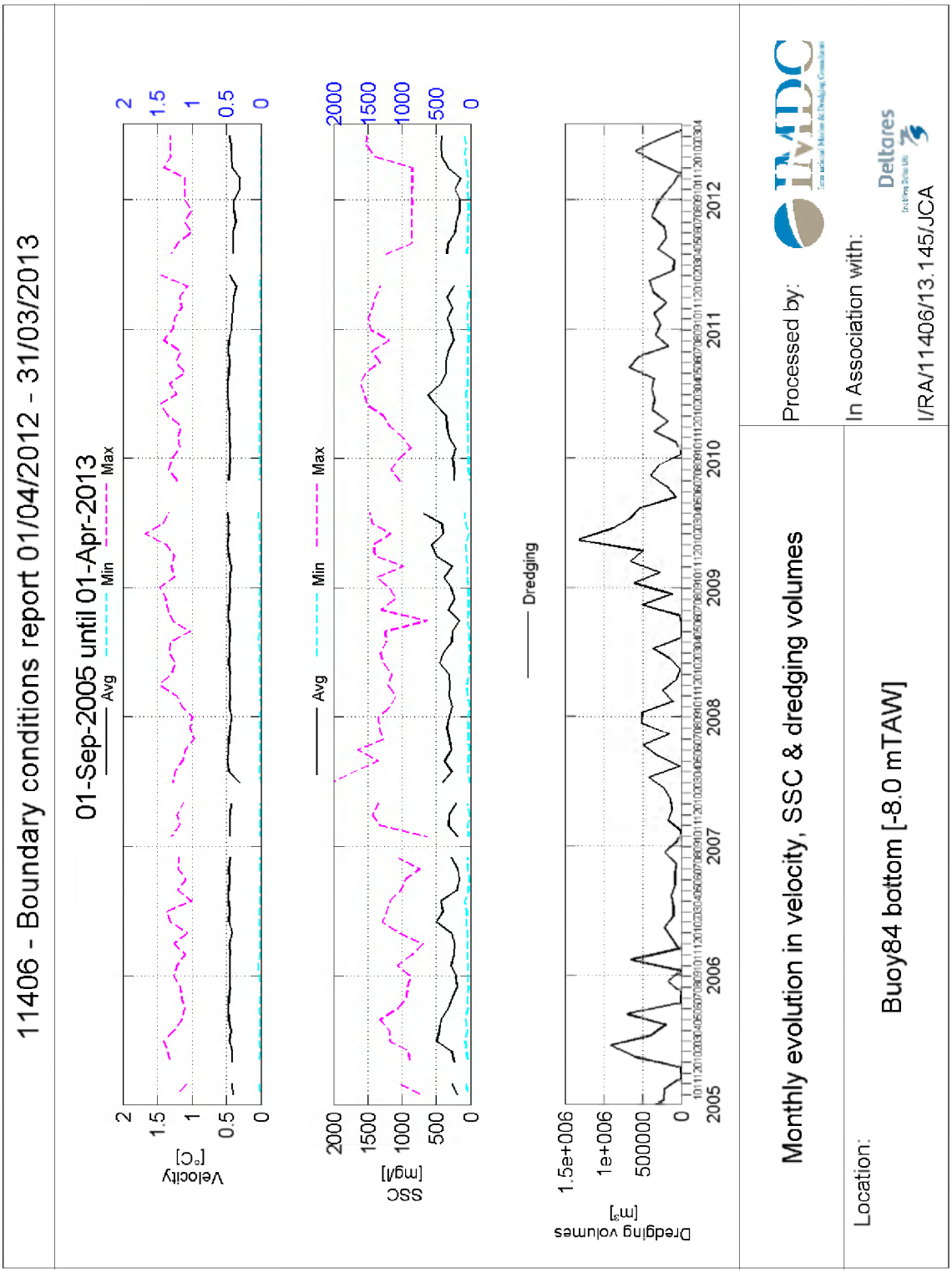

11406 - Boundary conditions report 01/04/2012 - 31/03/2013
01-Sep-2005 until 01-Apr-2013
Avg
Min
Max
Temperature [°C]
Avg HW
Avg LW
Min HW
Max HW
Min LW
Max LW
Salinity [psu]
Discharge Schelle [m³/s]
2005
2006
2007
2008
2009
2010
2011
2012
Monthly evolution in salinity, temperature & discharge
Location:
Liefkenshoek [-1.5 mTAW]
Processed by:
In Association with:
Deltares
I/RA/11406/13.145/JCA


11406 - Boundary conditions report 01/04/2012 - 31/03/2013
01-Sep-2005 until 01-Apr-2013
Avg
Min
Max
Temperature [°C]
Avg HW
Avg LW
Min HW
Max HW
Min LW
Max LW
Salinity [psu]
Discharge Schelle [m³/s]
2005
2006
2007
2008
2009
2010
2011
2012
Monthly evolution in salinity, temperature & discharge
Location:
Buoy84 top [-6.0 mTAW]
Processed by:
In Association with:
Deltares
I/RA/11406/13.145/JCA

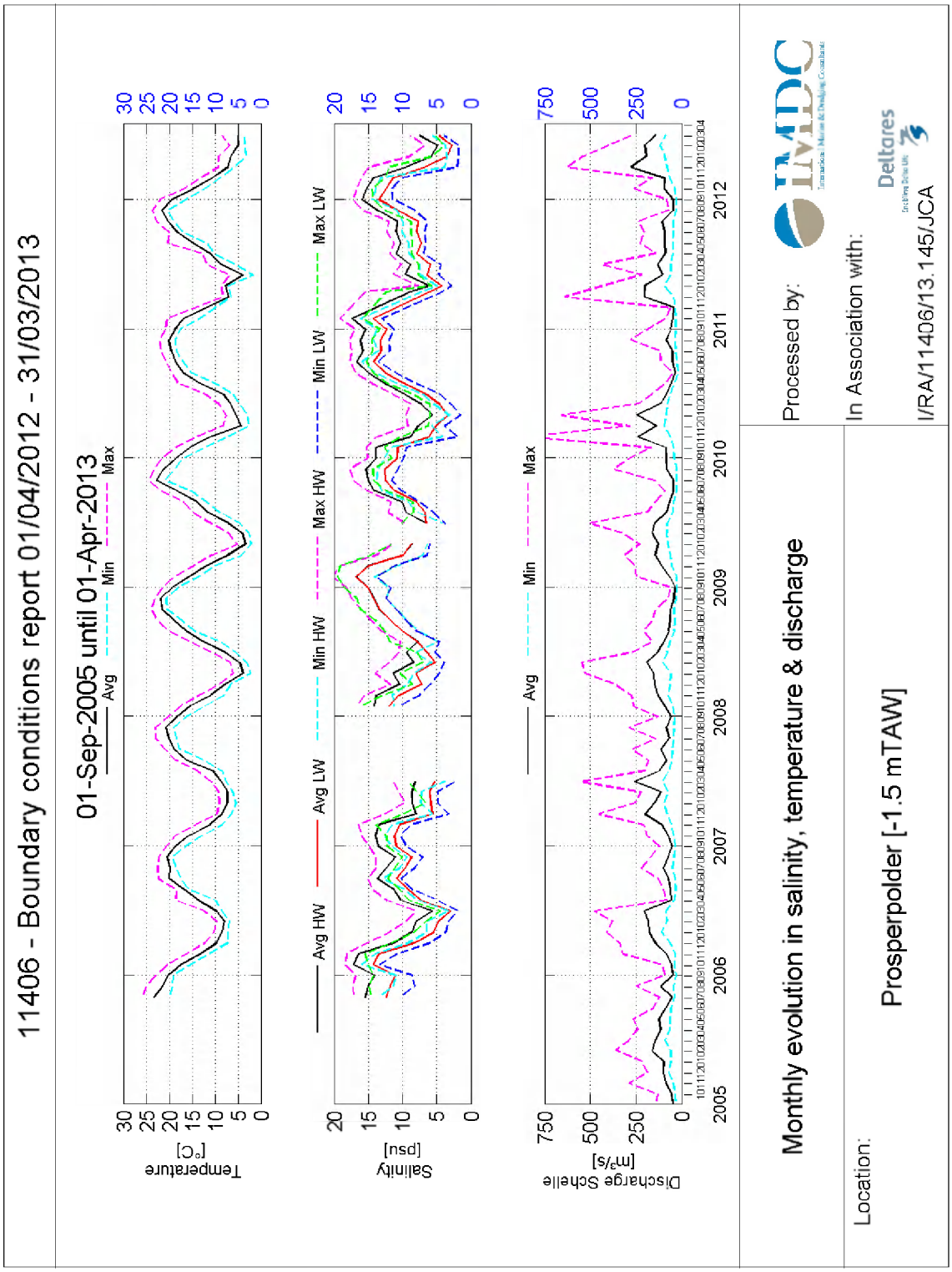


[Note: The dredging volumes are based on dredging activities close to Buoy84: Europaterminal, Drempel van Frederik, Lillovaarwater Plaat, Deurganckdok and Drempel van Lillo]


11406 - Boundary conditions report 01/04/2012 - 31/03/2013
01-Sep-2005 until 01-Apr-2013
Avg
Min
Max
Temperature [°C]
Avg HW
Avg LW
Min HW
Max HW
Min LW
Max LW
Salinity [psu]
Avg
Min
Max
Discharge Schelle [m³/s]
2005
2006
2007
2008
2009
2010
2011
2012
Monthly evolution in salinity, temperature & discharge
Location:
Buoy84 bottom [-8.0 mTAW]
Processed by:
In Association with:
Deltares
I/RA/11406/13.145/JCA



[Note: The dredging volumes are based on dredging activities close to Buoy84: Europaterminal, Drempel van Frederik, Lillovaarwater Plaat, Deurganckdok and Drempel van Lillo]


11406 - Boundary conditions report 01/04/2012 - 31/03/2013
01-Sep-2005 until 01-Apr-2013
Avg
Min
Max
Temperature [°C]
Avg HW
Avg LW
Min HW
Max HW
Min LW
Max LW
Salinity [psu]
Avg
Min
Max
Discharge Schelle [m³/s]
2005
2006
2007
2008
2009
2010
2011
2012
Monthly evolution in salinity, temperature & discharge
Location:
Prosperpolder [-1.5 mTAW]
Processed by:
IMDC
In Association with:
Deltares
I/RA/11406/13.145/JCA

B.4 Total result from April 2012 till March 2013 of velocity magnitude. temperature. salinity and suspended sediment concentration

Averages for the whole deployment period of each instrument [April 2012 – March 2013]

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	0.00	1.44	0.66	2	23	13	25	1425	326
Oosterweel left bank	-5.5	0.00	1.20	0.51	2	22	13	42	1756	347
Liefkenshoek	-1.5	-	-	-	3	23	13	-	-	-
Buoy84 top	-6.0	0.00	1.50	0.46	4	23	13	20	1242	198
Buoy84 bottom	-8.0	0.00	1.40	0.38	4	23	13	24	1517	272
Prosperpolder	-1.5	-	-	-	3	24	13	-	-	-

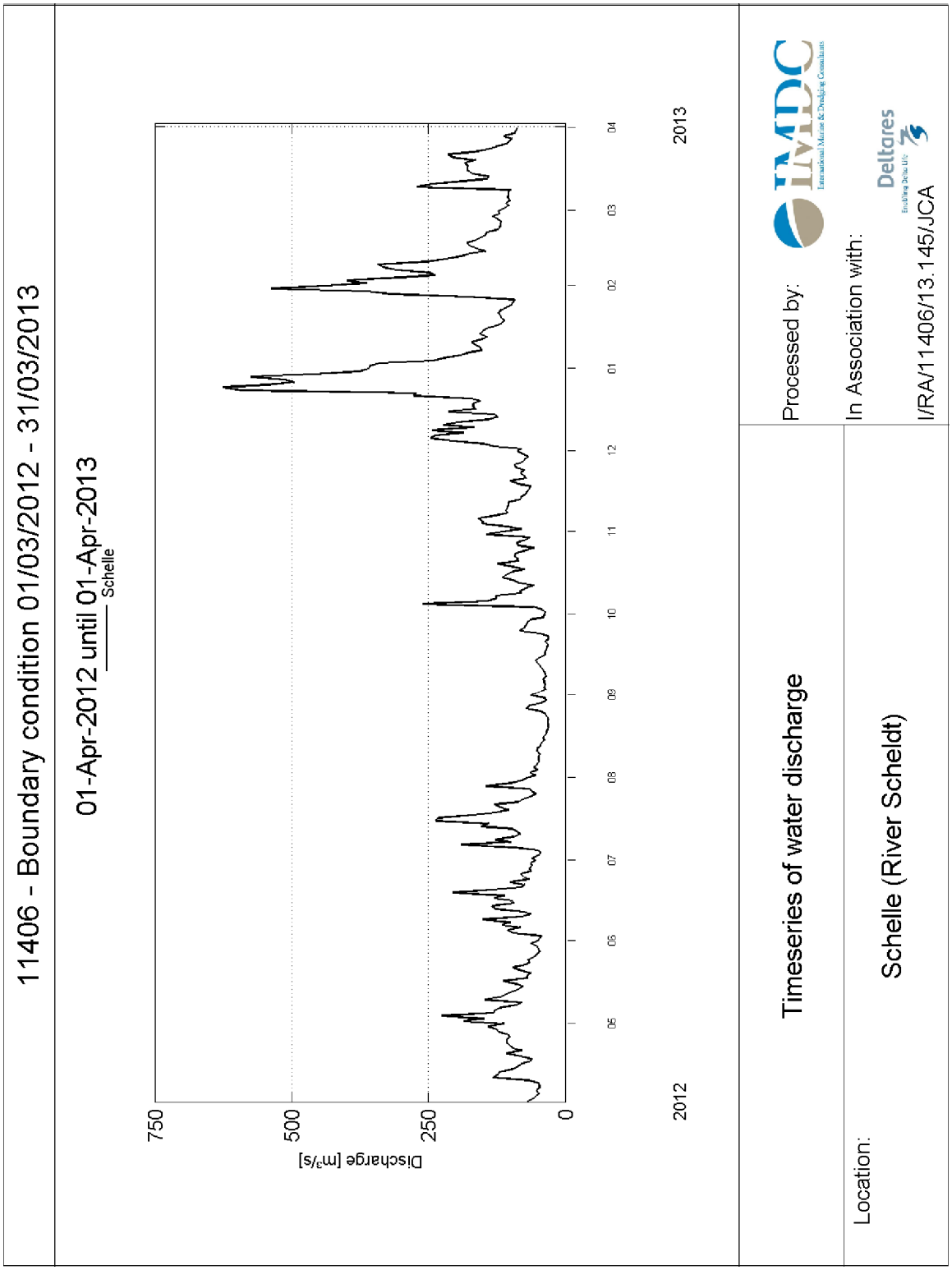
Salinity [ppt]

Location	**Depth [m TAW]**	**Minimum**		**Maximum**		**Average**	
		Slack HW	***Slack LW***	***Slack HW***	***Slack LW***	***Slack HW***	***Slack LW***
Oosterweel left bank	-2.0	1.0	0.3	12.6	5.0	6.5	1.3
Oosterweel left bank	-5.5	1.0	0.3	12.6	5.5	6.7	1.4
Liefkenshoek	-1.5	1.5	0.9	13.7	11.8	7.5	6.1
Buoy84 top	-6.0	2.6	1.2	15.9	12.9	9.4	6.9
Buoy84 bottom	-8.0	2.6	1.2	16.1	13.1	9.9	7.5
Prosperpolder	-1.5	3.5	1.7	17.2	14.4	10.9	8.2

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

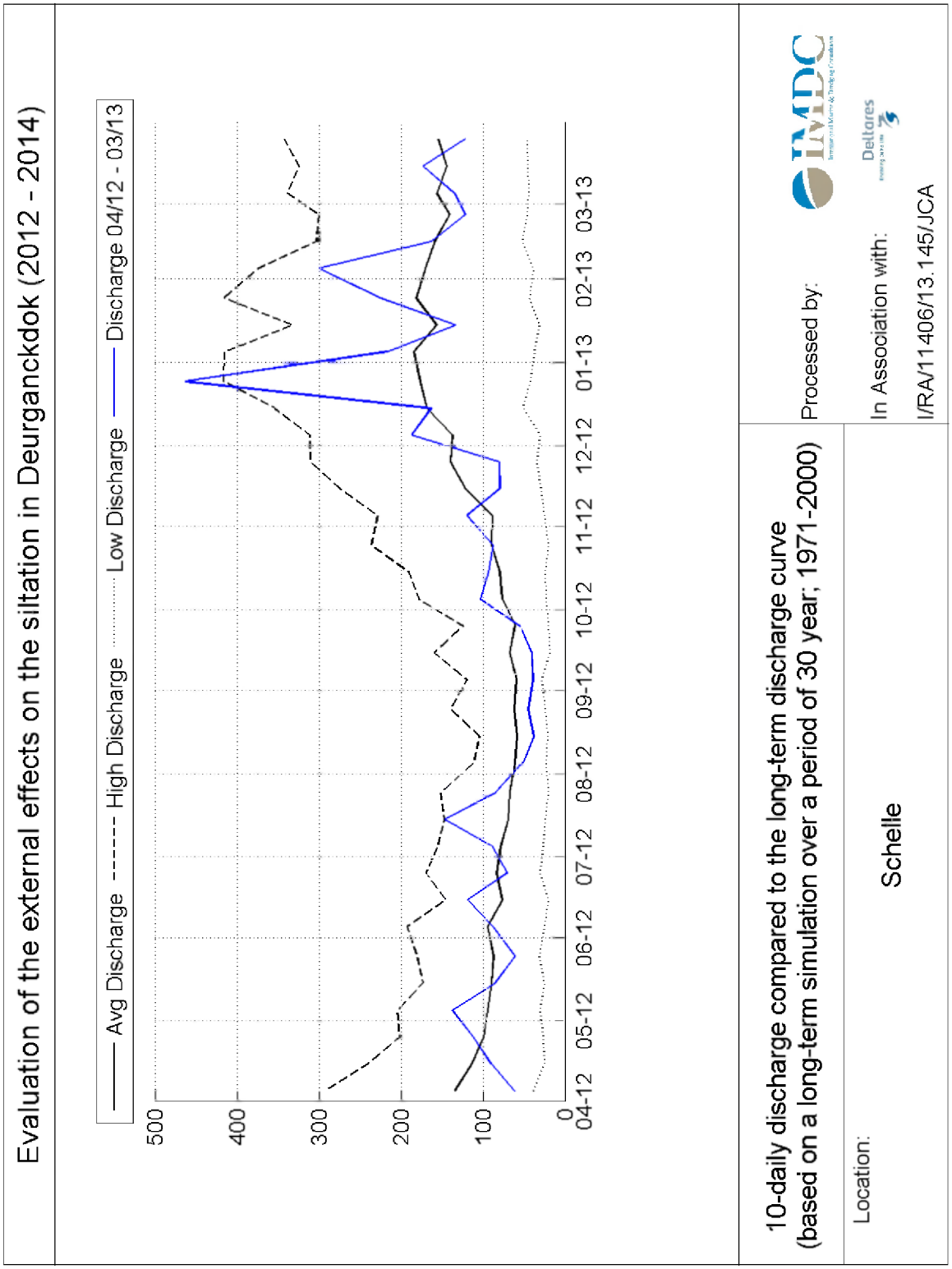
Annex C

Fresh water discharge


11406 - Boundary condition 01/03/2012 - 31/03/2013
01-Apr-2012 until 01-Apr-2013
Schelle
Discharge [m³/s]
750
500
250
0
05
06
07
08
09
10
11
12
01
02
03
04
2012
2013
Processed by:
IMDC
International Marine & Dredging Consultants
In Association with:
Deltares
Enabling Delta Life
I/RA/11406/13.145/JCA
Timeseries of water discharge
Location:
Schelle (River Scheldt)

Monthly statistics of the fresh water discharge [m³/s] of the river Scheldt at Schelle between April 2012 and March 2013

Date	First Decade	Second Decade	Third Decade	Monthly average	Monthly minimum	Monthly maximum
April 2012	62	90	111	87	46	140
May 2012	137	85	61	93	46	225
June 2012	88	118	70	92	44	205
July 2012	89	146	84	106	44	236
August 2012	51	38	44	44	30	71
September 2012	39	40	54	44	30	82
October 2012	103	93	87	94	36	260
November 2012	119	79	79	93	63	158
December 2012	186	163	463	277	80	625
January 2013	217	133	224	192	93	538
February 2013	300	163	122	200	117	399
March 2013	135	172	121	142	88	271


Evaluation of the external effects on the siltation in Deurganckdok (2012 - 2014)
Avg Discharge
High Discharge
Low Discharge
Discharge 04/12 - 03/13
500
400
300
200
100
0
04-12
05-12
06-12
07-12
08-12
09-12
10-12
11-12
12-12
01-13
02-13
03-13
10-daily discharge compared to the long-term discharge curve
(based on a long-term simulation over a period of 30 year; 1971-2000)
Location:
Schelle
Processed by:
IMDC
Deltares
In Association with:
I/RA/11406/13.145/JCA

Annex D 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
:reewnO = ק	mrotsrednuht = ק
Neerslag te wijten aan mist of dauw:	Precipitation due to fog or dew

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DEURNE(RIW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. april 2012

	Druk hPa	Bewolking Octas				Son	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	1019.5	0	2	5	1	/	5.7	10.4	-1.6	-2.0	7.6	8.0	7.9	8.3	9.5	9.4
2	1011.1	0	6	5	5	/	7.9	14.1	-1.0	-0.8	7.5	7.9	7.8	8.1	9.3	9.4
3	1003.3	3	4	4	6	/	10.1	16.0	2.8	2.5	8.6	8.8	8.8	9.0	9.4	9.3
4	1008.1	3	7	7	5	/	9.5	14.7	6.9	6.0	9.7	9.8	9.8	9.9	9.7	9.4
5	1016.9	8	7	7	8	/	7.3	8.9	4.9	4.3	9.6	9.8	9.8	9.9	10.0	9.4
6	1013.8	7	3	2	6	/	6.3	10.5	1.6	0.7	8.5	8.7	8.7	9.0	9.8	9.5
7	1010.4	8	8	7	5	/	6.4	9.5	4.3	3.6	9.2	9.5	9.4	9.6	9.8	9.6
8	1013.8	8	7	8	8	/	6.8	10.8	3.7	2.5	8.6	8.8	8.7	9.0	9.6	9.6
9	1001.1	8	7	8	7	/	9.5	11.6	6.9	6.7	9.4	9.5	9.5	9.6	9.7	9.6
10	993.5	8	8	8	8	/	9.1	10.3	7.3	5.5	9.9	9.9	9.9	10.0	9.8	9.6
11	998.9	0	3	5	7	/	7.6	12.8	4.8	3.9	9.2	9.4	9.3	9.5	9.8	9.6
12	1002.9	8	3	6	4	/	7.1	11.4	2.5	2.3	9.1	9.3	9.3	9.5	9.8	9.7
13	1005.4	0	/	5	4	/	6.6	13.0	-1.1	0.0	8.5	8.8	8.7	9.0	9.7	9.7
14	1006.3	8	4	5	4	/	7.9	12.6	3.5	2.9	9.1	9.3	9.3	9.5	9.8	9.7
15	1015.1	0	7	7	7	/	6.6	9.6	3.6	2.4	8.8	9.2	9.1	9.3	9.8	9.7
16	1022.6	0	1	5	1	/	5.9	10.4	-0.7	-1.3	8.1	8.4	8.3	8.6	9.5	9.7
17	1007.9	0	6	8	7	/	5.0	10.2	-2.0	-2.8	7.4	7.8	7.7	8.1	9.2	9.6
18	991.1	1	6	6	7	/	8.1	11.5	5.5	4.1	7.9	8.1	8.1	8.3	9.1	9.5
19	988.8	8	8	8	5	/	9.3	13.1	7.0	4.4	8.8	8.8	8.9	8.9	9.1	9.5
20	995.5	1	5	7	5	/	7.9	12.7	2.9	2.6	8.6	8.8	8.7	8.9	9.3	9.4
21	998.6	6	5	4	6	/	7.9	12.2	6.3	4.9	9.0	9.1	9.1	9.2	9.4	9.4
22	1004.4	8	2	3	5	/	9.0	13.1	6.5	5.4	9.2	9.3	9.3	9.5	9.5	9.5
23	999.4	1	7	5	8	/	8.7	13.1	6.7	5.8	9.5	9.6	9.6	9.7	9.6	9.5
24	996.0	8	6	6	7	/	8.8	13.0	5.9	6.4	9.9	9.9	9.9	10.0	9.8	9.6
25	997.2	8	1	8	5	/	9.5	12.5	4.9	4.4	9.9	10.1	10.0	10.2	10.0	9.6
26	1002.1	/	8	7	6	/	11.6	15.3	9.9	9.0	10.1	10.1	10.1	10.2	10.0	9.7
27	1014.2	3	7	8	7	/	12.9	15.4	10.8	9.6	10.6	10.5	10.5	10.6	10.2	9.8
28	1011.4	8	8	7	7	/	12.6	17.7	10.0	9.8	11.2	11.1	11.1	11.1	10.4	9.8
29	1007.2	1	8	8	3	/	13.9	20.1	9.5	7.7	11.6	11.5	11.6	11.6	10.8	9.9
30	1014.8	0	2	4	7	/	15.3	21.4	5.8	4.7	11.0	11.1	11.1	11.3	11.0	10.1
M	1005.7					/	8.7	12.9	4.6							

Bewolking : 9 = Bovenlucht niet zichtbaar / = Ontbrekend gegeven

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DEURNE (RIW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. april 2012

	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	67	48	-	-	-	-	-	-	/	/	-	-	-	7	29	NW	N	-	W	NNW
2	67	47	-	-	-	-	-	-	/	/	-	-	-	7	18	N	W	SW	SW	N
3	63	33	-	-	-	0.3	1 03	4	/	/	-	-	-	4	22	SSW	-	-	VAR	NE
4	76	36	-	-	-	<0.1	1 15	5	/	/	-	-	-	7	29	NNW	N	W	WNW	N
5	74	62	-	-	-	<0.1	0 49	3	/	/	-	-	-	14	36	NE	NE	ENE	NE	ENE
6	61	30	-	-	-	0.6	2 06	9	/	/	-	-	-	11	29	NW	NNE	NNE	NW	NW
7	69	44	-	-	-	2.2	5 47	24	/	/	-	-	-	14	43	NNW	WSW	N	N	N
8	65	51	-	-	-	1.4	4 04	17	/	/	-	-	-	14	40	SSW	NNW	SSW	SSW	SW
9	85	71	-	-	-	10.3	15 08	62	/	/	-	-	-	18	43	SW	SSW	SW	SW	SSW
10	87	78	-	-	-	8.8	15 27	64	/	/	-	-	-	14	47	SSW	SSW	SSW	SW	S
11	81	50	16	6	-	6.7	4 08	17	/	/	-	X	-	14	36	SW	WSW	SSW	S	SSE
12	83	57	217	95	21	-	-	-	/	/	-	-	-	7	36	WNW	NE	SSW	-	WNW
13	83	52	382	317	148	0.1	2 25	10	/	/	X	-	-	7	25	NNE	W	ESE	-	NE
14	74	47	-	-	-	-	-	-	/	/	-	-	-	11	36	NNW	-	NNE	N	NNW
15	70	49	-	-	-	<0.1	1 02	4	/	/	-	-	-	18	43	NNE	N	N	NNE	NNE
16	62	42	-	-	-	0.1	0 16	1	/	/	-	-	-	14	47	NNW	N	NNW	NNW	NNW
17	72	42	-	-	-	2.6	3 30	15	/	/	-	-	-	18	61	SSW	S	S	SSW	SSW
18	79	53	-	-	-	4.4	4 18	18	/	/	-	-	-	18	54	S	S	SSE	S	SSE
19	69	48	-	-	-	0.4	1 25	6	/	/	-	X	-	18	47	SSW	S	S	S	SSW
20	80	58	-	-	-	4.0	2 53	12	/	/	-	-	-	11	58	SW	S	SSW	SSW	S
21	79	49	-	-	-	1.6	4 46	20	/	/	-	-	-	14	58	SW	S	SW	W	W
22	73	44	-	-	-	1.7	0 43	3	/	/	-	X	-	14	50	SW	SW	SW	SW	SSW
23	77	45	-	-	-	3.8	8 19	35	/	/	-	-	-	18	43	SSE	SSW	SSW	S	ESE
24	82	54	-	-	-	3.1	4 14	18	/	/	-	-	-	7	29	WSW	SE	SE	S	SW
25	80	61	-	-	-	1.1	4 33	19	/	/	-	-	-	22	61	SSE	SW	SE	S	SSE
26	73	53	-	-	-	6.6	7 29	31	/	/	-	-	-	22	68	SSW	S	S	SSW	S
27	68	51	118	33	-	<0.1	0 11	1	/	/	-	-	-	14	43	SSW	S	SSW	SSW	SW
28	89	74	-	-	-	2.9	8 16	34	/	/	-	-	-	11	36	NE	ENE	NE	NE	NNE
29	75	41	-	-	-	0.7	3 45	16	/	/	-	-	-	11	43	SSW	NE	E	SSE	SW
30	65	37	-	-	-	8.3	3 57	16	/	/	-	-	-	11	40	ENE	E	ESE	SE	ENE
M	74		733	451	169	71.7	111 49				1	3	0	13						

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

10

DEURNE(RLW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 u W.T. mei 2012

	Druk hPa	Bewolking Octas				Zon	Temperaturen °C									
						Duur	Lucht			Gras	Minimum onder naakte grond					
	Gem.	0u	6	12	18	u min	Gem.	Max.	Min.	Min.	-2cm	-5cm	-10cm	-20cm	-50cm	-100cm
1	1016.7	6	7	4	5	/	15.4	19.7	11.3	10.7	13.0	12.8	12.9	12.9	11.3	10.3
2	1016.4	0	6	7	7	/	11.2	13.7	9.6	8.5	13.0	13.0	13.0	13.1	11.9	10.4
3	1011.2	8	8	8	7	/	11.7	13.4	9.9	9.1	12.7	12.7	12.7	12.8	12.1	10.7
4	1005.7	0	6	7	6	/	11.1	15.3	8.7	7.8	12.3	12.3	12.3	12.4	12.0	10.9
5	1007.4	8	8	8	7	/	8.6	10.2	7.7	7.6	12.1	12.3	12.2	12.3	12.1	11.0
6	1012.0	8	8	8	6	/	8.7	11.4	6.5	5.7	11.6	11.8	11.7	11.9	11.9	11.1
7	1017.1	8	7	4	5	/	10.6	16.2	5.0	4.9	11.3	11.5	11.4	11.6	11.7	11.2
8	1010.5	8	7	7	7	/	14.6	20.3	9.3	8.7	12.3	12.3	12.3	12.3	11.9	11.2
9	1011.9	8	7	7	7	/	16.8	20.2	14.2	13.6	13.2	13.1	13.2	13.1	12.0	11.2
10	1014.4	/	8	8	7	/	20.0	24.3	15.5	14.3	14.1	14.0	14.0	13.9	12.5	11.3
11	1022.0	/	7	7	7	/	15.1	18.9	8.6	8.2	14.3	14.4	14.4	14.5	13.0	11.5
12	1035.0	0	5	5	1	/	9.7	13.3	5.1	3.5	13.0	13.3	13.2	13.4	13.2	11.7
13	1031.4	0	1	4	5	/	9.3	14.9	1.2	1.0	11.7	12.1	11.9	12.3	12.8	11.9
14	1018.0	0	3	1	2	/	12.2	17.8	6.1	5.5	11.6	12.0	11.8	12.1	12.7	12.0
15	1012.1	8	2	6	6	/	8.7	11.7	6.5	6.8	12.1	12.4	12.3	12.6	13.0	12.0
16	1023.5	8	5	4	2	/	9.0	13.2	3.5	4.3	11.2	11.6	11.5	11.8	12.6	12.1
17	1019.3	0	3	5	7	/	10.4	15.0	2.5	3.0	10.8	11.2	11.1	11.5	12.4	12.1
18	1007.6	8	8	8	7	/	14.0	18.4	9.5	8.7	12.1	12.3	12.2	12.4	12.5	12.1
19	1010.6	8	7	5	7	/	16.3	21.5	11.8	11.5	13.0	13.1	13.0	13.1	12.7	12.1
20	1007.2	8	6	2	6	/	15.6	22.3	11.6	11.2	14.1	14.2	14.2	14.3	13.3	12.1
21	1003.2	8	7	5	5	/	15.2	20.8	11.8	13.2	15.7	15.7	15.7	15.7	14.0	12.4
22	1009.5	/	7	1	7	/	17.0	23.1	12.5	13.2	15.7	15.8	15.7	15.8	14.6	12.7
23	1021.2	/	7	4	2	/	17.8	25.7	12.0	13.6	17.1	17.1	17.1	17.1	15.2	12.9
24	1024.5	0	3	5	5	/	21.5	28.9	14.5	15.5	18.1	18.1	18.1	18.2	15.9	13.3
25	1023.7	0	1	1	0	/	21.1	26.4	15.8	14.0	18.2	18.4	18.3	18.5	16.7	13.6
26	1020.8	0	0	0	2	/	20.7	26.1	13.1	12.8	17.3	17.6	17.5	17.8	16.9	14.0
27	1018.8	0	2	1	1	/	21.2	26.9	13.1	13.0	17.5	17.8	17.7	18.0	17.1	14.4
28	1016.8	0	0	1	0	/	20.2	24.6	15.2	14.9	18.5	18.7	18.7	18.8	17.4	14.6
29	1016.3	0	5	1	5	/	18.8	24.9	13.3	14.7	18.8	18.9	18.9	19.0	17.9	14.9
30	1018.4	0	4	6	4	/	18.0	23.5	12.1	14.1	19.0	19.2	19.1	19.3	18.2	15.3
31	1017.6	0	7	8	8	/	17.1	20.2	13.9	15.1	19.4	19.6	19.5	19.6	18.5	15.5
M	1016.2					/	14.8	19.4	10.0							

Bewolking : 9 = Bovenlucht niet zichtbaar / = Ontbrekend gegeven

11

DEURNE(RIW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. mei 2012

	Rel.Vocht.		Mist			Meerslag								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	73	51	-	-	-	<0.1	2 32	11	/	/	-	-	-	11	36	WSW	NNE	E	SW	W
2	90	79	-	-	-	4.2	6 09	26	/	/	-	-	-	11	32	NW	N	N	WNW	W
3	87	77	-	-	-	<0.1	0 51	4	/	/	-	-	-	11	25	SW	SSW	SW	S	SW
4	81	66	-	-	-	<0.1	1 52	8	/	/	-	-	-	11	29	NNW	SW	W	NW	NNW
5	84	73	-	-	-	1.6	8 59	37	/	/	-	-	-	11	25	ENE	NNE	NNE	NNE	NE
6	73	59	-	-	-	<0.1	0 45	3	/	/	-	-	-	14	32	NE	NE	ENE	NE	NE
7	72	45	-	-	-	-	-	-	/	/	-	-	-	11	25	SSE	E	E	SE	SE
8	74	52	-	-	-	1.3	2 22	10	/	/	-	-	-	14	32	SSW	SSE	SSE	SSE	SSW
9	82	62	-	-	-	3.5	3 27	14	/	/	-	-	-	14	43	SW	S	SW	SW	SSW
10	76	57	-	-	-	1.0	4 23	18	/	/	-	-	X	14	47	SW	SSE	S	SW	WSW
11	73	56	-	-	-	<0.1	0 25	2	/	/	-	-	-	18	47	WSW	W	WSW	W	WNW
12	67	46	-	-	-	-	-	-	/	/	-	-	-	14	36	NW	NNW	N	NNW	NW
13	63	38	-	-	-	-	-	-	/	/	-	-	-	4	18	ENE	N	-	WNW	S
14	57	31	-	-	-	-	-	-	/	/	-	-	-	14	40	SW	SSW	SSW	SW	NNW
15	81	68	-	-	-	16.8	11 33	48	/	/	-	-	X	14	43	W	W	SW	W	NW
16	63	35	-	-	-	2.1	2 36	11	/	/	-	-	-	18	50	NW	NNW	NNW	NW	WNW
17	59	33	-	-	-	-	-	-	/	/	-	-	-	11	29	SE	SE	SE	SSE	E
18	66	50	-	-	-	0.1	2 14	9	/	/	-	-	-	14	40	S	E	E	SSW	SSW
19	63	39	-	-	-	18.8	1 34	7	/	/	-	-	-	11	32	NNE	S	SSW	SSW	N
20	83	57	35	-	-	<0.1	0 10	1	/	/	-	-	X	11	29	NW	NNE	NE	NNE	W
21	85	65	405	176	-	-	-	-	/	/	-	-	-	18	40	NW	WNW	NW	NW	WNW
22	80	64	-	-	-	<0.1	0 19	1	/	/	-	-	-	14	29	W	W	WNW	WNW	WNW
23	80	57	-	-	-	-	-	-	/	/	-	-	-	11	25	NW	W	W	SW	NNW
24	70	49	-	-	-	0.4	0 30	2	/	/	-	-	X	7	29	NE	N	NNW	NW	NNE
25	43	23	-	-	-	-	-	-	/	/	-	-	-	22	47	E	ENE	E	E	E
26	46	30	-	-	-	-	-	-	/	/	-	-	-	14	43	E	ENE	E	E	ENE
27	50	32	-	-	-	<0.1	0 09	1	/	/	-	-	-	11	32	NNE	E	E	ESE	ENE
28	57	32	-	-	-	-	-	-	/	/	-	-	-	14	36	NW	N	NNW	NW	NNW
29	67	43	-	-	-	-	-	-	/	/	-	-	X	11	32	NW	WNW	WSW	VAR	N
30	68	47	-	-	-	-	-	-	/	/	-	-	-	7	25	NW	N	ENE	VAR	NNW
31	76	53	-	-	-	2.7	2 34	11	/	/	-	-	-	18	43	WNW	W	SW	W	WNW
M	71		440	176	0	52.5	53 24				0	0	5	13						

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

10

DEURNE (RLW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. juni 2012

	Druk hPa	Bewolking Octas				Son	Temperaturen °C									
						Duur	Lucht			Gras	Minimum onder naakte grond					
	Gem.	9h	6	12	18	h min	Gem.	Max.	Min.	Min.	-2cm	-5cm	-10cm	-20cm	-50cm	-100cm
1	1018.8	0	6	3	6	/	15.3	19.4	12.0	12.7	18.5	18.7	18.7	18.8	18.3	15.8
2	1016.6	8	7	8	3	/	14.1	18.7	10.1	11.5	18.0	18.3	18.2	18.4	18.1	16.0
3	1008.9	8	8	8	8	/	9.6	12.6	8.5	9.8	15.9	16.2	16.1	16.4	17.4	16.1
4	1011.7	8	8	8	8	/	10.7	13.7	8.4	8.9	15.2	15.6	15.5	15.8	16.7	16.1
5	1017.3	0	5	7	6	/	12.1	17.2	5.5	**6.5**	14.1	14.6	14.4	14.9	16.2	15.9
6	1006.0	8	8	7	6	/	14.9	19.4	10.6	11.9	15.7	15.9	15.9	16.0	16.3	15.7
7	1002.8	8	8	7	8	/	16.6	21.1	13.7	13.2	16.4	16.5	16.4	16.6	16.3	15.6
8	1005.4	7	1	6	1	/	15.8	19.6	12.0	11.5	16.4	16.6	16.5	16.7	16.5	15.6
9	1012.0	0	1	4	6	/	13.9	17.4	10.3	10.2	15.8	16.1	16.0	16.2	16.4	15.6
10	1010.0	0	1	7	7	/	15.1	19.2	9.8	9.8	15.1	15.4	15.3	15.6	16.1	15.5
11	**1002.5**	8	8	7	8	/	14.8	18.6	13.0	13.9	16.5	16.5	16.5	16.6	16.3	15.5
12	1005.6	8	1	6	7	/	14.7	19.1	10.1	12.0	16.0	16.2	16.1	16.3	16.3	15.5
13	1015.9	8	7	7	6	/	12.5	16.3	9.3	10.0	16.0	16.2	16.1	16.3	16.3	15.6
14	1018.9	0	0	2	6	/	13.6	18.7	**5.3**	7.5	14.8	15.2	15.1	15.4	16.1	15.6
15	1013.0	8	8	7	8	/	15.3	19.4	13.1	14.3	16.3	16.4	16.3	16.5	16.3	15.5
16	1013.4	8	6	7	5	/	16.7	19.5	14.4	13.8	16.7	16.7	16.7	16.8	16.4	15.6
17	1019.4	8	4	6	5	/	16.5	20.9	13.3	13.0	16.6	16.7	16.6	16.8	16.6	15.6
18	1016.6	6	8	7	5	/	15.7	18.6	10.4	12.6	16.6	16.7	16.7	16.9	16.7	15.6
19	1020.1	0	2	7	7	/	15.5	20.2	7.6	10.7	16.1	16.4	16.3	16.6	16.7	15.7
20	1015.7	0	7	5	3	/	18.3	22.9	14.1	14.5	17.1	17.2	17.1	17.3	16.7	15.8
21	1009.7	0	5	7	6	/	18.5	23.7	13.8	14.2	17.5	17.6	17.5	17.6	17.0	15.8
22	1016.0	0	3	7	5	/	15.8	18.6	13.3	13.2	17.6	17.7	17.7	17.8	17.3	15.9
23	**1022.0**	0	4	5	6	/	16.1	20.0	11.8	12.2	16.8	17.0	17.0	17.2	17.1	16.0
24	1014.2	7	8	8	5	/	14.6	16.7	12.4	13.4	17.0	17.1	17.0	17.2	17.1	16.1
25	1017.7	/	8	4	5	/	15.2	19.4	9.7	12.3	16.6	16.7	16.7	16.8	16.9	16.1
26	1021.4	0	3	2	4	/	17.7	23.8	8.4	10.9	16.2	16.5	16.3	16.6	16.9	16.1
27	1018.3	0	7	7	7	/	19.7	23.9	16.6	17.4	18.0	18.0	18.0	18.0	17.0	16.1
28	1008.3	8	6	5	6	/	**24.0**	**31.0**	16.6	17.9	18.4	18.4	18.4	18.5	17.4	16.1
29	1009.0	0	7	7	3	/	19.5	22.0	16.9	17.3	19.7	19.7	19.7	19.7	17.9	16.3
30	1011.8	0	3	3	7	/	19.7	25.1	15.4	16.6	19.1	19.1	19.2	19.2	18.4	16.5
M	1013.3					/	15.8	19.9	11.5							

Bewolking : 9 = Bovenlucht niet zichtbaar / = Ontbrekend gegeven

11

DEURNE (RLW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. juni 2012

	Rel. Vocht. %		Mist Duur in minuten			Neerslag								Wind Snelheid (km/h) en richting						
							Duur		* (cm)		Dag met									
	Gem.	Min.	<1000m	<500m	<200m	l/m²	h min	%	6h	18h	*	^	R	Gem.	Max.		0h	6h	12h	18h
1	78	62	-	-	-	<0.1	0 17	1	/	/	-	-	-	14	32	W	W	WNW	NNW	N
2	61	43	-	-	-	<0.1	0 22	2	/	/	-	-	-	7	29	E	ENE	NE	N	NE
3	95	64	-	-	-	15.8	17 56	75	/	/	-	-	-	11	36	ENE	E	E	E	NE
4	92	69	-	-	-	13.5	11 14	47	/	/	-	-	-	14	47	N	ESE	SSE	WSW	N
5	65	37	-	-	-	<0.1	1 04	4	/	/	-	-	-	7	29	SSE	W	W	VAR	SE
6	78	53	-	-	-	13.6	9 32	40	/	/	-	-	-	14	40	SW	SSE	SSE	W	SSW
7	80	55	-	-	-	7.5	5 54	25	/	/	-	-	-	11	32	SSE	SW	SSE	SSE	SSE
8	62	41	-	-	-	0.3	0 42	3	/	/	-	-	-	25	65	WSW	SSE	SSW	SW	WSW
9	60	42	-	-	-	<0.1	0 10	1	/	/	-	-	-	22	58	SW	WSW	SSW	SW	WSW
10	64	45	-	-	-	<0.1	4 52	20	/	/	-	-	-	7	25	SSW	SW	SW	SSW	ESE
11	88	68	-	-	-	20.8	13 10	55	/	/	-	-	X	7	40	S	ENE	ESE	ESE	W
12	84	64	134	100	33	7.4	2 45	11	/	/	-	-	X	11	29	NNE	-	-	NNE	NNE
13	68	50	-	-	-	<0.1	0 22	2	/	/	-	-	-	11	29	NW	N	N	NNW	NNW
14	63	43	-	-	-	<0.1	0 23	2	/	/	-	-	-	7	25	ESE	N	E	NE	E
15	84	62	-	-	-	10.2	11 15	47	/	/	-	-	-	14	43	SW	ESE	SSE	SSW	S
16	76	49	-	-	-	1.9	4 03	17	/	/	-	-	-	14	50	SW	SSW	SSW	WSW	SW
17	65	44	-	-	-	-	-	-	/	/	-	-	-	14	40	SW	SW	SW	SSW	SW
18	79	63	-	-	-	12.8	3 32	15	/	/	-	-	X	11	36	W	E	NNW	W	W
19	76	51	90	55	16	-	-	-	/	/	-	-	-	7	22	NNE	SE	ESE	-	NNE
20	71	55	-	-	-	-	-	-	/	/	-	-	-	11	25	NNE	NNE	NNW	NNE	ENE
21	82	64	-	-	-	3.1	2 05	9	/	/	-	-	X	14	40	S	NE	SE	SE	SSE
22	66	50	-	-	-	1.1	1 58	8	/	/	-	-	-	22	61	SW	SSW	SSW	SW	WSW
23	60	43	-	-	-	-	-	-	/	/	-	-	-	14	40	SW	SW	SW	SW	WSW
24	79	62	-	-	-	6.4	8 36	36	/	/	-	-	-	18	54	WSW	SSW	SSW	SW	W
25	75	54	-	-	-	-	-	-	/	/	-	-	-	18	47	WNW	SW	WSW	WNW	WNW
26	69	40	-	-	-	-	-	-	/	/	-	-	-	7	25	SW	-	SE	WSW	SW
27	82	66	-	-	-	0.5	2 25	10	/	/	-	-	-	11	32	WSW	SW	WSW	W	N
28	74	48	-	-	-	-	-	-	/	/	-	-	-	14	29	SSW	S	ENE	SE	S
29	66	48	-	-	-	0.1	1 36	7	/	/	-	-	-	14	36	SW	W	WSW	SSW	SSW
30	69	42	-	-	-	3.1	1 53	8	/	/	-	-	-	14	40	SW	S	SSW	SW	W
M	74		224	155	49	118.1	106 06				0	0	4	13						

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

10

DEGRUNE(RLW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. juli 2012

	Druk hPa	Bewolking Octas				Zon	Temperaturen °C									
						Duur	Lucht			Gras	Minimum onder naakte grond					
	Gem.	9h	6	12	18	h min	Gem.	Max.	Min.	Min.	-2cm	-5cm	-10cm	-20cm	-50cm	-100cm
1	1016.9	8	7	7	4	/	16.2	19.6	13.3	13.9	19.0	19.1	19.1	19.3	18.6	16.7
2	1019.1	0	6	5	5	/	16.7	23.0	**8.3**	**11.9**	18.0	18.2	18.1	18.4	18.4	16.9
3	1016.9	0	5	5	5	/	19.3	23.7	12.7	14.8	18.4	18.5	18.5	18.7	18.5	17.1
4	1012.4	8	7	4	2	/	21.4	27.6	16.7	18.5	19.2	19.2	19.3	19.3	18.6	17.1
5	1009.6	/	6	5	8	/	20.7	26.8	16.9	19.4	19.9	19.9	19.9	19.9	18.8	17.2
6	1009.3	8	8	4	5	/	18.6	24.4	13.8	16.0	20.2	20.3	20.3	20.4	19.2	17.4
7	1010.9	0	5	5	6	/	17.9	23.8	12.1	14.7	19.4	19.6	19.5	19.7	19.3	17.6
8	1006.5	8	7	4	7	/	17.1	20.7	15.3	16.6	19.6	19.6	19.7	19.7	19.3	17.8
9	1012.4	8	7	6	6	/	17.0	19.8	14.7	16.3	19.3	19.3	19.3	19.4	19.1	17.9
10	1012.8	8	7	8	6	/	16.2	19.1	14.4	15.4	19.0	19.1	19.1	19.2	18.9	18.0
11	1011.9	8	7	7	2	/	15.5	18.6	11.9	13.1	18.1	18.3	18.2	18.5	18.7	17.9
12	1013.3	0	7	4	7	/	15.5	20.1	11.0	13.2	17.6	17.8	17.7	17.9	18.4	17.9
13	**1004.8**	8	8	8	7	/	15.7	20.1	13.4	15.1	17.9	17.9	17.9	18.1	18.3	17.8
14	1005.1	8	8	8	7	/	14.9	17.6	13.2	14.9	17.9	17.9	17.9	18.1	18.2	17.7
15	1015.0	8	7	8	5	/	14.6	17.6	12.6	13.1	17.6	17.6	17.6	17.8	18.0	17.7
16	1021.8	8	3	7	8	/	**14.4**	16.7	12.6	13.6	17.3	17.4	17.3	17.5	17.8	17.5
17	1022.1	8	8	7	7	/	17.1	20.9	14.9	15.5	17.2	17.2	17.2	17.4	17.6	17.5
18	1015.1	5	6	5	7	/	17.9	21.4	15.3	15.9	17.6	17.6	17.6	17.7	17.6	17.4
19	1010.3	8	7	4	6	/	16.5	20.2	13.7	15.7	17.8	17.8	17.8	18.0	17.8	17.3
20	1016.2	8	8	7	7	/	14.7	16.8	12.4	13.5	17.6	17.7	17.6	17.8	17.8	17.3
21	1023.4	8	7	6	2	/	14.9	19.7	11.5	12.3	17.1	17.3	17.2	17.4	17.7	17.3
22	**1028.0**	0	3	3	1	/	16.3	22.1	10.8	12.2	16.7	16.9	16.8	17.1	17.6	17.3
23	1025.0	0	1	1	0	/	19.7	26.6	11.2	13.0	17.0	17.2	17.1	17.4	17.7	17.2
24	1018.5	0	1	1	1	/	21.9	28.8	12.3	14.0	17.6	17.8	17.7	17.9	17.8	17.2
25	1016.1	0	1	/	1	/	22.9	**29.2**	13.9	16.0	18.4	18.5	18.5	18.6	18.2	17.3
26	1017.3	0	0	0	0	/	**23.1**	28.9	16.8	18.0	19.4	19.5	19.5	19.5	18.7	17.4
27	1011.7	1	1	1	7	/	22.8	29.0	17.7	19.1	20.3	20.4	20.4	20.4	19.2	17.6
28	1009.1	8	7	5	1	/	19.7	23.6	15.4	17.7	20.9	20.9	20.9	20.9	19.7	17.9
29	1013.1	2	4	4	5	/	16.8	21.1	13.5	16.0	20.1	20.2	20.2	20.3	19.9	18.2
30	1016.4	/	1	6	4	/	15.6	19.6	11.8	14.3	19.2	19.4	19.3	19.5	19.7	18.4
31	1017.6	8	5	7	6	/	16.3	20.6	12.7	14.3	18.7	18.8	18.8	19.0	19.3	18.5
M	1014.8					/	17.7	22.2	13.4							

Bewolking : 9 = Bovenlucht niet zichtbaar / = Ontbrekend gegeven

11

DEURNE (RIW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. juli 2012

	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	67	43	-	-	-	<0.1	0 14	1	/	/	-	-	-	14	47	WSW	SW	WSW	WSW	W
2	64	39	-	-	-	-	-	-	/	/	-	-	-	7	25	SSE	SW	S	SSE	SE
3	69	53	-	-	-	-	-	-	/	/	-	-	-	7	25	S	SE	S	SW	SW
4	73	40	-	-	-	1.7	1 17	5	/	/	-	-	X	11	36	NW	SE	ESE	SSE	SE
5	83	51	10	-	-	21.0	7 12	30	/	/	-	-	X	7	50	SSE	S	S	SSE	W
6	78	42	-	-	-	0.1	2 36	11	/	/	-	-	X	11	32	SSW	W	W	S	S
7	76	43	-	-	-	8.8	2 17	10	/	/	-	-	X	11	43	S	SSE	S	SSW	ESE
8	85	58	-	-	-	10.9	6 11	26	/	/	-	-	-	18	50	WSW	ESE	SE	SW	WSW
9	79	66	-	-	-	0.7	0 13	1	/	/	-	-	-	14	40	WSW	WSW	SW	SW	WNW
10	78	63	-	-	-	1.5	3 00	13	/	/	-	-	-	11	29	WSW	SW	SSW	S	SW
11	74	59	-	-	-	18.2	3 05	13	/	/	-	X	X	18	54	WSW	SSW	SW	W	WSW
12	70	43	-	-	-	7.1	7 01	29	/	/	-	-	-	14	40	W	SW	WSW	W	SSW
13	82	64	-	-	-	7.7	9 44	41	/	/	-	-	-	14	43	WSW	SE	SSW	WSW	SW
14	87	75	-	-	-	18.6	15 32	65	/	/	-	-	-	14	47	WNW	SSW	SW	SW	WNW
15	81	53	-	-	-	3.0	4 03	17	/	/	-	-	X	11	32	WNW	-	WSW	NW	WNW
16	87	72	-	-	-	6.5	12 29	52	/	/	-	-	-	18	50	WSW	SW	WSW	SW	SW
17	83	62	-	-	-	4.4	7 02	29	/	/	-	-	-	18	43	WSW	WSW	W	W	WSW
18	74	50	-	-	-	0.2	1 53	8	/	/	-	-	-	22	50	SW	SW	SW	WSW	WSW
19	78	55	-	-	-	6.9	5 56	25	/	/	-	-	-	22	50	W	SW	WSW	WNW	W
20	87	70	-	-	-	1.6	5 34	23	/	/	-	-	-	7	29	WSW	SW	SSW	SE	N
21	68	49	-	-	-	-	-	-	/	/	-	-	-	11	32	NNW	N	NNE	NNW	NNW
22	66	42	-	-	-	-	-	-	/	/	-	-	-	4	22	ESE	N	E	VAR	ESE
23	59	32	-	-	-	-	-	-	/	/	-	-	-	7	22	S	SE	SE	SE	SE
24	54	29	-	-	-	-	-	-	/	/	-	-	-	7	25	E	ESE	ESE	E	E
25	58	32	-	-	-	-	-	-	/	/	-	-	-	7	29	NW	-	SW	/	N
26	66	43	-	-	-	-	-	-	/	/	-	-	-	7	22	NE	N	NE	ENE	NE
27	73	44	-	-	-	1.0	1 39	7	/	/	-	-	-	11	32	NNW	E	-	NW	N
28	82	62	-	-	-	<0.1	0 26	2	/	/	-	-	-	11	36	WNW	N	N	ESE	NW
29	71	43	-	-	-	1.2	2 11	9	/	/	-	-	-	14	43	SW	W	WSW	WSW	SSW
30	75	47	-	-	-	2.7	0 34	2	/	/	-	-	-	14	40	WSW	SW	SW	S	WSW
31	81	65	-	-	-	-	-	-	/	/	-	-	-	11	36	SSW	SW	SSW	S	SSW
M	74		10	0	0	125.8	100 09				0	1	6	12						

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

10

DEGRNE (RLW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. augustus 2012

	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	1012.0	0	2	1	8	/	20.4	28.7	12.0	13.8	17.9	18.2	18.1	18.4	19.1	18.5
2	1012.9	/	7	7	4	/	19.2	22.9	13.2	15.4	19.3	19.5	19.5	19.6	19.1	18.5
3	1015.4	7	1	5	7	/	18.5	23.7	14.3	15.9	18.9	19.0	19.1	19.2	19.3	18.5
4	1013.2	8	/	/	7	/	18.4	24.0	14.1	16.3	19.2	19.3	19.3	19.4	19.3	18.5
5	1009.1	/	2	5	7	/	19.5	25.0	14.3	16.8	19.2	19.3	19.3	19.4	19.4	18.5
6	1011.1	0	3	7	6	/	17.0	19.7	14.9	15.3	19.2	19.3	19.3	19.4	19.5	18.6
7	1020.5	/	4	7	7	/	16.6	19.3	13.4	14.2	18.6	18.7	18.7	18.9	19.2	18.6
8	1024.0	0	6	7	6	/	16.5	21.3	11.7	13.4	18.0	18.2	18.1	18.4	18.9	18.6
9	1026.2	7	7	3	3	/	17.9	23.0	11.5	13.8	17.9	18.1	18.1	18.3	18.9	18.5
10	1027.1	0	0	1	1	/	17.0	21.8	11.1	12.8	17.9	18.2	18.1	18.4	18.9	18.5
11	1022.1	0	1	3	1	/	17.4	22.2	11.7	12.8	17.8	18.1	18.0	18.3	18.9	18.5
12	1014.0	0	6	4	1	/	19.0	25.8	12.1	13.8	18.1	18.4	18.3	18.6	19.0	18.5
13	1013.0	0	7	7	7	/	20.8	26.2	15.2	16.8	19.1	19.2	19.2	19.2	19.1	18.5
14	1013.1	/	5	6	7	/	21.3	25.6	14.8	16.7	19.4	19.6	19.5	19.7	19.3	18.5
15	1009.6	/	5	3	6	/	23.5	31.6	17.5	18.3	19.9	20.0	20.0	20.1	19.6	18.6
16	1017.7	0	1	5	5	/	20.1	24.5	15.3	16.4	19.9	20.0	20.0	20.1	19.9	18.7
17	1018.1	/	7	6	4	/	22.4	29.7	15.1	17.5	19.9	20.1	20.0	20.2	20.1	18.9
18	1016.2	0	5	1	0	/	25.9	**35.5**	16.1	17.1	19.9	20.1	20.1	20.2	20.2	19.0
19	1015.2	0	0	1	5	/	**26.3**	33.9	18.9	19.6	21.0	21.1	21.1	21.1	20.5	19.1
20	1019.8	/	3	5	6	/	22.8	26.4	19.2	20.5	21.9	21.9	21.9	21.9	20.8	19.3
21	1017.6	1	6	6	7	/	21.7	26.6	17.5	19.4	21.4	21.5	21.5	21.6	21.2	19.5
22	1017.8	/	2	4	6	/	18.6	22.6	14.9	16.1	20.7	20.9	20.8	21.0	21.1	19.7
23	1015.2	0	7	4	2	/	17.7	23.1	13.5	15.6	20.0	20.2	20.2	20.4	20.9	19.8
24	1007.0	/	7	6	7	/	18.8	24.3	14.7	17.5	20.1	20.3	20.3	20.5	20.8	19.9
25	1005.2	0	5	7	6	/	18.6	22.3	15.5	16.9	19.8	20.0	20.0	20.2	20.7	19.9
26	1013.4	8	7	7	1	/	16.2	19.9	12.4	14.3	18.9	19.2	19.1	19.3	20.3	19.9
27	1018.2	0	1	6	4	/	17.0	24.1	**8.7**	**11.9**	17.8	18.2	18.0	18.5	19.8	19.8
28	1015.0	8	8	8	3	/	18.8	23.8	13.3	14.8	18.9	19.0	19.0	19.1	19.7	19.6
29	1015.9	0	5	4	6	/	18.6	24.8	12.4	14.1	18.3	18.5	18.5	18.8	19.7	19.5
30	1016.2	8	4	7	5	/	16.8	21.8	13.9	15.3	18.8	18.9	18.9	19.1	19.7	19.4
31	1022.9	8	8	6	3	/	**14.5**	18.1	12.0	13.2	17.6	17.9	17.8	18.1	19.3	19.4
M	1016.0					/	19.3	24.6	14.0							

Bewolking : 9 = Bovenlucht niet zichtbaar / = Ontbrekend gegeven

11

DEURNE (RLW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. augustus 2012

	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	72	37	-	-	-	0.1	2 04	9	/	/	-	-	-	11	50	NW	SE	ESE	SSE	NNW
2	71	47	-	-	-	-	-	-	/	/	-	-	-	14	40	WSW	W	WSW	SW	SW
3	71	42	-	-	-	0.1	1 38	7	/	/	-	-	-	11	32	SW	SE	WSW	SW	SW
4	76	45	-	-	-	1.1	1 04	4	/	/	-	-	X	11	40	SSW	SSW	SSE	SSW	SSW
5	71	43	-	-	-	1.1	3 16	14	/	/	-	-	-	7	40	SSW	ESE	WSW	SW	SSW
6	78	61	-	-	-	14.9	3 20	14	/	/	-	-	X	14	43	SW	SSW	SSW	SW	WSW
7	69	51	-	-	-	-	-	-	/	/	-	-	-	18	43	WSW	SW	SW	W	W
8	83	63	27	25	1	0.8	1 02	4	/	/	-	-	-	11	25	SSW	SSW	SW	WSW	SW
9	72	43	186	117	42	-	-	-	/	/	-	-	-	7	29	NNE	N	-	NNW	N
10	67	47	-	-	-	-	-	-	/	/	-	-	-	11	32	NE	ENE	ENE	NE	NE
11	69	48	-	-	-	-	-	-	/	/	-	-	-	11	29	E	ENE	E	E	E
12	66	44	-	-	-	-	-	-	/	/	-	-	-	11	32	SE	E	E	ESE	E
13	69	42	-	-	-	-	-	-	/	/	-	-	-	7	18	SW	ESE	WSW	SW	E
14	73	47	81	26	20	-	-	-	/	/	-	-	-	4	18	WSW	ENE	SSE	SW	WNW
15	65	36	-	-	-	-	-	-	/	/	-	-	-	14	47	SW	E	E	ESE	SW
16	63	44	-	-	-	-	-	-	/	/	-	-	-	11	29	SSW	SSW	SSW	SSW	SSW
17	61	32	-	-	-	-	-	-	/	/	-	-	-	11	32	SSE	ESE	ESE	S	SSW
18	57	26	-	-	-	-	-	-	/	/	-	-	-	7	25	SSE	ESE	ESE	SSE	WSW
19	64	38	-	-	-	-	-	-	/	/	-	-	-	7	47	WNW	NE	ESE	SW	NNW
20	72	59	-	-	-	-	-	-	/	/	-	-	-	11	22	W	W	W	W	N
21	68	43	-	-	-	0.5	0 17	1	/	/	-	-	-	7	25	W	N	E	VAR	WNW
22	67	44	-	-	-	-	-	-	/	/	-	-	-	14	36	WSW	W	WSW	W	NW
23	72	40	-	-	-	2.0	2 55	12	/	/	-	-	-	7	25	WSW	SW	SW	S	SE
24	76	43	-	-	-	1.7	1 29	6	/	/	-	-	-	7	40	SSW	NNE	ESE	S	SE
25	74	53	-	-	-	0.4	1 43	7	/	/	-	-	-	18	50	SW	SSW	SW	SW	WSW
26	86	63	-	-	-	22.0	6 48	28	/	/	-	-	-	18	54	W	SW	WSW	W	NW
27	70	42	45	41	-	<0.1	0 18	1	/	/	-	-	-	7	29	SSE	SW	SE	S	SSE
28	70	44	-	-	-	<0.1	1 08	5	/	/	-	-	-	11	36	SW	S	SSE	WSW	NNW
29	67	38	-	-	-	<0.1	0 23	2	/	/	-	-	-	14	47	WNW	SE	ESE	SW	WSW
30	75	48	-	-	-	8.9	4 04	17	/	/	-	-	-	14	47	SW	W	SSW	SW	SW
31	75	50	-	-	-	10.6	9 43	40	/	/	-	-	-	22	54	NNW	W	NNW	NNW	N
M	71		339	209	63	64.2	41 12				0	0	2	11						

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

10

DEURNE(KLW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. september 2012

	Druk hPa	Bewolking Octas				Zon	Temperaturen °C									
						Duur	Lucht			Gras	Minimum onder naakte grond					
	Gem.	9h	6	12	18	h min	Gem.	Max.	Min.	Min.	-2cm	-5cm	-10cm	-20cm	-50cm	-100cm
1	1027.0	8	4	4	2	/	15.1	19.6	8.6	11.9	17.0	17.3	17.2	17.5	18.9	19.3
2	1025.1	0	8	6	6	/	16.8	21.2	13.1	14.0	17.3	17.5	17.5	17.7	18.8	19.1
3	1025.3	8	8	6	4	/	18.5	22.7	13.4	15.4	18.4	18.5	18.5	18.6	18.8	19.0
4	1023.1	0	2	1	1	/	18.4	24.6	10.7	14.1	17.8	18.1	18.0	18.3	19.0	18.9
5	1024.5	4	1	5	1	/	17.1	20.5	13.1	14.2	18.7	18.9	18.9	19.0	19.1	18.9
6	**1027.9**	4	8	6	5	/	15.6	20.1	9.6	13.4	18.0	18.3	18.2	18.4	19.1	18.9
7	1024.7	0	1	0	0	/	16.9	24.0	9.6	13.2	17.6	17.8	17.8	18.0	18.9	18.9
8	1021.1	0	0	1	3	/	17.3	25.7	9.6	13.0	17.2	17.5	17.4	17.7	18.9	18.9
9	1013.7	0	2	1	1	/	19.5	**29.0**	10.0	13.3	17.1	17.4	17.4	17.6	18.8	18.8
10	1013.3	0	7	3	5	/	**19.6**	24.7	14.9	16.7	18.4	18.5	18.5	18.6	18.9	18.8
11	1012.6	/	7	7	6	/	16.5	19.2	12.7	14.8	18.1	18.4	18.3	18.6	19.1	18.8
12	1014.1	8	7	6	6	/	14.2	17.4	10.9	13.0	17.3	17.6	17.5	17.8	18.8	18.9
13	1016.3	8	8	7	4	/	14.0	17.1	9.0	12.8	16.7	17.0	17.0	17.3	18.4	18.8
14	1013.6	0	7	7	7	/	14.5	19.2	10.9	12.2	16.4	16.6	16.6	16.9	18.1	18.6
15	1017.5	2	5	6	5	/	14.6	19.3	7.9	11.5	16.2	16.6	16.5	16.8	17.9	18.5
16	1014.7	0	0	1	6	/	15.9	22.0	8.1	11.4	15.7	16.0	15.9	16.3	17.7	18.3
17	1013.7	4	8	7	7	/	16.1	19.3	12.6	14.2	16.7	16.8	16.8	17.0	17.7	18.2
18	1012.9	0	7	7	3	/	14.6	18.2	10.3	12.1	16.4	16.7	16.6	16.9	17.7	18.1
19	1020.4	0	2	5	7	/	11.6	15.9	8.9	10.6	15.6	15.9	15.8	16.1	17.4	18.0
20	1022.3	7	4	7	6	/	11.3	16.4	6.1	9.8	14.8	15.2	15.1	15.4	17.0	17.9
21	1015.6	0	7	7	6	/	11.2	16.2	**5.7**	8.9	14.1	14.5	14.4	14.8	16.7	17.7
22	1017.6	0	7	4	5	/	12.4	16.4	8.6	10.1	14.6	15.0	14.8	15.2	16.5	17.5
23	1011.8	8	7	7	8	/	**10.2**	13.1	6.8	9.0	14.0	14.4	14.2	14.6	16.2	17.3
24	**993.2**	/	7	5	7	/	14.7	20.5	10.5	11.2	14.2	14.4	14.4	14.6	16.0	17.1
25	995.4	7	6	5	6	/	13.7	16.8	11.5	11.7	14.6	14.7	14.7	14.9	16.0	16.9
26	998.1	8	8	7	4	/	13.7	16.2	10.9	12.3	14.7	14.8	14.8	14.9	15.9	16.8
27	1006.3	8	7	6	5	/	13.5	16.6	10.6	10.1	14.7	14.8	14.7	14.9	15.8	16.7
28	1015.2	0	7	5	6	/	13.7	18.0	10.2	9.7	14.4	14.6	14.5	14.8	15.8	16.6
29	1017.4	8	4	4	1	/	12.6	16.0	9.6	8.8	14.2	14.5	14.4	14.7	15.7	16.5
30	1021.1	8	1	3	3	/	12.2	17.4	7.5	**7.4**	13.7	13.9	13.9	14.2	15.5	16.4
M	1015.9					/	14.9	19.4	10.1							

Bewolking : 9 = Bovenlucht niet zichtbaar / = Ontbrekend gegeven

11

DEURNE (RLW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. september 2012

	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	62	36	-	-	-	-	-	-	/	/	-	-	-	7	22	SW	N	WSW	VAR	SSW
2	71	56	-	-	-	<0.1	0 03	0	/	/	-	-	-	11	25	W	SW	S	W	NW
3	76	48	-	-	-	<0.1	1 16	5	/	/	-	-	-	7	25	NE	W	ESE	NNW	NE
4	73	45	1398	1368	82	-	-	-	/	/	-	-	-	7	29	NNW	-	-	VAR	NNW
5	71	48	-	-	-	-	-	-	/	/	-	-	-	11	40	NNW	NNE	NNE	NNE	N
6	66	42	-	-	-	-	-	-	/	/	-	-	-	4	18	ESE	NNE	S	S	W
7	68	37	-	-	-	-	-	-	/	/	-	-	-	11	32	W	SW	WSW	WNW	NW
8	66	31	-	-	-	-	-	-	/	/	-	-	-	4	14	ESE	SSE	SSW	VAR	E
9	62	28	-	-	-	-	-	-	/	/	-	-	-	7	29	WSW	-	ESE	S	S
10	71	52	-	-	-	-	-	-	/	/	-	-	-	11	32	SW	SW	SSW	WSW	SSW
11	75	51	-	-	-	4.0	4 12	18	/	/	-	-	-	14	43	WNW	SSE	SW	SW	WNW
12	62	/	-	-	-	5.4	5 04	21	/	/	-	-	-	14	36	/	W	W	WNW	SSW
13	78	56	2	2	-	3.7	1 32	6	/	/	-	-	-	11	29	NE	SW	VAR	N	W
14	78	62	-	-	-	0.4	1 51	8	/	/	-	-	-	14	43	WSW	SW	SW	SW	WNW
15	76	55	-	-	-	-	-	-	/	/	-	-	-	7	25	SW	W	WSW	SW	SSW
16	75	47	-	-	-	-	-	-	/	/	-	-	-	11	29	SW	S	SSW	SW	S
17	79	68	-	-	-	0.1	0 43	3	/	/	-	-	-	11	25	WSW	W	SW	SSW	SSW
18	71	47	-	-	-	0.4	1 25	6	/	/	-	-	-	14	43	WNW	WSW	SSW	WSW	WNW
19	72	48	-	-	-	3.1	1 34	7	/	/	-	-	-	14	50	W	SW	WSW	W	WSW
20	73	44	-	-	-	<0.1	0 15	1	/	/	-	-	-	11	29	SSW	SE	SSW	SW	SSW
21	77	48	-	-	-	-	-	-	/	/	-	-	-	4	11	WSW	SSE	ESE	SSW	-
22	71	42	-	-	-	0.9	2 32	11	/	/	-	-	-	11	32	NW	WSW	NW	N	N
23	82	69	-	-	-	8.4	5 51	24	/	/	-	-	X	14	43	E	E	ENE	E	N
24	86	64	-	-	-	5.8	7 36	32	/	/	-	-	-	22	76	SW	E	SE	SSW	SSW
25	79	60	-	-	-	1.0	2 17	10	/	/	-	-	X	22	50	SSW	S	S	SSW	S
26	79	62	-	-	-	<0.1	1 28	6	/	/	-	-	-	14	40	SSW	SSE	S	S	S
27	84	67	-	-	-	2.2	1 40	7	/	/	-	-	-	14	36	W	SSW	S	W	WNW
28	74	52	-	-	-	<0.1	0 21	1	/	/	-	-	-	14	36	SSW	SSW	SSW	WSW	SSW
29	74	54	-	-	-	0.2	0 34	2	/	/	-	-	-	14	40	WNW	SW	WSW	WNW	W
30	70	48	-	-	-	-	-	-	/	/	-	-	-	11	32	SW	SW	SSW	SW	SSW
M	73		1400	1370	82	35.6	40 14				0	0	2	11						

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

10

DEGRNE (RLW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. oktober 2012

	Druk hPa	Bewolking Octas				Zon	Temperaturen °C									
						Duur	Lucht			Gras	Minimum onder naakte grond					
	Gem.	9h	6	12	18	h min	Gem.	Max.	Min.	Min.	-2cm	-5cm	-10cm	-20cm	-50cm	-100cm
1	1016.0	0	5	4	7	/	14.1	19.9	6.4	8.3	13.8	14.0	13.9	14.2	15.4	16.2
2	1014.0	7	7	6	6	/	14.9	17.6	13.3	12.5	14.6	14.7	14.7	14.8	15.4	16.1
3	1009.3	8	6	8	8	/	13.2	15.9	10.3	11.2	14.3	14.5	14.4	14.6	15.5	16.1
4	1009.6	6	8	4	3	/	11.9	15.7	9.8	9.5	13.9	14.1	14.0	14.3	15.3	16.0
5	1009.4	6	8	7	6	/	13.7	17.3	10.7	9.9	13.8	14.0	13.9	14.1	15.1	15.9
6	1011.8	8	8	7	4	/	11.8	15.6	5.2	5.5	13.4	13.8	13.7	14.0	15.1	15.8
7	1021.1	6	1	4	5	/	9.0	15.7	3.0	3.8	12.4	12.8	12.7	13.0	14.7	15.7
8	1017.7	0	4	5	7	/	8.7	14.6	2.7	2.9	11.6	12.0	11.9	12.3	14.2	15.5
9	1015.5	8	0	5	5	/	10.0	14.3	4.8	5.0	12.2	12.5	12.4	12.7	14.1	15.3
10	1016.3	7	2	4	1	/	8.5	14.0	3.3	3.2	11.5	11.9	11.8	12.1	13.8	15.2
11	1008.9	0	4	4	7	/	9.7	15.9	3.3	3.5	11.1	11.5	11.4	11.7	13.5	15.0
12	1006.6	8	7	7	4	/	12.6	14.6	8.4	7.3	12.4	12.5	12.5	12.6	13.5	14.8
13	1006.5	0	7	8	4	/	9.0	11.4	7.1	6.6	11.8	12.0	11.9	12.2	13.5	14.7
14	1000.5	2	3	4	5	/	8.3	11.8	5.4	4.8	11.2	11.5	11.4	11.7	13.2	14.6
15	1004.2	/	4	4	7	/	10.4	13.3	7.1	6.3	11.2	11.5	11.4	11.6	13.0	14.4
16	1005.7	0	8	6	3	/	11.0	15.4	5.5	4.7	11.4	11.6	11.5	11.7	12.9	14.3
17	1005.5	0	8	8	8	/	11.6	16.2	4.9	4.6	11.1	11.3	11.2	11.5	12.8	14.1
18	1006.6	8	8	8	4	/	15.5	18.8	12.8	12.0	12.2	12.3	12.3	12.4	12.8	14.0
19	1009.9	8	7	3	8	/	17.0	22.0	13.3	13.1	13.1	13.1	13.1	13.1	13.1	14.0
20	1016.4	8	7	7	8	/	15.4	17.4	13.4	13.0	14.0	13.9	13.9	13.9	13.5	14.0
21	1016.7	0	7	7	3	/	14.0	16.7	12.0	11.4	14.0	14.1	14.0	14.1	13.9	14.0
22	1020.1	/	2	3	2	/	16.0	23.5	10.4	10.2	13.5	13.6	13.6	13.7	14.1	14.2
23	1022.8	0	3	2	3	/	14.2	20.8	8.0	8.9	13.3	13.5	13.5	13.7	14.2	14.2
24	1020.1	/	7	6	7	/	13.1	19.2	9.8	9.8	13.6	13.7	13.7	13.8	14.2	14.3
25	1016.6	8	7	7	7	/	10.8	12.2	9.0	8.7	13.4	13.6	13.5	13.7	14.2	14.4
26	1010.8	8	8	8	7	/	6.5	9.1	1.8	1.4	11.3	11.9	11.7	12.1	13.9	14.4
27	1009.9	0	1	5	1	/	3.8	7.9	0.6	0.2	9.8	10.4	10.2	10.6	13.1	14.3
28	1016.1	0	0	2	7	/	5.2	9.9	-2.7	-1.3	8.8	9.4	9.2	9.7	12.3	14.0
29	1011.0	8	7	8	6	/	7.4	8.9	5.4	5.6	9.9	10.1	10.0	10.3	12.0	13.7
30	1004.2	8	5	5	5	/	8.1	10.1	4.5	2.8	9.7	10.1	10.0	10.3	11.8	13.4
31	996.7	0	7	2	3	/	8.2	13.2	4.5	3.1	9.3	9.7	9.6	9.9	11.6	13.2
M	1011.5					/	11.1	15.1	6.9							

Bewolking : 9 = Bovenlucht niet zichtbaar / = Ontbrekend gegeven

11

DEURNE (RLW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. oktober 2012

	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	72	46	-	-	-	0.3	1 15	5	/	/	-	-	-	14	36	SSW	S	SSE	SSW	SSW
2	79	60	-	-	-	0.1	2 23	10	/	/	-	-	-	14	32	SSW	SSW	S	SW	SSW
3	87	69	-	-	-	22.4	12 56	54	/	/	-	-	X	18	47	SSW	SSW	SSW	SW	SSW
4	80	47	-	-	-	8.6	8 25	35	/	/	-	-	-	11	43	W	SSW	WNW	W	S
5	86	76	-	-	-	6.6	9 19	39	/	/	-	-	-	18	61	SSW	S	SSW	W	SW
6	90	72	224	179	26	5.4	4 36	19	/	/	-	-	-	7	47	WSW	N	SW	NNW	-
7	79	46	1219	1158	31	-	-	-	/	/	-	-	-	7	25	N	N	WSW	NE	-
8	87	61	41	8	2	1.6	5 04	21	/	/	-	-	-	7	25	SE	E	E	SE	ESE
9	82	57	48	16	-	-	-	-	/	/	-	-	-	7	22	NNE	NNE	NNW	NE	NE
10	75	46	-	-	-	-	-	-	/	/	-	-	-	7	25	ENE	ESE	NE	E	ENE
11	81	63	-	-	-	0.7	1 29	6	/	/	-	-	-	11	25	SE	E	ESE	E	ESE
12	78	50	-	-	-	6.2	5 03	21	/	/	-	-	-	18	50	WSW	SE	WSW	WSW	SW
13	89	82	-	-	-	12.0	10 58	46	/	/	-	-	-	14	40	SSW	SSW	SSW	W	SW
14	83	58	-	-	-	<0.1	0 18	1	/	/	-	-	-	11	29	SW	SW	SW	W	SW
15	75	50	-	-	-	1.7	2 55	12	/	/	-	-	-	14	40	SSW	SW	NNW	SW	SSW
16	79	48	-	-	-	2.0	5 32	23	/	/	-	-	-	18	50	SW	S	S	SSW	SSW
17	89	73	-	-	-	9.1	9 00	38	/	/	-	-	-	14	47	SSW	SSE	SE	SSW	S
18	85	66	-	-	-	0.8	3 55	16	/	/	-	-	-	11	25	S	SSE	SSE	S	ESE
19	76	49	-	-	-	0.1	2 11	9	/	/	-	-	-	11	36	SSW	E	SSE	S	SSE
20	87	75	-	-	-	0.6	4 03	17	/	/	-	-	-	11	22	WSW	SSE	SW	WNW	N
21	94	85	91	91	55	<0.1	0 50	3	/	/	-	-	-	11	32	NNE	NE	NNE	ENE	NE
22	85	60	341	225	143	-	-	-	/	/	-	-	-	7	14	NE	ENE	ENE	E	ENE
23	85	59	217	160	102	-	-	-	/	/	-	-	-	7	18	ENE	ENE	E	E	E
24	86	66	4	-	-	<0.1	0 49	3	/	/	-	-	-	11	25	ENE	E	ESE	E	E
25	90	75	147	3	-	0.6	2 13	9	/	/	-	-	-	11	25	NE	E	E	ENE	NE
26	76	61	-	-	-	1.0	9 55	41	/	/	-	-	-	14	32	NNE	NE	ENE	NE	NNE
27	72	51	-	-	-	0.1	0 03	0	/	/	-	X	-	11	40	NE	N	NNE	N	N
28	73	50	-	-	-	-	-	-	/	/	-	-	-	7	29	S	NNW	S	SW	S
29	85	62	-	-	-	4.0	11 56	50	/	/	X	-	-	18	43	SW	S	SSW	SSW	SW
30	89	75	-	-	-	4.6	4 23	18	/	/	-	-	-	11	32	SW	SW	SW	WSW	SW
31	76	42	-	-	-	-	-	-	/	/	-	-	-	14	40	S	S	S	S	SSE
M	82		2332	1840	359	88.5	119 31				1	1	1	12						

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

10

DEURNE(RLW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. november 2012

	Druk hPa	Bewolking Octas				Zon	Temperaturen °C									
						Duur	Lucht			Gras	Minimum onder naakte grond					
	Gem.	9h	6	12	18	h min	Gem.	Max.	Min.	Min.	-2cm	-5cm	-10cm	-20cm	-50cm	-100cm
1	984.4	0	6	8	2	/	8.2	11.5	4.3	3.3	9.2	9.5	9.4	9.7	11.3	13.0
2	995.1	8	8	6	5	/	6.8	10.6	5.0	4.4	9.2	9.4	9.3	9.6	11.1	12.8
3	999.5	/	5	7	2	/	7.2	9.6	5.1	3.7	8.8	9.1	9.0	9.3	10.9	12.6
4	998.0	0	4	7	5	/	6.7	10.5	1.0	0.8	8.2	8.5	8.4	8.8	10.6	12.5
5	1003.5	7	2	8	1	/	6.7	8.8	4.9	3.7	8.3	8.6	8.5	8.8	10.4	12.2
6	1018.0	0	4	4	7	/	7.3	10.7	3.8	1.8	7.6	8.0	7.9	8.2	10.1	12.0
7	1023.8	8	8	8	7	/	9.9	10.8	8.3	8.3	8.7	8.8	8.7	8.9	10.1	11.8
8	1019.7	7	8	8	7	/	10.0	11.3	9.2	8.5	9.3	9.4	9.4	9.5	10.2	11.7
9	1013.6	8	8	7	7	/	9.3	12.2	7.6	6.9	9.6	9.7	9.6	9.8	10.4	11.7
10	1000.5	8	8	8	7	/	10.5	12.3	8.5	8.3	9.7	9.8	9.8	9.9	10.5	11.7
11	1012.0	8	2	1	7	/	7.6	10.7	5.7	4.8	9.4	9.6	9.6	9.7	10.6	11.7
12	1024.6	0	8	8	7	/	6.6	8.0	5.2	4.8	9.1	9.3	9.2	9.4	10.5	11.6
13	1029.7	8	7	7	8	/	8.4	10.0	7.0	7.0	9.2	9.3	9.2	9.4	10.4	11.6
14	1027.5	8	4	1	2	/	7.6	11.6	0.0	1.1	8.5	8.9	8.8	9.1	10.4	11.5
15	1023.7	0	8	8	8	/	4.3	6.5	-0.9	0.2	8.0	8.3	8.2	8.5	10.1	11.4
16	1017.5	8	8	8	1	/	4.0	6.1	0.3	0.8	7.7	8.0	7.9	8.3	9.9	11.3
17	1010.4	0	1	8	8	/	5.2	9.0	-0.6	-0.8	6.9	7.3	7.2	7.6	9.4	11.2
18	1014.1	8	8	8	2	/	6.8	9.0	0.1	1.9	7.9	8.1	8.1	8.3	9.4	11.0
19	1016.0	/	/	8	7	/	5.7	10.7	1.8	2.3	7.7	7.9	7.8	8.0	9.4	10.9
20	1015.5	8	4	3	6	/	9.4	12.9	4.5	4.2	8.4	8.4	8.4	8.5	9.4	10.8
21	1012.8	/	3	7	6	/	6.6	10.9	1.5	1.1	7.8	8.1	8.0	8.3	9.4	10.8
22	1019.6	0	0	1	1	/	8.1	11.8	5.8	4.1	7.8	8.0	8.0	8.2	9.4	10.7
23	1015.2	0	7	8	7	/	7.5	9.3	5.4	5.1	7.8	8.0	7.9	8.1	9.2	10.6
24	1015.0	8	7	7	8	/	7.5	10.0	4.6	5.0	7.9	8.0	8.0	8.2	9.2	10.5
25	1007.6	8	6	5	2	/	10.8	14.1	7.5	5.9	8.5	8.5	8.5	8.6	9.2	10.5
26	1003.8	0	4	3	5	/	9.0	12.4	5.0	3.7	8.0	8.2	8.1	8.3	9.3	10.4
27	1003.3	8	3	7	6	/	7.5	9.4	4.0	3.8	8.2	8.3	8.3	8.4	9.3	10.4
28	1007.1	8	0	4	7	/	6.4	8.9	2.2	1.6	7.6	7.8	7.8	8.0	9.2	10.4
29	1007.3	5	6	4	3	/	5.1	7.4	3.1	1.5	7.0	7.3	7.2	7.5	9.0	10.3
30	1010.5	7	1	1	8	/	3.3	7.2	-0.4	-0.3	6.1	6.5	6.4	6.8	8.5	10.2
M	1011.7					/	7.3	10.1	4.0							

Bewolking : 9 = Bovenlucht niet zichtbaar / = Ontbrekend gegeven

11

DEURNE (RIW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. november 2012

	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	80	65	-	-	-	2.4	4 01	17	/	/	-	-	-	18	43	SSW	SE	SSE	SSW	SSW
2	81	58	-	-	-	1.5	4 37	19	/	/	-	-	-	22	58	SW	SW	SSW	SSW	SSW
3	84	68	-	-	-	4.1	3 14	13	/	/	-	-	-	14	50	SW	SW	S	SSW	SW
4	84	65	-	-	-	3.8	2 43	11	/	/	-	-	-	14	47	SW	SSW	SSE	ESE	SW
5	88	78	-	-	-	4.2	5 06	21	/	/	-	-	-	11	32	SW	SW	SSW	W	WSW
6	81	57	-	-	-	1.6	5 19	22	/	/	-	-	-	14	40	W	W	W	W	WSW
7	86	70	-	-	-	2.3	5 36	23	/	/	-	-	-	18	43	WSW	WSW	W	WSW	WSW
8	82	74	-	-	-	<0.1	0 38	3	/	/	-	-	-	14	36	SW	SW	SW	WSW	WSW
9	83	61	-	-	-	2.3	3 08	13	/	/	-	-	-	11	25	SSW	SW	SSW	SSW	SSE
10	92	85	-	-	-	1.3	4 12	18	/	/	-	-	-	11	47	WSW	S	S	S	SSE
11	88	70	-	-	-	<0.1	0 03	0	/	/	-	-	-	14	32	SSW	WSW	SSW	SW	WSW
12	87	80	-	-	-	-	-	-	/	/	-	-	-	14	32	SSW	SW	SSW	SSW	S
13	92	81	-	-	-	0.8	2 52	12	/	/	X	-	-	11	32	SSW	S	SSW	SSW	SSE
14	85	55	91	55	19	-	-	-	/	/	-	-	-	7	18	E	ESE	E	E	ENE
15	87	74	161	115	76	-	-	-	/	/	-	-	-	7	18	SE	E	E	SE	SE
16	84	77	-	-	-	-	-	-	/	/	-	-	-	7	18	SSW	SE	SSE	SSE	SE
17	92	86	-	-	-	0.1	3 40	15	/	/	-	-	-	11	29	SSW	E	SE	SSW	SSW
18	94	81	210	180	78	3.3	14 02	58	/	/	X	-	-	4	25	NNW	SW	NNW	N	SE
19	95	88	403	276	122	<0.1	4 58	21	/	/	X	-	-	7	22	SSW	SE	ESE	SE	S
20	85	65	-	-	-	-	-	-	/	/	-	-	-	14	40	S	SSE	S	S	S
21	85	66	-	-	-	0.7	2 52	12	/	/	-	-	-	18	58	WSW	SE	ESE	S	SSW
22	81	60	-	-	-	-	-	-	/	/	-	-	-	18	40	SSW	SW	S	SSW	S
23	87	70	28	23	4	2.4	4 19	18	/	/	-	-	-	11	36	SSE	S	SSE	SW	S
24	96	88	549	508	259	1.5	3 45	16	/	/	-	-	-	11	32	SE	NE	ESE	E	E
25	71	58	-	-	-	0.9	1 35	7	/	/	-	-	-	29	76	SW	SE	SSW	SW	SW
26	76	62	-	-	-	0.3	1 58	8	/	/	-	-	-	14	43	SSW	S	SSE	S	SW
27	83	70	-	-	-	0.6	2 21	10	/	/	-	-	-	11	29	SSW	SSW	S	S	ESE
28	87	68	69	51	11	0.5	2 31	10	/	/	-	-	-	7	29	NNW	-	NNW	N	N
29	81	59	-	-	-	<0.1	0 44	3	/	/	-	-	-	11	25	NW	N	NNW	NNE	NNW
30	88	68	99	-	-	-	-	-	/	/	-	-	-	11	25	SW	W	W	SSW	SW
M	86		1610	1305	569	34.6	84 14				3	0	0	13						

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

10

DEURNE (RLW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. december 2012

	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	1012.4	8	8	4	8	/	2.7	4.3	0.8	0.7	6.1	6.4	6.3	6.6	8.3	10.0
2	1013.0	8	8	5	3	/	3.1	5.5	1.1	0.6	5.6	5.9	5.7	6.1	7.8	9.7
3	1009.0	0	8	8	7	/	3.2	7.7	0.0	-0.7	5.0	5.3	5.2	5.5	7.4	9.5
4	1000.8	3	1	7	7	/	4.6	6.3	3.3	2.2	5.0	5.3	5.2	5.5	7.2	9.2
5	1004.3	8	8	8	8	/	2.4	4.1	0.6	0.7	4.9	5.2	5.1	5.4	7.1	9.0
6	1014.4	7	7	5	5	/	1.5	2.9	0.0	-1.3	4.4	4.7	4.6	4.9	6.7	8.8
7	1001.8	0	8	7	8	/	1.8	3.2	0.3	0.3	4.3	4.5	4.4	4.7	6.4	8.6
8	1021.7	8	1	1	7	/	0.1	2.8	-2.9	-3.5	3.5	3.8	3.7	4.0	6.1	8.4
9	1015.6	3	8	8	7	/	4.6	7.9	1.3	0.8	3.5	3.8	3.7	4.0	5.9	8.2
10	1015.5	8	3	7	7	/	4.0	6.0	0.8	-0.7	4.2	4.5	4.4	4.6	5.9	8.0
11	1027.0	0	1	1	7	/	0.5	2.3	-2.5	-3.0	3.2	3.5	3.4	3.7	5.8	7.9
12	1021.8	4	3	3	6	/	-0.1	2.6	-4.0	-4.1	2.7	3.1	3.0	3.3	5.4	7.7
13	1009.1	0	7	7	8	/	-1.4	1.6	-5.6	-6.0	2.1	2.5	2.4	2.7	5.0	7.5
14	994.9	8	8	8	8	/	6.0	10.6	1.6	1.6	2.5	2.7	2.6	2.9	4.9	7.3
15	996.8	8	7	6	7	/	9.2	10.2	8.1	5.9	4.5	4.4	4.5	4.4	5.0	7.2
16	1003.0	8	7	8	7	/	7.8	8.7	6.9	4.8	5.5	5.5	5.5	5.5	5.5	7.2
17	1003.9	8	8	8	6	/	7.1	8.5	4.6	3.6	5.7	5.8	5.8	5.8	6.0	7.2
18	1013.3	0	7	8	6	/	5.8	7.1	4.4	3.5	5.4	5.6	5.5	5.7	6.3	7.3
19	1021.5	8	7	7	3	/	4.7	7.2	1.4	0.3	5.4	5.6	5.5	5.7	6.4	7.4
20	1010.6	0	7	8	8	/	3.2	5.3	1.3	0.2	4.9	5.1	5.0	5.3	6.3	7.5
21	1010.3	8	7	8	7	/	8.3	9.6	5.3	5.2	5.2	5.3	5.2	5.3	6.3	7.5
22	1010.7	8	7	7	4	/	7.9	12.9	6.5	5.5	6.1	6.1	6.1	6.1	6.4	7.5
23	1006.1	8	8	8	8	/	11.6	13.0	9.0	8.8	6.8	6.6	6.7	6.6	6.6	7.5
24	1004.0	/	8	7	8	/	10.7	12.8	8.2	8.4	8.1	8.0	8.1	8.0	7.2	7.6
25	999.0	/	8	8	8	/	9.7	11.8	8.1	7.7	8.2	8.2	8.2	8.3	7.7	7.7
26	1006.6	8	7	2	8	/	8.2	9.8	6.0	5.2	7.7	7.8	7.8	7.8	8.0	8.0
27	1005.2	5	7	8	8	/	8.2	9.8	6.8	6.2	7.5	7.6	7.6	7.7	7.9	8.1
28	1021.5	7	7	8	7	/	7.7	11.1	5.7	4.5	7.2	7.3	7.3	7.4	7.8	8.2
29	1011.6	7	7	5	7	/	11.2	13.0	8.4	8.0	7.7	7.7	7.7	7.7	7.8	8.2
30	1013.3	7	5	6	7	/	7.8	9.3	5.8	4.8	7.5	7.5	7.5	7.6	8.0	8.3
31	1010.2	8	5	7	8	/	9.4	10.7	8.3	7.5	7.4	7.4	7.4	7.5	7.9	8.4
M	1010.0					/	5.5	7.7	3.2							

Bewolking : 9 = Bovenlucht niet zichtbaar / = Ontbrekend gegeven

11

DEURNE (RLW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. december 2012

	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	90	78	150	73	-	10.2	6 58	29	/	/	X	-	-	14	40	SW	SW	SW	SW	WSW
2	90	79	-	-	-	15.9	11 08	46	/	/	-	-	-	14	54	WNW	W	NW	W	W
3	89	79	-	-	-	10.9	9 12	38	/	/	X	-	-	14	36	SSW	SW	S	SSW	W
4	88	83	-	-	-	2.3	4 48	20	/	/	-	-	-	18	43	WSW	SW	WSW	WSW	WSW
5	92	72	-	-	-	12.3	12 12	51	/	/	X	-	-	7	40	WNW	SW	VAR	SW	W
6	83	71	-	-	-	0.3	1 41	7	/	/	X	-	-	14	36	S	NW	W	W	SSW
7	89	75	-	-	-	6.4	7 38	32	/	/	X	-	-	18	47	S	S	S	SSW	ENE
8	83	67	-	-	-	<0.1	0 01	0	/	/	-	-	-	7	25	SW	NE	NNE	SSE	SW
9	87	74	-	-	-	4.9	11 41	49	/	/	X	-	-	22	61	W	SW	SW	W	W
10	80	68	-	-	-	3.0	4 07	17	/	/	-	-	-	18	50	WNW	WNW	NW	N	N
11	74	60	-	-	-	-	-	-	/	/	-	-	-	11	22	NNW	NNW	N	NE	SSW
12	75	55	-	-	-	-	-	-	/	/	-	-	-	11	29	SW	SW	WSW	SW	SSW
13	80	63	-	-	-	0.1	3 37	15	/	/	X	-	-	11	22	SSE	ESE	E	SSE	SE
14	89	79	-	-	-	10.4	7 38	32	/	/	-	-	-	18	54	SW	SE	SE	SE	S
15	81	75	-	-	-	1.3	1 44	7	/	/	-	-	-	18	50	SW	SW	SSW	SSW	S
16	86	80	-	-	-	2.6	7 07	30	/	/	-	-	-	14	40	SW	SW	SW	SW	SSW
17	91	84	-	-	-	2.2	5 46	24	/	/	-	-	-	14	29	SSW	SSW	SW	SW	WSW
18	91	88	-	-	-	0.5	3 11	13	/	/	-	-	-	11	22	SSW	SW	SSW	SW	WNW
19	94	88	232	115	-	-	-	-	/	/	-	-	-	7	18	ESE	W	S	SE	ESE
20	92	86	-	-	-	8.2	14 30	60	/	/	-	-	-	18	32	ESE	ESE	ESE	ESE	ESE
21	92	87	-	-	-	0.7	3 26	14	/	/	-	-	-	11	22	SW	SE	SW	WSW	WSW
22	93	88	-	-	-	19.4	14 27	60	/	/	-	-	-	14	47	WSW	SW	SSW	SSE	S
23	91	87	-	-	-	19.1	23 04	96	/	/	-	-	-	22	50	W	WSW	WSW	SW	SW
24	85	70	-	-	-	6.0	8 43	36	/	/	-	-	-	14	47	SW	SW	SE	SSW	SW
25	83	66	-	-	-	8.6	11 11	47	/	/	X	-	-	22	72	SW	S	WSW	SSW	WSW
26	84	71	-	-	-	13.5	7 25	31	/	/	-	-	-	22	61	SW	SW	SW	WSW	SW
27	86	76	-	-	-	5.5	7 06	30	/	/	-	-	-	18	54	WSW	WSW	SW	SW	N
28	90	82	-	-	-	3.3	7 22	31	/	/	-	-	-	14	32	SSW	W	SW	SSW	SSW
29	77	59	-	-	-	3.8	3 10	13	/	/	-	-	-	22	58	SW	SSW	S	S	SSW
30	78	68	-	-	-	2.0	1 06	5	/	/	-	-	-	25	61	SW	SW	SW	SW	SW
31	79	72	-	-	-	9.2	6 33	27	/	/	-	-	-	29	61	SW	SW	SSW	SSW	SSW
M	86		382	188	0	182.6	206 32				8	0	0	16						

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

10

DEURNE(RLW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. januari 2013

	Druk hPa	Bewolking Oktas				Son	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	1006.3	8	8	7	0	/	7.2	8.5	4.8	3.7	7.0	7.2	7.1	7.3	7.9	8.4
2	1023.0	8	5	7	8	/	6.4	8.3	4.8	3.5	6.5	6.7	6.6	6.9	7.7	8.4
3	1021.8	8	7	7	7	/	9.7	11.3	7.3	7.2	7.0	7.1	7.0	7.1	7.6	8.3
4	**1036.6**	8	7	7	7	/	9.1	9.8	8.2	8.0	8.0	7.9	8.0	7.9	7.7	8.3
5	1035.0	8	8	8	8	/	8.2	8.8	7.5	7.5	8.1	8.1	8.1	8.2	8.0	8.4
6	1032.0	8	8	7	8	/	8.8	10.0	7.6	7.1	8.0	8.0	8.0	8.1	8.2	8.4
7	1028.8	8	8	8	8	/	7.9	8.8	6.4	6.3	8.1	8.1	8.1	8.2	8.2	8.5
8	1026.2	8	8	8	8	/	6.8	8.0	5.9	5.9	7.7	7.8	7.8	7.9	8.3	8.5
9	1021.1	8	7	8	7	/	5.9	7.2	3.0	2.2	7.2	7.4	7.3	7.5	8.1	8.6
10	1014.6	/	6	3	7	/	5.1	7.4	3.0	1.9	6.4	6.7	6.6	6.8	7.8	8.6
11	1017.6	8	8	3	1	/	0.8	5.3	-2.9	-4.0	4.7	5.2	5.0	5.5	7.4	8.5
12	1016.8	0	1	5	7	/	-0.9	2.5	-5.2	-6.1	3.7	4.0	3.9	4.3	6.7	8.3
13	1017.5	8	7	2	3	/	-0.9	0.6	-2.7	-3.2	2.9	3.4	3.2	3.6	6.1	8.0
14	1013.6	0	4	7	7	/	-2.6	-0.7	-6.0	-5.5	2.3	2.7	2.6	3.0	5.4	7.7
15	1005.9	8	8	8	8	/	-1.7	-0.8	-3.4	-4.0	2.5	2.8	2.7	3.0	5.1	7.4
16	1012.2	8	0	0	0	/	-4.1	-1.1	-7.4	**-6.9**	2.9	3.1	3.1	3.3	5.0	7.2
17	1019.2	/	8	8	8	/	**-6.5**	-5.4	-7.7	-4.5	2.9	3.1	3.1	3.3	4.5	6.9
18	1009.1	8	8	7	6	/	-2.9	-0.7	-5.4	-3.3	2.9	3.1	3.0	3.2	4.7	6.5
19	998.1	8	8	8	8	/	-2.9	-1.6	-4.4	-4.6	2.6	2.9	2.8	3.0	4.6	6.6
20	**994.1**	8	8	8	8	/	-4.0	-1.6	-5.3	-5.5	2.3	2.6	2.5	2.7	4.4	6.5
21	997.5	/	8	8	7	/	-1.1	0.3	-3.4	-1.7	2.4	2.6	2.5	2.7	4.3	6.3
22	1004.9	8	8	2	0	/	-2.4	0.9	-6.4	-4.5	2.5	2.7	2.6	2.9	4.3	6.2
23	1009.6	0	0	2	2	/	-5.2	-0.5	-8.5	-5.0	1.9	2.2	2.1	2.4	4.1	6.1
24	1016.0	1	8	5	1	/	-4.3	-1.6	-10.3	-5.9	1.5	2.1	2.0	2.2	3.9	6.0
25	1018.6	8	0	5	8	/	-4.9	-1.6	**-12.0**	-6.5	1.6	1.8	1.7	2.0	3.7	5.5
26	1010.4	8	1	8	7	/	-1.9	2.0	-8.5	-4.7	1.6	1.8	1.7	2.0	3.6	5.7
27	1002.9	6	7	8	3	/	4.6	6.5	2.0	-0.2	1.7	1.9	1.8	2.0	3.6	5.6
28	1010.0	0	4	2	7	/	5.6	9.0	2.9	1.0	2.2	2.3	2.3	2.5	3.6	5.4
29	1007.5	8	7	7	7	/	10.7	13.2	8.3	7.7	3.6	3.4	3.5	3.4	3.5	5.4
30	1008.1	8	8	7	0	/	**11.5**	**13.7**	8.4	7.2	6.1	5.7	5.9	5.6	4.4	5.4
31	1013.9	0	6	7	2	/	8.3	10.7	6.6	6.1	6.1	6.1	6.1	6.1	5.5	5.5
M	1014.5					/	2.3	4.4	-0.4							

Bewolking : 9 = Bovenlucht niet zichtbaar / = Ontbrekend gegeven

11

DEURNE [RLW] 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. januari 2013

	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	84	66	-	-	-	3.2	10 15	43	/	/	X	-	-	15	50	SSW	SW	SW	WNW	WSW
2	86	76	-	-	-	0.1	3 13	13	/	/	X	-	-	14	40	SW	WSW	WSW	W	SW
3	92	87	-	-	-	3.5	5 53	25	/	/	X	-	-	14	32	SW	SW	WSW	WSW	W
4	92	85	-	-	-	0.7	2 09	9	/	/	-	-	-	14	25	WSW	WSW	WSW	WNW	W
5	91	85	-	-	-	0.1	1 34	7	/	/	-	-	-	11	25	WNW	W	W	W	WSW
6	91	87	-	-	-	-	-	-	/	/	-	-	-	11	25	W	WSW	W	W	W
7	87	80	-	-	-	-	-	-	/	/	-	-	-	11	25	SW	SW	SSW	SW	SW
8	82	79	-	-	-	-	-	-	/	/	-	-	-	14	32	SSW	W	SW	SW	SW
9	89	81	3	3	-	3.6	5 47	24	/	/	-	-	-	14	25	SW	SSW	SSW	SW	NW
10	83	68	-	-	-	-	-	-	/	/	-	-	-	11	25	W	N	SW	WSW	W
11	82	64	-	-	-	1.6	5 22	22	/	/	X	X	-	7	25	ENE	W	ENE	E	E
12	73	56	-	-	-	<0.1	1 24	6	/	/	X	-	-	14	25	E	ENE	ESE	ESE	E
13	71	57	-	-	-	<0.1	0 27	2	/	/	X	-	-	14	32	NE	E	E	NE	NNE
14	85	68	-	-	-	4.5	4 22	18	/	/	X	-	-	11	47	SSE	N	NW	SSW	SE
15	84	78	-	-	-	0.7	7 54	33	/	/	X	X	-	14	36	SSE	SE	ESE	N	N
16	76	54	161	51	-	-	-	-	/	/	-	-	-	7	18	NE	N	NNW	NNE	ENE
17	90	86	203	140	-	<0.1	0 30	2	/	/	X	-	-	4	14	E	NE	E	SSW	ESE
18	84	76	-	-	-	<0.1	5 43	24	/	/	X	-	-	11	25	E	E	ESE	ESE	E
19	78	73	-	-	-	<0.1	0 56	4	/	/	X	-	-	15	36	ENE	ENE	E	E	NE
20	83	73	-	-	-	3.7	11 59	50	/	/	X	-	-	15	40	ENE	ENE	ENE	ENE	E
21	89	83	-	-	-	0.7	4 23	18	/	/	X	X	-	11	22	SSE	S	SE	ESE	E
22	92	81	252	65	15	-	-	-	/	/	-	-	-	7	14	ENE	E	-	ESE	ENE
23	86	74	21	3	-	-	-	-	/	/	-	-	-	7	18	ENE	ENE	NE	SSE	ENE
24	82	72	-	-	-	-	-	-	/	/	-	-	-	11	32	NE	NE	NE	NE	-
25	84	67	116	100	26	-	-	-	/	/	-	-	-	7	26	SSE	-	-	SE	SSE
26	85	77	-	-	-	1.0	4 25	19	/	/	X	-	-	14	32	SSW	SSE	SSE	SSW	SSW
27	84	58	-	-	-	3.6	7 21	31	/	/	-	-	-	22	54	SSW	SSW	S	SSW	SSW
28	83	67	-	-	-	1.5	3 34	15	/	/	-	-	-	22	68	SW	SW	SSW	SW	S
29	91	83	-	-	-	15.1	19 27	81	/	/	X	-	-	22	58	SW	SW	SW	SW	SW
30	77	61	-	-	-	6.1	5 01	21	/	/	-	-	-	29	68	W	SW	SW	W	WSW
31	75	65	-	-	-	1.3	1 21	6	/	/	-	-	-	29	66	SW	W	SSW	SW	W
M	84		756	362	54	51.3	113 03				15	3	0	14						

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

10

DEURNE(RLW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. februari 2013

	Druk hPa	Bewolking Octas				Son	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	1002.2	0	8	5	7	/	6.2	8.1	4.0	3.7	5.7	5.8	5.5	5.9	5.9	5.5
2	1008.6	8	7	4	0	/	4.7	6.3	2.6	2.5	4.9	5.1	5.0	5.2	5.9	6.1
3	1017.6	8	7	7	7	/	4.4	7.0	3.2	2.6	4.7	4.9	4.9	5.0	5.6	6.2
4	1011.1	8	8	8	7	/	8.4	10.3	6.6	5.5	5.2	5.1	5.1	5.2	5.6	6.2
5	1000.5	2	7	5	4	/	4.4	6.8	1.5	1.4	4.9	5.1	5.0	5.2	5.5	6.2
6	1000.0	8	8	2	1	/	3.1	5.5	1.1	1.3	4.4	4.6	4.6	4.7	5.6	6.3
7	1012.7	0	6	5	7	/	3.0	5.3	0.5	0.4	4.0	4.2	4.2	4.4	5.4	6.3
8	1016.2	7	8	2	6	/	1.7	4.3	0.3	-2.1	3.5	3.9	3.7	4.0	5.1	6.2
9	1019.4	0	7	4	8	/	1.1	3.1	-2.3	-3.0	2.7	3.1	3.0	3.3	4.5	6.1
10	1008.2	8	7	7	7	/	0.4	3.1	-1.4	-2.6	2.5	2.9	2.5	3.1	4.6	5.9
11	1001.0	0	7	7	8	/	-0.4	0.8	-1.7	-1.9	2.1	2.4	2.3	2.6	4.2	5.5
12	1014.4	/	3	7	7	/	-1.1	0.3	-3.3	-3.9	1.6	2.0	1.9	2.1	3.9	5.6
13	1024.2	8	8	7	3	/	-0.1	2.8	-2.8	-4.5	1.6	1.8	1.7	2.0	3.7	5.5
14	1016.5	/	8	5	5	/	0.0	2.1	-2.3	-3.3	1.4	1.7	1.6	1.5	3.5	5.3
15	1018.6	8	8	7	7	/	5.0	5.0	2.1	1.6	1.7	1.9	1.5	2.0	3.4	5.2
16	1024.1	8	6	7	7	/	5.2	6.9	2.2	2.4	3.4	3.4	3.4	3.4	3.6	5.1
17	1023.9	8	7	8	5	/	3.0	5.1	-2.1	-2.7	3.4	3.6	3.6	3.7	4.1	5.1
18	1021.8	0	0	1	5	/	0.7	7.3	-5.7	-4.5	2.3	2.6	2.5	2.5	4.2	5.2
19	1019.2	0	7	7	8	/	2.4	6.4	-3.0	-3.4	2.1	2.4	2.3	2.6	4.0	5.3
20	1024.2	8	0	3	7	/	0.8	4.1	-2.2	-2.5	2.6	2.9	2.5	3.0	4.1	5.2
21	1024.0	0	0	5	7	/	-1.1	2.1	-3.2	-3.5	1.5	2.1	2.0	2.3	3.5	5.2
22	1019.0	0	2	7	7	/	-1.8	-0.2	-3.5	-4.0	1.2	1.5	1.4	1.7	3.5	5.1
23	1017.6	0	0	8	7	/	-1.8	0.4	-4.9	-5.2	1.0	1.2	1.2	1.4	3.2	5.0
24	1018.3	/	8	5	5	/	0.0	1.1	-1.3	-1.3	1.0	1.3	1.2	1.4	3.0	4.5
25	1022.8	8	7	7	8	/	1.5	2.6	0.6	0.3	1.4	1.6	1.5	1.7	3.0	4.7
26	1030.8	8	8	8	7	/	3.2	4.9	1.7	1.7	2.1	2.2	2.1	2.2	3.0	4.7
27	1032.4	8	8	8	8	/	1.2	3.5	0.6	0.7	2.7	2.8	2.5	2.9	3.3	4.7
28	1028.8	8	8	5	1	/	1.5	3.1	0.7	-1.0	2.5	2.7	2.6	2.5	3.6	4.7
M	1017.1					/	2.0	4.3	-0.4							

Bewolking : 9 = Bovenlucht niet zichtbaar / = Ontbrekend gegeven

11

DEURNE(RLW) 4° 27' 11" E 51° 11' 32" N 14m Periode 00-24 h W.T. februari 2013

	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	88	80	-	-	-	12.8	12 43	53	/	/	-	-	-	14	42	WSW	WSW	SW	SSE	NNW
2	78	55	-	-	-	0.1	2 39	11	/	/	-	X	-	15	58	N	W	NW	N	NNW
3	85	59	-	-	-	1.1	5 44	24	/	/	-	-	-	15	42	SW	W	W	WSW	WSW
4	79	55	-	-	-	1.4	3 12	13	/	/	-	-	-	22	54	WNW	WSW	W	W	W
5	73	52	-	-	-	5.1	4 29	19	/	/	X	X	-	22	68	SW	WSW	WSW	WSW	WSW
6	83	64	-	-	-	1.4	6 26	27	/	/	X	-	-	15	50	NNE	SSW	WNW	N	NNW
7	84	69	-	-	-	7.1	6 41	28	/	/	X	X	-	15	42	WNW	NNW	WNW	NW	WNW
8	81	52	-	-	-	1.6	3 12	13	/	/	X	X	-	11	32	NNW	WSW	W	N	N
9	79	65	-	-	-	<0.1	3 37	15	/	/	X	-	-	7	25	SSW	NNW	N	SSE	SW
10	66	51	-	-	-	-	-	-	/	/	-	-	-	22	43	SE	S	S	SSE	ESE
11	70	61	-	-	-	<0.1	5 59	25	/	/	X	X	-	22	36	ESE	ESE	E	E	E
12	69	57	-	-	-	-	-	-	/	/	-	-	-	11	29	ENE	ENE	ENE	E	NE
13	68	44	-	-	-	-	-	-	/	/	-	-	-	7	22	SE	NNE	NE	E	SSE
14	77	56	-	-	-	3.2	9 12	38	/	/	X	-	-	14	40	SSE	SSE	SSE	SSE	SSW
15	89	74	-	-	-	0.2	1 05	5	/	/	-	-	-	11	25	W	SW	SW	W	WNW
16	90	84	220	136	81	-	-	-	/	/	-	-	-	4	14	SW	WSW	WSW	SSE	-
17	93	82	620	536	454	<0.1	1 05	5	/	/	-	-	-	7	18	E	-	ENE	ENE	ENE
18	82	54	331	331	311	-	-	-	/	/	-	-	-	4	18	SSE	E	ENE	ESE	ENE
19	85	72	93	82	1	<0.1	1 59	8	/	/	-	-	-	7	18	E	-	-	NW	N
20	70	49	-	-	-	-	-	-	/	/	-	-	-	15	40	ENE	ENE	ENE	ENE	ENE
21	71	52	-	-	-	<0.1	0 37	3	/	/	X	-	-	15	36	NE	NE	NE	E	NE
22	70	56	-	-	-	<0.1	0 31	2	/	/	X	-	-	15	43	NE	NE	NE	NE	NE
23	69	58	-	-	-	<0.1	7 07	30	/	/	X	-	-	15	47	NE	NE	NNE	NE	NNE
24	88	82	-	-	-	2.6	1 24	6	/	/	X	X	-	14	25	NNE	N	N	N	N
25	90	85	-	-	-	1.2	4 56	21	/	/	-	-	-	14	25	NNE	N	NNE	N	NE
26	86	76	-	-	-	-	-	-	/	/	-	-	-	11	29	NE	ENE	E	NE	NE
27	88	84	-	-	-	<0.1	2 55	12	/	/	-	-	-	14	32	NE	NE	NE	ENE	NE
28	83	76	-	-	-	-	-	-	/	/	-	-	-	11	22	ENE	ENE	ENE	ENE	NNE
M	80		1264	1085	847	37.8	85 36				11	6	0	14						

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

Annex E Overview of maintenance - dredging activities

Dredging and disposal volumes [10^3 m^3] from April '12 till March '13

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					55.012	82.425			
Pas van Terneuzen								23.265	191.786
Put van Terneuzen									
Gat van Ossenisse			227.518	13.009					
Overloop Hansweert			53.087	11.253				96.726	222.162
Drempel van Hansweert					168.687	115.046	228.093	178.797	
Drempel van Walsoorden									
Drempel van Valkenisse					149.012	86.026	92.589		
Overloop van Valkenisse	121.437	108.164	133.468	123.301	7.013		64.365	81.417	
Drempel van Bath									9.489
Nauw van Bath									
Vaarwater Bath + Afwaarts Zandvliet									
Drempel van Zandvliet	36.833								
Noordzeeterminal (Containerkaai N)									
Toeg Zandvliet+Berendrechtsluis	1.747				22.889	57.281	30.768		
Europaterminal (Containerkaai Z)									
Drempel van Frederik							29.240	74.907	77.173
Lillo vaarwater plaat									
Deurganckdok	38.194	51.283	98.444	106.354					
Drempel van Lillo					3.545	872	2.633		7.116
Toeg Boudewijn+VanCauwelaertsluis				33.815	37.000				
Drempel van de Parel		14.428	111.832						
Toeg Kallosluis									
Drempel van Krankeloon									
Kaaien 23-27									

Disposal locations									
	Week 14	*Week 15*	*Week 16*	*Week 17*	*Week 18*	*Week 19*	*Week 20*	*Week 21*	*Week 22*
Hoge Platen (HP1)-storten									
Hoge Platen (HP1)- sproeien									
Hoge Platen (HP3) - storten									
Hoge Platen (HP3) - sproeien									
SN 11					55.012	82.425		23.265	191.786
SN 31									
Rug van Baarland									
SH 41			280.605	24.262	171.059	117.487	246.591	256.458	222.162
Plaat van Walsoorden - storten									4.676
Plaat van walsoorden - sproeien									
SH 51				116.115	20.972	74.438	93.417	100.482	
SN 51	121.437	108.164	133.468	7.186					
SH 61					132.681	9.147	45.039		4.813
Schaar Ouden Doel	36.833	14.428	111.832		3.545	872	2.633		7.116
Putten Ketelplaat									
Oosterweel - Plaat van Boomke									
Punt van Melsele	20.039	23.440	50.472	68.108	33.640	30.698	32.610	42.461	39.112
Opspuitingen Prosperpolder	19.902	27.843	47.972	72.061	26.249	26.583	27.398	32.446	38.061
OWC WLH KZ1									
OWC WLH KZ2									

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	52.009	81.618	86.394	14.933	64.401	65.324	63.640	59.653	30.507
Pas van Terneuzen	84.767								
Put van Terneuzen									
Gat van Ossenisse									84.618
Overloop Hansweert									
Drempel van Hansweert							177.641	200.258	50.921
Drempel van Walsoorden									
Drempel van Valkenisse									
Overloop van Valkenisse	9.093							55.995	111.466
Drempel van Bath	116.723	70.481	34.658	108.372	57.865	2.304			
Nauw van Bath									
Vaarwater Bath + Afwaarts Zandvliet					15.782	93.039	2.372		
Drempel van Zandvliet	105.184	13.920							
Noordzeeterminal (Containerkaai N)									
Toeg Zandvliet+Berendrechtsluis								34.958	
Europaterminal (Containerkaai Z)									
Drempel van Frederik	72.950	69.658	57.091		16.535				
Lillo vaarwater plaat								45.211	96.105
Deurganckdok					5.396	77.182	77.473	4.860	
Drempel van Lillo			7.871	2.499	52.819				
Toeg Boudewijn+VanCauwelaertsluis									
Drempel van de Parel									
Toeg Kallosluis						74.218	13.334		
Toeg Kallosluis LO									
Drempel van Krankeloon		38.505	54.838						
Kaaien 23-27									

Disposal locations									
	Week 23	*Week 24*	*Week 25*	*Week 26*	*Week 27*	*Week 28*	*Week 29*	*Week 30*	*Week 31*
Hoge Platen (HP1)-storten					14.288	15.244	15.192	15.881	6.204
Hoge Platen (HP1)- sproeien									
Hoge Platen (HP3) - storten									
Hoge Platen (HP3) - sproeien									
SN 11	64.181	81.618	86.394	14.933	50.113	50.080	48.448	43.772	24.303
SN 31	72.595								84.618
Rug van Baarland									
SH 41							152.207	171.124	50.921
Plaat van Walsoorden - storten	76.945	65.668	34.658	108.372	73.647	95.343	27.806	85.129	93.065
Plaat van walsoorden - sproeien									
SH 51	32.505	4.813							18.401
SN 51									
SH 61	16.366								
Schaar Ouden Doel	96.088	52.425	62.709	2.499	52.819				
Putten Ketelplaat									
Oosterweel - Plaat van Boomke									
Punt van Melsele	41.639	36.821	29.677		12.988	64.727	47.205	40.027	47.328
Opspuitingen Prosperpolder	40.407	32.837	27.414		8.943	86.673	43.602	45.002	48.777
OWC WLH KZ1									
OWC WLH KZ2									

Dredging locations									
	Week 32	*Week 33*	*Week 34*	*Week 35*	*Week 36*	*Week 37*	*Week 38*	*Week 39*	*Week 40*
Drempel van Vlissingen							63.823	226.808	9.009
Drempel van Borssele	63.866	2.863			19.563				
Pas van Terneuzen					6.555		93.192	4.841	
Put van Terneuzen									
Gat van Ossenisse	134.094	51.787	52.608	118.081	5.196				
Overloop Hansweert									
Drempel van Hansweert		76.700	42.822				6.294		
Drempel van Walsoorden									
Drempel van Valkenisse			108.790	141.133	72.922				
Overloop van Valkenisse	143.717	135.125	29.260						
Drempel van Bath									
Nauw van Bath									
Vaarwater Bath + Afwaarts Zandvliet							3.467		
Drempel van Zandvliet					14.923	134.085		89.607	60.147
Noordzeeterminal (Containerkaai N)									
Toeg Zandvliet+Berendrechtsluis		24.632	25.887	14.796			49.308	51.387	2.287
Europaterminal (Containerkaai Z)									
Drempel van Frederik	75.615	100.686	59.968	64.410	76.684	96.386	3.883		
Lillo vaarwater plaat	18.259								
Deurganckdok								44.533	46.979
Drempel van Lillo									
Toeg Boudewijn+VanCauwelaertsluis									
Drempel van de Parel						23.826	46.001		
Toeg Kallosluis						2.388	9.464	8.920	6.183
Toeg Kallosluis LO						13.924	17.900	16.722	9.574
Drempel van Krankeloon					1.333	13.279			
Kaaien 23-27									

Disposal locations									
	Week 32	*Week 33*	*Week 34*	*Week 35*	*Week 36*	*Week 37*	*Week 38*	*Week 39*	*Week 40*
Hoge Platen (HP1)-storten	5.178						33.114	94.012	2.269
Hoge Platen (HP1)- sproeien									
Hoge Platen (HP3) - storten									
Hoge Platen (HP3) - sproeien									
SN 11	58.688	2.863			26.118		30.709	132.796	6.740
SN 31	134.094	51.787					93.192	4.841	
Rug van Baarland									
SH 41		76.700	95.430	149.504	47.450		6.294		
Plaat van Walsoorden - storten	111.080	22.419							
Plaat van walsoorden - sproeien									
SH 51	32.637	112.706	80.491	49.717					
SN 51									
SH 61			57.559	59.993	30.668		3.467		
Schaar Ouden Doel				2.508	2.719	188.224	46.001	89.607	60.147
Putten Ketelplaat									
Oosterweel - Plaat van Boomke									
Punt van Melsele	44.757	59.217	38.582	37.603	41.519	41.566	34.906	52.311	26.991
Opspuitingen Prosperpolder	49.117	66.101	47.273	39.095	48.702	49.415	38.531	61.633	34.551
OWC WLH KZ1									3.481
OWC WLH KZ2						4.683	7.118	7.618	

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					63.583	46.432			70.118
Pas van Terneuzen					30.361	98.219	47.360		
Put van Terneuzen							38.403	85.832	60.568
Gat van Ossenisse									37.310
Overloop Hansweert									
Drempel van Hansweert			64.603	230.662	57.045				
Drempel van Walsoorden									
Drempel van Valkenisse									
Overloop van Valkenisse	36.036	98.729	39.514				15.894		77.712
Drempel van Bath			20.234	89.911	10.204				
Nauw van Bath									
Vaarwater Bath + Afwaarts Zandvliet									
Drempel van Zandvliet									
Noordzeeterminal (Containerkaai N)		789	14.470	14.008	9.496				
Toeg Zandvliet+Berendrechtsluis							1.832	54.190	56.374
Europaterminal (Containerkaai Z)									
Drempel van Frederik									
Lillo vaarwater plaat									
Deurganckdok	53.176								
Drempel van Lillo					13.920				
Toeg Boudewijn+VanCauwelaertsluis						15.974		22.460	12.753
Drempel van de Parel									
Toeg Kallosluis	6.744	10.074	827						
Toeg Kallosluis LO	19.230	16.726	27.662						
Drempel van Krankeloon								22.576	
Kaaien 23-27									

Disposal 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									
SN 31	36.036	98.729	104.117	8.167	93.944	144.651	85.763	85.832	130.686
Rug van Baarland									
SH 41			6.409	249.908	62.258		15.894		115.022
Plaat van Walsoorden - storten									
Plaat van walsoorden - sproeien									
SH 51									
SN 51									
SH 61			13.825	62.498	4.991				
Schaar Ouden Doel		789	14.470	14.008	23.416			21.806	
Putten Ketelplaat									
Oosterweel - Plaat van Boomke									
Punt van Melsele	32.305	9.639	860			8.550		39.068	36.044
Opspuitingen Prosperpolder	37.520	11.029	898			7.424	1.832	38.352	33.083
OWC WLH KZ1									
OWC WLH KZ2	9.325	5.312	1.617						

Dredging locations									
	Week 50	*Week 51*	*Week 52*	*Week 01*	*Week 02*	*Week 03*	*Week 04*	*Week 05*	*Week 06*
Drempel van Vlissingen									
Drempel van Borssele	95.771	10.437							
Pas van Terneuzen									
Put van Terneuzen									
Gat van Ossenisse	9.246	40.745				8.873	65.893		
Overloop Hansweert						142.043			
Drempel van Hansweert							48.777	19.995	
Drempel van Walsoorden									
Drempel van Valkenisse						17.176		102.666	124.321
Overloop van Valkenisse						16.579	29.587		
Drempel van Bath		73.887	4.710		69.170	18.356			
Nauw van Bath									
Vaarwater Bath + Afwaarts Zandvliet									
Drempel van Zandvliet								51.375	
Noordzeeterminal (Containerkaai N)									
Toeg Zandvliet+Berendrechtsluis	58.321	3.348							
Europaterminal (Containerkaai Z)									
Drempel van Frederik		60.981			101.042	131.247	116.357	139.160	54.723
Lillo vaarwater plaat		81.954	6.638		17.814				
Deurganckdok	65.631	107.167	3.872		46.915	3.198			32.788
Drempel van Lillo							21.380	5.141	
Toeg Boudewijn+VanCauwelaertsluis									
Drempel van de Parel									
Toeg Kallosluis	4.864	6.904						6.247	10.203
Toeg Kallosluis LO	15.487	15.712						10.926	14.862
Boerenschans					8.617				
Wrak henri Durre						1.400	800		

Disposal 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	92.615	3.898							
SN 31	3.156	6.539				8.873	65.893		
Rug van Baarland									
SH 41	9.246	57.455	2.372		26.133	181.062	78.364	19.995	3.788
Plaat van Walsoorden - storten									
Plaat van walsoorden - sproeien									
SH 51									
SN 51									
SH 61		57.177	2.338		43.037	13.092			
Schaar Ouden Doel		128.049	6.638		74.105	105.175	97.436	121.831	38.829
Putten Ketelplaat		1.327							
Oosterweel - Plaat van Boomke					52.860	23.420	40.301	38.144	32.348
Punt van Melsele	75.143	67.085	2.575		47.423	7.250	800	51.098	38.087
Opspuitingen Prosperpolder	63.935	75.085	1.297					102.666	120.533
OWC WLH KZ1								1.776	2.038
OWC WLH KZ2	4.807								1.274

Dredging locations							
	Week 07	*Week 08*	*Week 09*	*Week 10*	*Week 11*	*Week 12*	*Week 13*
Drempel van Vlissingen							
Drempel van Borssele						62.905	73.707
Pas van Terneuzen		21.461	75.091	60.176	63.180	16.201	
Put van Terneuzen							
Gat van Ossenisse							
Overloop Hansweert					60.575	176.961	20.340
Drempel van Hansweert				125.864	141.237	143.820	193.520
Drempel van Walsoorden							
Drempel van Valkenisse	78.718						
Overloop van Valkenisse			167.877	161.543	94.879		
Drempel van Bath							83.691
Nauw van Bath							
Vaarwater Bath + Afwaarts Zandvliet							
Drempel van Zandvliet	51.239	181.412	12.137		22.096	18.122	
Noordzeeterminal (Containerkaai N)							
Toeg Zandvliet+Berendrechtsluis						8.175	
Europaterminal (Containerkaai Z)							
Drempel van Frederik	2.274						
Lillo vaarwater plaat							
Deurganckdok	61.927	79.961	96.108	3.520			
Drempel van Lillo							
Toeg Boudewijn+VanCauwelaertsluis							
Drempel van de Parel	6.512	43.289					
Toeg Kallosluis	2.655						39.132
Drempel van Krankeloon	2.791						
Boerenschans	37.188						
Wrak Henri Durre							

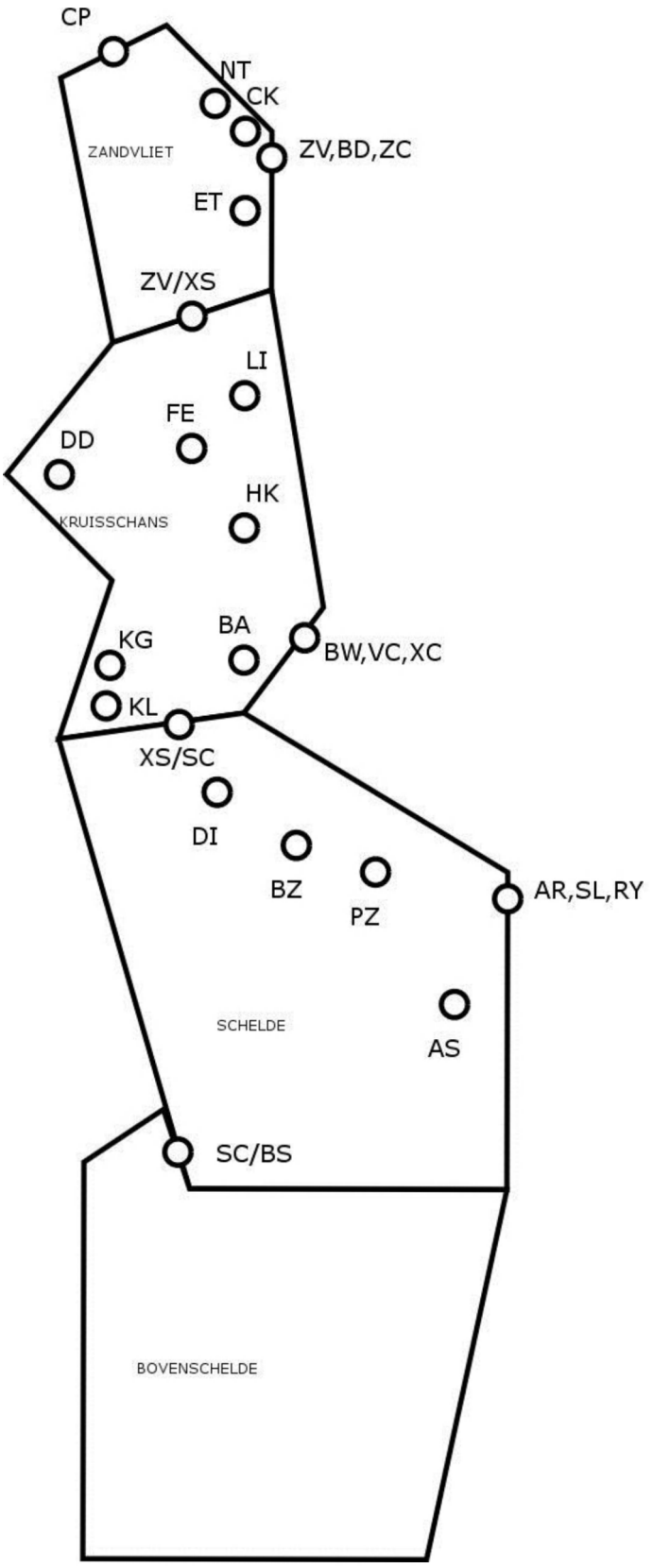
Disposal locations							
	Week 07	*Week 08*	*Week 09*	*Week 10*	*Week 11*	*Week 12*	*Week 13*
Hoge Platen (HP1)-storten							
Hoge Platen (HP1)- sproeien							
Hoge Platen (HP3) - storten							
Hoge Platen (HP3) - sproeien							
SN 11		21.461	75.091	60.176	63.180	79.106	73.707
SN 31							
Rug van Baarland							
SH 41			86.435	200.523	261.021	320.781	213.860
Plaat van Walsoorden - storten							
Plaat van walsoorden - sproeien							
SH 51	3.729		81.442	86.884	35.670		39.782
SN 51							
SH 61							43.909
Schaar Ouden Doel	82.393	211.717	12.137				
Putten Ketelplaat							
Oosterweel - Plaat van Boomke	40.610	49.736	50.357	2.366	12.060	12.569	19.546
Punt van Melsele	40.758	43.209	45.751	1.154	10.036	13.728	19.586
Opspuitingen Prosperpolder	74.989						
OWC WLH KZ1							
OWC WLH KZ2	825						

Annex F Navigation

F.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

F.2 Weekly data

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
Week 15 (02/04/2012 – 08/04/2012)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	43	41	2	12	29
	0 – 8 m	882	509	371	458	418
	8 – 12 m	212	0	212	72	140
	> 12 m	87	47	40	21	65
2	Unknown	39	36	3	11	26
	0 – 8 m	664	435	227	397	261
	8 – 12 m	97	0	97	49	48
	> 12 m	47	37	10	12	34
3	Unknown	35	33	2	10	23
	0 – 8 m	628	415	211	376	246
	8 – 12 m	66	0	66	33	33
	> 12 m	39	38	1	8	30
4	Unknown	12	11	1	5	7
	0 – 8 m	192	141	51	148	44
	8 – 12 m	1	0	1	0	1
	> 12 m	1	1	0	1	0

Week 16 (09/04/2012 – 15/04/2012)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	45	43	2	13	30
	0 – 8 m	862	527	335	439	417
	8 – 12 m	194	0	194	50	144
	> 12 m	73	40	33	34	39
2	Unknown	45	43	2	13	30
	0 – 8 m	662	460	202	375	282
	8 – 12 m	77	0	77	38	39
	> 12 m	38	28	10	24	14
3	Unknown	44	44	0	14	29
	0 – 8 m	631	445	186	361	265
	8 – 12 m	52	0	52	27	25
	> 12 m	28	28	0	18	10
4	Unknown	17	17	0	8	9
	0 – 8 m	180	150	30	136	44
	8 – 12 m	1	0	1	0	1
	> 12 m	6	6	0	6	0
Week 17 (16/04/2012 – 22/04/2012)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	97	94	1	27	68
	0 – 8 m	934	570	363	505	423
	8 – 12 m	191	0	191	62	129
	> 12 m	36	2	34	7	29
2	Unknown	77	72	3	24	53
	0 – 8 m	719	488	230	438	277
	8 – 12 m	84	0	84	36	48
	> 12 m	14	2	12	6	8
3	Unknown	77	72	3	24	52
	0 – 8 m	685	468	216	415	265
	8 – 12 m	57	0	57	23	34
	> 12 m	4	2	2	2	2
4	Unknown	15	14	1	11	3
	0 – 8 m	185	141	44	148	37
	8 – 12 m	0	0	0	0	0
	> 12 m	1	1	0	1	0
Week 18 (23/04/2012 – 29/04/2012)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***

1	Unknown	87	83	4	34	52
	0 – 8 m	899	565	333	472	425
	8 – 12 m	187	0	187	51	136
	> 12 m	35	0	35	10	25
2	Unknown	66	63	3	28	38
	0 – 8 m	660	463	196	397	262
	8 – 12 m	78	0	78	36	42
	> 12 m	11	0	11	5	6
3	Unknown	63	61	2	28	35
	0 – 8 m	618	441	176	374	242
	8 – 12 m	53	0	53	24	29
	> 12 m	0	0	0	0	0
4	Unknown	10	9	1	7	3
	0 – 8 m	132	106	25	116	16
	8 – 12 m	1	0	1	0	1
	> 12 m	0	0	0	0	0
Week 19 (30/04/2012 – 06/05/2012)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	76	73	3	15	60
	0 – 8 m	867	508	357	436	428
	8 – 12 m	226	0	226	78	148
	> 12 m	42	0	42	12	30
2	Unknown	63	60	3	12	50
	0 – 8 m	646	423	222	367	276
	8 – 12 m	99	0	99	51	48
	> 12 m	17	0	17	10	7
3	Unknown	63	60	3	12	50
	0 – 8 m	623	410	212	352	268
	8 – 12 m	70	0	70	38	32
	> 12 m	2	0	2	2	0
4	Unknown	17	14	3	4	12
	0 – 8 m	175	133	42	139	36
	8 – 12 m	6	0	6	4	2
	> 12 m	1	0	1	1	0
Week 20 (07/05/2012 – 13/05/12)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	60	58	2	12	47
	0 – 8 m	1023	639	383	513	502

	8 – 12 m	193	0	193	60	133
	> 12 m	25	0	25	7	18
2	Unknown	52	49	3	10	42
	0 – 8 m	785	539	245	453	327
	8 – 12 m	84	0	84	40	44
	> 12 m	11	0	11	5	6
3	Unknown	50	46	4	11	39
	0 – 8 m	740	512	227	428	307
	8 – 12 m	55	0	55	25	30
	> 12 m	1	0	1	0	1
4	Unknown	3	2	1	1	2
	0 – 8 m	166	129	37	129	36
	8 – 12 m	0	0	0	0	0
	> 12 m	0	0	0	0	0
Week 21 (14/05/2012 – 20/05/2012)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	74	71	3	17	56
	0 – 8 m	858	513	344	456	400
	8 – 12 m	211	0	211	71	140
	> 12 m	33	0	33	7	26
2	Unknown	64	57	7	11	52
	0 – 8 m	667	435	231	403	262
	8 – 12 m	88	0	88	45	43
	> 12 m	15	0	15	6	9
3	Unknown	61	55	6	11	48
	0 – 8 m	640	418	221	386	252
	8 – 12 m	59	0	59	30	29
	> 12 m	0	0	0	0	0
4	Unknown	11	9	2	2	9
	0 – 8 m	162	117	44	132	30
	8 – 12 m	4	0	4	3	1
	> 12 m	0	0	0	0	0
Week 22 (21/05/2012 – 27/05/2012)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	108	104	3	23	81
	0 – 8 m	911	566	342	475	429
	8 – 12 m	206	0	206	75	131
	> 12 m	32	2	30	7	25

2	Unknown	97	91	5	19	75
	0 – 8 m	728	490	236	423	301
	8 – 12 m	88	0	88	46	42
	> 12 m	13	2	11	7	6
3	Unknown	90	87	3	18	69
	0 – 8 m	690	466	223	399	287
	8 – 12 m	58	0	58	28	30
	> 12 m	2	2	0	2	0
4	Unknown	8	8	0	2	6
	0 – 8 m	191	142	48	153	38
	8 – 12 m	1	0	1	1	0
	> 12 m	0	0	0	0	0
Week 23 (28/05/2012 – 03/06/2012)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	63	59	4	11	51
	0 – 8 m	878	555	322	454	418
	8 – 12 m	202	0	202	75	127
	> 12 m	35	0	35	6	29
2	Unknown	59	54	5	12	46
	0 – 8 m	665	479	185	386	275
	8 – 12 m	90	0	90	45	45
	> 12 m	8	0	8	4	4
3	Unknown	54	49	5	11	42
	0 – 8 m	630	457	172	366	260
	8 – 12 m	61	0	61	31	30
	> 12 m	1	0	1	1	0
4	Unknown	11	9	2	4	7
	0 – 8 m	176	138	38	141	35
	8 – 12 m	0	0	0	0	0
	> 12 m	0	0	0	0	0
Week 24 (04/06/2012 – 10/06/2012)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	55	55	0	8	42
	0 – 8 m	931	610	321	442	478
	8 – 12 m	221	0	221	68	153
	> 12 m	38	0	38	9	29
2	Unknown	56	47	9	10	42
	0 – 8 m	705	520	185	385	313

	8 – 12 m	98	0	98	50	48
	> 12 m	13	0	13	6	7
3	Unknown	50	45	5	10	37
	0 – 8 m	666	493	173	360	299
	8 – 12 m	68	0	68	35	33
	> 12 m	1	0	1	1	0
4	Unknown	6	4	2	2	4
	0 – 8 m	147	122	25	119	26
	8 – 12 m	2	0	2	2	0
	> 12 m	0	0	0	0	0
Week 25 (11/06/2012 – 17/06/2012)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	58	58	0	9	48
	0 – 8 m	947	600	347	489	447
	8 – 12 m	213	0	213	76	137
	> 12 m	35	1	34	9	26
2	Unknown	49	49	0	8	40
	0 – 8 m	719	494	225	410	302
	8 – 12 m	87	0	87	46	41
	> 12 m	12	0	12	5	7
3	Unknown	49	49	0	8	40
	0 – 8 m	683	475	208	391	285
	8 – 12 m	58	0	58	30	28
	> 12 m	1	0	1	0	1
4	Unknown	4	3	1	0	4
	0 – 8 m	152	117	35	123	28
	8 – 12 m	3	0	3	2	1
	> 12 m	0	0	0	0	0
Week 26 (18/06/2012 – 24/06/2012)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	43	39	4	9	33
	0 – 8 m	954	597	355	458	484
	8 – 12 m	202	0	202	60	142
	> 12 m	32	0	32	7	25
2	Unknown	37	32	5	7	29
	0 – 8 m	736	508	226	404	322
	8 – 12 m	84	0	84	41	43
	> 12 m	13	0	13	6	7

3	Unknown	33	30	3	7	25
	0 – 8 m	696	479	215	378	308
	8 – 12 m	49	0	49	23	26
	> 12 m	2	0	2	1	1
4	Unknown	5	5	0	1	4
	0 – 8 m	163	124	38	128	33
	8 – 12 m	0	0	0	0	0
	> 12 m	0	0	0	0	0
Week 27 (25/06/2012 – 01/07/2012)						
Area	***Draught***	***Total***	***Inland navigation***	***Seagoing***	***Arrival***	***Departure***
1	Unknown	71	66	5	16	52
	0 – 8 m	957	612	344	502	453
	8 – 12 m	206	0	206	60	146
	> 12 m	35	0	35	9	26
2	Unknown	61	56	5	14	44
	0 – 8 m	751	525	225	436	313
	8 – 12 m	84	0	84	40	44
	> 12 m	16	0	16	7	9
3	Unknown	60	56	4	14	43
	0 – 8 m	717	503	213	413	301
	8 – 12 m	54	0	54	24	30
	> 12 m	1	0	1	1	0
4	Unknown	15	15	0	8	7
	0 – 8 m	166	130	35	131	34
	8 – 12 m	0	0	0	0	0
	> 12 m	1	0	1	1	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 G UNESCO PSS-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

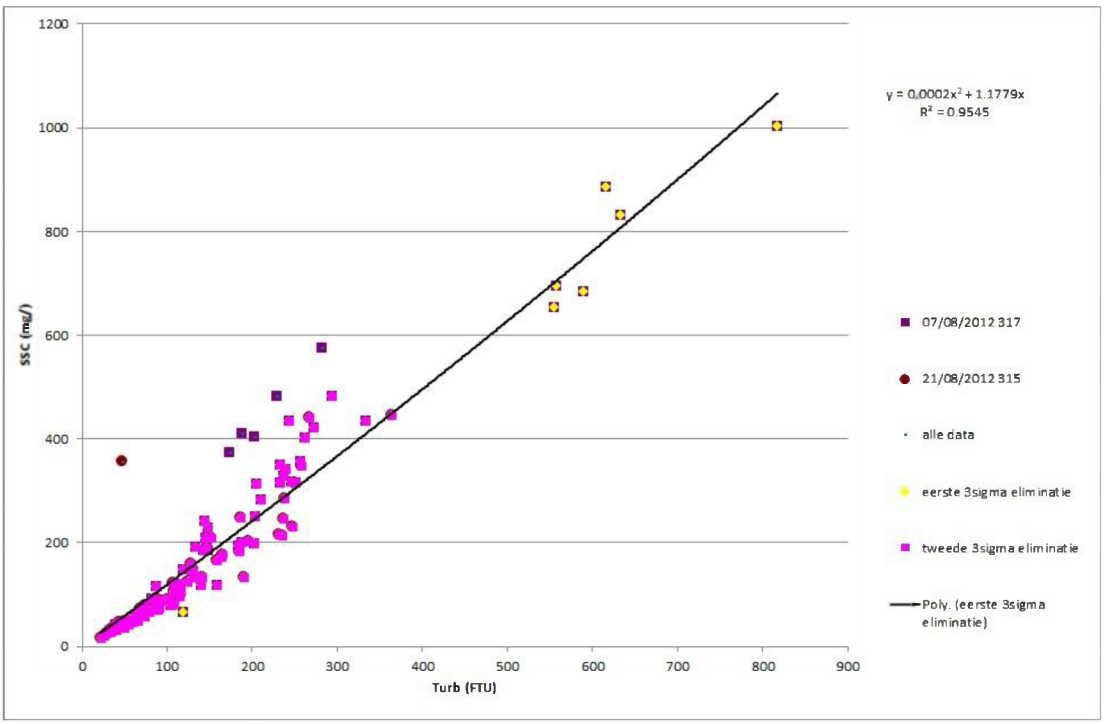
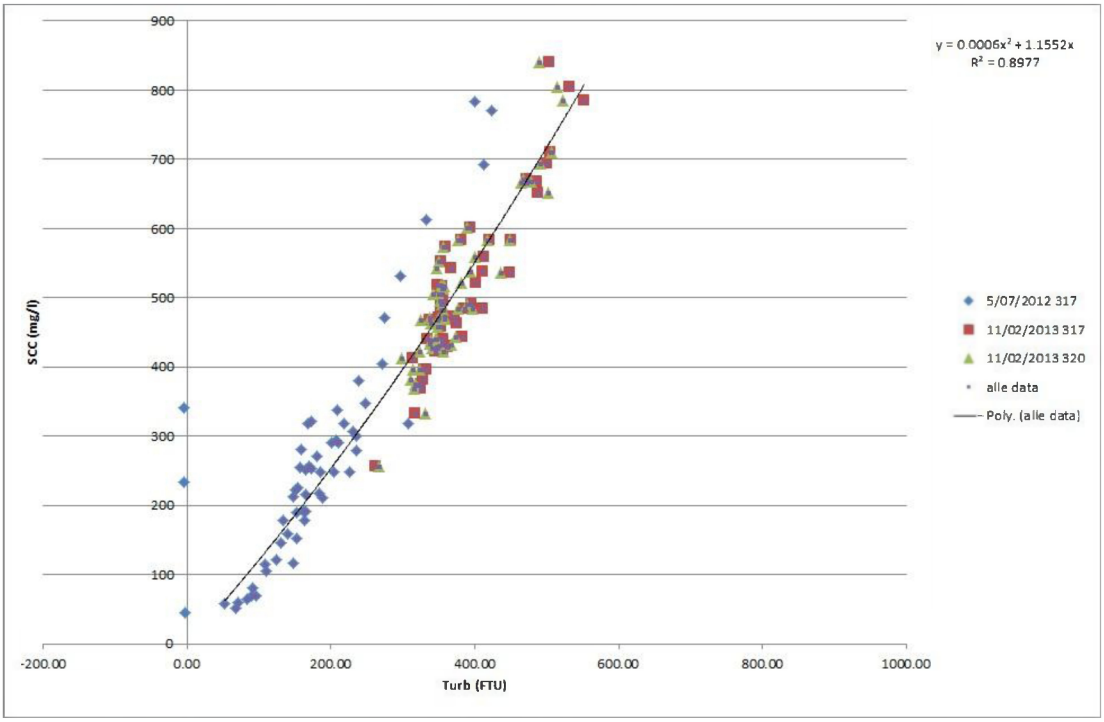
R = C(S,t,p)/C(35,15,0)

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 H Calibration curve of 2500 FTU turbidity sensor of RCM Seaguard

Buoy 84



Oosterweel