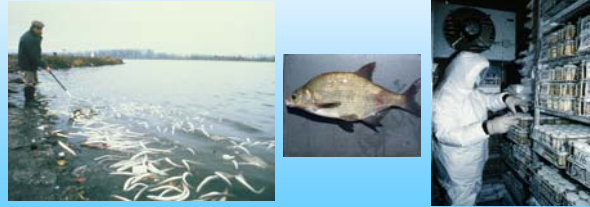


German ESB for Human and Environmental Specimen

Dr. Christoph Schlüter, Federal Environmental Agency FG IV 2.2

Environmental Archive



Definition

An Environmental Specimen Bank is an archive of representative environmental and human samples which are collected regularly

Aims

Control of legislative measures and voluntary producer bans

Identification of problematical substances

Information about the substantial condition of the environment



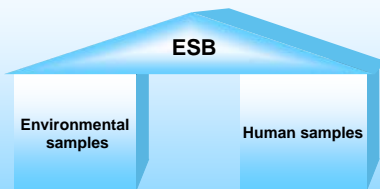
History of the Environmental Specimen Bank

Development and Conception 1980 to 1985

1985 integration in Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

Administrative and scientific coordination by the Federal Environmental Agency (FEA)

ESB



Operation of the ESB



Sampling areas of the ESB



Umwelt Bundes Amt
Für Mensch und Umwelt

Sampling areas of the ESB Aquatic Ecosystems

Marine Ecosystems

- Biosphere reserve and national parks Schleswig-Holstein and Lower Saxony Wadden Sea – since 1985
- NP Vorpommersche Bodden Landschaft – since 1992

Freshwater Ecosystems

- Rhine – since 1995
- Elbe – since 1993

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Sampling areas of the ESB Terrestrial Ecosystems

Near-natural terrestrial Ecosystems

- Biosphere reserve / NP Berchtesgaden – since 1998
- Biosphere reserve / NP Bavarian Forest – since 1998
- NP Higher Harz – since 1996

Forest Ecosystems

- Biosphere reserve Palatinate Forest – since 2001
- Solling – since 1999

Agrarian Ecosystems

- Bornhoeveder Lake district (Schleswig-Holstein) – since 1999
- Bavarian tertiary hill country – since 2000

Near conurbation Ecosystems

- Densely populated area Saar – since 1985
- Dueben Heath/Transect Halle-Leipzig – since 1991

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Specimen types for the Environmental Specimen Bank

Terrestrial samples

Pine/Spruce One-year-old shoots	Beech Leaves	Lombardy poplar Leaves	Earthworm Entire body (defecated)	Domestic pigeon Egg content	Roe deer Liver
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Aquatic samples

Zebra mussel Soft body	Bream Muscles and liver	Bladder wrack Thallus	Blue mussel Soft body	Eel pout Muscles and liver	Herring gull Egg content
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Specimen types for the Human Specimen Bank

Whole blood Blood plasma	Saliva
24- h urine	Hair

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Sampling areas of the human specimen bank

Münster since 1980	Halle/Saale since 1995
Ulm since 1997	Greifswald since 1996

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Sample preparation of environmental samples

Cryomill for preparation of sample homogenate	Microscope
Filling/storing of sample homogenate	Vials

Human specimen are not processed and pooled → individual samples

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Sample storage

Human specimen

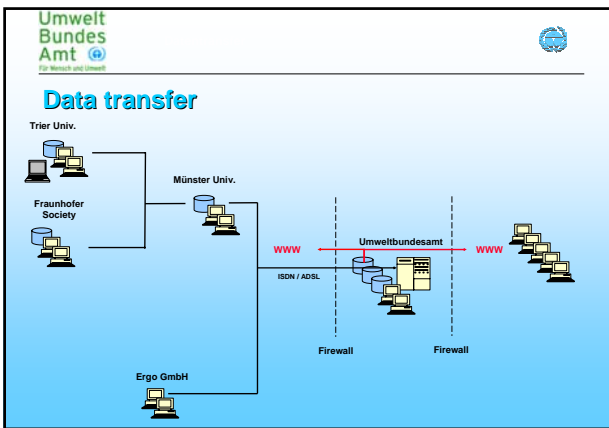
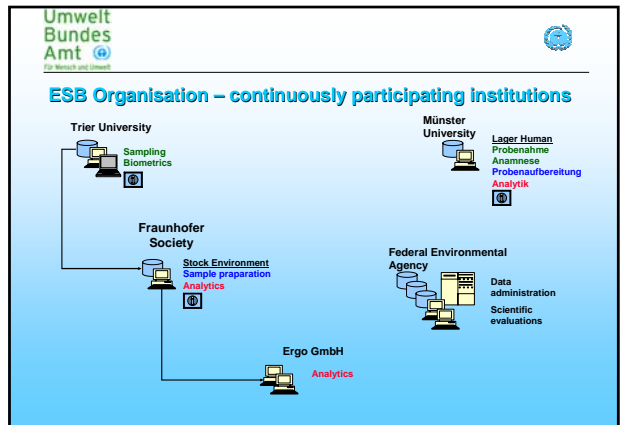


Stock at Dec. 31th 2004:
81.200 Urine
17.600 Whole blood
15.600 Blood plasma
Individual samples

Environmental specimen



Stock at Dec. 31th 2004:
165.000 Samples
Pool Samples



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What's next?

Update and enhancements of conception of environmental part of ESB



Soil
routine sampling
started in 2002



Sediments / particulate matter
test for routine sampling
in 2005



River Danube
evaluation for
routine sampling



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What's next?

Update and enhancements of conception of human part of ESB

Environmental monitoring for human health



Perinatal archive



Study group of seniors



Expansion of repository: former military terrain Wolbeck



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Additional data is available from:



www.umweltprobenbank.de

www.umweltprobenbank.de



Publications for the public as well as professionals



Geographic information and data retrieval

Thank you for your attention

