# **TOWARDS A HEALTHIER BALTIC SEA**

## - IMPLEMENTATION OF THE BALTIC SEA ACTION PLAN IN RUSSIA

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# **TABLE OF CONTENTS**

#### SELECTED RECOMMENDAT

#### INTRODUCTION

- BASE
- HELCOM
- Cooperation with Russia
- Baltic Sea Action Plan (B

#### **BSAP: EUTROPHICATION**

- Agriculture
- Scattered Settlements

#### **BSAP: BIODIVERSITY**

- Marine Protected Zone:
- Management Plan for Lu

#### **BSAP: HAZARDOUS SUBST**

- Pharmaceuticals
- Microplastics
- Oil Terminal

#### HOT SPOTS

DATA: MONITORING DATA: INDICATORS PUBLIC AWARENESS

RECOMMENDATIONS

THANKS

photo: OCEANA / Carlos Suárez

TIONS	page 4
	page 6
a BSAP)	
	page 12
Curonian Spit uga Salmon	page 20
ANCES	page 28
	page 36
	page 40
	page 50
	page 54
	page 58

page 74

# SELECTED RECOMMENDATIONS

TO BETTER IMPLEMENT THE BALTIC SEA ACTION PLAN IN RUSSIA Please find the complete list on pages 58-71

#### **IN ST. PETERSBURG &** LENINGRAD REGION:

• Support the survival of wild salmon in river Luga by establishing an effective management plan

· Continue to research the pharmaceuticals in urban waste water treatment - with current treatment practices, common pain killer residues end up in the Baltic Sea

· Investigate more the amount and types of microplastic litter in waste water of St. Petersburg

· Improve data collection concerning the actual nutrient load from point sources in Russian catchment, concerning river Neva and its tributaries

#### IN KALININGRAD & **KALININGRAD REGION:**

• Use all animal & poultry manure as organic fertilizers in agriculture in Kaliningrad

• Establish the extension for marine protected zone in Curonian Spit

• Upgrade physical, chemical and biological waste water treatment processes in Kaliningrad port oil terminal

• Install new oil pumping wells along the pier in Kaliningrad port oil terminal

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 Continue the critical efforts on the Vistula lagoon management plan by involving a wide range of authorities as well as research institutions

• Speed up the work among relevant Russian authorities across sectors for developing a plan to improve the environmental status of the Curonian lagoon

• Elaborate a monthly monitoring scheme on total nutrient concentrations of the water bodies in Kaliningrad region

#### CONCERNING BOTH REGIONS:

• Establish guidelines on best available solutions and technologies for better waste water treatment of small settlements in Kaliningrad & Leningrad regions

• Submit application for removal of three Russian sites from the HELCOM Hot Spot list

· Secure the active participation of Russia in the operationalization of HELCOM core indicators

• Ensure that the awareness and involvement of the general public is maintained on the necessary actions to restore the good environmental status of the Baltic Sea

#### INTRODUCTION

# **BASE - IMPLEMENTATION OF THE BALTIC SEA ACTION PLAN IN RUSSIA**

**HELCOM BASE** is a project funded by the EU with a budget of 2,5 M €. BASE supports carrying out activities set out in the **Baltic Sea Action Plan (BSAP)** in Russia. The project is managed by the HELCOM Secretariat and St. Petersburg Public Organization "Ecology and Business". A project steering group support the project team.

Several pilot projects related to eutrophication. hazardous substances and biodiversity and nature protection are implemented by experts from Russia with the support of other European experts.

## BASE

Duration: 2012-2014 Budget: 2,5 EUR million Funded by: EU Managed by: HELCOM Secretariat and St. Petersburg Public Organization "Ecology and Business"

#### **RUSSIAN PARTNER**

The project is managed by a project team at the HELCOM Secretariat in close cooperation with the project's Russian Partner, St. Petersburg Public Organization "Ecology and Business".

The Russian Partner is responsible for strengthening of stakeholder dialogue in Russia, including capacity building and awareness-raising by means of workshops and events. As the link between Russia and the project team at the HELCOM Secretariat, the Russian Partner assists in ensuring that project activities are carried out in line with HELCOM and EU requirements and supports the work on harmonisation of environmental assessment and monitoring practices in Russia. A special working group is supporting BASE activities in Kaliningrad.



### HELCOM

HELCOM (Baltic Marine Environment Protection Commission - Helsinki Commission) is the governing body of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, known as the Helsinki Convention. The Contracting Parties are Denmark, Estonia, the European Union, Finland, Germany, Latvia, Lithuania, Poland, Russia and Sweden,

HELCOM was established forty years ago to protect the marine environment of the Baltic Sea from all sources of pollution through intergovernmental cooperation.

#### **HELCOM IS:**

- (1) an environmental policy maker actively developing common environmental objectives and actions
- (2) providing information about the trends and the state of the marine environment, the efficiency of measures to protect it and common initiatives, which can form the basis for international decision-making
- (3) developing recommendations of its own and recommendations supplementary to measures imposed by other international organisations
- (4) a supervisory body ensuring that HELCOM environmental standards are fully implemented by all parties throughout the Baltic Sea and its catchment area
- (5) a coordinating body in case of major maritime incidents

#### **BALTIC SEA ACTION PLAN -REACHING GOOD** ENVIRONMENTAL STATUS FOR THE BALTIC SEA

HELCOM Baltic Sea Action Plan (BSAP) is an ambitious programme to restore the good ecological status of the Baltic marine environment by 2021. The Plan, adopted by all the coastal states and the EU in 2007 at the HELCOM ministerial meeting in Krakow, is a crucial stepping stone for wider and more efficient actions to combat the continuing deterioration of the marine environment resulting from human activities. The Plan provides a concrete basis for HELCOM work.

#### **BALTIC SEA ACTION PLAN KEY AIMS AND FEATURES:**

- safeguards the sea's natural ecosystems while allowing the sustainable use of its goods and services
- · improves the quality of life and prosperity in the entire region
- sets specific ecological objectives and measurable targets in line with the ecosystem approach
- is implemented through national programmes and regional actions

# VISION

A healthy Baltic Sea environment in terms of a good ecological status and a wide range of sustainable economic and social activities

photo: OCEANA / Carlos Minguell

INTRODUCTION



# OUR PROJECT

#### **EUTROPHICATION**

#### AGRICULTURE

Agriculture is a major source of nutrient inputs to the Baltic Sea. BASE project experts have prepared a Long-Term Manure Management Plan for Kaliningrad Region to address the issue of nutrient management. All the processed animal and poultry manure in Russia's Kaliningrad Region could be used as an organic fertilizer, according to the calculations made in the project. Implementation of a manure handling plan for Kaliningrad Region will reduce the entry of nutrients into the environment from animal/poultry manure as follows: nitrogen by 20-30% and phosphorus by 15%.

Read more on p. 14

#### SCATTERED SETTLEMENTS

Our project has assessed the nutrient input of the small scattered settlements in the Kaliningrad and Leningrad regions. According to the assessment, the nutrient load coming to the Baltic Sea from scattered settlements of the Kaliningrad region is app. 377 t/a for total nitrogen (Ntot) and app. 87 t/a for total phosphorus (Ptot) and the nutrient load coming to the Gulf of Finland from scattered settlements of the Leningrad region is app. 4585 t/a for Ntot and app. 837 t/a for Ptot.

Read more on p. 16

### BIODIVERSITY

#### MARINE PROTECTED ZONE

To increase the number of HELCOM Marine Protected Areas and to preserve the natural diversity of the Curonian Spit, an application to create a marine protected zone is ready to be submitted to the Ministry of Natural Resources and Environment of the Russian Federation. The proposed area entails 12 nautical miles of internal sea waters and territorial sea of the Russian Federation adjacent to the western coast of the Curonian Spit. The total area of the protected zone will be 15,517 ha.

Read more on p. 22

#### LUGA SALMON

The Luga River is one of the few rivers in the Baltic Sea region that holds an

ION PLAN	IN RUSSIA		

original salmon population and is free of migration barriers for ascending salmon. However, the number of salmon is significantly reduced as a result of unreported fishing. Elimination of unreported fishing and development of a management plan can significantly increase the wild salmon population in the Baltic Sea.

Read more on p. 24

#### HAZARDOUS SUBSTANCES

#### PHARMACEUTICALS

There is a growing concern about the harmful effects of pharmaceuticals on plants and animals in our waterways. Baltic Sea is an especially sensitive marine environment since it is the final sink of the pharmaceuticals residues consumed by more than 80 million people. Two hormones and an anti-inflammatory drug diclofenac were studied in our project where their concentration in waste water in St. Petersburg was determined. The preliminary results show that the anti-inflammatory pharmaceutical diclofenac can be measured in influents and effluents of the studied wastewater treatment plants. Concentrations of hormones seem to be very low in waste water.

Read more on p. 34

#### INTRODUCTION

#### MICROPLASTICS

Public and scientific interest in microsized plastic waste in marine environment has increased considerably in recent years, but relatively little is known about its sources. Also standardized sampling and analyzing methods are lacking. In this pilot study, the amount of microplastic litter arriving at the Central Wastewater Treatment Plant (WWTP) of St. Petersburg and the effect of the purification process were studied. The results of this study show that the WWTPs may operate as a point source of microplastic litter into the aquatic environment. However, the reduction of the microplastic load is also remarkable in scale.

Read more on p. 30

#### **OIL TERMINAL**

A pilot activity to minimise oil pollution to the Pregolya River from the Kaliningrad Port Oil Terminal was realized within our project. The work was conducted in order to develop an environmental management plan for the Oil Terminal, the implementation of which will help remove the fuelling and cargo handling facilities from HELCOM's hot spot list.

Read more on p. 32

#### HOT SPOTS

#### HOT SPOTS INVENTORY IN RUSSIA

Out of the twelve remaining Russian sites identified in the Baltic Sea catchment as 'hot spots', one third could be removed from the original list as the necessary measures to meet the requirements have been introduced. Owners of six hot spots are either implementing or planning improvements, the study concludes, while two sites remain with lower levels of mitigation efforts. Since the report was written. further progress has been made. Russia submitted a proposal to HELCOM to delete Sub-Hot Spot No. 18.1 "Construction of new sewer connections" (St. Petersburg).

#### Read more on p. 38

#### VISTULA LAGOON AND **CURONIAN LAGOON - HOW TO** APPROACH TRANSBOUNDARY MARITIME SPATIAL PLANNING

Our project initiated a platform for discussion between relevant stakeholders pertaining to the management of the two lagoons bordering Russia's Kaliningrad. Cooperation regarding crossborder management of the Vistula Lagoon between Poland and Russia has a

long tradition and partial management plans exist (territorial and sectoral). A joint management plan is still missing. With Curonian Lagoon, different authorities from Lithuania and Russia were able to present their views in order to engage in more formal interinstitutional discussions.

Read more on p. 39

#### MONITORING AND INDICATORS

#### MONITORING OF NUTRIENTS AND HAZARDOUS SUBSTANCES

The incompleteness of nutrient load data from the Russian part of the Gulf of Finland catchment prevents measuring Russian progress in achieving the nutrient reduction targets in the HELCOM Baltic Sea Action Plan. In our project, nutrient loads (nitrogen and phosphorus) entering the Baltic Sea from Kaliningrad and Leningrad Regions were assessed and quantified. Particular attention was paid to previously unmonitored tributaries of Rivers Pregolya and Neva. A screening of certain hazardous substances was also carried out in River Pregolya and in Kaliningrad Bay. The results of the screening are available as a separate report.

According to the monitoring activities

and assessments implemented in our project, the Russian contribution to the nutrient load to the Gulf of Finland in 2013 was 3 700 t/a for total phosphorus (Ptot) and 87,000 t/a for total nitrogen (Ntot). The total load through the River Neva to the Gulf of Finland is 2 700 t/a for Ptot and 63 000 t/a for Ntot, of which app. 75% originated from the Lake Ladoga outlet.

The approximate total nutrient input coming through the main rivers researched in the BASE Project in 2013-2014 from the Kaliningrad Region to the Baltic Sea constitutes 10 667 t/a for total nitrogen and 927 t/a for total phosphorus. The nutrient load to the Vistula Lagoon is 5,384 tonnes nitrogen and 529 tonnes phosphorus, to the Curonian Lagoon 9,459 tonnes total nitrogen and 332 tonnes total phosphorus.

Read more on p. 42

#### **INDICATORS**

The main objective in our project was to enhance the participation of Russian partners in the development of the core set of HELCOM biodiversity and hazardous substances indicators. Furthermore, we set out to improve the provision of data from Russia to HELCOM and to improve Russian ca-

pacity to participate in the operationalization of those indicators, including pressure indicators. In particular it supported the HELCOM CORESET and HELCOM CORESET II projects.

Read more on p. 52

#### **PUBLIC AWARENESS**

The results of various activities implemented under our project and its predecessors were presented to students from St. Petersburg and Kaliningrad universities. A group of ca. 30 students had an opportunity to take part in a study tour and visit the sites where pilot technologies were introduced. An open-air 3D -show for the general public took place in Kaliningrad presenting the nature and ecosystem assets of the Curonian Spit National Park and the plan to extend the park into the Baltic Sea through the establishment of a marine protected zone. The event was supported by a series of articles in local newspapers and by video spots presented in local TV and cinemas.

Read more on p. 56

All full reports are available at www.helcom.fi

*"Owners of six"* hot spots are either implementing or planning improvements

photo: Shutterstock





# **AGRICULTURE:** MANURE MANAGEMENT **PLAN FOR KALININGRAD**

**PREPARATION OF LONG-TERM** MANURE MANAGEMENT PLAN FOR KALININGRAD REGION

Implemented by The State Scientific Institution North-West Research Institute of Agricultural Engineering and Electrification (SZNIIMESH) of the Russian Academy of Agricultural Sciences (Main Consultant)

Support provided by MTT Agrifood Research Finland (EU Expert)

#### BACKGROUND

Agriculture is a major source of nutrient inputs into the Baltic Sea and thus any intensification of farming practices will, in turn, increase said inputs. The Agriculture Development Programme in Kaliningrad Region up to the year

2015 stipulates a substantial increase in livestock and poultry stocks. This will be achieved through the reconstruction of the existing and the construction of new livestock complexes that use highly intensive technologies and by concentrating animals in large farms.

However, the experience of intensive farming development in Leningrad Region demonstrates that complying with environmental standards is difficult, especially in cases where many animals are concentrated and vast amounts of animal and poultry manure is used (up to 100,000 tonnes per farm/annum).

At the same time, most agricultural enterprises in Leningrad and Kaliningrad Regions do not have the state-ofthe-art environmental technologies for animal and poultry waste handling in place. This increases the loss of nutrients from the agricultural processes to the water bodies.

Building on a pilot implemented under BALTHAZAR project in Leningrad Region, BASE project experts have

prepared a Long-Term Manure Management Plan for Kaliningrad Region to address the issue of nutrient management. This will avoid serious environmental problems already at the planning, design and construction stages of new animal and poultry complexes. Moreover, the experiences to date of introducing best available technologies (BATs) will also be taken into account.

#### **OBJECTIVES**

The main aims of the project were to:

- assist the Kaliningrad Regional Government to implement the Baltic Sea Action Plan:
- establish a regional farming database to contribute to the environmental soundness of regional farming; and

• draw up guidelines on the location and operation of environmentally sustainable animal and poultry farms in Kaliningrad Region.

#### CONCLUSIONS AND RECOMMENDATIONS

• The project analysed the amount of animal/poultry manure produced in Kaliningrad Region and the area of agricultural cropland and concluded that all the processed animal/poultry manure may be used as an organic fertilizer. As there is a shortage of organic fertilizers, even in the case of

"Producing organic fertilizer from manure is economically profitable for farmers"

a substantial growth in animal/poultry stocks all produced manure will be in high demand in the region.

• The project has identified relevant technologies for processing animal/ poultry manure. Although good practices have been adopted in certain places, most farms still need to upgrade the materials they use and modernise technical facilities for animal/poultry manure handling taking into account the best 'region specific' practices.

• In order to raise the stakeholders' awareness of available choices, an extensive online database of technologies, machines and equipment for manure processing can be found at http://eco.sznii.ru. This project has contributed to updating the database with region-specific information.

• Decision-making guidelines were elaborated for the local executive agencies responsible for agriculture development. The guidelines focus on the siting of new and the modernization of existing livestock complexes and based on nutrients (N and P) balance calculation.

• The project calculated that producing organic fertilizer is economically profitable for farmers.

• The project also recommends subsidies to agricultural producers as a tool of state economic support. Subsidies would be used to compensate a portion of expenditures on organic fertilizer.

#### NEXT STEPS

The outcomes have been discussed in meetings and workshops with representatives of Kaliningrad Regional Government and managers and specialists of large-scale agricultural enterprises. The project outcomes and recommendations will be submitted for further consideration of the Agriculture Minister of Kaliningrad Region.

Should the Kaliningrad Regional Government (especially the Ministry of Agriculture of Kaliningrad Region) adopt the recommended approach, it will be able to initiate the coordination of activities, which will lead to improved ecological safety of agricultural production in the region.

#### Full report available at

# SCATTERED SETTLEMENTS - NUTRIENT REDUCTION POTENTIAL FROM WASTE WATER

PILOT ACTIVITY REGARDING THE TREATMENT OF WASTE WATER FROM SMALL AND SCATTERED COMMUNI-TIES IN LENINGRAD AND KALININGRAD REGIONS AND ELABORATION OF A WATER MANAGEMENT PLAN (WA-TER SUPPLY AND SANITATION) FOR A PILOT AGGLOMERATION IN LENINGRAD REGION (VISTINO SETTLEMENT)

#### Implemented by Marketing Agency Murkot (Main Consultant)

#### Implemented in cooperation with

FCG International Ltd and TineCoin SUE Vodokanal of St. Petersburg

#### BACKGROUND

Urban areas are significant sources of nutrient loads to the Baltic Sea and further reductions are needed in order to meet the HELCOM Recommendation for waste water treatment plants. Russia is among the countries with the largest potential for phosphorus reductions. There has been remarkable progress in the upgrading of waste water treatment in municipalities around the Baltic Sea in recent decades. The city of St Petersburg is an example of such success. There are also various on-going activities for medium sized municipalities in Russia initiated by the regions in cooperation with financing institutions.

However, smaller municipalities, scattered settlements and single family homes have received less attention and there is not enough information availa-

ble for the estimation of the nutrient reduction potential of these smaller units. The BASE project has built on existing reports and estimates and has come up with proposals and recommendations for good solutions to improve the waste water treatment of individual households and dachas, summerhouses and other second homes.

#### **OBJECTIVES**

Before the start of the project, BASE was in touch with major actors aiming to reduce nutrient input into the Baltic Sea. In full synergy with other similar work, the BASE pilot project aimed at assessing the nutrient reduction potential of certain scattered settlements in Leningrad and Kaliningrad Regions. Furthermore, the project had an important aim of informing local authorities and individual home owners in the regions on the technical solutions

available for them in order to improve waste water treatment in scattered settlements.

#### MAIN OUTCOMES

Based on the assessment and other available information, the pilot project has come up with proposals and recommendations for good solutions to improve the waste water treatment of individual households and dachas, summerhouses and other second homes.

The final report contains an estimation of the nutrient inputs from scattered settlements according to the different sizes as per HELCOM recommendations (mainly up to 300 p.e. and 300-2,000 p.e.). The project has also estimated the cost-effectiveness of the waste water treatment plant on the Isle of Valaam in Karelia. The conclusion was that other similar sized settlements could consider cheaper, technologically simpler options.



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IMPLEMENTATION OF THE BALTIC SEA ACTION PLAN IN RUSSIA

PRIORITY AREA: EUTROPHICATION

#### The report also contains an analysis of the typical and specific (environmental, economic, legal and social) problems/ obstacles in the field of waste water treatment in different sizes of small and scattered agglomerations in Leningrad and Kaliningrad Regions.

The pilot has been implemented in close cooperation with SUE Vodokanal of St. Petersburg, which has been instrumental in reaching the right authorities and other stakeholders as well as having much of the baseline information for the reports. Several local authorities have been informed of the project findings in workshops in Kaliningrad and in St. Petersburg.

In order to give a concrete example of how nutrient releases from small and scattered settlements could be reduced, a pilot settlement in Leningrad Region was chosen and a water management plan (water and waste water) was made for the settlement. Below is the structure of such a plan.

#### **1. DESCRIPTION OF THE TERRITORY**

- 1.1 Location of the territory
- 1.2 Land use and status of general plans
- 1.3 Objects of natural and cultural heritage and protected areas

#### 2. HYDROGRAPHY

- 2.1. Ground water resources
- 2.2. Surface water resources

#### 3. DESCRIPTION OF EXISTING WATER SUPPLY AND SEWAGE SYSTEMS OF 'VISTINO RURAL SETTLEMENT'

- 3.1. Main information about Vistino
- 3.2. General characteristics of water supply and waste water systems
  - 3.2.1. Characteristics of the water supply network
  - 3.2.2. Characteristics of the sewage network
  - 3.2.3. Water consumption volume and waste water volume
- 3.2.4. Calculation of infiltration
- 3.2.5. Balance of water supply and sewage systems
- 3.2.6. Water intake and treatment facilities
- 3.2.7. Existing water supply and water treatment process
- 3.2.8. Proposals for a water purification system
- 3.2.9. Waste water treatment facilities
- 3.2.10. Suggestions for a waste water treatment system

#### 4. FORECASTS OF DEVELOPMENT

4.1. Forecast of development for Vistino settlement

#### 5. TECHNICAL SOLUTIONS AND PLANNING SCHEMES

- 5.1. Drinking water sources
- 5.2. Suggestions for water supply systems
- 5.2.1. Technical description and basic parameters of the various options
- 5.2.2. An assessment of the pipe network in need of refurbishment and recommended methods of reconstruction
- 5.2.3. Assessment of the risks and impacts of different options
- 5.2.4. Comparison of different options in terms of cost and effect

#### 6. GUIDELINES

- 7. CONCLUSIONS AND RECOMMENDATIONS
- **APPENDIX 1.** Questionnaire to the authorities

#### **NEXT STEPS**

The results will be shared with the relevant local and regional authorities, the Ministry of Natural Resources and Environment of the Russian Federation, different HELCOM Groups as well as with international financing institutions and private foundations working towards reducing nutrients input into the Baltic Sea. Building on the existing reports and pre-feasibility studies, it will be possible for Russian regions to implement activities aimed at nutrient reduction from scattered settlements. •

Full report available at www.helcom.fi

18





# BIODIVERSITY



#### PRIORITY AREA: BIODIVERSITY

"The creation of the protected zone will considerably contribute to the preservation of biodiversity in the South-East Baltic Sea"

# PROTECTED **ZONE OF THE CURONIAN SPIT** NATIONAL PARK SUPPORTING MANAGEMENT OF

THE HELCOM MARINE PROTECTED AREAS (MPAS) IN KALININGRAD REGION

**EXTENSION OF** 

THE MARINE

**Implemented by** Ecological Monitoring, Management, Audit and Consulting Ltd. (ECOMMAC) and the Biodiversity Conservation Center (Main Consultants)

#### BACKGROUND

The HELCOM Ministerial Meeting in Moscow 2010 expressed concern over the unfavourable conservation status in most of the Baltic Sea marine areas, and that all levels of Baltic biodiversity have been negatively affected by human activities, noting the need for additional designation of HELCOM Marine Protected Areas (MPAs) and the development and application of proper management plans and measures for them.

Our project focused on the preparation of the documentation for the development of the marine protected zone of the Curonian Spit National Park by accession of the adjacent water area

#### **OBJECTIVES**

The purpose of this study was to validate the legal status of the marine protected zone adjacent to the boundaries of the Curonian Spit National Park. This will help in maintaining the ecological coherence of the MPA network in the South-Eastern part of the Baltic Sea.

#### MAIN OUTCOMES

A significant outcome of the project was the involvement of regional and federal authorities, including the Curonian Spit National Park authorities in Russia and in Lithuania as well as researchers in the development of a common approach to establish MPAs. Based on joint discussions, it was decided to apply for legal status for the extension of the protected zone into the sea.

The creation of the protected zone will considerably contribute to the preservation of biodiversity in the South-East Baltic Sea.

The proposed area entails 12 nautical miles of internal sea waters and territorial sea of the Russian Federation adjacent to the western coast of the Curonian Spit. The total area of the protected zone will be 15,517 ha.

In addition to putting together an application to extend the protected zone into the sea, a number of promotion activities have been carried out in the local communities of Kaliningrad region highlighting the assets of the Curonian Spit marine protected zone.

#### RECOMMENDATIONS

For Russia to establish the marine protected zone following the submission of the application by the Curonian Spit National Park authorities.

#### Full report available at

#### PRIORITY AREA: BIODIVERSITY

# WILD SALMON IN THE RIVER LUGA

#### SUPPORT FOR THE DEVELOP-MENT OF A SALMON MANAGE-MENT PLAN IN THE RIVER LUGA

Implemented by All-Russian Social Organisation "All-Russian Society of Nature Protection", Leningrad Region office (ARSoNP) (Main Consultant)

Support provided by Inland Fisheries Institute, Department of Migratory Fishes, Gdansk, Poland (EU Expert)

#### BACKGROUND

Our project prepared an inventory of rivers with salmon and sea trout populations in the Baltic Sea rivers within the Russian Federation.

The River Luga that empties into the Gulf of Finland is one of the identified rivers that hold an original salmon population that is in need of recovery. The River Luga is also listed by the International Baltic Sea Fishery Commission (IBFSC) as an index salmon river.

The project's significance is increased by the fact that the population of At-

lantic salmon in the River Luga is currently the only salmon population in the Russian part of the Baltic Sea that is reproducing naturally: however, according to existing data, a clear decline in their population numbers is observed. In order to maintain and restore the small population of wild salmon in the River Luga a workable management plan must be developed.

#### **OBJECTIVES**

The first step in drawing up a management plan was to conduct a comprehensive study of the current state of the Luga salmon and its habitat in order to develop evidence-based recommendations for its restoration.

In addition to analysing available material and conducting additional research on the current status of the Luga salmon, public awareness activities play a key role. It was important to ensure the recommendations of the SALAR project and the HELCOM Baltic Sea Action Plan would also materialise in the Russian Federation by involvement and cooperation with the relevant stakeholders. This would pave the way for the approval of a management plan and for better commitment of the local communities in the activities.

#### MAIN OUTCOMES

The research shows that the main reason for the decline of wild salmon numbers in the River Luga is their unreported catch, occurring mainly in the lower courses of the river and close to major settlements. Unreported fishing consists of illegal fishing (poaching) and also of overfishing by fishermen catching salmon for the needs of the Luga hatchery.

Poaching and the concealment of catches by professional fishermen are encouraged by high market cost of salmon and the lack of sufficient control by law enforcement authorities.

The results indicate that at the moment the River Luga can support a of wild salmon population of up to 170,000 individuals of juveniles of different age classes. This is due to the following conditions: good quality of water environment, sufficient potential areas of spawning and nursery grounds, and easily available food resources.

The salmon potential of the River Luga can be increased to 360,000 juveniles by means of the melioration of the part of the spawning grounds currently not used by salmon, as well as the elimination or attenuation of unreported (illegal) fishing. A significant part of spawning grounds and nursery areas



Continue >>

"A clear decline in salmon population numbers is observed"

IMPLEMENTATION OF THE BALTIC SEA ACTION PLAN IN RUSSIA

PRIORITY AREA: BIODIVERSITY

"Poaching has been and remains the most important factor resulting in the low quantity of salmon in the river"

in the main stream of the River Luga (730,000 m2) currently can't be used by salmon because of littering of the bottom, its 'cementation' and its biofouling with water vegetation. The only way to solve this problem is the re-cultivation of spawning grounds.

#### RECOMMENDATIONS

• An effective conservation program is the most important and powerful method that can be used to restore the Luga salmon population since poaching has been and remains the most important factor resulting in the low abundance of this species in the river.

• The efficiency (corr.) of Luga salmon hatcheries should be increased to maintain the population of wild salmon in the River Luga.

 The improvement of the productive capacity of the River Luga to restore most of the spawning grounds located in the main course of the river could include cleaning the area of the Kingiseppskie rapids from household waste and metal products, and restoring the spawning grounds and nursery areas by changing the profile of the rapids and the stone and pebble banking in some cases.

 At the Sabskie and Storonskie rapids. it is essential to conduct reclamation activities aimed at the removal of higher aquatic vegetation, which grows at these rapids in high densities.

• The efficiency of natural spawning grounds can be increased by using artificial 'spawning nests'.

 Strict compliance with scientific recommendations on the limitation of the construction of port facilities in Luga



...because people throw litter in the river which sinks to the bottom. The bottom is also disturbed by 'cementation' and bio-fouling with water vegetation."

Bay could be one of the most efficient ways to reduce anthropogenic pressure on the Luga salmon population.

 Some limiting measures are currently practised by GosNIORKh (State Research Institute on Lake and River Fisheries) for construction in Luga Harbour and have a real positive effect; for ex-

ample, the termination of any economic activity in Luga Bay and the mouth of the River Luga during the downstream migration of juvenile salmon during May and June, and during the mass spawning migration of salmon breeders.

• Conducting annual monitoring of nutrient inflows from agricultural farms and prohibiting logging activities in the water-protection zone is also crucial

Major spawning grounds of salmon in the River Luga:

- The River Luga, Sabskie rapids.
- The River Luga, Storonskie rapids
- The River Luga, Kingiseppskie rapids

#### Full report available at



# HAZARDOUS SUBSTANCES PAGES 30-35





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**MICROPLASTICS** IN WASTE WATER, **ST. PETERSBURG** 

PRELIMINARY STUDY ON SYN-THETIC MICROFIBERS AND PAR-TICLES AT A MUNICIPAL WASTE WATER TREATMENT PLANT

Implemented by Helsinki Region Environmental Services HSY (Main Consultant)

State Unitary Enterprise "Vodokanal of

Annual global plastic production exceeds 280 million tonnes and is expected to increase by 4% per year. With growing plastic production, plastic litter in the environment is increasing. This causes an accumulation of plastic litter in various environments, including marine habitats. It is estimated that marine litter consists of 60 - 80% of plastics, most of it being very small (< 5 mm) and termed as microplastics.

Plastic litter in the marine environment causes a threat to wildlife. Animals may ingest or get entangled in plastics. Ingested plastics can cause internal damage, reduce feeding, disturb the digestive enzyme system or hormone balance and have an impact on reproduction. Plastics can contain harmful additives such as phthalates and flame retardants,

*"With growing plastic* production, plastic litter in the environment is increasing"

and they may also absorb hydrophobic pollutants, such as PCBs and DDE from the surrounding water. The ingestion of plastics may thus potentially transfer environmental pollutants to marine food webs. Entanglement in plastic litter can drown an animal. reduce its fitness. cause external injuries, or impair its ability to catch food and avoid predators. Plastics may also transport species far away from their origin.

Marine microplastic litter is derived from a variety of sources, such as traffic, industry, fragmentation of larger plastic particles and waste water treatment plants (WWTPs). Processed municipal waste waters contain, for example, synthetic textile fibres from washing of clothes and abrasive plastic fragments from cleaning agents.

The aim of this project was to perform a pilot study on the amount of microplastic litter arriving at the Central WWTP of Vodokanal of St. Petersburg



with the effluents, and to examine the effect of the purification process. The study was performed in cooperation with the Helsinki Region Environmental services Authority HSY and SUE Vodokanal of St. Petersburg.

#### **OBJECTIVES**

The objective of this project was to study the amount of microplastic litter arriving at the Central Waste Water Treatment Plant (WWTP) of St. Petersburg and the effect of the purification process

#### MAIN OUTCOMES

The results of this study show that the WWTPs may operate as a point source of microplastic litter into the aquatic environment. However, the reduction of the microplastic load is also remarkable in scale.

## RECOMMENDATIONS

Due to the preliminary status of this project, results gained in this study are only indicative. In order to evaluate the actual role of WWTPs on the total microplastic load of the marine environment, a more detailed investigation is needed into the amount and types of microplastic litter in waste water and in natural waters. Furthermore, extensive studies of other possible sources are needed.

## **NEXT STEPS**

The procedures and methodology for studying microplastics in waste water were presented to Vodokanal employees for Vodokanal of St. Petersburg to continue microplastic research independently. In addition, all of the equipment acquired for this study was left in the possession of Vodokanal. The results will be presented to relevant HELCOM Groups who will be able to use the results in their work on marine litter. 🔵

#### Full report available at

#### IMPLEMENTATION OF THE BALTIC SEA ACTION PLAN IN RUSSIA

#### PRIORITY AREA: HAZARDOUS SUBSTANCES



# **KALININGRAD-PORT OIL** TERMINAL

BASE PROJECT PILOT ACTIVITY TO MINIMISE PREGOLYA RIVER POLLUTION WITH OIL PROD-UCTS FROM KALININGRAD PORT **OIL TERMINAL** 

#### Implemented by LLC TehnoTerra

Supervised by Pöyry Finland Oy and Finnish Environment Institute SYKE

#### BACKGROUND

Kaliningrad Port Oil Terminal is a HELCOM "hot spot". It is a source of oil pollution to the Baltic Sea through the Pregolya River.

The oil terminal is located on the bank of a navigable canal in the estuary of the Pregolya River. The enterprise dates back to pre-WWII times. The Kaliningrad Port Oil Terminal (KPOT ) is currently part of the Kaliningrad Marine Fishing Port.

Previous projects and activities have addressed the issue of pollution of the Pregolya river from the KPOT. Projects such as BALTHAZAR have done inventories of hot spots in Russia.

HELCOM BASE Project (Implementation of the Baltic Sea Action Plan in Russia), 2012-2014, builds on the results of previous projects. With regard to the KPOT. BASE focuses on developing recommendations for remediation of oil-contaminated soil.

#### **OBJECTIVES**

- Recommendations for fulfilling the criteria for deletion of the site from the HELCOM Hot Spot list
- Preparation of a pre-feasibility study, including a cost estimate for different remediation and pollution prevention measures

• Agreement on a realistic environmental programme for the oil terminal together with the authorities

The general long-term goal is the reduction of oil products pollution to the Baltic Sea.

#### MAIN OUTCOMES

In addition to building on previous projects and existing information, new screening activities were performed to determine the level of oil contamination on the premises of the Kaliningrad Port Oil Terminal and the adjacent water area of the Pregolya River.

These screening activities produced the following outcomes:

• A map of distribution of soil contamination with oil products by depth and in layout was created

• The thickness of the contaminated layer of the soil was determined



• Sites of the highest thickness of the free oil product plume in the soil were defined in order to design a remediation project of the territory

The statutory and legal framework of the facility's environmental activities was also determined.

### RECOMMENDATIONS

Based on the screening results, the following remediation options were selected to minimize discharge of oil into the Pregolya River:

#### 1) improve recovery of free oil phase by installing new oil pumping wells along the pier that was found to be the critical area of oil leakage to the River

2) in three of the four waste water discharge channels from the site to the River the concentration of oil in water exceeds the maximum allowed concentration of 0,05 mg/l by 2 to 14 fold. Water treatment will be improved by implementing physical, chemical and biological treatment processes that aim to cut discharges of oil to the allowed level.

#### **NEXT STEPS**

Should the Kaliningrad Marine Fishing Port (of which the Kaliningrad Port Oil Terminal forms a part) implement the Environmental Management Plan fully, a more than 50-fold reduction in oil pollution from the oil terminal to the Pregolya River could be expected. This result would allow for the removal of the site from the HELCOM Hot Spots list.

Full report available at

#### PRIORITY AREA: HAZARDOUS SUBSTANCES



# PHARMA-**CEUTICALS IN** WASTE WATER, **ST. PETERSBURG**

PILOT ACTIVITY TO IDENTIFY SOURCES AND FLOW PATTERNS OF PHARMACEUTICALS IN ST. PETERSBURG TO THE BALTIC SEA

Implemented by Institution of Russian Academy of Sciences Saint-Petersburg Scientific-Research Centre for Ecological Safety (SRCES RAS) (Main Consultant)

Support provided by Envieno, Finland (EU Expert)

#### BACKGROUND

Building on the results achieved in the BALTHAZAR project, the BASE project has further contributed to identifying the most important sources and necessary measures for HELCOM's priority substances and the development of pilot projects aiming at practical results.

This also includes further work to identify sources, substance flows and release patterns of hazardous substances to the Baltic Sea.

St. Petersburg, with its population of over five million in 2013, is the largest megapolis on the Baltic Sea. It is also the largest single point of sales, consumption, excretion and, presumably, release of pharmaceutical substances into the Baltic Sea environment.

This study was the first of its kind to be carried out in St. Petersburg. Its aim was to analyse the load of pharmaceuticals entering and passing through the city's sewage system.

A comprehensive sampling and chemical analysis campaign was carried out.

"Waste water treatment processes cur*rently in use cannot* remove all antiinflammatory drugs"

Initially, just two pharmaceutical substances were to be analysed: Diclofenac (DCF) and Ethinylestradiol (EE2). These two compounds are known to be present in the natural waters and are also known to cause harmful effects on the ecosystem. They are currently being developed by HELCOM as pre-core indicators.

After initial sampling and an analysis of the pharmaceutical sales statistics the focus, however, shifted to a more diverse set of some 20 different pharmaceuticals and to the naturally produced human estrogens: Estron (E1), Estradiol (E2) and Estriol (E3).

#### **OBJECTIVES**

The overall aim of the project was to analyse the load of pharmaceuticals entering and passing through the city's sewage system. Other objectives:

- Input to waste management strategies.
- Input to the HELCOM Ministerial Meeting in 2013, with regard to the effectiveness of treatment at WWTPs.

## **MAIN OUTCOMES**

- Screening activities in WWTPs (inflow/outflow) and receiving water bodies.
- Evaluation of the efficiency of treatment methods at municipal waste water treatment plans with regard to Diclofenac, an anti-inflammatory drug. It was found that the concentration of Diclofenac was often higher after treatment than in unpurified

sewage water. This phenomenon can be explained by the liberation of Diclofenac during the waste water treatment process.

- Assessment of potential sources and flows of pharmaceuticals.
- Evaluation of consumer use patterns and other sectors' use (e.g. industry, hospitals and pharmacies).
- Contribution to the flagship project 'Make the Baltic Sea Region a Lead in Sustainable Management for Pharmaceuticals' under Priority Area 9 of the EU Strategy for the Baltic Sea Region (Hazardous Substances).

## RECOMMENDATIONS

The project results clearly indicate that the waste water treatment processes currently in use cannot remove all antiinflammatory drugs from waste water and much ends up in the sea with a probably negative effect on living organisms. Therefore, an improvement of technology is the first step to take. Secondly, consuming less pharmaceuticals or substituting persistent substances with greener pharmaceuticals should be aimed at.

Full report available at





#### IMPLEMENTATION OF THE BALTIC SEA ACTION PLAN IN RUSSIA

# **HELCOM** HOT SPOTS INVENTORY IN RUSSIA

PREPARATION OF THE HOT SPOTS REPORT INCLUDING THE HOT SPOT QUESTIONNAIRE - REPORT ON THE STATUS OF HELCOM'S HOT SPOTS IN RUSSIA.

IMPLEMENTATION OF THE BALTIC SEA JOINT COMPREHEN-SIVE ENVIRONMENTAL ACTION PROGRAMME (JCP) 1992-2013 (HOT SPOTS COMPONENT)

Implemented by Ecological Monitoring, Management, Audit and Consulting Ltd. (ECOMMAC) and the Biodiversity Conservation Center (Main Consultant)

#### BACKGROUND

Following the decision of the HELCOM Moscow Ministerial Meeting (2010), the report on the current status of the Russian hot spots was presented to the HELCOM Copenhagen Ministerial Meeting in 2013. The report has been prepared in compliance with the reguirements of the agreement between HELCOM and ECOMMAC in December 2012 and contains an assessment of the current state of HELCOM's list of Russian Hot Spots.

HOT SPOTS INVENTORY IN RUSSIA

#### **OBJECTIVES**

- To review and update the materials produced for the HELCOM LAND meeting in May 2012 concerning the status of the Russian hot spots (Saint-Petersburg, Kaliningrad and Leningrad Regions)
- To prepare an input to the HELCOM assessment on the implementation of the JCP for the Ministerial Meeting in 2013
- To evaluate further actions necessary to fulfil the criteria to remove it from HELCOM's list of Hot Spots.

#### MAIN OUTCOMES

Out of the twelve remaining Russian sites identified in the Baltic Sea catchment, one third could be removed from the original list as the necessary measures to meet the requirements have been introduced. Six hot spots are either implementing or planning for improvements, the study concludes, while two sites remain with lower levels of mitigation efforts. Since the report

was written, further progress has been made. Russia submitted a proposal to HELCOM to delete sub-hot Spot No. 18.1 "Construction of new sewer connections" (Saint-Petersburg).

A questionnaire on the status of the fulfilled requirements was prepared and submitted to the regional authorities and to the representatives of enterprises and organizations of St. Petersburg and Kaliningrad and Leningrad Regions included in the hot spot list.

Based on the analysis of the questionnaire, conclusions were made on the different conditions for removing the 12 Russian hot spots in guestion from HELCOM's list.

#### HOT SPOTS OF ST. PETERSBURG AND LENINGRAD REGION

#### ST. PETERSBURG

No. 18 (sub-hot spots 18.1-18.19) Municipal waste water treatment in St.-Petersburg

**18.1** Waste Water Treatment Plant (WWTP) collectors

**18.11** WWTP Town of Kolpino 18.15 WWTP Settlement of Metallostroy

No. 23 Hazardous Waste Landfill -

State Unitary Nature Conservation Enterprise - Krasny Bor Landfill.

**No. 72** Agriculture of Kaliningrad Region

#### LENINGRAD REGION

No. 14 Syaskiy Pulp and Paper Mill (PPM)

No. 15 Volkhov Aluminium Plant -Metankhim Ltd.

No. 24 Large livestock farms - sewage water treatment and sediment processing.

#### HOT SPOTS OF **KALININGRAD REGION**

No. 49 Sovietsk Pulp and Paper Mill

No. 50 Neman Pulp and Paper Mill

No. 67 Waste Water Treatment Plant of Kaliningrad City

No. 69 Cepruss Pulp and Paper Mill

No. 70 Landfill of Hazardous Wastes of Kaliningrad City

No. 71 Fuel and Cargo Complex (FSUE) - State Sea Fishing Port (Port Oil Bunkering Station of Kaliningrad City

#### **RECOMMENDATIONS FOR REMOVING RUSSIAN HOT** SPOTS FROM THE **HELCOM LIST**

After studies on the current state of the Russian hot spots on HELCOM's list, the BASE report concludes that out of the twelve listed Russian Hot Spots, four could be removed from the list as the necessary measures to meet the reguirements have been introduced. Six hot spots are either implementing or planning for improvements while two sites remain with lower levels of mitigation efforts.

#### ST. PETERSBURG

Hot spot No. 18 (sub-hot spots 18.1-18.19). Municipal sewage water treatment in St. Petersburg.

Sub-hot spot No. 18.1 - Sewage water treatment plant: collectors. An application for the removal of sub-hot spot No. 18.1 was made and submitted to the 19th meeting of the HELCOM LAND Group in May 2014.

#### LENINGRAD REGION

Hot spot No. 15 Volkhov aluminium

plant (Metankhim Ltd.). The Volkhov aluminium plant was divided into three independent enterprises after reorganization. It is proposed to divide this hot spot into three sub-hot spots and remove hot spot No. 15.1 Parosilovoe Hozyaystvo Ltd. - Volkhov from the list in view of its minor negative impact.

#### **KALININGRAD REGION**

Hot spot No. 49 Sovietsk Pulp and Paper Mill (PPM). The input of nutrients from the former Sovietsk PPM operation has been reduced significantly so that it is now possible to request that it be removed from the list.

Hot spot No. 50 Neman Pulp and Paper Mill. Neman PPM Ltd. does not, at present, seriously endanger the environment and can be removed from the list of hot spots.

Hot spot No. 69 Cepruss Pulp and Paper Mill. In view of the closure of paper and cellulose production at the Cepruss PPM and the resulting cessation of water consumption and the discharge of sewage water into the River Pregel, it has been proposed that the enterprise is removed from the list.

#### Full report available at



# DATA: **MONITORING** PAGES 42-49



## MONITORING

Data obtained through monitoring is valuable in order to follow progress towards goals and targets agreed upon by all members of HELCOM. Monitoring is the basis for the formulation of policies, and the setting of priorities for cost-efficient actions designed to protect the marine environment, and ensure it is used sustainably.

The aim of the activities in BASE is to contribute to the harmonisation of assessment methods in the whole Baltic Sea region in order to have compara-

ble and reliable results for the assessments and evaluation of sources for hazardous substances and nutrients. The incompleteness of nutrient load data from the Russian part of the Gulf of Finland catchment prevents measuring Russian progress in achieving the nutrient reduction targets in the HEL-COM Baltic Sea Action Plan. Moreover, the lack of input data from different sources in the Russian part of the Baltic Sea catchment area hinders the development of the cost-effective measures required to achieve HELCOM's reduc-

BASE Project has carried out monitoring in Russia as two case studies: 1) Assessment and quantification of nutrient

tion targets.

loads to the Baltic Sea from Leningrad Region including a desk study assessment of nutrient loads transboundary rivers. 2) Previously unmonitored tributaries of the Pregolya in Kaliningrad Region including a desk study assessment of nutrient loads transboundary rivers. The analysis of the loads from Kaliningrad Region includes also a screening activity to determine 3) Hazardous substances loads.

Results from this project have regularly been reported to HELCOM expert groups and projects (e.g. HELCOM LAND, HELCOM PLC), Russia will continue to report monitoring results to HELCOM and is encouraged to develop its state monitoring programmes.



# MONITORING OF **NUTRIENTS IN** LENINGRAD REGION

NUTRIENTS IN NEVA, ITS TRIBUTAR-IES AND TRANSBOUNDARY RIVERS IN LENINGRAD REGION

Assessment and quantification of nutrient loads to the Baltic Sea from Leningrad Region and transboundary rivers, and the evaluation of their sources

Implemented by ECOGLOBUS Ltd. (Main Consultant)

#### Support provided by Pöyry Finland Oy (EU Expert)

To obtain complete nutrient load data from the Russian part of the Gulf of Finland catchment, data from previously unmonitored tributaries of the Neva is needed in addition to data obtained through regular state monitoring in the Neva catchment. Furthermore, point sources discharging directly into the Gulf of Finland and the share of Russian transboundary load of the River Narva need to be estimated.

#### **OBJECTIVES**

The objective of the study was to quantify and assess the total annual nutrient load from the River Neva to the Baltic Sea, including the share of Lake Ladoga,



the unmonitored or partly monitored 17 tributaries and watercourses as well as the city of St Petersburg. The study was based on four rounds of hydrological and hydrochemical monitoring activities in most water objects within Neva River catchment situated downstream of the Lake Ladoga outlet. The aim was also to assess transboundary nutrient loads from the Leningrad Re-

gion, flowing to the Gulf of Finland via the River Narva, and make proposals for common methodology on how to quantify the transboundary loads. As a final result, an assessment of the total nutrient load from Leningrad Region based on a compilation of the results of several on-going activities on monitoring - was produced, along with recommendations for the improvement of the monitoring system for future HEL-COM reporting.

#### **MAIN OUTCOMES**

#### NEVA AND ITS REGULARLY MONITORED AND PREVIOUSLY UNMONITORED TRIBUTARIES

The total load with River Neva to the Gulf of Finland is 2,700 t/a for Ptot and 63.000 t/a for Ntot. of which app. 75% (73% for Ptot and 85% for Ntot) originated from the Lake Ladoga outlet and the rest with tributaries, partly as unspecified loads most likely caused by direct point sources of inputs to the River Neva. The main part of the nutrient load comes with major monitored tributaries (Ohta, Izhora, Mga, Tosna) while the nutrient load from the unmonitored tributaries not yet covered by the state monitoring programme is small (around 1% of total nutrient load), except for the Novoladozskiy Canal.

#### IMPLEMENTATION OF

#### TRANSBOUNDARY NUTRIENT LOADS THROUGH THE RIVER NARVA

The assessment of the transboundary nutrient loads from Leningrad Region through the River Narva, has been implemented through modelling. According to the results of the modelling, the Russian part of the nutrient load via the River Narva to the Gulf of Finland is approximately 7,687 tonnes of total nitrogen (Ntot) and 339 tonnes of total phosphorous (Ptot), with the natural background load constituting of 3459 and 122 tonnes of total nitrogen and total phosphorus, correspondingly. The main part (more than 80 %) of this calculated total Russian load originates from diffuse sources, namely the agriculture sector such as run-off from arable lands and emissions from organic and mineral fertilizers.

Based on a compilation of results from several on-going activities, the Russian contribution to the nutrient load to the Gulf of Finland in 2013 was 3,700 t/a for Ptot and 87,000 t/a for Ntot. The approximate Russian share of nutrient input from the River Daugava to the Gulf of Riga was 100 t/a for Ptot and 2,000 t/a for Ntot.

## RECOMMENDATIONS

In order to ensure more accurate assessments in the future, the following activities are recommended:

- Take into account the transboundary load from Finland, e.g. by establishing agreement with in bilateral cooperation or/and HELCOM process.
- Develop the data collection to improve modelling activities and model verification in the River Narva catchment.
- Collect the most recent information on the nutrient load in the River Daugava on the border between Russia and Belorussia, using Russian state monitoring capacity and/or data from the Belorussian side obtained within the existing bilateral agreement in order to assess Russia's share of the nutrient input of the transboundary rivers
- Improve data collection concerning the actual nutrient load from point sources within the Russian catchment area
- Further develop the state monitoring programme of the Russian Federation

Full report available at www.helcom.fi



#### DATA: MONITORING

# MONITORING OF **NUTRIENTS IN KALININGRAD** REGION

NUTRIENTS IN PREGOLYA, **ITS TRIBUTARIES AND** TRANSBOUNDARY RIVERS IN KALININGRAD REGION

Assessment and quantification of nutrient loads to the Baltic Sea from Kaliningrad Region and transboundary rivers, and the evaluation of their sources.

Implemented by ECOGLOBUS Ltd., Baltic Institute for Ecology of Hydrosphere (BIEH) (Main Consultant)

#### Support provided by Pöyry Finland Oy (EU Expert)

To obtain the complete data of the nutrient load from the unmonitored areas of Kaliningrad Region as well as the Russian input to the watersheds to the Vistula and Curonian Lagoons, including transboundary share, should be estimated. Moreover, lack of data concerning inputs of different sources in the Russian part of the catchment area hinders the identification of cost-



effective measures required to achieve HELCOM's reduction targets.

#### **OBJECTIVES**

The objective of the study was to quantify and assess the total annual load of nutrients to the Baltic Sea from the Kaliningrad Region. The work was conducted through four sampling rounds in the River Pregolya and its 12 tributaries as well as in a number of rivers of the Curonian and Vistula lagoons. Additionally, the assessment of the transboundary nutrients inputs from Kaliningrad Region (with a specific focus on River Neman and the Matrosovka Canal) and proposals for common methodology on how to quantify the transboundary loads are elaborated and described.

#### MAIN OUTCOMES

According to the hydrological and hydrochemical surveys, namely sampling and analysis of the River Pregolya and its 12 tributaries, the Matrosovka Canal, and the Kaliningrad waste water discharge canal as well as the quantification of the transboundary nutrient load from Kaliningrad Region (the River Neman and the Matrosovka Canal), the following conclusions can be drawn:

**1.** The following big tributaries are mainly employed in the Pregolya water stream formation: the Instruch, the Angrapa, the Golubaya, the Stream Glubokij, and the Lava River. According to the measurements conducted in 2013 - 2014 all these rivers in total bring 8111 tons of total nitrogen and 369 tons of phosphorus a year. Near Gvardejsk the Dejma arm flows out of the River Pregolya. Before this branching total nutrient load of the Pregolya is 5595 tons of total nitrogen and 221 tons of total phosphorus a year.





#### DATA: MONITORING

- 2. The main tributary of the River Pregolya is the cross-border River Lava, of which more than half of the water basin is located in Poland. Thus, the greatest part of the nutrient input comes to Kaliningrad Region from this transboundary territory. The amount of nutrients that come from Polish territory is less than half of the total amount. which is later carried out to the Pregolya and further to the Baltic Sea. Moreover, immediately after the national Russian-Polish border is the Pravdinsk reservoir, which according to autumn and winter monitoring rounds, keeps half of the upstream nutrient input.
- **3.** The total annual nutrient inputs to the Vistula Lagoon are 5,384 tonnes nitrogen and 529 tonnes phosphorus. Of this amount, 69% of nitrogen comes from the Pregolya River and 26% from the Kaliningrad waste canal and for phosphorus 48% and 46% respectively.
- The total annual input to the Curonian Lagoon in 2013-2014 was 9,459 tonnes total nitrogen and 332 tonnes total phosphorus.
- Retention by the Matrosov Canal in Kaliningrad Region is 25% of total nitrogen and 37% of total phospho-

rus. Nutrient retention by the River Sheshupe in the Kaliningrad Region is 1% of total nitrogen and 13% of total phosphorus.

- 6. For quantification of the transboundary nutrient input into Kaliningrad Region (the River Neman and the Matrosovka Canal) the Institute of Limnology Load Model (ILLM) is effective. The results obtained in applying this model have shown good comparability with other similar assessments.
- 7. The average annual input in the period 2010-2013 from the Russian part of the catchment to the Baltic Sea via the River Neman and the Matrosovka Canal constitutes 700 tonnes of total nitrogen and 200 tonnes of total phosphorous, where the natural background load constitutes 290 and 2.1 tonnes of total nitrogen and total phosphorrus, correspondingly. These figures tentatively constitute 1.6% for total nitrogen load and 12% for total phosphorous load coming with the River Neman to the Baltic Sea.
- 8. The main part of this total Russian input coming with the River Neman to the Baltic Sea originates from diffuse sources (more that 70%) - namely the agriculture sector such as run-off

from arable lands and emissions of organic and mineral runoff from agricultural lands as well as emissions of organic and mineral fertilizers.

9. The approximate total nutrient input from the Kaliningrad Region to the Baltic Sea - coming with the main rivers investigated in the BASE Project as well as the Russian share of the total input via the River Neman - constitutes 10,667 t/a for total nitrogen and 927 t/a for total phosphorus.

#### RECOMMENDATIONS

Accordingly, for a more detailed analysis of the water bodies in Kaliningrad Region it would be sensible to elaborate a monthly monitoring scheme on total nitrogen and phosphorus concentrations in the existing monitoring points as well as in the previously unmonitored rivers.

Moreover, in order to quantify transboundary nutrient loads through modelling on a regular basis, input data should be improved. This includes statistical data on the amount of nitrogen and phosphorous resulting from the use of fertilizers, the number of animals, and other relevant factors.

Full report available at www.helcom.fi

# SCREENING OF HAZARDOUS SUBSTANCES IN KALININGRAD REGION

Implemented by ECOGLOBUS Ltd. (Main Consultant)

**Support provided by** Pöyry Finland Oy (EU Expert)

#### **OBJECTIVES**

To measure the concentrations of heavy metals (Hg, Cd, Zn, Cu and Pb) in the River Pregolya and qualitatively assess potential pollution sources of the river, the samples should be taken from the river sediment and the river water. The analysis of water samples shall include both soluble and total concentrations.

To measure the concentrations of the HELCOM Priority Hazardous Substances in the sediments of Kaliningrad Bay and qualitatively assess potential pollution sources of the bay.

Main outcomes and further information are available on the HELCOM website www.helcom.fi. The report includes the results of a sediment analysis, a map of major industries in the region and recommendations by the project.



FION PLAN IN RUSSIA	







#### DATA: INDICATORS



# INDICATORS FOR BIODIVERSITY AND HAZARDOUS SUBSTANCES

'Preparation of biodiversity and hazardous substances indicators with targets that reflect good environmental status for HELCOM (including the HELCOM CORESET project) and the improvement of Russian capacity to participate in the operationalization of those indicators'

Implemented by St. Petersburg University (Main Consultant)

#### BACKGROUND

Core indicators are a set of state and pressure indicators that measure the progress towards achieving Good Environmental Status (GES) in the Baltic Sea, which is the goal of the Baltic Sea Action Plan (BSAP).

The core indicators enable the comparison of monitoring data and assessment results across the entire Baltic Sea region. As core indicators have a scientific basis and reflect changes due to anthropogenic pressures, they enable the improvement of the environmental status by management measures on land or at sea.

The Russian part of the Gulf of Finland has some specific characteristics. It is the easternmost part of the Baltic Sea and has the most freshwater of the regions of the gulf. Bringing the experts working in this part of the Baltic Sea into the cooperation framework of HELCOM is important for the success of the work on the core indicators.

#### **OBJECTIVES**

The main objective in our project was to enhance the participation of Russian partners in the development of the core set of HELCOM biodiversity and hazardous substances indicators. Furthermore, we set out to improve the provision of data from Russia to HELCOM and to improve Russian capacity to participate in the operationalization of those indicators, including pressure indicators. In particular it supported the HELCOM CORESET and HELCOM CORESET II projects.

#### MAIN OUTCOMES

In total, 31 HELCOM-CORESET indicators were analysed by Russian experts in the Russian part of the Gulf of Finland.

The experts estimated the general relevance of each HELCOM-CORESET indicator to the conditions of the Russian waters of the Gulf of Finland. They provided available data on the state



of the indicator in the given area, even if it was not a subject of regular state monitoring. In this case, the experts used their own knowledge and initial research to establish the limits for good environmental status, to adapt the indicator to regional conditions and to propose monitoring schemes for each indicator in the Russian part of the Gulf of Finland.

The final report also discusses the challenges of Russian involvement in the operationalization of the indicators. In total, 27 experts and consultants were integrated in the work, which has been a major step forward in developing the experts' network to participate in HELCOM's activities related to the development and implementation of the indicators.

#### RECOMMENDATIONS

It is recommended that Russian experts continue to participate in HELCOM core indicator work and take into account that new challenges in the form of new hazardous substances and potentially new harmful processes require new approaches to monitoring.

#### Full report available at



# **PUBLIC AWARENESS** PAGES 56-57



#### IMPLEMENTATION OF THE BALTIC SEA ACTION PLAN IN RUSSIA





# PUBLIC **AWARENESS**

STUDY TOUR FOR STU-DENTS FROM UNIVERSI-TIES IN KALININGRAD AND ST. PETERSBURG

Implemented by BaltZemProekt Ltd. (Main Consultant)

**OPEN-AIR EVENT IN** KALININGRAD IN THE CURONIAN SPIT NATIONAL PARK AND EXTENSION OF THE MARINE PROTECTED ZONE

Implemented by Marketing Agency Murkot (Main Consultant)

#### BACKGROUND

The Baltic Sea Action Plan (BSAP) has identified the major environmental risks for the marine environment, and the necessary actions to restore good ecological status of the Baltic Sea within four priority areas: eutrophication, hazardous substances, biodiversity, and nature protection and maritime activities. Although the challenges faced within each of the priority areas are well known to experts, the importance of public information and involving the general public in the discussion cannot be overestimated.

In our project we have designed awareness activities utilising experience and results of the BALTHAZAR Project (2009-2012) and BASE Project (2012-2014).

#### MAIN ACTIVITIES

General public awareness activities were implemented in order to inform the public of three priority areas of the Baltic Sea Action Plan, namely biodiversity, eutrophication and hazardous substances. The results of various activities implemented under our project and its predecessors were presented to students from St. Petersburg and Kaliningrad universities.

A group of ca. 30 students had an opportunity to take part in a study tour and visit the sites where pilot technologies were introduced. The students were studying issues such as management processes in large scale farms, hazardous waste collection sites as well as the monitoring of the hazardous substances in the rivers of Kaliningrad and Leningrad Regions, and the status of the hot spots in the regions.

been put on communication activities around the marine protected zone of the Curonian Spit. This nature protection area has importance for the local communities and it is crucial to make all aware of the assets of the Spit in order to motivate them to use it wisely and develop the region in a sustainable wav.

#### MAIN OUTCOMES





Заноститель диронатал по науче Алгонатического задаления института остановлении ин Дироцова Корис Чибарево отчетие, что балении градовей (бистинский) заява в накой-то нере сан осби защищает, поскопику российская и пописная части накорится не в толной Мансоности от другай, «Ли не воедин друг другу. Но до отредоточной статеми».

menoamous docume - SASE, VEA Kenson - nontracient & pearcetoy to compare transmere идебни по свечестному управление биловноскі запучкі для дотичночні благогрантикого аколомичаских состовник видовна годо завитися і незадинарцина правото, ратичностична, трецитальных аластей, ученых, бизнерненов. По этогом форми будет поннита реализаи которую разнетит на святки проектой согранаетского.



# BASE PROJECT FINAL REPORT **RECOMMENDATIONS** PAGES 60-71

BASE PILOT ACTIVITY	Main Outputs / Results	Main Recommendations	RUSSIAN AUTHORITIES	OTHER ACTORS
EXTENSION OF THE MARINE PROTECTED ZONE OF THE CU- RONIAN SPIT NATIONAL PARK	Application to the Ministry of Natural Resources and Environment of Russia: establishment of a marine protected zone This will contribute to the protection of biodiversity in South-East Baltic A number of promotion activities - citizens of Kaliningrad interested in the natural values of their area	For Russia to establish the marine protected zone following the submission of the necessary documents	Ministry of Natural Resources and Environment of Russia	PROTECT Curonian Spit National Park Authorities
WILD SALMON IN THE RIVER LUGA	Research shows that the main reason for the decline of wild salmon numbers in the River Luga is their unreported catch (overfishing and poaching) The salmon potential of the River Luga can be increased to 360,000 (from 170,000) juveniles by means of the melioration of that part of the spawning grounds currently not used by salmon, as well as the elimina- tion or attenuation of unreported (illegal) fishing	To establish an effective management programme to control illegal catch To increase number of Luga salmon hatcheries to maintain the population of wild salmon in the River Luga To restore the river to incease its capacity to provide spawning grounds	Ministry of Natural Resources and Environment of Russia Ust-Luga Harbour Authority St. Petersburg Initiative N-W territorial authority of the Federal Fishery Agency Committee of Natural Resources of the Leningrad Region Federal Service for Supervi- sion of the Use of Natural Resources	Coalition Clean Baltic (CCB) OCEANA Fish-PRO Baltic Sea Advi- sory Council Fiish M International Council for the Exploration of the Sea (ICES Working Groups) HELCOM FISHERIES ENVIRONMENT FORUM Russian NGOs

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BASE PILOT ACTIVITY	Main Outputs / Results	Main Recommendations	RUSSIAN AUTHORITIES	OTHER ACTORS
AGRICULTURE: MA- NURE MANAGEMENT PLAN FOR KALININGRAD	The report shows that as there is a shortage of organic fertilizers, even in the case of a substantial growth in animal/poultry stocks all produced manure will be in high demand in the region An extensive online database of technologies, machines and equipment for manure processing can be found at http://eco.sznii.ru. This project has contributed to updating the database with region-specific information Decision-making guidelines were elaborated for the local executive agencies responsible for agriculture development. The guidelines focus on the siting of new and the modernization of existing livestock complexes and based on nutrients (N and P) balance calculation.	All the processed animal/poultry manure may be used as an organic fertilizer The project recommends subsidies to agricultural producers as a tool of state economic support. Subsidies would be used to com- pensate a portion of expenditures on organic fertilizer.	Kaliningrad Ministry of Agriculture of Russia Kaliningrad Government	HELCOM AGRICULTURE ENVIRONMENT FORUM

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BASE PILOT ACTIVITY	Main Outputs / Results	Main Recommendations	RUSSIAN AUTHORITIES	OTHER ACTORS
BASE PILOT ACTIVITY SCATTERED SETTLE- MENTS, NUTRIENT RE- DUCTION POTENTIAL FROM WASTE WATER	Main Outputs / Results         The total nitrogen load (Ntot) coming to the Baltic Sea from scattered settlements of the Kaliningrad region is estimated in 377,01 t/a and the total phosphorus load (Ptot) in 86,91 t/a. The nutrient loads into the Gulf of Finland from scattered settlements of the Leningrad region are 4584,9 t/a for Ntot and 836,6 t/a for Ptot         32 issues have been identified as blocking waste water treatment development in the region (administrative and financial issues; difficulties of technical maintenance, accounting and logistics, as well as lack of information on available practices and technical solution)         In the studied area, the issue of communal infrastructure in general, and the disposal and wastewater treatment in particular, is one of the most actual problems and constraints of social development of settlements         Proposals and recommendations for good solutions to improve the waste water treatment of individual households         Water management plan (water supply and sanitation) for a pilot agglomeration in Leningrad region	<ul> <li>Main Recommendations</li> <li>Improvement of input data (including statistical data) regarding, for example, nutrient retention and the number of summer houses. Moreover, there is a need to investigate the influence of the different waste water systems on the potential to decrease the nutrient load</li> <li>Development of the schemes of water supply and water discharge (according to the Federal Law "On Water supply and water discharge")</li> <li>Development of the legal background for economic stimulation of the development of water management systems in scattered settlements</li> <li>Establishing a dialogue between different authorities regulating water management, house owners, business society and financial organizations</li> <li>Pilot project on the installation and commissioning of a waste water management system in a selected small settlement. The project can be launched in the frame of St. Petersburg Initiative activities</li> <li>Based on the pilot project results, launching investment projects aimed at water management systems, including setting up waste water treatment plants in small settlements</li> <li>Development of investment projects in the field of waste water management in the frame of state programmes at federal and regional level</li> </ul>	RUSSIAN AUTHORITIES         Ministry of Economic         Development of Russia         St. Petersburg Initiative         Ministry of Regional         Development of Russia         Ministry of Regional         Development of Russia         Ministry of Natural         Resources and         Environment of Russia	OTHER ACTORS PLC projects Russian association of water supply and discharge Russian NGOs
	An estimation of the cost-effectiveness of the waste water treatment plant on the Isle of Valaam in Karelia			
	An estimation of the cost-effectiveness of the waste water treatment plant on the Isle of Valaam in Karelia Proposals and recommendations for good solutions to improve the waste water			
	treatment of individual households			•

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BASE PILOT ACTIVITY	Main Outputs / Results	Main Recommendations
MICROPLASTICS IN WASTE WATER, ST. PETERSBURG	The results of this study show that the WWTPs may operate as a point source of microplas- tic litter into the aquatic environment. However, the reduction of the microplastic load is also remarkable in scale.	In order to evaluate the actual role of WWTPs on the total micro- plastic load of the marine environment, a more detailed investigation is needed into the amount and types of microplastic litter in waste water and in natural waters. Extensive studies of other possible sources are needed
MINIMIZE OIL POL- LUTION TO THE PREGOLYA RIVER FROM KALININ-	New screening activities were performed to determine the level of oil contamination on the premises of the Kaliningrad Port Oil Terminal and the adjacent water area of the Pregolya River The statutory and legal framework of the facility's environmental activities was determined	Improve recovery of free oil phase by installing new oil pumping wells along the pier that was found to be the critical area of oil leak- age to the River In three of the four waste water discharge channels from the site to the River the concentration of oil in water exceeds the maximum
GRAD PORT OIL TERMINAL	Should the Kaliningrad Marine Fishing Port (of which the Kaliningrad Port Oil Terminal forms one part) implement the Environmental Management Plan fully, a more than 50-fold reduc- tion in oil pollution from the oil terminal to the Pregolya River could be expected. This result would allow for the removal of the site from the HELCOM Hot Spots list	allowed concentration of 0,05 mg/l by 2 to 14 fold. Water treatment will be improved by implementing physical, chemical, and biologi- cal treatment processes that aim to lower discharges of oil to the
	Screening activities in WWTPs (inflow/outflow) and receiving water bodies.	
CALS IN WASTE	Evaluation of the efficiency of treatment methods at municipal waste water treatment plans.	
WATER, ST. PETERSBURG	Assessment of potential sources and flows of pharmaceuticals.	
	Evaluation of consumer use patterns and other sectors' use (e.g. industry, hospitals and pharma-	

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RUSSIAN AUTHORITIES	OTHER ACTORS
Kaliningrad Ministry of Agriculture of Russia	EUREAU, WssTP (Waste water treatment assos- ciations) PDP - Plastic Dis- closure Project MICRO project BIOCLEAN Project CORESET II Baltic Marine Litter Programme HELCOM Marine Litter Network
	HELCOM RESPONSE GROUP
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BASE PILOT ACTIVITY	Main Outputs / Results Main Recommendations	
MONITORING: NUTRIENTS IN NEVA, ITS TRIBUTARIES AND TRANSBOUNDARY RIVERS IN LENINGRAD REGION	The total load with River Neva to the Gulf of Finland is 2,500 t/a for Ptot and 63,000 t/a for Ntot, of which app. 75% (75% for Ptot and 85% for Ntot) originated from the Lake Ladoga outlet and the rest with tributaries, partly as unspecified loads most likely caused by direct point sources of inputs to the River Neva The Russian part of the nutrient load via the River Narva to the Gulf of Fin- land is approximately 7,687 tonnes of total nitrogen (Ntot) and 339 tonnes of total phosphorous (Ptot), with the natural background load constitut- ing of 3459 and 122 tonnes of total nitrogen and total phosphorus, corre- spondingly. The main part (more than 80 %) of this calculated total Russian	Take into account the transboundary load from Finland, e.g. by establishing agreement with in bilateral cooperation or/and HELCOM process. Improve data collection concerning the actual nutrient load from point sources within the Russian catchment area Improve the data collection for modelling activities and model verifcation in the River Narva catchment
	load originates from diffuse sources, namely the agriculture sector such as run-off from arable lands and emissions from organic and mineral fertilizers The approximate Russian share of nutrient input from the River Daugava to the Gulf of Riga was 100 t/a for Ptot and 2,000 t/a for Ntot The Russian contribution to the nutrient load to the Gulf of Finland in 2013 estimeted in 3,700 t/a for Ptot and 87,000 t/a for Ntot	Collect the most recent information on the nutrient load in the River Daugava on the border between Russia and Belarus, us- ing Russian state monitoring capacity and/or data from the Be- larussian side obtained within the existing bilateral agreement Further develop the state monitoring programme of the Rus- sian Federation

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RUSSIAN AUTHORITIES	OTHER ACTORS
Ministry of Natural Resources and Environment of Russia	Organisations form- ing the monitoring system in Russia

BASE PILOT ACTIVITY	Main Outputs / Results	Main Recommendations	RUSSIAN AUTHORITIES	OTHER ACTORS
MONITORING: NUTRIENTS IN PREGOLYA, ITS TRIBUTARIES AND TRANSBOUNDARY RIVERS IN KALININGRAD REGION	The approximate total nutrient input from the Kaliningrad Region to the Baltic Sea constitutes 10,667 t/a for total nitrogen and 927 t/a for total phosphorus The total annual nutrient inputs to the Vistula Lagoon are 5,384 tonnes nitrogen and 529 tonnes phosphorus (69% of nitrogen comes from the Pregolya River and 26% from the Kaliningrad waste canal and for phosphorus 48% and 46% respectively) The total annual input to the Curonian Lagoon in 2013-2014 was 9,459 tonnes total nitrogen and 332 tonnes total phosphorus The Angrapa, the Golubaya, the Stream Glubokij, and the Lava mainly employed in the Pregolya water stream formation (these tributaries in total bring 8111 tons of total nitrogen and 369 tons of phosphorus a year). The average annual input in the period 2010-2013 from the Russian part of the catchment to the Baltic Sea via the River Neman and the Matrosovka Canal constitutes 700 tonnes of total nitrogen and 200 tonnes of total phosphorus	For a more detailed analysis of the water bodies in Kaliningrad Re- gion it would be sensible to elaborate a monthly monitoring scheme on total nitrogen and phosphorus concentrations in the existing monitoring points as well as in the previously unmonitored rivers		PLC projects
MONITORING: SCREENING OF HAZARDOUS SUBSTANCES IN KALININGRAD REGION	Results pending - we will need to write that results available in a separate report		· · · · · · · · · · · · · · · · · · ·	
USEFUL DATA FOR CORESET II	Some useful data for CORESET II	To encourage Russian participation in HELCOM core indicators work		CORESET II

FION PLAN IN RUSSIA	

BASE PILOT ACTIVITY	Main Outputs / Results	Main Recommendations	RUSSIAN AUTHORITIES	OTHER ACTORS
STATUS OF RUSSIAN HOT SPOTS	The reports identifies three (+ some more vague) Hot Spots which could be eliminated from the list	For Russia to submit application for removal from the Hot Spot list	Ministry of Natural Resources and Environment of Russia	
PREPARATIONS ON DEVELOPMET OF JOINT MANAGEMENT PLANS FOR: 1. THE VISTULA LAGOON (PL-RU) 2. THE CURONIAN LAGOON (RU-LT)	<ol> <li>Continuing the critical work on the area and broadening the range of authorities involved on local, municipal and federal levels as well as research institutions to speed up the process for a joint management plan building on the existing projects' results.</li> <li>Initiating a new discussion platform among relevant Russian authorities responsible for different sectors, for identifying a joint approach and for developing a plan, to urgently improve the envi-</li> </ol>		The Government of Kalin- ingrad region to put into operation the Waste Water Treatment Plant in Kalinin- grad City 1. Polish-Russian environ- mental commission	HELCOM-VASAB MSP Group
PUBLIC AWARENESS	Study tour for ca. 30 students Public event related to Curonian Spit TV spots, articles Printing of HELCOM recommendations in Russian Bilingual ENG-RUS agriculture glossary BASE home page Eutrophication roll-up in Russian			

FION PLAN IN RUSSIA	

#### THANKS

# THANKS

List of authorities and institutions we would like to thank for their support, contribution and challenging questions.

#### FROM RUSSIA:

#### Federal level ministries, agencies and institutions

Ministry of Natural Recourses and Environment of the Russian Federation

Ministry of Culture of the Russian Federation

Ministry of Defense of the Russian Federation

Federal Security Service

Federal Agency of Maritime and River Transport

The Federal Agency for Fisheries (FAR)

The Federal Service Registration, Cadastre and Cartography

The Federal Agency for State Property Management

The Federal Subsoil Resources Management Agency

Federal Forestry Agency

Federal Service for Supervision in the Field of Nature Use. North West District Departamnet

North-West interregional Department Federal Service of Hydrometeorology and Environmental Monitoring

Research and Design Institute of Urban development (NIIPGradostroitelstva)

Biodiversity Conservation Center in Moscow

Federal Fishery Agency, NW Board

State Research Institute for Lake and River Fisheries

Rosprirodnadzor (Federal Service for Supervision in the Use of Natural Resources)

Federal port administration Environment protection department

Federal Registration Service

#### Federal authorities representation at regional level

Neva-Ladoga Water Basin Administration (Kaliningrad Branch)

FSI Kaliningrad Provincial Center for Hydrometeorology and Environmental Monitoring

FSI "Balttehmordirektsiya" Kaliningrad branch

Administration of Sea Port of Kaliningrad FSUE Rosmorport Kaliningrad branch West Baltic Territorial Administration FAR Department of Mineral Resources for Kaliningrad Region Service for ecological control and supervision in the Kaliningrad region West - Baltic Territorial Administration of the Federal Fishery Agency Cadastre and Cartography of the Kaliningrad Region Baltic Institute for Ecology of Hydrosphere Center for Ecological Safety, Russian Academy of Sciences

#### Regional level (government, municipal and scientific institutions)

Ministry of Infrastructure Development of the Kaliningrad region;

Ministry of Tourism of Kaliningrad region

Agency for International and Interregional Relations of the Government of Kaliningrad Region:

Service for ecological control and supervision in Kaliningrad region

Department of water resources use. Committee for natural resources of Leningrad region

Department of fisheries, Committee for agricultural and fishery complex of Leningrad region

Municipal Institution ECAT-Kaliningrad

Agency for Fisheries and Fishery Industry Development of the Kaliningrad Region

Agency for Protection, Reproduction and Use of Wildlife and Forests of Kaliningrad Region

Kaliningrad City Administration

Kaliningrad State Technological University BFU of Immanuel Kant

Russian Academy of Science, P.P. Shirshov Institute of Oceanology Atlantic Branch

Atlantic Scientific Research Institute for Fisheries and Oceanography

Kingisepp District administration, Leningrad region

Luga District administration, Leningrad region

TehnoTerra Ltd

FSI "Kaliningrad Provincial Center for Hydrometeorology and Environmental Monitoring"

SUE Vodokanal of St. Petersburg Ecoglobus consortium with Baltic Institute for Ecology of Hydrosphere (BIEH) Committee Urban City Administration "City of Kaliningrad" Protection Agency, reproduction and use of wildlife and forests of the Kaliningrad region SMU - 303 Engineering Agency for International and Interregional Relations of the Government of the Kaliningrad region SPb PO «Ecology and Business» FSI "Balttehmordirektsiya" Kaliningrad branch Municipal District Administration Gurievsky Adminstrarion of Zelenogradsk district Monitoring Agency «Balttechmordirectiva» NGO "Zelenaya volna" (St.Petersburg) Fish catching company "Truzenik Morja" LUKOIL - KMN Ltd. Baltic Fund for Nature ARSoNP National Park "Curonian Spit

Biodiversity Conservation Center (Moscow

EcoMMAC Ltd.

#### Marketing Agency Murkot

The State Scientific Institution "North-West Research Institute of Agricultural Engineering Electrification (SZNIIMESH)" of the Russian Academy of Agricultural Sciences

#### FROM POLAND:

Chief Inspectorate for Environment Protection -> Department of Monitoring and Reporting	Enviror North-	
Voivodeship Inspectorate for Environment Protection in Olsztyn,	Centra	
delegation in Elblag	VILA P	
Voivodeship Inspectorate for Environment Protection in Gdansk,		
General Directorate for Environmental Protection	LILINUA	
Institute of Meteorology and Water Management,		
Regional Water Management Authority in Gdynia	AND	

#### IMPLEMENTATION OF THE BALTIC SEA ACTION PLAN IN RUSSIA

Klaipeda University

TineCoin Envieno

Marine Fisheries Research Institute in Gdvnia Maritime Institute in Gdansk Inland Fishery Institute/Poland

#### FROM LITHUANIA:

National Park «Curonian Spit" Lithuania

- Mayor of Neringe

#### FROM FINLAND:

- Helsinki Region Environmental Services Authority HSY
- John Nurminen Foundation
- Ministry of the Environment of Finland
- Finnish Environment Institute (SYKE)
- FCG International Ltd
- Pöyry Finland Oy
- Baltic Sea Action Group (BSAG)
- HEALFISH project, Finnish Game and Fisheries Research Institute
- MTT Agrifood Research Finland

#### FROM SWEDEN :

Coalition Clean Baltic/Sweden RUSNIP project. Swedish Environment Protection Agency

#### **INTERNATIONAL PROJECTS:**

Environmentally responsible agricultural business development in North-East Baltic Sea Region – ERAB (Russia, Latvia, Sweden)

- Central Baltic INTERREG IV A Programme 2007-2013
- VILA Project Unities and benefits of joint use of the Vistula
- ithuania Russia Poland / CBC Programme 2007-2013

.AND MANY MORE!

