**Partners, a European team of experts**

**SP Technical Research Institute of Sweden**
Charlotte Gjelstrup Björdal, Coordinator  
E-mail: charlotte.bjordal@sp.se  
www.sp.se

**National Museum of Denmark, Denmark**
David Gregory  
E-mail: david.john.gregory@natmus.dk  
www.nationalmuseet.dk

**Cultural heritage Agency, The Netherlands**
Martijn Manders  
E-mail: m.manders@cultureelerfgoed.nl  
www.cultureelerfgoed.nl

**The geological Survey of Denmark and Greenland, Denmark**
Zyad Ali Hamdani  
E-mail: azh@geus.dk  
www.geus.dk

**University of Gothenburg, Sweden**
Dept. Of Marine Ecology, Loven institute, Jon Havenhand  
E-mail: jon.havenhand@marecol.gu.se  
Christin Appelqvist  
E-mail: christin.appelqvist@marecol.gu.se  
www.loven.gu.se

**The Viking Ship Museum, Roskilde, Denmark**
Jörgen Dencker  
E-mail: jd@vikingeskibsmuseet.dk  
www.vikingeskibsmuseet.dk

**External advisory group**

Stefan Wessman, National Board of Antiquities, Finland  
Fredrick Lueth, German Archaeological Institute, Germany  
Giulia Boetto, Centre Camille Jullian, France

**European Commission**

Directorate General Research  
Directorate I – Environment  
Michel Chapuis (project officer)  
E-mail: Michel.chapuis@ec.eu

**Project duration**

2009–2011

---

**WreckProtect**

c/o Charlotte Gjelstrup Björdal  
SP Technical Research Institute of Sweden  
Box 5609, SE-114 86 Stockholm, SWEDEN  
Telephone: +46 10 516 62 25  
E-mail: charlotte.bjordal@sp.se  
www.wreckprotect.eu

---

**Strategies for the protection of shipwrecks in the Baltic Sea against forthcoming attack by wood degrading marine borers.**

A synthesis and information project based on the effects of climatic changes.

**FP7-ENV-2008-1**

Coordination and support action

---

**Additional information**

**WreckProtect**

Strategies for the protection of shipwrecks in the Baltic Sea against forthcoming attack by wood degrading marine borers.

A synthesis and information project based on the effects of climatic changes.

**FP7-ENV-2008-1**

Coordination and support action

---

**Partners, a European team of experts**

**SP Technical Research Institute of Sweden**
Charlotte Gjelstrup Björdal, Coordinator  
E-mail: charlotte.bjordal@sp.se  
www.sp.se

**National Museum of Denmark, Denmark**
David Gregory  
E-mail: david.john.gregory@natmus.dk  
www.nationalmuseet.dk

**Cultural heritage Agency, The Netherlands**
Martijn Manders  
E-mail: m.manders@cultureelerfgoed.nl  
www.cultureelerfgoed.nl

**The geological Survey of Denmark and Greenland, Denmark**
Zyad Ali Hamdani  
E-mail: azh@geus.dk  
www.geus.dk

**University of Gothenburg, Sweden**
Dept. Of Marine Ecology, Loven institute, Jon Havenhand  
E-mail: jon.havenhand@marecol.gu.se  
Christin Appelqvist  
E-mail: christin.appelqvist@marecol.gu.se  
www.loven.gu.se

**The Viking Ship Museum, Roskilde, Denmark**
Jörgen Dencker  
E-mail: jd@vikingeskibsmuseet.dk  
www.vikingeskibsmuseet.dk

**External advisory group**

Stefan Wessman, National Board of Antiquities, Finland  
Fredrick Lueth, German Archaeological Institute, Germany  
Giulia Boetto, Centre Camille Jullian, France

**European Commission**

Directorate General Research  
Directorate I – Environment  
Michel Chapuis (project officer)  
E-mail: Michel.chapuis@ec.eu

**Project duration**

2009–2011

---

**WreckProtect**

c/o Charlotte Gjelstrup Björdal  
SP Technical Research Institute of Sweden  
Box 5609, SE-114 86 Stockholm, SWEDEN  
Telephone: +46 10 516 62 25  
E-mail: charlotte.bjordal@sp.se  
www.wreckprotect.eu

---
Aggressive shipworms eating underwater cultural heritage

At the bottom of the Baltic Sea lie up to 100,000 well preserved shipwrecks and other maritime related constructions. This unique and well preserved collection is now in danger due to the invasion of shipworms.

The shipworm and wood degradation

The shipworm is a worm-like mollusc living inside wood, where it destroys the material by making large tunnels. Total decomposition of a structure takes less than 10 years. These molluscs are found in most marine waters and oceans world-wide. However, they require a relatively high level of salt for their activity, and therefore the Baltic Sea with its low salinity, has afforded natural protection of the underwater cultural heritage for centuries.

New spread into the Baltic Sea

New outbreaks of shipworms have been observed in the Baltic Sea that previously had been protected from attack due to the low salinity of the water. The spread to new areas is most likely related to climatic changes.

About the project

If we are not able to protect shipwrecks against the shipworm, these objects will be lost within a very short time. This cross-disciplinary project will provide stakeholders and end-users, responsible for long term preservation of cultural heritage, with tools and methods to protect the wrecks. The work is based on currently available knowledge within different fields of science, which are evaluated and synthesized.

WreckProtect is an EU coordination action funded through the Seventh Framework Programme. The project, supported by The European Commission, Directorate General, Directorate “Environment”, started in May 2009 and will end in April 2011.

Aim and objectives

Our goal is to protect archaeological shipwrecks and submerged settlement sites in the Baltic Sea against forthcoming attack by shipworms. To achieve this aim, the following objectives will be investigated:

- Evaluating the most economic and efficient choice for an effective in situ preservation of shipwrecks
- Developing tools for assessing and predicting the future spread of shipworm (GIS model)
- Developing user-friendly guidelines for cultural heritage
- Disseminating guidelines through a workshop and training course
- Disseminating knowledge through a monograph and scientific publications

Expected outcomes

The Baltic region as well as other parts of Europe will benefit from this increased knowledge. The main outcomes will be:

- Guidelines for physical protection of shipwreck that can be used for managing underwater cultural heritage world-wide
- Methods for identification of sites under imminent threat from shipworm
- A recommendation of methods which support the UNESCO convention on the Protection of the Underwater Cultural Heritage
About the project
If we are not able to protect shipwrecks against the shipworm, these objects will be lost within a very short time. This cross-disciplinary project will provide stakeholders and end-users, responsible for long-term preservation of cultural heritage, with tools and methods to protect the wrecks. The work is based on currently available knowledge within different fields of science, which are evaluated and synthesized.

WreckProtect is an EU coordination action funded through the Seventh Framework Programme. The project, supported by The European Commission, Directorate General, Directorate “Environment”, started in May 2009 and will end in April 2011.

Aim and objectives
Our goal is to protect archaeological shipwrecks and submerged settlement sites in the Baltic Sea against forthcoming attack by shipworms. To achieve this aim, the following objectives will be investigated:

- Evaluating the most economic and efficient choice for an effective in situ preservation of shipwrecks
- Developing tools for assessing and predicting the future spread of shipworm (GIS model)
- Developing user-friendly guidelines for cultural heritage
- Disseminating guidelines through a workshop and training course
- Disseminating knowledge through a monograph and scientific publications

Expected outcomes
The Baltic region as well as other parts of Europe will benefit from this increased knowledge. The main outcomes will be:

- Guidelines for physical protection of shipwreck that can be used for managing underwater cultural heritage world-wide
- Methods for identification of sites under imminent threat from shipworm
- A recommendation of methods which support the UNESCO convention on the Protection of the Underwater Cultural Heritage

Aggressive shipworms eating underwater cultural heritage
At the bottom of the Baltic Sea lie up to 100,000 well preserved shipwrecks and other maritime-related constructions. This unique and well-preserved collection is now in danger due to the invasion of shipworms.

The shipworm and wood degradation
The shipworm is a worm-like mollusc living inside wood, where it destroys the material by making large tunnels. Total decomposition of a structure takes less than 10 years. These molluscs are found in most marine waters and oceans worldwide. However, they require a relatively high level of salt for their activity, and therefore the Baltic Sea with its low salinity, has afforded natural protection of the underwater cultural heritage for centuries.

New spread into the Baltic Sea
New outbreaks of shipworms have been observed in the Baltic Sea that previously had been protected from attack due to the low salinity of the water. The spread to new areas is most likely related to climatic changes.
WreckProtect

Strategies for the protection of shipwrecks in the Baltic Sea against forthcoming attack by wood degrading marine borers.

A synthesis and information project based on the effects of climatic changes.

FP7-ENV-2008-1
Coordination and support action

Partners, a European team of experts

SP Technical Research Institute of Sweden
Charlotte Gjelstrup Björdal, Coordinator
E-mail: charlotte.bjordal@sp.se
www.sp.se

National Museum of Denmark, Denmark
David Gregory
E-mail: david.john.gregory@natmus.dk
www.nationalmuseet.dk

Cultural heritage Agency, The Netherlands
Martijn Manders
E-mail: m.manders@cultureelrfgoed.nl
www.cultureelrfgoed.nl

The geological Survey of Denmark and Greenland, Denmark
Zyad Al Hamdani
E-mail: azk@geus.dk
www.geus.dk

University of Gothenburg, Sweden
Dept. of Marine Ecology, Loven institute,
Jon Havenhand
E-mail: jon.havenhand@marecol.gu.se
Chritin Appelqvist
E-mail: christin.appelqvist@marecol.gu.se
www.loven.gu.se

The Viking Ship Museum, Roskilde, Denmark
Jörgen Dencker
E-mail: jd@vikingeskibsmuseet.dk
www.vikingeskibsmuseet.dk

External advisory group

Stefan Wessman, National Board of Antiquities, Finland
Friedrick Lueth, German Archaeological Institute, Germany
Giulia Boetto, Centre Camille Jullian, France

European Commission

Directorate General Research
Directorate I – Environment
Michel Chapuis (project officer)
E-mail: Michel.chapuis@ec.eu

Project duration

2009–2011

WreckProtect

c/o Charlotte Gjelstrup Björdal
SP Technical Research Institute of Sweden
Box 5609, SE-114 86 Stockholm, SWEDEN
Telephone: +46 10 516 62 25 • E-mail: charlotte.bjordal@sp.se
www.wreckprotect.eu