P-05-135

Forsmark site investigation

Benthic vegetation, plant associated macrofauna and benthic macrofauna in shallow bays and shores in the Grepen area, Bothnian Sea

Results from sampling 2004

Micke Borgiel, Sveriges Vattenekologer AB

July 2005

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ISSN 1651-4416
SKB P-05-135

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Keywords: SKB, Forsmark, Shallow, Bay, Shores, Coast, Sea, Analyses, Phytobenthos, SCUBA diving, Line transect, Sampling, Biomass, Abundance, Vegetation, Plants, Animal, Benthic, Macrofauna, Ekman grap sampler, AP PF 400-04-63.

Abstract

By order of SKB AB (Swedish Nuclear Fuel and Waste Management Co), a marine inventory regarding plant and animal communities of the vegetation covered substrates in the vicinity of the candidate area was performed.

Data describing the phytobenthic plant and animal communities in the Grepen area are essential for modelling of the marine ecosystem. This study was performed as part of the Forsmark Site Investigation programme.

The investigation was performed in four shallow bays and one coastal station in the vicinity of the candidate area.

The investigation was carried out in three different steps.

1. A general survey.
2. Benthic vegetation and plant associated macrofauna.
3. Benthic macrofauna.

Asphällsfjärden

The total number of dominating plant species or higher taxa observed in the 16 transects in Asphällsfjärden was 22.

The highest diversity and cover-degree estimates were around the inlet from Grepen and along the current induced by the power plant water intake, except for the deepest parts (> 4 m depth). The total cover-degree estimates were in average 50–100%. At the northern part of Asphällsfjärden vegetation was sparse. Along the southern part of the bay, vascular plants dominated, covering 10–25% of the substrate.

Tixelfjärden

The total number of dominating plant species or higher taxa observed in the 10 transects in Tixelfjärden was 18. The distribution of plants was heterogeneous.

The plants biomass (g dry weight m^{-2}) was clompletely dominated by *Vaucheria sp* which contributed with 89% of the biomass. The plant associated macrofauna was dominated by detrivores, 81%. The Baltic mussel *Macoma baltica* and the snail *Hydrobia sp*, dominated the detrivores biomass.

The benthic macrofauna biomass of 8.8 g dry weight m^{-2} was also dominated by detrivores 7.7 g (88%). The Baltic mussel *Macoma baltica* and snail *Hydrobia sp*, dominated the detrivores biomass. The total number of identified species or higher taxa was 20.

Kallrigafjärden 1

The total number of dominating plant species or higher taxa observed in the 11 transects in Kallrigafjärden 1 was 16.

This bay had the highest plant biomass found in this survey. The plant biomass was totally dominated by *Vaucheria sp*, 163 g (68%) of the total of 238 g dry weight m^{-2}. The biomass of plant associated macrofauna (29.3 g dry weight m^{-2}) was completely dominated by detrivores (25.6 g, 87%). The snail *Hydrobia sp* and the Baltic mussel *Macoma baltica* dominated the detrivores biomass.

The benthic macrofauna biomass of 11.2 g dry weight m^{-2} was also dominated by detrivores 9.2 g (83%). The snail *Hydrobia sp* and the Baltic mussel *Macoma baltica*, dominated the detrivores biomass. The total number of identified species or higher taxa was 16.

Kallrigafjärden 2

The total number of dominating plant species or higher taxa observed in the 12 transects in Kallrigafjärden 2 was 15.

The plant distribution was heterogeneous in general. The major distribution and coverage of phanerogames were in the southeast. Patchiness was frequent. The most frequent species were *Potamogeton pectinatus*, *Potamogeton perfoliatus*, *Myriophyllum spp* and *Zanichellia palustris*.

The major occurrence of algaes was found in the northwestern and southwestern parts, where mainly filamentous green and brown algae covered 50–75% of the bottom substrate from surface down to approximately 0.9 m depth.

Most of the transects had dense, richly growth of *characeae* (*Chara aspera*, *Chara spp*).

Trollgrund

The coastal station Trollgrund is situated outside the bay Tixelfjärden, in the Grepen area, between earlier investigated stations.

The total plant and animal biomass was low but of the same magnitude as in earlier visited stations in the area where the two major biomass contributors bladder wreck (*Fucus vesiculosus*) and blue mussel (Mytilus edulis) were missing.

Sammanfattning

På uppdrag av SKB AB (Svensk Kärnbränslehantering AB) genomfördes en marin inventering av växt- och djursamhällen på de vegetationsklädda bottnarna i anslutning till platsundersökningsområdet.

Data som beskriver fytobentalens växt- och djursamhällen i Grepen-området är nödvändiga för modellering av det bentiska ekosystemet, vilket är en del av det pågående platsundersökningsprogrammet i Forsmark.

Undersökningen utfördes i fyra grunda havsvikar och på en kuststation i anslutning till platsundersökningsområdet.

Undersökningarna utfördes i tre steg.

1. Översiktlig kartering.
2. Bentisk vegetation och växtassocierad makrofauna.
3. Bentisk makrofauna.

Asphällsfjärden

Det totala antalet dominerande arter eller högre taxa som observerades i de 16 transekterna i Asphällsfjärden var 22.

De högsta skattningarna av diversitet och täckningsgrad fanns i inloppet från Grepen och längs strömmen som bildas av vattenintaget från kraftverket, utom för de djupaste delarna (> 4 meters djup). De totala täckningsgradsskattningarna uppgick i snitt till 50–100 %. Vid den norra delen av Asphällsfjärden var vegetationen sparsam. Längs den södra delen av viken dominerade kärlväxter, som täckte 10–25 % av bottnen.

Tixelfjärden

Det totala antalet dominerande växtarter eller högre taxa som observerades i de 10 transekterna i Tixelfjärden var 18. Utbredningen av växter varierade mycket.

Växtbiomassan (g torrvikt m^{-2}) var helt dominerad av *Vaucheria sp* som bidrog med 89 % av biomassan. Den växtassocierade makrofaunan dominerades av detrivorer, 81 %. Östersjömusslan *Macoma baltica* och snäckan *Hydrobia sp*, dominerade detrivorernas biomassa.

Den bentiska makrofaunans biomassa på 8,8 g torrvikt m^{-2} var också dominerad av detrivorer 7,7 g (88 %). Östersjömusslan *Macoma baltica* och snäckan *Hydrobia sp*, dominerade detrivorernas biomassa. Antalet identifierade arter eller högre taxa var 20.

Kallrigafjärden 1

Det totala antalet dominerande växtarter eller högre taxa som observerades i de 11 transekterna i Kallrigafjärden 1 var 16.

Denna vik hade den högsta växtbiomassan i undersökningen. Växtbiomassan dominerades totalt av *Vaucheria sp*, 163 g (68 %) av den totala på 238 g torrvikt m^{-2}. Den växtassocierade makrofaunan (29,3 g torrvikt m^{-2}) var helt dominerad av detrivorer (25,6 g, 87 %). Snäckan *Hydrobia sp* och östersjömusslan *Macoma baltica* dominerade detrivorernas biomasa.

Den bentiska makrofaunans biomassa på 11,2 g torrvikt m^{-2} var också dominerad av detrivorer 9,2 g (83 %). Snäckan *Hydrobia sp* och Östersjömusslan *Macoma baltica*, dominerade detrivorernas biomassa. Antalet identifierade arter eller högre taxa var 16.

Kallrigafjärden 2

Det totala antalet dominerande växtarter eller högre taxa som observerades i de 12 transekterna i Kallrigafjärden 2 var 15.

Växternas utbredning var heterogen överlag. Kärlväxternas huvudsakliga utbredning och största täckningsgrader fanns i den sydöstra delen. ”Patchiness”, d v s en fläckvis vegetationsutbredning, var vanligt förekommande. De mest frekven förekommande arterna var *Potamogeton pectinatus*, *Potamogeton perfoliatus*, *Myriophyllum spp* och *Zanichellia palustris*.

Den största förekomsten av alger fanns i nordväst och sydväst, där huvudsakligen fintrådiga grön- och brunalger täckte 50–75 % av bottnarna från ytan ner till uppskattningsvis 0,9 m djup.

De flesta transekterna hade en riklig förekomst av kransalger (*Chara aspera*, *Chara spp*).

Trollgrund

Kustlokalen Trollgrund är belägen utanför viken Tixelfjärden, i Grepen, mellan tidigare undersökta lokaler.

Den totala växt- och djurbiomassan var låg men i samma storleksordning som i tidigare besökta lokaler i området, där de två normalt huvudsakliga bidragsgivarna till biomassan, blåstång (*Fucus vesiculosus*) och blåmusslan (Mytilus edulis), saknades.

Contents

1 Introduction

By order of SKB AB (Swedish Nuclear Fuel and Waste Management Co), a marine inventory regarding plant and animal communities of the vegetation covered substrates in the vicinity of the candidate area was performed.

The phytobenthic plant and animal communities of the Bothnian Sea may contribute to over half of the total production of the coastal zone /1/. The distribution and function of the phytobenthic plant and animal communities in the area is therefore of major importance for the understanding of biological processes within and in the vicinity of the candidate area.

This document reports the results from a general survey, sampling of benthic vegetation, plant associated macrofauna and benthic macrofauna in shallow bays and shores in the Grepen area, Bothnian Sea. Field work were performed during August and September 2004. The sampling was done in different habitats, in shallow bays and along the coast in the Grepen area (Figure 1-1).

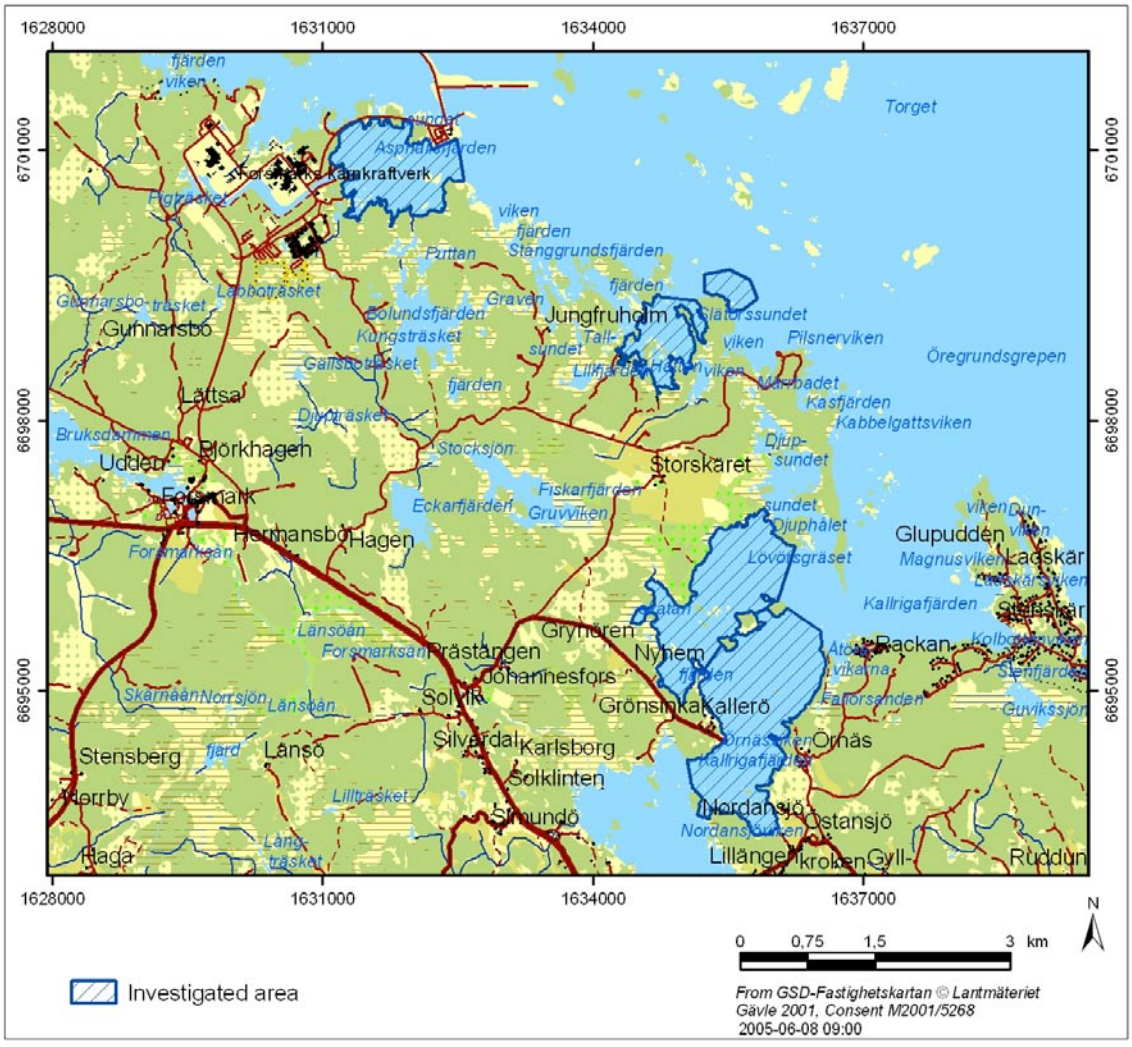

Figure 1-1. *Location of investigated areas, four bays and one coastal station, marked with blue stripes.*

The investigation was carried out in three different steps.

1. General survey of benthic vegetation.
2. Benthic vegetation and plant associated macrofauna.
3. Benthic macrofauna.

This is one of the activities performed within the site investigation programme at Forsmark. The work was carried out in accordance with Activity Plan AP PF 400-04-63. In Table 1-1, controlling documents for performing this activity are listed /2, 3/. The Activity Plan is SKB's internal controlling document. All data generated were stored in the database SICADA and are traceable by the Activity Plan number, AP PF 400-04-63.

Table 1-1. Controlling documents for performance of the activity.

Activity Plan	**Number**	**Version**
Undersökning av bottenfauna och bottenvegetation i sjöar och grunda havsvikar.	AP PF 400-04-63	1.0
Method descriptions	**Number**	**Version**
Platsundersökningar. Undersökningsmetoder och generellt genomförandeprogram.	SKB R-01-10	1.0
Metodik för provtagning av ekologiska parametrar i hav.	SKB PIR-04-09	1.0

2 Objective and scope

The primary aim of this investigation was to estimate the distribution, coverage and biomass of aquatic plant and animal communities within shallow bays and shores in the Grepen area, Bothnian Sea.

The second objective was to characterise the bottom substrates in the plant and animal communities.

The third purpose was to generate data which will characterise the plant and animal communities of the vegetation covered substrates. The data will support mapping in GIS, concerning area and depth distribution of different vegetation communities, which can be used to approximately determine its coverage and biomass. The results of this work will be presented in a separate report.

The investigations were performed in four shallow bays and one coastal station in the vicinity of the candidate area (Figure 1-1).

Data describing the phytobenthic plant and animal communities in the Grepen area are essential for modelling of the benthic ecosystem, which is included in the Site Investigation programme at Forsmark.

Figure 2-1. *General survey, Asphällsfjärden 2004 (left). Diver estimating cover-degree of* Chara tomentosa *in transect located in Kallrigafjärden (right).*

3 Equipment

3.1 Description of equipment tools

3.1.1 GPS

The sampling point position was given from a Garmin 176C GPS /4/.

3.1.2 Depth gauge

Divers used a calibrated depth gauge with an average accuracy of +/– 0.1 m. The water depth was measured from a ship using an echo sounder with an accuracy of +/– 0.05 m.

3.1.3 Ekman grab sampler and sieve

An Ekman grab sampler with a sampling area of 0.0225 m^2 (size 0.15×0.15 m) (Figure 3-1) was used to sample benthic macrofauna. The samples from the Ekman grab sampler were sifted in the field through a sieve with a mesh size of 0.5×0.5 mm.

Figure 3-1. *Ekman grab sampler.*

3.1.4 Scraper, frame and net bag

A diver equipped with a scraper and an open iron frame (size 0.2×0.2 m) with an attached net bag was used to sample benthic vegetation and plant associated macrofauna (Figure 3-2 and Figure 3-3).

3.1.5 Laboratory equipment

In the laboratory, the organisms were sorted out from the material using a magnifying glass and a stereo microscope. The organisms were then identified in the stereo microscope. For some species, a light microscope was used. The organisms were dried in an oven (60°C) to a constant weight (at least for two weeks). The biomass was measured on an analytical balance with an accuracy of 0.1 mg.

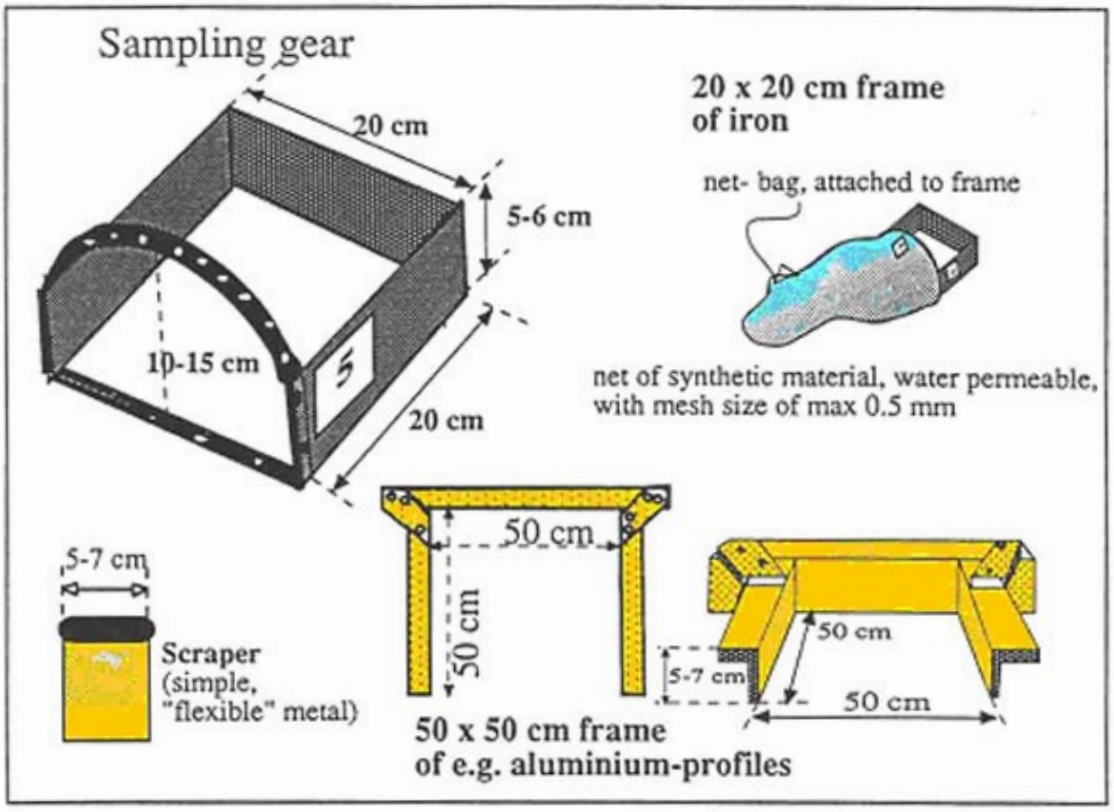

Figure 3-2. *Equipment used for collecting quantitative samples in the phytobentic communities.*

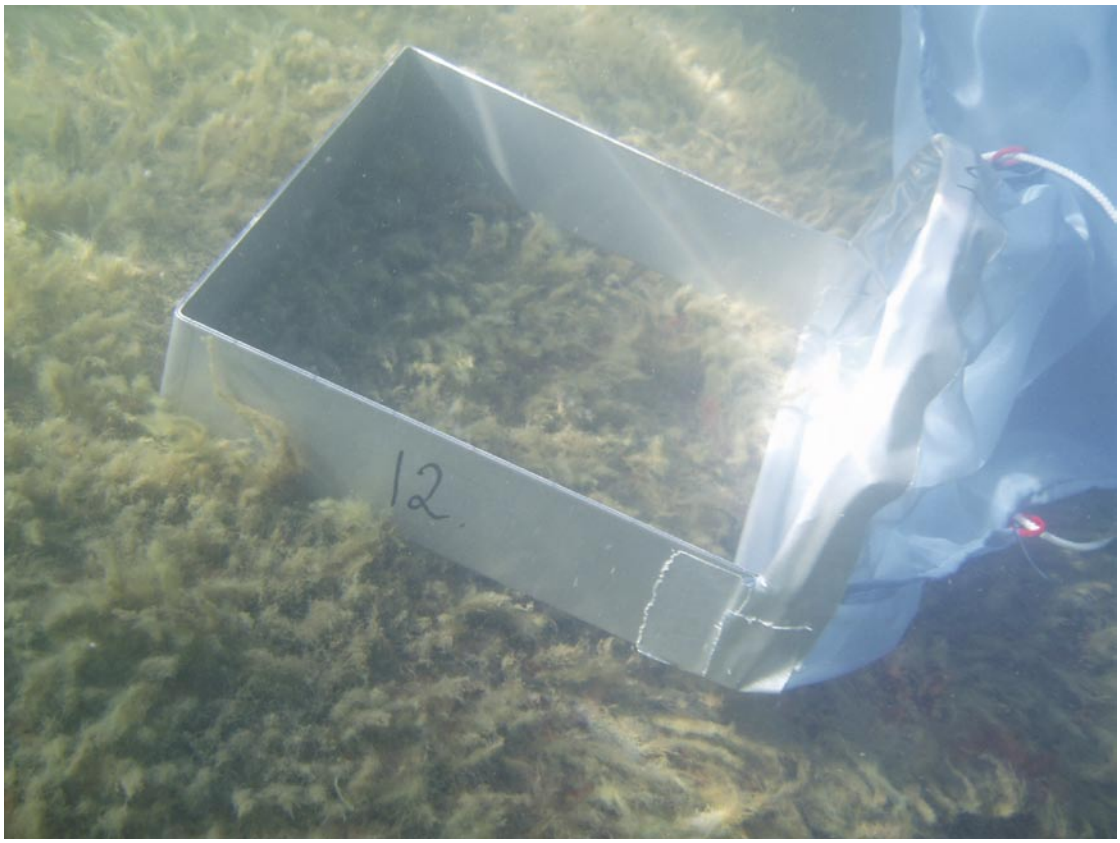

Figure 3-3. *Frame (size 0.2×0.2 m) with attached net bag. Trollgrund 2004.*

4 Execution

The investigation was carried out in three different steps:

1. A general survey of benthic vegetation
2. Sampling of benthic vegetation and plant associated macrofauna
3. Sampling of benthic macrofauna.

The general survey, sampling of benthic vegetation, plant associated macrofauna and benthic macrofauna in shallow bays and shores in the Grepen area, Bothnian Sea were conducted during August and September 2004. The sampling was done in different habitats, in shallow bays and along the coast. The identification codes, sampling points and sampling types are presented in maps, Appendix 1.

The extent of the investigations is described in Table 4-1.

Table 4-1. The extent of the investigations.

Organism	Parameters	Performance	Extent/Number of samples	Reference
Benthic vegetation	Dominating species	Transects	Four bays	/3/
(General survey)	Cover degree (dominating species)		Estimates in a seven-point scale	
	Distribution (dominating species)			
Benthic vegetation	Species	Transects	Two bays	/3/
	Cover degree		Estimates in a seven-point scale	
	Distribution			
	Plant groups			
Benthic vegetation	Species	Transects	Two bays + one coastal station	/3/
	Cover degree	Frames 0.20×0.20 m	9–12 samples in each transect	
	Distribution		(Three samples in each stratum 3–4 strata in each transect)	
	Biomass			
	Plant groups			
Plant associated macrofauna	Species	Transects	Two bays	/3/
	Cover degree		Estimates in a seven-point scale	
	Distribution			
	Functional groups			
Plant associated macrofauna	Species	Transects	Two bays + one shore	/3/
	Cover degree	Frames 0.20×0.20 m	9–12 samples in each transect	
	Distribution		(Three samples in each stratum 3–4 strata in each transect)	
	Biomass			
	Functional groups			
Benthic macrofauna	Species	Ekman grab sampler	Two bays	/3, 5/
	Biomass		10 samples in each bay	
	Functional groups			
	Abundance			

4.1 Preparations

Before the activity started, the sampling equipment and diving gear were checked.

A field protocol was copied on plastic papers for field notes.

The GPS-units were calibrated at a special reference point in the area. The accuracy had to be within +/– 5 m to be accepted.

4.2 Execution of field work

4.2.1 General survey of benthic vegetation

The method for the general survey estimates of the dominating benthic vegetation was a simplified version of the national monitoring program of the vegetation covered substrates of the Baltic Sea, run by the Swedish Environmental Protection Agency (Naturvårdsverket) /6, 7, 8, 9/ and HELCOM guidelines /10/.

Sampling point (Number and locations of stations)

The locations of the transects were not randomly placed but selected to present representative parts of the shallow bays and cover the different vegetation communities that appeared in the bays. The stations were placed and marked in advance on a navigation chart. The number of transects varied mainly depending on size and shape of the bays. The total number of transects visited in the general survey were 50, which were subdivided into 365 intervals. The dominating plants were estimated in every interval (See below for execution in field).

The exact position of the transects was then determined using a handheld GPS (Garmin 176C, +/– 0.5–1.0 m precision). Documentation of the position of each of the stations by GPS-coordinates, together with a photography of the site, makes it possible to revisit the stations (see Appendix 2). All the stations were visited in mid August 2004.

Estimates of bentic vegetation

A diver, followed by a small rubber boat, swam in a given compass direction, starting from the shoreline. Within a 2–3 m wide zone, plants and type of substrate were described along the transect by snorkling. The diver estimated the depth distribution and cover degree of the dominating species. The interval where the species occurred for the first and last time, or major changes in cover degree, was determined by GPS (in the boat) and the distance from the shore (or starting point) was noted. The depth was measured with a calibrated depth gauge. New notes were done as the diver observed any change, e.g. a new species, a change in cover degree of the species or a change in substrate. The estimates were done continuously along the transect and not only at distinct intervals of distance, nor in frames. Thus, an area estimate was obtained describing the entire section. As different plants species tend to occur in different distinct and limited zones depending on substrate, depth and wave exposure, the estimates resulted in the establishment of vegetation belts along the transect. The belts were named after the dominating species or plant groups.

The cover degree of the dominating macroscopic plants was given in a seven-point scale: + for occurrence (single observation), 5, 10, 25, 50, 75 and 100%. As species can overgrow each other, e.g. forming a canopy and a bottom layer, the sum of all the species' cover

degrees at a given site can exceed 100%. The epiphytes were estimated in the same way as the organisms directly attached to the substrate. The type of substrate was classified into rock, boulders, stones, gravel, sand, soft substrate and/or combinations of these.

4.2.2 Benthic vegetation and plant associated macrofauna

The method for sampling and measurements was in accordance with the national monitoring program of the vegetation covered substrates of the Baltic Sea, run by the Swedish Environmental Protection Agency (Naturvårdsverket) /6, 7, 8, 9/ and HELCOM guidelines /10/.

Sampling point (number and location of stations)

The number of stations (transects), three quantitative and six qualitative, was small in comparison to the surveyed area but they should be seen as complements to the general survey and earlier investigations in the Forsmark area /11, 12/. The primary aim was to obtain reliable biomass values and confident cover degree estimates for the phytobenthic plant and animal communities, which can be used to estimate the quantitative and qualitative distribution of phytobenthos in the bays and coastal areas of Grepen. Therefore, the locations of the stations were not random, but chosen to present representative parts of the entire area.

The stations were placed and marked in advance on a navigation chart. The exact position of the transects was then determined using a handheld GPS (Garmin 176C, +/– 0.5–1.0 m precision). Documentation of the position of each of the stations by GPS-coordinates, together with a photography of the site, makes it possible to revisit the stations (see Table 4-2 and maps in Appendix 1). All the stations were visited in mid August 2004.

Table 4-2. Forsmark 2004. The station name, ID-code, compass direction of divers transect, starting position (GPS, RT 90-system) and number of samples taken.

Station no	Name of station	ID-code	Compass (°)	Position X	(GPS) Y	No of samples
1	Tixlan	LFM 710	234	6698961	1635067	9
2	Tixlan	LFM 711	36	6698776	1634804	0
3	Tixlan	LFM 712	18	6698687	1634937	0
4	Tixlan	LFM 713	238	6699225	1634923	0
5	Trollgrund	LFM 714	360	6699386	1635401	12
6	Kallriga	LFM 715	144	6696790	1635470	9
7	Kallriga	LFM 716	90	6696142	1635103	0
8	Kallriga	LFM 717	216	6695717	1635222	0
9	Kallriga	LFM 718	63	6695199	1634727	0

Sampling and estimates of benthic vegetation and plant associated macrofauna

Divers swam along a metre marked line in a given compass direction. Within a 3–5 m wide zone at each side of the transect line (6–10 m width in total, depending on the visibility) the type of substrate and the siltation (loose sediment dust, see below) was described. Divers estimated the depth distribution and cover degree of the dominating and conspicuous species. The interval where the species occurred for the first and last time was determined by noting the distance from shore on the line (or starting point), and the depth was measured with a calibrated depth gauge. New notes were taken as the diver observed any change, e.g. a new species, a change in cover degree of the species or a change in substrate. The estimates were done continuously along the transect and not only at distinct intervals or in frames. Thus, an area estimate was obtained describing the entire section. Special attention was made to find the deepest limit of *Fucus vesiculosus*. As different plant species (and Mytilus edulis) tend to occur in different distinct and limited depth zones, the estimates resulted in the establishment of vegetation belts along the transect line. The belts were named after the dominating species.

The cover degree of the macroscopic plants and the blue mussel (Mytilus edulis) was given in a seven-point scale: + for occurrence (single observation), 5, 10, 25, 50, 75 and 100%. As species can overgrow each other, e.g. forming a canopy and a bottom layer, the sum of all the species cover degrees at a given site can be more than 100%. The epiphytes were estimated in the same way as the organisms directly attached to the substrate. The type of substrate was classified into rock, boulders, stones, gravel, sand, soft substrate and/or combinations of these. The siltation on the substrate and on the vegetation, which indicates water movement, was given in a four-point scale:

- 1 = no silt,
- 2 = small amount,
- 3 = more/much – easily stirred by the hand, but settles after a short while,
- 4 = heavily siltated – the sight of the diver is blurred for a long time.

Quantitative samples were collected by tossing frames of the size 0.2×0.2 m within the identified belts. The divers placed three frames at a given depth within the belt by throwing them haphazardly over their shoulders. The entire content within the frame was scraped into a bag attached to one open side of the frame. The samples were analyzed by sorting each species separately and dried in 60°C to a constant weight (at least for two weeks). The animals were also counted. If not otherwise stated in the text, biomass is given in g dry weight m^{-2}, including shells when present. In all, 30 quantitative samples were collected.

4.2.3 Benthic macrofauna

Sampling point

Within respective shallow bay (Tixlan and Kallriga), ten sampling points were randomized for Ekman grab sampling in the littoral and sublittoral zone. The position was then found by GPS. Sometimes the randomized sampling point ended up in an area with dense reeds (Phragmites australis) or hard substrate (e.g. boulders and stones). The point was then moved the shortest distance possible to an area free from obstacles (see Appendix 6 for details).

Sampling of benthic macrofauna with an Ekman grab sampler

The benthic macrofauna was sampled from a boat with an Ekman grab sampler according to the Swedish industrial standard SS 02 81 90 /5/. One sample was taken at each sampling point. Each sample was sifted through a sieve and transferred into an individually marked plastic can with cover. The samples were preserved in 70% ethanol and transported to the laboratory. Field notes embrace the following (compiled in Appendix 6):

- date,
- time,
- performer,
- coordinates,
- water depth,
- bottom structure,
- submersed vegetation in the sample.

4.3 Sample preparation for further analyses

4.3.1 Benthic vegetation and plant associated macrofauna

When the field activity was terminated, the samples were transferred to plastic bags, thoroughly marked and frozen for later sorting in the lab. The samples were stored in a freezer container, packed transect by transect.

4.3.2 Benthic macrofauna

The samples were sieved (0.5 mm) and transferred to plastic bottles in the field and thoroughly marked and conserved (70% ethanol) for later sorting in the lab. The samples were stored station by station.

4.4 Data handling/post processing

When the activity was terminated, the field/dive protocols were quality checked by the responsible personnel. Data from diving measurements and estimates, as well as background data, have been incorporated in the database at SKB (SICADA).

4.5 Analyses and interpretations

4.5.1 Vegetation analysis

The benthic vegetation sorting, measuring and analysis were performed by Cecilia Journath and Micke Borgiel, Sveriges Vattenekologer AB, Vingåker, according to Swedish Environmental Protection Agency method standards /9/.

If possible, the plants were determined to species level using stereo and light microscopes. The samples were analysed by sorting each species separately. The biomass was then measured as dry weight (DW) on an analytical balance after drying in 60°C to a constant weight (at least for 2 weeks). The biomass is given in g dry weight m^{-2}.

4.5.2 Macrofauna analysis

The plant associated macrofauna was analysed by Micke Borgiel, Sveriges Vattenekologer AB. The biomass was sorted and measured by Cecilia Journath, Sveriges Vattenekologer AB, according to Swedish Environmental Protection Agency method standards /9/.

The benthic macrofauna was analysed by Christina Ekström, Ekströms Hydrobiologi-konsult, Stockholm. The biomass was sorted and measured by Cecilia Journath, Sveriges Vattenekologer AB, according to Swedish industrial standard SS 02 81 90 /5/.

If possible, the animals were determined to species levels using stereo and light microscopes. The samples were analysed by sorting each species separately. The biomass was then measured as dry weight (DW) on an analytical balance after drying in 60°C to a constant weight (at least 2 weeks). The biomass is given in g dry weight m^{-2}, including shells when present.

4.6 Nonconformities

4.6.1 Sampling of benthic macrofauna with an Ekman grab sampler

Sometimes the randomized sampling point ended up in an area with dense reeds (Phragmites australis) or hard substrate (e.g. boulders and stones). The point was then moved the shortest distance possible to an area free from obstacles (see Appendix 6 for details).

5 Results

5.1 General survey of benthic vegetation

The results generated by the general survey of the four shallow bays will primarily be used for GIS-modelling of the plants depth distribution, coverage and bottom substrate in the vicinity of the site investigation area. These results will be presented in a separate report.

The results from the general survey were also used to find representative shallow bays for further investigations (benthic vegetation and plant associated macrofauna and benthic macrofauna), of which the results are presented in this report.

A brief general description of the transects will be presented further in this report. The dominating species or higher taxa observed during the general survey are presented in Table 5-1. Primary data and field notes are compiled in Appendix 2. For an overview of the location of the transects, see maps in Appendix 1.

Figure 5-1. *General survey, Kallrigafjärden 2004. Field crew checking the depth distribution of* Chara aspera *between the investigated transects.*

Table 5-1. Dominating species or higher taxa observed during the general survey in four shallow bays.

Area	Asphällsfjärden	Tixelfjärden	Kallrigafjärden 1	Kallrigafjärden 2
Transect ID-numbers	**LFM 660–675**	**LFM 676–685**	**LFM 686–696**	**LFM 697–708**
Number of transects	**16**	**10**	**11**	**12**
Taxa/Species				
Bluegreen				
Rivularia atra	X	X	X	X
Red				
Ceramium tenuicorne	X			
Furcellaria lumbricalis	X			
Polysiphonia fucoides	X			
Polysiphonia fibrillosa	X			
Brown				
Pilayella littoralis	X	X	X	X
Chorda filum	X	X		
Fucus vesiculosus	X			
Sphacelaria arctica	X			X
Vaucheriales				
Vaucheria sp		X	X	X
Green				
Enteromorpha intestinalis	X	X	X	X
Cladophora glomerata	X	X	X	X
Characeae				
Chara aspera		X	X	X
Chara baltica		X		
Chara canescens			X	
Chara tomentosa	X	X	X	
Chara spp (aspera/baltica)	X		X	X
Tolypella nidifica	X	X		
Phanerogames				
Callitriche spp	X	X	X	X
Myriophyllum spp	X	X	X	X
Potamogeton pectinatus	X	X	X	X
Potamogeton perfoliatus	X	X	X	X
Ranunculus spp	X	X	X	X
Ruppia sp	X			
Zanichellia palustris	X	X	X	X
Najas maritima	X	X	X	
Hippuris vulgaris		X		X
Sum Taxa/Species	22	18	16	15

5.1.1 Asphällsfjärden

The total number of dominating species or higher taxa observed in the 16 transects in Asphällsfjärden was 22 (Table 5-1).

The highest diversity and cover-degree estimates were done around the inlet from Grepen and along the current induced by the power plant water intake, except for the deepest parts (> 4 m depth). The total cover-degree estimates were in average 50–100%, and often exceeding 100% in shallow areas (< 3 m depth). The cover-degree of the vascular plants was approximately of the same magnitude as the algae. Red algae were generally observed from 2 m depth, with a maximum coverage of up to 50% (e.g. *Ceramium tenuicorne*). Filamentous green and brown algae were dominating the shallow parts together with vascular plants, mainly *Potamogeton pectinatus* and *Myriophyllum sp*. The brown alga *Fucus vesiculosus* was observed at several transects in this area (LFM 660–663). The substrate in this area was a mixture of rock, boulders, gravel, sand and also some soft bottom.

The shallow and sheltered areas of the northern part of Asphällsfjärden were dominated by sediment-rich, soft bottom substrate, mixed with sand and some boulders in the inner parts. The vegetation was sparse. Filamentous green and brown algae (e.g. *Cladophora glomerata* and *Pillayella/Ectocarpus*) grew on the boulders, covering 5–10%. On the soft bottom substrate, *Potamogeton pectinatus* and *Myriophyllum spp* were dominating, covering 5–10%, in the inner parts 10–25%. In the northwest of the bay, on sand/clay substrate, *Chara tomentosa* was also quite frequent, covering 5–10%.

Boulders mixed with sand and soft substrates dominate the southern, sheltered and shallow part of the bay. Most of the transects reached a maximum depth of 2–3 m where few individuals of red algae were observed. Filamentous green and brown algae (e.g. *Cladophora glomerata* and *Pillayella/Ectocarpus*) grew on top of the boulders, covering approximately 5–10%. The vascular plants dominated, covering 10–25% of the total substrate. *Potamogeton pectinatus*, *Potamogeton perfoliatus*, *Zanichellia palustris* and *Myriophyllum spp* were the most frequent taxa.

5.1.2 Tixelfjärden

The total number of dominating species or higher taxa observed in the 10 transects in Tixelfjärden was 18 (Table 5-1). The distribution of plants varied widely in Tixelfjärden.

In the northern part, large areas of the soft bottom substrate was empty or almost empty of plants. Close to the surface, filamentous green and brown algae grew on top of boulders (5–10%). Phanerogams covered approximately up to 10%. *Potamogeton perfoliatus*, *Zanichellia palustris* and *Callitriche spp* were the dominating vascular plants.

In the sheltered shallow bay called “Hatten” in the southern part of the bay, the growth of phanerogams was tremendous. *Potamogeton pectinatus*, *Potamogeton perfoliatus*, *Myriophyllum spp*, *Zanichellia palustris* and *Najas maritima* covered 75–100% of the bay. Filamentous green and brown algae covered 5–10% of the substrate. In the inner west parts of Hatten (LFM 685) the “uncommon” *Najas maritima* alone covered 75% of the soft substrate. Further to the west (LFM 676), the transect started with a freshwater plant, *Hippuris vulgaris*, mixed with *Myriophyllum spp*, *Potamogeton pectinatus*, *Potamogeton perfoliatus*, *Najas maritima* and *Zanichellia palustris*, covering 25–50% of the mixed bottom substrate. At 2.8 m depth (waypoint 220), the bottom became empty, except for some clusters of large boulders which had *Cladophora glomerata* and *Enteromorpha*

intestinalis growing on top. In the northeast end of the transect (LFM 676), at the inlet of the bay, *Cladophora glomerata*, *Chorda filum* and *Enteromorpha intestinalis* covered 50–75%, while the phanerogams covered 25–50% of the boulder, stone and gravel substrate.

The central part of Tixelfjärden was dominated by *Vaucheria sp*, which completely covered the soft bottom substrate from 2–3 m depth. If the bottom substrate was sand or sand mixed with clay, *Zanichellia palustris* usually also grew in dense stands (75%) between 2 to 3 m depth. Closer to the surface, phanerogams covered roughly 25% of the substrate. Algae, dominated by filamentous green and brown algae, were most frequent close to the shoreline at 0.5–1 m depth (10–75%). In the southern part of central Tixelfjärden, rich growth of *Chara tomentosa* and *Chara baltica* was observed on the sand/clay substrate (75%, 1.2–1.7 m depth). *Tolypella nidifica* and *Chara aspera* were also observed.

5.1.3 Kallrigafjärden 1

The total number of dominating species or higher taxa observed in the 11 transects in Kallrigafjärden 1 was 16 (Table 5-1).

The distribution and coverage of plants was homogenous in the shallow and quite sheltered bay. It was possible to make a good general characterization of the entire bay. The central part of the bay was dominated by *Vaucheria sp*, which completely (100%) covered the soft bottom substrate from 1.5–2 m depth.

Phanerogams dominated between 1 to 1.5 m depth, covering approximately 50% of the substrate, usually sand, clay or a mixture of both. The most frequent species were *Potamogeton pectinatus*, *Potamogeton perfoliatus*, *Myriophyllum spp* and *Zanichellia palustris*.

Most of the substrate between 0.3 to 1.0 m depth was also sand mixed with clay where *Chara aspera* covered in average 75% of the bottom. At soft bottom substrates, *Chara tomentosa* and *Najas maritima* covered 75–100% in the same depth interval. In very sheltered areas with a soft bottom substrate, *Chara tomentosa* formed dense stands down to 1.5 m depth. *Chara canescens*, not observed in the area before, was found along transect LFM 689.

The growth and distribution of algae was sparse. Short turfs of algae grew close to the shoreline and on scattered boulders. Filamentous green and brown algae (e.g. *Cladophora glomerata* and *Pillayella/Ectocarpus*) dominated. The total average coverage of algae was 5–10% from the surface down to about 1.5 m depth.

5.1.4 Kallrigafjärden 2

The total number of dominating species or higher taxa observed in the 12 transects in Kallrigafjärden 2 was 15 (Table 5-1).

If Kallrigafjärden 1 was quite homogeneous in substrate and plant distribution, then Kallrigafjärden 2 was just the opposite. There are several reasons for this. The investigated area is not enclosed by any natural borders and the central parts are deep, 3–6 m, in the northern part down to 8 m depth. Two freshwater rivers have their outlets further south in the bay, so there are several gradients which may affect the plant distribution and coverage.

Vaucheria sp was not so common and seemed to form isolated clusters in shallow sheltered areas. *Vaucheria sp* was lacking in the most northern transects and had a very limited occurrence and distribution in the southwest transects. The major depth distribution seemed to be on soft bottom substrate at 1.5–2.5 m depth, but patches of *Vaucheria sp* were found at 0.5 m depth and occasionally also deeper than 3 m. The major distribution of *Vaucheria sp* was observed at transect LFM 707.

The distribution and coverage of phanerogams was also very heterogeneous in the different parts of the investigated area. The major distribution and coverage of phanerogams was in the southeast, but some transects in that area were also lacking vascular plants. Patchiness was frequent. In the southwest, phanerogams covered in average 25–100% of the bottom substrate, between 0.5 to 2.7 m depth. In the northeast, 10–50% of the bottom substrate between 0.7 to 2.7 m depth was covered by phanerogams. The islands in the northwest had a phanerogam coverage of 10–25% between 0.7 to 2.9 m depth. The most frequent species were *Potamogeton pectinatus*, *Potamogeton perfoliatus*, *Myriophyllum spp* and *Zanichellia palustris*.

Most of the transects had dense, rich growth of *characeae* (*Chara aspera*, *Chara spp*). Eight of the twelve transects demonstrated 50–100% coverage between 0.3 to 0.7 m depth.

The major occurrence of algae was found in the northwest. In the southwest, mainly filamentous green and brown algae covered 50–75% of the bottom substrate from the surface down to approximately 0.9 m depth. The transects situated in the south and southeast part had a depth distribution of algae from the surface down to 2.3 m depth, but the coverage was quite low, 5–10%. Algae were missing or low in frequency in the northeast part of the investigated area.

5.2 Benthic vegetation and plant associated macrofauna

The stations are described in the order of the divers' notes, from the deepest point of the transect towards the surface. A copy of the divers' protocols is given in Appendix 3. The mean biomass (g dry weight/m^2) of plant systematic/functional group and animal trophic group for each sampling depth of the quantitative transects are compiled in Table 5-2. A table of the biomass, standard deviation and standard error of the quantitative samples is given in Appendix 5. The cover-degree estimates for each transect are compiled in Appendix 4.

Table 5-2. The mean biomass (g dry weight/m²) of plant systematic/functional group and animal trophic group for each sampling depth of the quantitative transects.

Transect		Tixlan			Trollgrund				Kallriga		
Biomass, (dw g/m²)		Mean			Mean				Mean		
		2004			2004				2004		
Profile no		1			5				6		
Transect ID-code		LFM 710			LFM 714				LFM 715		
Frame no	**1.2.3**	**21.23.24**	**4.5.6**	**10.11.12**	**9.7.8**	**4.5.6**	**1.2.3**	**4.5.6**	**21.22.23**	**1.2.3**
Depth (m)	**0.6**	**3.1**	**3.1**	**0.5**	**2.1**	**4.2**	**6**	**0.9**	**1.2**	**1.3**
Plant groups										
bluegreen	3.9725	0.0007	0.0003	0.3625	0.6467	0.0107		0.1017	1.0400	0.0212
annual red	1.7975	0.0003	0.3628	2.2170	0.3842	0.0955				
perennial red	0.1728	0.0010	0.0003	0.0003	1.9968	0.2215	0.0007			
annual brown	4.9487	0.0350	0.0032	0.4162	4.2333	6.3045	1.1066	0.0003	0.6082	0.4720
perennial brown						0.0237	0.2566			
Vaucheria sp		7.9558	356.9893						0.0003	488.3003
green	13.7432	8.2200	0.2340	12.8615	7.2727	3.1525	0.6942	0.0007	0.0003	
characeae								164.4902	0.0003	
Potamogeton spp	3.5808									
Zanichellia/Ruppia	0.3500	2.9825						0.1267	48.8833	11.1208
others	0.7883	4.8067	0.2348		0.0825		0.0003		0.2958	
Sum plants	**29.354**	**24.002**	**357.462**	**14.003**	**16.449**	**10.097**	**2.154**	**164.720**	**50.828**	**499.914**
Animal trophic groups										
filter feeders	7.5407	0.0003	2.6018	15.5122	0.0007	2.2142	0.5850	0.4525		
herbivores	8.7258	0.0102	0.7323	6.0650	5.3733	6.4327	2.2093	6.7250	0.7527	0.0998
carnivores	0.1113	0.0108			0.0007	0.0057	0.0140	0.2578	0.0082	0.0003
omnivores	0.3492	0.1633	0.0108	0.4095	0.1112	0.0148	0.0062	0.0500	0.0412	
detrivores	24.7110	28.7870	22.7745		0.3165	37.7833	19.1132	34.7167	20.7850	21.1562
Sum animals	**41.438**	**28.971**	**23.518**	**6.475**	**8.404**	**59.749**	**21.343**	**43.964**	**22.172**	**21.709**

5.2.1 Station 1, Tixlan, LFM 710

This station, located on a peninsula in the eastern part of Tixlan, was visited on the 23rd of August. The divers swam in a 234° compass direction down to 3.2 m depth, 75 m from the shore (Figure 5-2, Figure 5-4, Figure 5-5, Table 5-2 and Appendix 3, 4 and 5).

The flat, soft sediment-rich substrate was completely covered with the filamentous alga *Vaucheria sp* 75 m from the shoreline (3.2 m depth), where the diver estimates started. The Vaucheria mat was covering the substrate (100%) between 60 to 75 m (3.1–3.2 m depth). The first quantitative frame samples were taken at 3.1 m depth, 63 m from the shore in the "Vaucheria stratum".

Vaucheria sp decreased and vanished at 3.1 m depth, 55–60 m from the shore. The bottom substrate changed to a mixture of clay, sand and gravel. A few individuals of the phanerogams *Zanichellia palustre* and *Callitriche spp* were observed, covering 5% and 5–10% of the substrate respectively. The transects' maximum coverage of plants (> 100%) occurred between 39 to 55 m from the shore (2.8–3.1 m depth). The dominating plant was *Zanichellia palustre*, which covered 50–100% of the substrate in that section. *Callitriche spp* had a maximum coverage here too, up to 50%. A few individuals of Myriophyllum spicatum and *Potamogeton perfoliatus* were also observed. The second quantitative frame sample was collected at 3.1 m depth, 55 m from the shore in the "Zanichellia stratum".

Figure 5-2. *Station 1, Tixlan, LFM 710. Diver marking the starting point of a transect.*

Between 19 to 39 m from the shore (2.8–2.2 m depth) the substrate turned into sand and the coverage of *Zanichellia palustre* decreased gradually from 50% to 10%, but it was still the dominating plant, followed by *Callitriche spp* (5–10%). The only observation of *Potamogeton pectinatus* was done here. The first charophytes (e.g. *Chara aspera*, maximum 5%) were growing 29 m from the shore. A mixture of sand and gravel substrate started at 2.2 m depth, 19 m from the shore with a few scattered boulders around. The species composition was about the same but with *Zanichellia palustre* and *Potamogeton perfoliatus* dominating (coverage 5–10% each). The brown and green filamentous algae *Pilayella/ Ectocarpus* and *Cladophora glomerata* grew on top of the few boulders. A slope of boulders and stones started at 1.7 m depth, 6 m from the shoreline. A few rooted plants still grew between the stones (e.g. *Callitriche spp*, Myriophyllum spicatum and *Zanichellia palustre*). The brown annual algae *Pilayella/Ectocarpus* dominated, covering 25% of the substrate, followed by the green alga (Cladophora spp), which contributed with 10% coverage. The third quantitative frame sample was collected at 0.6 m depth, 3 m from the shore. The last metre before the shoreline (0.2 m depth) and surface, the substrate was covered with green (*Cladophora glomerata* 5%, *Enteromorpha intestinalis* 5%) and blue-green (*Rivularia atra* 5%) algae in small numbers.

This station had the second highest plant biomass found in this survey. The plant biomass was totally dominated by *Vaucheria sp*. At 3.1 m depth, 63–60 m from the shoreline *Vaucheria sp* biomass contributed with 99.9% of the total of 357 g dry weight m^{-2}. Apart from *Vaucheria sp*, the green alga Cladophora aegagropila, 0.23 g dry weight m^{-2} (0.7%) was the dominating plant (Figure 5-5, Table 5-2 and Appendix 5).

Closer to shore, 50–55 m from the shoreline (3.1 m depth), the biomass of the green algae Cladophora aegagropila was 8.2 g (34%) of a total of 24 g dry weight m^{-2}, followed by *Vaucheria sp* 7.96 g (33%) and the phanerogams *Callitriche spp* and *Zanichellia palustre* with a biomass off 3.8 g (16%) and 3.4 g (14%), dry weight m^{-2}, respectively.

Next to the shore, 1–3 m from the shoreline (0.2–0.6 m depth), the biomass of green algae was 13.7 g (47%) of a total of 29.4 g dry weight m^{-2}. The dominating green alga was *Cladophora glomerata* 9.98 g (34%) followed by *Enteromorpha intestinalis* 3.32 g (11%). The brown annual filamentous algae, *Pilayella/Ectocarpus*, contributed with 4.95 g (17%) of the plant biomass, followed by *Rivularia atra* (together with an unidentified blue-green alga) 3.97 g (14%). Annual red algae (e.g. *Ceramium tenuicorne*) biomass was 1.8 g (6%). Small fragments of perennial red algae (Hildenbrandia), green algae (Enteromorpha prolifera, Ulothrix sp) and plants (*Zanichellia palustre*, *Callitriche spp* and *Potamogeton perfoliatus*) were also found in these samples.

The total animal biomass of 23.5 g dry weight m^{-2} in the “Vaucheria stratum”. (3.1 m depth, 60–63 m from the shoreline) was completely dominated by detrivores 22.8 g, 97%. The snail *Hydrobia sp* and the Baltic mussel, *Macoma baltica*, dominated the detrivores biomass. The herbivores (Bithynia tentaculata) share of the animal biomass was only 3% (0.73 g). The filter feeder, omnivore and carnivore share of the animal biomass was zero or negligible.

Closer to shore, 50–55 m from the shoreline (3.1 m depth), the total animal biomass of 29.0 g dry weight m^{-2} again was completely dominated by detrivores (28.8 g, 99%) where the Baltic mussel *Macoma baltica* alone constituted 51% of the total animal biomass, followed by the snail *Hydrobia sp* (48%). The omnivores (e.g. Chironomidaes) contributed with < 1% of the total animal biomass. The filter feeder, herbivore and carnivore share of the animal biomass was zero or negligible.

Next to the shore, (1–3 m from the shoreline, 0.2–0.6 m depth), the total animal biomass of 41 g dry weight m^{-2} had a somewhat different biomass distribution between the functional groups compared to the previous. Again, detrivores dominated with 24.7 g, 60% of the total biomass, where the Baltic mussel *Macoma baltica* alone constituted 53% of the total animal biomass. The herbivorous snail Bithynia tentaculata dominated the herbivores biomass, which was 21% of the total animal biomass. Filter feeders, e.g. Cerastoderma/Cardium sp, contributed with 18%. The omnivore and carnivore share of the biomass was < 1% of the total animal biomass.

The transect's total animal biomass was of the same magnitude as the other quantitative transects in this survey.

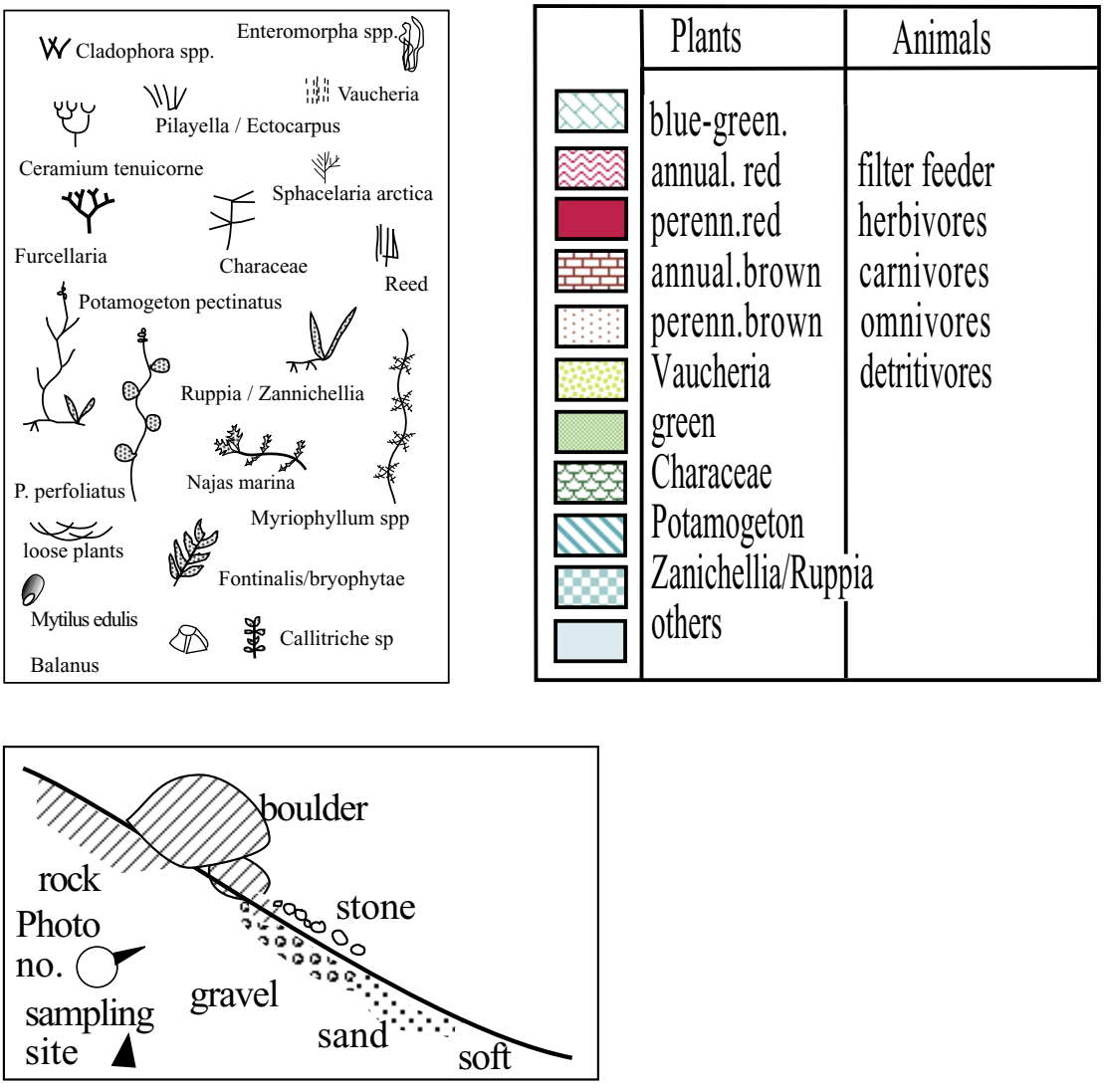

Figure 5-3. *Legend and symbols of plant and animal groups, plant and animal species and substrate.*

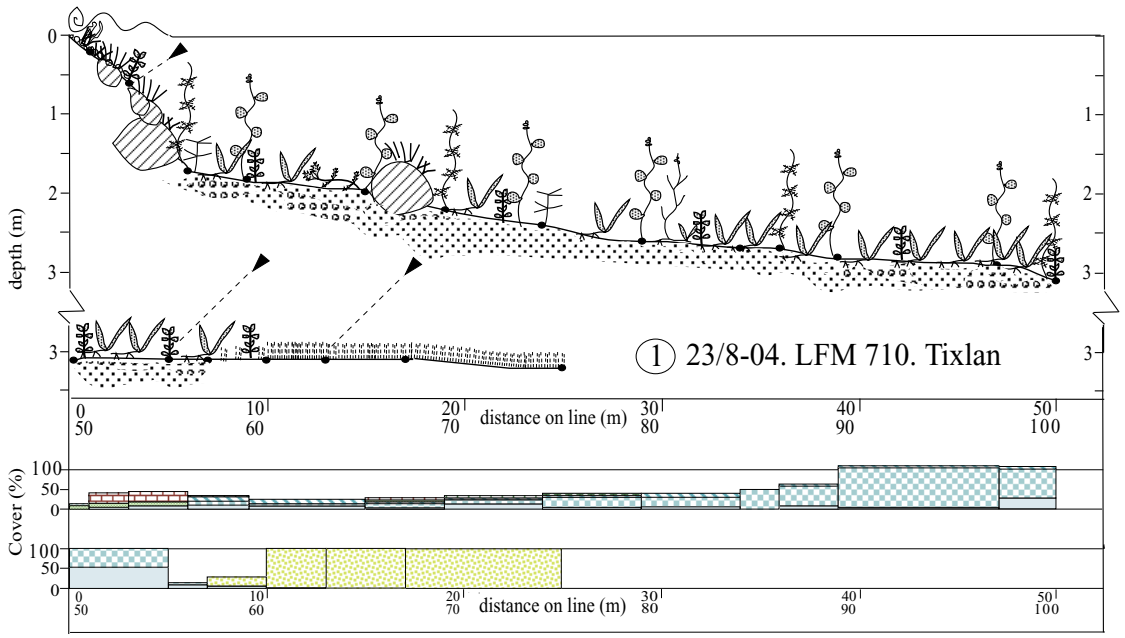

Figure 5-4. *Forsmark 2004. Station 1. LFM 710. Tixlan. The distribution of the transect plant communities and substrate. For a description of the symbols, see the legend in Figure 5-3.*

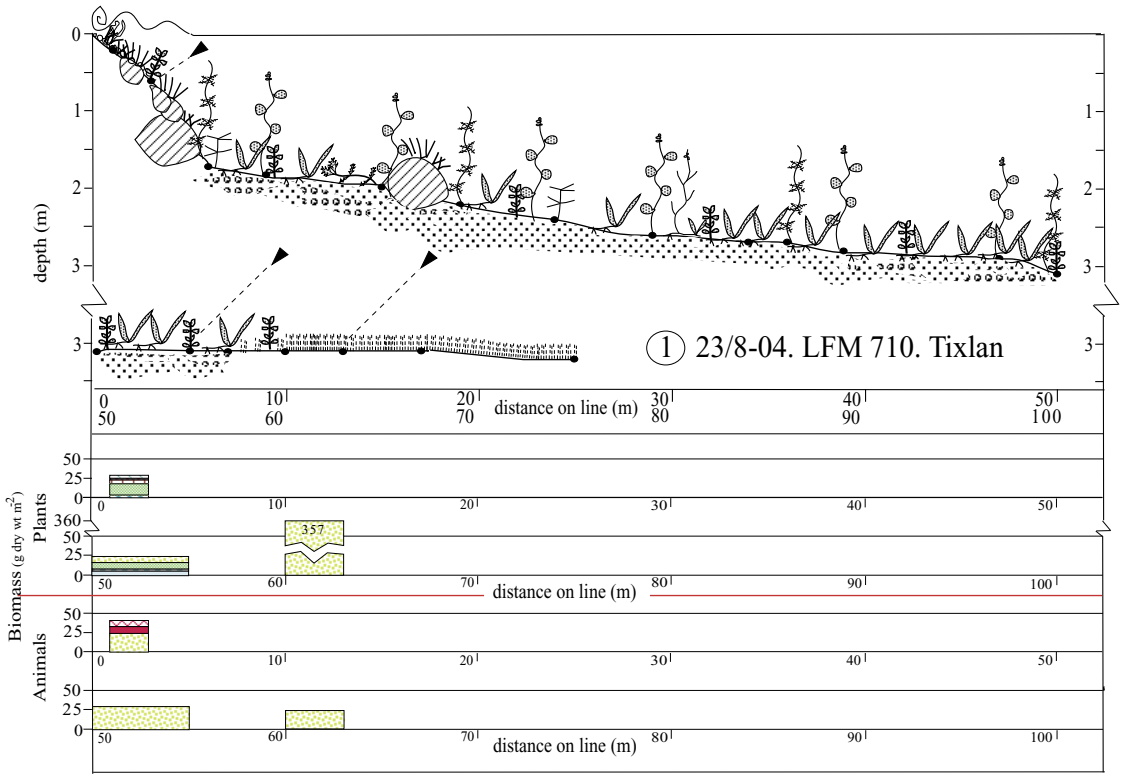

Figure 5-5. *Forsmark 2004. Station 1. LFM 710. Tixlan. The distribution of the transect plant communities and substrate as well as plant and animal biomass. For a description of the symbols, see the legend in Figure 5-3.*

5.2.2 Station 2, Tixlan, LFM 711

This station, located on a small island in the western part of Tixlan was visited on the 25th of August. The divers swam in a 36° compass direction down to 3.2 m depth, 50 m from the shore (Figure 5-6, Figure 5-7 and Appendix 3 and 4).

The flat, soft sediment-rich substrate, including clay, was completely covered with *Vaucheria sp* 50 m from the shoreline (3.2 m depth) where the divers' estimates started. The *Vaucheria* mat was covering the substrate (100%) between 17 to 50 m (3.2–3.5 m depth). At 14 m to 17 m from the shoreline the bottom was empty, that is, no macrophytes were present. A slope of boulders started 14 m from the shore (3.5 m depth). Short turfs of brown and green algae (*Sphacelaria artica*, *Pilayella/Ectocarpus*, and *Cladophora glomerata*) grew on top of the boulders covering maximally 5% respectively. Barnacles (*Balanus improvisus*) grew at the side of the boulders, maximum 5%. The boulders were covered with a thin layer of sediment. Soft substrate mixed with small boulders started 7 m from the shore (2.2 m depth). A few phanerogams were also observed (*Najas marina*, *Myriophyllum spicatum*, *Callitriche spp* and *Ranunculus spp*). The phanerogams increased towards the shore and surface and new species occurred. At 1.4 m depth, 4 m from the shore, *Potamogeton perfoliatus* and *Potamogeton pectinatus* became the dominating phanerogams (maximum 5% coverage respectively).

Figure 5-6. *Station 2, Tixlan, LFM 711. Diver marking the starting point of a transect.*

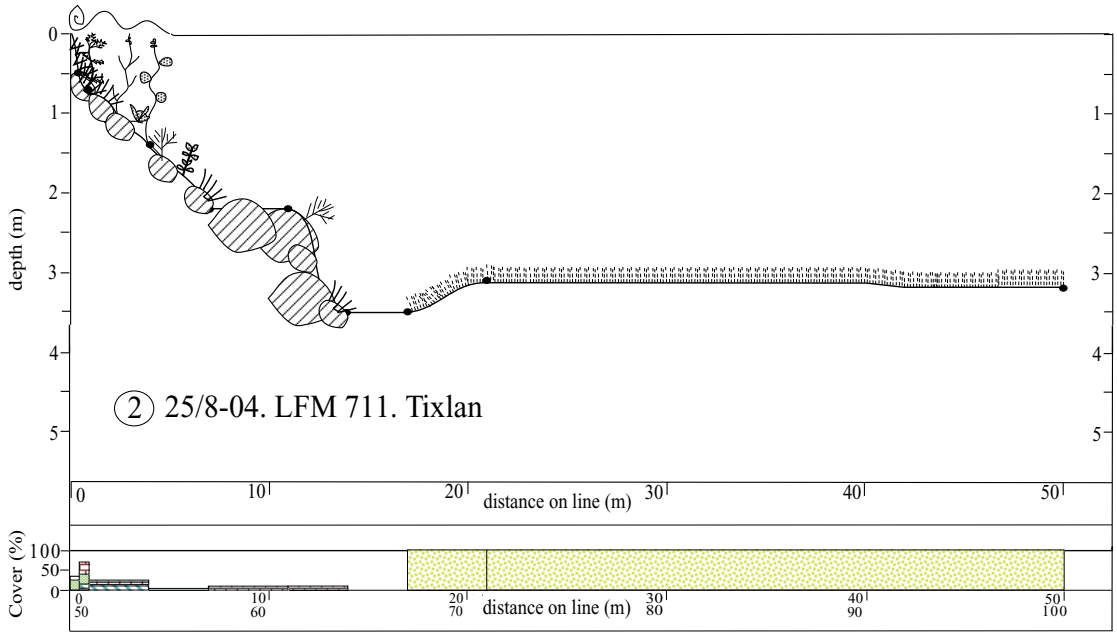

Figure 5-7. *Forsmark 2004. Station 2. LFM 711. Tixlan. The distribution of the transect plant communities and substrate. For a description of the symbols, see the legend in Figure 5-3.*

Closer to the shore the boulder substrate increased. At 0.7 m depth, 1 m from the shore, large amounts of the filamentous green alga, *Cladophora glomerata* and the brown algae *Pilayella/Ectocarpus* covered the boulders (25% coverage respectively). The blue-green alga *Rivularia atra* was also observed (5%). Between the boulders *Potamogeton perfoliatus* and *Potamogeton pectinatus* still grew. At 0.5 depth, 0.5 m from the shoreline, *Cladophora glomerata* was the dominating plant and covered the boulder substrate with 25%. *Pilayella/ Ectocarpus* were also present (10%).

5.2.3 Station 3, Tixlan, LFM 712

This station, located on an island in the southern part of Tixlan, was visited on the 25th of August. The divers swam in an 18° compass direction down to 2.9 m depth, 100 m from the shore, Figure 5-8, Figure 5-9 and Appendix 3 and 4).

At 2.9 m depth, 100 m from the shoreline, the flat soft sediment-rich substrate was completely covered with *Vaucheria sp*. A few large boulders were observed at 2.6 m depth, 61 to 86 m from the shore. Short turfs of brown and green algae (*Pilayella/Ectocarpus*, and *Enteromorpha spp*) with maximum 5–10% coverage respectively, grew on top of the boulders. Barnacles (*Balanus improvisus*) grew at the side of the boulders (maximum coverage 5%). The dominating phanerogam *Potamogeton perfoliatus* was first observed 56 m from the shoreline (2.6 m depth), increasing towards the shore and having it's maximum coverage of 75% between 9 to 13 m from the shore (2.2–2.3 m depth). *Vaucheria sp* declined at 2.7 m depth, 33 m from the shore (25% coverage) and vanished completely a couple of metres closer to the shore. New phanerogams replaced the empty space (*Najas marina*, *Myriophyllum spicatum*, *Zanichellia palustre*, *Callitriche spp*) and got more frequent closer to the shore. Between 9 to 29 m from the shoreline (2.2–2.6 m depth) phanerogams covered 25–75% of the bottom substrate with a maximum coverage (> 75%) 9–16 m from the shore (2.2–2.4 m depth). The soft bottom substrate got mixed with

Figure 5-8. *Station 3, Tixlan, LFM 712. Diver marking the starting point of a transect.*

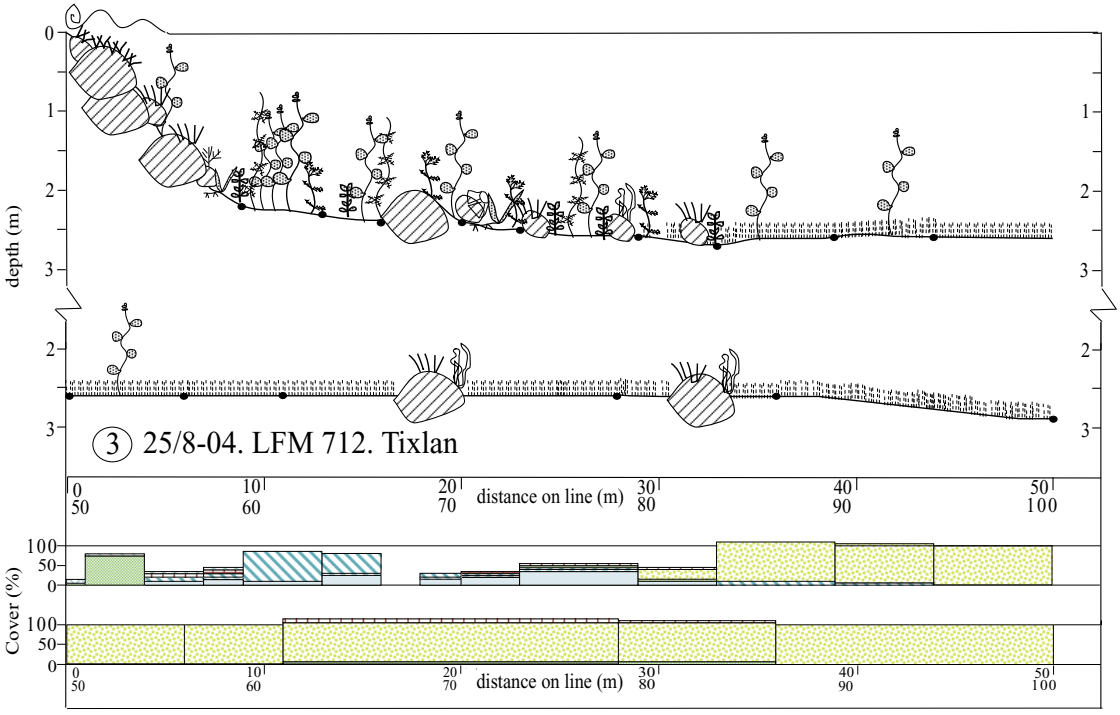

Figure 5-9. *Forsmark 2004. Station 3. LFM 712. Tixlan. The distribution of the transect plant communities and substrate. For a description of the symbols, see the legend in Figure 5-3.*

boulders and the transect turned gently upwards 4–9 m from the shore (1.0–2.2 m depth), which means a less suitable substrate for the phanerogams. Their coverage decreased down to about 25% and algae attached to the boulders increased to 10–25%. Two algae, the perennial brown alga *Sphacelaria artica* (5%) and the blue-green *Rivularia atra* (5%) were first observed here. *Pilayella/Ectocarpus* were also present (5–10%). Large boulders dominated the last 4 metres to the shore (0–1.0 m depth). The filamentous green alga, *Cladophora glomerata*, and the brown algae *Pilayella/Ectocarpus* covered the boulders 75% and 5% respectively. The blue-green alga *Rivularia atra* was also observed (5%). Just before the shoreline (0.2 m depth), the blue-green alga *Rivularia atra* occured in frequent numbers, maximum 10%. The remaining substrate was covered by *Cladophora glomerata*, 5%.

5.2.4 Station 4, Tixlan, LFM 713

This station, located on an island in the northeastern part of Tixlan, was visited on the 25th of August. The transect was close to the major inlet of the bay from the Baltic Sea. The divers swam in a 238° compass direction down to 5.2 m depth, 150 m from the shore (Figure 5-10, Figure 5-11 and Appendix 3 and 4).

The divers' estimates started at 5.2 m depth, 150 m from the shoreline, on a greyish, silt-rich soft substrate. The bottom was first empty, no Vauceria sp or other macrophytes. Boulders appeared at 5.0 m depth, 144 m from the shore and formed a slope upwards. On top of the mixed sized boulders the vegetation was sparse with only individuals of the brown alga *Sphacelaria artica* (5–10%). On hard substrates in the Bothnian Sea, *Sphacelaria spp* often forms the lower limit of attached plants /13, 14/. A few individuals of the hydroide (*Laomedea sp*) were attached at the sides of the boulders.

The transect soon became more flat and the boulders got mixed with soft bottom substrate. At 3.3 m depth, 132 m from the shore, the first observations of phanerogams occurred (e.g. *Myriophyllum spicatum* and *Ranunculus spp*). The red alga *Polysiphonia fucoides* was also observed and collected for identification as well as the brown algae *Pilayella/ Ectocarpus* which together with *Sphacelaria artica* covered almost 25% of the bottom substrate. The phanerogams increased (25% coverage) and new species (*Potamogeton perfoliatus*, *Zanichellia palustre* and *Callitriche spp*)appeared at 2.7 m depth, 128 m from the shore. Between 104 to 120 m from the shore (3.0–3.2 m depth) the phanerogams had their maximum coverage in this transect, close to 100%. The dominating species were *Zanichellia palustre* (75%) followed by *Potamogeton perfoliatus* 10%. The substrate had turned into a mixture of fine sand and clay. Brown filamentous algae (*Pilayella/Ectocarpus*) were also present (10%).

Between 81 to 104 m from the shore (3.2–3.4 m depth), small boulders appeared again, together with the sand and clay mixture substrate. *Zanichellia palustre* coverage decreased from 25 to 5%. The phanerogams total coverage decreased down to 10–25%. Loose, growing balls, of the perennial red alga *Furcellaria lumbricalis* became the dominating plant, covering 25% of the bottom substrate 69–90 m from the shore (3.0–3.4 m depth). The quite rare phanerogam *Najas marina* was also observed, maximum coverage was 5%.

At 3.0 m depth, 69 m from the shore, the transect again turned into a slope of boulders with some soft bottom in between. A great variety of plant species, algae and phanerogams, were observed in this section of the transect, covering 50–75% of the substrate (*Pilayella/ Ectocarpus*, *Sphacelaria artica*, *Rivularia atra*, *Enteromorpha sp*, *Ranunculus spp*, Najas *marina*, *Callitriche sp*, *Zanichellia palustre*, *Myriophyllum spicatum* and *Chara aspera*). *Pilayella/Ectocarpus* were the dominating plants covering 25% of the substrate. Shells from

Figure 5-10. *Station 4, Tixlan, LFM 713. Diver marking the starting point of a transect.*

the Baltic mussel (*Macoma baltica*) were also frequent. Large boulders close to the surface appeared at 0.8 m depth, 58 m from the shoreline. The filamentous green alga, *Cladophora glomerata* covered the boulders, 75–100%.

The diver's estimates between 5.0 to 51 m from the shore (0.9–1.6 m depth) showed a rich variety of plant species, algae and phanerogams. The bottom substrate became a mixture of sand, gravel and stones with scattered small boulders. Besides the species observed earlier, except for Sphacelaria artica and Callitriche sp which vanished, some new species (*Cladophora glomerata*, *Chara tomentosa* and *Ruppia sp*) were also observed. The plants covered 25–75% of the substrate decreasing slowly towards the shore. *Cladophora glomerata* was the dominating alga, with a maximum coverage of 10–25%. The phanerogams were dominated by Myriophyllum spicatum with a maximum coverage of 25–50%.

A slope of small boulders started at 0.9 m depth, 5.0 m from the shore and ended at the surface. The boulders were covered with *Cladophora glomerata* (5–10%), *Pilayella/ Ectocarpus* (25–75%), partly decayed and *Rivularia atra* (5–10%).The transect made a rich and beautiful impression. This station had the highest number of observed taxa (19) among the qualitative transects in this survey.

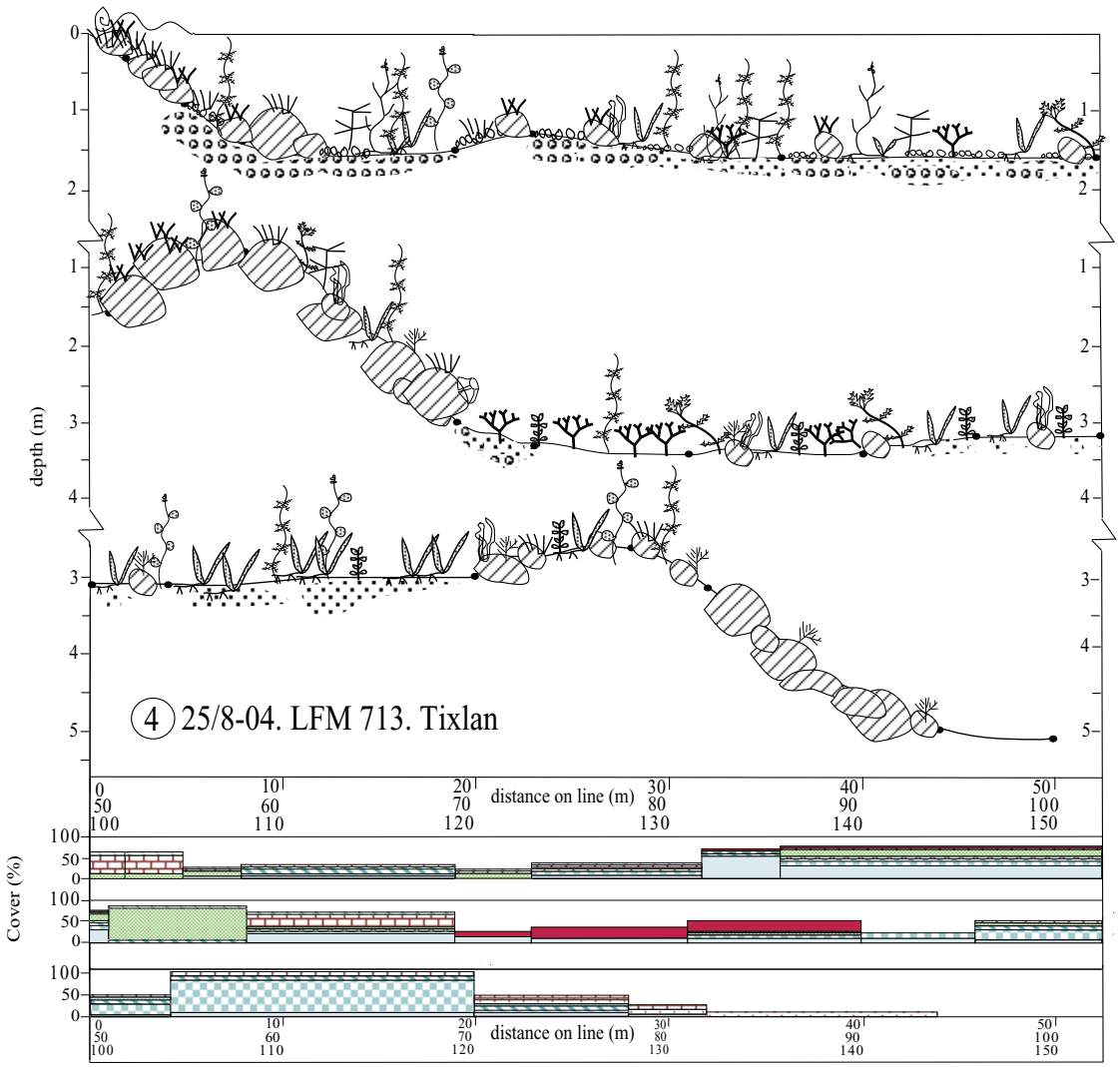

Figure 5-11. *Forsmark 2004. Station 4. LFM 713. Tixlan. The distribution of the transect plant communities and substrate. For a description of the symbols, see the legend in Figure 5-3.*

5.2.5 Station 5, Trollgrund, LFM 714

This station, located on a peninsula east of the bay Tixlan along the coast, was visited on the 24th of August 2004. The divers swam in a 360° compass direction down to 8.4 m depth, 72 m from the shore (Figure 5-12, Figure 5-13, Figure 5-14, Table 5-2 and Appendix 3, 4 and 5).

The diver estimates started at 8.4 m depth, 72 m from the shoreline, on a substrate consisting of sand and small boulders. On top of the small boulders the vegetation was sparse with only a few individuals of the brown alga Sphacelaria artica and the red alga *Polysiphonia fucoides*. At 8.1 m depth, 37 m from the shore, the filamentous brown algae *Pillayella/Ectocarpus* were also observed in small numbers. A growth of barnacles (*Balanus improvisus*) occurred at the sides of the boulders.

The transect soon sloped steeper upwards, and the share of boulders and gravel increased. The first quantitative frame samples were taken at 6.0 m depth, 16 m from the shore. *Polysiphonia fucoides* and *Pillayella/Ectocarpus* increased and Sphacelaria artica decreased and vanished. At 4.9 m depth, 12 m from the shore, the coverage of *Pillayella/Ectocarpus*

Figure 5-12. *Station 5, Trollgrund, LFM 714. Diver marking the starting point of the transect.*

was 50% and *Polysiphonia fucoides* covered the boulder, stone and gravel substrate with 5–10%. The second quantitative frame samples were collected at 4.2 m depth, 11 m from the shore. Between 7 to 10 m from the shore (2.1–3.2 m depth) the dominating algae *Pillayella/Ectocarpus* had their maximum distribution, covering 50–75% followed by the annual red algae (*Polysiphonia fucoides* and *Ceramium tenuicorne*) whose coverage was 10–25%. At 2.1 m depth, 7 m from the shoreline, the substrate had turned into boulders and stones. The first individuals of *Cladophora glomerata* occurred and increased upwards to become the dominating alga for the remaining transect. The third quantitative frame samples were collected at 2.1 m depth, 7 m from the shore. Closer to the surface (0.5–1.5 m depth) 4–6 m from the shoreline, the annual brown algae *Pillayella/Ectocarpus* decreased down to 5% while the perennial brown algae (e.g. *Chorda filum*) increased slowly up to 10%. The green algae were now dominating (*Cladophora glomerata* 10–25% and *Enteromorpha intestinalis* 5%). Between 0.5 m depth and the surface 4 m from the shore, the filamentous green alga *Cladophora glomerata* increased to cover 75–100%. Small amounts of *Chorda filum*, *Pillayella/Ectocarpus* and the blue-green alga *Rivularia atra* were also observed close to the shore. The fourth quantitative frame samples were collected at 0.5 m depth, 4 m from the shoreline.

The plant biomass was low with a transect average of 10.7 g dry weight m^{-2}. The magnitude of the biomass was similar to biomasses found in the northernmost part of the Bothnian Bay having 7 g m^{-2} on average but where biomass could be up to over 200 g m^{-2} in ice-sheltered areas /15, 16/. One of the reasons was the absence of a Fucus-belt, which usually occurred in other earlier investigated stations in the Grepen area /11, 12/.

At 6.0 m depth, 16 m from the shoreline, the plant biomass was dominated by annual brown algae. *Pilayella/Ectocarpus* biomass contributed with 0.95 g (44%) to the total of 2.15 g dry weight m^{-2}. Apart from *Pilayella/Ectocarpus*, the green alga *Cladophora glomerata*, 0.49 g dry weight m^{-2} (23%), was the dominating plant. Despite the low plant biomass, the number of species was high; 16 taxa were identified in the frame samples.

At 4.2 m depth, 11 m from the shoreline, the biomass of the brown filamentous algae *Pilayella/Ectocarpus* still dominated with 6.0 g (59%) of a total of 10.1 g dry weight m^{-2}, followed by the green alga (*Enteromorpha spp*), 2.9 g (28%) and annual red algae (e.g. *Ceramium tenuicorne*) with a biomass of 0.33 g (3%) dry weight m^{-2}. 16 different plant taxa were found in the samples.

Closer to the shore, at 2.1 m depth, 7 m from the shoreline, the biomass of the dominating plant, the green alga *Enteromorpha intestinalis* was 4.7 g (29%) of a total of 16.4 g dry weight m^{-2}, followed by *Pilayella/Ectocarpus*, 2.28 g (14%), and annual red algae (e.g. *Ceramium tenuicorne*) with a biomass of 2.03 g (12%) dry weight m^{-2}. 14 different plant taxa were found in the samples. This strata had the highest plant biomass in the transect.

Next to the shore, at 0.5 m depth, 4 m from the shoreline, the biomass of green algae was 12.9 g (92%) of a total of 14 g dry weight m^{-2}. The dominating green alga was *Cladophora glomerata*, 12.6 g (90%), followed by *Enteromorpha prolifera* 0.2 g (2%). The brown annual algae contributed with 0.4 g (3%) of the plant biomass, mainly *Pilayella/Ectocarpus*, 0.28 g (2%), followed by the annual red algae (e.g. *Polysiphonia fibrillosa* and *Ceramium tenuicorne*), whose biomass was 0.4 g (3%). The blue-green alga *Rivularia atra* also had a biomass of 0.4 g (3%). Small fragments of perennial red algae (*Hildenbrandia sp*), were also found in these samples. 13 different plant taxa were encountered in the samples.

The transects' total animal biomass average was of the same magnitude as the other quantitative transects in this survey and earlier investigations in the Grepen area /11, 12/.

The total animal biomass of 21.3 g dry weight m^{-2} at 6.0 m depth, 16 m from the shoreline was completely dominated by detrivores 19.1 g (90%). The Baltic mussel *Macoma baltica* (74%) and the snail *Hydrobia sp* (16%), dominated the detrivores biomass. The share of the herbivorous snail, *Bithynia tentaculata*, was 10% (2.1 g) of the animal biomass.

The filter feeder, omnivore and carnivore share of the animal biomass was close to zero and negligible.

At 4.2 m depth, 11 m from the shoreline, the total animal biomass of 59.7 g dry weight m^{-2} was the highest in this survey. The biomass was dominated by detrivores (37.8 g, 63%) where the Baltic mussel *Macoma baltica* alone constituted 31.9 g (53%) of the total animal biomass, followed by the snail *Hydrobia sp* 5.9 g (10%). Filter feeders (e.g. *Cerastoderma/ Cardium sp*), contributed with 15.5 g (26%). The herbivorous snail *Theodoxus fluviatilis* dominated the herbivores biomass, which was 6.4 g (11%) of the total animal biomass. The omnivore and carnivore share of the biomass was < 1% of the total animal biomass.

Closer to the shore, at 2.1 m depth, 7 m from the shoreline, the animal biomass had a somewhat different distribution between the functional groups than the previous. The total animal biomass of 8.4 g dry weight m^{-2} was dominated by herbivores (5.4 g, 64%), where the snail *Theodoxus fluviatilis* alone constituted 3.2 g (38%) of the total animal biomass, followed by the herbivorous snail *Bithynia tentaculata* 1,2 g (14%). Filter feeders (e.g. *Cerastoderma/Cardium sp*), contributed with 2.6 g (31%). The detrivores share was only 0.3 g (4%). The omnivores contributed with 1% of the total animal biomass and the carnivore share of the animal biomass was negligible.

Next to the shore, at 0.5 m depth, 4 m from the shoreline, the total animal biomass of 6.5 g dry weight m^{-2} was completely dominated by herbivores (6.1 g, 94%) where the snail *Theodoxus fluviatilis* alone constituted 5.0 g (77%) of the total animal biomass, followed by the herbivorous snail *Lymnea peregra* 1.0 g (15%). The omnivores (e.g. *Chironomidaes* and *Gammarus spp*) contributed with 0.4 g (6%) of the total animal biomass. The filter feeder, carnivore and detrivore share of the biomass was zero or negligible

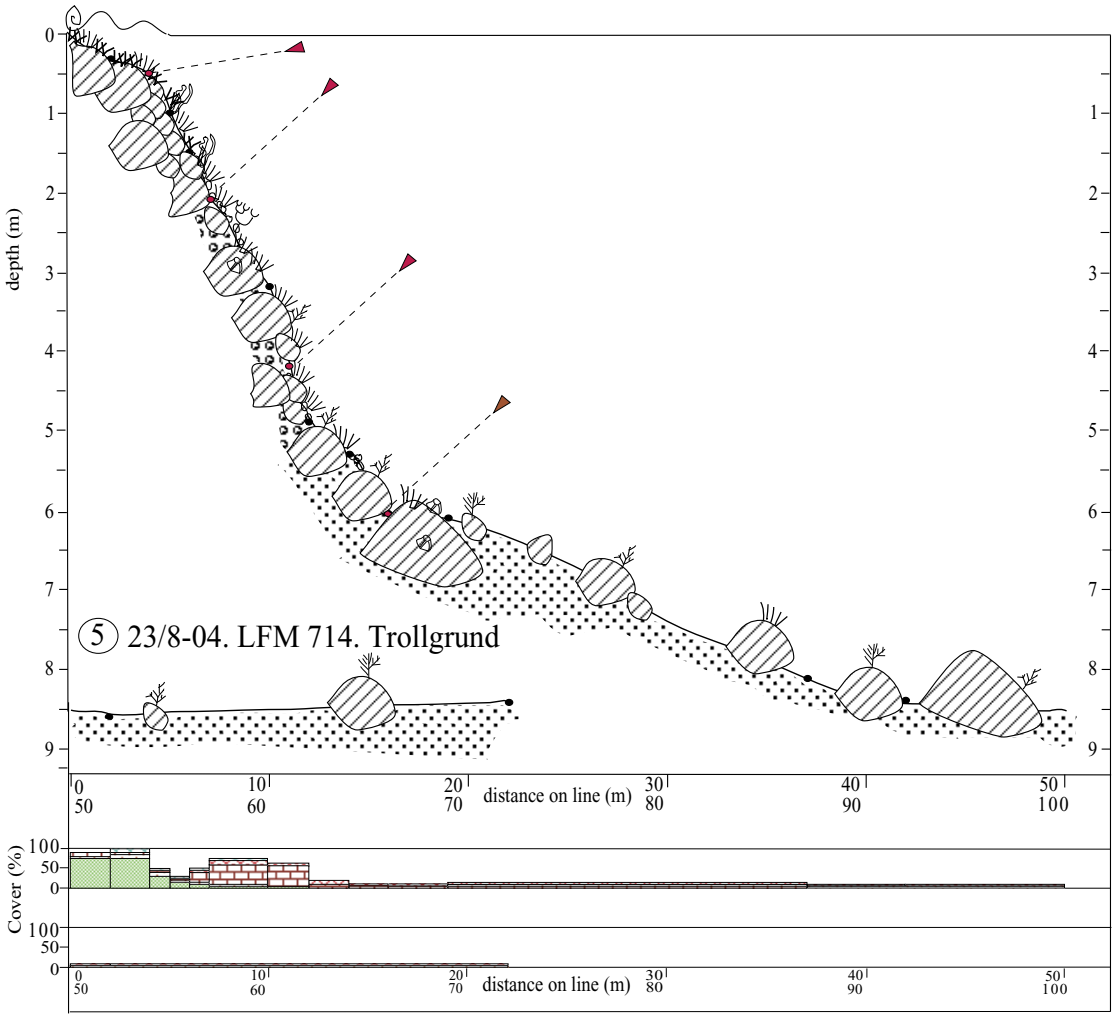

Figure 5-13. *Forsmark 2004. Station 5. LFM 714. Trollgrund. The distribution of the transect plant communities and substrate. For a description of the symbols, see the legend in Figure 5-3.*

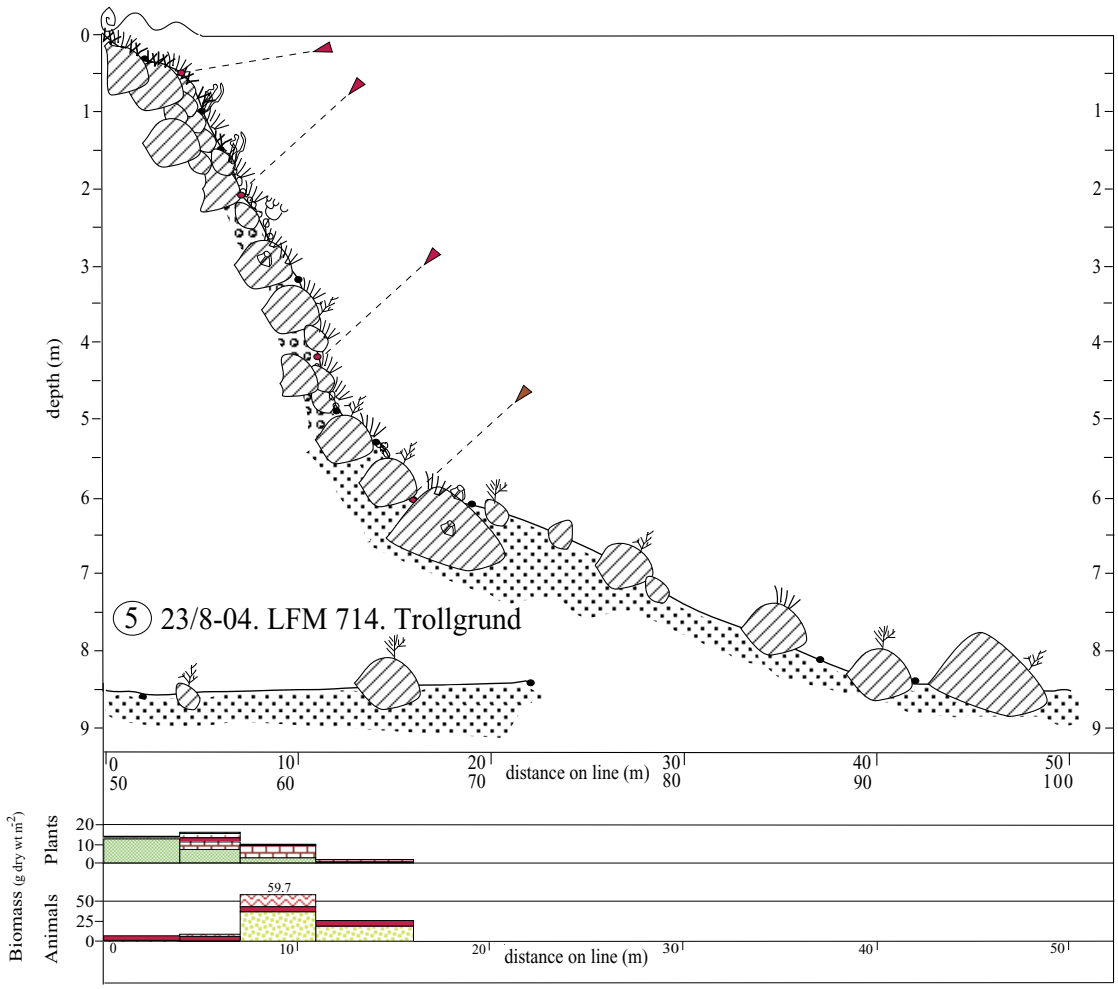

Figure 5-14. *Forsmark 2004. Station 5. LFM 714. Trollgrund. The distribution of the transect plant communities and substrate as well as plant and animal biomass. For a description of the symbols, see the legend in Figure 5-3.*

5.2.6 Station 6, Kallriga, LFM 715

The station was visited on the 24th of August. The divers swam in a 144° compass direction down to 1.5 m depth, 250 m from the shore (Figure 5-15, Figure 5-16 and Figure 5-17, Table 5-2 and Appendix 3, 4 and 5).

At 1.5 m depth, 250 m from the shoreline, the flat, soft sediment-rich substrate was completely covered with *Vaucheria sp*. The phanerogam *Zanichellia palustre* covered 25–50% of the bottom, growing on (above) the *Vaucheria* mat. *Myriophyllum spicatum*, *Potamogeton pectinatus* and loose, partly decaying algae, *Pilayella/Ectocarpus*, were also observed. The first quantitative frame samples were collected at 1.3 m depth, 186 m from the shore in the "*Vaucheria* stratum".

At 1.3 m depth, 125 m from the shoreline, the first charophyte (*Chara tomentosa*) occurred. At 1.3 m depth, 87 to 125 m from the shoreline the substrate turned into a mixture of sand and clay. In that area, *Myriophyllum spicatum* increased and covered 25–75% of the bottom, while the *Vaucheria sp* decreased down to 25–75% and *Zanichellia palustre* covered 25–50%. The soft sediment-rich substrate reappeared 87 m from the shore. The bottom was again completely covered with *Vaucheria sp*, until 1.3 m depth, 58 m from the shoreline,

Figure 5-15. *Station 6, Kallriga, LFM 715. Diver marking the starting point of a transect.*

where *Vaucheria sp* vanished completely. *Myriophyllum spicatum* and *Zanichellia palustre* also decreased down to 5% coverage respectively. The *Najas marina* was first observed at 1.3 m depth, 73 m from the shore, covering 5%.

Between 39 to 58 m from the shore (1.3–1.1 m depth) *Zanichellia palustre* grew luxuriantly and covered 75–100%. Myriophyllum spicatum, *Chara tomentosa*, *Najas marina*, *Potamogeton pectinatus* and *Pilayella/Ectocarpus*, were also observed. The second quantitative frame samples were collected at 1.2 m depth, 48 m from the shore in the "*Zanichellia* stratum".

Between 24 to 39 m from the shore (0.8–1.1 m depth) the bottom substrate turned into sand mixed with clay. The *Zanichellia palustre* decreased from 50 to 0% coverage and the charophytes (*Chara tomentosa* and *Chara aspera*) increased from 10 to 100%. Loose brown algae, *Pilayella/Ectocarpus*, covered 10% and *Najas marina* covered a maximum of 5% of the bottom. The third quantitative frame samples were collected at 0.9 m depth, 26 m from the shore in the "Chara stratum".

At 0.8 m depth, 24 m from the shoreline, the transect turned gently upwards into a "slope" of boulders and stones. The annual filamentous brown algae, *Pilayella/Ectocarpus*, grew on top of small boulders (50–75% coverage) and was the dominating plant until 0.3 m depth, 14 m from the shore, where *Chara aspera* covered 50–75% of the bottom substrate until the shoreline. Close to the surface (0–0.2 m depth) the blue-green alga *Rivularia atra* was frequent, covering 5% of the boulder/stone substrate. Between small boulders and stones, a few stands of phanerogams grew (*Zanichellia palustre*, *Najas marina*, *Potamogeton pectinatus* and *Potamogeton perfoliatus*). The transect made a rich and beautiful impression, with a total coverage degree of 100–180% most of the 250 m long transect.

This station had the highest plant biomass found in this survey. The plant biomass was totally dominated by *Vaucheria sp*. At 1.3 m depth, 164 to 186 m from the shoreline, *Vaucheria sp* biomass contributed with 488 g (98%) to the total of 500 g dry weight m^{-2}. Apart from *Vaucheria sp*, the phanerogam *Zanichellia palustre* was the dominating plant followed by the annual brown algae *Pilayella/Ectocarpus* (see Figure 5-17 and Table 5-2).

Closer to the shore, 39 to 48 m from the shoreline (1.2–1.1 m depth) the biomass of *Zanichellia palustre* was 49 g (96%) of a total of 51 g dry weight m^{-2}, followed by unidentified blue-green algae and the annual brown algae *Pilayella/Ectocarpus*, with a biomass of only 1.0 and 0.6 g dry weight m^{-2} respectively.

Next to the shore, 24 to 27 m from the shoreline (0.8–0.9 m depth), the biomass of *Chara aspera* was close to 100%, 164.5 g (99.9%) of a total of 164.7g dry weight m^{-2}. Small fragments of *Zanichellia palustre*, *Pilayella/Ectocarpus*, *Rivularia atra*, *Ulothrix spp* and *Cladophora spp* were also found in these samples.

The total animal biomass of 21.7 g dry weight m^{-2} in the "*Vaucheria* stratum" (1.3 m depth, 164 to 186 m from the shoreline) was completely dominated by detrivores (21.2 g, 97%). The snail *Hydrobia sp* and the Baltic mussel *Macoma baltica* dominated the detrivore biomass. The filter feeder share of the animal biomass was only 2% (0.45 g). *Cerastoderma/ Cardium sp* dominated the filter feeder biomass. The omnivore and carnivore share of the animal biomass was zero or negligible.

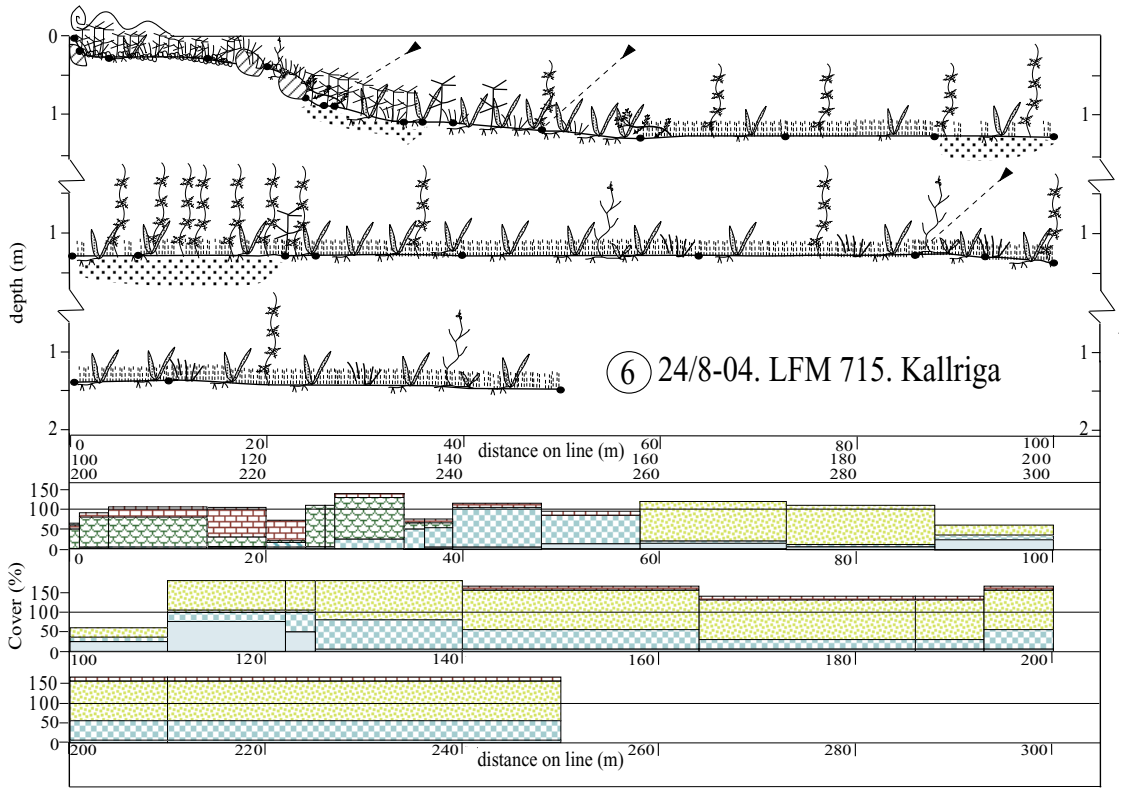

Figure 5-16. *Forsmark 2004. Station 6. LFM 715. Kallriga. The distribution of the transect plant communities and substrate. For a description of the symbols, see the legend in Figure 5-3.*

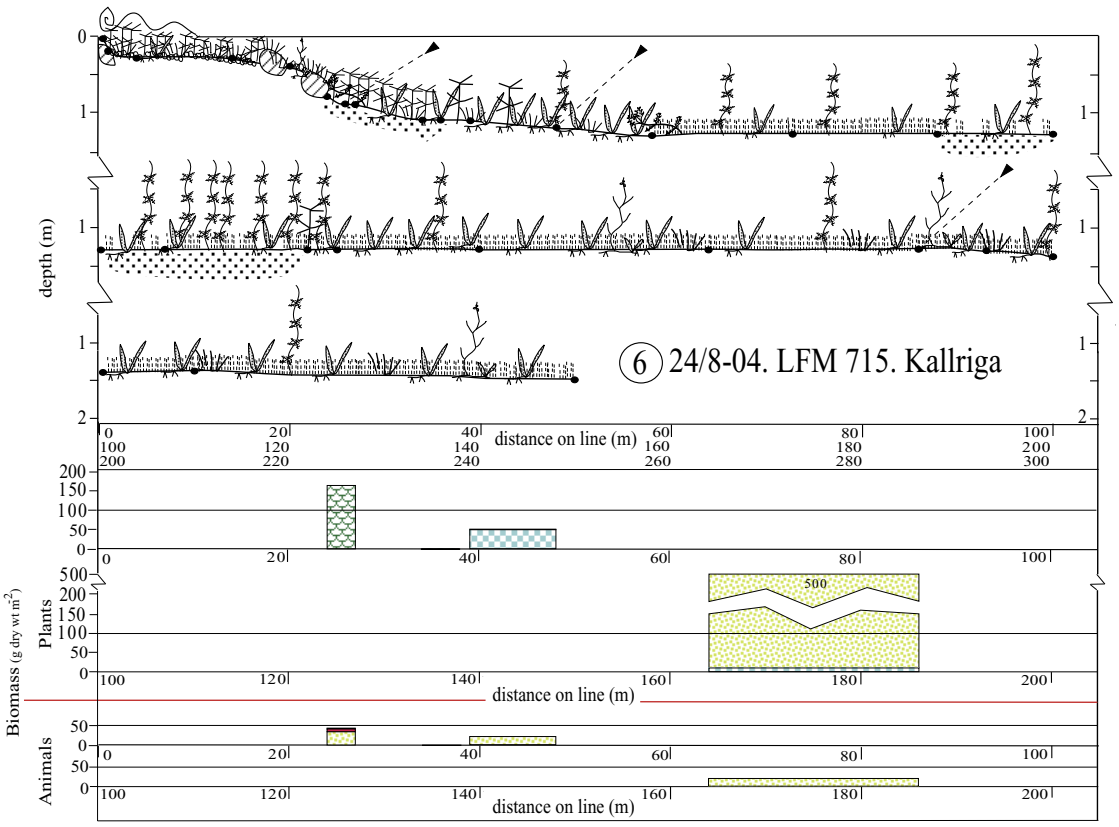

Figure 5-17. *Forsmark 2004. Station 6. LFM 715. Kallriga. The distribution of the transect plant communities and substrate as well as plant and animal biomass. For a description of the symbols, see the legend in Figure 5-3.*

In the "*Zanichellia* stratum", closer to the shore, (1.1–1.2 m depth, 39 to 48 m from the shoreline) the total animal biomass of 22.2 g dry weight m^{-2} was again completely dominated by detrivores (20.8 g, 94%) where the snail *Hydrobia sp* alone constituted 75% of the total animal biomass, followed by the Baltic mussel *Macoma baltica* (19% of the total animal biomass). The herbivores contributed with 3% of the total animal biomass, where the snail Lymnaea peregra dominated. The filter feeder share of the animal biomass was only 2.6% (0.58 g). *Cerastoderma/Cardium sp* dominated the filter feeder biomass. The omnivore and carnivore share of the animal biomass was zero or negligible.

Next to the shore, in the "*Chara* stratum" (24 to 27 m from the shoreline, 0.8–0.9 m depth), the total animal biomass of 44 g dry weight m^{-2} had the same biomass distribution between the functional groups, as the previous. Again, detrivores completely dominated with 79% of the total biomass, where the snail *Hydrobia sp* alone constituted 54% of the total animal biomass, followed by the Baltic mussel *Macoma baltica* (25%). The herbivorous snails *Lymnaea peregra* and *Bithynia tentaculata* dominated the herbivore biomass, which was 15% of the total animal biomass. Filter feeders, e.g. *Cerastoderma/Cardium sp*, contributed with 5%. The omnivore and carnivore share of the animal biomass was zero or negligible.

The transect's total animal biomass was of the same magnitude as the other quantitative transects in this survey.

5.2.7 Station 7, Kallriga, LFM 716

The station was visited on the 27th of August. The divers swam in a 90° compass direction down to 1.6 m depth, 257 m from the shore (Figure 5-18, Figure 5-19 and Appendix 3 and 4).

The diver estimates started 257 m from the shoreline (1.6 m depth). The sight was poor (1–1.5 m). The flat, soft sediment-rich substrate was completely covered with *Vaucheria sp*. The phanerogams *Potamogeton pectinatus* and *Potamogeton perfoliatus* covered 10–25% of the bottom, having their maximum occurrence (25–50%) at 221 to 228 m and 211 to 221 m respectively from the shore (1.6 m depth) growing in the Vaucheria mat. *Callitriche spp* was also common and most frequent (25%) 211 to 228 m from the shore. *Zanichellia palustre*, *Myriophyllum spicatum*, and loose drifting *Pilayella/Ectocarpus*, were also observed.

The Vaucheria mat vanished 221 m from the shore and Myriophyllum spicatum established a rich stand (50%). The transects maximum coverage of plants (135%) occurs in this part (1.6–1.5 m depth, 211 to 221 m from the shore). A small boulder covered with *Pilayella/ Ectocarpus* (10–25%) made the border for the "*Zanichellia* stratum" which started at 1.5 m depth, 209 m from the shore. The phanerogam *Zanichellia palustre* was the dominating plant for the next 109 metres, covering 25–75% of the soft bottom substrate most of the distance.

Figure 5-18. *Station 7, Kallriga, LFM 716. Diver marking the starting point of a transect.*

At 1.2 m depth, 117 m from the shoreline, the substrate turned into a mixture of sand and clay and the plants vanished almost completely. A few individuals of the charophyte (*Chara tomentosa*) occurred at 1.1 m depth, 112 m from the shore. A very dense distinct border of growing *Chara aspera* (100%) was observed at 100 m (1.0 m depth). The phenomenon of *Chara aspera* establishing dense distinct borders was observed several times in different transects, often with an empty area before. The charophyte was the dominating plant for the rest of the transect with its maximum (75–100%) 60 to 100 m ashore (1.0–0.6 m depth).

At 57 to 74 m from the shore (0.6–0.7 m depth) the rare phanerogam *Najas marina* was observed, covering 5% of the substrate. Other plants observed in small numbers were *Pilayella/Ectocarpus*, *Myriophyllum spicatum* and *Potamogeton pectinatus*. The bottom substrate turned into sand and got mixed with gravel closer to the shore. The last 10 meters before the reeds began (0.4–0.5 m depth) a "dead zone" started with just some scattered plants, mainly *Chara aspera* (5%). The transect ended 32 m from the shoreline (0.4 m depth), due to clumps of reeds. An estimation of the reeds is excluded in this survey.

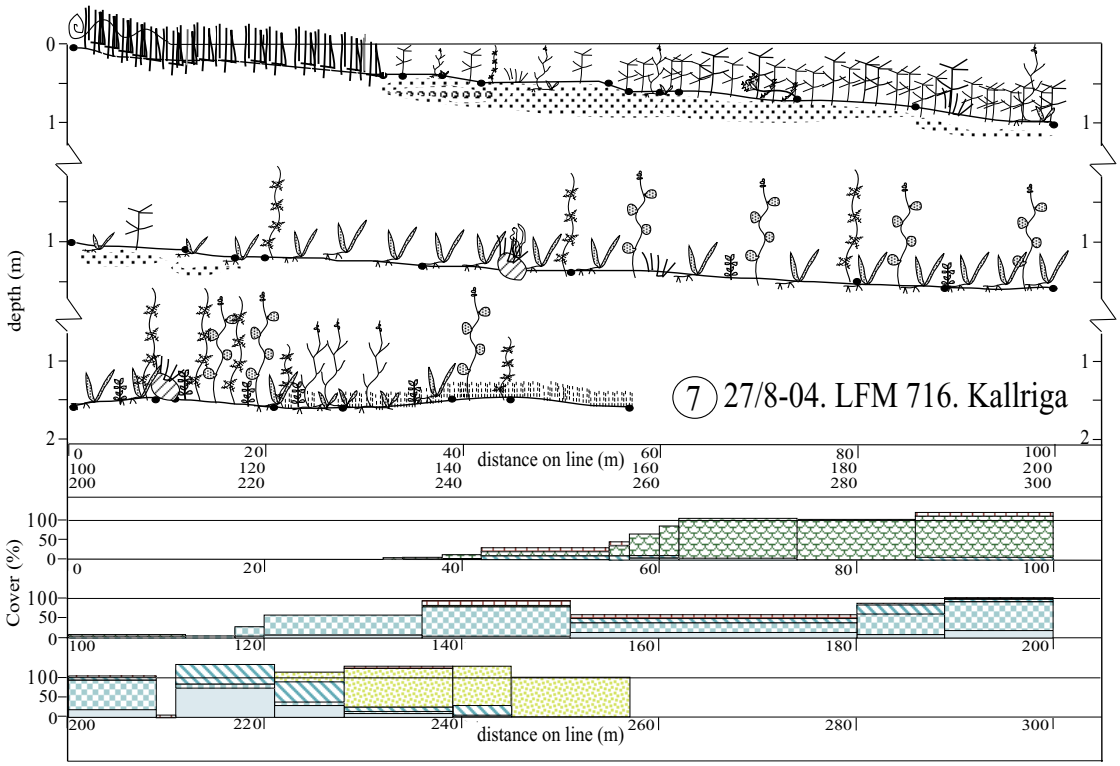

Figure 5-19. *Forsmark 2004. Station 7. LFM 716. Kallriga. The distribution of the transect plant communities and substrate. For a description of the symbols, see the legend in Figure 5-3.*

5.2.8 Station 8, Kallriga, LFM 717

This station, located on a small island, was visited on the 26th of August. The divers swam in a 216° compass direction down to 1.5 m depth, 150 m from the shore (Figure 5-20, Figure 5-21 and Appendix 3 and 4).

The flat, soft sediment-rich substrate was completely covered with *Vaucheria sp* at 1.5 m depth, 150 m from the shoreline where the diver estimates started. The Vaucheria mat was reduced from 100% to zero at 1.5 m depth between 134 to 150 m. Only a single plant of Myriophyllum spicatum was also observed. The sight was very poor (< 1 m), due to hard wind, which reduced the visibility in the water.

The phanerogam Myriophyllum spicatum replaced the *Vaucheria sp* and was the dominating plant at 1.5 m depth, 101 to 134 m from the shore with its maximum (100%) 109 to 134 m from the shore. *Zanichellia palustre* also grew frequently with its maximum (25–50%) 107 to 134 m from the shore. *Callitriche spp* (maximum 10%), *Potamogeton perfoliatus* (maximum 10%) and the charophyte (*Chara tomentosa*) (maximum 5%) were also quite common.

At 101 m (1.5 m depth) the soft clay substrate was replaced by fine sand and small boulders. The dominating phanerogam between 60 to 101 m from the shoreline (1.2–1.5 m depth) was *Potamogeton perfoliatus* decreasing towards the shore (75–10%). On several of the few scattered small boulders, short turfs of the perennial brown alga *Sphacelaria*

Figure 5-20. *Station 8, Kallriga, LFM 717. Diver marking the starting point of a transect.*

artica grew together with the annual brown algae *Pilayella/Ectocarpus*. *Sphacelaria artica* had its maximum coverage of 25% between 60 to 68 m from the shore. A short stretch of soft substrate (e.g. clay) mixed with boulders appeared 53 to 60 m from the shore (0.8–1.2 m depth). Myriophyllum spicatum grew very richly here and covered 75% of the substrate. The filamentous brown algae *Pilayella/Ectocarpus* were attached to the boulders and covered the substrate with 50%. The 10 metres between 43 to 53 m from the shore (0.8–1.2 m depth), were dominated by the brown algae (*Pilayella/Ectocarpus*) and green alga (*Cladophora glomerata*) growing on boulders and covering 50% of the boulder substrate together. *Najas marina* and *Chara tomentosa* were also present, growing between the boulders.

At 0.9 m depth, 43 m from the shore the substrate turned back into fine sand. The charophytes *Chara tomentosa* and *Chara aspera* became frequent and *Chara aspera* increased towards the shore with a maximum coverage of 75–100% between 2 to 30 m from the shoreline (0.5–0.8 m depth). A mixture of phanerogams was also present (e.g. Myriophyllum spicatum, *Potamogeton perfoliatus*, *Potamogeton pectinatus*, *Najas marina* and *Zanichellia palustre*) together with algae (*Pilayella/Ectocarpus*) on the few small boulders. The transect ended at 0.5 m depth, 2 m from the shoreline, due to a clump of reeds. An estimation of the reeds is excluded in this survey.

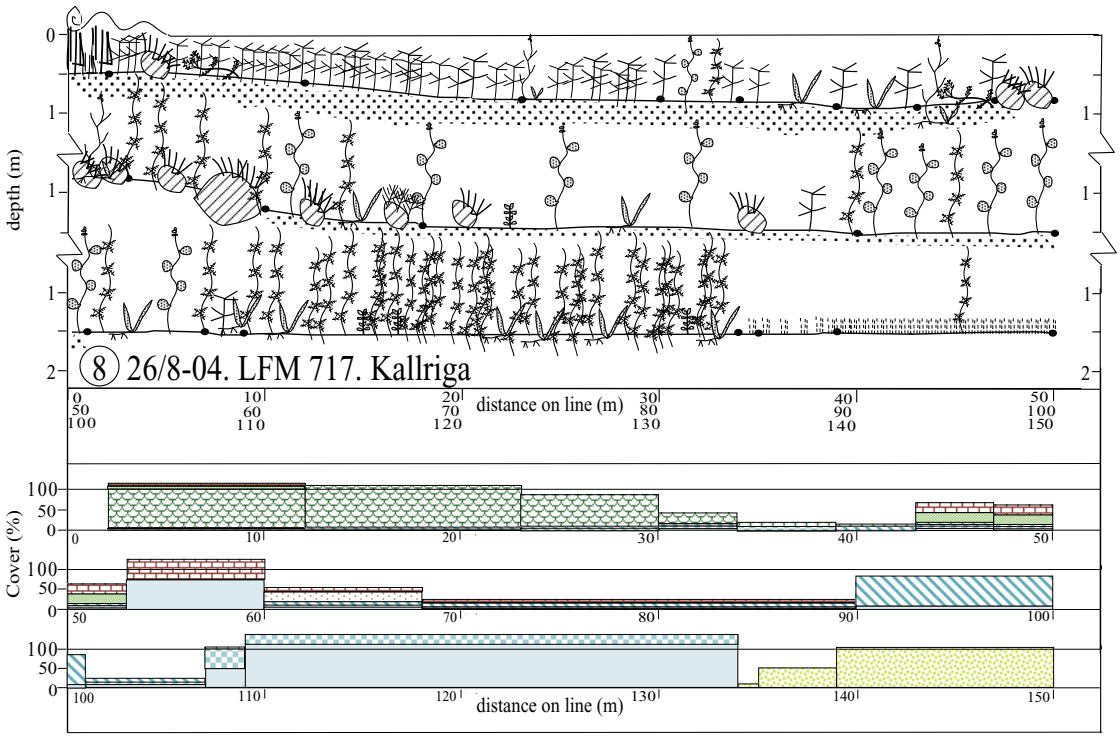

Figure 5-21. *Forsmark 2004. Station 8. LFM 717. Kallriga. The distribution of the transect plant communities and substrate. For a description of the symbols, see the legend in Figure 5-3.*

5.2.9 Station 9, Kallriga, LFM 718

This station, located in a shallow sheltered bay, was visited on the 26th of August. The divers swam in a 63° compass direction down to 1.4 m depth, 184 m from the shore (Figure 5-22, Figure 5-23 and Appendix 3 and 4).

This transect differs from the rest in the Kallriga area. The number of species was low and the zonation of different plant species was uncommon with “dead zones” in the middle.

The diver estimates started at 1.4 m depth, 184 m from the shoreline. The flat, soft sediment-rich substrate was mainly covered with tall (40–50 cm) *Chara tomentosa*. The phanerogams (e.g. *Potamogeton pectinatus*) had a distribution characterized by patchiness, with coverage varying widely (0–100%) over short distances. At 140 m from the shore (1.4 m depth) the soft bottom substrate was completely empty for three meters. These “dead zones” were repeated several times between 73 to 140 m from the shoreline (1.4 m depth). They were usually formed like circular craters in the thick vegetation and looked quite odd in the green lush plant community. *Najas marina* was first observed at 137 m and

Figure 5-22. *Station 9, Kallriga, LFM 718. Diver marking the starting point of a transect.*

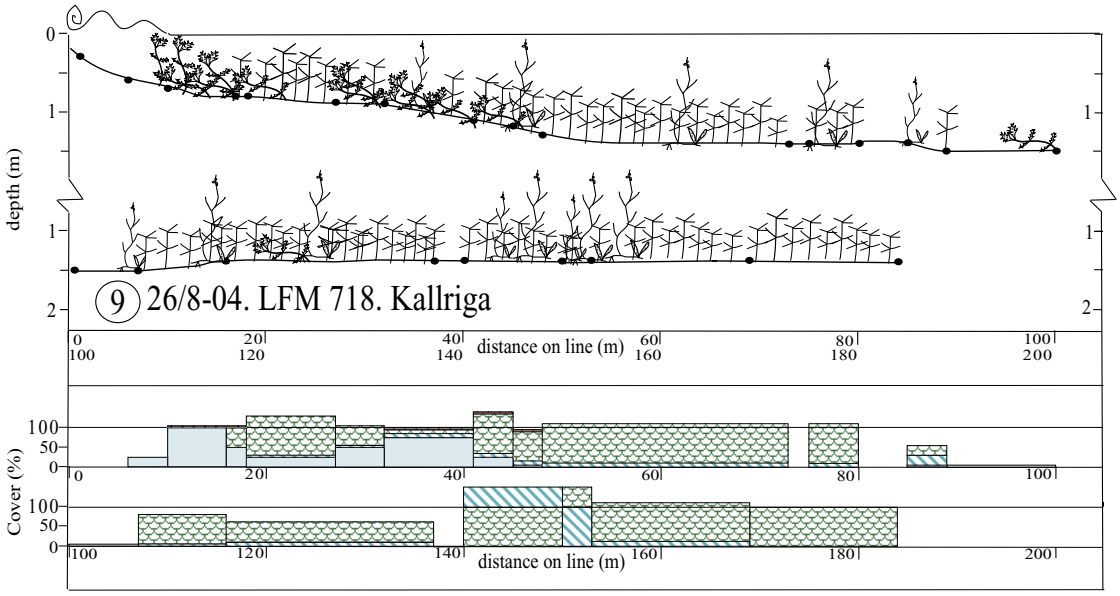

Figure 5-23. *Forsmark 2004. Station 9. LFM 718. Kallriga. The distribution of the transect plant communities and substrate. For a description of the symbols, see the legend in Figure 5-3.*

increased slowly towards the shore. Except for the dead zones, *Chara tomentosa* was the dominating plant (75–100% coverage) all the way, until 41 m from the shore (1.1 m depth) where *Najas marina* (75–100%) "took the lead". From this point, the two species alternated as the dominating plant all the way to the shore. The other phanerogams (e.g. *Potamogeton pectinatus*) and brown algae (*Pillayella/Ectocarpus*) were of minor importance, covering maximally 10% respectively. At 0.6 m depth, 6 m from the shore, the bottom substrate was detritus, originating from reed, covered with turfs of drifting brown algae (*Pillayella/ Ectocarpus*), which were the only observed plants until the end of the transect. The transect gave a nice and clean impression. The water was very clear here. The rich vegetation probably works as a nutrient sink.

5.3 Benthic macrofauna

The two most representative shallow bays in the general survey, Tixelfjärden and Kallrigafjärden, which were selected for further investigations including benthic macrofauna, were sampled on the 15th of September 2004. Primary data and field notes are presented in Appendix 6, 7 and 8. Selected data and results are compiled in the tables and figures below (Table 5-3 and 5-4, Figure 5-24 to Figure 5-27 and Figure 5-28 to Figure 5-31).

5.3.1 Tixelfjärden

The total number of identified species or higher taxa was 20, with a mean of 5.6 in 10 samples. The number of taxa found in the samples varied between 2 and 9. The most frequent taxa in the samples was *Macoma baltica* which was found in 7 of the 10 samples. The species *Hydrobia sp* and Prostoma obscurum were also frequently represented and occurred in 6 of the 10 samples.

Table 5-3. Mean biomass (dry weight) and abundance of different functional groups of benthic macrofauna in Tixelfjärden. August 2004.

Tixelfjärden. Benthic macrofauna	Biomass		Abundance	
Animal trophic groups	DW (g/m²)	(%)	(individuals/m²)	(%)
filter feeders	0.036	0.4	22.2	1.0
herbivores	0.865	9.9	128.9	5.7
carnivores	0.036	0.4	164.4	7.2
omnivores	0.079	0.9	444.4	19.5
detrivores	7.741	88.4	1,515.5	66.6
Sum animals	8.757	100	2,275.5	100

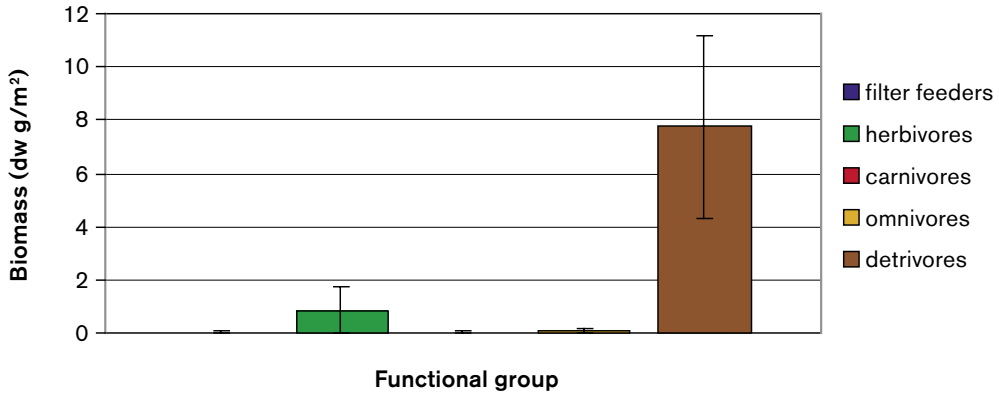

Figure 5-24. *Biomass (g dry weight m^{-2}) distribution of benthic macrofauna, functional groups, in Tixelfjärden. August 2004 (standard error is indicated as bars).*

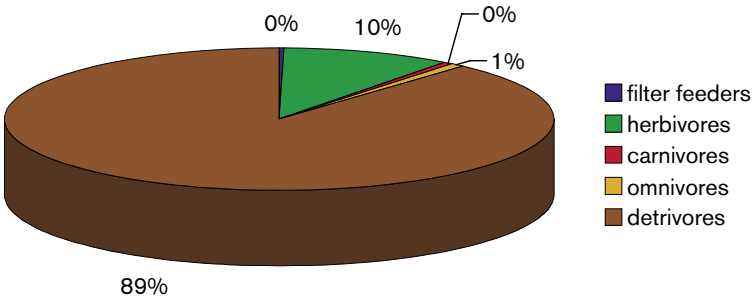

Figure 5-25. *Percentage biomass distribution of benthic macrofauna, functional groups, in Tixelfjärden. August 2004.*

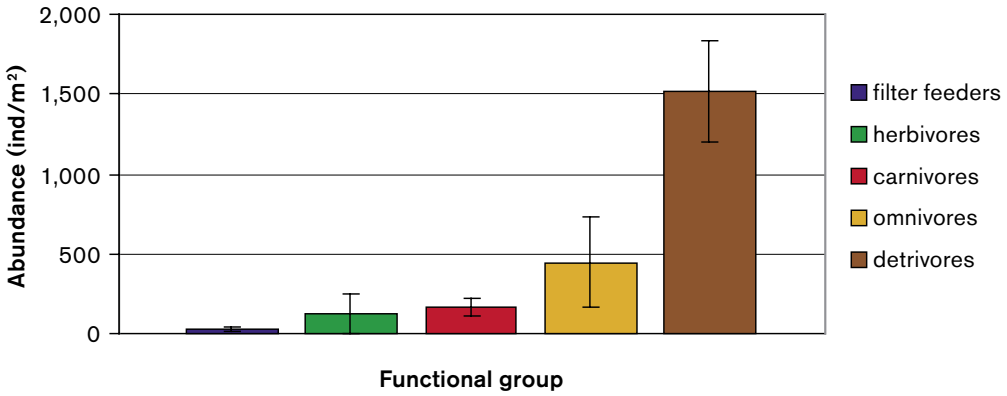

Figure 5-26. *Abundance (individuals/m²) distribution of benthic macrofauna, functional groups, in Tixelfjärden. August 2004 (standard error is indicated as bars).*

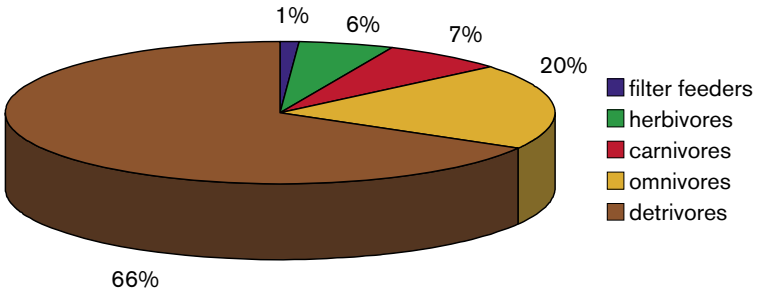

Figure 5-27. *Percentage abundance (individuals/m²) distribution of benthic macrofauna, functional groups, in Tixelfjärden. August 2004.*

The total benthic macrofauna biomass of 8.8 g dry weight m^{-2} in Tixelfjärden was completely dominated by detrivores 7.7 g (88%). The Baltic mussel *Macoma baltica* and snail *Hydrobia sp*, dominated the detrivore biomass. *Macoma baltica* alone contributed with 73% of the total animal biomass. This corresponds well with earlier studies in shallow areas in the Uppland archipelago, where *Macoma baltica* often is the dominating species regarding biomass /17/. The herbivores (dominated by the snails Bithynia tentaculata and Lymnea peregra) share of the animal biomass was 10% (0.9 g). The filter feeder, omnivore and carnivore share of the animal biomass was < 1%, (see Table 5-3, Figure 5-24 and 5-25).

The benthic macrofauna abundance (2,278 individuals/m²) was completely dominated by detrivores, 1,516 individuals/m² (67%). The Baltic mussel *Macoma baltica* and snail *Hydrobia sp* were the most frequent animals. The omnivores (e.g. *Chironomidaes*) contributed with 444 individuals/m² (20%). The filter feeder, herbivore and carnivore share of the total abundance was 14% together (see Table 5-3, Figure 5-26 and 5-27).

The same species (e.g. *Macoma baltica*, *Hydrobia sp*, *Bithynia tentaculata* and *Lymnea peregra*) were dominating the biomass also in the plant associated macrofauna samples in Tixelfjärden, but the total animal biomass was 3.6 times higher in the transects (transect average), see 5.2.1. It must be taken under consideration that some of the animals "belonging to" benthic macrofauna was sampled together with the associated macrofauna.

5.3.2 Kallrigafjärden

The results from Kallrigafjärden showed the same distribution of biomass as Tixelfjärden; the dominant trophic groups and the total animal biomass were of the same magnitude.

The total number of identified species or higher taxa was 16, with a mean of 6.2 in 10 samples. The number of taxa found in the samples varied between 4 and 8. The most frequent species in the samples were *Macoma baltica* and *Hydrobia sp* which were both found in all the 10 samples.

The total benthic macrofauna biomass of 11.2 g dry weight m^{-2} in Kallrigafjärden was also completely dominated by detrivores 9.2 g (83%). The snail *Hydrobia sp* and the Baltic mussel *Macoma baltica*, dominated the detrivore biomass. *Hydrobia sp* alone contributed with 47% of the total biomass, while *Macoma baltica* was the second largest contributor with a share of 36%. The herbivores (dominated by the snails *Bithynia tentaculata* and *Lymnea peregra*) share of the animal biomass was 14% (1.6 g). Other trophic groups with notable biomass shares were filter feeders and carnivores, each with a share of approximately 1.5% (1.3–1.7%) of the total biomass. The omnivore share of the animal biomass was < 1% (see Table 5-4, Figure 5-28 and 5-29).

The mean abundance (3,178 individuals/m^2) was completely dominated by detrivores, 2,676 individuals/m^2 (84%). The snail *Hydrobia sp* and the Baltic mussel *Macoma baltica* were the most frequent animals. *Hydrobia sp* alone contributed with about 68% of the total abundance. The carnivores (e.g. *Prostoma obscurum* and *Nereis diversicolor*) had the second highest abundance in the samples and contributed with 182 individuals/m^2 (6%). Other trophic groups that made a minor contribution to the abundance were filter feeders (e.g. *Cardium spp*) 4.2%, herbivores (3.2%) and omnivores (2.7%) (see Table 5-3, Figure 5-30 and 5-31).

The same species (e.g. *Macoma baltica*, *Hydrobia sp*, *Bithynia tentaculata* and *Lymnea peregra*) dominated the biomass also in the plant associated macrofauna samples in Kallrigafjärden, but the total animal biomass was 2.6 times higher in the transects (transect average), see 5.2.1. It must be taken under consideration that some of the animals "belonging to" benthic macrofauna was sampled together with the associated macrofauna.

Table 5-4. Mean biomass (dry weight) and abundance of different functional groups of benthic macrofauna in Kallrigafjärden. August 2004.

Kallrigafjärden. Benthic macrofauna	Biomass		Abundance	
Animal trophic groups	DW (g/m^2)	(%)	(individuals/m^2)	(%)
filter feeders	0.190	1.7	133.3	4.2
herbivores	1.608	14.4	102.2	3.2
carnivores	0.140	1.3	182.2	5.7
omnivores	0.009	0.1	84.4	2.7
detrivores	9.215	82.6	2,675.5	84.2
Sum animals	11.161	100	3,177.7	100

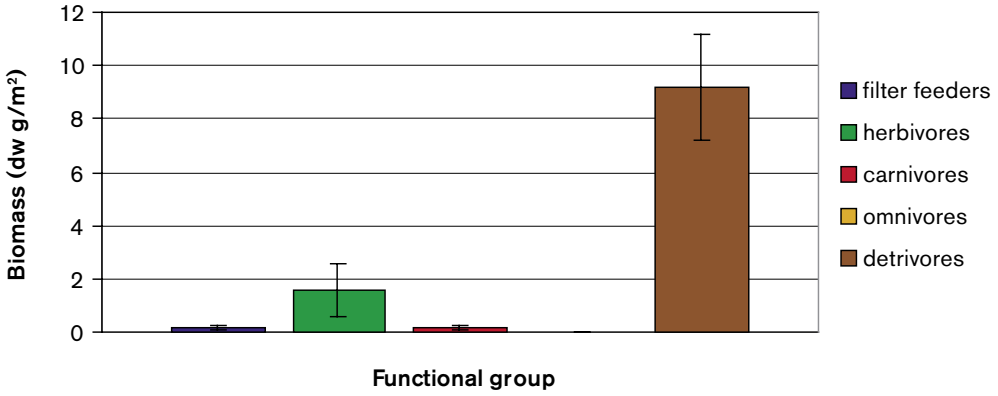

Figure 5-28. *Biomass (g dry weight m^{-2}) distribution of benthic macrofauna, functional groups, in Kallrigafjärden. August 2004 (standard error is indicated as bars).*

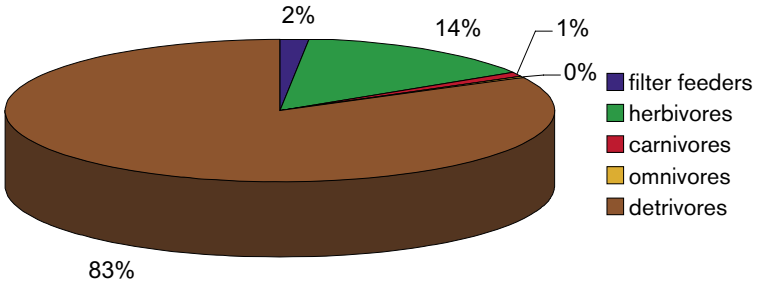

Figure 5-29. *Percentage biomass distribution of benthic macrofauna, functional groups, in Kallrigafjärden. August 2004.*

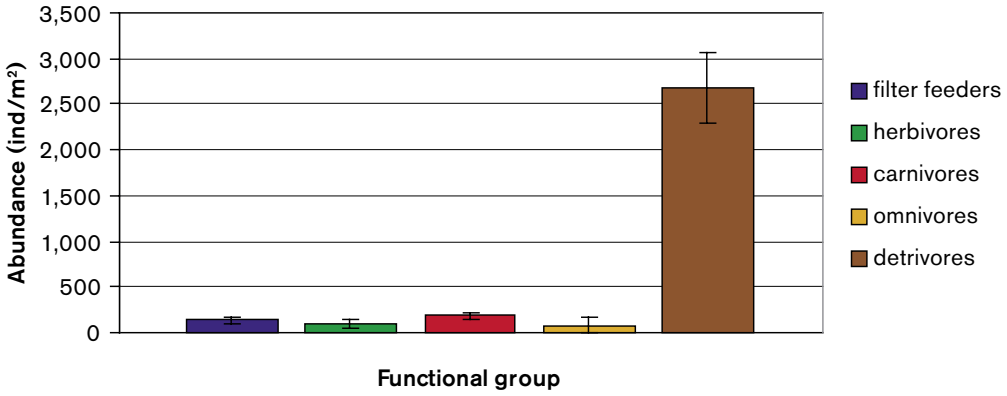

Figure 5-30. *Abundance (individuals/m^2) distribution of benthic macrofauna, functional groups, in Kallrigafjärden. August 2004 (standard error is indicated as bars).*

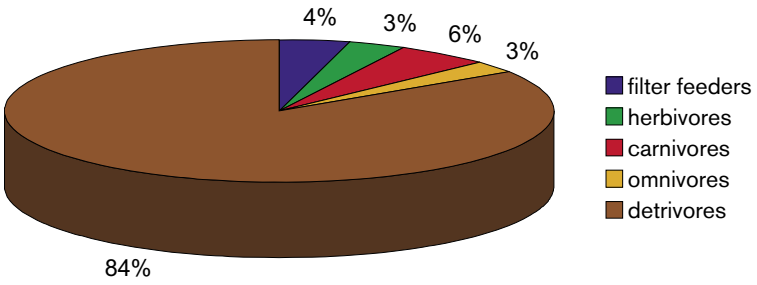

Figure 5-31. *Percentage abundance (individuals/m²) distribution of benthic macrofauna, functional groups, in Kallrigafjärden. August 2004.*

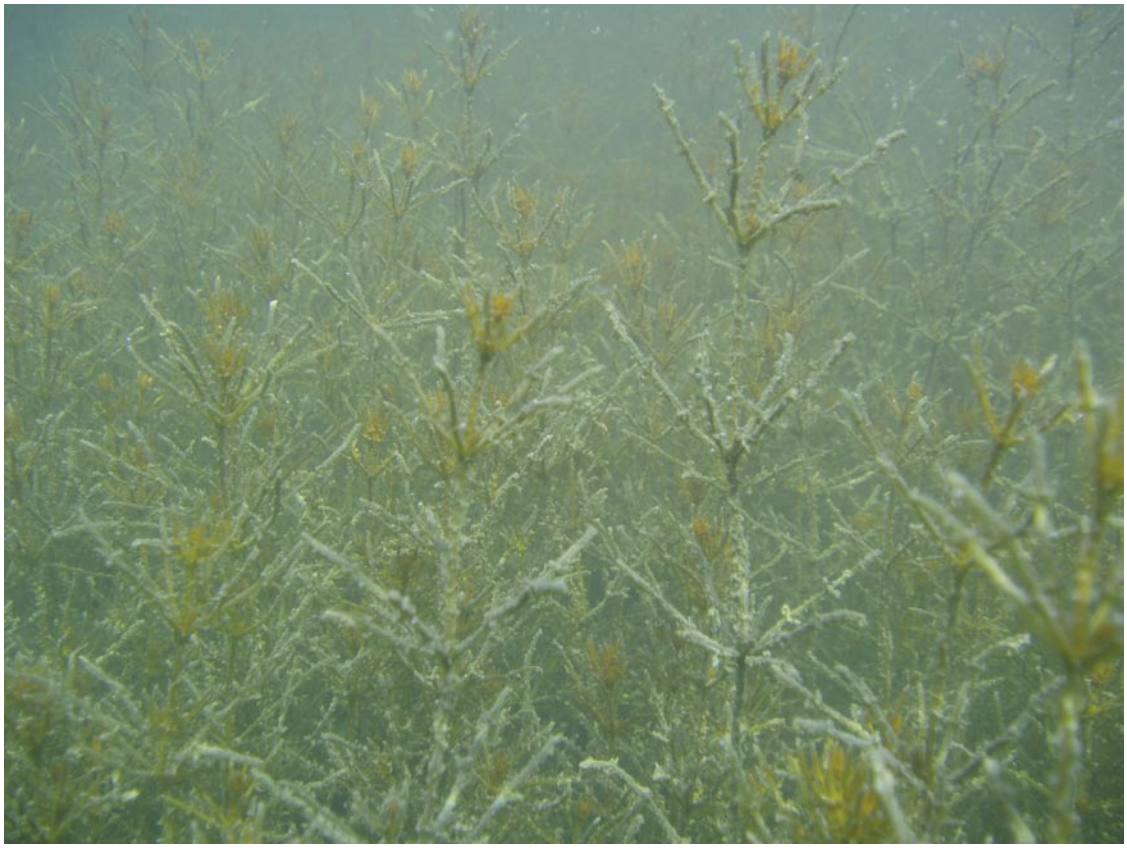

Figure 5-32. *Rich growth of* Chara tomentosa *was common in the shallow and sheltered areas of the bays, Kallrigafjärden 2004.*

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Appendix 1

Maps of the investigated areas with identification codes, sampling points and sampling type

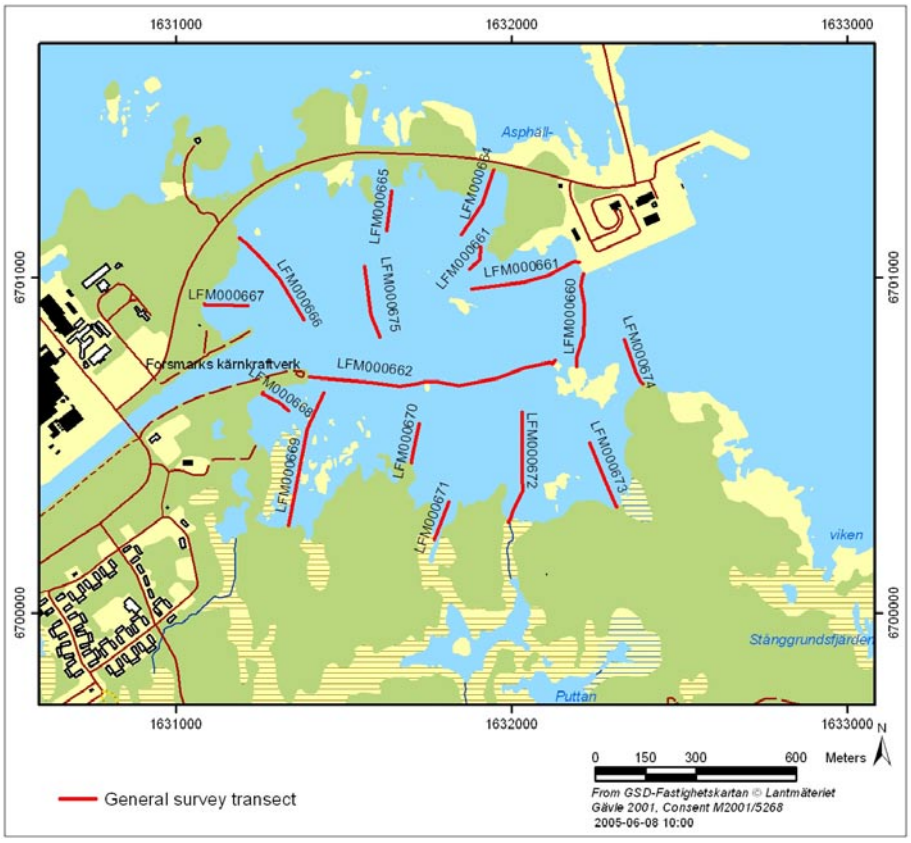

Figure A1-1. *Investigated transects in Asphällsfjärden.*

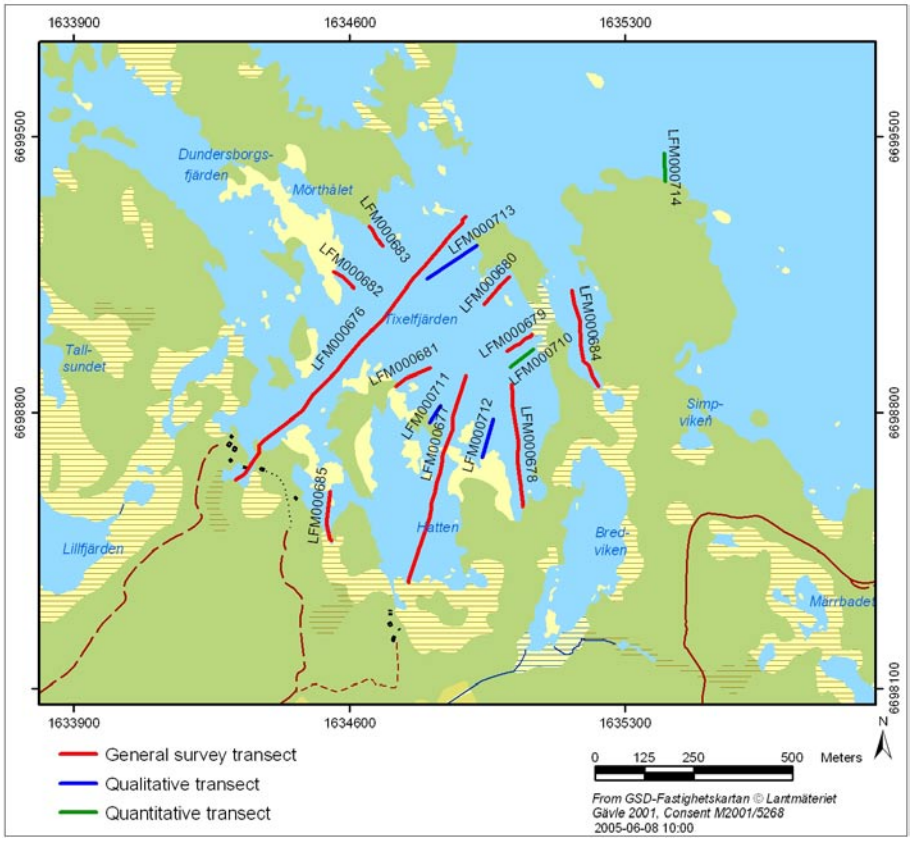

Figure A1-2. *Investigated transects in Tixelfjärden and Trollgrund.*

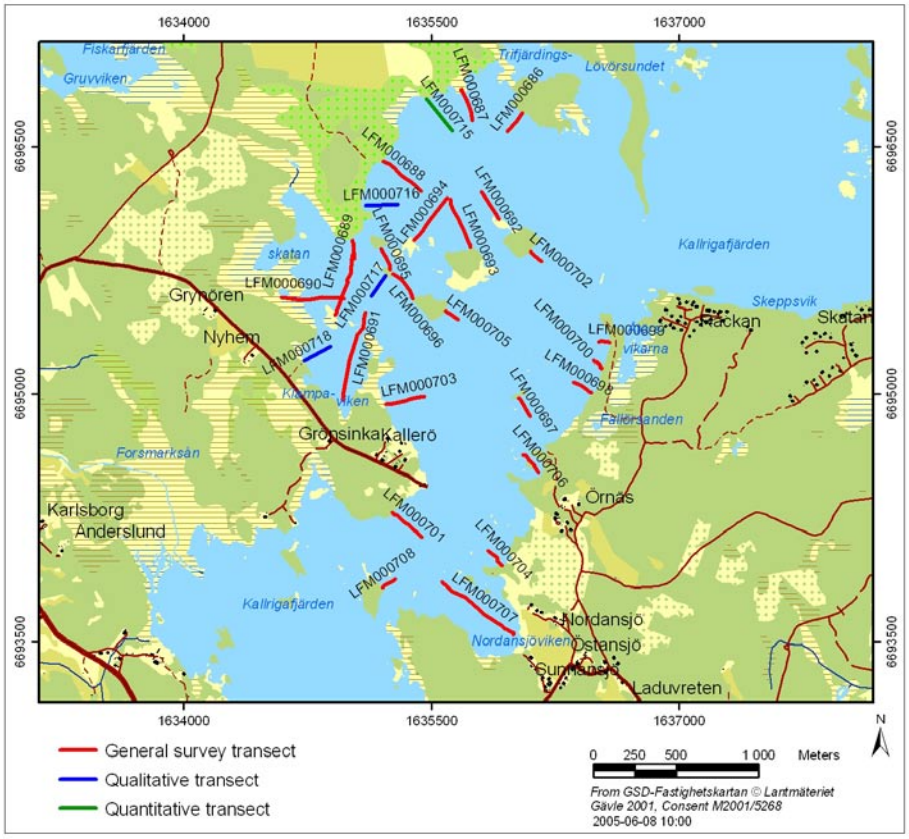

Figure A1-3. *Investigated transects in Kallrigafjärden.*

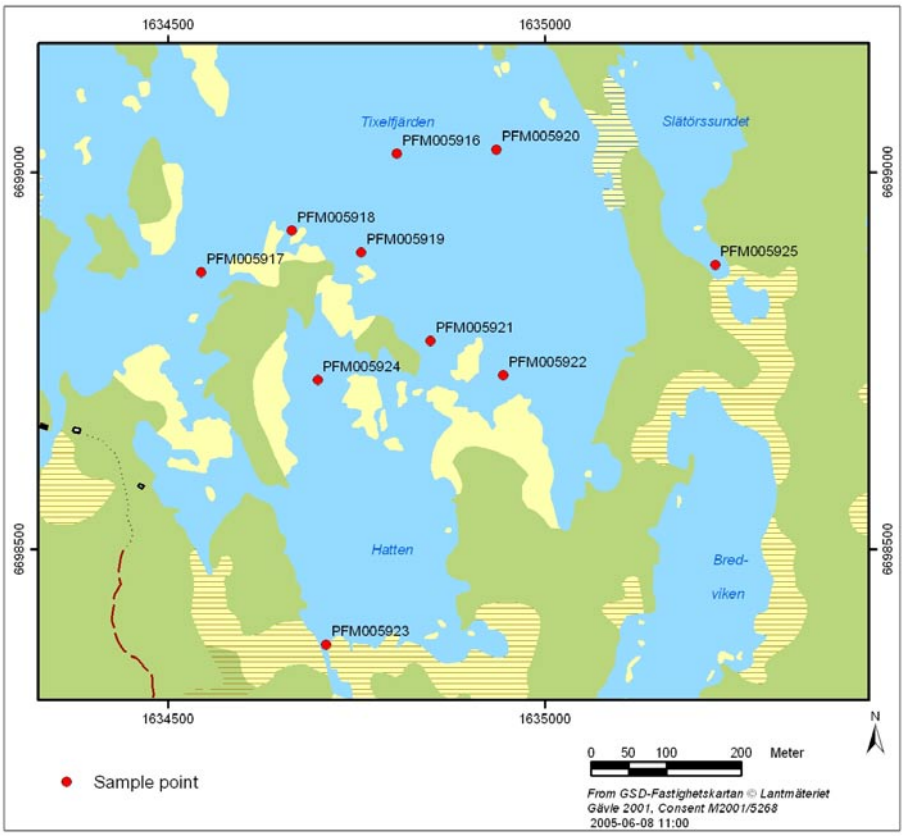

Figure A1-4. *Sampling points in Tixefjärden.*

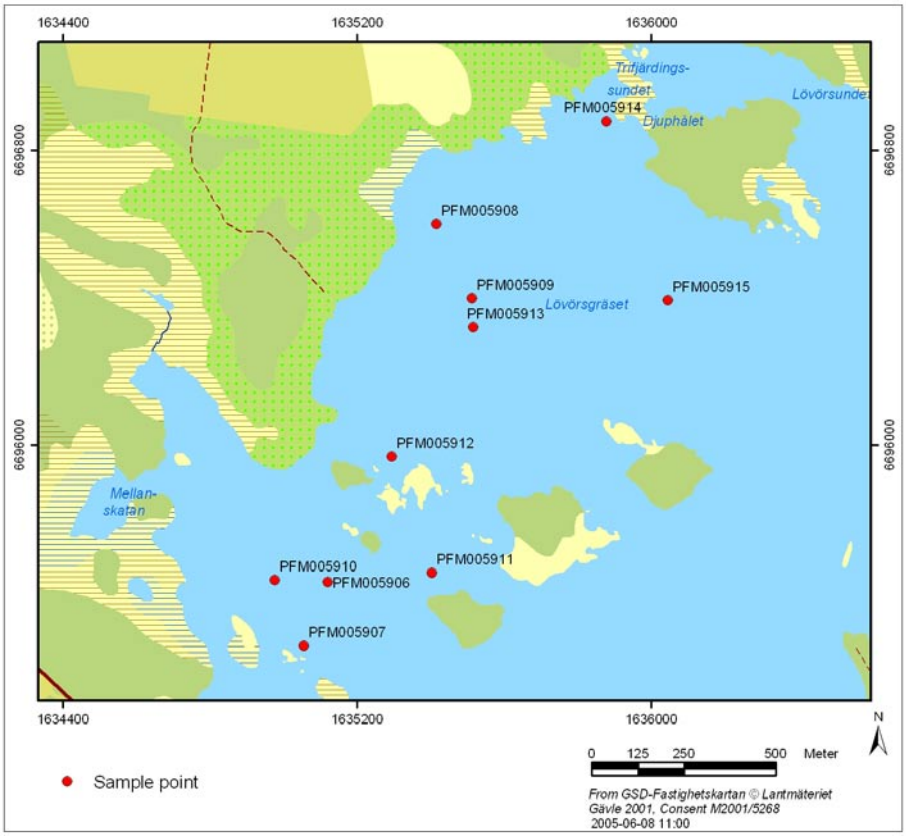

Figure A1-5. *Sampling points in Kallrigafjärden.*

Appendix 2

Primary data and field notes from the general survey

Lokal: **ASPHÄLLSFJÄRDEN**
ID-code: **LFM000660**
Datum: 2004-08-10
Klockslag slut: 15:03
Väder: Sol, ost 0-1 m/s
Utförare: Micke Borgiel
Strandlinje nr: 1

		x-koordinat	y-koordinat	Foto
Startpt strandlinje:	1A	6701012	1632215	57
Slutpt strandlinje:	1B	6701108	1632202	58
Transektlinjestart:	1A			
Prel "transektslut":	1E			
Transektbäring:	176°			

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
1A	6701012	1632215	0,0	57	0,0
154	6701008	1632213	1,7		2,0
155	6700977	1632207	1,8		36,4
156	6700921	1632217	3,5		90,6
157	6700884	1632217	3,6		121,8
158	6700825	1632214	3,8		186,8
159	6700818	1632210	3,1		193,6
160	6700796	1632204	2,0		215,4
161	6700763	1632193	1,4		249,1
162	6700736	1632194	0,8		276,6

Täckning

Transektsträcka	1A-154	154-155	155-156	156-157	157-158	158-159	159-160	161-161	161-162
Art									
Bluegreen									
Rivularia atra									
Red									
Ceramium tenuicorne		10	10	5	10-25	25	10	10	
Furcellaria lumbricalis			25						
Polysiphonia fucoides									
Brown									
Pilayella littoralis	75	50	10	5					5
Chorda filum	10								
Fucus vesiculosus							5	+	
Sphacelaria arctica									
Vaucheriales									
Vaucheria									
Green									
Enteromorpha intestinalis	5								
Cladophora glomerata	25							5	
Characeae									
Chara baltica									
Chara tomentosa									5
Chara sp.									5
Tolypella nidifica.									
Phanerogams									
Callitriche spp.			5						
Myriophyllum spp.		25		10	+	100	75	25	5
Potamogeton pectinatus	50	75	10	50-75	10		5	10	5
Potamogeton perfoliatus			5						5-10
Ranunculus spp.									+
Ruppia sp.									
Zanichellia palustris								5	+
Botten	Block	Mjuk	Block/sand/	Sand/grus	Sand/grus			Sand/grus	Sand/grus/
			grus		m.block			/block	block
Övriga anmärkningar	Strömt hela transekten								

Lokal: **ASPHÄLLSFJÄRDEN**
ID-code **LFM000661**
Datum: 2004-08-10
Klockslag start: 10:57
Klockslag slut: 12:30
Väder: Sol, ost 0-1 m/s
Utförare: Micke Borgiel
Strandlinje nr: 1

		x-koordinat	y-koordinat	Foto
Startpt strandlinje:	1A	6701012	1632215	57
Slutpt strandlinje:	1B	6701108	1632202	58
Transektlinjestart:	1C	6701047	1632202	59
Prel "transektslut":	1D	6701020	1632107	
Transektbäring:	250°			

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
1C	6701047	1632202	0,0	59	0,0
148	6701049	1632187	1,1		16,2
149	6701042	1632173	1,3		29,3
150	6701008	1632109	0,7		100,3
151	6700986	1632036	3,1		176,3
153	6700966	1631880	1,6		333,7

Täckning

Transektsträcka	1C-148	148-149	149-150	150-151	151-153
Art					
Bluegreen					
Rivularia atra					
Red					
Ceramium tenuicorne			+		5
Furcellaria lumbricalis					
Polysiphonia fucoides					
Brown					
Pilayella littoralis					
Chorda filum			5		
Fucus vesiculosus	+		+		+
Sphacelaria arctica					
Pilayella/Cladophora			10-25	5-10	25-50
Vaucheriales					
Vaucheria					
Green					
Enteromorpha intestinalis			+		
Cladophora glomerata	75	10			
Characeae					
Chara baltica					
Chara tomentosa					
Chara sp.			+		
Tolypella nidifica.					
Phanerogams					
Callitriche spp.					
Myriophyllum spp.		5	5-10	25	5-10
Potamogeton pectinatus	10	75	5	5-10	10-25
Potamogeton perfoliatus			+	+	+
Ranunculus spp.			+		
Ruppia sp.					
Zanichellia palustris	10	10-25	5		
					+
Botten			Småblock	Grus	Block
Övriga anmärkningar					

Lokal: **ASPHÄLLSFJÄRDEN**
ID-code **LFM000662**

Datum: 2004-08-10
Klockslag start: 15:32
Klockslag slut: 17:00
Väder: Sol, ost 0-1 m/s
Utförare: Micke Borgiel

		x-koordinat	y-koordinat
Transektlinjestart:	2A	6700754	1632130
Prel "transektslut":	2B	6700730	1632024
Transektbäring:	260°		

Waypoint	x-koordinat	y-koordinat	Djup	Foto	Längd från startpt. (m)
2A	6700754	1632130	0,0	60	0,0
163	6700743	1632122	1,3		8,2
164	6700748	1632113	2,5		13,9
165	6700731	1632038	4,3		92,8
166	6700700	1631957	3,3		177,8
167	6700678	1631843	2,5		293,4
168	6700691	1631778	1,9		354,6
169	6700691	1631741	1,3		391,3
170	6700685	1631719	2,7		413,7
171	6700676	1631668	3,4		465,7
172	6700688	1631579	2,3		552,5
173	6700705	1631397	1,0		732,0

Täckning

Transektsträcka	2A-163	163-164	164-165	165-166	166-167	167-168	168-169	169-170	170-171	171-172	172-173
Art											
Bluegreen											
Rivularia atra	5						5				
Red											
Ceramium tenuicorne			5		10-25	25-50			5		
Furcellaria lumbricalis											
Polysiphonia fucoides					5				25	25	5
Polysiphonia fibrillosa				+							
Brown											
Pilayella littoralis	10				5		5				5
Pilayella ludd		10						10			
Chorda filum	5						5				5
Fucus vesiculosus		+					+	5	+		5
Sphacelaria arctica											
Vaucheriales											
Vaucheria											
Green											
Enteromorpha intestinalis	5	+					5	5			
Cladophora glomerata	50-75						50	10			5
Characeae											
Chara baltica											
Chara tomentosa											
Chara sp.							+				
Tolypella nidifica.							+				
Phanerogams											
Callitriche spp.											
Myriophyllum spp.			5	+	5	25	50	5			+
Potamogeton pectinatus				+	5	10	5		5		5
Potamogeton perfoliatus			10	+	5	5	5	5	5		5-10
Ranunculus spp.					5						
Ruppia sp.							+				
Zanichellia palustris	5			+	5	5					
Tomt		75									
Botten	Häll och block	Block	Sand, enstaka	Sand, enstaka	Block	Block	Block	Block m.	Block på	Block	Block, grus
			småblock	block				grus	mjukbotten		
Övriga anmärkningar	Strömt vatten hela transekten, utom sista 25 meter.										

Lokal:	**ASPHÄLLSFJÄRDEN**			
ID-code	**LFM000663**			
Datum:	2004-08-10			
Klockslag start:	19:14			
Klockslag slut:	19:29			
Väder:	Sol, ost 0-1 m/s			
Utförare:	Micke Borgiel			
Strandlinje nr:	3			
		x-koordinat	**y-koordinat**	**Djup (m)**
Startpt strandlinje:	3A	6701092	1631908	0,5
Slutpt strandlinje:	4A	6701242	1631883	0,7
Transektlinjestart:	3A	6701092	1631908	0,5
Prel "transektslut":	3D	6700962	1631845	
Transektbäring:	208°			

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
3A	6701092	1631908	0,5	64	0,0
178	6701054	1631905	1,6		38,7
179	6701026	1631875	2,2		73,6

Täckning

Transektsträcka	3A-178	178-179
Art		
Bluegreen		
Rivularia atra	5	
Red		
Ceramium tenuicorne		+
Furcellaria lumbricalis		
Polysiphonia fucoides		10
Polysiphonia fibrillosa		
Brown		
Pilayella littoralis	25	
Pilalyella ludd		
Chorda filum		
Fucus vesiculosus		+
Sphacelaria arctica		
Vaucheriales		
Vaucheria		
Green		
Enteromorpha intestinalis		
Cladophora glomerata	5	25
Characeae		
Chara baltica		
Chara tomentosa		
Chara sp.	+	
Tolypella nidifica.		
Phanerogams		
Callitriche spp.		
Myriophyllum spp.	+	5
Potamogeton pectinatus	10	5
Potamogeton perfoliatus		5
Ranunculus spp.	+	+
Ruppia sp.	5	
Zanichellia palustris		5
Tomt		
Botten	Block m. sand	Block m. sand
	och häll	
Övriga anmärkningar	Strömt	Strömt

Lokal: **ASPHÄLLSFJÄRDEN**
ID-code **LFM000664**
Datum: 2004-08-10
Klockslag start: 18:45
Klockslag slut: 19:07
Väder: Sol, ost 0-1 m/s
Utförare: Micke Borgiel
Strandlinje nr: 3

		x-koordinat	y-koordinat	Djup (m)
Startpt strandlinje:	3A	6701092	1631908	0,5
Slutpt strandlinje:	4A	6701242	1631883	0,7
Transektlinjestart:	3B	6701321	1631947	1,0
Prel "transektslut":	3C	6701126	1631856	
Transektbäring:	204°			

Waypoint	x-koordinat	y-koordinat	Djup (m)	Foto	Längd från startpt. (m)
3B	6701321	1631947	1,0		0,0
175	6701218	1631912	1,4		107,9
176	6701176	1631883	2,3	63	157,2
177	6701128	1631851	2,2		214,6

Täckning

Transektsträcka	3B-175	175-176	176-177
Art			
Bluegreen			
Rivularia atra			
Red			
Ceramium tenuicorne			
Furcellaria lumbricalis			
Polysiphonia fucoides			
Polysiphonia fibrillosa			
Brown			
Pilayella littoralis		5	5
Pilalyellaludd			
Chorda filum			
Fucus vesiculosus			
Sphacelaria arctica			
Vaucheriales			
Vaucheria			
Green			
Enteromorpha intestinalis			
Cladophora glomerata			
Characeae			
Chara baltica			
Chara tomentosa	+	+	
Chara sp.			
Tolypella nidifica.			
Phanerogams			
Callitriche spp.			
Myriophyllum spp.	+	5	5
Potamogeton pectinatus	+	5	+
Potamogeton perfoliatus	5	+	+
Ranunculus spp.			
Ruppia sp.			
Zanichellia palustris		+	+
Tomt			
Botten	Sandig mjukbo	Mjukbotten,	Mjukbotten,
		enstaka block	enstaka block
Övriga anmärkningar			

Lokal:	**ASPHÄLLSFJÄRDEN**				
ID-code	**LFM000665**				
Datum:	2004-08-10				
Klockslag start:	19:50				
Klockslag slut:	20:05				
Väder:	Sol, ost 0-1 m/s				
Utförare:	Micke Borgiel				
Strandlinje nr:	4				
		x-koordinat	**y-koordinat**	**Djup (m)**	**Foto**
Startpt strandlinje:	4A	6701242	1631883	0,7	65
Slutpt strandlinje:	4H	6700844	1631233	0,4	
Transektlinjestart:	4B	6701259	1631642	0,5	66
Prel "transektslut":	4C	6701101	1631627		
Transektbäring:	181°				

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
4B	6701259	1631642	0,5	66	0,0
180	6701238	1631641	0,8		21,0
181	6701140	1631627	2,3		120,5

Täckning

Transektsträcka	4B-180	180-181
Art		
Bluegreen		
Rivularia atra	+	+
Red		
Ceramium tenuicorne		
Furcellaria lumbricalis		
Polysiphonia fucoides		
Polysiphonia fibrillosa		
Brown		
Pilayella littoralis		5
Pilalyellaludd		
Chorda filum	+	+
Fucus vesiculosus		
Sphacelaria arctica		
Vaucheriales		
Vaucheria		
Green		
Enteromorpha intestinalis		
Cladophora glomerata	5	10
Characeae		
Chara baltica		
Chara tomentosa		
Chara sp.	+	
Tolypella nidifica.		+
Phanerogams		
Callitriche spp.		
Myriophyllum spp.	+	5
Potamogeton pectinatus	+	5
Potamogeton perfoliatus	+	+
Ranunculus spp.		
Ruppia sp.	+	+
Zanichellia palustris		
Tomt		
Botten	Block	
Övriga anmärkningar		

Lokal: **ASPHÄLLSFJÄRDEN**
ID-code **LFM000666**
Datum: 2004-08-11
Klockslag start: 08:54
Klockslag slut: 09:30
Väder: Sol, nord 4-5 m/s
Utförare: Micke Borgiel
Strandlinje nr: 4

		x-koordinat	y-koordinat	Djup (m)
Startpt strandlinje:	4A	6701242	1631883	0,7
Slutpt strandlinje:	4H	6700844	1631233	0,4
Transektlinjestart:	4D	6701119	1631189	0,0
Prel "transektslut":	4E	6701001	1631311	
Transektbäring:	133°			

Waypoint	x-koordinat	y-koordinat	Djup (m)	Foto	Längd från startpt. (m)
4D	6701119	1631189	0,0	1	0,0
182	6701103	1631209	1,3		25,5
183	6701062	1631249	1,3		82,8
184	6700999	1631307	3,3		167,8
185	6700875	1631381	3,9		309,3

Täckning

Transektsträcka	4D-182	182-183	183-184	184-185
Art				
Bluegreen				
Rivularia atra	5			
Red				
Ceramium tenuicorne				
Furcellaria lumbricalis				
Polyciphonia fuciodes				10
Polysiphonia fucoides				
Polysiphonia fibrillosa				
Brown				
Pilayella littoralis	5			
Pilalyellaludd			5	5
Chorda filum				
Fucus vesiculosus				
Sphacelaria arctica				
Vaucheriales				
Vaucheria				
Green				
Enteromorpha intestinalis		+		
Cladophora glomerata	5	5-10	5-10	
Characeae				
Chara baltica				
Chara tomentosa	5	5	5	
Chara sp.				
Tolypella nidifica.				
Phanerogams				
Callitriche spp.			+	
Myriophyllum spp.	5	10	5	
Potamogeton pectinatus	5		5	
Potamogeton perfoliatus		5	5	5
Ranunculus spp.	+			
Ruppia sp.				
Zanichellia palustris	5	+	5	+
Tomt				
Botten	Ler/sand m.	Ler/sand m.	Mkt sediment	Sand m.
	block	block	på block	block

Övriga anmärkningar

Lokal:	**ASPHÄLLSFJÄRDEN**			
ID-code	**LFM000667**			
Datum:	2004-08-11			
Klockslag start:	09:45			
Klockslag slut:	10:03			
Väder:	Sol, nord 4-5 m/s			
Utförare:	Micke Borgiel			
Strandlinje nr:	4			
		x-koordinat	**y-koordinat**	**Djup (m)**
Startpt strandlinje:	4A	6701242	1631883	0,7
Slutpt strandlinje:	4H	6700844	1631233	0,4
Transektlinjestart:	4F	6700923	1631084	0,0
Prel "transektslut":	4G	6700925	1631265	
Transektbäring:	88°			

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
4F	6700923	1631084	0,0	2	0,0
186	6700919	1631086	0,8		4,7
187	6700918	1631129	1,3		45,6
188	6700916	1631215	2,1		131,0

Täckning

Transektsträcka	4F-186	186-187	187-188
Art			
Bluegreen			
Rivularia atra	5		
Red			
Ceramium tenuicorne			
Furcellaria lumbricalis			
Polysiphonia fucoides			
Polysiphonia fibrillosa			
Brown			
Pilayella littoralis			
Pilalyellaludd			
Chorda filum			
Fucus vesiculosus			
Sphacelaria arctica			
Vaucheriales			
Vaucheria			
Green			
Enteromorpha intestinalis		5	5
Cladophora glomerata	5-10	5	5
Characeae			
Chara baltica			
Chara tomentosa	5	5	10
Chara aspera			5
Chara sp.	+		
Tolypella nidifica.			
Phanerogams			
Callitriche spp.			
Myriophyllum spp.	5	5	5
Potamogeton pectinatus	5	5	5
Potamogeton perfoliatus	5-10	10	5
Ranunculus spp.		+	
Ruppia sp.			
Zanichellia palustris	5		5
Tomt			
Botten	Sand/block	Sand/lera,	Sand/lera
		enstaka block	
Övriga anmärkningar	Mycket god sikt, mer än 4 m.		

Lokal: **ASPHÄLLSFJÄRDEN**
ID-code **LFM000668**
Datum: 2004-08-11
Klockslag start: 10:25
Klockslag slut: 11:00
Väder: Sol, nord 4-5 m/s
Utförare: Micke Borgiel
Strandlinje nr: 5

		x-koordinat	y-koordinat	Djup (m)	Foto
Startpt strandlinje:	5A	6700704	1631391	0,5	
Slutpt strandlinje:	5D	6700506	1631291	0,3	4
Transektlinjestart:	5B	6700659	1631259	1,0	3
Prel "transektslut":	5C	6700568	1631400		
Transektbäring:	120°				

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
5B	6700659	1631259	1,0	3	0,0
189	6700654	1631258	1,1		4,6
190	6700652	1631264	2,2		8,9
191	6700637	1631290	2,0		38,1
192	6700630	1631304	1,6		53,5
193	6700604	1631335	1,5		110,5

Täckning

Transektsträcka	5B-189	189-190	190-191	191-192	192-193
Art					
Bluegreen					
Rivularia atra					
Red					
Ceramium tenuicorne					
Furcellaria lumbricalis					
Polysiphonia fucoides					
Polysiphonia fibrillosa					
Brown					
Pilayella littoralis					
Pilalyellaludd					
Chorda filum					
Fucus vesiculosus					
Sphacelaria arctica					
Vaucheriales					
Vaucheria					
Green					
Enteromorpha intestinalis	10			10	
Cladophora glomerata	50-75			50-75	25
Najas maritma			+		
Characeae					
Chara baltica					
Chara tomentosa					
Chara sp.					
Tolypella nidifica.					
Phanerogams					
Callitriche spp.					
Myriophyllum spp.					+
Potamogeton pectinatus			+	5	10
Potamogeton perfoliatus					
Ranunculus spp.					
Ruppia sp.					
Zanichellia palustris		75		5	10
Tomt			100		
Botten	Block		Lös botten, H_2S	Block	Mjuk m.
			väte. Sed:3		block.
Övriga anmärkningar	Vik med reningsverk. Dålig sikt.				

Lokal:	**ASPHÄLLSFJÄRDEN**			
ID-code	**LFM000669**			
Datum:	2004-08-11			
Klockslag start:	11:30			
Klockslag slut:	11:48			
Väder:	Sol, nord 4-5 m/s			
Utförare:	Micke Borgiel			
Strandlinje nr:	6			
		x-koordinat	**y-koordinat**	**Djup (m)**
Startpt strandlinje:	6A (=5D)	6700506	1631291	0,3
Slutpt strandlinje:	6L	6700685	1632391	0,0
Transektlinjestart:	6B	6700263	1631335	0,0
Prel "transektslut":	6C	6700454	1631362	
Transektbäring:	6°			

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
6B	6700263	1631335	0,0	5	0,0
194	6700551	1631391	0,7		293,5
195	6700658	1631441	1,8		409,0

Täckning

Transektsträcka	6B-194	194-195
Art		
Bluegreen		
Rivularia atra	+	
Red		
Ceramium tenuicorne		
Furcellaria lumbricalis		
Polysiphonia fucoides		
Polysiphonia fibrillosa		
Brown		
Pilayella littoralis		
Pilalyellaludd		
Chorda filum		
Fucus vesiculosus		
Sphacelaria arctica		
Vaucheriales		
Vaucheria		
Green		
Enteromorpha intestinalis	+	10
Cladophora glomerata	5-10	25
Najas maritima	+	
Characeae		
Chara baltica		
Chara tomentosa	5	
Chara sp.		
Tolypella nidifica.		
Phanerogams		
Callitriche spp.		
Myriophyllum spp.	+	+
Potamogeton pectinatus	5	5
Potamogeton perfoliatus	5	5
Ranunculus spp.		
Ruppia sp.		
Zanichellia palustris	5	5
Tomt		
Botten	Mjuk m. block	
Övriga anmärkningar		

Lokal: **ASPHÄLLSFJÄRDEN**
ID-code **LFM000670**
Datum: 2004-08-11
Klockslag start: 15:29
Klockslag slut: 15:40
Väder: Sol, nord 4-5 m/s
Utförare: Micke Borgiel
Strandlinje nr: 6

		x-koordinat	y-koordinat	Djup (m)
Startpt strandlinje:	6A (=5D)	6700506	1631291	0,3
Slutpt strandlinje:	6L	6700685	1632391	0,0
Transektlinjestart:	6D	6700449	1631702	0,0
Prel "transektslut":	6E	6700610	1631749	
Transektbäring:	15°			

Waypoint	x-koordinat	y-koordinat	Djup (m)	Foto	Längd från startpt. (m)
6D	6700449	1631702	0,0	6	0,0
196	6700452	1631702	1,1		3,0
197	6700469	1631705	2,6		20,4
198	6700564	1631725	3,1		117,3

Täckning

Transektsträcka	6D-196	196-197	197-198
Art			
Bluegreen			
Rivularia atra	25		
Red			
Ceramium tenuicorne			
Furcellaria lumbricalis			
Polysiphonia fucoides			10
Polysiphonia fibrillosa			
Brown			
Pilayella littoralis		5	
Pilalyellaludd			
Chorda filum	5		
Fucus vesiculosus			
Sphacelaria arctica			
Vaucheriales			
Vaucheria			
Green			
Enteromorpha intestinalis	10		
Cladophora glomerata	25-50	10	
Najas maritima			
Characeae			
Chara baltica			
Chara tomentosa			
Chara sp.			
Tolypella nidifica.			
Phanerogams			
Callitriche spp.			
Myriophyllum spp.			5
Potamogeton pectinatus	5	5	5
Potamogeton perfoliatus	10	5	5
Ranunculus spp.		+	
Ruppia sp.			
Zanichellia palustris			
Tomt			
Botten		Block	Sand/grus
			enstaka block
Övriga anmärkningar			

Lokal: **ASPHÄLLSFJÄRDEN**
ID-code **LFM000671**
Datum: 2004-08-11
Klockslag start: 15:52
Klockslag slut: 16:05
Väder: Sol, nord 4-5 m/s
Utförare: Micke Borgiel
Strandlinje nr: 6

		x-koordinat	y-koordinat	Djup (m)
Startpt strandlinje:	6A (=5D)	6700506	1631291	0,3
Slutpt strandlinje:	6L	6700685	1632391	0,0
Transektlinjestart:	6F	6700221	1631770	0,3
Prel "transektslut":	6G	6700413	1631812	
Transektbäring:	10°			

Waypoint	x-koordinat	y-koordinat	Djup (m)	Foto	Längd från startpt. (m)
6F	6700221	1631770	0,3	7	0,0
199	6700235	1631777	0,8		15,4
200	6700333	1631813	1,8		120,9

Täckning

Transektsträcka	6F-199	199-200
Art		
Bluegreen		
Rivularia atra	5	
Red		
Ceramium tenuicorne		
Furcellaria lumbricalis		
Polysiphonia fucoides		
Polysiphonia fibrillosa		
Brown		
Pilayella littoralis		
Pilalyellaludd		
Chorda filum		
Fucus vesiculosus		
Sphacelaria arctica		
Vaucheriales		
Vaucheria		
Green		
Enteromorpha intestinalis	+	+
Cladophora glomerata	5	5
Najas maritima		
Characeae		
Chara baltica		
Chara tomentosa		
Chara sp.	5	
Tolypella nidifica.		
Phanerogams		
Callitriche spp.		
Myriophyllum spp.	5	
Potamogeton pectinatus	5-10	5
Potamogeton perfoliatus	5	5
Ranunculus spp.		
Ruppia sp.		
Zanichellia palustris	+	5
Tomt		
Botten	Block och	Sand/lera,
	lersand	enstaka block
Övriga anmärkningar		

Lokal: **ASPHÄLLSFJÄRDEN**
ID-code **LFM000672**
Datum: 2004-08-11
Klockslag start: 16:16
Klockslag slut: 16:50
Väder: Sol, nord 4-5 m/s
Utförare: Micke Borgiel
Strandlinje nr: 6

		x-koordinat	y-koordinat	Djup (m)
Startpt strandlinje:	6A (=5D)	6700506	1631291	0,3
Slutpt strandlinje:	6L	6700685	1632391	0,0
Transektlinjestart:	6H	6700272	1631990	0,2
Prel "transektslut":	6I	6700390	1632023	
Transektbäring:	11°			

Waypoint	x-koordinat	y-koordinat	Djup (m)	Foto	Längd från startpt. (m)
6H	6700272	1631990	0,2	8-12	0,0
201	6700280	1631997	0,5		10,9
202	6700311	1632006	1,8		42,6
203	6700365	1632033	2,1		102,7
204	6700406	1632031	2,5		140,1
205	6700495	1632031	3,3		227,2
206	6700599	1632032	3,3		330,0

Täckning

Transektsträcka	6H-201	201-202	202-203	203-204	204-205	205-206
Art						
Bluegreen						
Rivularia atra						
Red						
Ceramium tenuicorne						
Furcellaria lumbricalis						
Polysiphonia fucoides						
Polysiphonia fibrillosa						
Polysiphonia/Ceramium					5	5
Brown						
Pilayella littoralis					+	
Pilalyellaludd						
Chorda filum						
Fucus vesiculosus					+	
Sphacelaria arctica						
Vaucheriales						
Vaucheria						
Green						
Enteromorpha intestinalis				5	+	
Cladophora glomerata	50-75	10		10		
Characeae						
Chara baltica						
Chara tomentosa						
Chara sp.	5					
Tolypella nidifica.						
Phanerogams						
Callitriche spp.						
Myriophyllum spp.	5				+	+
Potamogeton pectinatus	5	10				+
Potamogeton perfoliatus		5			5	+
Ranunculus spp.	+				+	
Ruppia sp.						
Najas maritima						
Zanichellia palustris	5	5		5	+	+
Tomt			100			
			Begiatoa			
Botten	Block m.	Sand, enstaka	Lös	Block, häll	Sand, grus	Lersand m.
	sand	block				block
Övriga anmärkningar						

Lokal:	**ASPHÄLLSFJÄRDEN**
ID-code	**LFM000673**
Datum:	2004-08-11
Klockslag start:	17:00
Klockslag slut:	17:18
Väder:	Sol, nord 4-5 m/s
Utförare:	Micke Borgiel
Strandlinje nr:	6

		x-koordinat	y-koordinat	Djup (m)
Startpt strandlinje:	6A (=5D)	6700506	1631291	0,3
Slutpt strandlinje:	6L	6700685	1632391	0,0
Transektlinjestart:	6J	6700317	1632314	0,0
Prel "transektslut":	6K	6700482	1632257	
Transektbäring:	339°			

Waypoint	x-koordinat	y-koordinat	Djup (m)	Foto	Längd från startpt. (m)
6J	6700317	1632314	0,0	13	0,0
207	6700320	1632310	0,6		4,3
208	6700407	1632273	2,1		98,6
209	6700507	1632233	2,4		205,6

Täckning

Transektsträcka	6J-207	207-208	208-209
Art			
Bluegreen			
Rivularia atra	5		
Red			
Ceramium tenuicorne			
Furcellaria lumbricalis			
Polysiphonia fucoides			+
Polysiphonia fibrillosa			
Brown			
Pilayella littoralis			
Pilalyellaludd			
Chorda filum	+		
Fucus vesiculosus			
Sphacelaria arctica			
Vaucheriales			
Vaucheria			
Green			
Enteromorpha intestinalis		+	
Cladophora glomerata	10-25	5	
Najas maritima			
Characeae			
Chara baltica			
Chara tomentosa			
Chara sp.	+		
Tolypella nidifica.			
Phanerogams			
Callitriche spp.			
Myriophyllum spp.		5-10	+
Potamogeton pectinatus	5	10	+
Potamogeton perfoliatus		5-10	10-25
Ranunculus spp.	+	+	
Ruppia sp.			
Zanichellia palustris	5	5	10
Tomt			
Botten	Block	Sand	Sand, enstaka
			block
Övriga anmärkningar			

Lokal: **ASPHÄLLSFJÄRDEN**
ID-code **LFM000674**
Datum: 2004-08-11
Klockslag start: 17:30
Klockslag slut: 17:52
Väder: Sol, nord 4-5 m/s
Utförare: Micke Borgiel
Strandlinje nr: 6

		x-koordinat	y-koordinat	Djup (m)
Startpt strandlinje:	6A (=5D)	6700506	1631291	0,3
Slutpt strandlinje:	6L	6700685	1632391	0,0
Transektlinjestart:	6L	6700685	1632391	0,0
Prel "transektslut":	6M	6700808	1632327	
Transektslut:				
Transektbäring:	330°			

Waypoint	x-koordinat	y-koordinat	Djup (m)	Foto	Längd från startpt. (m)
6L	6700685	1632391	0,0	14	0,0
210	6700688	1632387	0,7		4,6
211	6700693	1632383	0,7		11,3
212	6700716	1632370	1,2		36,3
213	6700816	1632336	1,6		141,5

Täckning

Transektsträcka	6L-210	210-211	211-212	212-213
Art				
Bluegreen				
Rivularia atra	5			
Red				
Ceramium tenuicorne				
Furcellaria lumbricalis				
Polysiphonia fucoides				+
Polysiphonia fibrillosa				
Brown				
Pilayella littoralis	10	10	5	5
Pilalyellaludd				
Chorda filum	10		10	5
Fucus vesiculosus		+	5	+
Sphacelaria arctica				
Vaucheriales				
Vaucheria				
Green				
Enteromorpha intestinalis	5		5	
Cladophora glomerata	50		50	10-25
Najas maritima				
Characeae				
Chara baltica				
Chara tomentosa				
Chara sp.		5		+
Tolypella nidifica.				
Phanerogams				
Callitriche spp.				
Myriophyllum spp.		10	+	25-50
Potamogeton pectinatus		+		5
Potamogeton perfoliatus				
Ranunculus spp.		+		
Ruppia sp.				
Zanichellia palustris				5
Tomt				
Botten	Block	Sand m.	Sand m.	Sand/grus m.
		enstaka block	enstaka block	enstaka block
Övriga anmärkningar				

Lokal: **ASPHÄLLSFJÄRDEN**
ID-code **LFM000675**
Datum: 2004-08-20
Klockslag start: 08:03
Klockslag slut: 08:17
Väder: Växl. molnighet. Väst 5-7 m/s.
Utförare: Micke Borgiel

		x-koordinat	**y-koordinat**
Transektlinjestart:	6N	6700824	1631607
Prel "transektslut":	6O	6701054	1631584
Transektbäring:	352°		

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
6N	6700824	1631607	4,1		0,0
975	6700889	1631581	4,5		70,2
976	6701033	1631562	3,6 i mitten, 3,0 i slutet		213,2

Täckning

Transektsträcka	6N-975	975-976
Art		
Bluegreen		
Rivularia atra		
Red		
Ceramium tenuicorne		
Furcellaria lumbricalis		
Polysiphonia fucoides	5-10	5
Polysiphonia fibrillosa		
Brown		
Pilayella littoralis		
Pilalyellaludd		
Chorda filum		
Fucus vesiculosus		
Sphacelaria arctica		5
Vaucheriales		
Vaucheria		
Green		
Enteromorpha intestinalis		
Cladophora glomerata		
Characeae		
Chara baltica		
Chara tomentosa		
Chara sp.		
Tolypella nidifica.		
Phanerogams		
Callitriche spp.		
Myriophyllum spp.	5	5
Potamogeton pectinatus	+	5
Potamogeton perfoliatus		5
Ranunculus spp.		
Ruppia sp.		
Najas maritima		
Zanichellia palustris	+	
Tomt		
Botten	block m. ler/	sand/grus/lera
	sand	m. stora block
Övriga anmärkningar	Bra sikt	

Lokal: **TIXELFJÄRDEN**
ID-code **LFM000676 (sid1av 2)**
Datum: 2004-08-12
Klockslag start: 08:53
Klockslag slut: 10:30
Väder: Sol, enstaka moln. 0-1 m/s
Utförare: Micke Borgiel

		x-koordinat	y-koordinat
Transektlinjestart:	7A	6698630	1634310
Prel "transektslut":	7B	6698296	1634573
Transektbäring:	39°		

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
7A	6698630	1634310	0,3	23	0,0
214	6698645	1634334	0,5		28,2
215	6698670	1634351	0,9		57,3
216	6698699	1634371	0,2		92,0
217	6698716	1634370	1,2		104,0
218	6698729	1634381	1,9		121,3
219	6698805	1634480	2,2		243,3
220	6698848	1634509	2,8		289,9
221	6698906	1634568	2,1		376,5
222	6698928	1634585	3,3		404,5
223	6698987	1634632	3,3		480,2
224	6699034	1634683	2,1		584,4
225	6699139	1634761	5,1		678,7
226	6699176	1634794	4,8		728,2
227	6699258	1634863	Början:2,9 WP:1.9		835,1
228	6699282	1634887	1,6		862,8
229	6699289	1634886	1,1		873,7
230	6699298	1634895	1,3		886,1

Täckning

Transektsträcka	7A-214	214-215	215-216	216-217	217-218	218-219	219-220	220-221	221-222
Art									
Bluegreen									
Rivularia atra									
Red									
Ceramium tenuicorne									
Furcellaria lumbricalis									
Polysiphonia fucoides									
Polysiphonia fibrillosa									
Brown									
Pilayella littoralis									
Pilalyellaludd									
Chorda filum									
Fucus vesiculosus									
Sphacelaria arctica									
Vaucheriales									
Vaucheria									
Green									
Entromaorpha intestinalis									25
Cladophora glomerata				10					50
Characeae									
Chara baltica									
Chara tomentosa	+	+							
Chara aspera f.subinermis							5		
Tolypella nidifica.									
Phanerogams									
Callitriche spp.							5		
Myriophyllum spp.	5-10	5-10	25	5	25	5	5		
Potamogeton pectinatus	5	5	5						
Potamogeton perfoliatus	5	5-10	5	10	5	+	5		
Ranunculus spp.									
Ruppia sp.									
Zanichellia palustris			5						
Najas maritima	5	+	10				5		
Hippuris vulgaris	10		5						
Phragmites australis			5						
Tomt								100	
Botten	Mjuk	Mjuk	Mjuk	Block m.	Grus, sten	Mjuk	Mjuk	Mjuk, lerb.	Block
				grus					
Övriga anmärkningar									

Lokal: **TIXELFJÄRDEN**
ID-code **LFM000676 (sid 2 av 2)**
Datum: 2004-08-12
Klockslag start: 08:53
Klockslag slut: 10:30
Väder: Sol, enstaka moln. 0-1 m/s
Utförare: Micke Borgiel

		x-koordinat	y-koordinat
Transektlinjestart:	7A	6698630	1634310
Prel "transektslut":	7B	6698296	1634573
Transektbäring:	39°		

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
7A	6698630	1634310	0,3	23	0,0
214	6698645	1634334	0,5		28,2
215	6698670	1634351	0,9		57,3
216	6698699	1634371	0,2		92,0
217	6698716	1634370	1,2		104,0
218	6698729	1634381	1,9		121,3
219	6698805	1634480	2,2		243,3
220	6698848	1634509	2,8		289,9
221	6698906	1634568	2,1		376,5
222	6698928	1634585	3,3		404,5
223	6698987	1634632	3,3		480,2
224	6699034	1634683	2,1		584,4
225	6699139	1634761	5,1		678,7
226	6699176	1634794	4,8		728,2
227	6699258	1634863	Början:2,9 WP:1.9		835,1
228	6699282	1634887	1,6		862,8
229	6699289	1634886	1,1		873,7
230	6699298	1634895	1,3		886,1

Täckning

Transektsträcka	222-223	223-224	224-225	225-226	226-227	227-228	228-229	229-230	
Art									
Bluegreen									
Rivularia atra									
Red									
Ceramium tenuicorne									
Furcellaria lumbricalis									
Polyciphonia fuciodes									
Polyciphonia violacea									
Brown									
Pilayella littoralis									
Pilalyellaludd									
Chorda filum							5	5	
Fucus vesiculosus									
Sphacelaria arctica									
Vaucheriales									
Vaucheria	+		+						
Green									
Enteromorpha intestinalis		5			+	5	5		
Cladophora glomerata		25			5	10	50	50-75	
Characeae									
Chara baltica									
Chara tomentosa									
Chara sp.						+		5	
Tolypella nidifica.									
Phanerogams									
Callitriche spp.									
Myriophyllum spp.					5	25	50	25	
Potamogeton pectinatus					+				
Potamogeton perfoliatus	+	5			5-10	5-10	5		
Ranunculus spp.									
Ruppia sp.									
Zanichellia palustris		+			25	10		5	
Najas maritima									
Hippuris vulgaris									
Phragmites australis									
Tomt				100					
Botten	Mkt lös	Block	Block	Sand, lera,	Sten, grus,	Sten, grus,	Block m.	Block m.	
	lerbotten			enst block	sand m. block		sten, grus	sten, grus	
Övriga anmärkningar									

Lokal: **TIXELFJÄRDEN**
ID-code **LFM000677 (sid 1 av 2)**
Datum: 2004-08-12
Klockslag start: 10:56
Klockslag slut: 11:55
Väder: Sol, enstaka moln. 0-1 m/s
Utförare: Micke Borgiel

		x-koordinat	**y-koordinat**
Transektlinjestart:	7C	6698370	1634750
Prel "transektslut":	7D	6698701	1634848
Transektbäring:	15°		

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
7C	6698370	1634750	0,5	24	0,0
231	6698378	1634750	1,1st 1,5 på WP	25-28	7,7
232	6698535	1634804	1,8	29	174,2
233	6698563	1634809	1,8		202,1
234	6698572	1634809	1,8		210,3
235	6698597	1634816	1,7		235,6
236	6698623	1634821	2,2		262,2
237	6698649	1634829	2,3		288,7
238	6698681	1634836	2,1		322,6
239	6698693	1634837	2,0		334,6
240	6698714	1634845	1,5		357,4
241	6698760	1634862	3,3		404,8
242	6698791	1634863	3,0		434,9
243	6698894	1634896	3,2		543,3

Täckning

Transektsträcka	7C-231	231-232	232-233	233-234	234-235	235-236	236-237
Art							
Bluegreen							
Rivularia atra							
Red							
Ceramium tenuicorne							
Furcellaria lumbricalis							
Polysiphonia fucoides							
Polysiphonia fibrillosa							
Brown							
Pilayella littoralis		5-10	10	5			
Pilalyellaludd							
Chorda filum							
Fucus vesiculosus							
Sphacelaria arctica							
Vaucheriales							
Vaucheria							
Green							
Enteromorpha intestinalis							
Cladophora glomerata	100					10	
Characeae							
Chara baltica							
Chara tomentosa							
Chara sp.							
Tolypella nidifica.							
Phanerogams							
Callitriche spp.							
Myriophyllum spp.	+	+	25	50	5		
Potamogeton pectinatus	10	100	25	10			5
Potamogeton perfoliatus						25	25-50
Ranunculus spp.							
Ruppia sp.							
Zanichellia palustris							5
Najas maritima			25	50	100	50	10
Phragmites australis							
Tomt							
Botten	Block	Mkt mjuk	Lös	Lös	Lös	Grus/block/	Grus/block/
Övriga anmärkningar						sand	sand

Lokal: **TIXELFJÄRDEN**
ID-code **LFM000677 (sid 2 av 2)**
Datum: 2004-08-12
Klockslag start: 10:56
Klockslag slut: 11:55
Väder: Sol, enstaka moln. 0-1 m/s
Utförare: Micke Borgiel

		x-koordinat	**y-koordinat**
Transektlinjestart:	7C	6698370	1634750
Prel "transektslut":	7D	6698701	1634848
Transektbäring:	15°		

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
7C	6698370	1634750	0,5	24	0,0
231	6698378	1634750	1,1st 1,5 på WP	25-28	7,7
232	6698535	1634804	1,8	29	174,2
233	6698563	1634809	1,8		202,1
234	6698572	1634809	1,8		210,3
235	6698597	1634816	1,7		235,6
236	6698623	1634821	2,2		262,2
237	6698649	1634829	2,3		288,7
238	6698681	1634836	2,1		322,6
239	6698693	1634837	2,0		334,6
240	6698714	1634845	1,5		357,4
241	6698760	1634862	3,3		404,8
242	6698791	1634863	3,0		434,9
243	6698894	1634896	3,2		543,3

Täckning

Övriga anmärkningar

Transektsträcka	237-238	238-239	239-240	240-241	241-242	242-243	
Art							
Bluegreen							
Rivularia atra							
Red							
Ceramium tenuicorne							
Furcellaria lumbricalis							
Polyciphonia fuciodes							
Polyciphonia violacea							
Brown							
Pilayella littoralis							
Pilalyellaludd							
Chorda filum							
Fucus vesiculosus							
Vaucheriales							
Vaucheria				10	100	100	
Green							
Entromaorpha intestinalis		5	+	5			
Cladophora glomerata	5	10	50-75	5			
Characeae							
Chara baltica							
Chara tomentosa							
Chara sp.							
Tolypella nidifica.							
Phanerogams							
Callitriche spp.				+			
Myriophyllum spp.	5		+				
Potamogeton pectinatus			+	+			
Potamogeton perfoliatus	25	50	5	5	10		
Ranunculus spp.							
Ruppia sp.							
Zanichellia palustris	75	10					
Najas maritima	5	5		5		+	
Phragmites australis							
Tomt							
Botten	Sand, grus,	Sand, grus,	Block	Mjuk m.	Mjuk, enst	Mkt mjuk	
	block	block		block	block		
Övriga anmärkningar							

Lokal: **TIXELFJÄRDEN**
ID-code **LFM000678**
Datum: 2004-08-12
Klockslag start: 15:05
Klockslag slut: 15:57
Väder: Sol, enstaka moln. 0-1 m/s
Utförare: Micke Borgiel

		x-koordinat	y-koordinat
Transektlinjestart:	7F	6698562	1635039
Prel "transektslut":	7G	6698820	1635010
Transektbäring:	352°		

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
7F	6698562	1635039	0,0	45	0,0
244	6698566	1635040	1,2		4,3
245	6698602	1635036	1,6	46 och 47	40,5
246	6698612	1635035	1,6		50,0
247	6698630	1635033	1,7		68,1
248	6698643	1635031	1,7		81,1
249	6698683	1635026	1,9		121,8
250	6698725	1635029	2,1		163,6
251	6698823	1635013	2,8		262,0
252	6698847	1635015	2,7		285,8
253	6698872	1635011	2,8		310,9

Täckning

Transektsträcka	7F-244	244-245	245-246	246-247	247-248	248-249	249-250	250-251	251-252	252-253
Art										
Bluegreen										
Rivularia atra	5									
Red										
Ceramium tenuicorne										
Furcellaria lumbricalis										
Polysiphonia fucoides										
Polysiphonia fibrillosa										
Brown										
Pilayella littoralis										
Pilalyellaludd										
Chorda filum										
Fucus vesiculosus										
Sphacelaria arctica										
Vaucheriales										
Vaucheria										100
Green										
Enteromorpha intestinalis										
Cladophora glomerata	25									
Characeae										
Chara baltica				75				5		
Chara tomentosa		75-100	5	5	5	5	5			
Chara sp.						+	10			
Tolypella nidifica.			5							
Phanerogams										
Callitriche spp.									5	
Myriophyllum spp.		5	25	10	25	10	10	5		
Potamogeton pectinatus		5						+		
Potamogeton perfoliatus						+	5	5	10	+
Ranunculus spp.										
Ruppia sp.										
Zanichellia palustris			5	25	25	5	5	75	25	
Najas maritima							+			
Tomt										
Botten	Block	Lera, sand	Lera, sand	Lera, sand	Lera, sand	Lera, sand	Lera, sand	Lera, sand	Lera,	Utströmnsomr?
									mjukbotten	Kratrar 0,5 m.
Övriga anmärkningar										0,2 m djup

Lokal: **TIXELFJÄRDEN**
ID-code **LFM000679**
Datum: 2004-08-12
Klockslag start: 16:05
Klockslag slut: 16:21
Väder: Halvklart, sv 1-3 m/s
Utförare: Micke Borgiel

		x-koordinat	y-koordinat
Transektlinjestart:	7H	6698999	1635064
Prel "transektslut":	7I	6698867	1634918
Transektbäring:	225°		

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
7H	6698999	1635064	0,0	48	0,0
254	6699000	1635062	0,4		2,7
255	6698995	1635061	1,2		5,4
256	6698990	1635048	2,0		17,7
257	6698977	1635034	2,5		36,4
258	6698969	1635019	2,9		53,9
259	6698964	1635012	2,9		62,1
260	6698956	1634999	2,9		77,2

Täckning

Transektsträcka	7H-254	254-255	255-256	256-257	257-258	258-259	259-260	
Art								
Bluegreen								
Rivularia atra	5							
Red								
Ceramium tenuicorne								
Furcellaria lumbricalis								
Polysiphonia fucoides								
Polysiphonia fibrillosa								
Brown								
Pilayella littoralis	5							
Pilalyellaludd								
Lös pilayella		25						
Chorda filum								
Fucus vesiculosus								
Sphacelaria arctica								
Vaucheriales								
Vaucheria						100	100	
Green								
Enteromorpha intestinalis	5-10							
Cladophora glomerata	25							
Characeae								
Chara baltica								
Chara tomentosa			5					
Chara sp.	5	25-50						
Tolypella nidifica.								
Phanerogams								
Callitriche spp.			5					
Myriophyllum spp.		+	+	+				
Potamogeton pectinatus	5	5	5					
Potamogeton perfoliatus	5	5	5-10	5		5		
Ranunculus spp.								
Ruppia sp.								
Zanichellia palustris			5	10-25	75			
Najas maritima			5					
Tomt								
Botten	Småblock	Sten, grus	Sand	Sand	Sand	Mkt lös mjukb	Mkt lös mjukbotten	
Övriga anmärkningar	Sikt halvbra, sämre på djupet.							

Lokal:	**TIXELFJÄRDEN**		
ID-code	**LFM000680**		
Datum:	2004-08-12		
Klockslag start:	16:30		
Klockslag slut:	16:44		
Väder:	Halvklart, sv 1-3 m/s		
Utförare:	Micke Borgiel		
		x-koordinat	**y-koordinat**
Transektlinjestart:	7J	6699145	1635006
Prel "transektslut":	7K	6699078	1634942
Transektbäring:	221°		

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
7J	6699145	1635006	1,3	49	0,0
261	6699137	1634998	1,3		11,7
263	6699121	1634982	1,3		33,3
264	6699098	1634961	1,9		64,5
265	6699076	1634941	2,7		94,6

Täckning

Transektsträcka	7J-261	261-263	263-264	264-265
Art				
Bluegreen				
Rivularia atra				
Red				
Ceramium tenuicorne				
Furcellaria lumbricalis				
Polysiphonia fucoides				
Polysiphonia fibrillosa				
Brown				
Pilayella littoralis			10	
Pilalyellaludd				
Chorda filum				
Fucus vesiculosus				
Sphacelaria arctica				
Vaucheriales				
Vaucheria				100
Green				
Enteromorpha intestinalis				
Cladophora glomerata	5	5	5	
Characeae				
Chara baltica				
Chara tomentosa	+	5	5	
Chara sp.			5	
Tolypella nidifica.				
Phanerogams				
Callitriche spp.				
Myriophyllum spp.	25	5	5	+
Potamogeton pectinatus				
Potamogeton perfoliatus	5	5	5	
Ranunculus spp.				
Ruppia sp.				
Zanichellia palustris	25	50-75	5	
Najas maritima	5		+	
Tomt				
Botten	Lera, sand m.	Sand m. block	Småblock	Lös
	block		m. sten	
Övriga anmärkningar				

Lokal:	**TIXELFJÄRDEN**		
ID-code	**LFM000681**		
Datum:	2004-08-12		
Klockslag start:	17:40		
Klockslag slut:	17:56		
Väder:	Halvklart, sv 1-3 m/s		
Utförare:	Micke Borgiel		
		x-koordinat	**y-koordinat**
Transektlinjestart:	7L	6698868	1634717
Prel "transektslut":	7M	6698958	1634875
Transektbäring:	58°		

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
7L	6698868	1634717	0,4	50 och 51	0,0
266	6698888	1634743	1,4		32,6
267	6698899	1634771	2,5		61,5
268	6698914	1634805	3,4		98,5

Täckning

Transektsträcka	7L-266	266-267	267-268
Art			
Bluegreen			
Rivularia atra	5		
Red			
Ceramium tenuicorne			
Furcellaria lumbricalis			
Polysiphonia fucoides			
Polysiphonia fibrillosa			
Brown			
Pilayella littoralis	10		
Pilalyellaludd			
Chorda filum			
Fucus vesiculosus			
Sphacelaria arctica			
Vaucheriales			
Vaucheria		75	100
Green			
Enteromorpha intestinalis	+		
Cladophora glomerata	10-25	25	
Characeae			
Chara baltica			
Chara tomentosa			
Chara sp.			
Tolypella nidifica.			
Phanerogams			
Callitriche spp.			
Myriophyllum spp.	5		
Potamogeton pectinatus	+		+
Potamogeton perfoliatus	+		+
Ranunculus spp.			
Ruppia sp.			
Zanichellia palustris			
Najas maritima	5		+
Tomt			
Botten	Stora block,	Stora block på	
	grus	mkt lös botten	
Övriga anmärkningar		Dålig sikt	

Lokal:	**TIXELFJÄRDEN**		
ID-code	**LFM000682**		
Datum:	2004-08-12		
Klockslag start:	18:04		
Klockslag slut:	18:14		
Väder:	Halvklart, sv 1-3 m/s		
Utförare:	Micke Borgiel		
		x-koordinat	**y-koordinat**
Transektlinjestart:	7N	6699157	1634560
Prel "transektslut":	7O	6699100	1634638
Transektbäring:	125°		

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
7N	6699157	1634560	0,5	52-54	0,0
269	6699145	1634585	2,3		27,5
270	6699117	1634610	3,4 st 3,7 på WP		64,0

Täckning

Transektsträcka	7N-269	269-270
Art		
Bluegreen		
Rivularia atra	5	
Red		
Ceramium tenuicorne		
Furcellaria lumbricalis		
Polysiphonia fucoides		
Polysiphonia fibrillosa		
Brown		
Pilayella littoralis		
Pilalyellaludd		
Chorda filum		
Fucus vesiculosus		
Sphacelaria arctica		
Vaucheriales		
Vaucheria		
Green		
Enteromorpha intestinalis	5	
Cladophora glomerata	5-10	
Characeae		
Chara baltica		
Chara tomentosa		
Chara sp.		
Tolypella nidifica.		
Phanerogams		
Callitriche spp.	+	
Myriophyllum spp.	+	
Potamogeton pectinatus		
Potamogeton perfoliatus	5	
Ranunculus spp.		
Ruppia sp.		
Zanichellia palustris	5	
Najas maritima	+	
Tomt		100
Botten	Mjuk m. block	Lös
Övriga anmärkningar		

Lokal:	**TIXELFJÄRDEN**		
ID-code	**LFM000683**		
Datum:	2004-08-12		
Klockslag start:	18:45		
Klockslag slut:	18:30		
Väder:	Halvklart, sv 1-3 m/s		
Utförare:	Micke Borgiel		
		x-koordinat	**y-koordinat**
Transektlinjestart:	7P	6699273	1634650
Prel "transektslut":	7Q	6699169	1634759
Transektbäring:	132°		

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
7P	6699273	1634650	0,5	55 och 55	0,0
771	6699272	1634652	1,3		1,8
772	6699263	1634658	2,1		12,9
773	6699244	1634669	3,4		34,1
774	6699223	1634685	3,7		61,6

Täckning

Transektsträcka	7P-771	771-772	772-773	773-774
Art				
Bluegreen				
Rivularia atra	5			
Red				
Ceramium tenuicorne				
Furcellaria lumbricalis				
Polysiphonia fucoides				
Polysiphonia fibrillosa				
Brown				
Pilayella littoralis			5	
Pilalyellaludd				
Chorda filum				
Fucus vesiculosus				
Sphacelaria arctica				
Vaucheriales				
Vaucheria				
Green				
Enteromorpha intestinalis				
Cladophora glomerata	10-25	5	5	
Characeae				
Chara baltica				
Chara tomentosa				
Chara sp.				
Tolypella nidifica.				
Phanerogams				
Callitriche spp.		10		
Myriophyllum spp.				
Potamogeton pectinatus				
Potamogeton perfoliatus		10	+	
Ranunculus spp.				
Ruppia sp.				
Zanichellia palustris				
Najas maritima		+		
Tomt				100
Botten	Stora block	Stora block	Mjuk botten, stora block.	Mkt lös lera.
Övriga anmärkningar				

Lokal: **TIXELFJÄRDEN**
ID-code **LFM000684**
Datum: 2004-08-13
Klockslag start: 08:53
Klockslag slut: 09:30
Väder: Växlande molnighet, skurar. 10 m/s
Utförare: Micke Borgiel

		x-koordinat	y-koordinat
Transektlinjestart:	7R	6698868	1635232
Prel "transektslut":	7S	6699043	1635160
Transektbäring:	338°		

Waypoint	x-koordinat	y-koordinat	Djup (m)	Foto	Längd från startpt. (m)
7R	6698868	1635232	0,4	57-59	0,0
775	6698895	1635215	0,5		32,0
776	6698916	1635208	0,6		54,2
777	6698922	1635205	0,7		60,2
778	6698931	1635194	1,0		73,9
779	6698968	1635188	1,3		109,1
780	6698987	1635188	1,4		127,3
781	6699002	1635185	1,7		141,9
782	6699035	1635184	1,9		174,4
783	6699075	1635171	2,2		216,5
784	6699112	1635165	2,2		252,8

Täckning

Transektsträcka	7R-775	775-776	776-777	777-778	778-779	779-780	780-781	781-782	782-783	783-784	
Art											
Bluegreen											
Rivularia atra			5								
Red											
Ceramium tenuicorne											
Furcellaria lumbricalis											
Polyciphonia fuciodes											
Polyciphonia violacea											
Brown											
Pilayella littoralis											
Pilalyellaludd											
Lös pilayella			25-50	5							
Chorda filum											
Fucus vesiculosus											
Sphacelaria arctica											
Vaucheriales											
Vaucheria											
Green											
Enteromorpha intestinalis								+			
Cladophora glomerata			25-50	10							
Characeae											
Chara baltica											
Chara tomentosa	5	+			5-10	10	+				
Chara sp.					5	5	5				
Tolypella nidifica.											
Phanerogams									+	+	
Callitriche spp.											
Myriophyllum spp.		+	+	5	5-10	10		5			
Potamogeton pectinatus	10	5	5	10	+	10		+			
Potamogeton perfoliatus			5		5		5-10				
Ranunculus spp.								5	10	+	
Ruppia sp.											
Zanichellia palustris	10			5	5-10	5-10	5				
Najas maritima											
Tomt											
Botten	Lera/sand	Lera/sand	Block	Sand, grus,	Sand, grus,	Sand, enstaka	Sand	Lera/sand	Lera/sand	Lera, sand, grus	
				sten, block,	småblock	block					
Övriga anmärkningar				lera							

Lokal:	**TIXELFJÄRDEN**		
ID-code	**LFM000685**		
Datum:	2004-08-13		
Klockslag start:	10:10		
Klockslag slut:	10:30		
Väder:	Växlande molnighet, skurar. 10 m/s		
Utförare:	Micke Borgiel		
		x-koordinat	**y-koordinat**
Transektlinjestart:	7T	6698475	1634555
Prel "transektslut":	7U	6698582	1634525
Transektbäring:	343°		

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
7T	6698475	1634555	0,2	60	0,0
785	6698482	1634550	0,3		26,1
786	6698521	1634541	0,4		66,1
787	6698601	1634551	1,5		144,2

Täckning

Transektsträcka	7T-785	785-786	786-787
Art			
Bluegreen			
Rivularia atra			
Red			
Ceramium tenuicorne			
Furcellaria lumbricalis			
Polysiphonia fucoides			
Polysiphonia fibrillosa			
Brown			
Pilayella littoralis			
Pilalyellaludd			
Chorda filum			
Fucus vesiculosus			
Sphacelaria arctica			
Vaucheriales			
Vaucheria			
Green			
Enteromorpha intestinalis			
Cladophora glomerata			+
Characeae			
Chara baltica			
Chara tomentosa			5-10
Chara sp.			
Tolypella nidifica.			
Phanerogams			
Callitriche spp.			
Myriophyllum spp.			
Potamogeton pectinatus			+
Potamogeton perfoliatus			
Ranunculus spp.			
Ruppia sp.			
Zanichellia palustris			
Najas maritima	25-50	75	75-100
Tomt			
Botten	Mkt mjuk	Mkt mjuk, stora	Mkt mjuk, stora
		block	block
Övriga anmärkningar			

Lokal:	**KALLRIGA 1**				
ID-code	**LFM000686**				
Datum:	2004-08-17				
Klockslag start:	09:50				
Klockslag slut:	09:58				
Väder:	Mulet, s-v 0-2 m/s.				
Utförare:	Micke Borgiel				
		x-koordinat	**y-koordinat**	**Djup (m)**	**Foto**
Transektlinjestart:	8A	6696703	1636051	0,0	1
Prel "transektslut":	8B	6696584	1635966		
Transektbäring:	216°				

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
8A	6696703	1636051	0,0		0,0
789	6696690	1636043	1,7		15,8
790	6696654	1636020	1,8		58,3
791	6696589	1635961	2,5		145,5

Täckning

Transektsträcka	8A-789	789-790	790-791
Art			
Bluegreen			
Rivularia atra			
Red			
Ceramium tenuicorne			
Furcellaria lumbricalis			
Polysiphonia fucoides			
Polysiphonia fibrillosa			
Brown			
Pilayella littoralis			
Pilalyellaludd			
Chorda filum			
Fucus vesiculosus			
Sphacelaria arctica			
Vaucheriales			
Vaucheria			75-100
Green			
Enteromorpha intestinalis			
Cladophora glomerata	10		
Characeae			
Chara baltica			
Chara tomentosa			
Chara sp.			
Tolypella nidifica.			
Phanerogams			
Callitriche spp.			
Myriophyllum spp.	5		
Potamogeton pectinatus			
Potamogeton perfoliatus	5-10		
Ranunculus spp.	+	+	
Ruppia sp.			
Zanichellia palustris	5		
Najas maritima			
Tomt			
Botten	Sand, lera m.	Mjuk	Mjuk
	block	lerbotten	lerbotten.
Övriga anmärkningar	Siktdjup 1,4 m.		

Lokal: **KALLRIGA 1**
ID-code **LFM000687**
Datum: 2004-08-17
Klockslag start: 10:13
Klockslag slut: 10:50
Väder: Mulet, s-v 0-2 m/s.
Utförare: Micke Borgiel

		x-koordinat	y-koordinat	Djup (m)	Foto
Transektlinjestart:	8C	6696843	1635679	0,0	2
Prel "transektslut":	8D	6696743	1635735		
Transektbäring:	149°				

Waypoint	x-koordinat	y-koordinat	Djup (m)	Foto	Längd från startpt. (m)
8C	6696843	1635679	0,0		0,0
792	6696842	1635684	0,1		5,1
793	6696839	1635683	0,2		6,2
794	6696827	1635691	0,4	3,4,5	20,2
795	6696787	1635709	0,9	6	64,0
796	6696776	1635715	1,2		76,6
797	6696769	1635717	1,4		83,4
798	6696753	1635725	1,3		101,3
799	6696705	1635740	1,4		151,6
800	6696655	1635747	1,5		200,0

Täckning

Transektsträcka	8C-792	792-793	793-794	794-795	795-796	796-797	797-798	798-799	799-800
Art									
Bluegreen									
Rivularia atra	+								
Red									
Ceramium tenuicorne									
Furcellaria lumbricalis									
Polysiphonia fucoides									
Polysiphonia fibrillosa									
Brown									
Pilayella littoralis	+	50-75	50	+	5-10	5			
Pilalyellaludd									
Chorda filum									
Fucus vesiculosus									
Sphacelaria arctica									
Vaucheriales									
Vaucheria							50	100	100
Green									
Enteromorpha intestinalis	+					+			
Cladophora glomerata			5 (på block)	5 (på block)	25	10			
Characeae									
Chara baltica									
Chara tomentosa			+	5	10	5			
Chara aspera	+	50-75	75	75-100					
Tolypella nidifica.									
Phanerogams									
Callitriche spp.									
Myriophyllum spp.				+	10		25	+	+
Potamogeton pectinatus			+	+	5-10		25		
Potamogeton perfoliatus							25		
Ranunculus spp.									
Ruppia sp.									
Zanichellia palustris	5			5	5	25-50	5	5	+
Najas maritima			+	+					
Tomt									
Botten	ler/sand m.	ler/sand m.	ler/sand m.	ler/sand,	ler/sand,	sediment:3			mjuk
	småblock	småblock	småblock	enstaka block	enstaka block				lerbotten
Övriga anmärkningar									

Lokal: **KALLRIGA 1**
ID-code **LFM000688**
Datum: 2004-08-17
Klockslag start: 11:10
Klockslag slut: 11:32
Väder: Sol. S-v 0-2 m/s.
Utförare: Micke Borgiel

		x-koordinat	y-koordinat	Djup (m)	Foto
Transektlinjestart:	8E	6696410	1635207	0,2	7
Prel "transektslut":	8F	6696310	1635370		
Transektbäring:	120°				

Waypoint	x-koordinat	y-koordinat	Djup (m)	Foto	Längd från startpt. (m)
8E	6696410	1635207	0,2	7	0,0
801	6696408	1635209	0,3		3,0
802	6696393	1635245	0,5		41,3
803	6696374	1635268	0,8		70,9
804	6696372	1635275	0,9		77,3
805	6696357	1635285	1,1		94,1
806	6696331	1635309	1,4		128,7
807	6696308	1635342	1,5		168,6
808	6696288	1635370	1,5		203,6
809	6696271	1635393	1,6		321,9
810	6696228	1635437	2,1		293,4

Täckning

Transektsträcka	8E-801	801-802	802-803	803-804	804-805	805-806	806-807	807-808	808-809	809-810
Art										
Bluegreen										
Rivularia atra										
Red										
Ceramium tenuicorne										
Furcellaria lumbricalis										
Polysiphonia fucoides										
Polysiphonia fibrillosa										
Brown										
Pilayella littoralis							10	10		
Pilalyellaludd										
Chorda filum										
Fucus vesiculosus										
Sphacelaria arctica										
Vaucheriales										
Vaucheria							50	75	100	100
Green										
Enteromorpha intestinalis										
Cladophora glomerata							5			
Characeae										
Chara baltica										
Chara tomentosa			+	5	5	5				
Chara aspera	25-50	25-50	75-100	+						
Tolypella nidifica.										
Phanerogams										
Callitriche spp.										
Myriophyllum spp.				25	25-50	10	25	25	+	+
Potamogeton pectinatus			5	5	10	10				5
Potamogeton perfoliatus									5	
Ranunculus spp.										
Ruppia sp.										
Zanichellia palustris	+	+	+	+	+	10-25	50-75	25-50	10	
Najas maritima										
Tomt										
Botten	Sand med inslag av lera.					Sand med större inslag av lera.				
Övriga anmärkningar	Börjar i vasskant.									

Lokal: **KALLRIGA 1**
ID-code **LFM000689 (sid 1 av 2)**
Datum: 2004-08-17
Klockslag start: 14:06
Klockslag slut: 15:26
Väder: Halvklart. Nord 5 m/s.
Utförare: Roger Hounonen

		x-koordinat	y-koordinat	Djup (m)	Foto
Transektlinjestart:	8G	6695929	1635023	0,2	
Prel "transektslut":	8H	6695655	1634907		
Transektbäring:	202°				

Waypoint	x-koordinat	y-koordinat	Djup (m)	Foto	Längd från startpt. (m)
8G	6695929	1635023	0,2		0,0
811	6695919	1635024	0,4		9,8
812	6695909	1635029	0,5		20,9
813	6695899	1635025	0,7		30,1
814	6695822	1635034	0,9		48,3
815	6695861	1635030	1,2		68,8
816	6695842	1635021	1,4		86,9
817	6695823	1635019	1,4		106,0
818	6695730	1635010	1,5		199,8
819	6695685	1634987	1,5		247,0
820	6695679	1634994	1,1		252,1
821	6695643	1634980	1,4		289,1
822	6695583	1634958	1,7		351,7
823	6695536	1634941	1,6		401,0
824	6695515	1634930	1,6		424,2
825	6695499	1634927	1,3		440,2
826	6695490	1634924	0,7		449,7
827	6695478	1634917	0,0		463,0

Täckning

Transektsträcka	8G-811	811-812	812-813	813-814	814-815	815-816	816-817	817-818	
Art									
Bluegreen									
Rivularia atra									
Red									
Ceramium tenuicorne									
Furcellaria lumbricalis									
Polysiphonia fucoides									
Polysiphonia fibrillosa									
Brown									
Pilayella littoralis				+					
Pilalyellaludd									
Chorda filum									
Fucus vesiculosus									
Sphacelaria arctica									
Vaucheriales									
Vaucheria								100	
Green									
Enteromorpha intestinalis									
Cladophora glomerata									
Characeae									
Chara baltica									
Chara tomentosa									
Chara aspera	50	75	100	+					
Chara canescens	+								
Tolypella nidifica.									
Phanerogams									
Callitriche spp.									
Myriophyllum spp.		+		+	75	+	+	+	
Potamogeton pectinatus						5	50	5	
Potamogeton perfoliatus									
Portamogeton spp.									
Ranunculus spp.									
Ruppia sp.									
Zanichellia palustris		+		+	+			+	
Najas maritima	+	5	+	+				+	
Tomt									
Botten	sand/mjukb.	sand/mjukb.	sand/mjukb.	sand/mjukb.	sand	mjukbotten	mjukbotten	mjukbotten	
Övriga anmärkningar								dålig sikt	

Lokal: **KALLRIGA 1**
ID-code **LFM000689 (sid 2 av 2)**
Datum: 2004-08-17
Klockslag start: 14:06
Klockslag slut: 15:26
Väder: Halvklart. Nord 5 m/s.
Utförare: Roger Hounonen

		x-koordinat	y-koordinat	Djup (m)	Foto
Transektlinjestart:	8G	6695929	1635023	0,2	
Prel "transektslut":	8H	6695655	1634907		
Transektbäring:	202°				

Waypoint	x-koordinat	y-koordinat	Djup (m)	Foto	Längd från startpt. (m)
8G	6695929	1635023	0,2		0,0
811	6695919	1635024	0,4		9,8
812	6695909	1635029	0,5		20,9
813	6695899	1635025	0,7		30,1
814	6695822	1635034	0,9		48,3
815	6695861	1635030	1,2		68,8
816	6695842	1635021	1,4		86,9
817	6695823	1635019	1,4		106,0
818	6695730	1635010	1,5		199,8
819	6695685	1634987	1,5		247,0
820	6695679	1634994	1,1		252,1
821	6695643	1634980	1,4		289,1
822	6695583	1634958	1,7		351,7
823	6695536	1634941	1,6		401,0
824	6695515	1634930	1,6		424,2
825	6695499	1634927	1,3		440,2
826	6695490	1634924	0,7		449,7
827	6695478	1634917	0,0		463,0

Täckning

Transektsträcka	818-819	819-820	820-821	821-822	822-823	823-824	824-825	825-826	826-827
Art									
Bluegreen									
Rivularia atra									5
Red									
Ceramium tenuicorne									
Furcellaria lumbricalis									
Polyciphonia fuciodes									
Polyciphonia violacea									
Brown									
Pilayella littoralis									5
Pilalyellaludd									
Chorda filum									
Fucus vesiculosus									
Sphacelaria arctica									
Vaucheriales									
Vaucheria	100	100		100	+				
Green									
Enteromorpha intestinalis									+
Cladophora glomerata			+						
Characeae									
Chara baltica									
Chara tomentosa			+				5	+	5
Chara aspera								+	75
Tolypella nidifica.									
Phanerogams									
Callitriche spp.									
Myriophyllum spp.	+		+	+	+	25	5	100	
Potamogeton pectinatus	5	+	5	10	+		10		5
Potamogeton perfoliatus									
Potamogeton spp.					+				
Ranunculus spp.									
Ruppia sp.									
Zanichellia palustris	5	+	+	+	+	+	25		+
Najas maritima	+	+		+	+	+			
Tomt									
Botten	mjukbotten	mjukbotten	sten m.	mjukbotten	mjukbotten	mjukbotten	mjukbotten	sten	sten
			sediment				m. sten		
Övriga anmärkningar									

Lokal: **KALLRIGA 1**
ID-code **LFM000690**
Datum: 2004-08-17
Klockslag start: 15:41
Klockslag slut: 16:25
Väder: Halvklart. Nord 5 m/s.
Utförare: Roger Hounonen

		x-koordinat	y-koordinat	Djup (m)	Foto
Transektlinjestart:	8I	6695585	1634591	0,1	11-17
Prel "transektslut":	8J	6695584	1634935		
Transektbäring:	85°				

Waypoint	x-koordinat	y-koordinat	Djup (m)	Foto	Längd från startpt. (m)
8I	6695585	1634591	0,1	11-17	0,0
828	6695570	1634714	0,3		124,2
829	6695572	1634770	1,2		179,6
830	6695584	1634839	1,5		247,3
831	6695580	1634863	1,6		271,3
832	6695582	1634932	1,6		340,6
833	6695580	1634943	1,6		350,2
834	6695578	1634970	1,6		378,6

Täckning

Transektsträcka	8I-828	828-829	829-830	830-831	831-832	832-833	833-834
Art							
Bluegreen							
Rivularia atra							
Red							
Ceramium tenuicorne							
Furcellaria lumbricalis							
Polysiphonia fucoides							
Polysiphonia fibrillosa							
Brown							
Pilayella littoralis							
Pilalyellaludd							
Chorda filum							
Fucus vesiculosus							
Sphacelaria arctica							
Vaucheriales							
Vaucheria			+			5	+
Green							
Enteromorpha intestinalis							
Cladophora glomerata							
Characeae							
Chara baltica							
Chara tomentosa		5	75-100	100	100	5	
Chara aspera	5	75-100	5				
Tolypella nidifica.							
Phanerogams							
Callitriche spp.							
Myriophyllum spp.		+	+	25	+	5	+
Potamogeton pectinatus	5	5	+				+
Potamogeton perfoliatus							
Ranunculus spp.							
Ruppia sp.							
Zanichellia palustris							
Najas maritima	+	5			+		plus(+) - 5
Tomt							
Botten	sand/lera	sand/lera	mjukbotten	mjukbotten	mjukbotten	mjukbotten	mjukbotten
Övriga anmärkningar	Betskador.Korna äter upp växterna?						

Lokal:	**KALLRIGA 1**				
ID-code	**LFM000691 (Sid 1 av 2)**				
Datum:	2004-08-17				
Klockslag start:	16:48				
Klockslag slut:	17:40				
Väder:	Halvklart. Nord 5 m/s.				
Utförare:	Roger Hounonen				
		x-koordinat	**y-koordinat**	**Djup (m)**	**Foto**
Transektlinjestart:	8K	6694960	1634965	1,6	18
Prel "transektslut":	8L	6695544	1635085		
Transektbäring:	10°				

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
8K	6694960	1634965	1,6	18	0,0
835	6694976	1634964	1,6		16,0
836	6695012	1634968	1,6		53,1
837	6695202	1635002	1,6		245,4
838	6695241	1635014	1,5		285,2
839	6695325	1635043	1,4		373,3
840	6695356	1635052	0,7		404,8
841	6695406	1635090	1,0		463,0
842	6695416	1635088	1,1		471,9
843	6695426	1635090	1,7		482,1
844	6695449	1635093	1,8		505,3
845	6695469	1635095	1,8		525,3
846	6695493	1635103	1,8		549,6

Täckning

Transektsträcka	8K-835	835-836	836-837	837-838	838-839	839-840
Art						
Bluegreen						
Rivularia atra						
Red						
Ceramium tenuicorne						
Furcellaria lumbricalis						
Polysiphonia fucoides						
Polysiphonia fibrillosa						
Brown						
Pilayella littoralis						
Pilalyellaludd						
Chorda filum						
Fucus vesiculosus						
Sphacelaria arctica						
Vaucheriales						
Vaucheria						
Green						
Enteromorpha intestinalis						
Cladophora glomerata					plus-5	+
Characeae						
Chara baltica						
Chara tomentosa	+	100	75-100	75-100	+	25
Chara aspera					75-100	50
Tolypella nidifica.						
Phanerogams						
Callitriche spp.						
Myriophyllum spp.					+	
Potamogeton pectinatus	5	+	5-10	+	5	
Potamogeton perfoliatus						
Ranunculus spp.						
Ruppia sp.						
Zanichellia palustris						
Najas maritima					+	+
Tomt						
Botten	mjukbotten	mjukbotten	mjukbotten	mjukb m. block	mjukb m. ste	nblock

Lokal: **KALLRIGA 1**
ID-code **LFM000691 (sid 2 av 2)**
Datum: 2004-08-17
Klockslag start: 16:48
Klockslag slut: 17:40
Väder: Halvklart. Nord 5 m/s.
Utförare: Roger Hounonen

		x-koordinat	y-koordinat	Djup (m)	Foto
Transektlinjestart:	8K	6694960	1634965	1,6	18
Prel "transektslut":	8L	6695544	1635085		
Transektbäring:	10°				

Waypoint	x-koordinat	y-koordinat	Djup (m)	Foto	Längd från startpt. (m)
8K	6694960	1634965	1,6	18	0,0
835	6694976	1634964	1,6		16,0
836	6695012	1634968	1,6		53,1
837	6695202	1635002	1,6		245,4
838	6695241	1635014	1,5		285,2
839	6695325	1635043	1,4		373,3
840	6695356	1635052	0,7		404,8
841	6695406	1635090	1,0		463,0
842	6695416	1635088	1,1		471,9
843	6695426	1635090	1,7		482,1
844	6695449	1635093	1,8		505,3
845	6695469	1635095	1,8		525,3
846	6695493	1635103	1,8		549,6

Täckning

Transektsträcka	840-841	841-842	842-843	843-844	844-845	845-846
Art						
Bluegreen						
Rivularia atra						
Red						
Ceramium tenuicorne						
Furcellaria lumbricalis						
Polysiphonia fucoides						
Polysiphonia fibrillosa						
Brown						
Pilayella littoralis	10 (lös?)					
Pilalyellaludd						
Chorda filum						
Fucus vesiculosus						
Sphacelaria arctica						
Vaucheriales						
Vaucheria						100
Green						
Enteromorpha intestinalis						
Cladophora glomerata	5					
Characeae						
Chara baltica						
Chara tomentosa	+					
Chara aspera	50					
Tolypella nidifica.						
Phanerogams						
Callitriche spp.						
Myriophyllum spp.	+	25	75	5	+	
Potamogeton pectinatus	5	25				
Potamogeton perfoliatus				+	10	
Ranunculus spp.						
Ruppia sp.						
Zanichellia palustris	+					
Najas maritima						
Tomt						
Botten	stenbotten	sten/mjukb.	sten/mjukb.	mjukb.	mjukb.	mjukb.

Lokal:	**KALLRIGA 1**				
ID-code	**LFM000692**				
Datum:	2004-08-18				
Klockslag start:	08:50				
Klockslag slut:	09:00				
Väder:	Regn. Ost 2-3 m/s.				
Utförare:	Micke Borgiel				
		x-koordinat	**y-koordinat**	**Djup (m)**	**Foto**
Transektlinjestart:	8M	6696058	1635908	0,0	21
Prel "transektslut":	8N	6696176	1635851		
Transektbäring:	334°				

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
8M	6696058	1635908	0,0	21	0,0
847	6696072	1635902	2,0		15,8
848	6696087	1635891	3,3		33,5
849	6696223	1635802	3,7		195,9

Täckning

Transektsträcka	8M-847	847-848	848-849
Art			
Bluegreen			
Rivularia atra	5		
Red			
Ceramium tenuicorne			
Furcellaria lumbricalis			
Polysiphonia fucoides			
Polysiphonia fibrillosa			
Brown			
Pilayella littoralis	5		
Pilalyellaludd			
Chorda filum			
Fucus vesiculosus			
Sphacelaria arctica			
Vaucheriales			
Vaucheria			
Green			
Enteromorpha intestinalis			
Cladophora glomerata	5		
Characeae			
Chara baltica			
Chara tomentosa			
Chara sp.			
Tolypella nidifica.			
Phanerogams			
Callitriche spp.	+		
Myriophyllum spp.	+		
Potamogeton pectinatus			
Potamogeton perfoliatus	5	+	
Ranunculus spp.	+		
Ruppia sp.			
Zanichellia palustris	5		
Najas maritima			
Tomt			100
Botten	sand/block	mjuk m. sten	mjuk, enstaka
		och block	stenar
Övriga anmärkningar	Sikt: 1,7m.		

Lokal: **KALLRIGA 1**
ID-code **LFM000693**
Datum: 2004-08-18
Klockslag start: 09:05
Klockslag slut: 09:33
Väder: Mulet. Ost 2-3 m/s.
Utförare: Micke Borgiel

		x-koordinat	y-koordinat	Djup (m)	Foto
Transektlinjestart:	8O	6695885	1635737	0,0	22
Prel "transektslut":	8P	6696024	1635626		
Transektbäring:	320°				

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
8O	6695885	1635737	0,0	22	0,0
850	6695888	1635736	0,9		3,5
851	6695905	1635732	1,5		21,3
852	6695912	1635729	1,5		28,9
853	6695926	1635722	1,6		43,9
854	6695957	1635710	1,9		77,9
855	6695987	1635697	1,9		110,0
856	6696005	1635690	2,0		129,3
857	6696071	1635656	2,3		203,4
858	6696111	1635635	2,3		247,5
859	6696147	1635620	2,7		287,1
860	6696175	1635614	2,8		315,0
861	6696181	1635614	2,8		320,9

Täckning

Transektsträcka	8O-850	850-851	851-852	852-853	853-854	854-855	855-856	856-857	857-858	858-859	859-860	860-861
Art												
Bluegreen												
Rivularia atra	10											
Red												
Ceramium tenuicorne												
Furcellaria lumbricalis												
Polysiphonia fucoides												
Polysiphonia fibrillosa												
Brown												
Pilayella littoralis	10											
Pilalyellaludd												
Chorda filum												
Fucus vesiculosus												
Sphacelaria arctica												
Vaucheriales												
Vaucheria									100	100	100	100
Green												
Enteromorpha intestinalis	5											
Cladophora glomerata	25-50											
Characeae												
Chara baltica												
Chara tomentosa												
Chara sp.		5			5							
Tolypella nidifica.												
Phanerogams												
Callitriche spp.		+	5	5	10	25	5	5				
Myriophyllum spp.		+		5	5	5	+	10-25				
Potamogeton pectinatus												
Potamogeton perfoliatus		10-25		5	5	10	75	25	5-10	5		
Ranunculus spp.						5	+					
Ruppia sp.												
Zanichellia palustris		10-25	75	10-25	10-25	5						
Najas maritima												
Botten	häll m. block	sand m. block	sand	sand	sand	sand	sand/lerb	mjukb.	mjukb.	mjukb.	mjukb.	mjukb.
Övriga anmärkningar												

Lokal: **KALLRIGA 1**
ID-code **LFM000694**
Datum: 2004-08-18
Klockslag start: 09:45
Klockslag slut: 10:08
Väder: Mulet. Ost 2-3 m/s.
Utförare: Micke Borgiel

		x-koordinat	y-koordinat	Djup (m)	Foto
Transektlinjestart:	8Q	6695930	1635395	0,2	23,24
Prel "transektslut":	8R	6695043	1635466		
Transektbäring:	30°				

Waypoint	x-koordinat	y-koordinat	Djup (m)	Foto	Längd från startpt. (m)
8Q	6695930	1635395	0,2	23,24	0,0
862	6695934	1635397	1,3		4,7
863	6695946	1635410	1,6		21,9
864	6695972	1635433	1,7		55,9
865	6695994	1635449	1,9		83,5
866	6696021	1635467	1,9		115,7
867	6696064	1635497	2,0		167,3
868	6696190	1635595	2,7		327,1

Täckning

Transektsträcka	8Q-862	862-863	863-864	864-865	865-866	866-867	867-868
Art							
Bluegreen							
Rivularia atra	5-10						
Red							
Ceramium tenuicorne							
Furcellaria lumbricalis							
Polysiphonia fucoides							
Polysiphonia fibrillosa							
Brown							
Pilayella littoralis							
Pilalyellaludd							
Chorda filum							
Fucus vesiculosus							
Sphacelaria arctica							
Vaucheriales							
Vaucheria					100	100	100
Green							
Enteromorpha intestinalis							
Cladophora glomerata	25						
Characeae							
Chara baltica							
Chara tomentosa							
Chara aspera	5						
Tolypella nidifica.							
Phanerogams							
Callitriche spp.		25	25-50	5			
Myriophyllum spp.		5	5	5	5	5	+
Potamogeton pectinatus	5						
Potamogeton perfoliatus	+	10-25	5	25-50	5	5	5
Ranunculus spp.			+				
Ruppia sp.							
Zanichellia palustris	5	5	5				
Najas maritima							
Tomt							
Botten	sten och block	ler/sand m.	ler/sand m.	mjukb.	mjukb.	mjukb.	mjukb.
		enstaka block	enstaka block				
Övriga anmärkningar							

Lokal: **KALLRIGA 1**
ID-code **LFM000695**
Datum: 2004-08-18
Klockslag start: 11:11
Klockslag slut: 11:26
Väder: Halvklart. Ost 2-3 m/s.
Utförare: Micke Borgiel

		x-koordinat	y-koordinat	Djup (m)	Foto
Transektlinjestart:	8S	6695754	1635251	0,2	25
Prel "transektslut":	8T	6695864	1635181		
Transektbäring:	325°				

Waypoint	x-koordinat	y-koordinat	Djup (m)	Foto	Längd från startpt. (m)
8S	6695754	1635251	0,2	25	0,0
869	6695755	1635252	0,8		1,1
870	6695783	1635246	0,8		29,4
871	6695816	1635230	0,8		65,6
872	6695834	1635224	0,7		84,5
873	6695845	1635215	0,7		98,2
874	6695872	1635200	0,5		128,7
875	6695880	1635195	0,3		137,4

Täckning

Transektsträcka	8S-869	869-870	870-871	871-872	872-873	873-874	874-875
Art							
Bluegreen							
Rivularia atra	5						
Red							
Ceramium tenuicorne							
Furcellaria lumbricalis							
Polysiphonia fucoides							
Polysiphonia fibrillosa							
Brown							
Pilayella littoralis							
Pilalyellaludd							
Chorda filum							
Fucus vesiculosus							
Sphacelaria arctica							
Vaucheriales							
Vaucheria							
Green							
Enteromorpha intestinalis							
Cladophora glomerata	5						
Characeae							
Chara baltica							
Chara tomentosa		5	5	5	5	5	
Chara aspera	+	5-10	5-10	50-75	25	75	75-100
Tolypella nidifica.							
Phanerogams							
Callitriche spp.							
Myriophyllum spp.		+	5	5		+	
Potamogeton pectinatus		10	5-10	10	100	10-25	+
Potamogeton perfoliatus							
Ranunculus spp.							
Ruppia sp.							
Zanichellia palustris							+
Najas maritima	5					5	5
Tomt							
Botten	block m. lera	lersand	lersand	mjukb/ler/sand	mjukb/ler/sand	sand/lera	sand/lera enstaka

Lokal: **KALLRIGA 1**
ID-code **LFM000696**
Datum: 2004-08-18
Klockslag start: 14:45
Klockslag slut: 15:29
Väder: Halvmulet. 0-1 m/s.
Utförare: Micke Borgiel

		x-koordinat	y-koordinat	Djup (m)	Foto
Transektlinjestart:	8U	6695578	1635389	0,0	26
Prel "transektslut":	8V	6695722	1635287		
Transektbäring:	322°				

Waypoint	x-koordinat	y-koordinat	Djup (m)	Foto	Längd från startpt. (m)
8U	6695578	1635389	0,0	26	0,0
877	6695579	1635386	1,2		2,7
878	6695586	1635385	1,2		8,9
879	6695594	1635383	1,2		17,1
880	6695628	1635367	1,5		53,8
881	6695681	1635328	1,8		119,7
882	6695704	1635303	1,8		152,3
883	6695708	1635300	1,8		157,0
884	6695715	1635290	1,6		169,1
885	6695728	1635270	1,0		191,1
886	6695727	1635264	0,3		194,4

Täckning

Transektsträcka	8U-877	877-878	878-879	879-880	880-881	881-882	882-883	883-884	884-885	885-886
Art										
Bluegreen										
Rivularia atra										5
Red										
Ceramium tenuicorne										
Furcellaria lumbricalis										
Polysiphonia fucoides										
Polysiphonia fibrillosa										
Brown										
Pilayella littoralis										
Pilalyellaludd										5
Chorda filum										
Fucus vesiculosus										
Sphacelaria arctica										
Vaucheriales										
Vaucheria							50-75			
Green										
Enteromorpha intestinalis										5
Cladophora glomerata	25							5	5	10-25
Characeae										
Chara baltica										
Chara tomentosa						+			5	
Chara aspera		75-100	5		10					5-10
Tolypella nidifica.										
Phanerogams										
Callitriche spp.					5	5	5	5	5	
Myriophyllum spp.		+		5	5	5-10				
Potamogeton pectinatus					+				5	
Potamogeton perfoliatus				25	5	5-10	5	5	5	
Ranunculus spp.					+	5	25	25	10	
Ruppia sp.										
Zanichellia palustris			75	5	100	5	5		10	5
Najas maritima										5
Tomt										
Botten	häll	sand/lera m.	mjukb.	mjukb.	sand/lera	sand/lera	mjukb.	mjukb m.	ler/sand	block
		block						enst	m.enst block	
Övriga anmärkningar	Dålig sikt, bättre mot slutet av transekten.							block		

Lokal: **KALLRIGA 2**
ID-code **LFM000697**
Datum: 2004-08-18
Klockslag start: 15:57
Klockslag slut: 16:13
Väder: Halvmulet. S-v 0-1 m/s.
Utförare: Micke Borgiel

		x-koordinat	y-koordinat	Djup (m)	Foto
Transektlinjestart:	9A	6694975	1636025	0,5	27
Prel "transektslut":	9B	6694937	1636057		
Transektbäring:	142°				

Waypoint	x-koordinat	y-koordinat	Djup (m)	Foto	Längd från startpt. (m)
9A	6694975	1636025	0,5	27	0,0
888	6694973	1636033	2,2		8,0
889	6694952	1636046	3,0		30,8
890	6694863	1636098	3,9		133,1

Täckning

Transektsträcka	9A-888	888-889	889-890
Art			
Bluegreen			
Rivularia atra	5		
Red			
Ceramium tenuicorne			
Furcellaria lumbricalis			
Polysiphonia fucoides			
Polysiphonia fibrillosa			
Brown			
Pilayella littoralis			
Pilalyellaludd			
Chorda filum			
Fucus vesiculosus			
Sphacelaria arctica			5
Vaucheriales			
Vaucheria		100	
Green			
Enteromorpha intestinalis			
Cladophora glomerata	5-10	5	
Characeae			
Chara baltica			
Chara tomentosa			
Chara sp.			
Tolypella nidifica.			
Phanerogams			
Callitriche spp.			
Myriophyllum spp.			
Potamogeton pectinatus			+
Potamogeton perfoliatus		5	
Ranunculus spp.			
Ruppia sp.			
Zanichellia palustris			
Najas maritima			
Tomt			
Botten	mjuk m. stora	mjuk m. stora	sten, stora
	block	block	block
Övriga anmärkningar	Dålig sikt.		

Lokal:	**KALLRIGA 2**				
ID-code	**LFM000698**				
Datum:	2004-08-18				
Klockslag start:	16:24				
Klockslag slut:	16:40				
Väder:	Halvmulet.s-v 0-1m/s.				
Utförare:	Micke Borgiel				
		x-koordinat	**y-koordinat**	**Djup (m)**	**Foto**
Transektlinjestart:	9C	6695007	1636469	0,6	28
Prel "transektslut":	9D	6695094	1636372		
Transektbäring:	310°				

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
9C	6695007	1636469	0,6	28	0,0
891	6695013	1636459	0,9		12,0
892	6695032	1636434	1,4		43,2
893	6695040	1636427	1,6		54,0
894	6695051	1636406	2,4		76,9
895	6695058	1636390	2,8		94,2
896	6695071	1636361	3,5		126,0

Täckning

Transektsträcka	9C-891	891-892	892-893	893-894	894-895	895-896
Art						
Bluegreen						
Rivularia atra						
Red						
Ceramium tenuicorne						
Furcellaria lumbricalis						
Polysiphonia fucoides						
Polysiphonia fibrillosa						
Brown						
Pilayella littoralis						
Pilalyellaludd						
Chorda filum						
Fucus vesiculosus						
Sphacelaria arctica						
Vaucheriales						
Vaucheria						
Green						
Enteromorpha intestinalis						
Cladophora glomerata						
Characeae						
Chara baltica						
Chara tomentosa						
Chara aspera	75-100	10	25-50	5		
Tolypella nidifica.						
Phanerogams						
Callitriche spp.				5		
Myriophyllum spp.		+				
Potamogeton pectinatus	5	5				
Potamogeton perfoliatus		5-10	10	25	+	
Ranunculus spp.	+					
Ruppia sp.						
Zanichellia palustris				25		
Najas maritima						
Tomt						100
Botten	sand m. sten	sand	sand m.	sand m.	sten/grus	sand/lera
			småblock	småblock		
Övriga anmärkningar	Dålig sikt.					

Lokal: **KALLRIGA 2**
ID-code **LFM000699**
Datum: 2004-08-18
Klockslag start: 17:46
Klockslag slut: 18:11
Väder: Halvmulet.s-v 0-1m/s.
Utförare: Roger Hounonen

		x-koordinat	y-koordinat	Djup (m)	Foto
Transektlinjestart:	9E	6695311	1636580	0,0	29
Prel "transektslut":	9F	6695533	1635756		
Transektbäring:	283°				

Waypoint	x-koordinat	y-koordinat	Djup (m)	Foto	Längd från startpt. (m)
9E	6695311	1636580	0,0	29	0,0
897	6695313	1636574	0,8		6,5
898	6695316	1636569	1,2		12,3
899	6695315	1636560	1,6		20,6
900	6695317	1636545	2,7		35,7
901	6695323	1636526	3,2		54,8
902	6695313	1636513	3,6		66,4

Täckning

Transektsträcka	9E-897	897-898	898-899	899-900	900-901	901-902
Art						
Bluegreen						
Rivularia atra						
Red						
Ceramium tenuicorne						
Furcellaria lumbricalis						
Polysiphonia fucoides						
Polysiphonia fibrillosa						
Brown						
Pilayella littoralis						
Pilalyellaludd						
Chorda filum						
Fucus vesiculosus						
Sphacelaria arctica						
Vaucheriales						
Vaucheria						
Green						
Enteromorpha intestinalis						
Cladophora glomerata	5					
Characeae						
Chara baltica						
Chara tomentosa						
Chara sp.				+		
Tolypella nidifica.						
Phanerogams						
Callitriche spp.		+		+		
Myriophyllum spp.	+	50	+			
Potamogeton pectinatus					+	
Potamogeton perfoliatus		+	25			
Ranunculus spp.				+	+	
Ruppia sp.						
Zanichellia palustris	10	10	5	+		
Najas maritima						
Tomt						100
Botten	grus/sten/sand	grus/sand	grus/sand	grus/sand	sand	sand/mjukb.
		inslag av sten				
Övriga anmärkningar						Mkt dålig sikt.

Lokal:	**KALLRIGA 2**				
ID-code	**LFM000700**				
Datum:	2004-08-18				
Klockslag start:	18:17				
Klockslag slut:	18:35				
Väder:	Sol. 0 m/s.				
Utförare:	Roger Hounonen				
		x-koordinat	**y-koordinat**	**Djup (m)**	**Foto**
Transektlinjestart:	9G	6695155	1636528	0,2	30
Prel "transektslut":	9H	6695611	1636848		
Transektbäring:	301°				

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**ıgd från startpt. (m)**
9G	6695155	1636528	0,2	30	0,0
903	6695159	1636531	0,6		4,3
904	6695159	1636524	0,7		5,8
905	6695172	1636522	1,2		18,0
906	6695184	1636511	1,8		33,4
907	6695195	1636498	2,4		49,5
908	6695193	1636493	2,7		50,6
909	6695204	1636479	3,0		69,2

Täckning

Transektsträcka	9G-903	903-904	904-905	905-906	906-907	907-908	908-909
Art							
Bluegreen							
Rivularia atra							
Red							
Ceramium tenuicorne							
Furcellaria lumbricalis							
Polysiphonia fucoides							
Polysiphonia fibrillosa							
Brown							
Pilayella littoralis				10			
Pilalyellaludd							
Chorda filum							
Fucus vesiculosus							
Sphacelaria arctica							
Vaucheriales							
Vaucheria					50		
Green							
Enteromorpha intestinalis							
Cladophora glomerata	50						
Characeae							
Chara baltica							
Chara tomentosa							
Chara aspera		100		10	50		
Tolypella nidifica.							
Phanerogams							
Callitriche spp.					10		
Myriophyllum spp.			50	+			
Potamogeton pectinatus	+		5				
Potamogeton perfoliatus			+	10	5	25	
Ranunculus spp.							
Ruppia sp.							
Zanichellia palustris	+			+	5		
Najas maritima							
Tomt							100
Botten	sten	grus	sand	sand	sand	sand	sand
Övriga anmärkningar							

Lokal: **KALLRIGA 2**
ID-code **LFM000701**
Datum: 2004-08-19
Klockslag start: 08:20
Klockslag slut: 08:47
Väder: Halvmulet. Ost 4-5 m/s.
Utförare: Micke Borgiel

		x-koordinat	y-koordinat	Djup (m)	Foto
Transektlinjestart:	9I	6694283	1635262	0,0	37
Prel "transektslut":	9J	6694163	1635397		
Transektbäring:	130°				

Waypoint	x-koordinat	y-koordinat	Djup (m)	Foto	Längd från startpt. (m)
9I	6694283	1635262	0,0	37	0,0
911	6694280	1635268	0,1		7,2
912	6694276	1635270	0,5		11,7
913	6694269	1635279	0,9		22,7
914	6694269	1635288	1,2		29,8
915	6694260	1635302	1,9		47,2
916	6694226	1635336	2,2		93,7
917	6694214	1635356	2,2		116,7
918	6694175	1635398	2,5		174,1
919	6694135	1635442	2,7		233,0

Täckning

Transektsträcka	9I-911	911-912	912-913	913-914	914-915	915-916	916-917	917-918	918-919
Art									
Bluegreen									
Rivularia atra									
Red									
Ceramium tenuicorne									
Furcellaria lumbricalis									
Polysiphonia fucoides									
Polysiphonia fibrillosa									
Brown									
Pilayella littoralis	75 ("påväxt" på chara)								
Pilalyellaludd									
Chorda filum									
Fucus vesiculosus									
Sphacelaria arctica									
Vaucheriales									
Vaucheria			100	100					
Green									
Enteromorpha intestinalis	+								
Cladophora glomerata		5							
Characeae									
Chara baltica									
Chara tomentosa									
Chara aspera	5	75-100							
Tolypella nidifica.									
Phanerogams									
Callitriche spp.			10	50	5	5			
Myriophyllum spp.		5							
Potamogeton pectinatus									
Potamogeton perfoliatus		5	10-25	10	50	5-10	5	+	+
Ranunculus spp.						+			
Ruppia sp.									
Zanichellia palustris	+	10	25	50	10	5			
Najas maritima									
Hippuris vulgaris		+	10						
Tomt									
Botten	sand/grus/	sand/sten enstaka småblock		ler/sand m.	mjukb.	ler/sand	ler/sand	ler/sand	ler/sand
	sten			sten					
Övriga anmärkningar	God sikt tom WP 914.								

ID-code	**LFM000702**				
Datum:	2004-08-19				
Klockslag start:	09:55				
Klockslag slut:	10:08				
Väder:	Mulet. Ost 7 m/s.				
Utförare:	Micke Borgiel				
		x-koordinat	**y-koordinat**	**Djup (m)**	**Foto**
Transektlinjestart:	9K	6695865	1636099	0,0	38
Prel "transektslut":	9L	6695772	1636183		
Transektbäring:	135°				

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
9K	6695865	1636099	0,0	38	0,0
920	6695857	1636104	0,7		8,9
921	6695833	1636131	2,4		45,0
922	6695818	1636152	2,9		70,0
923	6695811	1636154	2,9		76,4
924	6695806	1636168	4,0		90,2

Täckning

Transektsträcka	9K-920	920-921	921-922	922-923	923-924
Art					
Bluegreen					
Rivularia atra	5				
Red					
Ceramium tenuicorne					
Furcellaria lumbricalis					
Polysiphonia fucoides					
Polysiphonia fibrillosa					
Brown					
Pilayella littoralis	50-75				
Pilalyellaludd					
Chorda filum					
Fucus vesiculosus					
Sphacelaria arctica			10	10	5
Vaucheriales					
Vaucheria					
Green					
Enteromorpha intestinalis	5				
Cladophora glomerata	10	10-25			
Characeae					
Chara baltica					
Chara tomentosa					
Chara aspera	25-50				
Tolypella nidifica.					
Phanerogams					
Callitriche spp.		+			
Myriophyllum spp.		+			
Potamogeton pectinatus		10			
Potamogeton perfoliatus		10	+		
Ranunculus spp.					
Ruppia sp.					
Zanichellia palustris	+	+			
Najas maritima					
"Beggiatoa"		5	10		
Tomt					
Botten	sten/block	sand m. block	block m. sand	block	block
Övriga anmärkningar					

Lokal: **KALLRIGA 2**
ID-code **LFM000703**
Datum: 2004-08-19
Klockslag start: 10:24
Klockslag slut: 10:48
Väder: Mulet. Ost 7 m/s.
Utförare: Micke Borgiel

		x-koordinat	y-koordinat	Djup (m)	Foto
Transektlinjestart:	9M	6694940	1635223	0,0	39
Prel "transektslut":	9N	6694965	1635409		
Transektbäring:	84°				

Waypoint	x-koordinat	y-koordinat	Djup (m)	Foto	Längd från startpt. (m)
9M	6694940	1635223	0,0	39	0,0
925	6694940	1635232	0,9		9,5
926	6694943	1635267	1,4		44,0
929	6694949	1635306	1,6		82,7
930	6694957	1635340	2,0		117,7
931	6694970	1635372	2,7		151,0
932	6694976	1635405	3,1		184,8
933	6694986	1635458	3,4		238,4

Täckning

Transektsträcka	9M-925	925-926	926-929	929-930	930-931	931-932	932-933
Art							
Bluegreen							
Rivularia atra							
Red							
Ceramium tenuicorne							
Furcellaria lumbricalis							
Polysiphonia fucoides							
Polysiphonia fibrillosa							
Brown							
Pilayella littoralis	25						
Pilalyellaludd							
Chorda filum							
Fucus vesiculosus							
Sphacelaria arctica							
Vaucheriales							
Vaucheria							
Green							
Enteromorpha intestinalis							
Cladophora glomerata	25						
Characeae							
Chara baltica							
Chara tomentosa							
Chara aspera		100	5				
Tolypella nidifica.							
Phanerogams							
Callitriche spp.					5		
Myriophyllum spp.			+	+			
Potamogeton pectinatus							
Potamogeton perfoliatus	5	5	10	25-50	10	+	+
Ranunculus spp.				+			
Ruppia sp.							
Zanichellia palustris		10	75	5	5		
Najas maritima							
Phragmites australis	10						
Tomt							
Botten	sten m. lera	sand/lera	sand	sand	sand	sand	blålera
	och sand						
Övriga anmärkningar	Sikt ca 1,6 m.						

Lokal:	**KALLRIGA 2**				
ID-code	**LFM000704**				
Datum:	2004-08-19				
Klockslag start:	11:14				
Klockslag slut:	11:28				
Väder:	Mulet. 4 m/s.				
Utförare:	Micke Borgiel				
		x-koordinat	**y-koordinat**	**Djup (m)**	**Foto**
Transektlinjestart:	9O	6693963	1635927	0,0	40
Prel "transektslut":	9P	6694090	1635824		
Transektbäring:	320°				

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
9O	6693963	1635927	0,0	40	0,0
934	6693969	1635919	1,7		9,2
935	6693991	1635898	2,2		40,3
936	6694010	1635899	2,8		55,0
937	6694053	1635842	3,0		122,6

Täckning

Transektsträcka	9O-934	934-935	935-936	936-937
Art				
Bluegreen				
Rivularia atra	5			
Red				
Ceramium tenuicorne				
Furcellaria lumbricalis				
Polysiphonia fucoides				
Polysiphonia fibrillosa				
Brown				
Pilayella littoralis				
Pilalyellaludd				
Chorda filum				
Fucus vesiculosus				
Sphacelaria arctica				
Vaucheriales				
Vaucheria		10	+	
Green				
Enteromorpha intestinalis				
Cladophora glomerata	5-10			
Characeae				
Chara baltica				
Chara tomentosa				
Chara sp.				
Tolypella nidifica.				
Phanerogams				
Callitriche spp.				
Myriophyllum spp.				
Potamogeton pectinatus				
Potamogeton perfoliatus				
Ranunculus spp.				
Ruppia sp.				
Zanichellia palustris				
Najas maritima				
Tomt				100
Botten	block	lera/sand m.	mjuk lerb.	lera
		enstaka block		
Övriga anmärkningar	Mycket dålig sikt.			

Lokal:	**KALLRIGA 2**				
ID-code	**LFM000705**				
Datum:	2004-08-19				
Klockslag start:	13:52				
Klockslag slut:	14:11				
Väder:	Mulet. Syd 7m/s.				
Utförare:	Roger Hounonen				
		x-koordinat	**y-koordinat**	**Djup (m)**	**Foto**
Transektlinjestart:	9Q	6695505	1635588	0,0	44
Prel "transektslut":	9R	6695206	1635971		
Transektbäring:	125°				

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
9Q	6695505	1635588	0,0	44	0,0
939	6695500	1635586	0,3		5,4
940	6695500	1635586	0,5		4,8
941	6695487	1635610	2,3		27,9
942	6695451	1635660	3,4		89,9

Täckning

Transektsträcka	9Q-939	939-940	940-941	941-942
Art				
Bluegreen				
Rivularia atra				
Red				
Ceramium tenuicorne				
Furcellaria lumbricalis				
Polysiphonia fucoides				
Polysiphonia fibrillosa				
Brown				
Pilayella littoralis		75		
Pilalyellaludd				
Chorda filum				
Fucus vesiculosus				
Sphacelaria arctica				
Vaucheriales				
Vaucheria				25
Green				
Enteromorpha intestinalis	5			
Cladophora glomerata	5			
Characeae				
Chara baltica				
Chara tomentosa				
Chara aspera	10	100		
Tolypella nidifica.				
Phanerogams				
Callitriche spp.				
Myriophyllum spp.			+	
Potamogeton pectinatus				
Potamogeton perfoliatus			+	
Ranunculus spp.			+	
Ruppia sp.				
Zanichellia palustris	5		+	
Najas maritima				
Tomt				
Botten	sten/grus	grus/sand/	sand/mjukb.	sand/mjukb.
		sten		
Övriga anmärkningar				

Lokal: **KALLRIGA 2**
ID-code **LFM000706**
Datum: 2004-08-19
Klockslag start: 14:47
Klockslag slut: 15:05
Väder: Duggregn. Syd 7m/s.
Utförare: Roger Hounonen

		x-koordinat	y-koordinat	Djup (m)	Foto
Transektlinjestart:	9S	6694521	1636149	0,1	46
Prel "transektslut":	9T	6695384	1635602		
Transektbäring:	318°				

Waypoint	x-koordinat	y-koordinat	Djup (m)	Foto	Längd från startpt. (m)
9S	6694521	1636149	0,1	46	0,0
943	6694541	1636135	0,4		24,1
944	6694564	1636122	0,6		50,7
945	6694565	1636123	0,7		50,6
946	6694574	1636119	0,7		60,5
947	6694593	1636102	1,5		85,7
948	6694603	1636087	1,8		102,7
949	6694627	1636072	2,7		130,7
950	6694631	1636055	3,1		144,9

Täckning

Transektsträcka	9S-943	943-944	944-945	945-946	946-947	947-948	948-949	949-950	
Art									
Bluegreen									
Rivularia atra									
Red									
Ceramium tenuicorne									
Furcellaria lumbricalis									
Polysiphonia fucoides									
Polysiphonia fibrillosa									
Brown									
Pilayella littoralis	50-75	75-100	75	50					
Pilalyellaludd									
Chorda filum									
Fucus vesiculosus									
Sphacelaria arctica									
Vaucheriales									
Vaucheria						25	10		
Green									
Enteromorpha intestinalis									
Cladophora glomerata				+	+				
Characeae									
Chara baltica									
Chara tomentosa									
Chara sp.	75-100	75-100	75	50					
Tolypella nidifica.									
Phanerogams									
Callitriche spp.									
Myriophyllum spp.						+	+		
Potamogeton pectinatus	+		10						
Potamogeton perfoliatus	+			5	+	5			
Ranunculus spp.									
Ruppia sp.									
Zanichellia palustris					5	+			
Najas maritima									
Phragmites australis	5								
Bolboschoenus maritimus	5								
Tomt								100	
Botten	sand	sand/grus	sand/grus	sand/grus	grus/sten	stora block/	grus	grus/sand	
		/mjukb	/mjukb	/mjukb	/mjukb	sten/grus		/mjukb	
Övriga anmärkningar									

Lokal: **KALLRIGA 2**
ID-code **LFM000707 (sid 1 av 2)**
Datum: 2004-08-19
Klockslag start: 16:03
Klockslag slut: 16:57
Väder: Regn. S-o 7 m/s.
Utförare: Roger Hounonen

		x-koordinat	y-koordinat	Djup (m)	Foto
Transektlinjestart:	9U	6693541	1635994	0,5	52
Prel "transektslut":	9V	6693888	1635406		
Transektbäring:	298°				

Waypoint	x-koordinat	y-koordinat	Djup (m)	Foto	Längd från startpt. (m)
9U	6693541	1635994	0,5	52	0,0
955	6693554	1635998	0,6		13,4
956	6693560	1635986	1,2		19,0
957	6693578	1635952	1,3		54,1
958	6693579	1635949	1,3		57,3
959	6693587	1635939	1,3		71,1
960	6693593	1635933	0,7		79,6
961	6693635	1635864	0,7		159,1
962	6693665	1635821	1,3		210,6
963	6693682	1635804	1,5		234,7
964	6693772	1635704	1,6		369,0
965	6693806	1635628	1,9		449,8
966	6693847	1635581	2,0		512,1
967	6693866	1635564	2,7		537,2

Täckning

Transektsträcka	9U-955	955-956	956-957	957-958	958-959	959-960	960-961
Art							
Bluegreen							
Rivularia atra	+						
Red							
Ceramium tenuicorne							
Furcellaria lumbricalis							
Polysiphonia fucoides							
Polyciphonia violacea							
Brown							
Pilayella littoralis							
Pilalyellaludd							
Chorda filum							
Fucus vesiculosus							
Sphacelaria arctica							
Vaucheriales							
Vaucheria					5 (fläckvis 100)	100	100
Green							
Enteromorpha intestinalis							
Cladophora glomerata							
Characeae							
Chara baltica							
Chara tomentosa							
Chara sp.	100						
Tolypella nidifica.							
Phanerogams							
Callitriche spp.							
Myriophyllum spp.		5	+		+	5	
Potamogeton pectinatus	+	5	+	5 (fläckvis 100)	5 (fläckvis 100)	5	
Potamogeton perfoliatus	5	25					
Ranunculus spp.					+	+	
Ruppia sp.							
Zanichellia palustris							75
Najas maritima							
Tomt			100				
Botten	mjukb.	mjukb.	mjukb.	mjukb.	mjukb.	mjukb.	mjukb.
Övriga anmärkningar	Startar utanför vassbältet.						

Lokal: **KALLRIGA 2**
ID-code **LFM000707 (sid 2 av 2)**
Datum: 2004-08-19
Klockslag start: 16:03
Klockslag slut: 16:57
Väder: Regn. S-o 7 m/s.
Utförare: Roger Hounonen

		x-koordinat	y-koordinat	Djup (m)	Foto
Transektlinjestart:	9U	6693541	1635994	0,5	52
Prel "transektslut":	9V	6693888	1635406		
Transektbäring:	298°				

Waypoint	x-koordinat	y-koordinat	Djup (m)	Foto	Längd från startpt. (m)
9U	6693541	1635994	0,5	52	0,0
955	6693554	1635998	0,6		13,4
956	6693560	1635986	1,2		19,0
957	6693578	1635952	1,3		54,1
958	6693579	1635949	1,3		57,3
959	6693587	1635939	1,3		71,1
960	6693593	1635933	0,7		79,6
961	6693635	1635864	0,7		159,1
962	6693665	1635821	1,3		210,6
963	6693682	1635804	1,5		234,7
964	6693772	1635704	1,6		369,0
965	6693806	1635628	1,9		449,8
966	6693847	1635581	2,0		512,1
967	6693866	1635564	2,7		537,2

Täckning

Transektsträcka	961-962	962-963	963-964	964-965	965-966	966-967
Art						
Bluegreen						
Rivularia atra						
Red						
Ceramium tenuicorne						
Furcellaria lumbricalis						
Polysiphonia fucoides						
Polysiphonia fibrillosa						
Brown						
Pilayella littoralis				5	10	
Pilalyellaludd						
Chorda filum						
Fucus vesiculosus						
Sphacelaria arctica						
Vaucheriales						
Vaucheria	100	100	100	75-100	25	
Green						
Enteromorpha intestinalis						
Cladophora glomerata						
Characeae						
Chara baltica						
Chara tomentosa						
Chara sp.						
Tolypella nidifica.						
Phanerogams						
Callitriche spp.						
Myriophyllum spp.	+			+		
Potamogeton pectinatus	+					
Potamogeton perfoliatus			5	+	+	
Ranunculus spp.						
Ruppia sp.						
Zanichellia palustris	10	100				
Najas maritima						
Tomt						100
Botten	mjukb.	mjukb.	mjukb.	sand/grus/	block/grus/	grus/sten/
				sten/mjukb.	sten	mjukb.
Övriga anmärkningar						

Lokal: **KALLRIGA 2**
ID-code **LFM000708**
Datum: 2004-08-19
Klockslag start: 17:36
Klockslag slut: 17:52
Väder: Regn.S-o 5 m/s.
Utförare: Roger Hounonen

		x-koordinat	y-koordinat	Djup (m)	Foto
Transektlinjestart:	9X	6693828	1635206	0,0	53
Prel "transektslut":	9Y	6693964	1635706		
Transektbäring:	73°				

Waypoint	x-koordinat	y-koordinat	Djup (m)	Foto	Längd från startpt. (m)
9X	6693828	1635206	0,0	53	0,0
968	6693829	1635204	0,3		2,5
969	6693833	1635208	0,5		6,1
970	6693840	1635210	0,7		12,8
971	6693853	1635234	1,5		38,1
972	6693870	1635264	2,3		71,9
973	6693881	1635281	3,0		91,9

Täckning

Transektsträcka	9X-968	968-969	969-970	970-971	971-972	972-973	
Art							
Bluegreen							
Rivularia atra		+					
Red							
Ceramium tenuicorne							
Furcellaria lumbricalis							
Polysiphonia fucoides							
Polysiphonia fibrillosa							
Brown							
Pilayella littoralis		5	10	10	5		
Pilalyellaludd							
Chorda filum							
Fucus vesiculosus							
Sphacelaria arctica							
Vaucheriales							
Vaucheria							
Green							
Enteromorpha intestinalis	+						
Cladophora glomerata	+						
Characeae							
Chara baltica							
Chara tomentosa							
Chara sp.	10	50					
Tolypella nidifica.							
Phanerogams							
Callitriche spp.					5		
Myriophyllum spp.							
Potamogeton pectinatus					5		
Potamogeton perfoliatus	+		5	5	50		
Ranunculus spp.							
Ruppia sp.							
Zanichellia palustris	+	5		10			
Najas maritima							
Tomt						100	
Botten	sten/block	sten/block	sten/block	sand/grus/	sand/grus/	block/sten/	
				sten/block	sten/block	grus/mjukb.	
Övriga anmärkningar	Dålig sikt.						

Lokal: **KALLRIGA 1**
ID-code **LFM000709** **OBS. Extra transekt utanför undersökningsområdet, vadning ej dykning.**
Datum: 2004-08-26
Klockslag start: 09:30
Klockslag slut: 10:00
Väder: Regn, blåst.
Utförare: Micke Borgiel

		x-koordinat	**y-koordinat**
Transektlinjestart:	984	6696265	1634174
Prel "transektslut":			
Transektbäring:	28°		

Waypoint	**x-koordinat**	**y-koordinat**	**Djup (m)**	**Foto**	**Längd från startpt. (m)**
984	6695636	1634347	0,1	370-368	0,0
983	6695666	1634359	0,5		31,5
982	6695728	1634399			106,0

Täckning

Transektsträcka	984-983	983-982	
Art			
Bluegreen			
Rivularia atra			
Red			
Ceramium tenuicorne			
Furcellaria lumbricalis			
Polysiphonia fucoides			
Polysiphonia fibrillosa			
Brown			
Pilayella littoralis			
Pilalyellaludd			
Chorda filum			
Fucus vesiculosus			
Sphacelaria arctica			
Vaucheriales			
Vaucheria			
Green			
Enteromorpha intestinalis			
Cladophora glomerata			
Characeae			
Chara baltica			
Chara tomentosa			
Chara aspera		4:e	
Chara sp.			
Tolypella nidifica.			
Phanerogams			
Callitriche spp.			
Myriophyllum spp.			
Potamogeton pectinatus		3:e	
Potamogeton perfoliatus			
Ranunculus spp.			
Ruppia sp.			
Zanichellia palustris		Mest dominant	
Najas maritima		2:a	
Bladvass	5		
Luzula sp.	5-10		
Gräs	25-50		
Säv	75		
Bredbladig hästsvans	+		
Hästsvans	+		
Botten		Mjuk lerbotten.	
Övriga anmärkningar	Krattat i vadarstövlar.		

Appendix 3

Copy of the divers protocols

The following is a direct copy of the protocol the divers wrote below the water surface. It is in Swedish.

Primärprotokoll dykprofiler

Nedan följer en avskrift av dykprotokollen. Varje observation föregås av notis om avstånd från land och djup (t.ex. 30:14,2 betyder 30 m från land och 14,2 meter djupt), Fotografier togs under vatten, vilket indikeras med F samt hur många bilder det togs om fler än en (t,ex, Fx2 betyder två fotografier), I vissa fall har arterna justerats efter genomgång på lab, Dykningarna gjordes från djupaste observerade algförekomst upp mot ytan,

Dykprofil 1,Tixlan

ID-code: LFM 710

Starpos 6698961 x 1635067

Bäring 234°

Datum 2004-08-23, kl 15.15–17.10

Vattentemp: –

Vattenstånd: –

Väderobservationer: Halvklart till mulet ca +15°, vind NV 8–10 sm.

Dykare: Micke Borgiel, Roger Huononen

Not: Kvantitativt prov 9 ramar, 20X.

75:3,2 Vaucheria 100, F.

67:3,1 Vau 100.

63:3,1 Vau 100.

Ram 4. Vaucheria 100, ej foto på grund av sediment, mjukbotten, 0-sikt.

Ram 5. Vaucheria 100, ej foto på grund av sediment, mjukbotten, 0-sikt.

Ram 6. Vaucheria 100, ej foto på grund av sediment, mjukbotten, 0-sikt.

60:3,1 Vau 25, Zanichellia +, Callitriche 5–10, sed 4, mjukbotten.

57:3,1 Callitr 10, grus/ler/sand-botten, Zan 5.

55:3,1 Zan 50, F, Callitr 50, Myriophyllum +.

Ram 21. F. Zan 50, Calitr 50.

Ram 23. F. Zan 50, Calitr 50.

Ram 24. F. Zan 50, Calitr 50.

50:3,1 Calitr 25, Zan 75, Potamogeton. Perfoliatus 5, Myrioph 5.

47:2,9 Zanich 75–100, F, Myrio +, Callitr 5, Pot.perfol 5.

39:2,8 Sandbotten, Zan 50–75, Myrio 5, Pot.per 5, Callitr 5.

36:2,7 Zan 25–50, Myr +.

34:2,7 Zan 25, Calitr 5, Myr +, Pot.pect 5, Pot.perfol 5, Fx2, Najas +.

29:2,6 Zan 10–25, Chara (aspera?) 5, Callitr 5, Pot.perfol, 5, Myrio +.

24:2,4 Zan 10–25, Calitr 5–10, Chara.sp 5, Pot.perfol 5–10, Myrio 5.

19:2,2 Sand/grus botten (1 st block, Fx2), Block +, På block: Pil/Clad 10–25.
Annars Zan 10, Calitr 5, Pot.perfol 5–10.

15:2,0 Najas 5, Pot.perfol 10, Zan 5–10, Calitr 5, Chara +, Fx3.

9:1,8 Chara.sp (aspera?) 5, Pot.perfol 10, Zan 10, Najas 5, Sand/grus botten, sed 2–3, Calithr 5, Fx2, Myrio +.

6:1,7 Blockbotten börjar, Fx, Calithr 5, Myrio 5, Rivularia +, Pil (ludd) 25, Clad (?) 10.

3:0,6 Sten/Block, Fx3, Riv +, Pil (ludd) 25, Clad 10–25, Calithriche 5, Myrio +, Zan +.

Ram 1. F. Calithriche +, Pil 25, Clad 25.

Ram 2. F. Zan +, Pil 50.

Ram 3. Fx2. Pot.perfol 5, Pil 25, Clad 25.

1:0,2 F. Riv 5, Ent 5, Clad 5–10.

Dykprofil 2.Tixlan

ID-code: LFM 711

Starpos 6698776 x 1634804

Bäring 36°

Datum 2004-08-25, kl 11.00–11.40

Vattentemp: –

Vattenstånd: –

Väderobservationer: –

Dykare: Micke Borgiel, Roger Huononen

Not: Kvalitativt.

50:3,2 Fx4, Vaucheria 100, Sed 4, Mjukbotten. (Lera).

21:3,1 Vaucheria 100.

17:3,5 Tomt.

14:3,5 Blockbotten, Fx2, Balanus +, F, Sphacelaria 5, Pil 5, Sed 3, Clad (?) +, (klämma).

11:2,2 Block, F, Bal 5, Sed 3, Sphace 5, Pil 5, Fungi +, Ent +.

7:2,2 Som ovan men Najas +, Myrio +, Ranunculus +, Callitriche +.

4:1,4 Pot.pect 5, Pot.perfol 5, Myrio +, Fx2, Clad 5–10 (överväxt med Diatoméer), Rivularia 5, Pil 5–10.

1:0,7 Najas 5, Zan +, F, Blockbotten, Pot.pect 5, Pot.perfol 5, Pil 25 (delvis lös), Clad 25, Riv 5.

0,5:0,5 Clad 25, Pil 10.

Dykprofil 3.Tixlan

ID-code: LFM 712

Starpos 6698687 x 1634937

Bäring 18°

Datum 2004-08-25, kl 09.10–10.15

Vattentemp: –

Vattenstånd: –

Väderobservationer: –

Dykare: Micke Borgiel, Roger Huononen

Not: Kvalitativt.

100:2,9 Vaucheria 100, Fx4, Sed 4, mkt lös botten.

86:2,6 Vaucheria 100, stort block +, Fx3. På block: Ent 5, Pil 10.

78:2,6 Vaucheria 100, Fx3, stort block +, På block: Bal 5, Ent 5, Pil 10–25, sed 3.

61:2,6 Vaucheria 100 (0,5 m tjockt lager minst).

56:2,6 Vaucheria 100, Pot.perfol +.

44:2,6 Vaucheria 100, Pot.perfol 5.

39:2,6 Vaucheria 100, Pot.perfol 5–10.

33:2,7 Vaucheria 25, Najas 5, Callitriche 5, Myrioph +, enstaka små block 5, Fx2, Zan +, Fx3 (på mig). På block: Ent 5, Pil 5–10.

29:2,6 Block/mjukbotten, Ent 5, Pil 5–10, Callitriche 25–50, Myrio 5, Pot.perfol 5, Najas 5, Fx3, Zan 5. På block: Ent 5, Pil 5.

23:2,5 Callitriche 5–10, Najas 5, Pot.perfol 5, Myrio 5, Zan 5, Fx2. På block: Fx2, Fungi +, Ent +, Balanus 5, Pil 5.

20:2,4 Najas 10–25, Pot.perfol 10, Zan 5, Callitriche 5.

18:2,1 Stort block, Fx2, tomt.

16:2,4 Pot.perfol 25–50, Callitriche 5–10, Najas 5, Myrioph 5–10, Zan 5.

13:2,3 Pot.perfol 50–75, Myrioph 5, Najas 5.

9:2,2 Pot.perfol 10–25, Callitriche 5, Myrioph 5, Zan 5, Najas 5, Block/mjukbotten, Fx3. På block: Rivularia 5, Pil 5, Sphacelaria 5–10, Bal 5, Fungi 5, F.

7:1,9 Blockbotten med lite mjukbotten emellan. Pot.perfol 5–10, Riv 5, Pil 5–10, Najas 5, Pot.pect 5, Callitriche 5, Balanus 5.

4:1,0 Stora block, Cladophora 75 (överväxt med diatoméer), Fx2, Pil 5, Bal +, Pot.perfol +, Myrioph +, Rivularia 5.

1:0,2 Block, F, Rivularia 5–10, Cladophora 5.

Dykprofil 4.Tixlan

ID-code: LFM 713

Starpos 6699225 x 1634923

Bäring 238°

Datum 2004-08-25, kl 15.15–16.30

Vattentemp: –

Vattenstånd: –

Väderobservationer: –

Dykare: Micke Borgiel, Roger Huononen

Not: Kvalitativt.

150:5,2 Mjukbotten, Fx2, Tomt 100, sed 4.

144:5,0 Blockbotten. På block: Fx2, Sphacelaria 5–10, Laomedea +, sed 3–4, (Skiss).

132:3,3 Block/mjukbotten. Myriophyllum 5, Sphacelaria 10, Pil 10, Ranunculus +, F, Poly.nigr + (klämma).

128:2,7 Som ovan men även Callitriche 5, Pot.perfol 5–10, Zan 5, Ent 5.

120:3,0 Block slut, sand/lerbotten, Fx2, Zan 75–100, Pot.perfol 10, Callitriche 5–10, Myrio 5, Pil 10 (lös?).

104:3,2 Sand/lerbotten, med enstaka små block +, Zan 10–25, Pot.perfol 10, Callitriche 96:3.2 Najas 5, Zan 10, Callitriche 5.

90:3,4 Enstaka block 5. Najas 5, Zan 5, Callitriche 5, Myrioph +, Furcellaria (kluttar)25, F, Ranunculus +. På block: Lös Furcellaria 5, Sphacelari 5–10, F, Ent 5.

81:3,4 Furcellaria (kluttar, lösa) 25–50, (på mjukbotten), Myrioph 5, Callitriche 5, Ranunculus 5.

73:3,3 Sand/grus botten, Furc (kluttar) 10–25, annars som ovan.

69:3,0 Blockbotten, Fx2, Ent 5, Sphacelaria 5–10, Pil 25, Zan 5, Myrio 5, Ranunculus 5, Chara (aspera?) 5, Najas 5, Callitriche 5, Balanus 5, Macoma skal, Rivularia 5, (Skiss av stora block).

58:0,8 Stora block , F, Cladophora 75–100, Rivularia 5, Pot.perfol 5 (mellan block).

51:1,6 Sand/grus/sten botten, F, Najas 5, Chara (aspera?) 5, Myriophyllum 10–25, Zan 5, Ruppia 5, Pil 5, Furcellaria (lösa kluttar) 5, Pot.pect 5, Enstaka block 10. På block: Clad 10, Ent 5.

36:1,6 Myriophyllum 25–50, Furcellaria (lösa kluttar) 5, Chara (aspera?) 5, Pot.pect 5, Chara tomentosa +, Zanichellia +.

32:1,6 Sand/grus/sten botten, Myrioph 5–10, Zan 5–10, Chara (aspera?) 5, enstaka Block 5. På Block: Fx2, Clad 10, Riv 5, Pil 5.

23:1,3 Block/sten botten, Clad 10–25, Pil 5, Riv 5.

19:1,5 Småblock, sten/grus botten. Najas +, Myrioph 5, Pot.perfol 5, Zan 5, Pot.pect 5, Chara (aspera?) 5, Pil (lös?) 5.

8:1,4 Myrioph 5, Clad 10, Riv 5, Pil 5, F.

5:0,9 Små block. Clad 5–10, Riv 5, Pil 25–50 (delvis lös).

2:0,3 Små block. Fx3, Riv 5–10, F, Clad 5–10, Pil 50–75 (delvis lös).

Dykprofil 5.Trollgrund

ID-code: LFM 714

Starpos 6699386 x 1635401

Bäring 360°

Datum 2004-08-23, kl 08.50–10.35

Vattentemp: 16.0°

Väderobservationer: – (Se 1.Tixlan)

Vattenstånd: –

Dykare: Micke Borgiel, Roger Huononen

Not: Kvantitativt prov 12 ramar, 20X.

72:8,4 Sandbotten, enstaka block 5, Fx2, på block Poly.nigr 5, Sphacelaria 5, sed 2.

52:8,6 Stort block, på block, F, Poly.nigr 5, Sphace 5.

42:8,4 Fler block (block 5), annars som ovan.

37:8,1 Block/sandbotten, Poly.nigr 5, Sphace 5, Pil (ludd) 5, F.

19:6,1 Jätteblock, på blockbotten. På block, Fx4, Poly.nigr 5, Bal 5–10, Pil ludd 5, Sphace +.

16:6,0 Blockbotten med sten och sand, skiss, skattn som ovan.

Ram 1. F, på block, Sphace 5.

Ram 2. F, litet block, Polysiphonia 5.

Ram 3. F, Grus/sten, Pil (ludd) 10.

14:5,3 Block, Poly.nigr 10, Pil 10, Bal 5, F.

12:4,9 Block/sten/grus Pil 50, Ent (lös?) 5, Poly.nigr 5–10.

11:4,2 Som ovan.

Ram 4. F, sten/grus, Pil 25.

Ram 5. F, på block, Poly.nigr 10.

Ram 6. Fx2 (med och utan blixt), grus/sten, Pil 75.

10:3,2 Block sten/grus, Fx3, Pil 50–75, Chorda 5, Poly.nigr/Ceramium 10–25, Bal 5, Rivularia 5, Ent 5.

7:2,1 Skiss. Block, sten, Chorda 5, Ent 5 Pil 10–25, Cer.ten 5, Clad 5, Riv 5, Fx3.

Ram 7. F, På block, Pil 10, Chorda 5.

Ram 8. F, ”block”, Pil 25.

Ram 9. F, sten/block, Pil 75.

6:1,5 Fx2, Riv 5, Clad 10, Ent 5, Chorda 5, Pil (ludd) 5.

5:1,0 Chorda 5–10, Clad 25, Riv 5, Ent 5, Pil 5, F.

4:0,5 Clad 75, Chorda 10, Riv 10, F, Pil ludd 5.

Ram 10. F. På block Clad 75.

Ram 11. F. Litet block Clad 25.

Ram 12. F. Block Clad 75.

2:0,3 Clad 75–100, F, Chorda filum 5, Pil 10, F.

Dykprofil 6.Kallriga

ID-code: LFM 715

Starpos 6696790 x 1635470

Bäring 144°

Datum 2004-08-24, kl 15.30–17.30

Vattentemp: –

Vattenstånd: –

Väderobservationer: –

Dykare: Micke Borgiel, Roger Huononen

Not: Kvantitativt prov 9 ramar, 20X.

250:1,5 Vaucheria 100, Zan 25–50, Pil 10, Myrioph 5, Pot.pect +, mjukbotten, sed 3, F.

210:1,4 Som ovan, Fx2.

193:1,3 Som ovan men Zan 25–50.

186:1,3 Som ovan.

Ram 1. F, Vaucheria 100, Zanichellia 10.

Ram 2. F, Vaucheria 100, Zanichellia 25.

Ram 3. F, Vaucheria 100, Zanichellia 10.

164:1,3 Vaucheria 100, Zanichellia 25–50, Pot.pect +,Myrioph 5, Pil 10–25 (lös? påväxt).

140:1,3 Vaucheria 100, Zan 75, Myrioph 5.

125:1,3 Vaucheria 75, Zanichellia 50, Myrioph 25–50, Chara.tomentosa 5.

122:1,3 Sand/ler botten. Myriophyllum 75, Zan 25, Chara.tomentosa 5, Vaucheria 50–75.

107:1,3 Sand/ler botten. Myrioph 25, Vaucheria 25, Zan 10–25.

87:1,3 Vaucheria 100, Myrioph 5, Zan 5.

73:1,3 Vaucheria 100, Myrioph 10, Zan 5, Najas 5.

58:1,3 Zan 75, Myrioph 5, F, Najas 5, Pil 10.

48:1,2 Zanichellia 75–100, Myrioph 5, Chara.tomentosa +, Najas +, Pil 5–10, Pot.pect.

Ram 21. F, Zanichellia 100.

Ram 22. F, Zanichellia 100.

Ram 23. F, Zanichellia 100.

39:1,1 Fx2, Zan 50, Najas 5, Chara.tom 5, Chara (aspera?) 5, Pil 10–25 (påväxt, lös?).

36:1,1 Zan 25–50, Chara (aspera?) 10, Chara.tom 5, Pil 10 (lös?), sand/ler botten.

34:1,1 Chara (aspera?) 75–100, Zan 25, Chara.tom 5, Pil 10 (lös?), Fx3.

27:0,9 Chara (aspera?) 100, Chara.tom 5, Najas 5.

26:0,9 Som ovan.

Ram 4. F, Chara aspera 100.

Ram 5. F, Chara aspera 100.

Ram 6. F, Chara aspera 100.

24:0,8 Små block och sten botten börjar. Pil 50, Char.tom 5, Zan 5, F, Najas +, Pot.pect 5, Pot.perfol 5.

20:0,4 Pil 75, Chara.aspera 25, Zan 5–10.

14:0,3 Chara.aspera 75, Pil 25, Zan 5, Pot.pect +.

4:0,3 Som ovan men Pil 5–10.

1:0,2 Sten och små block. Chara.aspera 50, Pil 10, Riv 5, Pot.pect +.

Dykprofil 7.Kallriga

ID-code: LFM 716

Starpos 6696142 x 1635103

Bäring 90°

Datum 2004-08-27, kl 08.50–10.10

Vattentemp: –

Vattenstånd: –

Väderobservationer: –

Dykare: Micke Borgiel, Roger Huononen

Not: Kvalitativt.

225:1,6 Vaucheria 100 (ca 3 cm tjockt lager), F, mjukbotten, sed 4.

213:1,5 Vaucheria 100, Pot.perfol 10–25, Myrioph 5.

207:1,5 Vaucheria 100, Pot.pect 10–25, Callitriche 10, Zan 5, Pil 5 (påväxt, lös?)

196:1,6 Vaucheria 10–25, Pot.pect 25–50, Callitriche 10–25, Myrioph 5, Zan 10.

189:1,6 Callitriche 25–50, Myrioph 25–50, Pot.perfol 25–50, Zan 5–10.

179:1,5 Litet block +. På block Pil 10–25, Ent +.

177:1,5 Zan 75–100, Callitriche 10, Myrioph 5–10, Pil 5, Pot.perfol 5–10.

157:1,6 Zan 50, Callitriche 5, Myrioph 5–10, Pil 5, Pot.perfol 25–50.

148:1,5 Zan 25–50, Callitriche 5, Myrioph 10, Pil 10 (lös), Pot.perfol 10–25.

119:1,4 Zan 50–75, Myrioph 5, Pil 5. Block +. På Block: Pil 10, Ent 5 (mkt Diatoméer).

104:1,3 Zan 50–75, Myrioph 10, F.

88:1,2 Zan 10–25, Myrioph 5.

85:1,2 Zan 5–10, Tomt 100, ler/sand botten, Myrioph +.

80:1,1 Zan 5, Tomt 100, Chara.tom 5, F.

68:1,0 Chara.aspera 100, Chara.tom 5, Fx2, Pot.pect 5, Zan +, Pil 10 (påväxt).

54:0,8 Chara.aspera 100, Fx2, Pot.pect +, Pil +.

42:0,7 Chara.aspera 100, Najas 5, sandbotten.

30:0,6 Chara.aspera 75–100, Najas 5, Pot.pect 5, sandbotten, sed 2.

28:0,6 Chara.aspera 50, Najas 5, Chara.tom 5, Pot.pect 5.

25:0,6 Chara.aspera 10–25, Pot.pect 5–10, Pil 10 (lös).

23:0,5 Chara.aspera 10, Myrioph +, Pot.pect 5–10, Pil 10 (lös).

10:0,5 Chara.aspera 5–10, Zan +, Myrioph +, Sandbotten med lite grus.

6:0,4 Chara.aspera 5, Pot.pect +.

2:0,4 Chara.aspera 5.

0:0,4 Chara.aspera 5, Pot.pect +, Pil 5 (lös). Vasskanten börjar. Uppmätt avstånd från strandlinjen = 32 m. Dvs om profilen skall anges från land läg till 32 m på avstånden. Vass hela vägen in till land (32 m).

Dykprofil 8.Kallriga

ID-code: LFM 717

Starpos 6695717 x 1635222

Bäring 216°

Datum 2004-08-26, kl 14.00–15.00

Vattentemp: –

Vattenstånd: –

Väderobservationer: Hård vind, 10–17 sm

Dykare: Micke Borgiel, Roger Huononen

Not: Kvalitativt. Mycket dålig sikt på grund av blåst.

150:1,5 Mjukbotten. Sed 3–4.Vaucheria 100, Myrioph +.

139:1,5 Vaucheria 25–50.

135:1,5 Vaucheria 10.

134:1,5 Myrioph 100, Zan 25–50, Callitriche 5–10.

109:1,5 Chara.tom 5, Zan 50, Myrioph 50.

107:1,5 Myrioph 10, Pot.perfol 10, Zan 5.

101:1,5 Pot.perfol 50–75, Myrioph 10, Sandbotten.

90:1,5 Pot.perfol 10, Myrioph +, Zan 5, Callitriche +, Chara.tom +, Enstaka små block på sandbotten. På block: Pil 10, Ent +.

68:1,4 Pot.perfol 10, Zan 5, Myrioph 5, Små block 5. På block: Sphacelaria 75, Pil 50.

60:1,2 Block/ler-botten, Myrioph 75–100. På block: Pil 50, Ent + (mkt Diatoméer).

53:0,8 Blockbotten (Skiss), F, Myrioph 5, Zan 5, Pot.pect 5, Pil 25, Clad 25.

47:0,8 Som ovan men även Chara.tom 5, najas +.

43:0,9 Sandbotten. Pot.pect 10, Chara.tom 5, Najas +.

39:0,9 Sandbotten. Chara.aspera 5, Chara.tom 5, Zan 10, Myrioph +.

34:0,8 Chara.tom 5–10, Chara.aspera 25–50, Myrioph 5, Pot.perfol 5, Zan 5.

30:0,8 Chara.aspera 50–75 (fläckvis 100), Fx2, Zan 5, Chara.tom 5, Pot.pect 5, Myrioph +.

23:0,8 Chara.aspera 100, Pot.pect 5, Fx3, Chara.tom 5, Myrioph +, Sandbotten, Pot.pect +.

12:0,6 Chara.aspera 75–100, Najas 5, Zan +, Block +. På Block: Pil 5, Clad 5.

2:0,5 Vass börjar, slut skattningar.

Dykprofil 9.Kallriga

ID-code: LFM 718

Starpos 6695199 x 1634727

Bäring 63°

Datum 2004-08-26, kl 16.45–17.45

Vattentemp: –

Vattenstånd: –

Väderobservationer: –

Dykare: Micke Borgiel, Roger Huononen

Not: Kvalitativt.

184:1,4 Chara.tomentosa 100, Fx? (RH med skrivtavla), sed 2, mjukbotten.

169:1,4 Chara.tom 100, Pot.pect 5–10, Fx3.

153:1,4 Chara.tom 50, Pot Pect 100.

150:1,4 Chara.tom 100, Pot.pect 50.

140:1,4 Pot.pect +, Tomt 100, Fx3 (gränsen), mjukbotten.

137:1,4 Chara.tom 100, Pot.pect 10, Najas +.

116:1,4 Chara.tom 75–100, ca 40 cm höga, (tomma fläckar), Pot.pect 5–10.

107:1,5 Tomt 100, Najas 5, Pot.pect +, F.

89:1,5 Tomt 50, (Patchiness), Najas 5–10, Pot.pect 25, Chara.tom 25.

85:1,4 Tomt 100.

80:1,4 Chara.tom 100, Pot.pect 5–10.

75:1,4 Tomt 100.

73:1,4 Chara.tom 100, Pot.pect 5–10.

48:1,3 Chara.tom 75–100, Phragmites 5, Pot.pect 5–10, Pil 5 (påväxt?).

45:1,2 Chara.tom 100, Najas 25, Pil 5 (påväxt), Pot.pect 10.

41:1,1 Fx3, Najas 75–100, Pot.pect 10, Chara.tom 5–10, Pil 5–10 (lös).

32:0,9 Chara.tom 50, Najas 50, Pot.pect 5.

27:0,9 Najas 10–25, Chara.tom 75–100, Pot.pect 5.

18:0,8 Najas 50, Chara.tom 50, Pil 5 (lös och påväxt på Najas och Chara).

17:0,8 Najas 100, Pil 5.

10:0,7 Najas 25, Pot.pect +, Tomt 75.

6:0,6 Tomt 100 (detritus), (död vass på botten 100), Pil10, F+Fx2 (Cissi).

1:0,2 Som ovan.

Appendix 4

Primary data, transect cover-degree estimates (%) and substrate

Primärdata SKB-Forsmark dykprotokoll täckningsgrad																				**max skattn**	**max djup**
År	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004		
Protokoll nr:	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
Profil nr.:	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**		
Transect ID-code	LFM 710	LFM 710	LFM 710	LFM 710	LFM 710	LFM 710	LFM 710	LFM 710	LFM 710	LFM 710	LFM 710	LFM 710	LFM 710	LFM 710	LFM 710	LFM 710	LFM 710	LFM 710	LFM 710		
Datum	04.08.23	04.08.23	04.08.23	04.08.23	04.08.23	04.08.23	04.08.23	04.08.23	04.08.23	04.08.23	04.08.23	04.08.23	04.08.23	04.08.23	04.08.23	04.08.23	04.08.23	04.08.23	04.08.23		
Skattare*	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
djupinterv.nr:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**		
avstånd min	67	63	60	57	55	50	47	39	36	34	29	24	19	15	9	6	3	1	O		
avstånd max	75	67	63	60	57	55	50	47	39	36	34	29	24	19	15	9	6	3	1		
djup min.	3,1	3,1	3,1	3,1	3,1	3,1	2,9	2,8	2,7	2,7	2,6	2,4	2,2	2	1,8	1,7	0,6	0,2	O		
djup max	3,2	3,1	3,1	3,1	3,1	3,1	3,1	2,9	2,8	2,7	2,7	2,6	2,4	2,2	2	1,8	1,7	0,6	0,2		
bottentyp																					
häll																					
block														1			1	1	1		
sten																		1	1		
grus					1	1	1	1						1	1	1	1				
sand					1	1	1	1	1	1	1	1	1	1	1	1	1				
lera	1	1	1	1	1	1	1	1													
övrigt																					
sediment	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	3	3		
siktdjup																					
Rivularia atra																	1	1	5	**5**	**1,7**
Pilayella/Ectoc.														5			25	25		**25**	**2,2**
Vaucheria spp.	100	100	100	25																**100**	**3,2**
Enteromorpha																			5	**5**	**0,2**
Cladophora spp																	10			**10**	**1,7**
Cladophora glomerata														5				10	5	**10**	**2,2**
Chara spp.													5		1					**5**	**2,4**
Chara aspera												5				5				**5**	**2,6**
Callitriche spp.				5	10	50	25	5	5		5	5	10	5	5	5	5	5		**50**	**3,1**
Myriophyllum				1		1	5	1	5	1	1	1	5			1	5	1		**5**	**3,1**
Najas marina											1				5	5				**5**	**2,7**
Pot. perfol							5	5	5		5	5	5	5	10	10				**10**	**3,1**
P.pectinatus											5									**5**	**2,7**
Zannichellia				1	5	50	75	100	50	50	25	25	10	10	5	10		1		**100**	**3,1**
Summa	**100**	**100**	**100**	**32**	**15**	**101**	**110**	**111**	**65**	**51**	**42**	**41**	**35**	**30**	**26**	**36**	**46**	**43**	**15**		
Kommentarer:*MB=1																					
Sammanfattn täckningsgrader																					
djupinterv.nr:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**		
avstånd min	67	63	60	57	55	50	47	39	36	34	29	24	19	15	9	6	3	1	O		
avstånd max	75	67	63	60	57	55	50	47	39	36	34	29	24	19	15	9	6	3	1		
djup min.	3,1	3,1	3,1	3,1	3,1	3,1	2,9	2,8	2,7	2,7	2,6	2,4	2,2	2	1,8	1,7	0,6	0,2	O		
djup max	3,2	3,1	3,1	3,1	3,1	3,1	3,1	2,9	2,8	2,7	2,7	2,6	2,4	2,2	2	1,8	1,7	0,6	0,2		
blågröna																	1	1	5	**5**	**1,7**
röda fintrådiga/anuell																					
röda struk/perenna																					
bruna anuellea														5			25	25		**25**	**2,2**
bruna perenna																					
Vaucheriales	100	100	100	25																**100**	**3,2**
gröna														5			10	10	10	**10**	**2,2**
Characeae												5	5		1	5				**5**	**2,6**
Potamogeton spp							5	5	5		10	5	5	5	10	10				**10**	**3,1**
Zannichellia/Ruppia				1	5	50	75	100	50	50	25	25	10	10	5	10		1		**100**	**3,1**
öv kärlväxter				6	10	51	30	6	10	1	7	6	15	5	10	11	10	6		**51**	**3,1**
kala ytor																					
Summa	**100**	**100**	**100**	**32**	**15**	**101**	**110**	**111**	**65**	**51**	**42**	**41**	**35**	**30**	**26**	**36**	**46**	**43**	**15**		

Primärdata SKB-Forsmark dykprotokoll täckningsgrad										**max skattn**	**max djup**
År	2004	2004	2004	2004	2004	2004	2004	2004	2004		
Protokoll nr:	3	3	3	3	3	3	3	3	3		
Profil nr.:	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**		
Transect ID-code	LFM 711	LFM 711	LFM 711	LFM 711	LFM 711	LFM 711	LFM 711	LFM 711	LFM 711		
Datum	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25		
Skattare*	1	1	1	1	1	1	1	1	1		
djupinterv.nr:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**		
avstånd min	21	17	14	11	7	4	1	0,5	O		
avstånd max	50	21	17	14	11	7	4	1	0,5		
djup min.	3,1	3,1	3,5	2,2	2,2	1,4	0,7	0,5	O		
djup max	3,2	3,5	3,5	3,5	2,2	2,2	1,4	0,7	0,5		
bottentyp											
häll											
block				1	1	1	1	1	1		
sten											
grus											
sand											
lera	1	1	1								
övrigt											
sediment	4	4	4	3	3	3	3	3	3		
siktdjup											
Rivularia atra							5	5		**5**	**1,4**
Pilayella/Ectoc.				5	5		5	25	10	**25**	**3,5**
Sphacelaria				5	5					**5**	**3,5**
Vaucheria spp.	100	100								**100**	**3,5**
Enteromorpha					1					**1**	**2,2**
Cladophora glomerata				1			5	25	25	**25**	**3,5**
Callitriche spp.						1				**1**	**2,2**
Myriophyllum						1	1			**1**	**2,2**
Najas marina						1		5		**5**	**2,2**
Pot. perfol							5	5		**5**	**1,4**
P.pectinatus							5	5		**5**	**1,4**
Ruppia											
Zannichellia								1		**1**	**0,7**
Ranunculus						1				**1**	**2,2**
Fungi					1					**1**	**2,2**
Balanus				1	5					**5**	**3,5**
kala ytor			100							**100**	**3,5**
Summa	**100**	**100**	**100**	**12**	**17**	**4**	**26**	**71**	**35**		
Kommentarer:*MB=1											
Sammanfattn täckningsgrader											
djupinterv.nr:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**		
avstånd min	21	17	14	11	7	4	1	0,5	O		
avstånd max	50	21	17	14	11	7	4	1	0,5		
djup min.	3,1	3,1	3,5	2,2	2,2	1,4	0,7	0,5	O		
djup max	3,2	3,5	3,5	3,5	2,2	2,2	1,4	0,7	0,5		
blågröna							5	5		**5**	**1,4**
röda fintrådiga/anuell											
röda struk/perenna											
bruna anuellea				5	5		5	25	10	**25**	**3,5**
bruna perenna				5	5						
Vaucheriales	100	100								**100**	**3,5**
gröna				1	1		5	25	25	**25**	**3,5**
Characeae											
Potamogeton spp							10	10		**10**	**1,4**
Zannichellia/Ruppia								1		**1**	**0,7**
öv kärlväxter						4	1	5		**5**	**0,7**
Fungi					1					**1**	**2,2**
öv djur				1	5					**5**	**3,5**
kala ytor			100							**100**	**3,5**
Summa	**100**	**100**	**100**	**12**	**17**	**4**	**26**	**71**	**35**		

Primärdata SKB-Forsmark dykprotokoll täckningsgrad																			**max skattn**	**max djup**
År	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004		
Protokoll nr:	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
Profil nr.:	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**		
Transect ID-code	LFM 712	LFM 712	LFM 712	LFM 712	LFM 712	LFM 712	LFM 712	LFM 712	LFM 712	LFM 712	LFM 712	LFM 712	LFM 712	LFM 712	LFM 712	LFM 712	LFM 712	LFM 712		
Datum	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25		
Skattare*	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
djupinterv.nr:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**		
avstånd min	86	78	61	56	44	39	33	29	23	20	18	16	13	9	7	4	1	O		
avstånd max	100	86	78	61	56	44	39	33	29	23	20	18	16	13	9	7	4	1		
djup min.	2,6	2,6	2,6	2,6	2,6	2,6	2,6	2,6	2,5	2,4	2,1	2,1	2,3	2,2	1,9	1	0,2	O		
djup max	2,9	2,6	2,6	2,6	2,6	2,6	2,7	2,7	2,6	2,5	2,4	2,4	2,4	2,3	2,2	1,9	1	0,2		
bottentyp																				
häll																				
block		1	1					1	1	1	1	1	1	1	1	1	1	1		
sten																				
grus																				
sand																				
lera	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
övrigt																				
sediment	4	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
siktdjup																				
Rivularia atra															5	5	5	10	**10**	**2,2**
Pilayella/Ectoc.		5	10					5	5	5					5	10	5		**10**	**2,7**
Sphacelaria															5				**5**	**2,2**
Vaucheria spp.	100	100	100	100	100	100	100	25											**100**	**2,9**
Enteromorpha		5	5					5	5	1									**5**	**2,7**
Cladophora glomerata																	75	5	**75**	**1**
Callitriche spp.								5	25	10	5		10		5	5			**25**	**2,7**
Myriophyllum								1	5	5			10	5	5		1		**10**	**2,7**
Najas marina								5	5	5	10		5	5	5	5			**10**	**2,7**
Pot. perfol				1	5	10			5	5	10		50	75	10	5	1		**75**	**2,7**
P.pectinatus																5			**5**	**1,9**
Zannichellia								1	5	5	5		5		5				**5**	**2,7**
Fungi										1					5				**5**	**2,5**
Balanus			5							5					5	5	1		**5**	**2,6**
kala ytor												100							**100**	**2,4**
Summa	**100**	**110**	**120**	**100**	**101**	**105**	**110**	**47**	**55**	**42**	**30**	**100**	**80**	**85**	**55**	**40**	**88**	**15**		
Kommentarer:	mkt lös botten																			
*MB=1																				
sammanfattn täckningsgrader																				
djupinterv.nr:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**		
avstånd min	86	78	61	56	44	39	33	29	23	20	18	16	13	9	7	4	1	O		
avstånd max	100	86	78	61	56	44	39	33	29	23	20	18	16	13	9	7	4	1		
djup min.	2,6	2,6	2,6	2,6	2,6	2,6	2,6	2,6	2,5	2,4	2,1	2,1	2,3	2,2	1,9	1	0,2	O		
djup max	2,9	2,6	2,6	2,6	2,6	2,6	2,7	2,7	2,6	2,5	2,4	2,4	2,4	2,3	2,2	1,9	1	0,2		
blågröna															5	5	5	10	**10**	**2,2**
röda fintrådiga/anuell																				
röda struk/perenna																				
bruna anuellea		5	10					5	5	5					5	10	5		**10**	**2,7**
bruna perenna															5					
Vaucheriales	100	100	100	100	100	100	100	25											**100**	**2,9**
gröna		5	5					5	5	1							75	5	**75**	**2,7**
Characeae																				
Potamogeton spp					1	5	10		5	5	10		50	75	10	10	1		**75**	**2,7**
Zannichellia/Ruppia								1	5	5	5		5		5				**5**	**2,7**
öv kärlväxter								11	35	20	15		25	10	15	10	1		**35**	**2,7**
Fungi										1					5				**5**	**2,5**
öv djur			5							5					5	5	1		**5**	**2,6**
kala ytor												100							**100**	**2,4**
Summa	**100**	**110**	**120**	**100**	**101**	**105**	**110**	**47**	**55**	**42**	**30**	**100**	**80**	**85**	**55**	**40**	**88**	**15**		

Primärdata SKB-Forsmark dykprotokoll täckningsgrad																					**max skattn**	**max djup**
År	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004		
Protokoll nr:	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5		
Profil nr.:	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**		
Transect ID-code	LFM 713	LFM 713	LFM 713	LFM 713	LFM 713	LFM 713	LFM 713	LFM 713	LFM 713	LFM 713	LFM 713	LFM 713	LFM 713	LFM 713	LFM 713	LFM 713	LFM 713	LFM 713	LFM 713	LFM 713		
Datum	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25	04.08.25		
Skattare*	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
djupinterv.nr:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**		
avstånd min	144	132	128	120	104	96	90	81	73	69	58	51	36	32	23	19	8	5	2	O		
avstånd max	150	144	132	128	120	104	96	90	81	73	69	58	51	36	32	23	19	8	5	2		
djup min.	5	3,3	2,7	2,7	3	3,2	3,2	3,4	3,3	3	0,8	0,8	1,6	1,6	1,3	1,3	1,4	0,9	0,3	O		
djup max	5,2	5	3,3	3	3,2	3,2	3,4	3,4	3,4	3,3	3	1,6	1,6	1,6	1,6	1,5	1,5	1,4	0,9	0,3		
bottentyp																						
häll																						
block		1	1	1		1	1	1	1		1	1				1	1	1	1	1		
sten													1	1	1	1	1	1				
grus										1			1	1	1		1	1				
sand					1	1	1	1	1	1			1	1	1							
lera	1		1	1	1	1	1	1	1													
övrigt																						
sediment	4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4		
siktdjup																						
Rivularia atra											5	5			5	5		5	5	5	**5**	**3**
Furcellaria								25	25	10			5	5							**25**	**3,4**
Polysiphonia.nigr			1	1																	**1**	**3,3**
Pilayella/Ectoc.			10	10	10						25		5		5	5	5	5	50	50	**50**	**3,3**
Sphacelaria		10	10	10		5		5			5										**10**	**5**
Enteromorpha				5		5		5			5		5								**5**	**3,4**
Cladophora glomerata												75	10		5	10		10	10	10	**75**	**1,6**
Chara aspera											5		5	5	5		5				**5**	**3**
Chara tomentosa														1							**1**	**1,6**
Callitriche spp.				5	5	5	5	5	5	5	5										**5**	**3,4**
Myriophyllum			5	5	5			1	5	5	5		25	50	5		5	5			**50**	**3,4**
Najas marina							5	5			5		5				1				**5**	**3,4**
Pot. perfol				10	10	10						5					5				**10**	**3,2**
P.pectinatus													5	5			5				**5**	**1,6**
Ruppia													5								**5**	**1,6**
Zannichellia				5	75	25	10	5			5		5	1	10		5				**75**	**3,4**
Ranunculus			1	1				1	5	5	5										**5**	**3,4**
Laomedea/Cordyl		1																			**1**	**5**
Balanus											5										**5**	**3**
kala ytor	100																				**100**	**5,2**
Summa	**100**	**11**	**27**	**52**	**105**	**50**	**20**	**52**	**40**	**25**	**75**	**85**	**75**	**67**	**35**	**20**	**31**	**25**	**65**	**65**		
Kommentarer:*MB=1																						
sammanfattn täckningsgrader																						
djupinterv.nr:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**		
avstånd min	144	132	128	120	104	96	90	81	73	69	58	51	36	32	23	19	8	5	2	O		
avstånd max	150	144	132	128	120	104	96	90	81	73	69	58	51	36	32	23	19	8	5	2		
djup min.	5	3,3	2,7	2,7	3	3,2	3,2	3,4	3,3	3	0,8	0,8	1,6	1,6	1,3	1,3	1,4	0,9	0,3	O		
djup max	5,2	5	3,3	3	3,2	3,2	3,4	3,4	3,4	3,3	3	1,6	1,6	1,6	1,6	1,5	1,5	1,4	0,9	0,3		
blågröna											5	5			5	5		5	5	5	**5**	**3**
röda fintrådiga/anuell			1	1																	**1**	**3,3**
röda struk/perenna								25	25	10			5	5							**25**	**3,4**
bruna anuellea			10	10	10						25		5		5	5	5	5	50	50	**50**	**5**
bruna perenna		10	10	10		5		5			5											
Vaucheriales																						
gröna				5		5		5			5	75	15		5	10		10	10	10	**75**	**3**
Characeae											5		5	6	5		5				**6**	**3**
Potamogeton spp				10	10	10						5	5	5			10				**10**	**3,2**
Zannichellia/Ruppia				5	75	25	10	5			5		10	1	10		5				**75**	**3,4**
öv kärlväxter			6	11	10	5	10	12	15	15	20		30	50	5		6	5			**50**	**3,4**
öv djur		1																			**1**	**5**
kala ytor	100																				**100**	**5,2**
Summa	**100**	**11**	**27**	**52**	**105**	**50**	**20**	**52**	**40**	**25**	**70**	**85**	**75**	**67**	**35**	**20**	**31**	**25**	**65**	**65**		

Primärdata SKB-Forsmark dykprotokoll täckningsgrad															**max skattn**	**max djup**
År	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004		
Protokoll nr:	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Profil nr:	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**		
Transect ID-code	LFM 714	LFM 714	LFM 714	LFM 714	LFM 714	LFM 714	LFM 714	LFM 714	LFM 714	LFM 714	LFM 714	LFM 714	LFM 714	LFM 714		
Datum	04.08.23	04.08.23	04.08.23	04.08.23	04.08.23	04.08.23	04.08.23	04.08.23	04.08.23	04.08.23	04.08.23	04.08.23	04.08.23	04.08.23		
Skattare*	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
djupinterv.nr:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**		
avstånd min	52	42	37	19	16	14	12	10	7	6	5	4	2	O		
avstånd max	72	52	42	37	19	16	14	12	10	7	6	5	4	2		
djup min.	8,4	8,4	8,1	6,1	6	5,3	4,9	3,2	2,1	1,5	1	0,5	0,3	O		
djup max	8,6	8,6	8,4	8,1	6,1	6	5,3	4,9	3,2	2,1	1,5	1	0,5	0,3		
bottentyp																
häll																
block	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
sten						1		1	1	1	1	1	1	1		
grus								1	1							
sand	1	1	1	1		1										
lera																
övrigt																
sediment	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
siktdjup																
Rivularia atra									5	5	5	5	10		**10**	**3,2**
Ceramium ten..									5	5					**5**	**3,2**
Polysiphonia.nigr	5	5	5	5	5	5	10	5	5						**10**	**8,6**
Chorda filum									5	5	5	10	10	5	**10**	**3,2**
Pilayella/Ectoc.				5	5	5	10	50	50	25	5	5	5	10	**50**	**8,1**
Sphacelaria	5	5	5	5	1	1									**5**	**8,6**
Enteromorpha								5	5	5	5	5			**5**	**4,9**
Cladophora glomerata										5	10	25	75	75	**75**	**2,1**
Balanus					5	5	5		5						**5**	**6,1**
Summa	**10**	**10**	**10**	**15**	**16**	**16**	**25**	**60**	**80**	**50**	**30**	**50**	**100**	**90**		
Kommentarer:*MB=1																
Sammanfattn täckningsgrader																
djupinterv.nr:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**		
avstånd min	52	42	37	19	16	14	12	11	7	6	5	4	2	O		
avstånd max	72	52	42	37	19	16	14	12	10	7	6	5	4	2		
djup min.	8,4	8,4	8,1	6,1	6	5,3	4,9	4,2	2,1	1,5	1	0,5	0,3	O		
djup max	8,6	8,6	8,4	8,1	6,1	6	5,3	4,9	3,2	2,1	1,5	1	0,5	0,3		
blågröna									5	5	5	5	10		**10**	**3,2**
röda fintrådiga/anuell	5	5	5	5	5	5	10	5	10	5					**10**	**8,6**
röda struk/perenna																
bruna anuellea				5	5	5	10	50	50	25	5	5	5	10	**50**	**8,1**
bruna perenna	5	5	5	5	1	1			5	5	5	10	10	5	**10**	**8,6**
gröna								5	5	10	15	30	75	75	**75**	**4,9**
Characeae																
Potamogeton spp																
Zannichellia/Ruppia																
öv kärlväxter																
öv djur					5	5	5		5						**5**	**6,1**
kala ytor																
Summa	**10**	**10**	**10**	**15**	**16**	**16**	**25**	**60**	**80**	**50**	**30**	**50**	**100**	**90**		

Primärdata SKB-Forsmark dykprotokoll täckningsgrad																									**max skattn**	**max djup**
År	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004		
Protokoll nr:	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6		
Profil nr.:	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**		
Transect ID-code	LFM 715	LFM 715	LFM 715	LFM 715	LFM 715	LFM 715	LFM 715	LFM 715	LFM 715	LFM 715	LFM 715	LFM 715	LFM 715	LFM 715	LFM 715	LFM 715	LFM 715	LFM 715	LFM 715	LFM 715	LFM 715	LFM 715	LFM 715	LFM 715		
Datum	04.08.24	04.08.24	04.08.24	04.08.24	04.08.24	04.08.24	04.08.24	04.08.24	04.08.24	04.08.24	04.08.24	04.08.24	04.08.24	04.08.24	04.08.24	04.08.24	04.08.24	04.08.24	04.08.24	04.08.24	04.08.24	04.08.24	04.08.24	04.08.24		
Skattare*	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
djupinterv.nr:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**			
avstånd min	210	193	186	164	140	125	122	107	87	73	58	48	39	36	34	27	26	24	20	14	4	1	O			
avstånd max	250	210	193	186	164	140	125	122	107	87	73	58	48	39	36	34	27	26	24	20	14	4	1			
djup min.	1,4	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,2	1,1	1,1	1,1	0,9	0,9	0,8	0,4	0,3	0,3	0,2	O			
djup max	1,5	1,4	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,2	1,1	1,1	1,1	0,9	0,9	0,8	0,4	0,3	0,3	0,2			
bottentyp																										
häll																										
block																			1	1	1	1	1			
sten																			1	1	1	1	1			
grus																										
sand								1	1	1	1	1	1	1	1	1	1	1								
lera	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1								
övrigt																										
sediment	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3			
siktdjup																										
Rivularia atra																							5	**5**	**0,2**	
Pilayella/Ectoc.	10	10	10	10	10							10	10	10	10	10			50	75	25	10	10	**75**	**1,5**	
Vaucheria spp.	100	100	100	100	100	100	75	75	25	100	100													**100**	**1,5**	
Chara aspera														5	10	100	100	100		25	75	75	50	**100**	**1,1**	
Chara tomentosa							5	5					1	5	5	5	5	5	5					**5**	**1,3**	
Myriophyllum	5	5	5	5	5	5	50	75	25	5	10	5	5											**75**	**1,5**	
Najas marina											5	5	1	5			5	5	1					**5**	**1,3**	
Pot. perfol																			5					**5**	**0,8**	
P.pectinatus	1	1	1	1	1								1						5		1	1	1	**5**	**1,5**	
Zannichellia	50	50	25	25	50	75	50	25	10	5	5	75	100	50	50	25			5	5	5	5		**100**	**1,5**	
Summa	**166**	**166**	**141**	**141**	**166**	**180**	**180**	**180**	**60**	**110**	**120**	**95**	**118**	**75**	**75**	**140**	**110**	**110**	**71**	**105**	**106**	**91**	**66**			
Kommentarer:																										
*MB=1																										
sammanfattn täckningsgrader																										
djupinterv.nr:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**			
avstånd min	210	193	186	164	140	125	122	107	87	73	58	48	39	36	34	27	26	24	20	14	4	1	O			
avstånd max	250	210	193	186	164	140	125	122	107	87	73	58	48	39	36	34	27	26	24	20	14	4	1			
djup min.	1,4	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,2	1,1	1,1	1,1	0,9	0,9	0,8	0,4	0,3	0,3	0,2	O			
djup max	1,5	1,4	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,2	1,1	1,1	1,1	0,9	0,9	0,8	0,4	0,3	0,3	0,2			
blågröna																							5	**5**	**0,2**	
röda fintrådiga/anuell																										
röda struk/perenna																										
bruna anuellea	10	10	10	10	10							10	10	10	10	10			50	75	25	10	10	**75**	**1,5**	
bruna perenna																										
Vaucheriales	100	100	100	100	100	100	75	75	25	100	100													**100**	**1,5**	
gröna																										
Characeae							5	5					1	10	15	105	105	105	5	25	75	75	50	**105**	**1,3**	
Potamogeton spp	1	1	1	1	1								1						10		1	1	1	**10**	**1,5**	
Zannichellia/Ruppia	50	50	25	25	50	75	50	25	10	5	5	75	100	50	50	25			5	5	5	5		**100**	**1,5**	
öv kärlväxter	5	5	5	5	5	5	50	75	25	5	15	10	6	5			5	5	1					**75**	**1,5**	
kala ytor																										
Summa	**166**	**166**	**141**	**141**	**166**	**180**	**180**	**180**	**60**	**110**	**120**	**95**	**118**	**75**	**75**	**140**	**110**	**110**	**71**	**105**	**106**	**91**	**66**			

Primärdata SKB-Forsmark dykprotokoll täckningsgrad																											**max skattn**	**max djup**
År	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004		
Protokoll nr:	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7		
Profil nr.:	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**	**7**		
Transect ID-code	LFM 716	LFM 716	LFM 716	LFM 716	LFM 716	LFM 716	LFM 716	LFM 716	LFM 716	LFM 716	LFM 716	LFM 716	LFM 716	LFM 716	LFM 716	LFM 716	LFM 716	LFM 716	LFM 716	LFM 716	LFM 716	LFM 716	LFM 716	LFM 716	LFM 716	LFM 716		
Datum	04.08.27	04.08.27	04.08.27	04.08.27	04.08.27	04.08.27	04.08.27	04.08.27	04.08.27	04.08.27	04.08.27	04.08.27	04.08.27	04.08.27	04.08.27	04.08.27	04.08.27	04.08.27	04.08.27	04.08.27	04.08.27	04.08.27	04.08.27	04.08.27	04.08.27	04.08.27		
Skattare*	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1							
djupinterv.nr:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**			
avstånd min	245	239	228	221	211	209	189	180	151	136	120	117	112	100	86	74	62	60	57	55	42	38	34	32	O			
avstånd max	257	245	239	228	221	211	209	189	180	151	136	120	117	112	100	86	74	62	60	57	55	42	38	34	32			
djup min.	1,5	1,5	1,5	1,6	1,5	1,5	1,5	1,5	1,4	1,3	1,2	1,2	1,1	1	0,8	0,7	0,6	0,6	0,6	0,5	0,5	0,4	0,4	0,4	O			
djup max	1,6	1,5	1,6	1,6	1,6	1,5	1,6	1,6	1,5	1,4	1,3	1,2	1,2	1,1	1	0,8	0,7	0,6	0,6	0,6	0,5	0,5	0,4	0,4	0,4			
bottentyp																												
häll																												
block						1				1																		
sten																												
grus																						1	1	1	1			
sand													1	1	1	1	1	1	1	1	1	1	1	1	1			
lera	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1												
övrigt																												
sediment	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	2	2	2	2	2	2	2	2			
siktdjup																												
Pilayella/Ectoc.			5			5	5	5	10	10					10	1				10	10				5	**10**	**1,6**
Vaucheria spp.	100	100	100	25																						**100**	**1,6**
Enteromorpha						1				5																**5**	**1,5**
Chara aspera															100	100	100	75	50	25	10	10	5	5	5	**100**	**1**
Chara tomentosa														5	5				5							**5**	**1,1**
Callitriche spp.			10	25	25		10	5	5																	**25**	**1,6**
Myriophyllum		5		5	50		10	5	10	5	10	5	1								1	1				**50**	**1,6**
Najas marina																	5	5	5							**5**	**0,7**
Pot. perfol		25			50		5	25	10																	**50**	**1,6**
P.pectinatus			10	50											5	1		5	5	10	10		1		1	**50**	**1,6**
Zannichellia			5	10	10		75	50	25	75	50	25	5	5	1							1				**75**	**1,6**
kala ytor													100	100												**100**	**1,2**
Summa	**100**	**130**	**130**	**115**	**135**	**6**	**105**	**90**	**60**	**95**	**60**	**30**	**106**	**110**	**121**	**102**	**105**	**85**	**65**	**45**	**31**	**12**	**6**	**5**	**11**			
Kommentarer:																							**Vassbård börjar (32m)**					
*MB=1																												
sammanfattn täckningsgrader																												
djupinterv.nr:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**			
avstånd min	245	238	228	221	211	209	189	180	151	136	120	117	112	100	86	74	62	60	57	55	42	38	34	32	O			
avstånd max	257	245	239	228	221	211	209	189	180	151	136	120	117	112	100	86	74	62	60	57	55	42	38	34	32			
djup min.	1,5	1,5	1,5	1,6	1,5	1,5	1,5	1,5	1,4	1,3	1,2	1,2	1,1	1	0,8	0,7	0,6	0,6	0,6	0,5	0,5	0,4	0,4	0,4	O			
djup max	1,6	1,5	1,6	1,6	1,6	1,5	1,6	1,6	1,5	1,4	1,3	1,2	1,2	1,1	1	0,8	0,7	0,6	0,6	0,6	0,5	0,5	0,4	0,4	0,4			
blågröna																												
röda fintrådiga/anuell																												
röda struk/perenna																												
bruna anuellea			5			5	5	5	10	10					10	1				10	10				5	**10**	**1,6**
bruna perenna																												
Vaucheriales	100	100	100	25																						**100**	**1,6**
gröna						1				5																**5**	**1,5**
Characeae														5	105	100	100	75	55	25	10	10	5	5	5	**105**	**1,1**
Potamogeton spp		25	10	50	50		5	25	10						5	1		5	5	10	10		1		1	**50**	**1,6**
Zannichellia/Ruppia			5	10	10		75	50	25	75	50	25	5	5	1							1				**75**	**1,6**
öv kärlväxter		5	10	30	75		20	10	15	5	10	5	1				5	5	5		1	1				**30**	**1,6**
kala ytor													100	100												**100**	**1,2**
Summa	**100**	**130**	**130**	**115**	**135**	**6**	**105**	**90**	**60**	**95**	**60**	**30**	**106**	**110**	**121**	**102**	**105**	**85**	**65**	**45**	**31**	**12**	**6**	**5**	**11**			

Primärdata SKB-Forsmark dykprotokoll täckningsgrad																				**max skattn**	**max djup**
År	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004		
Protokoll nr:	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8		
Profil nr.:	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**	**8**		
Transect ID-code	LFM 717	LFM 717	LFM 717	LFM 717	LFM 717	LFM 717	LFM 717	LFM 717	LFM 717	LFM 717	LFM 717	LFM 717	LFM 717	LFM 717	LFM 717	LFM 717	LFM 717	LFM 717	LFM 717		
Datum	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26		
Skattare*	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
djupinterv.nr:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**		
avstånd min	139	135	134	109	107	101	90	68	60	53	47	43	39	34	30	23	12	2	O		
avstånd max	150	139	135	134	109	107	101	90	68	60	53	47	43	39	34	30	23	12	2		
djup min.	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,4	1,2	0,8	0,8	0,8	0,9	0,8	0,8	0,8	0,6	0,5	O		
djup max	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,4	1,2	0,8	0,9	0,9	0,9	0,8	0,8	0,8	0,6	0,5		
bottentyp																					
häll																					
block								1	1	1	1	1						1			
sten																					
grus																					
sand							1	1	1				1	1	1	1	1	1	1		
lera	1	1	1	1	1	1				1											
övrigt																					
sediment	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4		
siktdjup																					
Pilayella/Ectoc.								5	10	50	25	25						5		**50**	**1,5**
Sphacelaria									25											**25**	**1,4**
Vaucheria spp.	100	50	10																	**100**	**1,5**
Enteromorpha								1		1										**1**	**1,5**
Cladophora glomerata											25	25						5		**25**	**0,9**
Chara aspera														5	25	75	100	100		**100**	**0,9**
Chara tomentosa					5			1				5	5	5	5	5	5			**5**	**1,5**
Callitriche spp.				10				1												**10**	**1,5**
Myriophyllum	1			100	50	10	10	1	5	75	5	5		1	5	1	1			**100**	**1,5**
Najas marina												1	1					5		**5**	**0,9**
Pot. perfol						10	75	10	10						5		1			**75**	**1,5**
P.pectinatus											5	5	10			5	5			**10**	**0,9**
Zannichellia				25	50	5		5	5		5	5		10	5	5		1		**50**	**1,5**
Summa	**101**	**50**	**10**	**135**	**105**	**25**	**85**	**24**	**55**	**126**	**65**	**71**	**16**	**21**	**45**	**91**	**112**	**116**			
Kommentarer:																		**Vass börjar**			
*MB=1																					
sammanfattn täckningsgrader																					
djupinterv.nr:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**		
avstånd min	139	135	134	109	107	101	90	68	60	53	47	43	39	34	30	23	12	2	O		
avstånd max	150	139	135	134	109	107	101	90	68	60	53	47	43	39	34	30	23	12	2		
djup min.	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,4	1,2	0,8	0,8	0,8	0,9	0,8	0,8	0,8	0,6	0,5	O		
djup max	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,4	1,2	0,8	0,9	0,9	0,9	0,8	0,8	0,8	0,6	0,5		
blågröna																					
röda fintrådiga/anuell																					
röda struk/perenna																					
bruna anuellea								5	35	50	25	25						5		**50**	**1,5**
bruna perenna																					
Vaucheriales	100	50	10																	**100**	**1,5**
gröna								1		1	25	25						5		**25**	**1,5**
Characeae					5			1				5	5	10	30	80	105	100		**105**	**1,5**
Potamogeton spp						10	75	10	10		5	5	10		5	5	6			**75**	**1,5**
Zannichellia/Ruppia				25	50	5		5	5		5	5		10	5	5		1		**50**	**1,5**
öv kärlväxter	1			110	50	10	10	2	5	75	5	6	1	1	5	1	1	5		**110**	**1,5**
kala ytor																					
Summa	**101**	**50**	**10**	**135**	**105**	**25**	**85**	**24**	**55**	**126**	**65**	**71**	**16**	**21**	**45**	**91**	**112**	**116**			

Primärdata SKB-Forsmark dykprotokoll täckningsgrad																									**max skattn**	**max djup**
År	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004		
Protokoll nr:	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9		
Profil nr.:	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**		
Transect ID-code	LFM 718	LFM 718	LFM 718	LFM 718	LFM 718	LFM 718	LFM 718	LFM 718	LFM 718	LFM 718	LFM 718	LFM 718	LFM 718	LFM 718	LFM 718	LFM 718	LFM 718	LFM 718	LFM 718	LFM 718	LFM 718	LFM 718	LFM 718	LFM 718		
Datum	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26	04.08.26		
Skattare*	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
djupinterv.nr:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**			
avstånd min	169	153	150	140	137	116	107	89	85	80	75	73	48	45	41	32	27	18	17	10	6	1				
avstånd max	184	169	153	150	140	137	116	107	89	85	80	75	73	48	45	41	32	27	18	17	10	6	1			
djup min.	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,5	1,4	1,4	1,4	1,4	1,3	1,2	1,1	0,9	0,9	0,8	0,8	0,7	0,6	0,2				
djup max	1,4	1,4	1,4	1,4	1,4	1,4	1,5	1,5	1,5	1,4	1,4	1,4	1,4	1,3	1,2	1,1	0,9	0,9	0,8	0,8	0,7	0,6	0,2			
bottentyp																										
häll																										
block																										
sten																										
grus																										
sand																										
lera	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
övrigt																										
sediment	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2			
siktdjup																										
Pilayella/Ectoc.														5	5	5			5	5					**5**	**1,3**
Chara tomentosa	100	100	50	100		100	75		25		100		100	75	100	10	50	100	50						**100**	**1,5**
Najas marina						1		5	5						25	75	50	25	50	100	25				**100**	**1,5**
P.pectinatus		10	100	50	1	10	5	1	25		10		10	10	10	10	5	5			1				**100**	**1,5**
Phragmites australis														5											**5**	**1,3**
kala ytor					100			100	50	100		100									75	100	100		**100**	**1,5**
Summa	**100**	**110**	**150**	**150**	**101**	**111**	**80**	**106**	**105**	**100**	**110**	**100**	**110**	**95**	**140**	**100**	**105**	**130**	**105**	**105**	**101**	**100**	**100**			
Kommentarer:																						**Detritus 100**				
*MB=1																										
sammanfattn täckningsgrader																										
djupinterv.nr:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**			
avstånd min	169	153	150	140	137	116	107	89	85	80	75	73	48	45	41	32	27	18	17	10	6	1				
avstånd max	184	169	153	150	140	137	116	107	89	85	80	75	73	48	45	41	32	27	18	17	10	6	1			
djup min.	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,5	1,4	1,4	1,4	1,4	1,3	1,2	1,1	0,9	0,9	0,8	0,8	0,7	0,6	0,2				
djup max	1,4	1,4	1,4	1,4	1,4	1,4	1,5	1,5	1,5	1,4	1,4	1,4	1,4	1,3	1,2	1,1	0,9	0,9	0,8	0,8	0,7	0,6	0,2			
blågröna																										
röda fintrådiga/anuell																										
röda struk/perenna																										
bruna anuellea														5	5	5			5	5					**5**	**1,3**
bruna perenna																										
Vaucheriales																										
gröna																										
Characeae	100	100	50	100		100	75		25		100		100	75	100	10	50	100	50						**100**	**1,5**
Potamogeton spp		10	100	50	1	10	5	1	25		10		10	10	10	10	5	5			1				**100**	**1,5**
Zannichellia/Ruppia																										
öv kärlväxter						1		5	5					5	25	75	50	25	50	100	25				**100**	**1,5**
kala ytor					100			100	50	100		100									75	100	100		**100**	**1,5**
Summa	**100**	**110**	**150**	**150**	**101**	**111**	**80**	**106**	**105**	**100**	**110**	**100**	**110**	**95**	**140**	**100**	**105**	**130**	**105**	**105**	**101**	**100**	**100**			

Appendix 5

Primary data, plant and plant associated macrofauna biomass

Primary data. Plant and plant associated macrofauna biomass with mean, standard deviation and standard error of each transect and sampling depth

Primary data from quantitative sampling. Biomass given in g dry weight m $^{-2}$

				Mean	Stdev	SE				Mean	Stdev	SE				Mean	Stdev	SE
Year	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004
Sample no.	22	23	24	22--24	22--24	22--24	25	26	27	25--27	25--27	25--27	28	29	30	28--30	28--30	28--30
Profile no.	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Transect ID-code	**LFM 710**	**LFM 710**	**LFM 710**	**LFM 710**	**LFM 710**	**LFM 710**	**LFM 710**	**LFM 710**	**LFM 710**	**LFM 710**	**LFM 710**	**LFM 710**	**LFM 710**	**LFM 710**	**LFM 710**	**LFM 710**	**LFM 710**	**LFM 710**
Frame no.	1	2	3	1.2.3	1.2.3	1.2.3	21	23	24	21.23.24	21.23.24	21.23.24	4	5	6	4.5.6	4.5.6	4.5.6
Depth	0,6	0,6	0,6	0,6	0,6	0,6	3,1	3,1	3,1	3,1	3,1	3,1	3,1	3,1	3,1	3,1	3,1	3,1
PLANTS																		
BLUEGREEN		4,4425		1,4808	2,5649	1,8136			0,0010	0,0003	0,0006	0,0004	0,0010			0,0003	0,0006	0,0004
Rivularia atra	2,3100		5,1650	2,4917	2,5873	1,8295	0,0010			0,0003	0,0006	0,0004						
RED							0,0010			0,0003	0,0006	0,0004						
Hildenbrandia rubra (spp.)		0,0010		0,0003	0,0006	0,0004	0,0010	0,0010	0,0010	0,0010			0,0010			0,0003	0,0006	0,0004
Aglaothamnion roseum																		
Ceramium tenuicorne	0,2375	1,7350	3,4200	1,7975	1,5922	1,1258												
Polysiphonia spp.	1,5700			0,5233	0,9064	0,6409												
Polysiphonia fucoides		0,4450	0,0725	0,1725	0,2388	0,1688												
Polysiphonia fibrillosa																		
BROWN																		
Dictyosiphon/Stictyo.																		
Stictyosiphon tortilis																		
Pilayella littoralis																		
Pilayella/Ectocarpus	0,7950	12,4800	0,0010	4,4253	6,9868	4,9404												
Leathesia difformis							0,0525	0,0525		0,0350	0,0303	0,0214	0,0010	0,0075	0,0010	0,0032	0,0038	0,0027
Sphacelaria spp.																		
Sphacelaria arctica																		
Chorda filum																		
GREEN																		
green spp													0,0010			0,0003	0,0006	0,0004
Enteromorpha spp.																		
Enteromorpha compressa																		
Enteromorpha prolifera	0,1700	0.1925	1,1550	0,6625	0,6965	0,4925												
Enteromorpha intestinalis	4,6800	3,4500	1,8175	3,3158	1,4360	1,0154												
Ulothrix spp.	0,0010	0,0010		0,0007	0,0006	0,0004								0,0010		0,0003	0,0006	0,0004
Cladophora spp.																		
Cladophora aegagrophila							8,8300	10,0575	5,7725	8,2200	2,2067	1,5603	0,4750	0,2250		0,2333	0,2376	0,1680
Cladophora glomerata	13,8650	3,6750	12,4150	9,9850	5,5125	3,8979												
VAUCHERIALES																		
Vaucheria spp							4,9000	4,5925	14,3750	7,9558	5,5613	3,9324	340,4130	358,7350	371,8200	356,9893	15,7761	11,1554
CHARACEAE																		
Chara aspera																		
Chara sp.																		
DIATOMEA																		
BRYOPHYTA													0,0010	0,5925	0,0010	0,1982	0,3415	0,2415
PHANEROGAMS																		
Callitriche spp	2,2425		0,1225	0,7883	1,2608	0,8915		4,5500	6,8875	3,8125	3,5025	2,4766			0,1100	0,0367	0,0635	0,0449
C.hermafroditica							2,9825			0,9942	1,7219	1,2176						
Myriophyllum spicatum																		
Potamogeton perfoliatus			10,7425	3,5808	6,2022	4,3856												
Zannichellia spp.								1,9825	4,8150	3,3988	2,0029	1,4163						
Zannichellia palustris		1,0500		0,3500	0,6062	0,4287	2,1500			0,7167	1,2413	0,8777						
sum PLANTS	***25,871***	***27,280***	***34,911***	**29,354**	**4,864**	**3,439**	***18,918***	***21,236***	***31,852***	**24,002**	**6,896**	**4,876**	***340,893***	***359,561***	***371,932***	**357,462**	**15,626**	**11,049**
ANIMALS																		
PLATHYHELMINTES																		
NEMERTINI																		
Prostoma obscurum		0,0010	0,0010	0,0007	0,0006	0,0004												
Nematoda		0,0010		0,0003	0,0006	0,0004												
PRIAPULOIDEA																		
ECHIUROIDEA																		
ANNELIDAE																		
Pygospio elegans	0,0010		0,0010	0,0007	0,0006	0,0004												
Nereis diversicolor	0,0010	0,0010		0,0007	0,0006	0,0004	0,0325			0,0108	0,0188	0,0133						
Oligochaetae	0,0010	0,0010		0,0007	0,0006	0,0004									0,0010	0,0003	0,0006	0,0004
Piscicola geometra																		
MOLLUSCA								0,0010		0,0003	0,0006	0,0004						
Limapontia capitata	0,0010	0,0325	0,0010	0,0115	0,0182	0,0129	0,0010	0,0010	0,0275	0,0098	0,0153	0,0108			0,0010	0,0003	0,0006	0,0004
Bithynia tentaculata	1,4775	9,4850	7,9675	6,3100	4,2533	3,0075							2,1950			0,7317	1,2673	0,8961
Lymnaea spp.																		
Lymnaea stagnalis																		
Lymnaea peregra	0,1850	1,8250	0,0025	0,6708	1,0037	0,7097												
Planorbis sp.		0,1175		0,0392	0,0678	0,0480												
Theodoxus fluviatilis	0,4550	3,4275	1,0500	1,6442	1,5728	1,1121												
Potamopyrgus antipodarium							0,0010			0,0003	0,0006	0,0004						
Hydrobia spp.	2,1775	5,4575	0,8500	2,8283	2,3717	1,6770	19,9925	11,1200	10,8150	13,9758	5,2128	3,6860	14,4800	5,4375	6,2725	8,7300	4,9971	3,5335
Cerastoderma/Cardium	9,1075	12,1225	1,3900	7,5400	5,5353	3,9140												
Macoma balthica	5,3775	59,9750		21,7842	33,1833	23,4642	6,0925	26,4900	11,8500	14,8108	10,5161	7,4360	6,4100	10,3625	25,3600	14,0442	9,9971	7,0690
BRYOZOA																		
CRUSTACEANS																		
Balanus improvisus																		
Idothea spp.																		
Idothea viridis																		
Jaera albifronsspp.	0,0010			0,0003	0,0006	0,0004												
Gammarus spp.	0,0775	0,0900	0,0075	0,0583	0,0445	0,0314									0,0325	0,0108	0,0188	0,0133
Corophium volutator	0,2325	0,0600		0,0975	0,1207	0,0853												
Neomysis integer																		
INSECTA																		
Chironomidae	0,2950	0,4025	0,1750	0,2908	0,1138	0,0805	0,4750		0,0150	0,1633	0,2700	0,1909						
Tricoptera	0,0010	0,0010	0,1475	0,0498	0,0846	0,0598									0,0010	0,0003	0,0006	0,0004
Coleoptera																		
ACARINA																		
PISCES		0,3300		0,1100	0,1905	0,1347												
sum ANIMALS	***19,391***	***93,330***	***11,593***	**41,438**	**45,109**	**31,897**	***26,595***	***37,612***	***22,708***	**28,971**	**7,731**	**5,467**	***23,085***	***15,800***	***31,668***	**23,518**	**7,943**	**5,616**
Plant groups																		
bluegreen	2,3100	4,4425	5,1650	3,9725	1,4844	1,0496	0,0010		0,0010	0,0007	0,0006	0,0004	0,0010			0,0003	0,0006	0,0004
annual red	0,2375	1,7350	3,4200	1,7975	1,5922	1,1258	0,0010			0,0003	0,0006	0,0004						
perennial red		0,4460	0,0725	0,1728	0,2393	0,1692	0,0010	0,0010	0,0010	0,0010			0,0010			0,0003	0,0006	0,0004
annual brown	2,3650	12,4800	0,0010	4,9487	6,6286	4,6871	0,0525	0,0525		0,0350	0,0303	0,0214	0,0010	0,0075	0,0010	0,0032	0,0038	0,0027
perennial brown																		
Vaucheria							4,9000	4,5925	14,3750	7,9558	5,5613	3,9324	340,4130	358,7350	371,8200	356,9893	15,7761	11,1554
green	18,7160	7,1260	15,3875	13,7432	5,9674	4,2196	8,8300	10,0575	5,7725	8,2200	2,2067	1,5603	0,4760	0,2260		0,2340	0,2381	0,1684
characeae																		
Potamogeton spp			10,7425	3,5808	6,2022	4,3856												
Zostera																		
Zanichellia/Ruppia		1,0500		0,3500	0,6062	0,4287	2,1500	1,9825	4,8150	2,9825	1,5892	1,1237						
others	2,2425		0,1225	0,7883	1,2608	0,8915	2,9825	4,5500	6,8875	4,8067	1,9651	1,3895	0,0010	0,5925	0,1110	0,2348	0,3146	0,2225
Sum Plants	***25,871***	***27,280***	***34,911***	**29,354**	**4,864**	**3,439**	***18,918***	***21,236***	***31,852***	**24,002**	**6,896**	**4,876**	***340,893***	***359,561***	***371,932***	**357,462**	**15,626**	**11,049**
Animal trophic groups																		
filter feeders	9,1085	12,1225	1,3910	7,5407	5,5349	3,9137												
herbivores	2,1205	14,8885	9,1685	8,7258	6,3955	4,5223	0,0010	0,0020	0,0275	0,0102	0,0150	0,0106	2,1950		0,0020	0,7323	1,2667	0,8957
carnivores	0,0010	0,3320	0,0010	0,1113	0,1911	0,1351	0,0325			0,0108	0,0188	0,0133						
omnivores	0,3725	0,4925	0,1825	0,3492	0,1563	0,1105	0,4750		0,0150	0,1633	0,2700	0,1909			0,0325	0,0108	0,0188	0,0133
detrivores	7,7885	65,4945	0,8500	24,7110	35,4895	25,0949	26,0860	37,6100	22,6650	28,7870	7,8301	5,5367	20,8900	15,8000	31,6335	22,7745	8,0832	5,7157
Sum Animals	***19,391***	***93,330***	***11,593***	**41,438**	**45,109**	**31,897**	***26,595***	***37,612***	***22,708***	**28,971**	**7,731**	**5,467**	***23,085***	***15,800***	***31,668***	**23,518**	**7,943**	**5,616**

Primary data. Plant and plant associated macrofauna biomass with mean, standard deviation and standard error of each transect and sampling depth

Primary data from quantitative sampling. Biomass given in g dry weight m^{-2}

				Mean	Stdev	SE				Mean	Stdev	SE				Mean	Stdev	SE
Year	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004
Sample no.	10	11	12	10--12	10--12	10--12	1	2	3	1--3	1--3	1--3	4	5	6	4--6	4--6	4--6
Profile no.	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**
Transect ID-code	**LFM 714**	**LFM 714**	**LFM 714**	**LFM 714**	**LFM 714**	**LFM 714**	**LFM 714**	**LFM 714**	**LFM 714**	**LFM 714**	**LFM 714**	**LFM 714**	**LFM 714**	**LFM 714**	**LFM 714**	**LFM 714**	**LFM 714**	**LFM 714**
Frame no.	10	11	12	10.11.12	10.11.12	10.11.12	9	7	8	9.7.8	9.7.8	9.7.8	4	5	6	4.5.6	4.5.6	4.5.6
Depth	0,5	0,5	0,5	0,5	0,5	0,5	2,1	2,1	2,1	2,1	2,1	2,1	4,2	4,2	4,2	4,2	4,2	4,2
PLANTS																		
BLUEGREEN														0,0010	0,0300	0,0103	0,0170	0,0120
Rivularia atra	0,2600	0,6850	0,1425	0,3625	0,2854	0,2018	1,0200	0,6025	0,3175	0,6467	0,3533	0,2498	0,0010			0,0003	0,0006	0,0004
RED																		
Hildenbrandia rubra (spp.)		0,0010		0,0003	0,0006	0,0004	0,0010	0,0010	0,0010	0,0010			0,0010		0,0010	0,0007	0,0006	0,0004
Aglaothamnion roseum							0,0010			0,0003	0,0006	0,0004						
Ceramium tenuicorne	0,2675	0,0450	0,0010	0,1045	0,1429	0,1010	2,8325	0,2025	3,0550	2,0300	1,5866	1,1219	0,3175	0,1300	0,5475	0,3317	0,2091	0,1479
Polysiphonia spp.																		
Polysiphonia fucoides							5,3250	0,5475	0,1150	1,9958	2,8912	2,0444	0,0775	0,4000	0,1850	0,2208	0,1642	0,1161
Polysiphonia fibrillosa		0,7000	0,0750	0,2583	0,3843	0,2718		0,5600		0,1867	0,3233	0,2286			0,1575	0,0525	0,0909	0,0643
BROWN																		
Dictyosiphon/Stictyo.		0,0850		0,0283	0,0491	0,0347												
Stictyosiphon tortilis								0,4075	3,9300	1,4458	2,1610	1,5280	0,2175		0,3750	0,1975	0,1883	0,1331
Pilayella littoralis	0,0010			0,0003	0,0006	0,0004												
Pilayella/Ectocarpus		0,8275		0,2758	0,4778	0,3378	4,7300	1,0650	1,0475	2,2808	2,1211	1,4998	4,3225	1,1675	12,6150	6,0350	5,9128	4,1810
Leathesia difformis																		
Sphacelaria spp.																		
Sphacelaria arctica													0,0700	0,0010		0,0237	0,0401	0,0284
Chorda filum		0,3350		0,1117	0,1934	0,1368	1,4475		0,0725	0,5067	0,8156	0,5767	0,2150		0,0010	0,0720	0,1238	0,0876
GREEN																		
green spp																		
Enteromorpha spp.													4,6425			1,5475	2,6803	1,8953
Enteromorpha compressa			0,2600	0,0867	0,1501	0,1061												
Enteromorpha prolifera		0,6650		0,2217	0,3839	0,2715		1,5350	2,0000	1,1783	1,0466	0,7401		0,3800		0,1267	0,2194	0,1551
Enteromorpha intestinalis	0,0010			0,0003	0,0006	0,0004	14,2025			4,7342	8,1998	5,7981			3,5825	1,1942	2,0684	1,4625
Ulothrix spp.		0,0010		0,0003	0,0006	0,0004	0,0010	0,0010		0,0007	0,0006	0,0004	0,0010	0,0010	0,0010	0,0010		
Cladophora spp.														0,0010	0,0010	0,0007	0,0006	0,0004
Cladophora aegagrophila																		
Cladophora glomerata	19,7875	8,3625	9,5075	12,5525	6,2918	4,4490	0,0010	3,5950	0,4825	1,3595	1,9509	1,3795	0,8475			0,2825	0,4893	0,3460
VAUCHERIALES																		
Vaucheria spp																		
CHARACEAE																		
Chara aspera																		
Chara sp.																		
DIATOMEA																		
BRYOPHYTA																		
PHANEROGAMS																		
Callitriche spp																		
C.hermafroditica																		
Myriophyllum spicatum									0,2475	0,0825	0,1429	0,1010						
Potamogeton perfoliatus																		
Zannichellia spp.																		
Zannichellia palustris																		
sum PLANTS	***20,317***	***11,707***	***9,986***	**14,003**	**5,535**	**3,914**	***29,562***	***8,517***	***11,269***	**16,449**	**11,439**	**8,088**	***10,713***	***2,082***	***17,497***	**10,097**	**7,726**	**5,463**
ANIMALS																		
PLATHYHELMINTES																		
NEMERTINI																		
Prostoma obscurum							0,0010			0,0003	0,0006	0,0004			0,0010	0,0003	0,0006	0,0004
Nematoda																		
PRIAPULOIDEA																		
ECHIUROIDEA																		
ANNELIDAE																		
Pygospio elegans			0,0010	0,0003	0,0006	0,0004	0,0010	0,0010	0,0010	0,0010			0,0010	0,0010	0,0010	0,0010		
Nereis diversicolor																		
Oligochaetae																		
Piscicola geometra															0,0010	0,0003	0,0006	0,0004
MOLLUSCA																		
Limapontia capitata													0,0010			0,0003	0,0006	0,0004
Bithynia tentaculata								3,4625		1,1542	1,9991	1,4136	0,0010		4,7550	1,5853	2,7450	1,9410
Lymnaea spp.																		
Lymnaea stagnalis			0,0950	0,0317	0,0548	0,0388								0,3425		0,1142	0,1977	0,1398
Lymnaea peregra	2,0775	0,0600	0,8100	0,9825	1,0198	0,7211	2,1725		0,8900	1,0208	1,0921	0,7723						
Planorbis sp.																		
Theodoxus fluviatilis	8,7000	2,3350	4,0275	5,0208	3,2967	2,3311	6,0525	0,5050	2,8925	3,1500	2,7827	1,9677	4,6600	2,3525	7,1650	4,7258	2,4069	1,7020
Potamopyrgus antipodarium																		
Hydrobia spp.							0,0010	0,6400	0,0010	0,2140	0,3689	0,2609	7,1750	1,4475	9,0850	5,9025	3,9746	2,8105
Cerastoderma/Cardium							2,4325	0,2200	5,1500	2,6008	2,4693	1,7461	10,0900	0,0525	36,3900	15,5108	18,7655	13,2692
Macoma balthica							0,2225	0,0850		0,1025	0,1123	0,0794	13,5775		82,0650	31,8808	43,9878	31,1041
BRYOZOA																		
CRUSTACEANS																		
Balanus improvisus														0,0010		0,0003	0,0006	0,0004
Idothea spp.													0,0200			0,0067	0,0115	0,0082
Idothea viridis									0,0350	0,0117	0,0202	0,0143						
Jaera albifronsspp.							0,0625			0,0208	0,0361	0,0255						
Gammarus spp.	0,0725	0,0010	0,4725	0,1820	0,2541	0,1797	0,1275	0,0010	0,0300	0,0528	0,0663	0,0469	0,0150			0,0050	0,0087	0,0061
Corophium volutator																		
Neomysis integer														0,0150		0,0050	0,0087	0,0061
INSECTA																		
Chironomidae	0,3375	0,1150	0,2300	0,2275	0,1113	0,0787	0,0750	0,0700	0,0300	0,0583	0,0247	0,0174	0,0010	0,0275	0,0010	0,0098	0,0153	0,0108
Tricoptera		0,0900		0,0300	0,0520	0,0367	0,0275	0,0200		0,0158	0,0142	0,0101	0,0010			0,0003	0,0006	0,0004
Coleoptera																		
ACARINA							0,0010			0,0003	0,0006	0,0004						
PISCES																		
sum ANIMALS	***11,188***	***2,601***	***5,636***	**6,475**	**4,354**	**3,079**	***11,177***	***5,005***	***9,030***	**8,404**	**3,133**	**2,216**	***35,543***	***4,240***	***139,464***	**59,749**	**70,788**	**50,054**
Plant groups																		
bluegreen	0,2600	0,6850	0,1425	0,3625	0,2854	0,2018	1,0200	0,6025	0,3175	0,6467	0,3533	0,2498	0,0010	0,0010	0,0300	0,0107	0,0167	0,0118
annual red	0,2675	0,7450	0,0760	0,3628	0,3445	0,2436	2,8335	0,7625	3,0550	2,2170	1,2645	0,8941	0,3175	0,1300	0,7050	0,3842	0,2932	0,2074
perennial red		0,0010		0,0003	0,0006	0,0004	5,3260	0,5485	0,1160	1,9968	2,8912	2,0444	0,0785	0,4000	0,1860	0,2215	0,1637	0,1157
annual brown	0,0010	1,2475		0,4162	0,7200	0,5091	6,1775	1,4725	5,0500	4,2333	2,4565	1,7370	4,7550	1,1675	12,9910	6,3045	6,0621	4,2866
perennial brown													0,0700	0,0010		0,0237	0,0401	0,0284
Vaucheria																		
green	19,7885	9,0285	9,7675	12,8615	6,0103	4,2499	14,2045	5,1310	2,4825	7,2727	6,1475	4,3469	5,4910	0,3820	3,5845	3,1525	2,5818	1,8256
characeae																		
Potamogeton spp																		
Zostera																		
Zanichellia/Ruppia																		
others									0,2475	0,0825	0,1429	0,1010						
Sum Plants	***20,317***	***11,707***	***9,986***	**14,003**	**5,535**	**3,914**	***29,562***	***8,517***	***11,269***	**16,449**	**11,439**	**8,088**	***10,713***	***2,082***	***17,497***	**10,097**	**7,726**	**5,463**
Animal trophic groups																		
filter feeders			0,0010	0,0003	0,0006	0,0004	2,4335	0,2210	5,1510	2,6018	2,4693	1,7461	10,0910	0,0545	36,3910	15,5122	18,7650	13,2689
herbivores	10,7775	2,4850	4,9325	6,0650	4,2607	3,0127	8,3150	3,9875	3,8175	5,3733	2,5490	1,8024	4,6830	2,6950	11,9200	6,4327	4,8550	3,4330
carnivores							0,0020			0,0007	0,0012	0,0008		0,0150	0,0020	0,0057	0,0081	0,0058
omnivores	0,4100	0,1160	0,7025	0,4095	0,2933	0,2074	0,2025	0,0710	0,0600	0,1112	0,0793	0,0561	0,0160	0,0275	0,0010	0,0148	0,0133	0,0094
detrivores							0,2235	0,7250	0,0010	0,3165	0,3709	0,2622	20,7525	1,4475	91,1500	37,7833	47,2141	33,3854
Sum Animals	***11,188***	***2,601***	***5,636***	**6,475**	**4,354**	**3,079**	***11,177***	***5,005***	***9,030***	**8,404**	**3,133**	**2,216**	***35,543***	***4,240***	***139,464***	**59,749**	**70,788**	**50,054**

Primary data. Plant and plant associated macrofauna biomass with mean, standard deviation and standard error of each transect and sampling depth

Primary data from quantitative sampling. Biomass given in g dry weight m^{-2}

				Mean	Stdev	SE
Year	2004	2004	2004	2004	2004	2004
Sample no.	7	8	9	7--9	7--9	7--9
Profile no.	**5**	**5**	**5**	**5**	**5**	**5**
Transect ID-code	**LFM 714**	**LFM 714**	**LFM 714**	**LFM 714**	**LFM 714**	**LFM 714**
Frame no.	1	2	3	1.2.3	1.2.3	1.2.3
Depth	6	6	6	6	6	6
PLANTS						
BLUEGREEN						
Rivularia atra						
RED						
Hildenbrandia rubra (spp.)			0,0010	0,0003	0,0006	0,0004
Aglaothamnion roseum		0,0010		0,0003	0,0006	0,0004
Ceramium tenuicorne	0,0010	0,0010	0,0010	0,0010		
Polysiphonia spp.						
Polysiphonia fucoides	0,0010			0,0003	0,0006	0,0004
Polysiphonia fibrillosa			0,2825	0,0942	0,1631	0,1153
BROWN						
Dictyosiphon/Stictyo.						
Stictyosiphon tortilis			0,0010	0,0003	0,0006	0,0004
Pilayella littoralis						
Pilayella/Ectocarpus	0,5938	0,3850	1,8675	0,9488	0,8025	0,5674
Leathesia difformis						
Sphacelaria spp.	0,5938			0,1979	0,3428	0,2424
Sphacelaria arctica		0,1750	0,0010	0,0587	0,1007	0,0712
Chorda filum			0,4725	0,1575	0,2728	0,1929
GREEN						
green spp						
Enteromorpha spp.	0,0010		0,5775	0,1928	0,3331	0,2356
Enteromorpha compressa						
Enteromorpha prolifera						
Enteromorpha intestinalis		0,0350		0,0117	0,0202	0,0143
Ulothrix spp.	0,0010	0,0010	0,0010	0,0010		
Cladophora spp.	0,0010			0,0003	0,0006	0,0004
Cladophora aegagrophila						
Cladophora glomerata			1,4650	0,4883	0,8458	0,5981
VAUCHERIALES						
Vaucheria spp						
CHARACEAE						
Chara aspera						
Chara sp.						
DIATOMEA						
BRYOPHYTA						
PHANEROGAMS			0,0010	0,0003	0,0006	0,0004
Callitriche spp						
C.hermafroditica						
Myriophyllum spicatum						
Potamogeton perfoliatus						
Zannichellia spp.						
Zannichellia palustris						
sum PLANTS	***1,193***	***0,598***	***4,671***	**2,154**	**2,200**	**1,556**
ANIMALS						
PLATHYHELMINTES						
NEMERTINI						
Prostoma obscurum	0,0010	0,0010		0,0007	0,0006	0,0004
Nematoda						
PRIAPULOIDEA						
ECHIUROIDEA						
ANNELIDAE						
Pygospio elegans	0,0010		0,0010	0,0007	0,0006	0,0004
Nereis diversicolor			0,0400	0,0133	0,0231	0,0163
Oligochaetae						
Piscicola geometra						
MOLLUSCA						
Limapontia capitata			0,0010	0,0003	0,0006	0,0004
Bithynia tentaculata			6,1850	2,0617	3,5709	2,5250
Lymnaea spp.						
Lymnaea stagnalis						
Lymnaea peregra						
Planorbis sp.						
Theodoxus fluviatilis		0,0010	0,4400	0,1470	0,2537	0,1794
Potamopyrgus antipodarium						
Hydrobia spp.	2,2350	0,9275	6,8700	3,3442	3,1227	2,2081
Cerastoderma/Cardium						
Macoma balthica	0,0010	0,0010	47,3050	15,7690	27,3110	19,3118
BRYOZOA						
CRUSTACEANS						
Balanus improvisus						
Idothea spp.						
Idothea viridis						
Jaera albifronsspp.						
Gammarus spp.						
Corophium volutator						
Neomysis integer						
INSECTA						
Chironomidae	0,0175	0,0010		0,0062	0,0098	0,0069
Tricoptera			0,0010	0,0003	0,0006	0,0004
Coleoptera						
ACARINA						
PISCES						
sum ANIMALS	***2,256***	***0,932***	***60,843***	**21,343**	**34,214**	**24,193**
Plant groups						
bluegreen						
annual red	0,0010	0,0020	0,2835	0,0955	0,1628	0,1151
perennial red	0,0010		0,0010	0,0007	0,0006	0,0004
annual brown	0,5938	0,3850	2,3410	1,1066	1,0741	0,7595
perennial brown	0,5938	0,1750	0,0010	0,2566	0,3047	0,2155
Vaucheria						
green	0,0030	0,0360	2,0435	0,6942	1,1687	0,8264
characeae						
Potamogeton spp						
Zostera						
Zanichellia/Ruppia						
others			0,0010	0,0003	0,0006	0,0004
Sum Plants	***1,193***	***0,598***	***4,671***	**2,154**	**2,200**	**1,556**
Animal trophic groups						
filter feeders	0,0010		0,0010	0,0007	0,0006	0,0004
herbivores		0,0010	6,6270	2,2093	3,8258	2,7053
carnivores	0,0010	0,0010	0,0400	0,0140	0,0225	0,0159
omnivores	0,0175	0,0010		0,0062	0,0098	0,0069
detrivores	2,2360	0,9285	54,1750	19,1132	30,3715	21,4759
Sum Animals	***2,256***	***0,932***	***60,843***	**21,343**	**34,214**	**24,193**

Primary data. Plant and plant associated macrofauna biomass with mean, standard deviation and standard error of each transect and sampling depth

Primary data from quantitative sampling. Biomass given in g dry weight m $^{-2}$

				Mean	Stdev	SE				Mean	Stdev	SE				Mean	Stdev	SE
Year	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004
Sample no.	13	14	15	13--15	13--15	13--15	19	20	21	19--21	19--21	19--21	16	17	18	16--18	16--18	16--18
Profile no.	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**
Transect ID-code	**LFM 715**	**LFM 715**	**LFM 715**	**LFM 715**	**LFM 715**	**LFM 715**	**LFM 715**	**LFM 715**	**LFM 715**	**LFM 715**	**LFM 715**	**LFM 715**	**LFM 715**	**LFM 715**	**LFM 715**	**LFM 715**	**LFM 715**	**LFM 715**
Frame no.	4	5	6	4.5.6	4.5.6	4.5.6	21	22	23	21.22.23	21.22.23	21.22.23	1	2	3	1.2.3	1.2.3	1.2.3
Depth	0,9	0,9	0,9	0,9	0,9	0,9	1,2	1,2	1,2	1,2	1,2	1,2	1,3	1,3	1,3	1,3	1,3	1,3
PLANTS																		
BLUEGREEN	0,0525	0,1750	0,0775	0,1017	0,0647	0,0458	1,6250	0,6875	0,8075	1,0400	0,5102	0,3607	0,0300	0,0010	0,0325	0,0212	0,0175	0,0124
Rivularia atra																		
RED																		
Hildenbrandia rubra (spp.)																		
Aglaothamnion roseum																		
Ceramium tenuicorne																		
Polysiphonia spp.																		
Polysiphonia fucoides																		
Polysiphonia fibrillosa																		
BROWN																		
Dictyosiphon/Stictyo.																		
Stictyosiphon tortilis																		
Pilayella littoralis																		
Pilayella/Ectocarpus			0,0010	0,0003	0,0006	0,0004	1,3125	0,0010	0,0010	0,4382	0,7572	0,5354		0,0010	0,2000	0,0670	0,1152	0,0814
Leathesia difformis							0,1275	0,2500	0,1325	0,1700	0,0693	0,0490	0,5125	0,1025	0,6000	0,4050	0,2656	0,1878
Sphacelaria spp.																		
Sphacelaria arctica																		
Chorda filum																		
GREEN																		
green spp																		
Enteromorpha spp.																		
Enteromorpha compressa																		
Enteromorpha prolifera																		
Enteromorpha intestinalis																		
Ulothrix spp.			0,0010	0,0003	0,0006	0,0004	0,0010			0,0003	0,0006	0,0004						
Cladophora spp.		0,0010		0,0003	0,0006	0,0004												
Cladophora aegagrophila																		
Cladophora glomerata																		
VAUCHERIALES																		
Vaucheria spp									0,0010	0,0003	0,0006	0,0004	412,3630	568,4880	484,0500	488,3003	78,1492	55,2599
CHARACEAE																		
Chara aspera	156,2980	188,5350	148,6375	164,4902	21,1728	14,9714												
Chara sp.							0,0010			0,0003	0,0006	0,0004						
DIATOMEA																		
BRYOPHYTA																		
PHANEROGAMS																		
Callitriche spp																		
C.hermafroditica																		
Myriophyllum spicatum							0,8875			0,2958	0,5124	0,3623						
Potamogeton perfoliatus																		
Zannichellia spp.		0,1450	0,2350	0,1267	0,1186	0,0838	48,0225	51,9000	46,7275	48,8833	2,6916	1,9032	24,5250	4,0300	4,8075	11,1208	11,6149	8,2129
Zannichellia palustris																		
sum PLANTS	***156,351***	***188,856***	***148,952***	**164,720**	**21,228**	**15,010**	***51,977***	***52,839***	***47,670***	**50,828**	**2,769**	**1,958**	***437,431***	***572,623***	***489,690***	**499,914**	**68,173**	**48,206**
ANIMALS																		
PLATHYHELMINTES																		
NEMERTINI																		
Prostoma obscurum							0,0010			0,0003	0,0006	0,0004						
Nematoda																		
PRIAPULOIDEA																		
ECHIUROIDEA																		
ANNELIDAE																		
Pygospio elegans																		
Nereis diversicolor														0,0010		0,0003	0,0006	0,0004
Oligochaetae													0,0010			0,0003	0,0006	0,0004
Piscicola geometra	0,0010			0,0003	0,0006	0,0004	0,0225			0,0075	0,0130	0,0092						
MOLLUSCA																		
Limapontia capitata								0,0010	0,0010	0,0007	0,0006	0,0004	0,0010			0,0003	0,0006	0,0004
Bithynia tentaculata	6,7850			2,2617	3,9173	2,7700												
Lymnaea spp.		7,4050		2,4683	4,2753	3,0231												
Lymnaea stagnalis																		
Lymnaea peregra	1,8150		1,3625	1,0592	0,9448	0,6680	2,1350	0,1200	0,0010	0,7520	1,1992	0,8480	0,1525	0,1450		0,0992	0,0860	0,0608
Planorbis sp.	0,0675			0,0225	0,0390	0,0276												
Theodoxus fluviatilis		1,3600	0,9700	0,7767	0,7003	0,4952												
Potamopyrgus antipodarium																		
Hydrobia spp.	28,2550	24,4175	18,4925	23,7217	4,9183	3,4778	26,3500	11,2225	12,3200	16,6308	8,4349	5,9644	14,9400	10,3650	8,6500	11,3183	3,2516	2,2992
Cerastoderma/Cardium	3,1250	1,8475	1,6700	2,2142	0,7938	0,5613	0,9875	0,3750	0,3925	0,5850	0,3487	0,2466	0,7325	0,3175	0,3075	0,4525	0,2425	0,1715
Macoma balthica	12,0725	10,6650	10,2475	10,9950	0,9562	0,6761	6,7425	3,0150	2,7050	4,1542	2,2469	1,5888	8,6950	10,2550	10,5625	9,8375	1,0013	0,7080
BRYOZOA																		
CRUSTACEANS																		
Balanus improvisus																		
Idothea spp.																		
Idothea viridis																		
Jaera albifronsspp.																		
Gammarus spp.							0,1225			0,0408	0,0707	0,0500						
Corophium volutator																		
Neomysis integer																		
INSECTA																		
Chironomidae		0,1125	0,0375	0,0500	0,0573	0,0405		0,0010		0,0003	0,0006	0,0004						
Tricoptera		0,3075	0,1025	0,1367	0,1566	0,1107							0,0010			0,0003	0,0006	0,0004
Coleoptera									0,0010	0,0003	0,0006	0,0004						
ACARINA																		
PISCES		0,7725		0,2575	0,4460	0,3154												
sum ANIMALS	***52,121***	***46,888***	***32,883***	**43,964**	**9,947**	**7,034**	***36,361***	***14,735***	***15,421***	**22,172**	**12,293**	**8,692**	***24,523***	***21,084***	***19,520***	**21,709**	**2,559**	**1,810**
Plant groups																		
bluegreen	0,0525	0,1750	0,0775	0,1017	0,0647	0,0458	1,6250	0,6875	0,8075	1,0400	0,5102	0,3607	0,0300	0,0010	0,0325	0,0212	0,0175	0,0124
annual red																		
perennial red																		
annual brown			0,0010	0,0003	0,0006	0,0004	1,4400	0,2510	0,1335	0,6082	0,7228	0,5111	0,5125	0,1035	0,8000	0,4720	0,3500	0,2475
perennial brown																		
Vaucheria									0,0010	0,0003	0,0006	0,0004	412,3630	568,4880	484,0500	488,3003	78,1492	55,2599
green		0,0010	0,0010	0,0007	0,0006	0,0004	0,0010			0,0003	0,0006	0,0004						
characeae	156,2980	188,5350	148,6375	164,4902	21,1728	14,9714	0,0010			0,0003	0,0006	0,0004						
Potamogeton spp																		
Zostera																		
Zanichellia/Ruppia		0,1450	0,2350	0,1267	0,1186	0,0838	48,0225	51,9000	46,7275	48,8833	2,6916	1,9032	24,5250	4,0300	4,8075	11,1208	11,6149	8,2129
others							0,8875			0,2958	0,5124	0,3623						
Sum Plants	***156,351***	***188,856***	***148,952***	**164,720**	**21,228**	**15,010**	***51,977***	***52,839***	***47,670***	**50,828**	**2,769**	**1,958**	***437,431***	***572,623***	***489,690***	**499,914**	**68,173**	**48,206**
Animal trophic groups																		
filter feeders	3,1250	1,8475	1,6700	2,2142	0,7938	0,5613	0,9875	0,3750	0,3925	0,5850	0,3487	0,2466	0,7325	0,3175	0,3075	0,4525	0,2425	0,1715
herbivores	8,6675	9,0725	2,4350	6,7250	3,7208	2,6310	2,1350	0,1210	0,0020	0,7527	1,1986	0,8475	0,1545	0,1450		0,0998	0,0866	0,0612
carnivores	0,0010	0,7725		0,2578	0,4457	0,3152	0,0235		0,0010	0,0082	0,0133	0,0094		0,0010		0,0003	0,0006	0,0004
omnivores		0,1125	0,0375	0,0500	0,0573	0,0405	0,1225	0,0010		0,0412	0,0704	0,0498						
detrivores	40,3275	35,0825	28,7400	34,7167	5,8024	4,1029	33,0925	14,2375	15,0250	20,7850	10,6659	7,5419	23,6360	20,6200	19,2125	21,1562	2,2600	1,5980
Sum Animals	***52,121***	***46,888***	***32,883***	**43,964**	**9,947**	**7,034**	***36,361***	***14,735***	***15,421***	**22,172**	**12,293**	**8,692**	***24,523***	***21,084***	***19,520***	**21,709**	**2,559**	**1,810**

Appendix 6

Field notes, benthic macrofauna

Kallriga, bottenfauna

Datum: 2004-09-15

Klockslag: 11:40

Väder: Växl. moln. Regn.

Utförare: Micke Borgiel

		x-koordinat	y-koordinat	Djup (m)	Botten
Provpunkt:	PFM 5906	6695628	1635121	1,8	Mjukbotten

Provbeskrivning.

Art.

Vaucheriales	
Vaucheria	100
Characeae	
Chara baltica	
Chara tomentosa	
Chara sp	
Tolypella spp	
Green	
Enteromorpha intestinalis	
Cladophora glomerata	
Phanerogams	
Callitriche spp	
Myriophyllum sp	
Potamogeton pectinatus	
Potamogeton perfoliatus	
Ranunculus spp	
Ruppia spp	
Najas marina	
Zanichellia spp	
Phragmites australis	

Övriga anmärkningar.

Kallriga, bottenfauna

Datum: 2004-09-15

Klockslag: 12:25

Väder: Växl. moln. Regn.

Utförare: Micke Borgiel

		x-koordinat	y-koordinat	Djup (m)	Botten
Provpunkt:	PFM 5907	6695454	1635055	1,2	Sandbotten

Provbeskrivning

Art

Vaucheriales	
Vaucheria	
Characeae	
Chara baltica	
Chara tomentosa	
Chara sp	+
Tolypella spp	
Green	
Enteromorpha intestinalis	
Cladophora glomerata	
Phanerogams	
Callitriche spp	
Myriophyllum sp	
Potamogeton pectinatus	
Potamogeton perfoliatus	
Ranunculus spp	
Ruppia spp	
Najas marina	
Zanichellia spp	
Phragmites australis	

Övriga anmärkningar: Provpunkten flyttad (52,3 m) på grund av stenig botten.

Kallriga, bottenfauna

Datum: 2004-09-15

Klockslag: 09:55

Väder: Växl. moln. Regn.

Utförare: Micke Borgiel

		x-koordinat	y-koordinat	Djup (m)	Botten
Provpunkt:	PFM 5908	6696601	1635416	1,2	Sandbotten, grus

Provbeskrivning.

Art.

Vaucheriales	
Vaucheria	
Characeae	
Chara baltica	
Chara tomentosa	
Chara sp	+
Tolypella spp	
Green	
Enteromorpha intestinalis	
Cladophora glomerata	
Phanerogams	
Callitriche spp	
Myriophyllum sp	
Potamogeton pectinatus	
Potamogeton perfoliatus	
Ranunculus spp	
Ruppia spp	
Najas marina	
Zanichellia spp	
Phragmites australis	

Övriga anmärkningar.

Kallriga, bottenfauna

Datum: 2004-09-15

Klockslag: 10:05

Väder: Växl. moln. Regn.

Utförare: Micke Borgiel

		x-koordinat	y-koordinat	Djup (m)	Botten
Provpunkt:	PFM 5909	6696398	1635513	2,0	Mjukbotten

Provbeskrivning.

Art.

Vaucheriales	
Vaucheria	100
Characeae	
Chara baltica	
Chara tomentosa	
Chara sp	
Tolypella spp	
Green	
Enteromorpha intestinalis	
Cladophora glomerata	
Phanerogams	
Callitriche spp	
Myriophyllum sp	
Potamogeton pectinatus	
Potamogeton perfoliatus	
Ranunculus spp	
Ruppia spp	
Najas marina	
Zanichellia spp	
Phragmites australis	

Övriga anmärkningar.

Kallriga, bottenfauna

Datum: 2004-09-15

Klockslag: 11:55

Väder: Växl. moln. Regn.

Utförare: Micke Borgiel

		x-koordinat	y-koordinat	Djup (m)	Botten
Provpunkt:	PFM 5910	6695632	1634976	1,5	Mjukbotten

Provbeskrivning.

Art.

Vaucheriales	
Vaucheria	100
Characeae	
Chara baltica	
Chara tomentosa	
Chara sp	
Tolypella spp	
Green	
Enteromorpha intestinalis	
Cladophora glomerata	
Phanerogams	
Callitriche spp	
Myriophyllum sp	
Potamogeton pectinatus	
Potamogeton perfoliatus	
Ranunculus spp	
Ruppia spp	
Najas marina	
Zanichellia spp	
Phragmites australis	

Övriga anmärkningar.

Kallriga, bottenfauna

Datum: 2004-09-15

Klockslag: 11:27

Väder: Växl. moln. Regn.

Utförare: Micke Borgiel

		x-koordinat	y-koordinat	Djup (m)	Botten
Provpunkt:	PFM 5911	6695652	1635403	1,4	Sandbotten

Provbeskrivning.

Art.

Vaucheriales	
Vaucheria	
Characeae	
Chara baltica	
Chara tomentosa	
Chara sp	+
Tolypella spp	
Green	
Enteromorpha intestinalis	
Cladophora glomerata	
Phanerogams	
Callitriche spp	
Myriophyllum sp	
Potamogeton pectinatus	
Potamogeton perfoliatus	
Ranunculus spp	
Ruppia spp	
Najas marina	
Zanichellia spp	
Phragmites australis	

Övriga anmärkningar.

Kallriga, bottenfauna

Datum:	2004-09-15				
Klockslag:	11:00				
Väder:	Växl. moln. Regn.				
Utförare:	Micke Borgiel				
		x-koordinat	**y-koordinat**	**Djup (m)**	**Botten**
Provpunkt:	PFM 5912	6695969	1635295	1,3	Sandbotten, sten

Provbeskrivning.

Art.

Vaucheriales
Vaucheria
Characeae
Chara baltica
Chara tomentosa
Chara sp
Tolypella spp
Green
Enteromorpha intestinalis
Cladophora glomerata
Phanerogams
Callitriche spp
Myriophyllum sp
Potamogeton pectinatus
Potamogeton perfoliatus
Ranunculus spp
Ruppia spp
Najas marina
Zanichellia spp
Phragmites australis

Övriga anmärkningar.

Kallriga, bottenfauna

Datum: 2004-09-15

Klockslag: 10:15

Väder: Växl. moln. Regn.

Utförare: Micke Borgiel

		x-koordinat	y-koordinat	Djup (m)	Botten
Provpunkt:	PFM 5913	6696320	1635515	2,3	Mjukbotten

Provbeskrivning.

Art.

Vaucheriales	
Vaucheria	100
Characeae	
Chara baltica	
Chara tomentosa	
Chara sp	
Tolypella spp	
Green	
Enteromorpha intestinalis	
Cladophora glomerata	
Phanerogams	
Callitriche spp	
Myriophyllum sp	
Potamogeton pectinatus	
Potamogeton perfoliatus	
Ranunculus spp	
Ruppia spp	
Najas marina	
Zanichellia spp	
Phragmites australis	

Övriga anmärkningar.

Kallriga, bottenfauna

Datum: 2004-09-15

Klockslag: 09:23

Väder: Växl. moln. Regn.

Utförare: Micke Borgiel

	x-koordinat	y-koordinat	Djup (m)	Botten
Provpunkt: PFM 5914	6696880	1635877	1,7	Mjukbotten, lera, gyttja

Provbeskrivning.

Art.

Vaucheriales	
Vaucheria	100
Characeae	
Chara baltica	
Chara tomentosa	
Chara sp	
Tolypella spp	
Green	
Enteromorpha intestinalis	
Cladophora glomerata	
Phanerogams	
Callitriche spp	
Myriophyllum sp	
Potamogeton pectinatus	
Potamogeton perfoliatus	
Ranunculus spp	
Ruppia spp	
Najas marina	
Zanichellia spp	
Phragmites australis	

Övriga anmärkningar.

Kallriga, bottenfauna

Datum: 2004-09-15

Klockslag: 09:05

Väder: Växl. moln. Regn.

Utförare: Micke Borgiel

	x-koordinat	y-koordinat	Djup (m)	Botten
Provpunkt: PFM 5915	6696393	1636044	3,1	Mjukbotten, lera, gyttja

Provbeskrivning.

Art.

Vaucheriales	
Vaucheria	100
Characeae	
Chara baltica	
Chara tomentosa	
Chara sp	
Tolypella spp	
Green	
Enteromorpha intestinalis	
Cladophora glomerata	
Phanerogams	
Callitriche spp	
Myriophyllum sp	
Potamogeton pectinatus	
Potamogeton perfoliatus	
Ranunculus spp	
Ruppia spp	
Najas marina	
Zanichellia spp	
Phragmites australis	

Övriga anmärkningar: Provpunkten flyttad på grund av stenig botten.

Tixlan, bottenfauna

Datum: 2004-09-15

Klockslag: 15:40

Väder: Växl. moln. Regn.

Utförare: Micke Borgiel

		x-koordinat	y-koordinat	Djup (m)	Botten
Provpunkt:	PFM 5916	6699025	1634804	5,6	Mjukbotten

Provbeskrivning.

Art.

Vaucheriales	
Vaucheria	+
Characeae	
Chara baltica	
Chara tomentosa	
Chara sp	
Tolypella spp	
Green	
Enteromorpha intestinalis	
Cladophora glomerata	
Phanerogams	
Callitriche spp	
Myriophyllum sp	
Potamogeton pectinatus	
Potamogeton perfoliatus	
Ranunculus spp	
Ruppia spp	
Najas marina	
Zanichellia spp	
Phragmites australis	
Animals	
Chironomider	+

Övriga anmärkningar.

Tixlan, bottenfauna

Datum: 2004-09-15

Klockslag: 15:58

Väder: Växl. moln. Regn.

Utförare: Micke Borgiel

		x-koordinat	y-koordinat	Djup (m)	Botten
Provpunkt:	PFM 5917	6698867	1634545	3,6	Mjukbotten

Provbeskrivning.

Art.

Vaucheriales	
Vaucheria	+
Characeae	
Chara baltica	
Chara tomentosa	
Chara sp	
Tolypella spp	
Green	
Enteromorpha intestinalis	
Cladophora glomerata	
Phanerogams	
Callitriche spp	
Myriophyllum sp	
Potamogeton pectinatus	
Potamogeton perfoliatus	
Ranunculus spp	
Ruppia spp	
Najas marina	
Zanichellia spp	
Phragmites australis	
Animals	
Chironomider	

Övriga anmärkningar.

Tixlan, bottenfauna

Datum: 2004-09-15

Klockslag: 16:13

Väder: Växl. moln. Regn.

Utförare: Micke Borgiel

	x-koordinat	y-koordinat	Djup (m)	Botten
Provpunkt: PFM 5918	6698923	1634665	2,1	Lera med grus, sand

Provbeskrivning.

Art.

Vaucheriales	
Vaucheria	
Characeae	
Chara baltica	
Chara tomentosa	
Chara sp	
Tolypella spp	
Green	
Enteromorpha intestinalis	
Phanerogams	
Callitriche spp	
Myriophyllum sp	
Potamogeton pectinatus	
Potamogeton perfoliatus	
Ranunculus spp	
Ruppia spp	
Najas marina	
Zanichellia spp	
Phragmites australis	
Animals	
Chironomider	+

Övriga anmärkningar: Provpunkten flyttad på grund av stenig botten.

Tixlan, bottenfauna

Datum: 2004-09-15

Klockslag: 16:27

Väder: Växl. moln. Regn.

Utförare: Micke Borgiel

		x-koordinat	y-koordinat	Djup (m)	Botten
Provpunkt:	PFM 5919	6698894	1634757	2,5	Mjukbotten

Provbeskrivning.

Art.

Vaucheriales	
Vaucheria	100
Characeae	
Chara baltica	
Chara tomentosa	
Chara sp	
Tolypella spp	
Green	
Enteromorpha intestinalis	
Cladophora glomerata	
Phanerogams	
Callitriche spp	
Myriophyllum sp	
Potamogeton pectinatus	
Potamogeton perfoliatus	
Ranunculus spp	
Ruppia spp	
Najas marina	
Zanichellia spp	
Phragmites australis	
Animals	
Chironomider	

Övriga anmärkningar.

Tixlan, bottenfauna

Datum: 2004-09-15

Klockslag: 16:40

Väder: Växl. moln. Regn.

Utförare: Micke Borgiel

		x-koordinat	y-koordinat	Djup (m)	Botten
Provpunkt:	PFM 5920	6699030	1634936	3,1	Mjukbotten

Provbeskrivning.

Art.

Vaucheriales	
Vaucheria	100
Characeae	
Chara baltica	
Chara tomentosa	
Chara sp	
Tolypella spp	
Green	
Enteromorpha intestinalis	
Cladophora glomerata	
Phanerogams	
Callitriche spp	
Myriophyllum sp	
Potamogeton pectinatus	
Potamogeton perfoliatus	
Ranunculus spp	
Ruppia spp	
Najas marina	
Phragmites australis	
Animals	
Chironomider	

Övriga anmärkningar.

Tixlan, bottenfauna

Datum: 2004-09-15

Klockslag: 17:05

Väder: Växl. moln. Regn.

Utförare: Micke Borgiel

		x-koordinat	y-koordinat	Djup (m)	Botten
Provpunkt:	PFM 5921	6698776	1634849	3,5	Mjukbotten

Provbeskrivning.

Art.

Vaucheriales	
Vaucheria	100
Characeae	
Chara baltica	
Chara tomentosa	
Chara sp	
Tolypella spp	
Green	
Enteromorpha intestinalis	
Cladophora glomerata	
Phanerogams	
Callitriche spp	
Myriophyllum sp	
Potamogeton pectinatus	
Potamogeton perfoliatus	
Ranunculus spp	
Ruppia spp	
Najas marina	
Zanichellia spp	
Phragmites australis	
Animals	
Chironomider	

Övriga anmärkningar: Provpunkten flyttad på grund av stenig botten.

Tixlan, bottenfauna

Datum: 2004-09-15

Klockslag: 17:23

Väder: Växl. moln. Regn.

Utförare: Micke Borgiel

		x-koordinat	y-koordinat	Djup (m)	Botten
Provpunkt:	PFM 5922	6698731	1634945	2,2	Mjukbotten

Provbeskrivning.

Art.

Vaucheriales	
Vaucheria	100
Characeae	
Chara baltica	
Chara tomentosa	
Chara sp	
Tolypella spp	
Green	
Enteromorpha intestinalis	
Cladophora glomerata	
Phanerogams	
Callitriche spp	
Myriophyllum sp	
Potamogeton pectinatus	
Potamogeton perfoliatus	
Ranunculus spp	
Ruppia spp	
Najas marina	
Phragmites australis	
Animals	
Chironomider	

Övriga anmärkningar.

Tixlan, bottenfauna

Datum: 2004-09-15

Klockslag: 18:05

Väder: Växl. moln. Regn.

Utförare: Micke Borgiel

	x-koordinat	y-koordinat	Djup (m)	Botten
Provpunkt: PFM 5923	6698373	1634710	1,9	Detrius, vass, grov sand

Provbeskrivning.

Art.

Vaucheriales	
Vaucheria	
Characeae	
Chara baltica	
Chara tomentosa	
Chara sp	
Tolypella spp	
Green	
Enteromorpha intestinalis	
Cladophora glomerata	
Phanerogams	
Callitriche spp	
Myriophyllum sp	
Potamogeton pectinatus	
Potamogeton perfoliatus	
Ranunculus spp	
Ruppia spp	
Najas marina	
Zanichellia spp	
Animals	
Chironomider	+

Övriga anmärkningar.

Tixlan, bottenfauna

Datum: 2004-09-15

Klockslag: 18:20

Väder: Växl. moln. Regn.

Utförare: Micke Borgiel

		x-koordinat	y-koordinat	Djup (m)	Botten
Provpunkt:	PFM 5924	6698724	1634699	1,9	Mjukbotten

Provbeskrivning.

Art.

Vaucheriales	
Vaucheria	
Characeae	
Chara baltica	
Chara tomentosa	
Chara sp	
Tolypella spp	
Green	
Enteromorpha intestinalis	
Phanerogams	
Callitriche spp	
Myriophyllum sp	
Potamogeton pectinatus	+
Potamogeton perfoliatus	
Ranunculus spp	
Ruppia spp	
Najas marina	
Zanichellia spp	
Phragmites australis	
Animals	
Chironomider	+

Övriga anmärkningar.

Tixlan, bottenfauna

Datum: 2004-09-15

Klockslag: 18:55

Väder: Växl. moln. Regn.

Utförare: Micke Borgiel

	x-koordinat	y-koordinat	Djup (m)	Botten
Provpunkt: PFM 5925	6698877	1635226	0,7	Sandbotten, grus, småsten

Provbeskrivning.

Art.

Vaucheriales
Vaucheria
Characeae
Chara baltica
Chara tomentosa
Chara sp
Tolypella spp
Green
Enteromorpha intestinalis
Cladophora glomerata
Phanerogams
Callitriche spp
Myriophyllum sp
Potamogeton pectinatus
Potamogeton perfoliatus
Ranunculus spp
Ruppia spp
Najas marina
Zanichellia spp
Phragmites australis
Animals
Chironomider

Övriga anmärkningar: Provpunkten flyttad på grund av vass.

Appendix 7

Primary data, benthic macrofauna biomass

Tixlan														
Primary data. SKB Forsmark 2004.														
Ekman grab sampler														
Biomass dw (g/m²)														
Sampling date	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**Mean**	**Stdv**	**SE**	**%**
Sample no	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**				
Habitat	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**				
Sample ID-code PFM	**5916**	**5917**	**5918**	**5919**	**5920**	**5921**	**5922**	**5923**	**5924**	**5925**				
Depth (m)	**5.6**	**3.6**	**2.1**	**2.5**	**3.1**	**3.5**	**2.2**	**1.9**	**1.9**	**0.7**				
ANIMALS														
PLATHYHELMINTES			0.022								0.002	0.007	0.002	0.0
NEMERTINI														0.0
Prostoma obscurum		0.027		0.018	0.040	0.013	0.044			0.036	0.018	0.018	0.006	0.2
ANNELIDAE														0.0
Nereis diversicolor		0.022		0.102							0.012	0.032	0.011	0.1
Oligochaetae				0.018	0.093			0.013			0.012	0.029	0.010	0.1
Naididae						0.013	0.027		0.027		0.007	0.011	0.004	0.1
Tubificidae	0.044	0.036	0.009				0.036				0.012	0.018	0.006	0.1
MOLLUSCA														0.0
Bithynia tentaculata					0.538				5.240		0.578	1.647	0.549	6.6
Lymnaea peregra							0.080		2.676		0.276	0.844	0.281	3.1
Valvata piscinalis									0.053		0.005	0.017	0.006	0.1
Hydrobia spp			3.640	1.787	0.747	1.360	0.484			2.831	1.085	1.305	0.435	12.4
Cardium spp				0.062	0.022					0.280	0.036	0.088	0.029	0.4
Macoma balthica		0.107	0.613	31.671	11.707	10.818	8.715			0.080	6.371	10.152	3.384	72.8

Tixlan														
Primary data. SKB Forsmark 2004.														
Ekman grab sampler														
Biomass dw (g/m²)														
Sampling date	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**Mean**	**Stdv**	**SE**	**%**
Sample no	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**				
Habitat	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**				
Sample ID-code PFM	**5916**	**5917**	**5918**	**5919**	**5920**	**5921**	**5922**	**5923**	**5924**	**5925**				
Depth (m)	**5.6**	**3.6**	**2.1**	**2.5**	**3.1**	**3.5**	**2.2**	**1.9**	**1.9**	**0.7**				
CRUSTACEANS														0.0
Gammarus spp									0.547		0.055	0.173	0.058	0.6
INSECTA														0.0
Chironomidae			0.058				0.013	0.034	0.138		0.027	0.046	0.015	0.3
Chironomus anthracinus								0.382	0.160		0.054	0.126	0.042	0.6
Chironomus plumosus	1.076		0.431					0.084	0.396		0.199	0.351	0.117	2.3
Tanypodinae			0.027							0.001	0.003	0.008	0.003	0.0
Tanytarsinae										0.004	0.000	0.001	0.000	0.0
Orthocladinae									0.062		0.006	0.020	0.007	0.1
ACARINA														0.0
Hydracarina								0.009			0.001	0.003	0.001	0.0
Sum ANIMALS dw (g/m²)	**1.120**	**0.191**	**4.800**	**33.657**	**13.147**	**12.204**	**9.400**	**0.522**	**9.298**	**3.232**	**8.757**	**9.987**	**3.329**	**100.0**
Number of taxa	**2**	**4**	**7**	**6**	**6**	**4**	**7**	**5**	**9**	**6**	**5.6**	**1.955**	**0.652**	**0.0**
Animal trophic groups											**Mean**	**Stdv**	**SE**	**%**
filter feeders				0.062	0.022					0.280	0.036	0.088	0.029	0.4
herbivores					0.538		0.080		8.031		0.865	2.524	0.841	9.9
carnivores		0.049	0.049	0.120	0.040	0.013	0.044	0.009		0.037	0.036	0.035	0.012	0.4
omnivores			0.058				0.013	0.034	0.684		0.079	0.214	0.071	0.9
detrivores	1.120	0.142	4.693	33.475	12.547	12.191	9.262	0.480	0.582	2.916	7.741	10.250	3.417	88.4
Sum ANIMALS dw (g/m²)	**1.120**	**0.191**	**4.800**	**33.657**	**13.147**	**12.204**	**9.400**	**0.522**	**9.298**	**3.232**	**8.757**	**9.987**	**3.329**	**100.0**
Total number of taxa	**20**													

Kallrigafjärden														
Primary data. SKB Forsmark 2004.														
Ekman grab sampler														
Biomass dw (g/m²)														
Sampling date	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**Mean**	**Stdv**	**SE**	**%**
Sample no	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**				
Habitat	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**				
Sample ID-code PFM	**5906**	**5907**	**5908**	**5909**	**5910**	**5911**	**5912**	**5913**	**5914**	**5915**				
Depth (m)	**1.8**	**1.2**	**1.2**	**2**	**1.5**	**1.4**	**1.3**	**2.3**	**1.7**	**1.7**				
ANIMALS														
PLATHYHELMINTES	0.018										0.002	0.006	0.002	0.0
NEMERTINI														0.0
Prostoma obscurum	0.013		0.022		0.001	0.018	0.027	0.009	0.022	0.013	0.013	0.010	0.003	0.1
ANNELIDAE														0.0
Nereis diversicolor		0.027						0.831		0.302	0.116	0.268	0.089	1.0
Oligochaetae					0.022	0.013					0.004	0.008	0.003	0.0
Tubificidae		0.009	0.018	0.036				0.027	0.018		0.011	0.013	0.004	0.1
Piscicola geometra						0.013					0.001	0.004	0.001	0.0
MOLLUSCA														0.0
Bithynia tentaculata		5.889		7.658							1.355	2.886	0.962	12.1
Lymnaea spp		0.049									0.005	0.015	0.005	0.0
Lymnaea peregra				0.129	1.467	0.089		0.018			0.170	0.458	0.153	1.5
Theodoxus fluviatilis		0.684									0.068	0.216	0.072	0.6
Hydrobia spp	2.720	3.027	5.307	4.400	4.111	4.462	3.827	9.249	4.733	10.507	5.234	2.580	0.860	46.9
Cardium spp	0.049	0.533	0.120	0.253	0.627	0.102		0.173	0.040		0.190	0.221	0.074	1.7
Macoma balthica	4.924	2.529	0.804	1.662	13.031	0.062	0.151	6.160	0.729	9.613	3.967	4.440	1.480	35.5
CRUSTACEANS														0.0
Neomysis integer			0.084								0.008	0.027	0.009	0.1

Kallrigafjärden														
Primary data. SKB Forsmark 2004.														
Ekman grab sampler														
Biomass dw (g/m²)														
Sampling date	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**Mean**	**Stdv**	**SE**	**%**
Sample no	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**				
Habitat	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**				
Sample ID-code PFM	**5906**	**5907**	**5908**	**5909**	**5910**	**5911**	**5912**	**5913**	**5914**	**5915**				
Depth (m)	**1.8**	**1.2**	**1.2**	**2**	**1.5**	**1.4**	**1.3**	**2.3**	**1.7**	**1.7**				
INSECTA														0.0
Chironomidae	0.031			0.004	0.053						0.009	0.018	0.006	0.1
Chrysomelidae						0.071	0.022				0.009	0.023	0.008	0.1
Sum ANIMALS dw (g/m²)	**7.755**	**12.747**	**6.356**	**14.142**	**19.312**	**4.831**	**4.027**	**16.467**	**5.542**	**20.435**	**11.161**	**6.229**	**2.076**	**100**
Number of taxa	**6**	**8**	**6**	**7**	**7**	**8**	**4**	**7**	**5**	**4**	**6.2**	**1.476**	**0.492**	
Animal trophic groups											**Mean**	**Stdv**	**SE**	**%**
filter feeders	0.049	0.533	0.120	0.253	0.627	0.102		0.173	0.040		0.190	0.221	0.074	1.7
herbivores		6.622		7.787	1.467	0.160	0.022	0.018			1.608	2.997	0.999	14.4
carnivores	0.031	0.027	0.107		0.001	0.031	0.027	0.840	0.022	0.316	0.140	0.263	0.088	1.3
omnivores	0.031			0.004	0.053						0.009	0.018	0.006	0.1
detrivores	7.644	5.564	6.129	6.098	17.164	4.538	3.978	15.435	5.480	20.120	9.215	5.954	1.985	82.6
Sum ANIMALS dw (g/m²)	**7.755**	**12.747**	**6.356**	**14.142**	**19.312**	**4.831**	**4.027**	**16.467**	**5.542**	**20.435**	**11.161**	**6.229**	**2.076**	**100**
Total number of taxa	**16**													**0.0**

Appendix 8

Primary data, benthic macrofauna abundance

Tixlan														
Primary data. SKB Forsmark 2004.														
Ekman grab sampler														
Abundance (specimens/m²)														
Sampling date	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**Mean**	**Stdv**	**SE**	**%**
Sample no	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**				
Habitat	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**				
Sample ID-code PFM	**5916**	**5917**	**5918**	**5919**	**5920**	**5921**	**5922**	**5923**	**5924**	**5925**				
Depth (m)	**5.6**	**3.6**	**2.1**	**2.5**	**3.1**	**3.5**	**2.2**	**1.9**	**1.9**	**0.7**				
ANIMALS														
PLATHYHELMINTES			44								4.4	14.1	4.7	0.2
NEMERTINI														0.0
Prostoma obscurum		44		89	400	89	311			89	102.2	140.6	46.9	4.5
ANNELIDAE														0.0
Nereis diversicolor		44		44							8.9	18.7	6.2	0.4
Oligochaetae				267	311			44			62.2	120.7	40.2	2.7
Naididae						44	1,156		222		142.2	362.8	120.9	6.3
Tubificidae	89	178	44				222				53.3	83.3	27.8	2.3
MOLLUSCA														0.0
Bithynia tentaculata					44				44		8.9	18.7	6.2	0.4
Lymnaea peregra							44		133		17.8	42.9	14.3	0.8
Valvata piscinalis									89		8.9	28.1	9.4	0.4
Hydrobia spp			1,378	844	267	400	222			1,067	417.8	503.8	167.9	18.4
Cardium spp				44	44					133	22.2	43.2	14.4	1.0
Macoma balthica		133	267	711	622	400	1,867			89	408.9	573.7	191.2	18.0

Tixlan														
Primary data. SKB Forsmark 2004.														
Ekman grab sampler														
Abundance (specimens/m²)														
Sampling date	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**Mean**	**Stdv**	**SE**	**%**
Sample no	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**				
Habitat	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**				
Sample ID-code PFM	**5916**	**5917**	**5918**	**5919**	**5920**	**5921**	**5922**	**5923**	**5924**	**5925**				
Depth (m)	**5.6**	**3.6**	**2.1**	**2.5**	**3.1**	**3.5**	**2.2**	**1.9**	**1.9**	**0.7**				
CRUSTACEANS														0.0
Gammarus spp.									178		17.8	56.2	18.7	0.8
INSECTA														0.0
Chironomidae			1,289				44	578	2,356		426.7	797.6	265.9	18.8
Chironomus anthracinus								1,067	400		146.7	346.8	115.6	6.4
Chironomus plumosus	622		978					311	533		244.4	353.9	118.0	10.7
Tanypodinae			400							44	44.4	125.7	41.9	2.0
Tanytarsinae										400	40.0	126.5	42.2	1.8
Orthocladinae									933		93.3	295.1	98.4	4.1
ACARINA														0.0
Hydracarina								44			4.4	14.1	4.7	0.2
Abundance (specimens/m²)	**711**	**400**	**4,400**	**2,000**	**1,689**	**933**	**3,867**	**2,044**	**4,889**	**1,822**	**2,275.5**	**1,574.8**	**524.9**	**100.0**
Number of taxa	**2**	**2**	**4**	**7**	**6**	**6**	**4**	**7**	**5**	**9**	**5.2**	**2.3**	**0.8**	
Animal trophic groups											**Mean**	**Stdv**	**SE**	**%**
filter feeders				44	44					133	22.2	43.2	14.4	1.0
herbivores					44		44		1,200		128.9	376.8	125.6	5.7
carnivores		89	444	133	400	89	311	44		133	164.4	162.4	54.1	7.2
omnivores			1,289				44	578	2,533		444.4	845.9	282.0	19.5
detrivores	711	311	2,667	1,822	1,200	844	3,467	1,422	1,156	1,556	1,515.5	943.6	314.5	66.6
Abundance (specimens/m²)	**711**	**400**	**4,400**	**2,000**	**1,689**	**933**	**3,867**	**2,044**	**4,889**	**1,822**	**2,275.5**	**1,574.8**	**524.9**	**100.0**
Total number of taxa	**20**													

Kallrigafjärden														
Primary data. SKB Forsmark 2004.														
Ekman grab sampler														
Abundance (specimens/m²)														
Sampling date	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**Mean**	**Stdv**	**SE**	**%**
Sample no	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**				
Habitat	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**				
Sample ID-code PFM	**5906**	**5907**	**5908**	**5909**	**5910**	**5911**	**5912**	**5913**	**5914**	**5915**				
Depth (m)	**1.8**	**1.2**	**1.2**	**2**	**1.5**	**1.4**	**1.3**	**2.3**	**1.7**	**1.7**				
ANIMALS														0.0
PLATHYHELMINTES	44										4.4	14.1	4.7	0.1
NEMERTINI														0.0
Prostoma obscurum	44		133		222	222	89	133	133	133	111.1	79.1	26.4	3.5
ANNELIDAE														0.0
Nereis diversicolor		133						178		222	53.3	88.4	29.5	1.7
Oligochaetae					222	89					31.1	72.7	24.2	1.0
Tubificidae		44	44	89				44	44		26.7	31.1	10.4	0.8
Piscicola geometra						44					4.4	14.1	4.7	0.1
MOLLUSCA														0.0
Bithynia tentaculata		222		44							26.7	70.1	23.4	0.8
Lymnaea spp.		89									8.9	28.1	9.4	0.3
Lymnaea peregra				178	89	44		44			35.6	58.5	19.5	1.1
Theodoxus fluviatilis		178									17.8	56.2	18.7	0.6
Hydrobia spp.	889	3,333	1,467	2,000	1,244	1,467	1,333	4,044	1,778	4,133	2,168.9	1,206.1	402.0	68.3
Cardium spp.	133	400	89	222	178	133		133	44		133.3	118.5	39.5	4.2
Macoma balthica	400	444	711	89	1,156	133	311	356	667	222	448.9	320.8	106.9	14.1
CRUSTACEANS														0.0
Neomysis integer			89								8.9	28.1	9.4	0.3

Kallrigafjärden														
Primary data. SKB Forsmark 2004.														
Ekman grab sampler														
Abundance (specimens/m²)														
Sampling date	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**04-09-15**	**Mean**	**Stdv**	**SE**	**%**
Sample no	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**				
Habitat	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**	**sea**				
Sample ID-code PFM	**5906**	**5907**	**5908**	**5909**	**5910**	**5911**	**5912**	**5913**	**5914**	**5915**				
Depth (m)	**1.8**	**1.2**	**1.2**	**2**	**1.5**	**1.4**	**1.3**	**2.3**	**1.7**	**1.7**				
INSECTA														0.0
Chironomidae	89			44	711						84.4	222.2	74.1	2.7
Chrysomelidae						89	44				13.3	30.0	10.0	0.4
Abundance (specimens/m²)	**1,600**	**4,844**	**2,533**	**2,667**	**3,822**	**2,222**	**1,778**	**4,933**	**2,667**	**4,711**	**3,177.7**	**1,287.8**	**429.3**	**100.0**
Number of taxa	**6**	**8**	**6**	**7**	**7**	**8**	**4**	**7**	**5**	**4**	**6.2**	**1.5**	**0.5**	
Animal trophic groups											**Mean**	**Stdv**	**SE**	**%**
filter feeders	133	400	89	222	178	133		133	44		133.3	118.5	39.5	4.2
herbivores		489		222	89	133	44	44			102.2	154.0	51.3	3.2
carnivores	89	133	222		222	267	89	311	133	356	182.2	111.8	37.3	5.7
omnivores	89			44	711						84.4	222.2	74.1	2.7
detrivores	1,289	3,822	2,222	2,178	2,622	1,689	1,644	4,444	2,489	4,356	2,675.5	1,141.0	380.3	84.2
Abundance (specimens/m²)	**1,600**	**4,844**	**2,533**	**2,667**	**3,822**	**2,222**	**1,778**	**4,933**	**2,667**	**4,711**	**3,177.7**	**1,287.8**	**429.3**	**100.0**
Total number of taxa	**16**													