



# The Baltic Sea Project

NEWSLETTER No. 1(34) 2010

ISSN 1237-489X

International Conference  
**“Urban Ecology in Baltic Sea Region”**

**World Water Day in BSP Schools**



# The Baltic Sea Project

**The Baltic Sea Project Newsletter is published twice a year ( 2009 and 2010 once a year)**

**Circulation (current issue):** 600 copies.

First issued in Finland in June 1990 (500 copies)

All issues are available electronically at

<http://www.b-s-p.org>

**Editor:** The general coordinator Mrs Velga Kakse

**Publisher:** Latvian National Commission for UNESCO

Pils laukums 4-206, Riga, LV 1050, Latvia

**Phone:** +371 67 325 109, fax: +371 67 222 762.

**E-mail:** [office@unesco.lv](mailto:office@unesco.lv)

**Design:** Arturs Kalnins

**Print:** Apgāds "Mantojums", Kramu str.3, Riga, LV 1050 Latvia.

Authors are responsible for the choice and presentation of facts contained in signed articles, and for the opinions contained therein, which are not necessarily those of the BSP organisers. Published texts may be freely reproduced and translated (except where reproduction rights are reserved) provided that mention is made of the author and source.

**Financial assistance:**

Newsletter is published in Latvia with financial support from the Ministry of Education and Science of the Republic of Latvia and State Education Centre

**Distribution:** The BSP Newsletter is sent free of charge to all BSP participants, organisations and other research institutions and government authorities.

**All correspondence should be addressed to:**

Velga Kakse

State Education Centre

Valnu str.2, Riga, LV 1050, Latvia

Phone: +371 67216427, fax: +371 67223801.

E-mail: [velga.kakse@visc.gov.lv](mailto:velga.kakse@visc.gov.lv)

[www.b-s-p.org](http://www.b-s-p.org)

**Logotype:** Modified after Karin Peterson & Kjell-Ake Holmberg/Hompe

**Cover:** The Baltic Sea

Photo: Inara Zevelte

**The BSP objectives are to:**

- increase the awareness of the students of the environmental problems in the Baltic Sea area and give them an understanding of the scientific, social and cultural aspects of the interdependence between man and nature,
- develop the students' ability to conduct research on changes in the environment,
- encourage students to participate in developing a sustainable future.

**The BSP works with the following means:**

- building networks of schools, teachers and educational institutions in the Baltic drainage area,
- creating and developing educational approaches and joint programmes for environmental and international education,
- organising joint activities and events, publishing the BSP Newsletter and issuing other relevant information.

**The basic characteristics of the BSP schools:**

- active participation in looking for solutions to the environmental problems in the Baltic Sea area,
- networking,
- pilot function in promoting environmental education in the spirit of the Rio Declaration, Agenda 21 & Baltic 21 and Agenda 21 for the Baltic region.

**The educational approach for the BSP is to:**

- achieve balance between a holistic view and individual subject studies,
- change the role of the student from passive recipient to active constructor,
- change the role of the teacher from supervisor to guide in a learning process,
- use networks to provide participants with opportunities to learn and pass along new ideas,
- use international co-operation as an inherent element of school work.

ISSN 1237-489X

© Latvian National Commission for UNESCO

## Editorial

UNESCO and Youth for sustainability .....	2
The Baltic Sea Project 20 years .....	2

## International activities

Word for thanks .....	3
My experience in the Baltic Sea Project conference .....	3
International conference „Urban Ecology in Baltic Sea Region“	
Process of the conference .....	4
Ecological footprint of cities in the Baltic regions .....	5
The Importance of the Green Oasis in the Cities .....	6
Oicosophy.Ecodrama “Green city”.....	6
Oicosophy.Green Vilnius and Art. Moss Graffiti .....	7
Workshop of environmental measurements: Waste water purification, water quality measurements in Vilnius area (19.09.2009) .....	8
After Final Conference, Vilnius 2009 .....	10
Urban Ecology conference .....	10
Climate changes conference, 2009 „Bright Green Youth“ - the adventure of a lifetime .....	12

## Varia

Global climate changes. BSP workshops for Polish teachers in Katowice, Poland .....	13
Green Roofs- Monitoring the Climate? .....	14
Our adventure with the BSP begun in 2006 .....	18
World Water day in the BSP schools of Latvia	
Water days at A.Upits Skrivery Secondary School .....	19
About the International Day of Water in Staicele Secondary School .....	20
Water week at Rujiena secondary School .....	21
The 17th International Environmental Camp School Organized by the Mery-Pory Upper Secondary School .....	22

## Observations

Midwinter Bird Counting .....	23
Great Spotted Woodpecker .....	25
The influence of winter 2009/2010 to wild animals .....	25

## BSP Programms

Chemical Water analysis in BSP Environmental measurements Programme .....	27
The Air Quality Programme – 2008/2009 report. ....	29

## BSP Coordinators

BSP coordinators .....	31
Programmes coordinators .....	32



## UNESCO and Youth for sustainability



In 2010 the world is entering the second half of the United Nations Decade of Education for Sustainable Development (2005 – 2014). This coincides Latvia taking over the general coordination of the Baltic Sea Project. Taking this into account I feel that we must acknowledge this momentum and take it as a motivation and possibility to further the contribution of the Project to all

the aspects of sustainable development – environmental, social, economical and cultural.

Indeed Baltic Sea Project embodies the education for sustainable development practices through all the many projects that have been carried out, all the people which have been involved as well as many success stories col-

lected. But most importantly this Project is an example of how young people inspired by their teachers take responsibility and know how to make wise decisions so to ensure sustainable development of the region and of the world. Still despite the fact that the Project as well as the Baltic Sea region are rich within themselves the more we have done more we have seen new challenges and possibilities. Therefore I hope that the coming years will be as interesting, creative and diverse as until now and we all together will succeed in involving and including more and more advocates for the sustainable development of the Baltic Sea region!

I thank warmly all the coordinators for their great inputs, inspiration and ideas! I feel treasured that the Latvian National Commission for UNESCO is now joining more actively in this Project. Let us all enjoy our common work!

Dagnija Baltina,

Secretary General, Latvian National Commission for UNESCO

## The Baltic Sea Project 20 years



Dear BSP Newsletter Readers, The Baltic Sea Project was started 20 years ago and this is the year when Latvia takes over the co-ordination of the project. Within the next three years we must keep up fulfilling the goals of the Project and we must think about the further development. While thinking about the future, I would like to look into the past of the Project.

The original idea of the Baltic Sea Project (BSP) was put forward by Ms Liisa Jaaskelainen, ASP National Co-ordinator (Finland). The first meeting to launch the BSP was held in Helsinki in April 1989 and which was attended by representatives from all countries surrounding the Baltic Sea. There was agreement about the modalities of the Project and it was decided that each country would designate the BSP National Co-ordinator. It was agreed that Finland would serve as Regional Co-ordinator. Emphasis was placed on innovations developed in each country for the benefit of others through a BSP newsletter as well as organization of sub-regional workshops for teachers, summer camps for students and participation in common programmes.

During these twenty years a lot of change has taken place in the Baltic Sea region. At the start of the 90ties it was a wonderful opportunity for the teachers and pupils of the Baltic region to gather international experience as well as to start promoting environmental education in their schools.

Within twenty years environmental quality of the Baltic Sea region has improved. If twenty years ago it was prohibited to swim in many places of the Baltic Sea region, then now in many of those beaches blue flags are waving.

I would like to thank the previous BSP general coordina-

tors : Liisa Jaaskelainen (Finland), Siv Sellinn (Sweden), Birthe Zimmermann (Denmark), Ute Groenwoldt (Germany), Jolanta Mol (Poland), Ruta Jociute-Zolyniene and Migle Simanavičiene (Lithuania ) for the contribution to the development of the project. Today schools of BSP may choose to get involved in any of the 9 common programmes. In 2009 the eight Learners' guide was published and the teachers and pupils had the chance to participate in the seventh international conference of the project which took place in Lithuania. Traditionally these conferences take place in the countries which co-ordinate the project and at the end of the conferences the next country, which will co-ordinate the project, is announced. In this Newsletter we will give you the opportunity to get acquainted with the "Urban Ecology in the Baltic Sea Region" conference – we offer you the articles of the organizers and participants and photographs from the conference. We also have included articles which display different international and local activities within BSP.

Since BSP has had a home page <http://www.b-s-p.org> for many years where anyone can get acquainted with the research results of the BSP programmes, we have decided not to include the research results of the programme co-ordinators in the Newsletter. We also have decreased the number of the Newsletter copies, because it is also available on the home page. In such a way we take a step further to sustainable development, while thinking about decreasing the usage of natural resources.

In the conclusion I would like to wish all the BSP participants, national and programme co-ordinators to get actively involved in realization of education for sustainable development, using the long experience of BSP, and to encourage the international co-operation within the Baltic Sea region for the improvement of the environmental quality.

Velga Kakse,

General Co-ordinator of the BSP within UNESCO ASPnet  
e-mail: [velga.kakse@visc.gov.lv](mailto:velga.kakse@visc.gov.lv)



## Word for thanks

Lithuania had been coordinating The Baltic Sea project since 2006, when it was passed on from Poland. All these three years have been very significant, successful and full of new challenges, but the time was flowing and position of BSP General Coordinator was passed on to Latvian representative, national BSP coordinator in Latvia - Ms. Velga Kakse. Nine delegations of the Baltic Sea Region countries and one from Japan were invited to participate in the 6th International The Baltic Sea Project conference "Urban Ecology in Baltic Sea Region" to mention this significant event. More than 200 teachers, students and coordinators spent four exciting days together. It was great pleasant to see so many enthusiastic The Baltic Sea Project respecters in the same place at the same time. I genuinely hope that it gave them precious experience, awareness and benefit. I would like to thanks to everyone for participation in the conference and personal inputs.



Also, my big thanks go to all teachers, students and coordinators who took part in various activities and have contributed to BSP success in these three years, when Lithuania had a possibility to coordinate BSP. I would like to express my biggest gratitude to National and Programmes Coordinators, for all their sincere work and support. They made a big input in successful cooperation between countries. Through all the time they had been spreading ideas of sustainability development, environmental education and kept to the main BSP aim – to give young people better environmental awareness, motivate them to be more responsible for our nature.

Yours respectfully  
Miglė Simanavičienė  
Former General Coordinator of BSP

## My experience in the Baltic Sea Project conference

Autumn is a season when our nature slowly falls into slumber and waits for the spring. Despite that the students of Prienai "Žiburys" gymnasium do not intend to slow down and continue taking part in various local and international projects. The latest international project is called "The Baltic Sea Project" and took place from 17th to 20th of September in

Vilnius "Žemyna" gymnasium and "Center of young naturalists". This year the main topic of the project was "Urban Ecology in Baltic Sea Region". You can imagine the importance of this project considering the fact that teachers and their student from all nine Baltic countries (Lithuania, Latvia, Estonia, Finland, Norway, Denmark, Germany, Poland and Russia) and even guests from Japan took part in it. Our school has been participating in BSP for three years and we had great luck that our teacher Rasa Kučinskienė chose us and gave the opportunity to take part in it. Before traveling to Vilnius we had done a detailed research of air pollution in Prienai and the data we collected was used in an overall evaluation of Lithuania's air quality which was presented at the conference. During the presentation of the project we were attending lectures which were led by other students. During the lectures we found out the main ecological problems in the cities of Baltic region such as extinction of parks and high air pollution due to transport and industry growth. We were having discussions what can we do to improve the current situation and were talking about the positive and negative consequences of urbanization. Beside the lectures we had workshops which helped us to realize that every single of us is responsible for our environment and if we work together we can grow and prosper without threatening our nature. After the



classes we were having leisure activities like dancing and excursions (we wandered through the incredible maze of small yards and narrow streets in Vilnius old town and saw some amazing architectural buildings such as the Cathedral of Vilnius) various games and spectacles that helped us to meet new friends and familiarize with other cultures. The performance of our Japanese friends was particularly interesting because their culture is totally different from ours and caused our curiosity. They performed a fisherman dance that is believed to bring good luck and help them to catch many fishes. We had a great opportunity to test and improve our English skills, make new friends, broaden our minds and gather a lot of information that we hope will help us to deal with ecological problems in our country.

Student: Narek Tadevosyan  
Prienu Žiburys Gymnasium  
J. Basanavičiaus Str. 1,  
Prienu  
Lithuania



## International conference “Urban Ecology in Baltic Sea Region”



### Process of the conference

- **Presentations.** Each delegation presented various presentations related to urban ecology.



- **Eight workshops were organized. (Table No1)**
- **During the conference six seminars were organized.** The seminars were prepared by students of Sweden Nacka and Lithuanian Vilnius Zemyna Gymnasiums. Topics of the seminars:
  1. „Ecological footprints of cities in the Baltic region” (double time)
  2. „The importance of green oasis in the cities”
  3. „Future of the City”

- **Evening of the National dances** was organized in the garden of The Lithuanian Young Naturalists’ Center. After a treat of the Lithuanian nation food and herbal tea, program of national dances was started. It was funny integration evening, which combined all participants into the friendly unit. The most attention was paid for the Japanese dances with their national elements, it isn’t typical for European.

- **Teachers, coordinators and other adults had excursion to the Vilnius University Kairenai Botanic Garden.**

Botanical Garden of Vilnius University was founded in 1781 by Professor J. E. Giliber (1741-1814). The Garden occupied an area of 300 sq. m and contained about 2000

species of plants from various countries of the world. It is a beautiful green area, so close to the city, where people can take a rest and enjoy the environment.

- **Excursion in Vilnius Old Town.**



The Old Town of Vilnius was inscribed on the UNESCO World Heritage List, for this reason organizers involved sightseeing into the program of conference. During the excursion was visited all famous Vilnius Old Town places: The Cathedral, Vilnius University, Gate of Dawn, Town Hall square, The Church of St. Peter and St. Paul.





Table No1

No.	Workshop	Lecturer
W - I	Environmental measurements. <i>Waste water purification simulation. Water quality measurements in Vilnius area</i>	<i>Simo Korpela</i> , BSP Environmental measurement Programme coordinator. <i>Anja Hokajärvi</i> , BSP Chemical Water Analysis Project coordinator
W - II	Phenological studies. <i>Autumn observation in the city</i>	<i>Vytautas Eidėjus</i> , BSP Phenological Studies Programme coordinator
W - III	Air quality. <i>Lichen indication of environmental changes</i>	<i>Jurga Motiejūnaitė</i> , Head of Laboratory of Mycology, Insitute of Botany
W - IV	Environment history. <i>Geology and city. From the Past to the Future</i>	<i>Gražina Skridlaitė</i> , Insitute of Geology
W - V	Oicosophy. <i>Green Vilnius and Art. Moss Graffiti</i>	<i>Viktorija Baliukonytė</i> and <i>Rūta Jakštaitė</i> , Vilnius Gediminas Technical University
W - VI	Water Quality. <i>Introduction to bottom invertebrates in urban rivers and brooks</i>	<i>Robertas Steponkus</i> , Vilnius University, Faculty of zoology
W - VII	<i>Ecoaesthetic landscape character assessment in Vilnius city and its suburb protected areas</i>	<i>Dalia Avižienė</i> , Insitute of Botany, Laboratory of Landscape Ecology
W VIII	Oicosophy. <i>Ecodrama "Green city"</i>	<i>Skaistė Nomekaitė</i> , Vilnius Pedagogical Universitety, Faculty of Lithuanian Philology

• **Trip in Pavilniai Regional Park “Magic of the darkness”.**

34 most active conference students and two the bravest teachers participated in Trip Pavilniai Regional Park “Magic of the darkness”. Backpackers wandered in the darkness, waded through cold river, crossed danger suspension bridges. During this trip we discovered one of the most incredible natural monument - it is an exposure of Pučkoriai sometimes called the pearl of Vilnia valley. It is the highest and the most impressive exposure in Lithuania of 65m height and 260m width. We visited beautiful mountain called hill of Belmontas under Italian meaning bello monte (beautiful mountain). The Belmontas hill is of 50-55 m height.

Pavilniai Regional Park includes some objects of historic heritage. There are plenty of remains of former defensive bunkers. Bunkers were built in the 20th century. Some of them were established under hills, others above the ground. Building works were very expensive; however, bunkers were not used at all as the war forces unexpectedly attacked from another side so during the war and postwar bunkers were used as a storages. In pitch darkness we all hand in hand explored one of the longest bunker. It was so extreme to feel magic of the darkness.

• **At the same time BSP coordinators meeting was organized in** The Lithuanian Young Naturalists’ Center. Almost all national, programme and former coordinators were shared their remembrances about 20 years BSP development, Lithuanian coordination also a lot of nice words was said for each other.

Miglė Simanavičienė  
Former General Coordinator of BSP

## Ecological footprints of cities in the Baltic region

This year’s BSP left us an unforgettable experience. We met lots of new friends, saw many interesting things and took

part in classes about ecological problems, why they occur and how we can solve them.

One of such classes was about our ecological footprint. Ecological footprint is a measure of human demand on the Earth’s ecosystems. It compares human demand with planet Earth’s ecological capacity to regenerate. During the class had done a test “My ecological footprint” which you can find in [www.myfootprint.org](http://www.myfootprint.org). You may have thought that transport or industry uses up all Earth’s resources and you can’t change anything, in fact so did we, but this test showed us that even the smallest and insignificant at first sight actions (such as where do you live (in suburbs or inner city), where do you buy your groceries, your eating habits, how is your house heated, do you grow your own vegetables and even where do you dry your clothes) can determine our demand on Earth’s resources. We discussed what renewable (water, food, wood) and non renewable (oil, gas) resources we consume, what could we do to reduce pollution and preserve Earth’s ecosystems. We came to a conclusion that we should act more reasonably, think about the consequences of our actions, save heat, electricity, water, share a ride with our friends, use public transportation or a bicycle as often as we can. These means will not just preserve our Earth but it will also increase the quality of our life and are good for your budget.

Thanks to this class we found out, that Lithuania is one of the least resources consuming countries of Baltic region. Knowing this made us happy but we understand that we must try harder if we want a green future so we will continue to fight against ecological problems by saving Earth’s resources, recycling, organizing various events and cleaning the environment of our city. We hope that one day we will live in an environment friendly world.

Students: Narek Tadevosyan and Eglė Vilkaitė  
Prienai Žiburys Gymnasium  
J. Basanavičiaus Str. 1, Prienai  
Lithuania



## The Importance of the Green Oasis in the Cities



We had a lesson about the green areas in the cities. Some students from Sweden gave us information and examples about all kind of green Oasis in the cities. We had a great time playing questions' game. Also we were taught how important and useful are the green areas. The girls showed us some photos and explained what sort of great things can the green areas give to the cities and people. Environment make influence to peoples health. Parks can make you fwell calm, relaxed and well-beins. It's very important to children and old people.

We remember this lesson every day, because this information is very useful and interesting.

Students: Rasa Radžiūnaitė, Jotvilė Sališiūtė ir  
Gintarė Matusevičiūtė  
Garliava Jonučiai Secondary School  
Vasario 16-osios str. 8  
Garliava, Kauno r.  
Lithuania



## Oicosophy. Ecodrama "Green city"

Can you imagine Lithuanian, Polish, German, Estonian, Latvian and Japanese students and their teachers acting on one stage? We experienced this and had a great pleasure while working on the Baltic Sea Project "Urban Ecology" in Vilnius from 17th to 20th September. The most memorable workshop was called "Ecodrama" and it took place on 19th September at Vilnius Žemyna Gymnasium. Firstly, we played several games in order to get acquainted with each other. The leader of our group suggested really inventive games such as saying your name and at the same time doing some kind of a special dance move or a gesture. In order to memorize better, we had to repeat not only the name of a person, but also a movement. We played one more game, which was called "Likes – dislikes". We had to tell everybody what we liked and didn't like in the person, who was standing in front of us. Saying something negative was very difficult because all people were very friendly.

Finally when we could remember each other's names, students and teachers from different countries were brought in groups. Each group consisted of 5 to 7 people.

The first task was to act out different situations without saying any word. The audience had to guess what they had acted out from their gestures, mimes, emotions. It was interesting to see how people acted music concert, ticket – collecting on a bus, the robbery of an old poor lady and arresting of the thief. This task was only the introduction to the "Ecodrama" workshop, the main aim of which was to decide, what to do with the human race, because our planet Earth is in a great danger.

The second task was to invent and act out or paint a vehicle, which could help to transfer as many people as possible to a safe planet. There were some memorable performances. The representation of one group claimed that the most important thing when planet is in danger, to be together, unite and reach the common aim to create the vehicle, which could work in synchronicity. After all it is important that all screws of the vehicle were concerted and all people on the Earth were united. Members of the group acted out that machine. Another team didn't analyzed the question of unity, their slogan was "The funnier – the more pleasant!". Members of this group thought that the best vehicle, which could transfer people to a safe planet, could be the one, in which all people were dancing. There is no doubt that it could gain a lot of energy from these dancers. And



of course, the dance of this group amazed the audience and attained unstinting applause.

The third task for each group was to paint a quarter of their dream planet, where people could travel. When we put all four parts together, we saw the whole planet. There was a lot of greenery, houses and happy people. Of course there was work for everyone.

When I was looking at our dream planet, I was thinking which is the main thing that discourage us from making Earth our dream planet? Most probably the most important thing is unity between different countries and nations. We have started this process. Lithuanian, German, Polish, Latvian, Estonian and Japanese students and teachers proved that together we can solve big problems. So, it would be nice to cherish our acquaintances and work for our planet.

At the end of our workshop, we stood in a big circle and gave a relaxing massage to each other. This workshop was very informative and interesting, so we would like to express our great thankfulness to our workshop leader Skaistė Nomekaitė and General and National coordinator of BSP - Miglė Simanavičienė.

Student: Kristina Avetisianaitė,  
Jono Basanavičiaus Secondary School  
Šarkuvos str. 28, Kaunas  
Lithuania

## Oicosophy. Green Vilnius and Art. Moss Graffiti



We have taken a part in the international conference called "Urban Ecology in Baltic Sea Region" in September. During this conference we participated in a workshop called "Green Art in Vilnius".

First of all, our group arrived to the Young Naturalists' Centre. Then two workshop guides showed us slides, movies and gave brochures about what we were going to do. Moss graffiti is an environmental friendly painting type, which can be used as an alternative to spraying paint. So after we have been provided all the information we have went outside for practice. First, we had to do a big stencil- to do so we have put pieces of paper on the ground. We have split into couple groups and cut one part of the stencil.

After that, we had to prepare the paints. We needed to find some moss in the territory and wash them carefully. We took some moss, yogurt, buttermilk, sugar and put it all to

a blender to make a green milkshake with the texture of a thick smooth. After we have made the paint we went to the bus stop and started painting pictures using the stencils and took some photos when the work was done.



This workshop was extremely useful for and we feel that we have unified the nature and the art. It was a great lesson of how to make an eco-friendly art.

Students: Rasa Radžiūnaitė, Jotvilė Sališūtė ir  
Gintarė Matusevičiūtė  
Garliava Jonučiai Secondary School  
Vasario 16-osios str. 8  
Garliava, Kauno r.  
Lithuania



## Workshop of environmental measurements: Waste water purification, water quality measurements in Vilnius area (19.09.2009)

Anja Hokajärvi and Simo Korpela, Meri-Pori Upper Secondary,  
Finland (Chemicals and the study method from Kemira/Sachtleben Pigments)



Jaruzale pond

### Taking samples:

At first our group drove with bus to take a water sample from Jaruzale pond about 10 kilometers from Vilnius Zemyna Gymnasium. The pond is situated in the middle of the city area. The nature around the pond is very beautiful and the area offers a good refreshment place for the city inhabitants. So it is very important to prevent the overnutrification of the pond water.

We also studied purified waste water samples from Vilnius and Pori, and in addition the local tap water too.

### bWaste water treatment simulation

We made experiments with phosphate solution. We tried to remove phosphates chemically from it by creating an insoluble ferro- or ferriphosphate precipitate.

Here below are the instructions of the studies and with bold letters the average results that we got.

#### Work I:

1. Pour phosphate solution (ammoniumdihydrogen phosphate  $(\text{NH}_4)_2\text{H}_2\text{PO}_4$ ) to plastic jar up to 1 cm level.
2. Take pH value and mark it here: **5,5**
3. Add 10 drops of ferrosulphate  $\text{FeSO}_4$ . What happens? **liquid turns foggy**

4. Take pH value and mark it here: **4,5**
5. Add little by little 10 drops of sodium carbonate  $\text{Na}_2\text{CO}_3$ . What can you notice? **blue-green coloured precipitate**
6. Add 5 drops  $\text{H}_2\text{O}_2$ . What happens now? **colour turns brown**

Wait for 5 minutes and make final observations: **the deposit sinks down**

#### Work II:

1. Pour phosphate solution (ammoniumdihydrogen phosphate  $(\text{NH}_4)_2\text{H}_2\text{PO}_4$ ) to plastic jar up to 1 cm level.
2. Take pH value and mark it here: **5,5**
3. Add 10 drops of ferrisulphate  $\text{Fe}_2(\text{SO}_4)_3$ . What happens? **liquid turns very foggy, and some precipitate appears, too**
4. Take pH value and mark it here: **2,0**
5. Add little by little 10 drops of sodium carbonate  $\text{Na}_2\text{CO}_3$ . What can you notice? **yellow-brown colour with precipitate**
6. Take once more pH value. **6**

Wait for 5 minutes and make final observations: **a lot of yellow-brown deposit sinking down to the bottom**



We noticed that ferrosulphate and ferrisulphate are both very efficient chemicals in making insoluble precipitate with phosphates. In order to have the best purification, ferro-ions must be (by oxidation with hydrogen peroxide) turned to ferri-ions, and also dihydrogen phosphate-ions must be (by raising pH-value with sodium carbonate) turned to plain phosphates.

The method used was the same as in sewage plants, by this means phosphates are extracted from the waste water to the deposit.

We also measured (with DREL 2000 field spectrophotometer) the contents of phosphates and nitrates from two purified waste water samples, the sample from Jaruzale pond and one local tap water sample.

The results are on the table below:

Phosphate and nitrate concentrations:

	Phosphates (mg/l)	Nitrates (mg/l)
Vilnius purified waste water	4,95	6,0
Pori purified waste water	0,62	0.3
Vilnius tap water	0,09	0,20
Jaruzale pond Vilnius	0.01	1,10

In comparison with the Pori (Finland) sample, the purified waste water of Vilnius had eight times the amount of phosphates and twenty times in nitrates.

The waste water purification plant of Pori has been recently renewed. For taking off phosphates they use ferrosulphate and for taking off nitrates they have biological (bacteria) methods.

In future the quality of purified waste water is very important - we must stop the overfertilization of the Baltic Sea and all local nature waters too.



**Concentrating on the work**  
Vytautas Janulevicius and Edgaras Ojpoliskas



**There it is!** Ronald Dubiel and Anja Hokajärvi looking at the phosphorus precipitate.

The tap water in Vilnius had rather small amounts of phosphates and nitrates.

In the water sample of Jaruzale pond the amount of phosphates was very little. Yet the pond looked like a fertilized one. The explanation for this low phosphate concentration is the season. In autumn all the available phosphates are bound in algae, plants and water animals. In winter time, when many of these will die, the phosphates are once more released.

Anyway, phosphorus seems to be the minimum factor in

the plant growth, because there was still a fair amount of nitrates left. When the most plants and algae need both of them, the lack of phosphorus stops the growth.

Generally in most local small waters phosphorus is the minimum factor, and that is why it is so important to clean the waste waters from phosphates.

Fortunately we have for instance this earlier mentioned cheap and efficient method (purification ratio of over 90%) for that.



The leaders and participants Liis Puis and Liina Kollamets in the good company of Dimitri Mendelejev.



## After the Final Conference, Vilnius 2009

Vilnius – the capital of Lithuania, beautifully renovated, brimming with history, where old monuments stand side by side with modern objects – from the 16th to the 21st of September it was the seat of the international conference “Urban Ecology in the Baltic Sea Region” as the part of BSP. Poland was represented by delegations from Katowice, Krakow, Łańcut, Toszek and Ustka. All Baltic Sea countries



(Germany, Denmark, Sweden, Finland, Estonia, Latvia and Russia) participated in the conference as well as, invited by the hosts, a delegation from Japan, interested in organizing a similar project in their country.

After the official Opening Ceremony in Žemyna Gymnasium, with the representatives of the Lithuanian educational authorities, we went to the Park of Youth where we could get to know each other better and where we were learning tra-

ditional Lithuanian dances. We also took part in a quiz checking our knowledge about Lithuania.

On the next day we had an opportunity to listen to presentations, prepared by the representatives of each participating country, about ecology of cities. We also had our Polish presentation, which covered the ecological problems of our cities as well as ways of solving them. At around 3 p.m. buses took us to the Old Town of Vilnius, which we were sightseeing till late evening. Thanks to the tour guides we were able to learn a lot about the history of the city.

On the third day the teachers went to visit the Botanical Gardens and the students, divided into six groups, participated in workshops dealing with ecology (lectures, discussions and practical activities, e.g. making toys from litter). After lunch break we took part in various workshops, some of them at school, some outside (field trips).

During the Closing Ceremony, the Lithuanian General National Coordinator handed over the leadership of the BSP project to Latvia. Lithuania had been the coordinator for the last three years.

Unfortunately we had to say our goodbyes. There was no end to taking photos, exchanging e-mail addresses and phone numbers. We returned to Poland on the 21st of September, richer in the new experiences, friends, full of memories, richer in knowledge and new skills.

Teachers: Krystyna Sojka, Krystyna Pytlik  
II Liceum Ogólnokształcące im. M. Konopnickiej  
Ul. Głowackiego 6, PL-40-052 Katowice

## Urban Ecology conference

September 17-20, 2009, in Lithuania - Vilnius, there was a 4-day-long conference of the Baltic Sea Project, where there were about 200 people





gathered from 10 different countries—Sweden, Finland, Estonia, Germany, Poland, Russia, Lithuania, Denmark, Japan and Latvia, too. There were 9 students and 9 teachers from Latvia from places like Aizpute, Jūrmala, Riga, Rūjiņa, Lielvārde, Jelgava, Ogre, Vecpiebalga and Skrīveri. The aim of this project was to create interest in students about problems of ecology and protection of the environment, and to develop responsibility to the environment and the Baltic Sea.

On the first day there was the opening ceremony and all participants could meet and get acquainted at the New Naturalists' Centre in the suburbs of Vilnius, where a lot of various games and dances were played and danced.

There were presentations until the lunchtime of the second day where each country talked about the ways they take care of nature and pristine areas in their cities and the ways we could be among those getting closer to their destiny – a cleaner city. After dinner we were separated into three groups and taken on an excursion to the Old Town of Vilnius and told about the history of this city and its monuments.

On the third day we were supposed to do something creative and were divided into groups once again, we were told about roof greening and allowed to express our views concerning different topics related with future, nature and cities, we were shown a movie about future technologies – how they can threaten our environment and how we may produce new things by recycling waste products. After that, in the evening of the first day, pupils participated in 6 groups

of interests to which they applied, for example, determination of water quality in the city environs, air quality – lichens as bio indicators, history of nature – geology and city, water quality – acquaintance with city rivers, theatre group – eco-drama called „The Green City”, art – moss graffiti (graffiti made from a mixture of moss, yoghurt and sugar without the use of paint flasks). Meantime, our teachers went on an excursion to the Botanical Garden of Vilnius University. It was possible to go for a 10-km hike called „The Magic of Darkness” in the evening – a walk along the pathways of the park during night time.

Conference was very positive and all people were warm-hearted and talked freely to each other, because we had one aim; although we live in different places of the world, together we can make a better and cleaner future for us and our children.

Student: Nadina Jemeneja,  
Teacher: Daiga Martinsone  
A.Upits Skrīveri secondary school  
Stacijas str. 1, Skrīveri, LV-5125  
Latvia





## Climate changes conference, 2009 "Bright Green Youth" – the adventure of a lifetime

The world youth conference on climate change called "Bright Green Youth" was held in Sønderborg, Denmark, from the 8th to the 11th of August, 2010. Poland was represented by four students from Konopnicka Secondary School in Katowice (II Liceum im. Marii Konopnickiej w Katowicach).

The conference was held at Alison University in Sønderborg. Every day the participants took part in lectures and meetings with various specialists and politicians. They also participated in workshops, during which students worked in multinational groups, which enabled them to use English all the time.



The projects we worked on were based on both imagination and knowledge of the participants of the conference. Fourteen most original projects were chosen, four out of which won in the final vote.

While going to Sønderborg, I imagined the conference as just another meeting where people talk too much and do too little. I did not realise how serious an undertaking the Danish conference was. At the venue, several photographers and reporters covered the event and conducted interviews with the participants of the conference. The articles and photographs taken during the

"Bright Green Youth" conference were published in a few newspapers. Frederik, Crown Prince of Denmark, was present at the official opening of the conference, and during the event the BBC made a feature about it. What is more, we were told that the four best projects would be continued for a year and the findings would probably be put into practice. It is a new approach towards climate change education.

I would like to thank my school for creating opportunities for young people to meet students from all over the world and do creative work with them. In this way, we are able to test our general knowledge and language skills, experience different cultures and traditions, learn how to be tolerant and make friends with our peers from all over the world.

Our team was not the only group of students from Konopnicka Secondary School who had an opportunity to take part in an international conference during the school year 2008 / 2009. In April 2009, my classmates participated in an ecological conference "the Baltic Sea Project" in Stockholm. In September 2009, another group of our students met their peers from the Baltic states in Vilnius. In April 2010, some students will participate in the workshops in Stockholm and in May another group will take part in an ecological camp in Finland.

Student: Łukasz Pieszczyk;  
e-mail: l.kaloryfer@interia.pl

Teachers: Jolanta Mol, Magdalena Kubica  
II Liceum Ogólnokształcące im.  
Marii Konopnickiej w Katowicach, Poland



## Global climate changes. BSP workshops for Polish teachers in Katowice, Poland

In October 2009 Konopnicka Upper Secondary School in Katowice hosted a 4-day event with a group of 33 teachers from 18 Polish BSP schools – 5 primary schools, 2 lower secondary schools, 8 upper secondary schools, two comprehensive school complexes and The Louis Braille School-Education Centre for the Blind and Visually Impaired students.

Teachers came from 15 cities and towns (Warszawa, Sulejówek, Bydgoszcz, Włocławek, Łańcut, Wrocław, Głogów, Wałbrzych, Jelenia Góra, Kraków, Miechów, Zabrze, Toszek, Chorzów, Katowice) situated in 6 voivodeships.

We took part in three, very interesting lectures concerning climate changes in the world. The lecturers turned our attention to the effects of the climate changes noticeable in our surroundings. The lectures not only provided us with a lot of information connected with the latest research and scientific discoveries, but also made us think over the human actions which influence the global warming. The lectures were presented by: PhD Krzysztof Kafel, Counsellor of the Minister for Education – “Chosen aspects of climate change”, PhD Beata Węgrzynek, research worker of the University of Silesia – “Climate warming versus biological invasions” and PhD Monika Jędrzejczyk, research worker of the University of Silesia – “City and Nature – where both worlds meet”.

We took part in outdoor workshops on coal heaps, cavity reservoirs, mining reservoirs and post-sand excavation areas, conservation area “Las Murckowski” (woodland area), in the Szopienice-Borki Landscape and Nature Reserve and in Ojcowski National Park. We had a chance to visit Nikiszowiec, and old monumental mining district of Katowice and Silesia City Center, which is a



shopping and entertainment centre built on the former grounds of the Gottwald Coalmine. Historic buildings of the former coal mine, for example the pit shaft tower and the buildings of the old boiler-house and Jerzy shaft engine-room are embedded in the modern architecture of the shopping mall.

The workshop participants also took part in IT classes and workshops connected with sustainable development. Both the lectures and the workshops were conducted by the Department of Botany research workers from the University of Silesia and teachers from Konopnicka Upper Secondary School in Katowice.

Members of the School Ecology Club “Demeter” from Biology-Chemistry classes and the Maths-Information Technology Profile “Sigma” actively participated in the organisation and offered their help during workshops. Older colleagues, who had participated in and helped with the organisation of many national and international BSP UNESCO conferences in the past, were a valuable assistance and great example for the younger students.

The Workshops were organized by National BSP UNESCO Coordinator and sponsored by the National Fund for Environmental Protection and Water Management and the Polish Ministry for Education



Polish National BSP UNESCO Coordinator,  
Jolanta Mol  
Photos: Jolanta Mol, Lidia Krzemień

## Green Roofs - Monitoring the Climate?

### From idea to project



It all began in October 2005 when the annual BSP-meeting for the Danish UNESCO schools met in Malmö, Sweden. The annual meeting was partly made as a teachers' training course on "Environmental History" where the methodology is to ask the following important questions: "What major environmental problem do we face to-day?" "How did this problem evolve, who or what caused it?" "What suggestions do we have to try to solve the problem for future generations".



Climate change has caused problems in a specific part of Malmö: Too much rain! Too often basements were flooded because the precipitation pattern had changed to more rain in less time. To solve this problem you can either reduce or delay the runoff of water. Rather than leading the water down the drain, it was led into ponds and swamps in people's back yards, creating natural habitats where people live. The many flat or slightly sloped roofs were covered with vegetation mats consisting of Sedum plants, and as plants absorb water in order to grow and also transpire water, the precipitation was simultaneously being reduced and delayed.



We visited Malmö's "Roof-botanical garden", and the idea developed that we could solve a similar problem in our local area. On August 21<sup>st</sup> 2007 we had food for thought when in two hours 140mm of rain created traffic chaos: The road between Sønderborg and Gråsten simply disappeared, and so did the dirt beneath the railroad tracks. On 20 August 2008 we were flooded again by 150 mm of "monster rain".



To actually measure delay and runoff reduction and find out the effects of a green roof we needed to establish one. Could a green roof really delay





the runoff, or even reduce it by 60-70 % ?  
Fortunately Dansk Naturvidenskabsformidling granted us enough money to get started in August 2009.

So it took four years from idea to project. But we have learnt through our joint cooperation in the BSP that from an environmental problem has been recognised and till a solution has been found, it normally takes one hundred years...

### Ownership

In August we were suggested to go to Aarhus to get the vegetation mats ourselves, as Aarhus Festival Week had had an "green wall" exhibition, and the mats used were the ones we could have for our project. We were to hire a bus with a trailer that could manage the 1.5 tons of extra weight and on 7 September we set off on our expedition... The idea was great! It made form a 11 take ownership of the project immediately. In groups they worked on methodology, discussing what they would measure, how they would monitor and calculate, whom they needed to establish contact to and make partnerships with. They also had to consider how to present their ideas to others – and the results were remarkable; they presented their work in flyers, posters, photo-stories, articles etc.



On 7 September we stopped at Handelsfagsskolen in Aarhus that with 5.600 m<sup>2</sup> of green roofs won an environmental reward. Ladders enabled students to climb to the roof to actually see, feel touch, photograph and sense what these Sedum-plants were like.



We also visited the green houses at Aarhus University's botanical garden to learn about succulent plants and why they so effectively store water.



Back at school the students had to work hard to actually establish the green roof, but with 30 committed students, great sunshine and a reporter and a photographers from the local newspaper they changed the rather dull grey roof into a living green one in less than one hour!

### Core curriculum

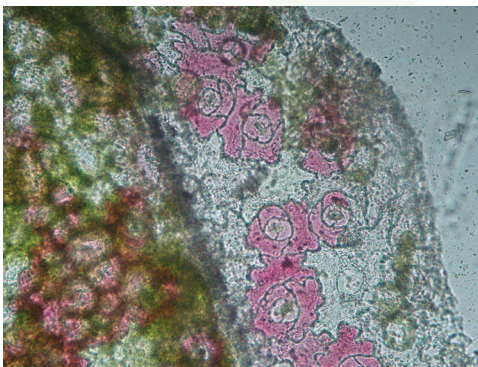
In the core curriculum for biology at the upper secondary level students have to explore a biotope.

Our newly established green roofs made us study how succulent plants are designed and function.



Mandø/Lise Andersen 2007

When students from our BSP partner school in Trier, Germany, came to visit, we made an excursion to the Wadden sea, to the island of Mandø where comparative studies could be made on the salt marshes succulent plants such as *Salicornia europaea*. The students used microscopes to examine the cells and why they changed colours from green to red.



### Tell others about your work

Very close to our school a rain water basin has been constructed under ground to delay runoff rain water from the streets when heavy rain occurs. People from Sønderborg Forsyning came to our school and informed us that the municipality has constructed 35 of such underground storage tanks - each capable of storing 100 m<sup>3</sup> of water (1 million liters of water!) in order to delay outlet into the pipes that carry the water directly into Sønderborg Bay.



Then we started monitoring the amount of rain and how much water the Sedum-vegetation mats could absorb. The results vary, but calculations show that from 8 - 14 mm of rain can be absorbed before the vegetation mats start dripping. With 20 m<sup>2</sup> of green roof in the project, students calculated the amount of water that could be absorbed if the entire roof at school was covered, some students even calculated the amount if also the flat roof of the hospital and other buildings in Sønderborg were green.



The Sedum mats are placed on a specific type of felt, made from recycled clothes and enriched with chicken dung. The felt therefore contains organic matters that serve as fertiliser to enable the Sedum plants to grow more rapidly to make a complete cover.

As by chance students had placed single mats for measurements one on felt, one without, a difference in colour was clearly seen: The felted ones were green and the others turned reddish and looked somewhat stressed. Quick measurements using pH sticks, Nitrate and Nitrite sticks proved that the felted ones had a pH value of 7.5 whereas



those without had a pH value of 7; The felted ones drained water with 5 mg of Nitrate/L where no nitrate could be measured in the others.

### Innovation

Students' commitment, core curriculum topics, and innovation were the three main reasons for the jury to nominate the project "Green Roofs – Monitoring the Climate?" the winner and entitle me "Danish Champion in Science Teaching 2009<sup>1</sup>". The event took place in Odense Congress Hall on 4<sup>th</sup> November 2009.



What I presented there were simply my students' work and results, so I humbly share my gratitude with my talented and responsible students, and with the Baltic Sea Project network, in which ESD has been the overall theme for more than the UN decade.

Working from the BSP principles for almost 15 years has taught me the importance of ownership, of the bottom-up approach, and of sharing your ideas with others.

### Next Step?

Monitoring the green roofs is not nearly as simple as the students thought when we started the project. They have begun reflecting on questions such as: What happens with the seasonal changes when the temperature, the amount of sunshine, the humidity differ? How will the plants grow and develop, and how will their growth influence upon our results? Can we measure the flow more accurately? And can we show that green roofs will

also cool down houses in hot summers that will also be a local consequence of the climate change?



If time allows us, much more study work can easily be made, and we all look forward to a roof that does not always stay green. It will actually vary from green in some months with rain to red in rather dry periods and then change into various colours when in bloom.



So science and aesthetics work together to solve some of the local problems caused by our changing climate.

Birthe Zimmermann,  
M.Sc & B.A  
Alssundgymnasiet Sønderborg  
Grundtvigs Alle 86  
6400 Sønderborg  
www.ags.dk

<sup>1</sup> <http://www.formidling.dk/sw15084.asp>

## Our adventure with the BSP begun in 2006

Our school - Mikolaj Kopernik Secondary School no 3 in Wałbrzych, Poland is not a big one. There are about 550 students and 40 teachers here and you can always find a group of biology / ecology freaks. That is the reason why we joined the BSP. Our Biology teacher Marga Czyż who, inspired by the National Coordinator Jolanta Mol, was the pioneer of our activities at school. (I understood the inspiration when I met Jolanta myself – a tiny woman with the energy and motivation of a giant). It was Marga who started the river quality research in our school, thanks to which numerous outdoor Biology lessons were no longer a curiosity. Writing articles on a number of topics for the BSP newsletter have become a tradition, I would say. Since the very beginning of our BSP participation the students of III LO in Wałbrzych regularly write articles which have been published in both the international as well as the Polish BSP newsletters. The topics range from biodiversity to water pollution, from bird ecology to sound pollution. Our students have dealt with plants and insects in the area of Wałbrzych, the nearby town of Boguszów Gorce or the beautiful Książ Landscape Park surrounding Książ - the third biggest castle in Poland. They have analyzed the waters of the streams and rivers running through our town or in the vicinity. In the meantime, when Marga Czyż left our school, another Biology teacher Krystian Niedojad became involved in the activities and many students regularly take part in bird ecology program organizing bird watch / bird counting. Having one's own articles published in the BSP newsletters is a great reward which can only be beaten by a chance of participating in international conferences in Latvia and Sweden.

In 2008 we went to Vilnius with a presentation on waste heap reclamation prepared by Wojtek Łagan and Paweł Bryll. For our students (not to mention myself) it was the first experience of that kind: giving a presentation to an international audience – quite challenging but well done. The stay in Vilnius, the people met there the things learned and activities done during the days of the Conference were very inspiring for us. Back at school the boys made a great presentation about all they had experienced to promote the BSP and encourage others to participate. If you ask me, they succeeded. The very next year two other students had a chance to take a step forward. Mateusz Ball came up with the idea to make a presentation and run a workshop at another international conference. Mateusz had quite a unique topic choice: "Acoustic Pollution". Together with Natalia Stawarska they made a presentation on different kinds of pollution and took a closer look at the problem of noise, especially underwater one. The idea was to involve other students at the conference, hence the workshop which followed the presentation.

We took part in the Nacka conference in 2009 and the workshop was really well assessed by all the participants (as I learned from the organizers later on). Again, after



coming back home the students in our school were presented with the details of the conference, which is a good recommendation of the BSP in general.

The local actions are also appreciated by our students. There have always been artistic individuals taking photos like Paulina Gut whose captures of nature could have been admired in the BSP newsletters as well as at local art galleries. There have also been 'activists' educating the school community in the field of recycling or battery disposal and organizing battery collection to be safely discharged by professional companies. There have been those quiet ones doing research, writing articles... and it is hard to mention everybody, but some names repeated ( Eстера Karolczyk, Łukasz Foryś, Bartek Czajka).

I have had the pleasure to watch all the activities, the growth of interest, the spread of actions...But above all, I have had the pleasure to cooperate with our Biology teachers and all the ambitious students who care, who want to put their ideas into action...and I have had the responsibility to assist them in translating their works into English, prepare them for the international conferences, participate in the conferences together and have this great chance to meet students and teachers of the BSP.

Those six years of our BSP adventure have given me personally wonderful lessons: where else could I learn about land reclamation, acoustic pollution, biodiversity, the mysteries of the river running through my town, the cod problem, ecosystems, sustainable development, life...

I believe, our students also learn a lot participating in the BSP actions. And I hope our adventure shall continue.

Teacher: Marzena Jerczyńska  
Mikolaj Kopernik  
Secondary School no 3  
in Wałbrzych, Poland  
ul. Jordana 4  
58-305 Wałbrzych  
POLAND



# World Water Day in the BSP schools



Photo: Anda Deksne

## Water days at A.Upits Skriveri Secondary school

We organised water-days from 22nd till 26th of March to improve pupils' knowledge about water resources in earth, to develop skills of analysing water and to make them aware of water quality.

Various lessons of art, geography, biology and nature science were devoted to water. In geography 9,10th grade students investigated and

presented the assessment of water resources in different countries of the world as well as the quality of drinking water in Skriveri pipeline was described. Students used data taken from our municipality and concluded that we had Fe in water 3 times more than in standards (in 2008, before iron removal system was made).

At biology students of 10th grade investigated the problem of acid rains, kinds of water pollution and made the analysis of drinking water in students hostel by using indicator paper. The amount of chlorine and Fe was more than 0 but not more than standards allow. In the class they obtained pH level in snow and investigated that it is about pH 6 and it is not acid precipitation.

At biology lessons the students of 8th grade had group work to find out the meaning of water in living organisms as well as in different water animals' lives.

At nature science lessons the students of 5th grades worked with a CD about rivers. At first we made a model of the relationship between the river



and the man. Then we recognised our hydro-electric-power station on the river Daugava. We discussed the problem of pollution in rivers and how it affects river fishes and, in the end, the role of rivers in folklore.

The 6th grades students have made IT presentations about fresh and salt-water and water resources and had group work about water kinds, water assessment, water pollution and water cycle in nature. Finally, we made „Water-wall” showing all presentations.

At art lessons 3rd grade pupils were trying to imagine and drew the colour of water. 4th grade pupils tried to work out the situations in which water can be friendly or unfriendly to a human. 9th grade students observed the lines in which different items make in contact with the surface of water, and lines and



curves made by water swirling, bubbling, flowing and streaming.

Teacher: Daiga Martinsone  
A.Upits Skriversi secondary school  
Stacijas str. 1, Skriversi, LV-5125, Latvia

## About The International Day of Water in Staicele Secondary school.

In order to pay more attention to role of water in our life and to accent its importance nowadays and in the future, there were organized following activities in our school:

- All students Forms 1-12 during classes of Arts were asked to draw water all around us. The 5th and 6th forms students made a team work: everybody drew a part of the River Salaca basin from Lake Burtnieki to The Baltic Sea. Finally all drawings were added together and were made a big picture, which were placed on the wall of one of the halls in our school. The exhibition 'My Salaca' from the 7th-12th forms students' drawings was made, but primary school

pupils' drawings were placed on the wall of another passage under the title 'Flood time - Water days'. As a result - students' works brighten the design of passages in our school.

- The another activity carried out was the annual competition 'Know or guess' – during this activity all tasks and questions were about water: students formed teams and their tasks were to go around 9 'stations' where teams were waited by teachers, who were prepared interesting, tricky tasks connected with water in all school subjects- Maths and Information Technologies, Latvian and Literature, English and Russian, Geography, Sciences, History and Social Studies, Arts and Music, Home Economics, Sports, where students could show their knowledge, erudition and witticism.

Teacher: Alda Gravere,  
Staicele secondary school  
Sporta str. 4, Staicele, LV-4043, Latvia





THE 17th INTERNATIONAL ENVIRONMENTAL  
CAMP SCHOOL ORGANIZED BY THE MERI-PORI  
UPPER SECONDARY SCHOOL  
FINLAND, 31.05.-04.06.2010





## Midwinter Bird Counting

On January the 18<sup>th</sup> C11 from AGS went to Høruphav, Trillen, to count bird species. It was a calm day and the sun was shining, it was a perfect day to go bird watching.

The clock was 12.15 when we came to Trillen, the weather was fine and we could see 5 km out on the water. We got two telescopes to look in and we were split into two groups. We got a piece of paper with a schedule of different bird species and a numerator to count the birds when we saw one from the same species. We counted them from left to right and wrote it down in our schedule.

Bird Species	Counted birds
Coot	20
Little Grebe	25
Mallard	140
Dunlin	15
Whooper Swan	34
Great Crested Grebe	3
Eider	30
Common Gull	16
Herring Gull	6
Cormorant	2
Tufted duck MALE	391
Tufted duck FEMALE	256
Golden eye	3

- This is the schedule of the birds we saw.



A whooper swan in a flock of tufted ducks and pochards

Birds are often in flock so they can defend themselves from enemies, e.g. birds of prey. When they fly together they protect each other and so they do not fly into each other because of the distance between the wings from one another.

We saw many tufted ducks, like you can see in the schedule; there were over 600 tufted ducks.

The male has white flanks and a black over side, his eyes are yellow like the female and on the back of his neck he has a tuft. Their bill is blue. This bird lives where they can eat snails, benthic fauna, mussels and worms; they dive down and catch their nourishment. The ducklings eat crayfish from the surface in the water and they catch insects.

All birds live and look different from species to species. Some live on the sea, some in a



lake, depending on what their need of food and their living conditions are.

The male birds are often more colourful than the females, because the males use colours to impress the females.

The female birds are often dark and brown in colour; it is a kind of camouflage, so they can protect themselves from birds of prey when they are hatching eggs out.

On our trip to Høruphav, we found out that there are many birds in Denmark during the winter, birds come here as winter guests from cold areas in northern Scandinavia, but not all birds are migratory birds. Because the weather in Denmark has been very cold since the middle of December, some birds might have gone to other places around Denmark to get food.

We use bird counting to get knowledge about the number of birds in this area and in all Denmark. We get knowledge of which birds migrate and which do not, we might get to know where they go and also if other birds visit during the winter that do not live here during the summer. The whooper swan, for instance, does not breed in our area, but we enjoyed watching 34 of this species and listening to their beautiful voice.



Students at work counting midwinter birds

Written by student in form c11  
Anne Philipsen  
Allsundgymnasiet Sønderborg  
Grundtvigs Alle 86  
DK-6400 Sønderborg Denmark  
[www.ags.dk](http://www.ags.dk)



## Great Spotted Woodpecker

Great Spotted Woodpecker (*Dendrocopos major*) belongs to the order of Piciformes, appearing in the whole of Poland and inhabiting all types of forests or parks. It also nests in bigger and older buffer strips in the neighbourhood of human dwellings. It eats insects extracted from under the tree bark, especially beetles. During bigger frosts it removes seeds from conifer cones, cleverly jammed into a specially prepared 'anvil' – crack in a branch or tree trunk.

Cones are a very important food source, as they contain seeds with such nutrients as fatty acids, essential – among others – for keeping the right body temperature in winter.

I am fascinated in watching birds first of all thanks to my Biology teacher. We chose Przemęcki Landscape Park (southern part of Wielkopolska) to conduct our research in great spotted woodpecker's winter foraging on pine cones.

Our research included four anvils, three situated on pedunculate oaks (*Quercus robur*), aged 70, 100 and 120. The fourth anvil was situated on a 70-year-old black locust (*Robinia pseudoacacia*). We visited each of the anvils once a week and collected all cones, counted them and removed from under the anvil.

It was observed that bark structure played an important part in the way the anvils were used. The most differentiated bark of black locust enabled cracking cones of different shapes. No anvil was found in the bark of Scots pines, as it is rather smooth and lacks creases. The bark of black locust is, on the other hand, more creased than the bark of oak trees, which makes it possible to crack bigger cones.



It was not surprising then that the anvils situated in the black locust bark were more frequently used than the anvils located in oak trees. 70 % of all cones were collected under the black locust anvil. The temperature, however, was not an important factor determining the number of cracked cones.

I spent many hours observing woodpeckers and counting cones. I had not realised that it would make me feel so close to the surrounding nature.

Student: Kamil Grycz

Teacher: Grzegorz Lorek, lorman@leszno.edu.pl  
ILO w Lesznie, Kurpińskiego 1, 64-100 Leszno, Poland  
Photo: Krzysztof Szade

## The influence of winter 2009/2010 to wild animals.



Three pupils from the second grade – Annija Tamane, Edgars Alde and Reinis Burkevics and their teacher Aija Staskevica researched how this cold winter influence the wild animals.

They were interested in what the animals eat and where they live in such cold and deep winter.

They observed the weather, too. The snowfall this winter was much higher than average. There were deep snowdrifts at the sides of the roads, about 76 – 95 cm, but the snow in the open fields was 66 -71 cm deep.

Pupils studied traces of wild animals in the snow, tried to guess the animal that made them, they observed the small branches of the trees eaten off by the roes and deer. Pupils recognized traces of a fox, a hare, a roe, a deer, a weasel, a marten and a wild boar. They took some carrots, apples and potatoes to the animals.



## OBSERVATIONS

The pupils concluded that:  
they like this winter with such deep snow-drifts;  
the wild animals have many difficulties to find the food, they often use the roads to move;  
the weaker and powerless animals will not manage to survive the bad winter;  
people should take care of wild animals and take vegetables, grain and hay to them.

Teacher: Ingrida Tamane  
Vecumnieki Secondary School  
Rigas Str. 24, Vecumnieki, Latvia  
e-mail: [ingridatamane@inbox.lv](mailto:ingridatamane@inbox.lv)  
Photos: Aija Staskevica, Ingrida Tamane





# Chemical Water Analysis

## In BSP Environmental measurements Programme

### To teachers and students:

The aim of this study is to gather information about the nutrient concentrations (total nitrogen N<sub>tot</sub> and total phosphorus P<sub>tot</sub>) in different parts of the Baltic Sea.

The schools get instructions and bottles by post in the middle of October and the sampling time will be at the beginning of November. The samples are sent to Meri-Pori Upper Secondary and they measured by the Finnish Institute of Marine Research. The schools will get the report about results in order to make their own conclusions.

The recommended way to do the sea water sampling would be to take one sample from the coastal waters and another from the open sea area. To get the open sea area sample, we would suggest for instance asking help from some fishermen, or maybe it would be even easier to ask help from harbour pilots. The exact descriptions of the sampling places are also needed (the location coordinates if possible).

Students' part: Students can take samples, draw maps, pack and mail samples, and take part in the international BSP Project. As samples are being taken and after the report is received, it is easy to discuss the importance of pure water - how we can save our environment for future generations! Everyone can have an influence by taking small steps forward!

### History:

In BSP Salacgriva Water Quality meeting (May 2004) it was agreed to arrange a small size chemical water analysis project in order to see, if it will work as a new part in our BSP Water Quality project. The teachers of Meri-Pori Upper Secondary suggested to organize the project. The scientist Hannu Haahti from The Finnish Institute of Marine Research promised laboratory help in measuring the samples.



**2004-05:** We got 9 samples (sample pairs: one sample from shore and another from open water area) from 6 countries around the Baltic Sea, both from coastal sea water and from open sea area. We got also samples from rivers and lakes near the Baltic Sea. The samples from Russia Lake Ladoga was taken by Meri-Pori Upper Secondary group within their trip to Valamo.

**2005-06:** We got 8 samples from 5 countries. All former participants were with.

**2006-07:** We got 9 samples from 6 countries around the Baltic Sea. All former participants were with and we got one new participant from Germany.

**2007-08:** We got 8 sample from 5 countries. Almost all former participants were with and we got two new participants: Katowice from Poland and Nacka from Sweden. This year our German sample was lost in the post.

### The schedule in 2008-09 :

In October 2008 the bottles and the following instructions was sent to the participating schools:

"The recommended way to do the sea water sampling would be taking one sample from the coastal waters and another from the open sea area. Sample bottles should always be rinsed with the seawater sample from the sampler before they are filled. For to get the open sea area sample we would suggest for instance asking help from some fishermen or maybe even more easily from harbour pilots. Samples should be stored protected from light and refrigerated (0-4 oC).

Still we hope that you fill the whole bottle with the sample water so that there is not very much air in it. Close the cap tightly in order to avoid leakages."

The sampling time was in November.

We got 9 sample pairs from (one sample from shore and another from open water area) from 5 countries around the Baltic Sea. The samples from the schools came by mail to Meri-Pori Upper Secondary. We sent them for measurements to The Finnish Institute of Marine Research (FIMR).

The results with descriptions of the sampling places can be seen in the table and in the two maps.

We have now results from 5 years time. All earlier results are in the report 2008. For comparing there are bar charts from such places which have been with for a longer time.



## The participants:

### Denmark

Sönderborg, Allsundgymnasiet (Birthe Zimmerman)

### Estonia

Sillamäe, Kannuka Kool (Alla Vjugova)  
Tartu, Tartu Nature House (Sirje Janiksen)

### Finland

Pori, Meri-Porin lukio (Anja Hokajärvi, Simo Korpela)

### Poland

Katowice, II Liceum Ogólnokształcące im. M. Konopnickiej (Jolanta Mol)  
Kolobrzeg, Zespół Szkół Nr 2 (Maria Adamiak)

### Sweden

Nacka, Nacka Gymnasium (Rolf Erikson)  
Osby, Ekbackeskolan (Bo Persson)  
Söderköping, Nyströmska Skolan (Jenny Lindström)

## Conclusions:

The amount of nutrients depends strongly on the season. Our common sampling time was in November (one sample was taken in January), so this year results should be comparable with each other. As to earlier years the comparability is not so good, because then the actual sampling time was much longer.

In river samples (Katowice and Tartu) total nitrogen and total phosphorus values are very high. In Katowice the values are lower than last year, but still much higher than in Tartu. Agriculture is a major reason to the phosphorus contents of the rivers. The waters from farmers' fields bring a lot of phosphorus. In the cities the waste water purification usually cleans the water from a great deal of phosphorus compounds, so the city waste waters can nowadays be rather clean from phosphorus. In Tartu sample the amount of phosphorus is really high compared with earlier results. Of course, the fertilization of the fields also brings nitrogen to the rivers. Some nitrogen also comes straight from the air (wet deposition of NO<sub>x</sub>:es). In waste water purification the reduction of nitrogen is rather complicated, so there is usually quite a lot of nitrogen compounds left in the purified waters of the cities, too.

Near the cities of Kolobrzeg and Pori the waters contained quite a lot of nutrients last year. Nacka is about same size when comparing the amount of inhabitants.

- In Nacka the waters are quite clean.
- As to the nitrogen the open sea sample of Kolobrzeg has been significantly cleaner than the coastal sample. All values in Kolobrzeg samples except the value of phosphorus from coastal area are higher than last year. The amount of phosphorus in open sea sample is highest during this 5-year period.
- In Pori the open sea samples are, like last year, cleaner than the coastal samples. The amount of phosphorus is quite high in the coastal sample, highest during 5-year period. In coastal area the streamings coming from the river Kokemäenjoki area can go rather far, and, on the other hand, the deep and rocky coastal area allows quite free water change with open sea waters. There is quite near (about 3 km to the South) to the sampling place Kallo, an area where Kemira Pigments has

in earlier decades lead huge amounts of ferrosulphate. This chemical has sedimentated to the bottom of the sea and now it is slowly dissolving to the seawater. Ferrosulphate is used as a water purification chemical in many municipal waste water purification plants and it combines easily with the phosphates creating an insoluble flock. The extraordinary low amount of phosphorus in Kallo sample could be the result of this kind of reaction.

The waters near smaller towns Sillamäe and Sönderborg have earlier been surprisingly clean compared with the others. In Sönderborg all amounts are like in 2007. In Sillamäe the amounts of nitrogen in coastal area were surprisingly high in 2007 but now the amounts are similar to earlier years. In Söderköping the values of phosphorus are in the same level as last year, but the amount of nitrogen is higher than last year. The values of phosphorus are still high. The water of Lake Osby shows now smaller values of nitrogen than last year. The values of phosphorus have been very small except the year 2005. In this small lake the yearly changes seems to be rather big.

## The future:

The water research will continue. All the present participants – of course – are welcome to continue in our research. We will send you the sampling bottles etc. but we hope that you will send us possible feedback from everything concerning this study.

As to new members the applications for joining our group can be sent to the following e-mail address [anja.hokajarvi@pori.cedunet.fi](mailto:anja.hokajarvi@pori.cedunet.fi) and we would especially hope to get sea water samples from you.

The recommended way to do the sea water sampling would be to take one sample from the coastal waters and another from the open sea area. To get the open sea area sample we would suggest for instance asking help from some fishermen or maybe it would be even easier to ask help from harbour pilots. Also the exact descriptions of the sampling places are needed (the location coordinates if possible). We will send the instructions and bottles in October and the sampling time will be at the beginning of November. Student participation in the research is essential. It is very important to teach students the background of scientific research: The methods and schedule, how to take the samples carefully and how to mark them without mistakes: the date, the labels, the map. Students can also get knowledge from earlier reports!

**Dear partners! Thank you very much for cooperation!  
Special thanks to scientist Hannu Hahti from Finnish Institute of Marine Research!**

Simo Korpela  
BSP liaison person in  
Meri-Pori Upper Secondary

Anja Hokajärvi  
The leader of this study  
Meri-Pori Upper Secondary  
Rieskalantie  
28800 Pori Finland  
Tel. +35826215380  
Fax. +35826215381  
e-mail: [anja.hokajarvi@pori.cedunet.fi](mailto:anja.hokajarvi@pori.cedunet.fi)



## The Air Quality Programme – 2008/2009 report

### Schools working within the programme:

#### Poland:

---

1. XVIII LO przy Specjalnym Ośrodku Szkolno Wychowawczym nr1 im. Louisa Braille'a in Bydgoszcz, Krasińskiego 10, PL 85-011 Bydgoszcz  
Teacher: Magdalena Hawrytkiewicz  
e-mail: magda.haw@vp.pl

2. I LO im. H. Sienkiewicza in Lancut  
ul. Mickiewicza 3, PL 37-100 Lancut  
Teacher: Ludmila Smet-Dudziak  
e-mail: ludmilasd@gazeta.pl

3. Szkoła Podstawowa nr 86  
os. Jagiellońskie 18, PL 31-843 Krakow  
Teachers: Anna Szmer, Malgorzata Topor

4. Complex of Environmental Protection Schools in Gdańsk  
ul. Smoleńska 5/7 80-058 Gdańsk  
Teachers: Katarzyna Gabryelczyk, Anna Sapieja  
e-mail: gallium2@wp.pl

5. Zespół Szkół Ponadgimnazjalnych nr 5 w Krośnie  
ul. Rzeszowska 10  
38-400 Krosno  
Teacher: Maciej Guzik  
e-mail: druidmg@o2.pl

6. Gimnazjum im. Ireny Sendler w Toszku  
ul. Dworcowa 27, 44-180 Toszek  
Teacher: Kornelia Rzepka  
e-mail: rzepka\_k@poczta.onet.pl

#### Latvia:

---

1. Vecpiebalga Secondary School  
Cesu rajons, Vecpiebalga LV 4122  
Teacher: Agita Berzina

2. Liepaja Secondary School No. 10  
Alejas 16, Liepaja  
Teacher: Aija Skinca

3. Rujiena Secondary School  
Rigas street 30, Rujiena LV 4240  
Teacher: Anda Deksnē

4. A.Upits Skriveri Secondary school,  
Stacijas 1, Skriveri, Aizkraukle district  
Teacher: Daiga Martinsone  
e-mail: dmartinsone60@inbox.lt

5. Riga Secondary School No. 49  
Krišjāna Valdemāra iela 65  
Riga – 10, LV 1010  
Teacher: Irina Liepina





## Lithuania

1. Mastaičiai Main School  
Mokslo 2, Mastaičiai, Kaunas region, Lithuania  
Teacher: Birutė Jasinskienė
2. Lapis Basic School  
Meriko 3, Lapes, Kauno r. LT 54434  
Teacher: Rasa Stankiene
3. Basanavicius secondary school  
Kaunas  
Teacher: Vilma Dirzyte  
e-mail: dirvile@yahoo.co.uk
4. Vilkyskiai Secondary School, Ecological Club "Droplet"  
Vielkyškiai, Pagigiai  
Teacher: Maryte Geciene
5. Primary School Žibai  
Miško 3, Šilutė, LT 99148  
info\_zibai@telesat.lt  
Teacher: Daiva Šarlauskienė
6. School Prienu "Ziburio" gymnasium  
Basanaviciaus strel 1, LT – 59131 Prienai  
kucinskiene.rasa@gmail.com>  
Teacher: Rasa Kucinskiene
7. Vilnius Žemyna gymnasium  
Čiobiškio str. 16, LT-07181 Vilnius  
Teachers: Gražina Drebigienė, Romualda Fedosejevaite  
rastine@zemynosgimnazija.vilnius.lm.lt  
roma.fedosejevaite@gmail.com
8. Šilutė primary school  
Lietuvininkų 38, Šilutė  
Teacher: Violeta Lukočenė
9. Vilkyskiai secondary school  
Vilkyskiai, Pagegiai Municipality  
Teacher Maryte Geciene  
lelija5@hotmail.com
10. Prienai Aзуolas Basic school  
Kestutis st. 45, Prienai LT  
Teacher: Jurgita Bakienė  
biomokytoja@yahoo.com

## Estonia:

1. Jõhvi Gümnaasium  
Hariduse 5, Jõhvi, Ida-Virumaa, 41 534  
Teacher: Tiina Gashkov  
e-mail: tiina.gashkov@mail.ru
2. Tartu Naturehouse  
Kompanii10, Tartu  
Teacher Sirje Janikson
3. BSP meeting In Illuka, Ida –Virumaa (students from different schools)  
Teachers: Aire Narits, Sirje Janikson



Country	No. of schools participating in AQ	No. of protocols
Poland	6	16
Latvia	5	7
Lithuania	10	13
Estonia	3	3
Total: 4	24	39

According to sending protocols, the smallest air pollution, like in previous years, is observed in Estonia, Lithuania and Latvia. But in some regions in Poland (southern and east-northern part of the country) situation has been getting better a little bit.

Beata Węgrzynek  
AQ Programme Co-ordinator  
Photos: Anda Deksnė



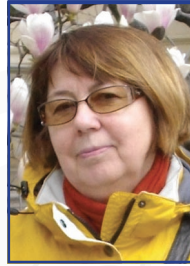
# BSP coordinators

## Latvia



National Coordinator:  
**Velga Kakse**  
State Education Centre  
Valnu St. 2, Riga, LV 1050, Latvia  
Phone: 37167216427  
E-mail: velga.kakse@visc.gov.lv

## Estonia



National coordinator:  
**Sirje Janikson**  
Tartu Environmental Education Centre  
Kompanii 10, Tartu 51007, Estonia  
Phone: +372-7361693  
Phone: +372-7361693  
E-mail: sirje.janikson@teec.ee

## Denmark



National coordinator:  
**Soren Levring**  
Sonderskovskolen  
Grundvigs Alle 100  
DK-6400 Sonderborg, Denmark  
E-mail: slev@sonderborg.dk

## Germany



National coordinator:  
**Ute Gronwoldt**  
Ministry for Education, Science,  
Research and Culture  
Brunswiker Strasse 16-22  
D-24105 Kiel, Germany  
E-mail: utegroenwoldt@t-online.de

## Finland

National coordinator:  
**Jaana Rätty**  
Linnajoen koul  
Edelfeltinbulevardi 2, 06100 Porvoo,  
Finland  
E-mail: Jaana.Raty@porvoo.fi

## Russia



National coordinator:  
**Prof. Stanislav Babitch**  
Department of Regional Economics  
and Environmental protection  
Saint-Petersburg State University of  
Economics  
Sadovaja Str. 21  
191023 Saint-Petersburg, Russia  
E-mail: stanislavbabitch@mail.ru

## Lithuania



National coordinator:  
**Miglė Simanavičienė**  
Lithuanian Centre of Young  
Naturalist's  
Džiaugsmo Str. 44  
11302 Vilnius, Lithuania  
Tel. 00370 5 2382600  
Fax. 00370 5 2670090  
E-mail: m.simanaviciene@gamtininkai.lt

## Sweden



National coordinator:  
**Susanne Mellvig**  
Nacka gymnasium  
Griffelvägen 17  
S-13140 Nacka, Sweden  
Tel. 00460 8 7188154  
Fax. 00460 8 7188298  
E-mail: susanne.mellvig@nacka.se

## Poland



National coordinator:  
**Dr. Jolanta Mol**  
Stowarzyszenie Komputer I Sprawy  
Szkoły "KISS"  
Ul. Raciborska 3  
PL-40074 Katowice, Poland  
Tel./fax. 0048 32 2 519811,  
0048 32 2 061581  
E-mail: jola.mol@pro.onet.pl,  
bspnews@kiss.pl



# Programmes coordinators

## Air Quality Programme



Coordinator:  
**Dr. Beata Wegrzynek**  
 Silesian University  
 ul. Wierzobowa 10/10  
 PL-42500 Bedzin, Poland  
 Tel. 0048 32 2009448  
 Fax. 0048 32 2555873  
 E-mail: bwegrzyn@us.edu.pl



## Bird Ecology Programme



Coordinator:  
**Andrzej Sliwinski**  
 LO im. T. Kosciuszki  
 Maria Konopnicka str. 2,  
 PL-32-200 Miechow, Poland  
 Tel. 0048 41 3831035  
 E-mail: andrewsl@wp.pl



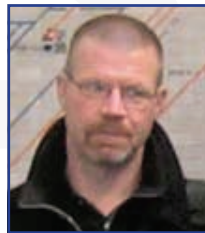
## Coast Watch Programme



Coordinator:  
**Peter Uhl Pedersen**  
 Birkevang 303  
 3250 Gilleleje, Denmark  
 E-mail: peter.uhl.pedersen@skolekom.dk



## Environmental History Programme



Coordinator:  
**Bo Persson**  
 Ekbackeskolan  
 Västra Storgatan Str. 15  
 S-28300 Osby  
 Sweden  
 E-mail: bo.persson@lut.mah.se



## Phenological Studies Programme



Coordinator:  
**Vytautas Eidėjus**  
 Lithuanian Center of Young  
 Naturalist's  
 Džiaugsmo Str. 44  
 11302 Vilnius, Lithuania  
 E-mail: vytautas@grazute.lt



## Rivers Programme



Coordinator:  
**Susanne Mellvig**  
 Nacka gymnasium  
 Griffelvägen 17  
 S-13140 Nacka, Sweden  
 Tel. 00460 8 7188154  
 Fax. 00460 8 7188298  
 E-mail: susanne.mellvig@nacka.se



## Water Quality Programme



Coordinator:  
**Liesma Abolina**  
 State Education Centre  
 The National Programm Project  
 Rostokas iela 54 -12  
 Riga, LV-1029, Latvia  
 E-mail: liesma.abolina@inbox.lv



## Oicosophy Programme



Coordinator:  
**Volker Stiehl**  
 Hauptstrasse Str. 14  
 D-38274 Klein Elbe  
 Germany  
 E-mail: stivol@t-online.de



## Environmental Measurements Programme



Coordinator:  
**Simo Korpela**  
 Meri-Pori Upper Secondary  
 Rieskalantie  
 28800 Pori, Finland  
 Tel: +35826215380, +35826215382  
 Fax: +35826215381  
 E-mail: korpela.simo@gmail.com

# BSP international events

## When?

## What?

## Where?

### 2010

April, 30 th – May, 2 nd	The 23 rd Consulting Meeting of National and Programme Coordinators of the Baltic Sea Project within UNESCO ASPnet	in Latvia
May 30 th – June 4 th	The 17 th International Environmental Camp School 2010 of Meri-Pori upper secondary school	in Finland
October 27 th – 30 th	International Teacher's Training Course "Observing and Innovating Urban Ecology in the Baltic Sea Region"	in Denmark

### 2011

March	The 23 rd Consulting Meeting of National and Programme Coordinators of the Baltic Sea Project within UNESCO ASPnet	in Latvia
May 29th – June 3rd	The 18th International Camp School" in Meri-Pori Upper Secondary	in Finland

### Contributions:

*Would you like to contribute to our Newsletter?  
You are very welcome!*

We are looking forward to receiving and publishing your contributions, such as:

- accounts of your work
- art works for the covers (size: 42x24 cm)
- newspaper and magazine clips presenting environmental issues in your country (the original article must be included)
- activity pictures presenting you and your students performing the BSP activities

There are, however, a few rules which you HAVE TO observe if you want your article to be published in the BSP Newsletter. There are:

1. Keep your articles short, precise and interesting
2. All contributions are to be e-mailed to [velga.kakse@visc.gov.lv](mailto:velga.kakse@visc.gov.lv) or sent by post (on CD) to:  
*Velga Kakse*  
*State Education Centre*  
*Valnu str.2, Riga, LV 1050, Latvia*
3. All articles are to be composed as **WORD** documents
4. Please **DO NOT** include any photos, pictures, illustrations or any other scanned materials directly **IN** the Word document; they are to be enclosed as **SEPARATE** attachments
5. All photos and illustrations are to be saved in **JPEG** format (more than 1 Mb size). If you send photos with people, please name them.

### Webmaster:

Gusts Kaksis, [gusts.kaksis@graftonit.lv](mailto:gusts.kaksis@graftonit.lv)



United Nations  
Educational, Scientific and  
Cultural Organization



UNESCO Associated Schools



United Nations  
Educational, Scientific and  
Cultural Organization

Latvian National Commission for UNESCO

“United Nations Decade of Education for Sustainable Development (2005-2014) concerns everyone. It is up to everyone to contribute, in ways large and small, to changes in thinking, values, attitudes and behaviours conducive to achieving sustainable development.

During the 2010-2015 period, UNESCO will focus its efforts on four key areas of strategic action:

- 1) enhancing synergies with different education and development initiatives and strengthening ESD partnerships;
- 2) developing and strengthening capacities for ESD;
- 3) building, sharing and applying ESD-related knowledge;
- 4) advocating for ESD, and increasing awareness and understanding of sustainability.

In each area of strategic action, UNESCO will strive to stimulate fresh initiatives, promote new forms of cooperation, boost the spread of good practices in ESD and place strong emphasis on enhancing partnerships in ESD to better mobilize and engage with key stakeholder groups. Evidence from good practices in ESD indicates that success factors include strong and effective partnerships that can contribute to promoting ESD.”

UNESCO Strategy for the Second Half of the United Nations Decade of Education for Sustainable Development.  
<http://www.unesco.org/en/esd/>

BSP teacher,  
help with your experience according to the Education for Sustainable Development to other teachers and students!  
WRITE A CHAPTER FOR THE NEXT BSP LEARNERS GUIDE ON  
“GOOD EXAMPLES ABOUT EDUCATION FOR SUSTAINABLE DEVELOPMENT”

Do contact with your national BSP coordinator about your ideas and educational approaches, and you will be welcomed to the editorial group as a contributor to the guide.

The Learners Guide should be printed by May 2012.

Velga Kakse

General and National Coordinator of the Baltic Sea Project within UNESCO ASPnet  
[velga.kakse@visc.gov.lv](mailto:velga.kakse@visc.gov.lv)