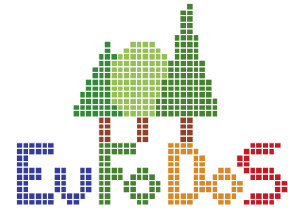


Österreichischer GEO Workshop, 10.12.2012



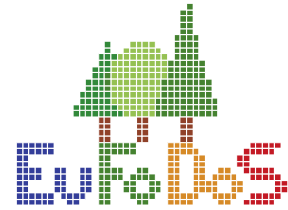
EUFODOS

European Forest Downstream Services
- Improved Information
on Forest Structure and Damages

Dr. Stefanie Linser, Umweltbundesamt GmbH
DI Klaus Granica, Joanneum Research

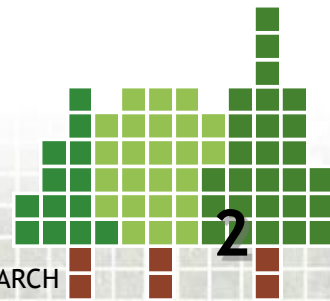


Inhalt

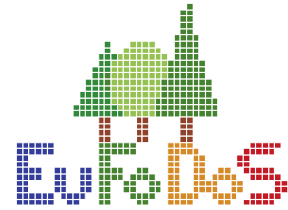


- Projektziele
- Vorstellung des Konsortiums, der Nutzer und der Nutzergemeinschaft
- Testgebiete
- Anwendungen und Produkte
- Erste Ergebnisse

■ <http://www.eufodos.info/>

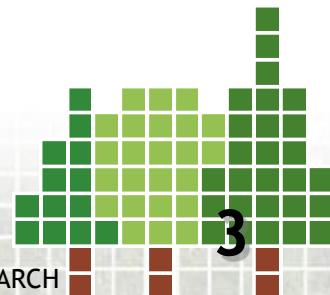


Ziele von EUFODOS

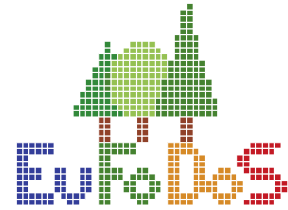


- Entwicklung von **operationellen Down Stream Services** für eine **effektive Waldschadensfeststellung** und eine **automatisierte** Ableitung von Waldparametern basierend auf **GMES Land / Wald Core Produkten**

- *Laufzeit: 1.1.2011 - 31.12.2013*



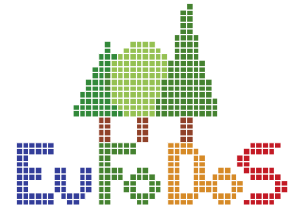
Konsortium



- JOANNEUM Research (JR), Österreich, Projekt Koordinator
- GAF AG, Deutschland
- Technical Research Centre of Finland (VTT), Finnland
- Abteilung Fernerkundung und Landschaftsinformationssysteme FeLis, Forstwissenschaftlichen Fakultät der Albert-Ludwigs-Universität Freiburg (ALU-FR), Deutschland
- RapidEye (RE), Deutschland
- Europäische Akademie Bozen (EURAC), Italien
- Remote Sensing Application Centre (ReSAC), Bulgarien
- Umweltbundesamt GmbH (EAA), Österreich



EUFODOS Nutzer



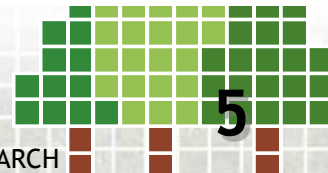
- Österreich - Landesforstdirektion Steiermark
- Deutschland - Landesforstverwaltung Thüringen
- Polen - Local Forest Authority, Regional Directorate of State Forests Wrocław
- Italien - Amt für Forstplanung der Autonomen Provinz Bozen Südtirol
- Bulgarien - Executive Forest Agency
- Finnland - Stora Enso
- Österreich - Umweltbundesamt GmbH



Ministry of Agriculture and Foods
Executive Forest Agency



umweltbundesamt^U



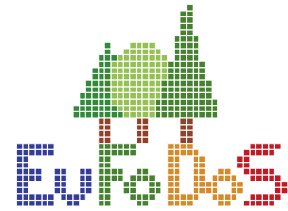
Warum?

- Orientierung der Produktentwicklung an den Bedürfnissen der Anwender

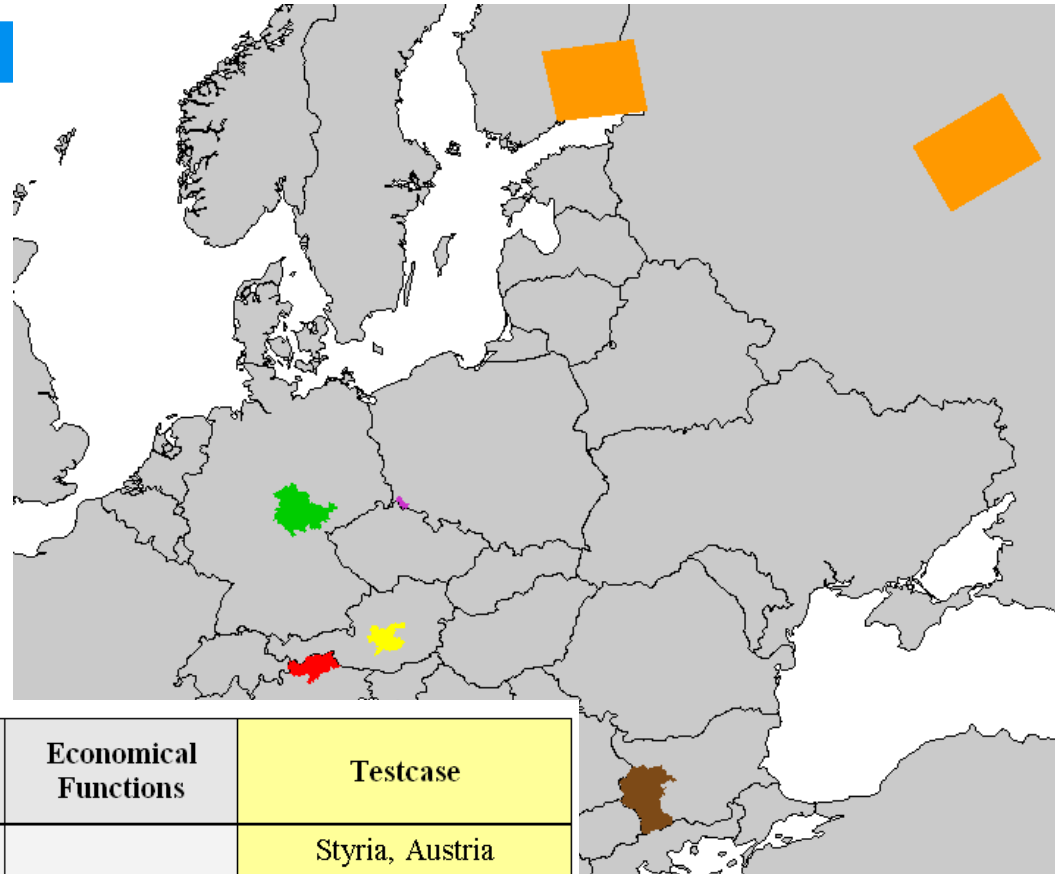
Leistungen:

- Informationsaustausch
- Erhebung der Nutzer-Bedürfnisse und Brauchbarkeitsbewertungen
- Newsletter zur Präsentation aller Services und Ergebnisse

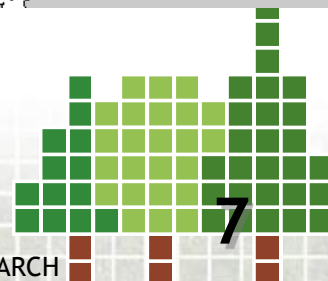
Testgebiete



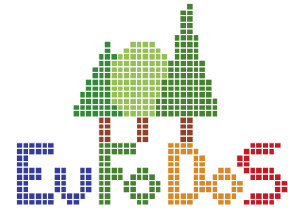
- In der gemäßigten und der borealen Zone
- In 7 Ländern
- Für 7 Nutzer



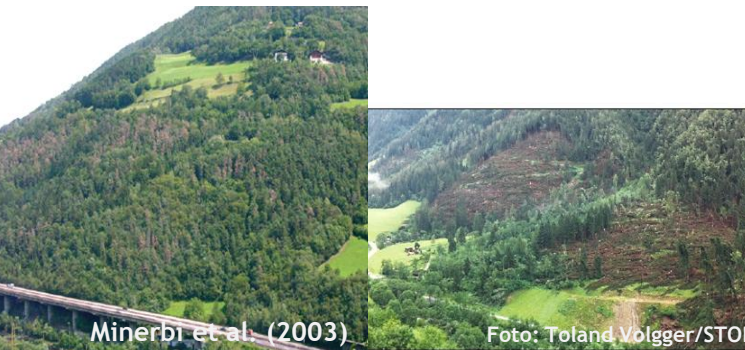
Fast Storm Damage Assessment	Storm Damage Assessment	Assessment of Insect Infested Areas	Ecological Functions	Economical Functions	Testcase
	JR		JR		Styria, Austria
GAF	GAF	GAF			Thuringia, Germany
RE	RE	RE	RE		Swieradow, Poland
			EURAC		Bolzano, Italy
	RESAC		RESAC		Sofia, Bulgaria
				VTT	Finland & Russia



Anwendungen und Produkte

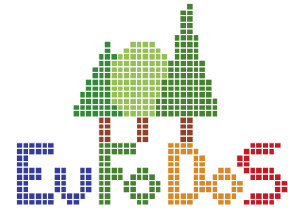


- Sturmschaden
- Waldbrand
- Schneebruch
- Insektenbefall
- Ökologische Parameter
- Ökonomische Parameter

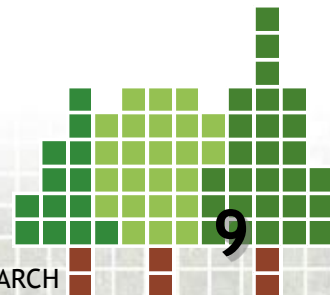


Forest Damage Assessment – Rush Services		
Service/Product Name	SP	User Organisation
Fast/Rapid Storm Damage Assessment	GAF	Thuringian State Institute for Forest, Game and Fishery
Forest Change Map for Windfall Areas	RapidEye	Local Forest Authority of the state forests in the Western Sudety mountains, Regional Directorate of State Forests Wroclaw
Rapid Mapping for Disaster Management	RESAC	The Executive Forest Agency (SFA), Sofia. SFA, Council of Ministers, Bulgaria
Forest Damage Assessment – Non-Rush Services		
Service/Product Name	SP	User Organisation
Event Maps	EURAC	Autonomous Province of Bolzano, Department of Forest Planning
After Event Monitoring Product	EURAC	Autonomous Province of Bolzano, Department of Forest Planning
Spatially explicit Forest Damage Information System	EURAC	Autonomous Province of Bolzano, Department of Forest Planning
Detailed Storm Damage Assessment	GAF	Thuringian State Institute for Forest, Game and Fishery
Insect Infested Damage Assessment	GAF	Thuringian State Institute for Forest, Game and Fishery
Forest Degradation Mapping	JR	Styrian Forestry Board
Ecological and Economical Functions / Forest Parameters		
Service/Product Name	SP	User Organisation
Base data on forest and potential risk on forest	EURAC	Department of Forest Planning - Autonomous Province of Bolzano
Impact of Forest Degradation on Forest Functional Indicators	JR	Styrian Forestry Board
Forest Vitality Map	RapidEye	Local Forest Authority of the state forests in the Western Sudety mountains, Regional Directorate of State Forests Wroclaw
Stem Volume Map with Tree Species	VTT	Stora Enso
Map and GIS database for the forest areas and forest area changes	ReSAC	The Executive Forest Agency (SFA), Sofia. SFA, Council of Ministers, Bulgaria
Map and GIS database for forest fire infrastructure	ReSAC	The Executive Forest Agency (SFA), Sofia. SFA, Council of Ministers, Bulgaria

Anwendung der Produkte und Services

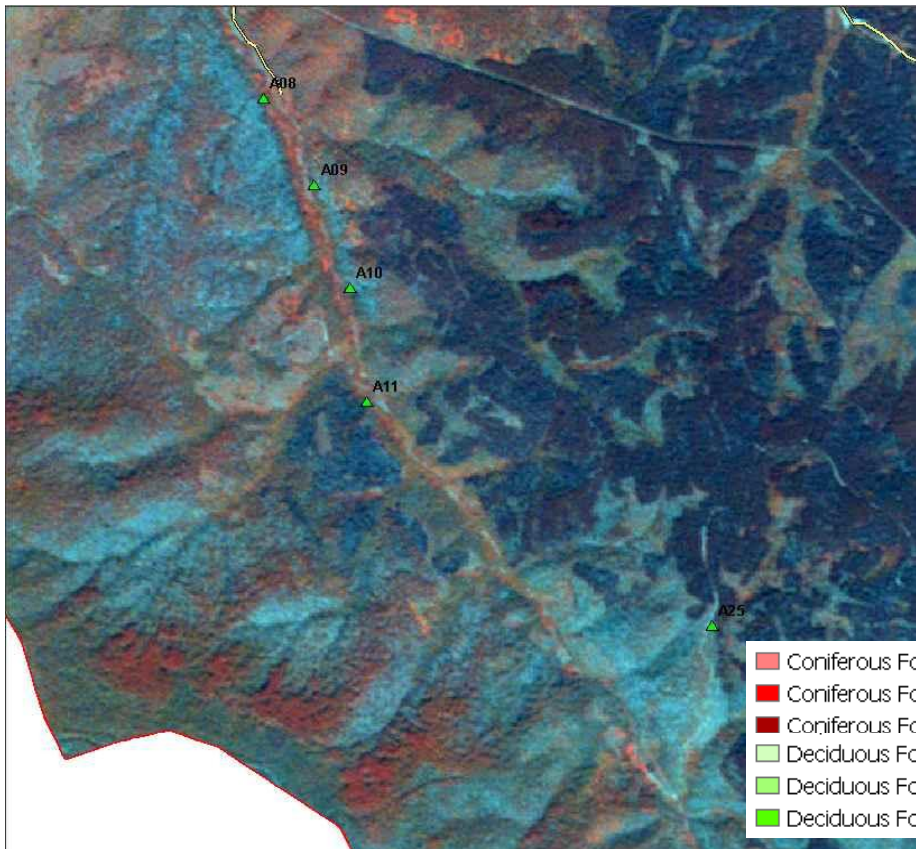


- Zur Schadensfeststellung und Einleitung von Folgemaßnahmen
- In der nachhaltigen Bewirtschaftung von Schutzwäldern
- In der nachhaltige Bewirtschaftung von Wirtschaftswäldern
- Für die Berichterstattung

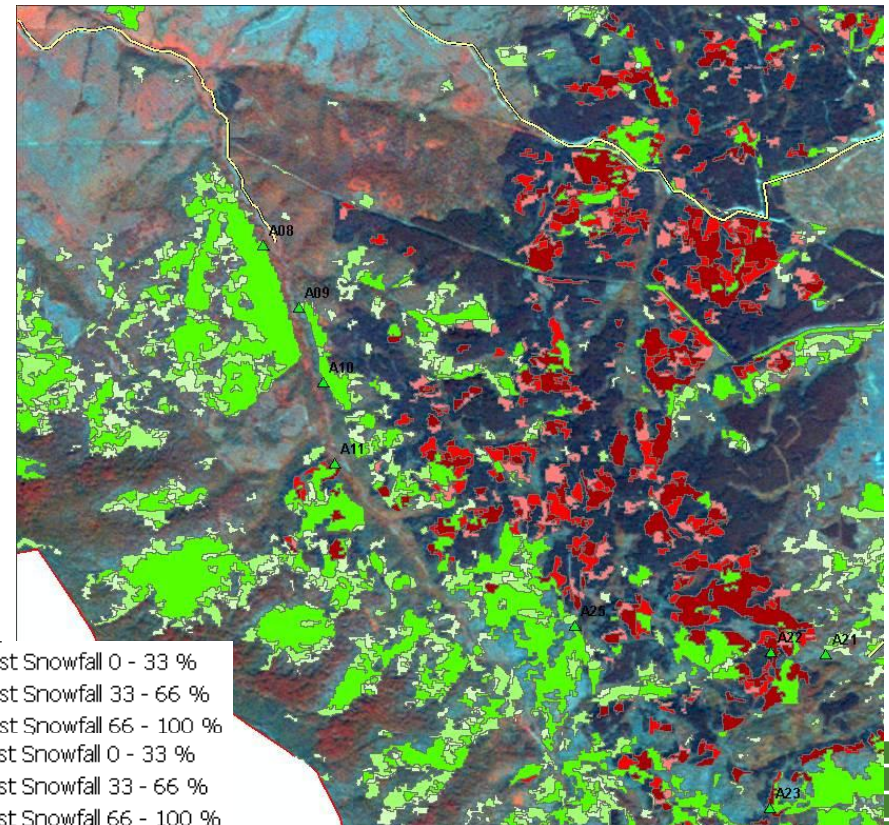


Erste Ergebnisse - Schneebruch

■ Schäden durch Schneebruch (0-100%) nach Waldtyp (Nadelwald und Laubwald)



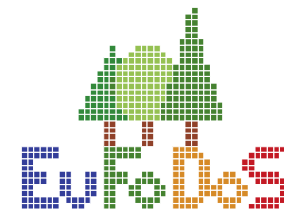
Satellitenbild vom 2. Mai 2012



Auswertung der Schäden durch
Schneebruch nach Waldtyp

[illegible]

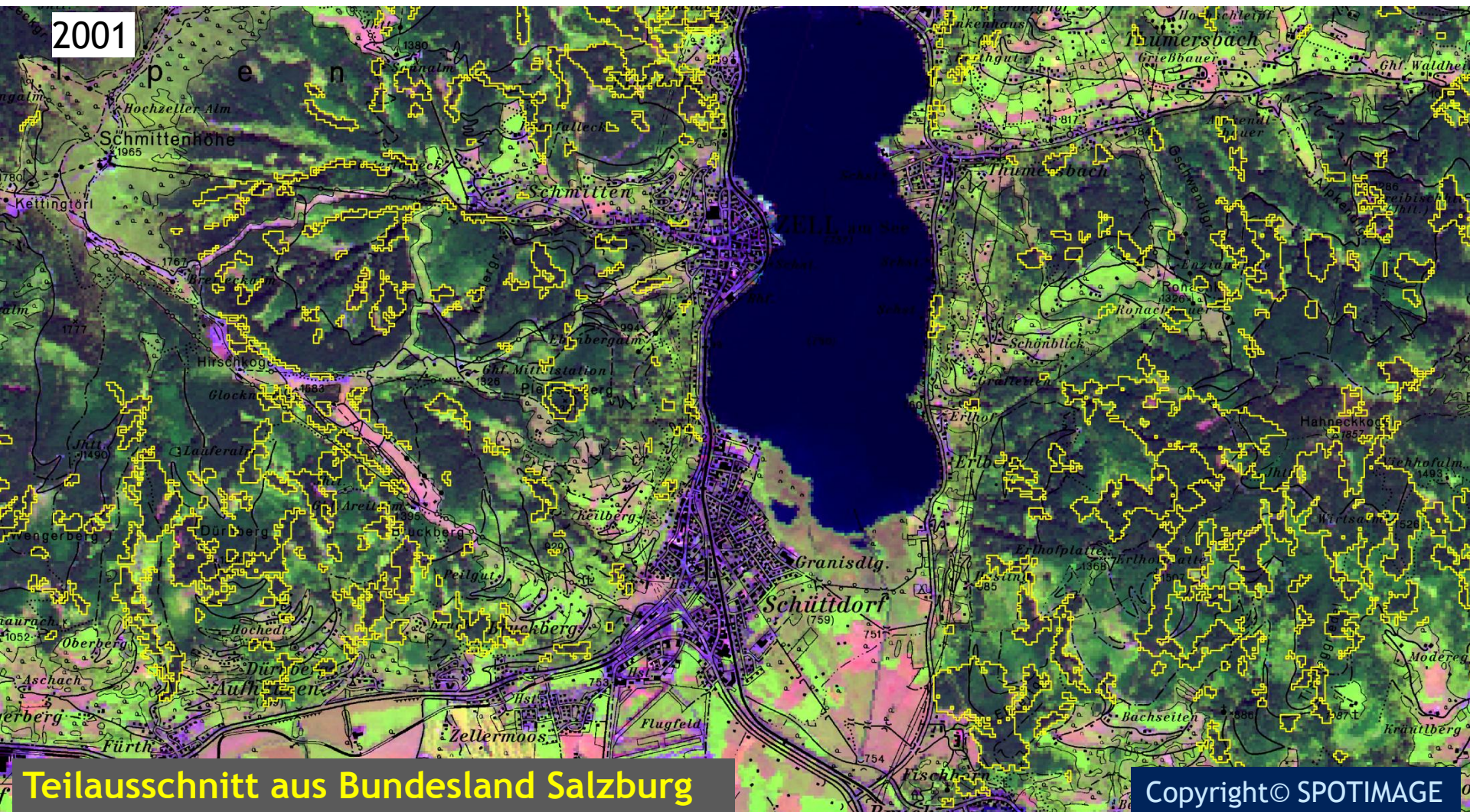
Erste Ergebnisse - Waldflächenveränderungen



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Improved Information on Forest Structure and Damages



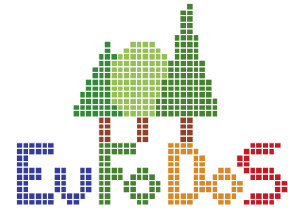
2001



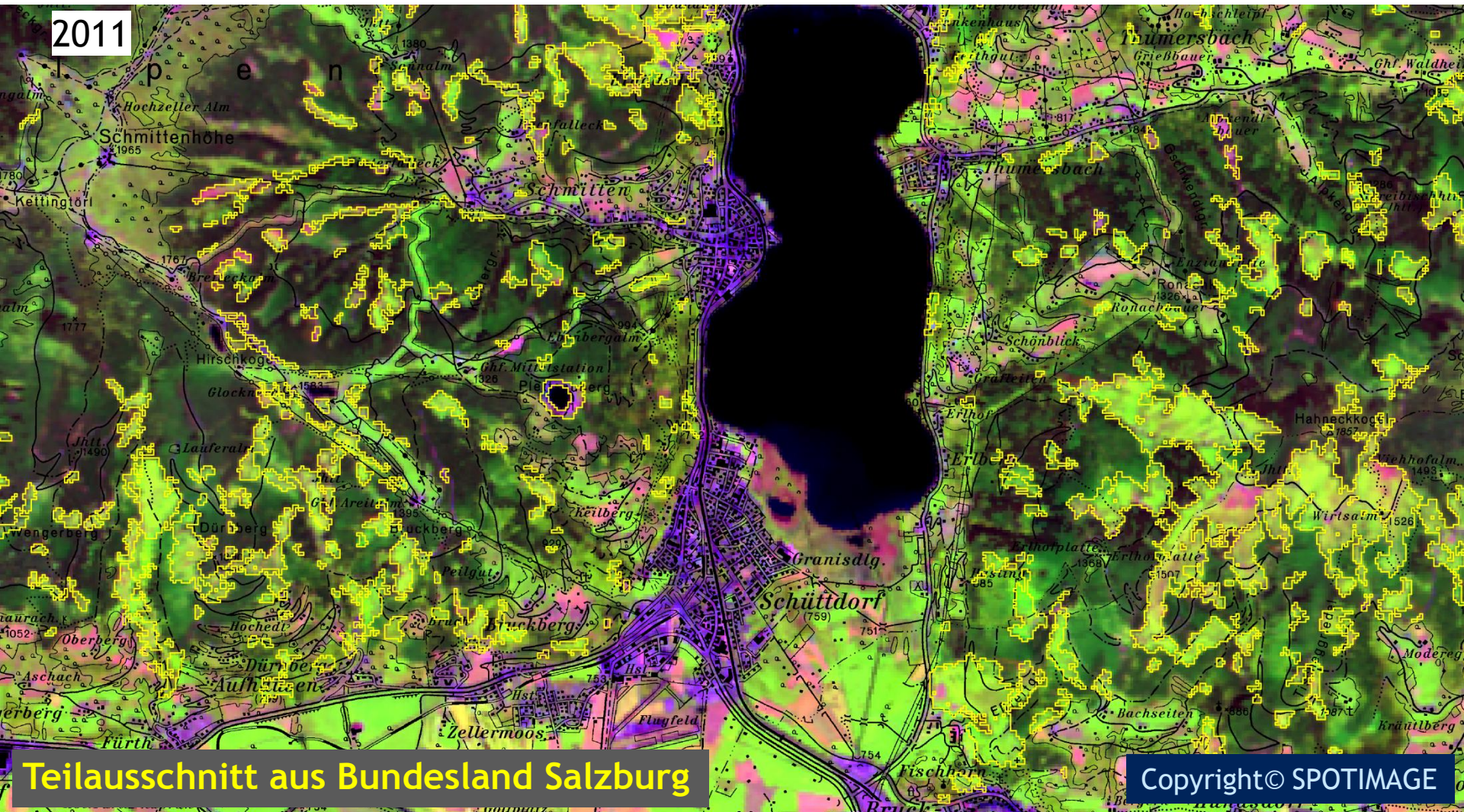
Teilausschnitt aus Bundesland Salzburg

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Erste Ergebnisse - Waldflächenveränderungen



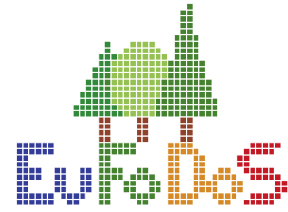
European Forest Downstream Services
Improved Information on Forest Structure and Damages



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Erste Ergebnisse - Insektenbefall



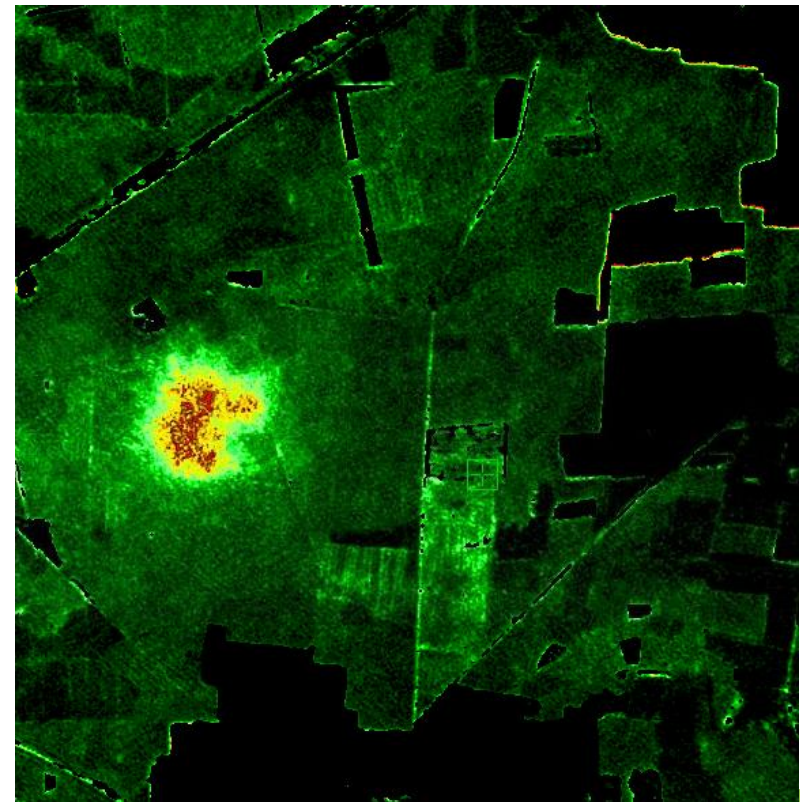
European Forest Downstream Services
Improved Information on Forest Structure and Damages



Befall von Nonne (*Lymantria monacha*) in Kiefernbeständen in Brandenburg 2011

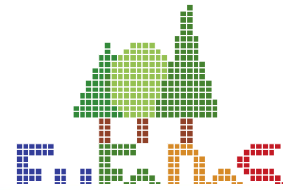


Referenzbild 23.8.2010



Befall erkennbar am 26.8.2011

Erste Ergebnisse - Ökonomische Parameter



EUPODOS Map ID: FI-P1-120K-IRS-TOTVOL_2011

P1: Forest Stem Volume - Total 2011

South East Finland

Location Diagrams



Legend

Stem Volume (m³/ha)



Cartographic Information

Map projection: ETRS 1989 LAEA, Datum: WGS 84

Scale: 1: 1 200 000 for A3 prints



Interpretation

The map consists of continuous stem volume values (m³/ha), non-forest and water areas. Cloud-infested regions with no thematic content have been excluded.

IRS-P6 LISS-3 multispectral imagery has been compiled into a mosaic. This mosaic has been interpreted with spectral classification assisted with ground data from the region.

Data Sources

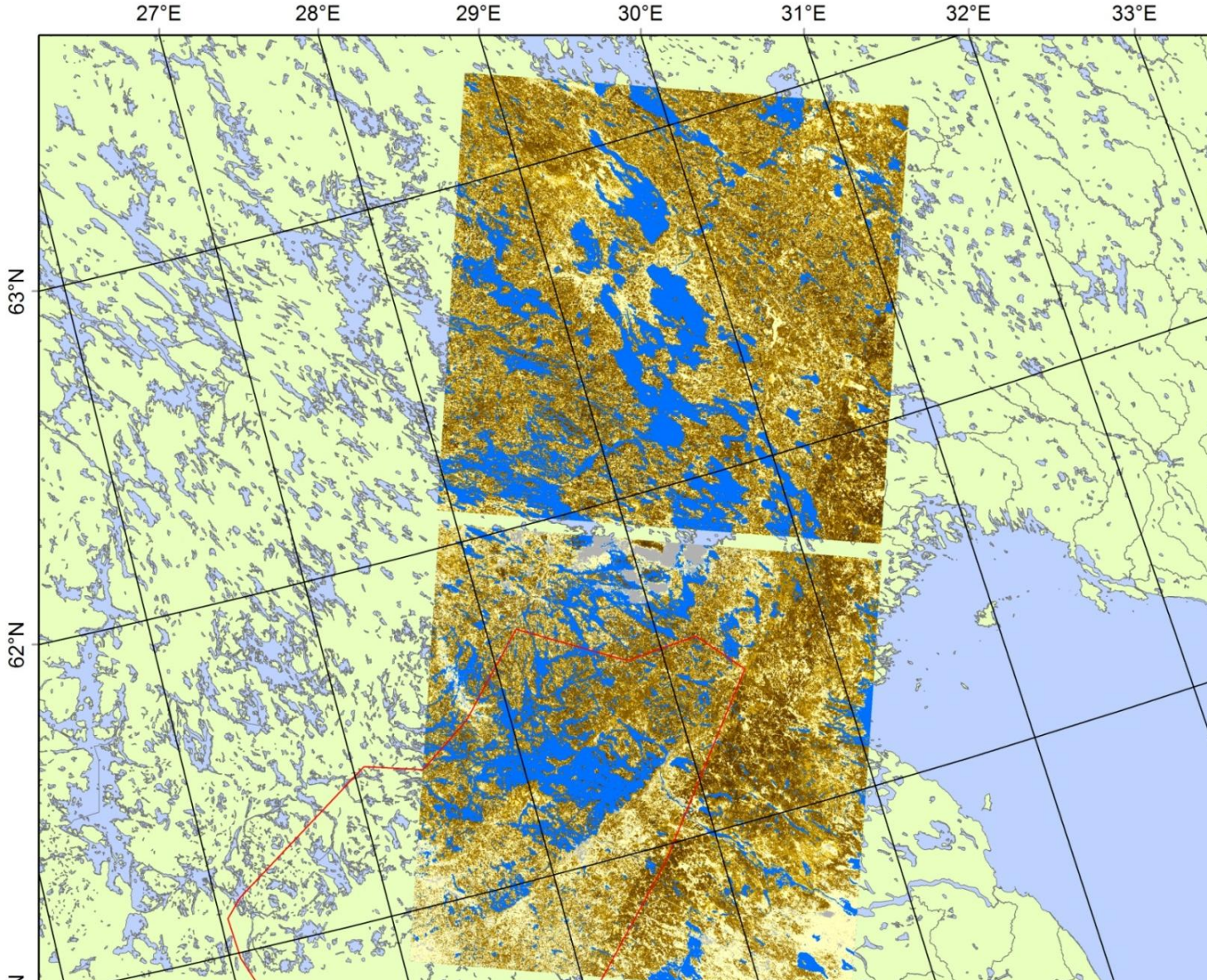
Imagery layers:
IRS-P6 LISS-3 - satellite: Resolution 25 m, dates range from xxxx 2010 to xxxx 2011

Background / Auxiliary layers:
ArcInfo Basemap (Terrain layer)
Target area borders (Shapefile)

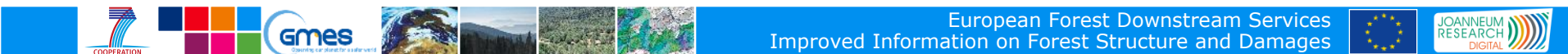
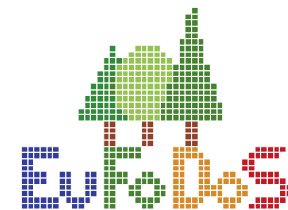
Framework

Map produced in June 13, 2012 by VTT
© VTT

To get more information on this mapping go to:



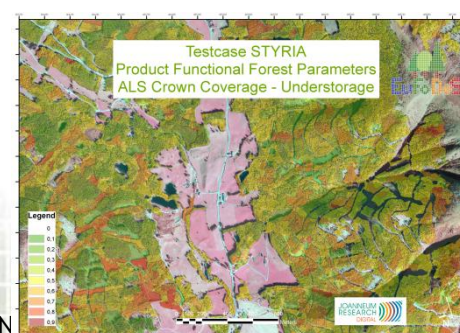
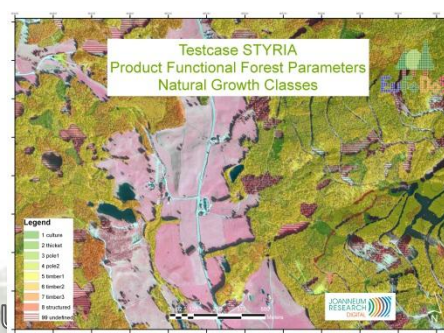
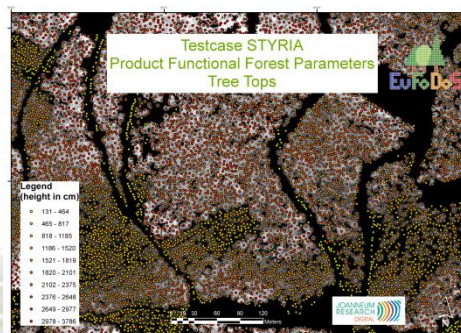
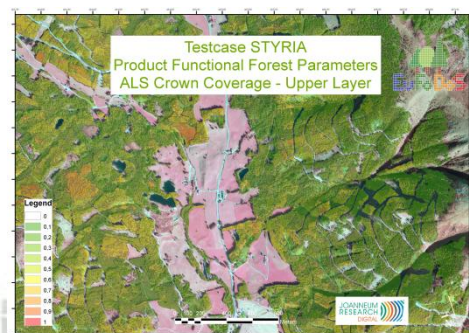
Erste Ergebnisse - Ökologische Parameter



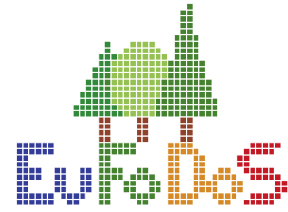
■ Von LIDAR Daten abgeleitete Parameter

Testcase Styria – Alpine Environment

Forest parameter / indicators	Remote sensing data to be applied	Service status
Improved forest types	Combination of CS and satellite data	CS + new satellite data
Improved forest density	Combination of satellite data and LIDAR	DSS
Natural growth classes	Combination of satellite data and LIDAR	DSS
Tree / Stand height	LIDAR data	DSS
Vertical Stand Structure	LIDAR data	DSS
Crown / Canopy volume	LIDAR data	DSS
Understorage	LIDAR data	DSS
Natural regeneration > 1.3m	LIDAR data	DSS



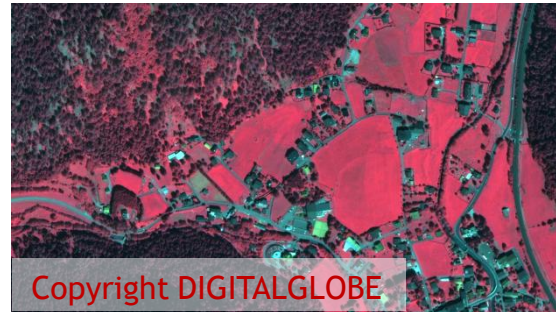
Fernerkundungsdaten



European Forest Downstream Services
Improved Information on Forest Structure and Damages



- RapidEye
- IRS P6
- SPOT 5
- IKONOS
- Quickbird
- Worldview2
- Formosat2
- Landsat
- MODIS
- TerraSAR-X
- TanDEM-X
- CosmoSkymed
- **LIDAR**



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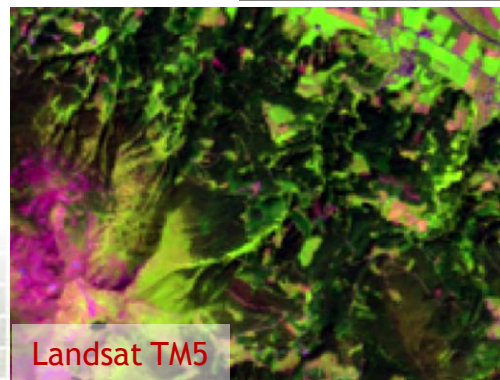
CosmoSkyMed Layer Stack



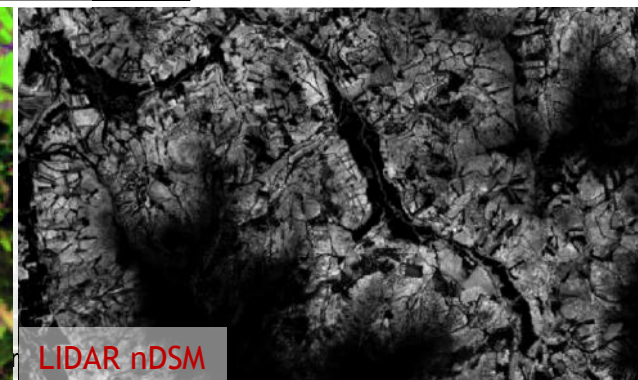
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Landsat TM5



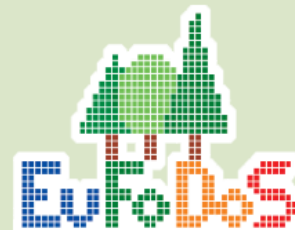
LIDAR nDSM

www.eufodos.info/
eufodos@joanneum.at



Project co-funded by the European Commission
Seventh Framework Cooperation Programme
FP7-SPACE-2010-1
Small and medium-scale focused research

Grant Agreement no: 262786



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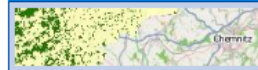
Services

Supporting R&D activities

Partners

User Executive Body

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Welcome from the Prime

Dear visitors,

We are pleased to present on this website the goals and contents of the FP7 EUFODOS project. The EUFODOS project was initialized within the SPACE call SPA.2010.1.1-01 - "Stimulating the Development of Downstream GMES Services". EUFODOS is focusing on the development of operational downstream services on forest degradation issues. The consortium encompasses partners and end users from 6 EC member states. The project has started on 1st January 2011 and ends with 31st December 2013. We hope that you will find useful information on this webpage and you are welcome to contact us for any questions or suggestions.

- By Mathias Schardt, Joanneum Research

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