

# Nuclear Trends in the Baltic Sea Area



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# Baltic Sea Area is the Environmentally Vulnerable Region

- ❑ 80 million people living in 9 countries,
- ❑ Low water exchange of the Baltic water with the world ocean (> 35 years);

- ❑ Abundant fish resources

## Main Problems

- ❑ Accelerated eutrophication;
- ❑ Pollution with oil products and heavy metals;
- ❑ Increasing risks of radioactive contamination



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# Nuclear Trend Baltic

28 nuclear units

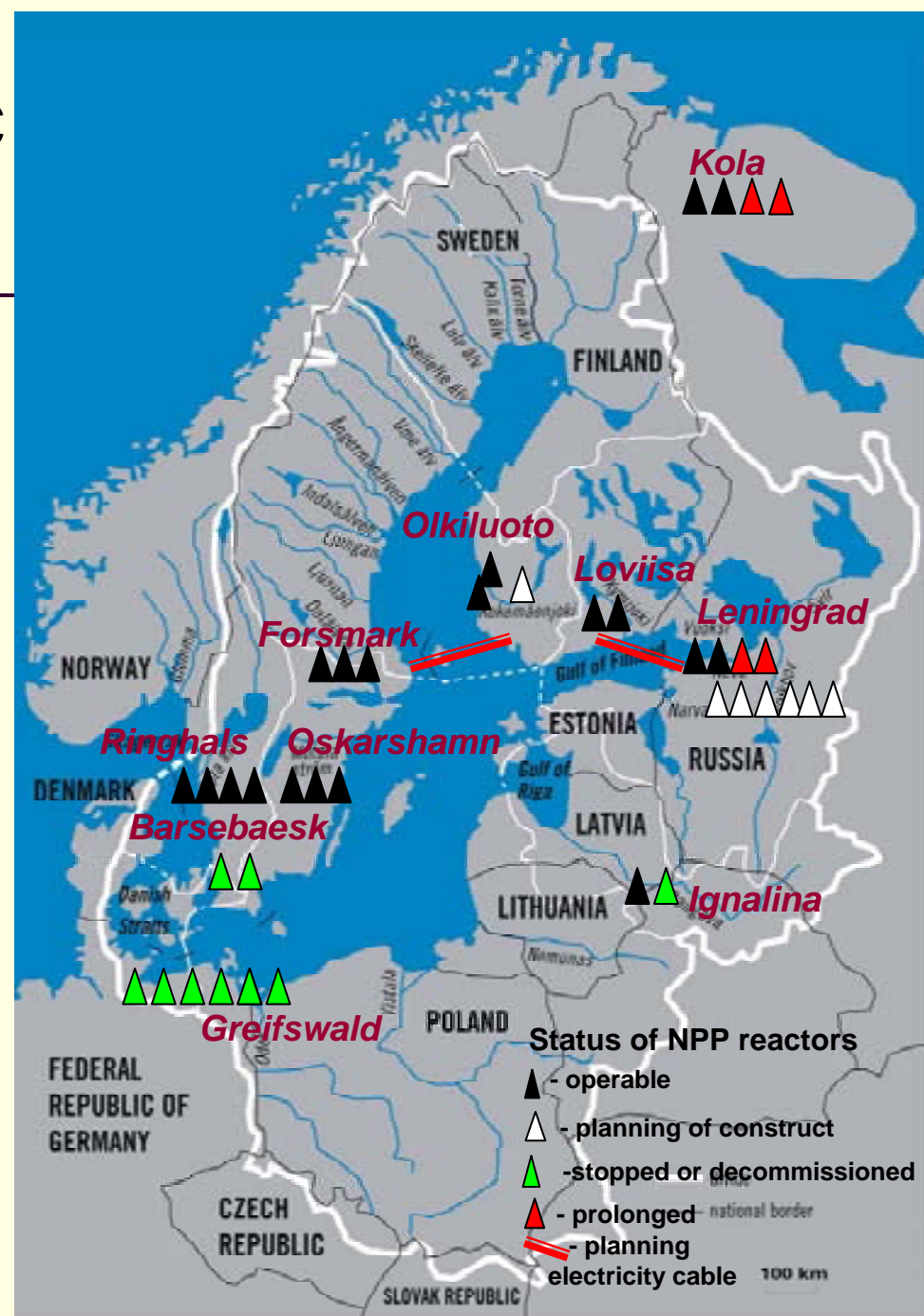
Sweden	12
Germany	6
Lithuania	2
Russia	4
Finland	4 + 1 = 5

First NPP constructed:

1966 Reinsberg, Germany, 100 MW

Last NPP constructed

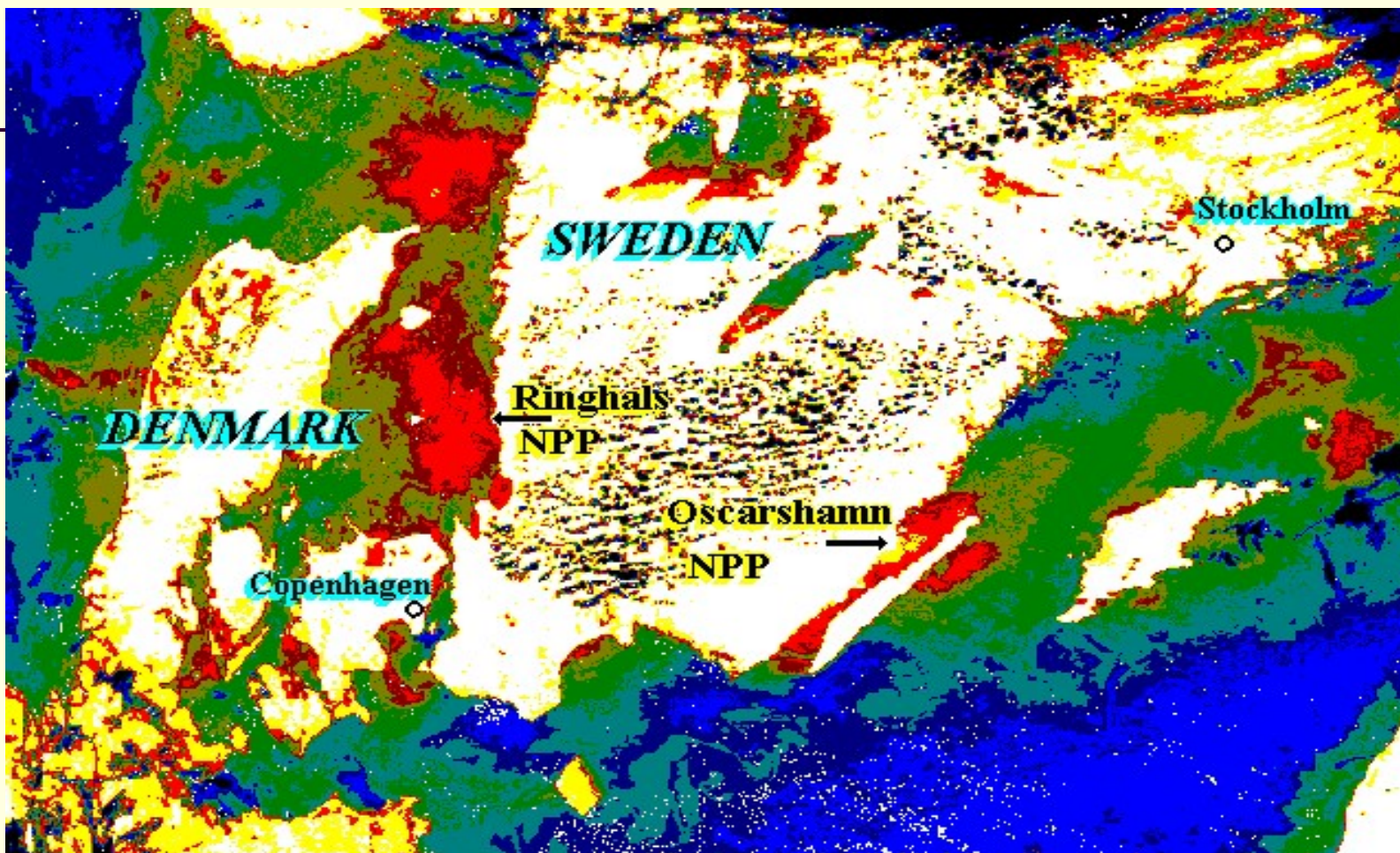
1987 Ignalina NPP, 1500 MW



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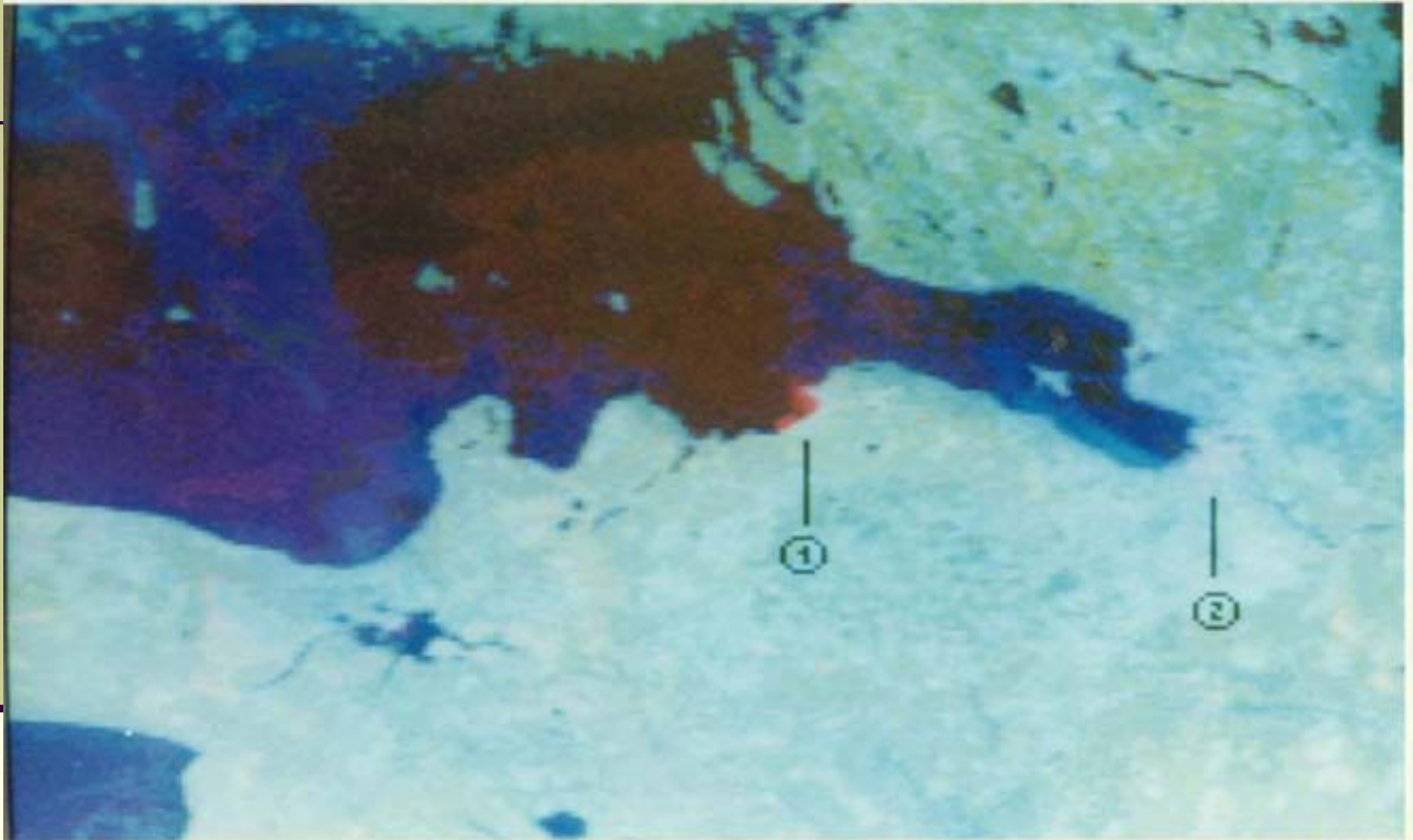
# Thermal pollution near the Swedish NPPs



**Thermal pollution from the Swedish NPP reach Denmark**  
*NPPs use 2 times more cooling water than thermo power plants*



# THERMAL POLLUTION LENINGRAD NPP



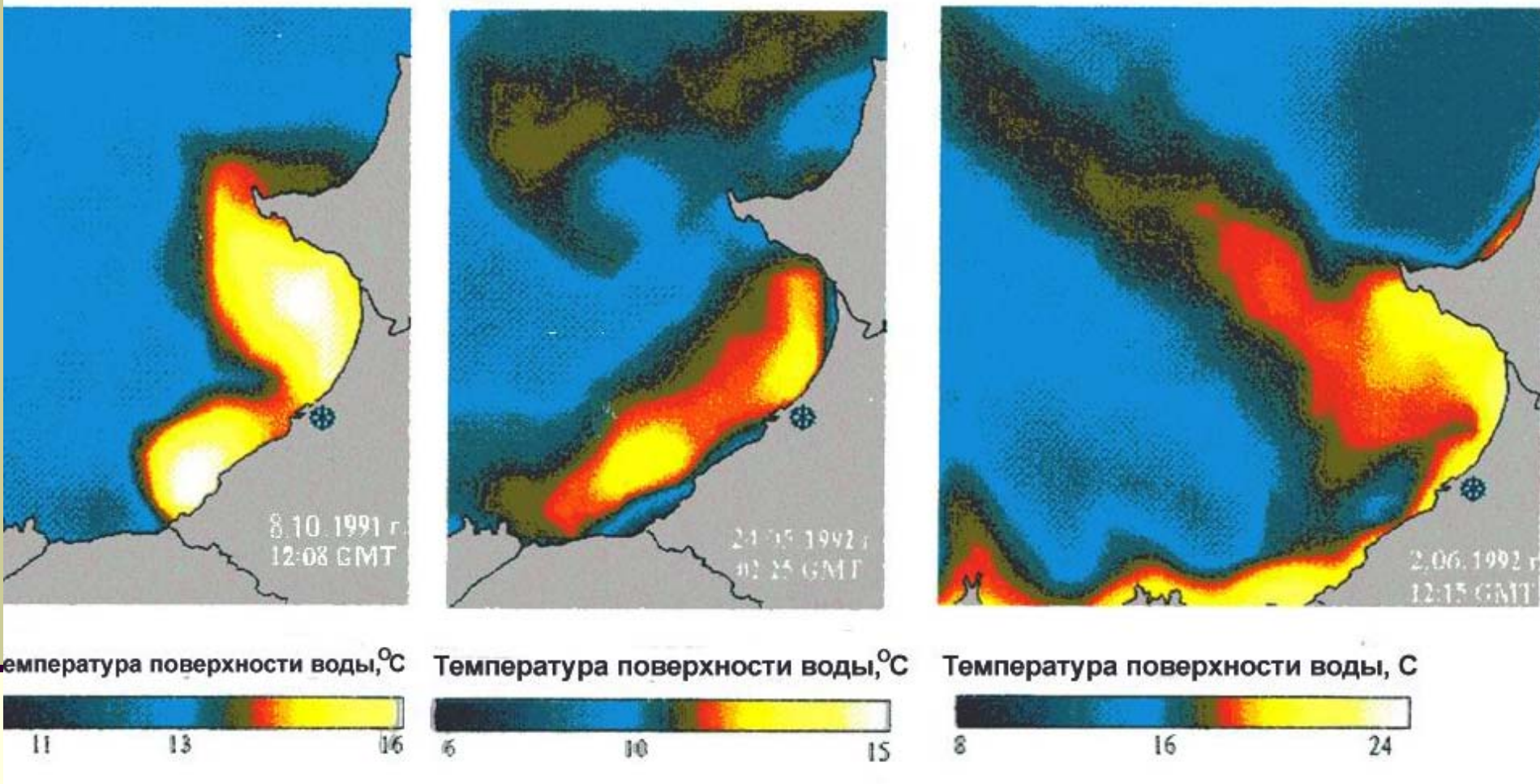
**Thermal pollution stimulates eutrophication of the Baltic Sea, increases the toxic impact of pollutants present in the seawater;**



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# THERMAL POLLUTION OF LNPP AT DIFFERENT WIND CHARACTERISTICS

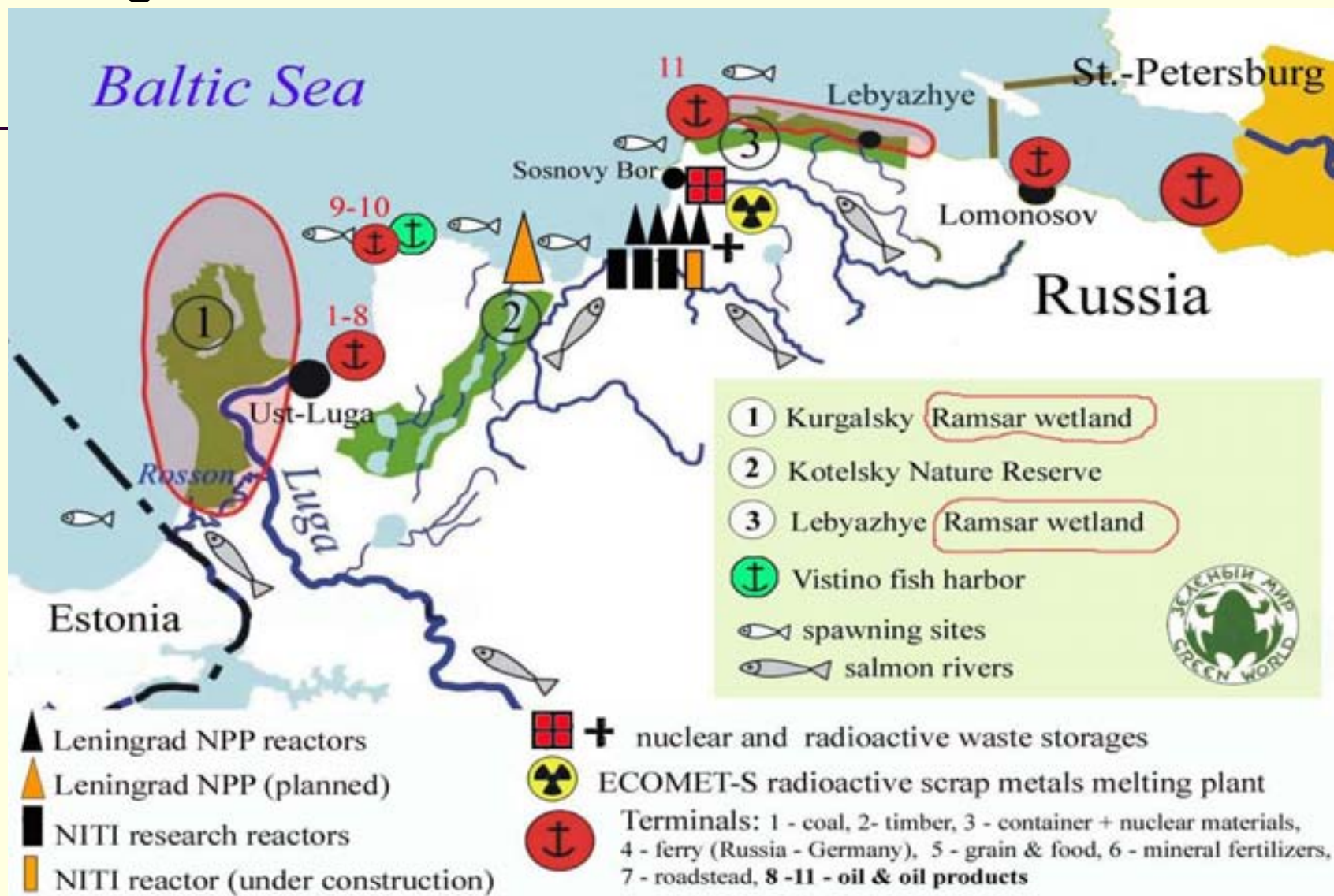


**Dramatic change in the thermal regime of spawning places undermines fish reproduction**



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# LNPP Against the Environment in the Baltic Russia



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# NUCLEAR RISKS IN THE WESTERN BALTIC ARE REDUCED

## ■ Nine power units have been decommissioned:

Reinsberg,	1990, Germany.
Greifswald 1,2,3,4,5	1990, Germany
Barsebek -1,2,	1999, 2005, Sweden
Ignalina 1	2004, Lithuania

## ■ One more unit is prepared for decommissioning:

Ignalina 2 (1500 MW), 2009.





# WHY OLD REACTORS OF THE BALTIC REGION SHOULD BE CLOSED

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- **Terminate production of hazardous nuclear waste.**
- **Stop production of the excessive energy, which is not used efficiently.**
- **Prevent continued killing of hundreds of millions fishes by NPPs of the Baltic Region .**
- **End stimulation of eutrophication, propagation of heat-loving toxic blue-green algae, thermal toxicity increase of the Baltic seawater.**



# NUCLEAR RISKS OF THE LENINGRAD NPP is GROWING.

## *Without Environment Impact assessment and the state environmental examination:*

- Spent nuclear fuel kept in the temporary storage of LNPP on the Baltic coast has been crowded – fuel assemblies put together twice closer than foreseen by the storage design;
- Operation lifetime of LNPP power unit 1 has been extended (the unit was to be closed in 2004); a similar decision will be taken for power unit 2 (lifetime limit in October 2006);
- A cutting unit for spent fuel assemblies is close to completion and dry storage for LNPP spent fuel is built on the South Coast of the Gulf of Finland;

## ***INTENTIONS DECLARED:***

Build LNPP-2 (LAES-2) (up to 6 power units with VVER-1000 reactors),  
2006.



# NUCLEAR RISKS IN THE EASTERN BALTIC ARE GROWING

- Radioactive metal is imported from other Russian regions and processed on the South coast of the Gulf of Finland (ECOMET-S). Baltic shore is turned into the rad-waste concentrator of the national scale;
- Construction of a new military nuclear complex in the Aleksandrov Research Institute of Technologies (NITI) is close to completion;
- Regional environmental monitoring around the nuclear industry complex on the South coast of the Gulf of Finland has been terminated;
- Certification of Ust-Luga, Vysotsk and Baltyisk ports for handling nuclear and radioactive cargoes has been announced (2004).
- CONSTRUCTION STARTED
- World-largest power unit, Euroreactor 1600 MW, (2003), at Olkiluoto NPP, Finland; the plant is built in spite of mass protests of the European community.
- Study possibilities for building the Baltic NPP (Lithuania, Latvia, Estonia).





# CHALLENGES

- Consumers of electricity can become investors into atomic projects by non-participation in the decisions about them;
- There are no sufficient resources for decommissioning Russian NPPs;
- Russian consumers of atomic electricity do not influence decisions on nuclear projects;
- Closed satellite towns of NPPs have no alternative job providers, therefore they are preprogrammed on the development of these technologies.



# NGO MISSION ON REDUCTION OF ATOMIC RISKS IN THE BALTIC AND BARENTS SEA REGIONS: GREEN WORLD OUTLOOK

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- Promote the idea of establishing the Baltic decommissioning fund. The Fund must be independent from nuclear business and reportable to the public;
- Organize international exchange on the experience of social partnership in the NPP decommissioning projects (social, ecological and economy aspects);
- Launch national campaigns and other activities for starting new NPP projects only on the approval at regional referendums.
- Ensure public participation of neighboring countries in the decision-making about new atomic projects in the Baltic region based on the Espoo and Aarhus conventions;
- Promote the development of renewable energy sources and energy saving , organize Baltic exchange of experience on these issues;
- Open atomic town of Sosnovy Bor for alternative business in parallel to strengthening security of nuclear facilities.
- Demand independent environmental monitoring of regions with NPPs, publications on the current and projected situation in the regions neighboring NPPs.



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