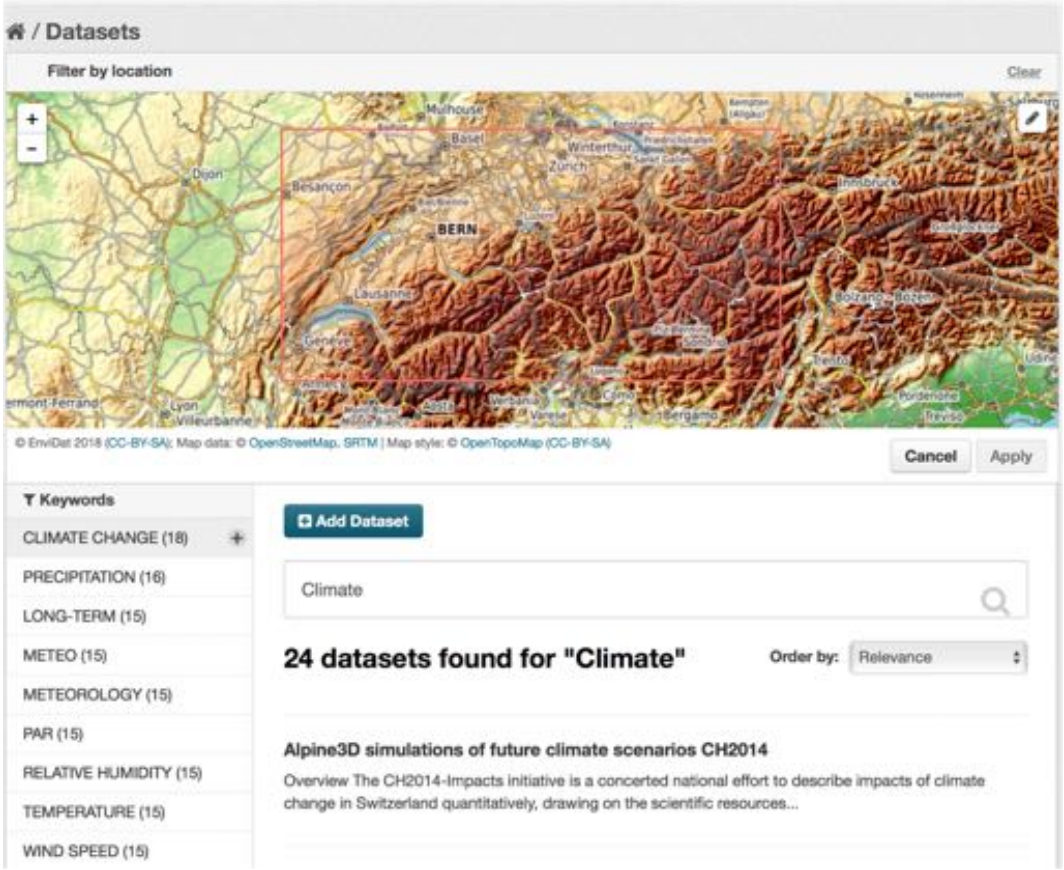
Forest Data Integration in the WSL Environmental Data Portal EnviDat

Ionuț Iosifescu Enescu, Gian-Kasper Plattner, Marcus Schaub, Rolf Meile, Arthur Gessler, Urs-Beat Brändli, Martin Hägeli, Marco Ferretti, Michael Lehning & Konrad Steffen

Swiss Federal Institute for Forest, Snow and Landscape Research WSL
A Research Institute of the ETH Domain

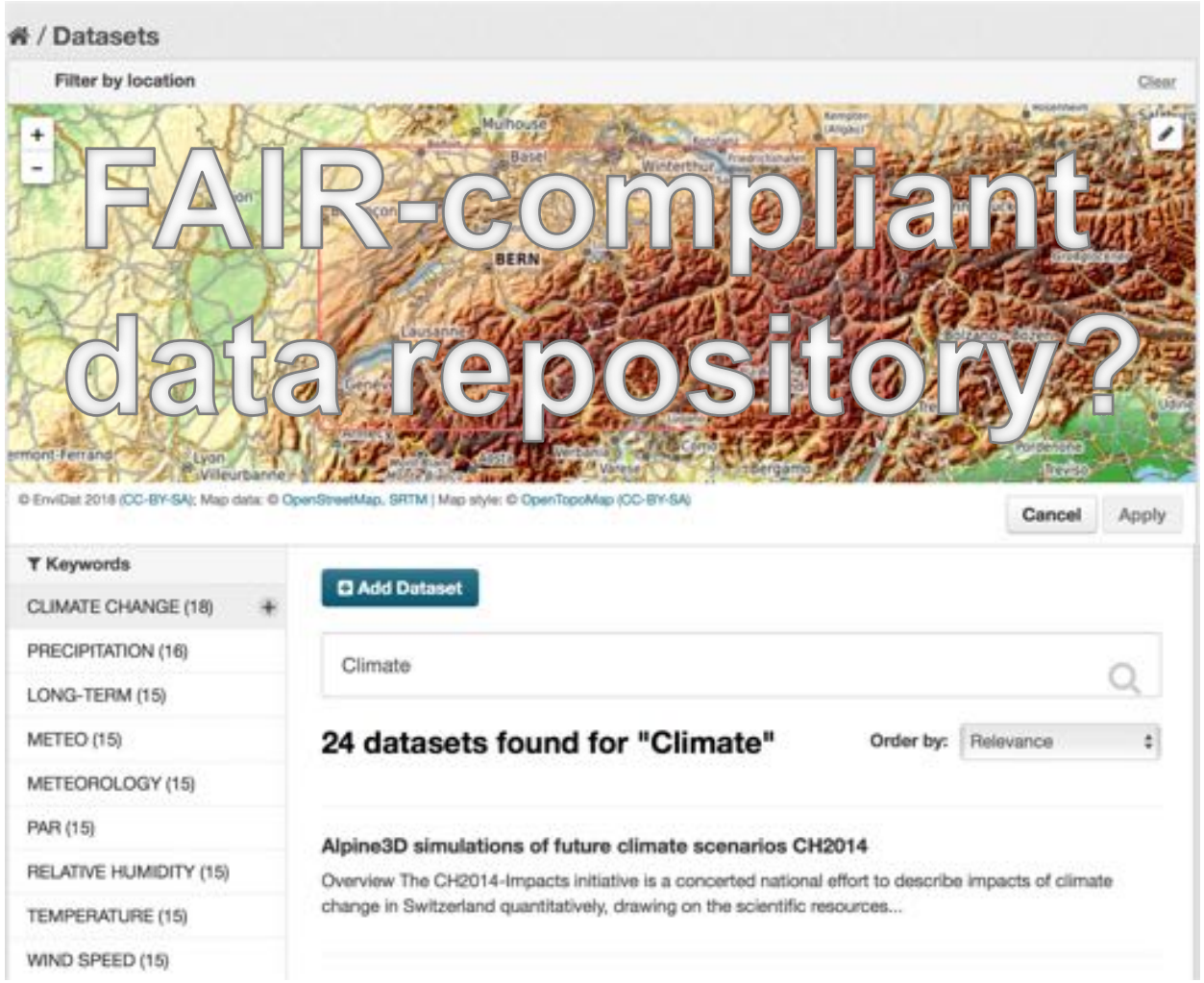
EnviDat – Environmental Data Portal



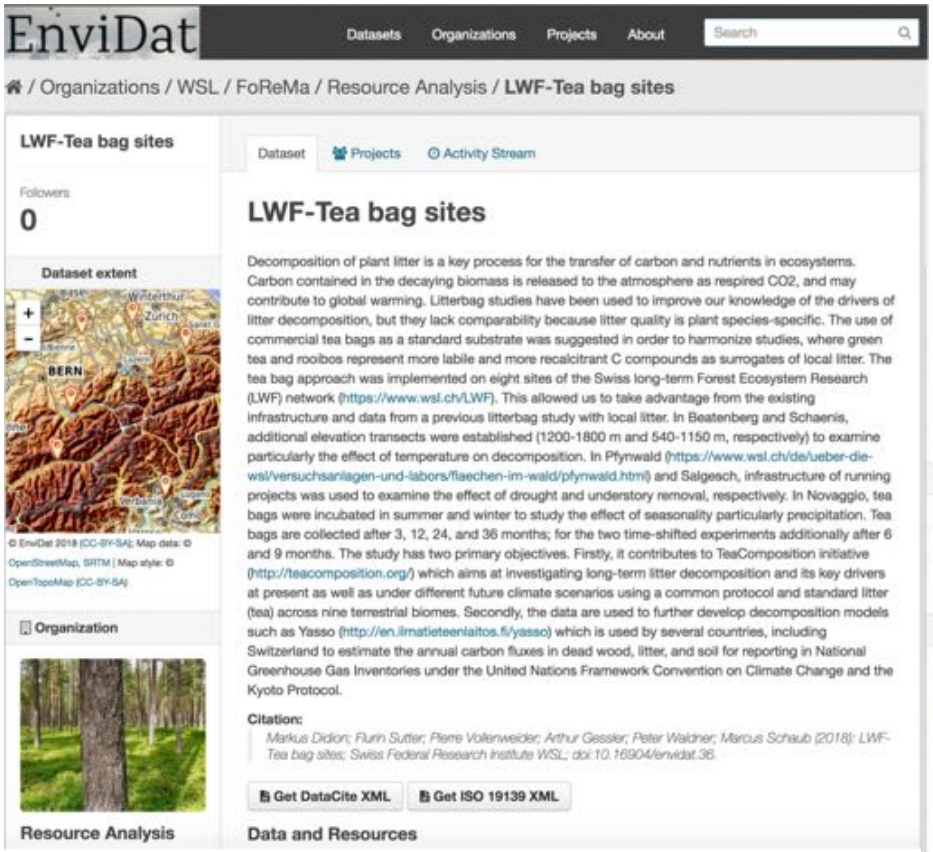
*EnviDat is the **WSL portal** providing **unified and managed access** to environmental monitoring and research data. EnviDat has the capability to **host and publish** data sets.*

Trends in the RDM Community

What Does This Mean for EnviDat?

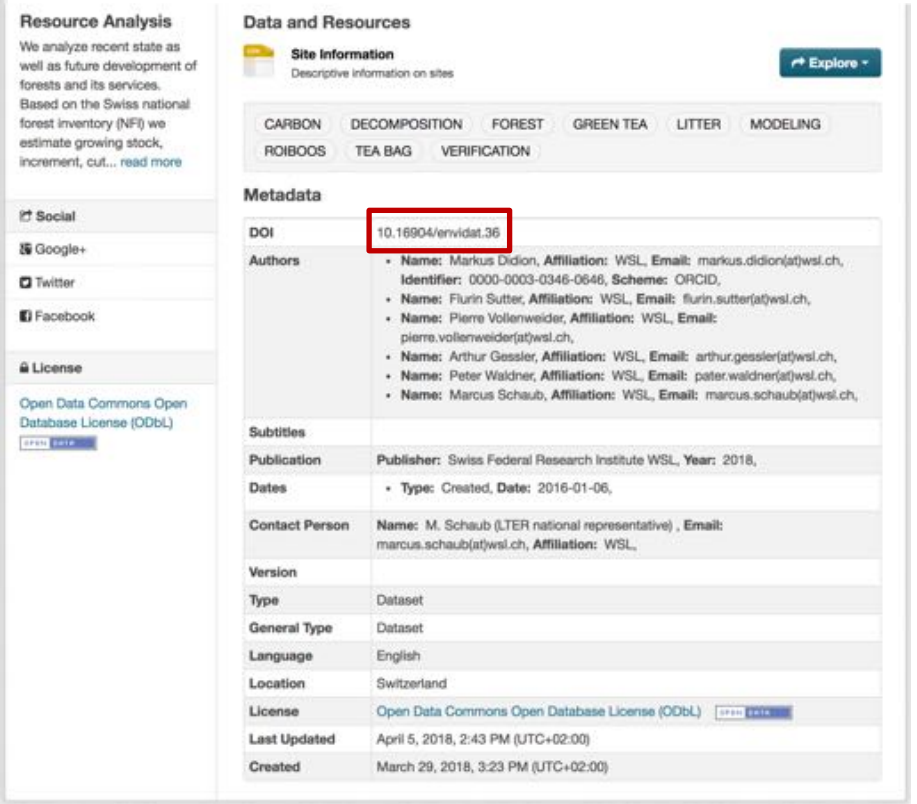


1. Data Publishing with Metadata and Document Object Identifiers (DOIs)

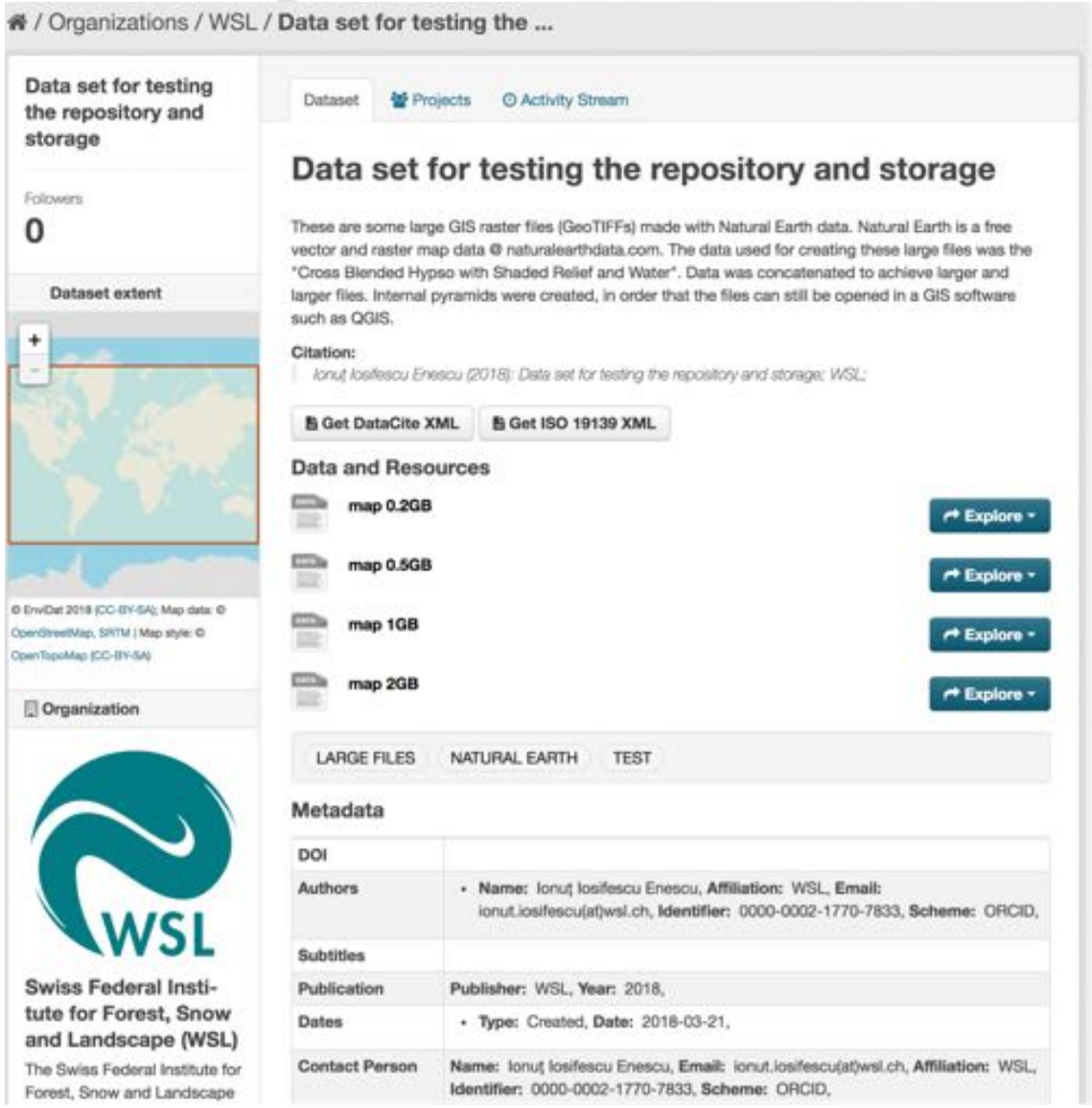


doi:10.16904/envidat.36

Prefix **Postfix**



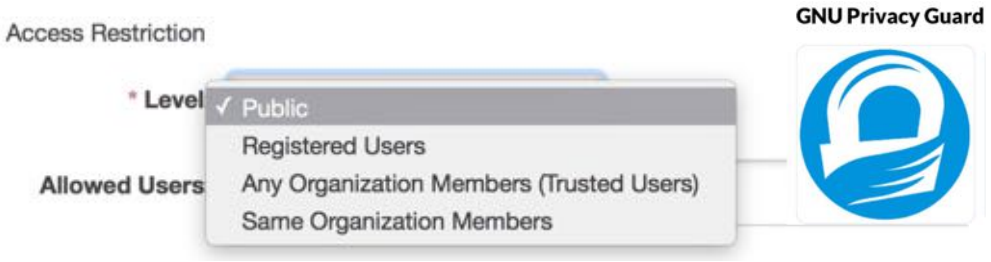
2. Repository for Publication Data



3. Giving Choice to Researchers for Publishing Curated, Reusable Data

- **For Metadata (Visibility Unpublished)**

- **For Data (Access Restriction + Encryption for Sensitive Data)**



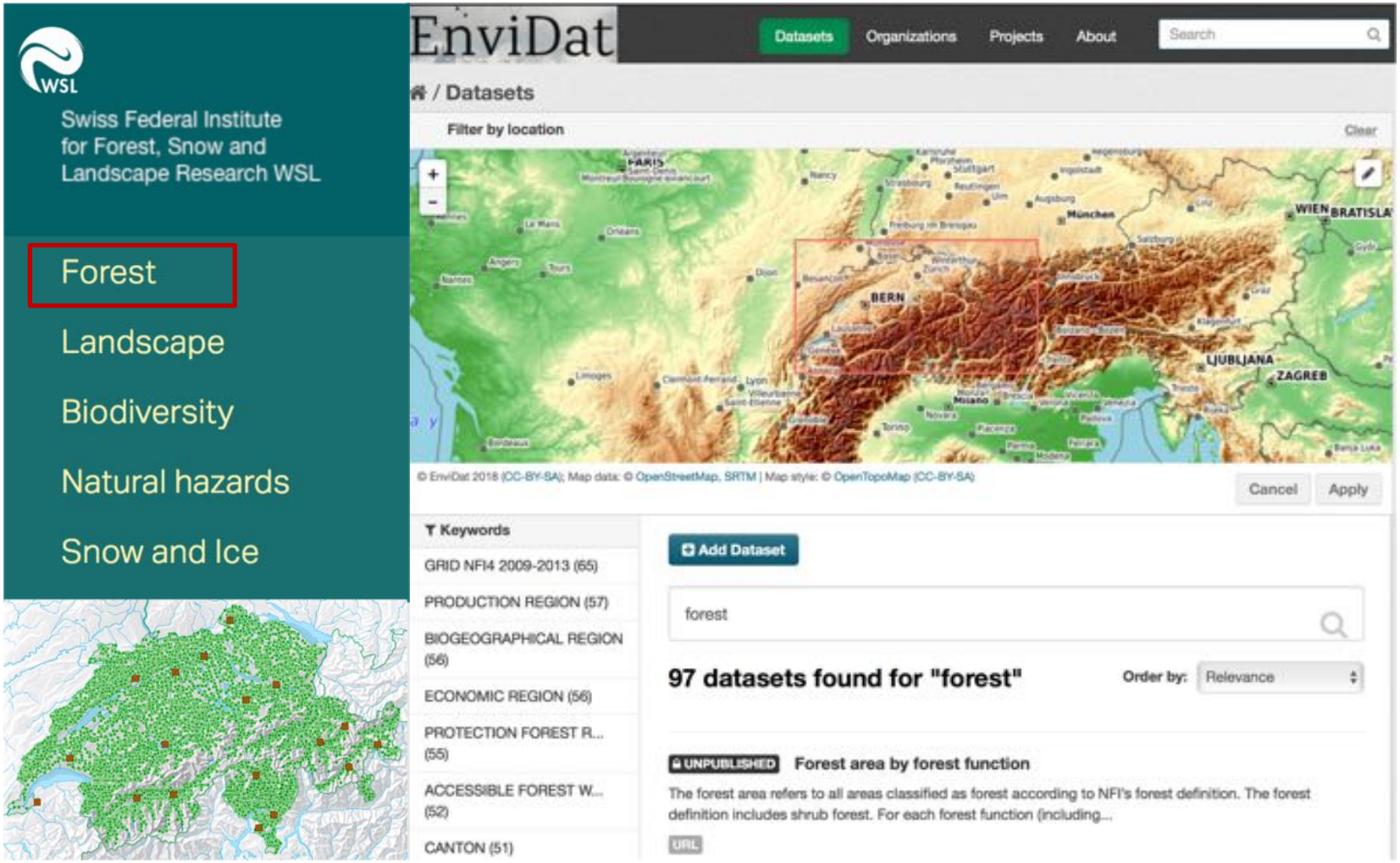
- For **License**

License	Other
Last Updated	May 13, 2018, 7:10 PM (UTC+02:00)
Created	May 13, 2018, 7:10 PM (UTC+02:00)

Custom Metadata

License	All data and text are copyrighted and further use is restricted. Copying these files or parts of them into any publicly accessible service is NOT permitted without a prior agreement with the authors.

Forest Data Integration in EnviDat



The Swiss National Forest Inventory

- **Records the state and changes** of the Swiss forest
- Results based mainly on **statistical analysis of around 6500 sample field plots** (and includes data from enquiries and RS)

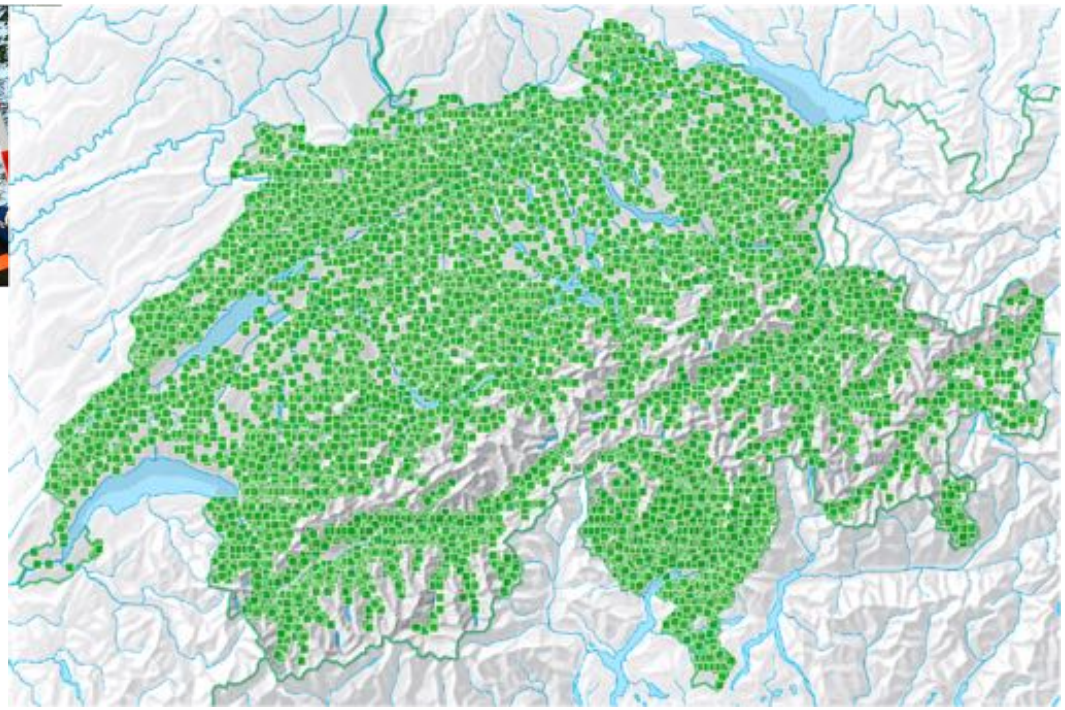
WSL Home > Forest > Forest development and monitoring > NFI

Swiss National Forest Inventory NFI

What does the Swiss forest look like and how does it change over time? The Swiss National Forest Inventory (NFI) answers these questions.

The forest fulfills many tasks: It prevents avalanches, rockfall and mudslides. The forest provides wood to be used as fuel and material for construction. It serves as a place of leisure and recreation and last but not least is home to animals and plants. Therefore, the forest has to be protected, but also managed sustainably with the clear goal of fulfilling these functions. Exact knowledge of its condition is necessary, thus an inventory. Valuable information on how the forest develops in the long run is obtained from carrying out several inventories over a long period of time.

The Swiss National Forest Inventory (NFI) records the current state and the changes of the Swiss forest. The survey obtains data about trees, stands, sample plots and through



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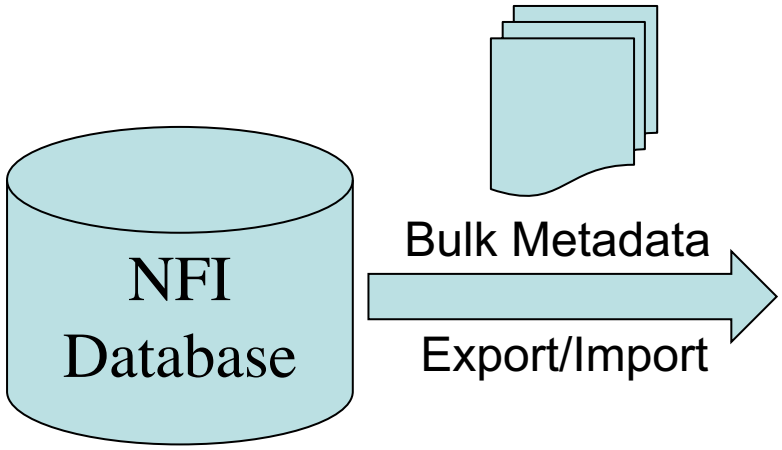
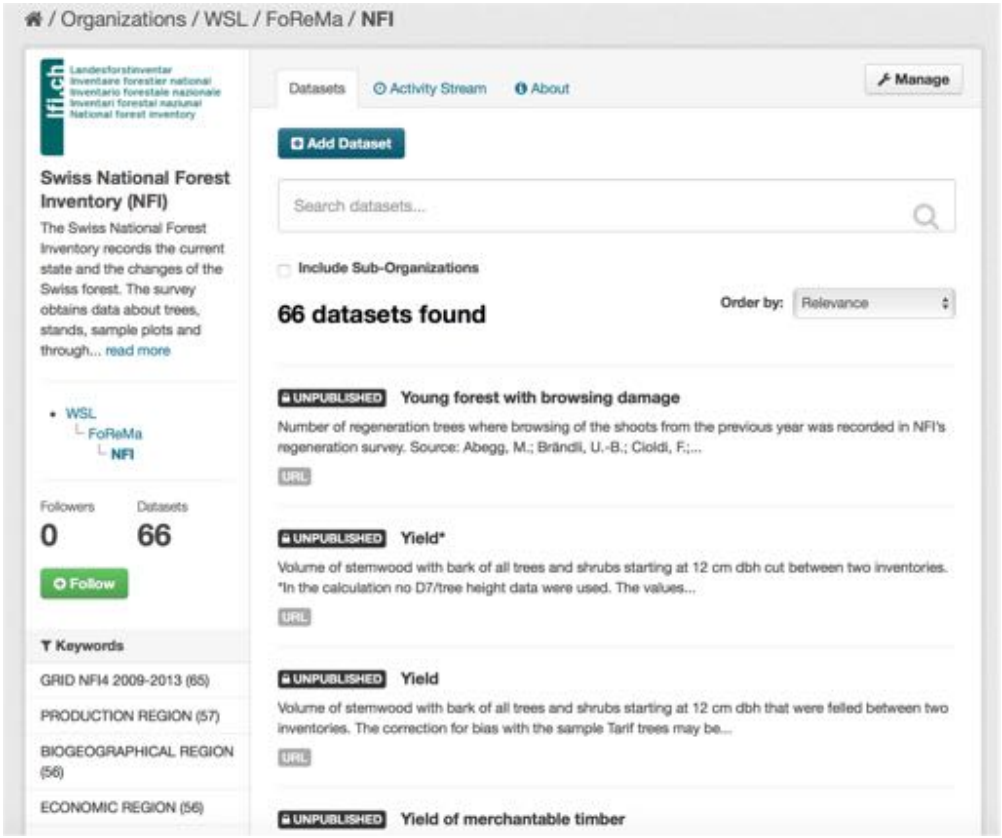
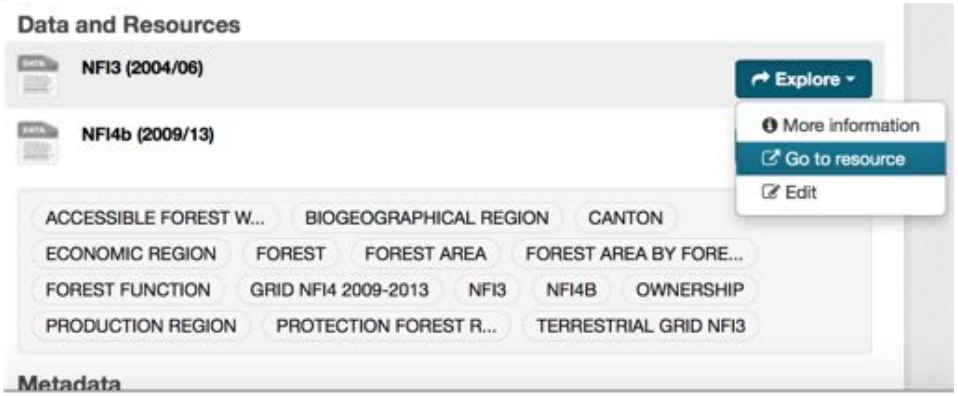
NFI Integration in EnviDat





NFI Integration in EnviDat



forest area by forest function divided by forest area forest function

unit of reference: biogeographical region
unit: %
unit of evaluation: accessible forest without shrub forest
grid: terrestrial grid NFI3
state 2004/06

	biogeographical region													
	Jura		Plateau		Northern Alps		Western Central-Alps		Eastern Central-Alps		Southern Alps		Switzerland	
forest function	%	±	%	±	%	±	%	±	%	±	%	±	%	±
no special forest function	2	0	1	0	3	0	10	1	11	1	18	1	6	0
wood production	80	1	91	1	58	1	33	2	35	2	25	1	60	1
agricultural use	10	1	0	0	6	1	8	1	11	1	3	1	6	0
shelterbelt	1	0	0	0	0	0	0	.	0	.	0	.	0	0
drinking water protection	8	1	8	1	3	0	2	1	1	0	1	0	4	0
protection against natural hazards (SPF)	3	1	1	0	29	1	23	2	37	2	32	2	19	0
protection against natural hazards (non-SPF)	9	1	7	1	36	1	47	2	19	2	28	2	24	0
nature protection	19	1	14	1	14	1	8	1	10	1	10	1	13	0
landscape protection	9	1	7	1	9	1	12	1	8	1	11	1	9	0
wildlife protection	2	0	2	0	7	1	4	1	9	1	5	1	5	0
recreation	8	1	20	1	6	1	9	1	12	1	9	1	11	0
military	1	0	1	0	0	0	0	0	0	0	0	0	0	0
total	.	.	.	.	.	.	.	.	.	.	.	.	.	.

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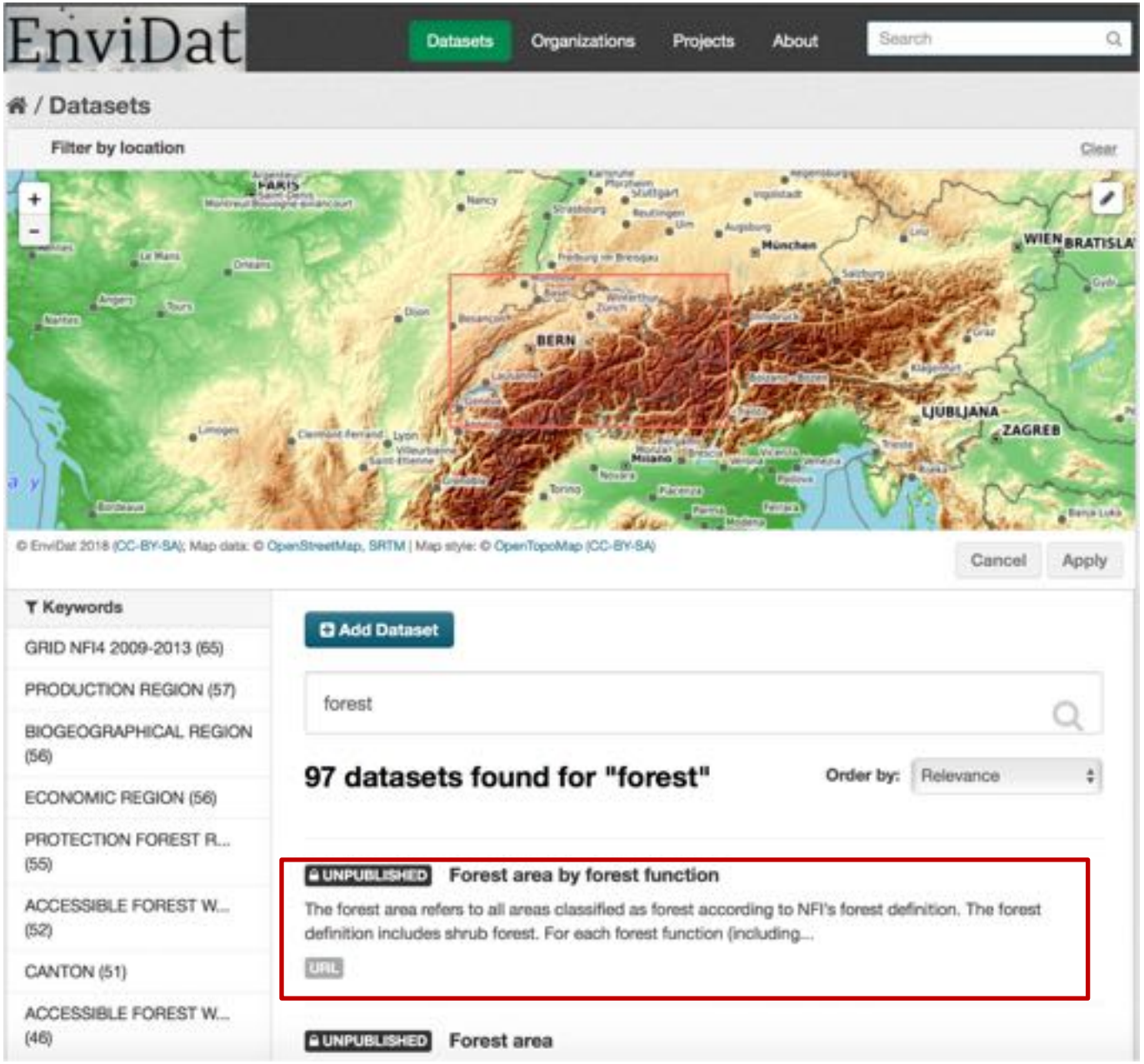
definitions (in German) methods (in German) download display map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ECONOMIC REGION (56)
PROTECTION FOREST R... (55)
ACCESSIBLE FOREST W... (52)
CANTON (51)
ACCESSIBLE FOREST W... (46)
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forest
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Forest area by forest function
The forest area refers to all areas classified as forest according to NFI's forest definition. The forest definition includes shrub forest. For each forest function (including...
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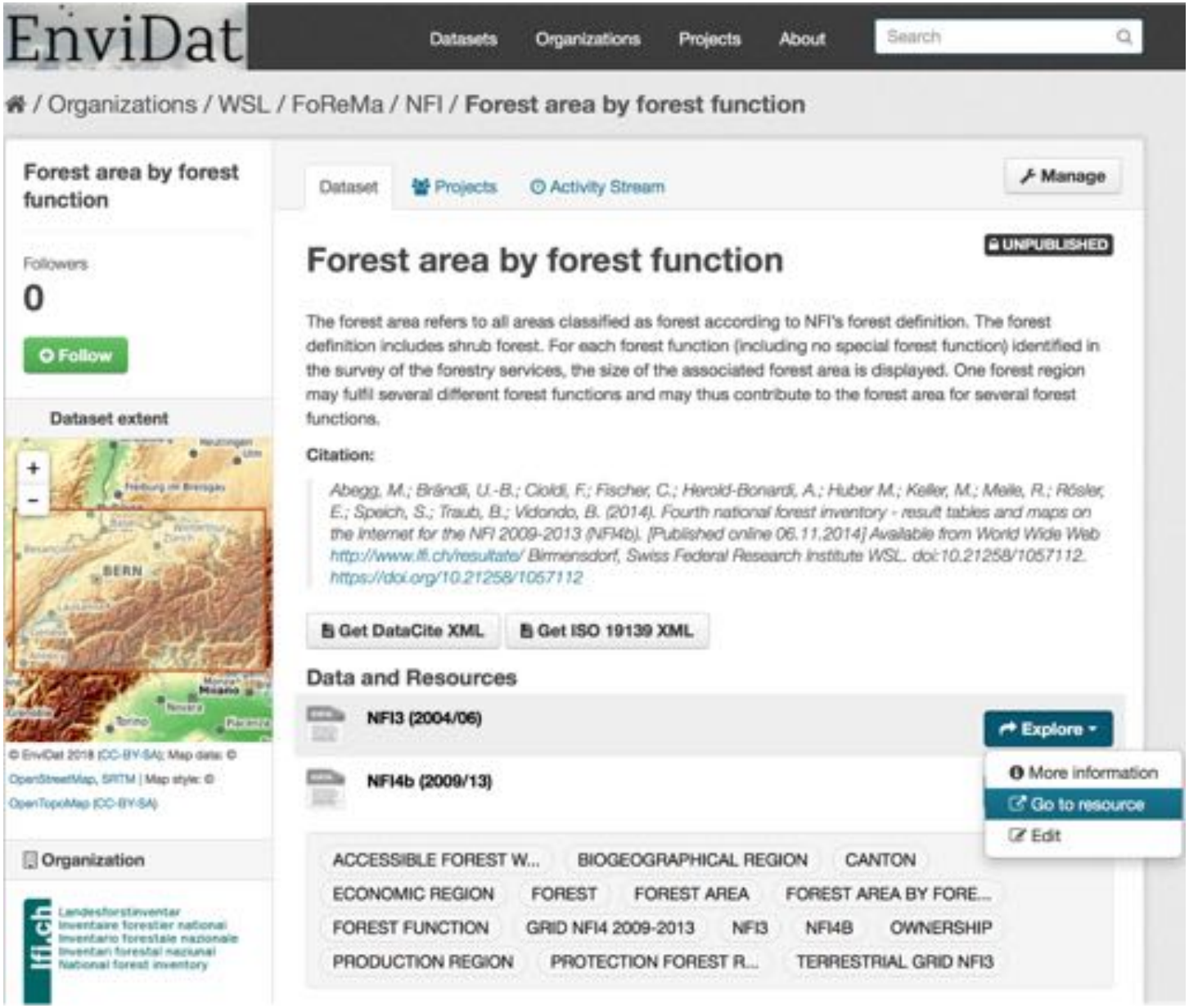
Forest area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Manage
Forest area by forest function
UNPUBLISHED
The forest area refers to all areas classified as forest according to NFI's forest definition. The forest definition includes shrub forest. For each forest function (including no special forest function) identified in the survey of the forestry services, the size of the associated forest area is displayed. One forest region may fulfil several different forest functions and may thus contribute to the forest area for several forest functions.
Citation:
Abegg, M.; Brändli, U.-B.; Cioldi, F.; Fischer, C.; Herold-Bonardi, A.; Huber M.; Keller, M.; Meile, R.; Rösler, E.; Speich, S.; Traub, B.; Vidondo, B. (2014). Fourth national forest inventory - result tables and maps on the Internet for the NFI 2009-2013 (NFI4b). [Published online 06.11.2014] Available from World Wide Web http://www.lfi.ch/resultate/ Birmensdorf, Swiss Federal Research Institute WSL. doi:10.21258/1057112. https://doi.org/10.21258/1057112
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Data and Resources
NFI3 (2004/06)
NFI4b (2009/13)
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CANTON
ECONOMIC REGION
FOREST
FOREST AREA
FOREST AREA BY FORE...
FOREST FUNCTION
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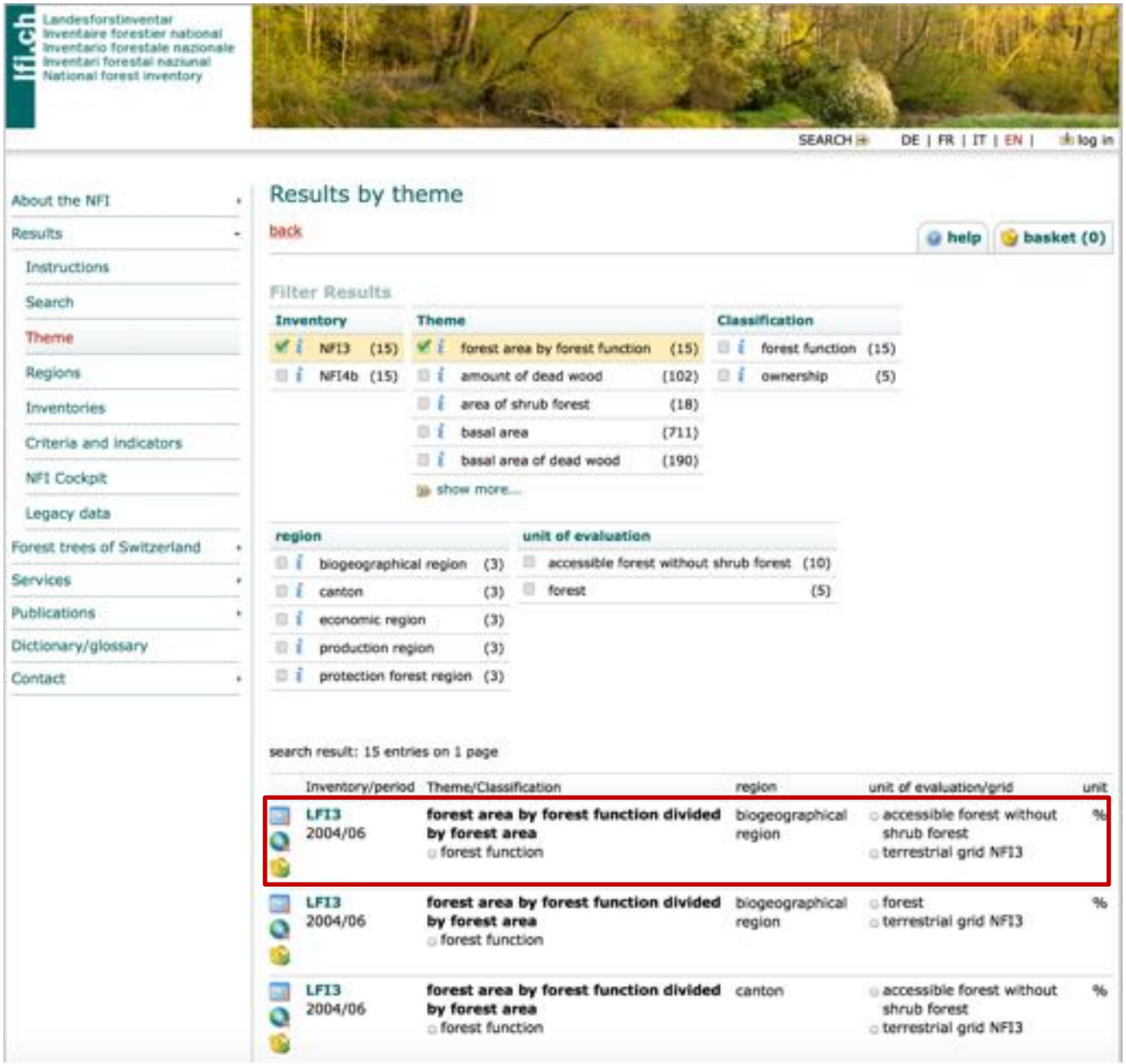
PROTECTION FOREST R...
TERRESTRIAL GRID NFI3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NFI4b (15)
Theme
forest area by forest function (15)
amount of dead wood (102)
area of shrub forest (18)
basal area (711)
basal area of dead wood (190)
show more...
Classification
forest function (15)
ownership (5)
region
biogeographical region (3)
canton (3)
economic region (3)
production region (3)
protection forest region (3)
unit of evaluation
accessible forest without shrub forest (10)
forest (5)
search result: 15 entries on 1 page
Inventory/period
Theme/Classification
region
unit of evaluation/grid
unit
LFI3 2004/06
forest area by forest function divided by forest area
forest function
biogeographical region
accessible forest without shrub forest
terrestrial grid NFI3
%
LFI3 2004/06
forest area by forest function divided by forest area
forest function
biogeographical region
forest
terrestrial grid NFI3
%
LFI3 2004/06
forest area by forest function divided by forest area
forest function
canton
accessible forest without shrub forest
terrestrial grid NFI3
%

Results by theme

back

NFI3

forest area by forest function divided by forest area forest function

unit of reference: biogeographical region
unit: %
unit of evaluation: accessible forest without shrub forest
grid: terrestrial grid NFI3
state 2004/06

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military	1	0	1	0	0	0	0	0	0	0	0	0	0	0
total	.	.	.	.	.	.	.	.	.	.	.	.	.	.

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Table citation

Abegg, M.; Brändli, U.-B.; Cioldi, F.; Fischer, C.; Herold-Bonardi, A.; Huber M.; Keller, M.; Meile, R.; Rösler, E.; Speich, S.; Traub, B.; Vidondo, B., 2014: Swiss national forest inventory - Result table No. 207104: forest area by forest function
Birmensdorf, Swiss Federal Research Institute WSL
https://doi.org/10.21258/1382448

The Long-term Forest Ecosystem Research (LWF)

- Multifunctional long-term monitoring data
- Swiss contribution to the UNECE LRTAP
- 19 non-systematically distributed plots + 50 overlapping with NFI

Long-term Forest Ecosystem Research (LWF)

Air pollution and climate change have an effect on the forest. We examine these effects as part of the Long-Term Forest Ecosystem Research (LWF) programme.

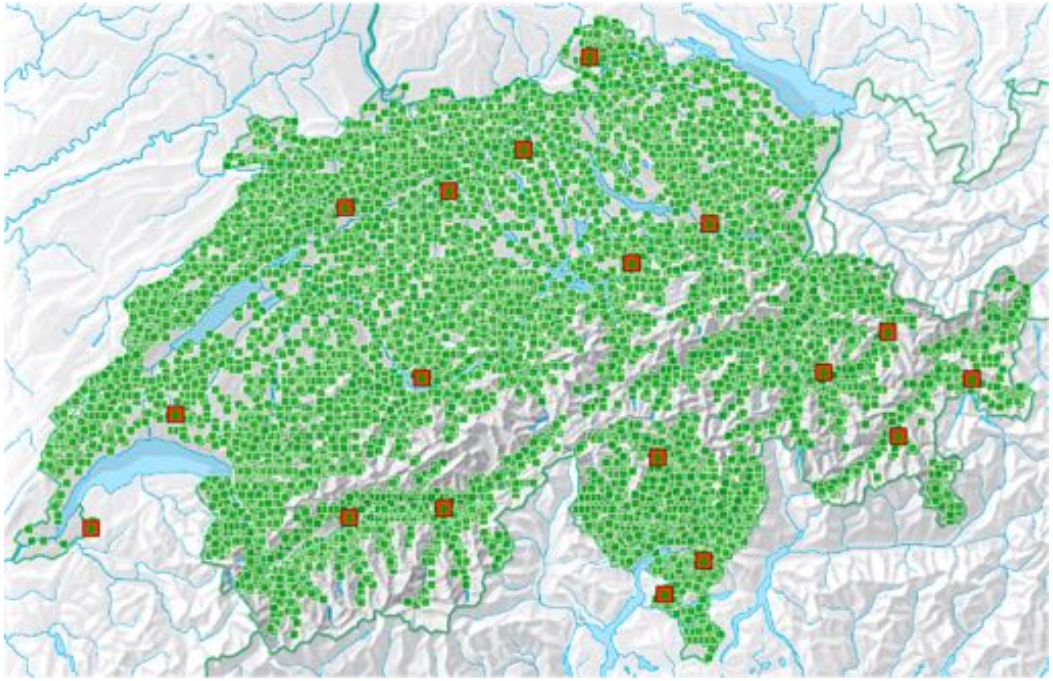
A researcher is emptying one of the litterfall collectors on the LWF plot in Beatenberg (canton Bern). Photo: WSL

We need reliable information in order to record the condition of the forest on an ongoing basis and to understand precisely what happens in the forest when the environment changes. An important source of data here is the Long-Term Forest Ecosystem Research (LWF) programme. It consists of 19 permanent monitoring sites on which we have regularly carried out numerous measurements since 1994. We have also been recording the health of trees on the monitoring sites of the Sanasilva Inventory, which is part of the LWF programme (see Sites), since 1985.

We disclose the gathered data, as well as the scientific interpretation of this data, to national and international decision-makers.

With the legally enshrined functions of the LWF programme, Switzerland participates in international research programmes such as the "International Co-operative Programme on Assessment and Monitoring of Air Pollution Effects on Forests" ICP Forests and the LTER-Europe Network (Long-Term Ecosystem Research in Europe).

The Long-term Forest Ecosystem Research (LWF) programme is run and financed by the WSL.



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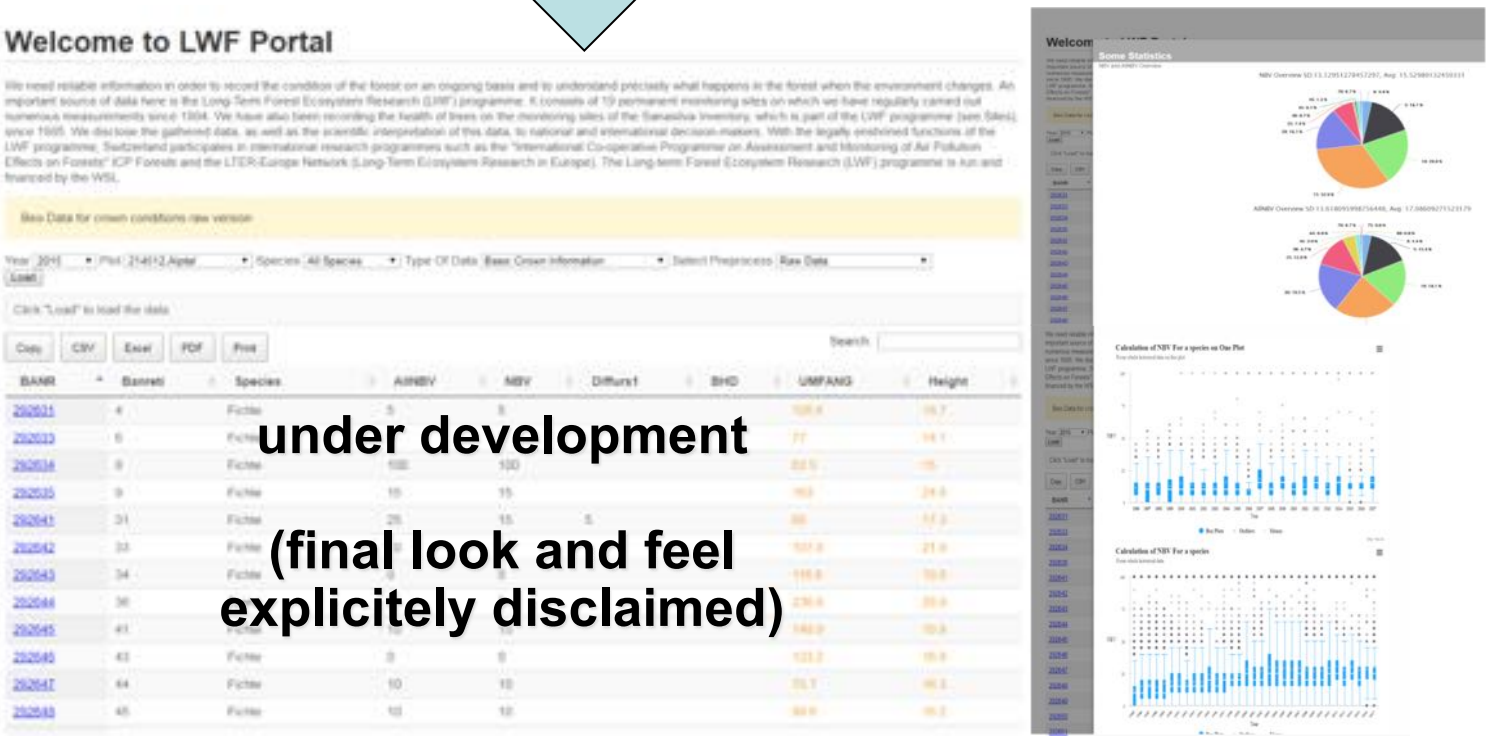
LWF Integration in EnviDat

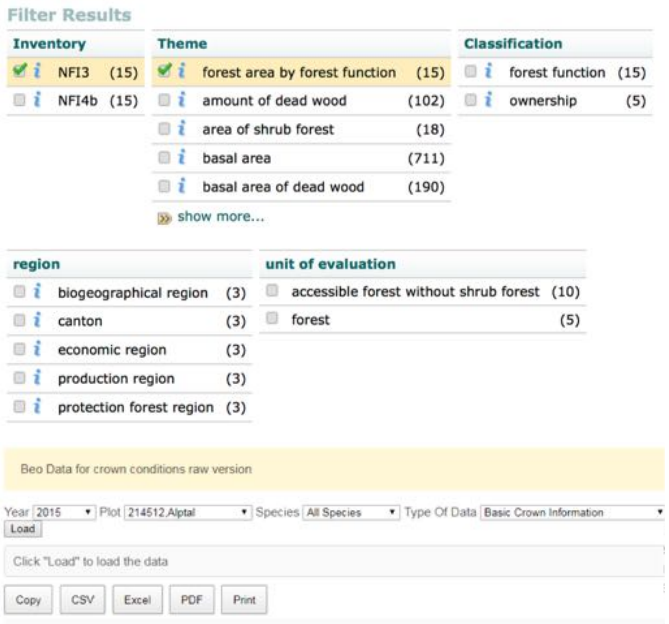
EnviDat

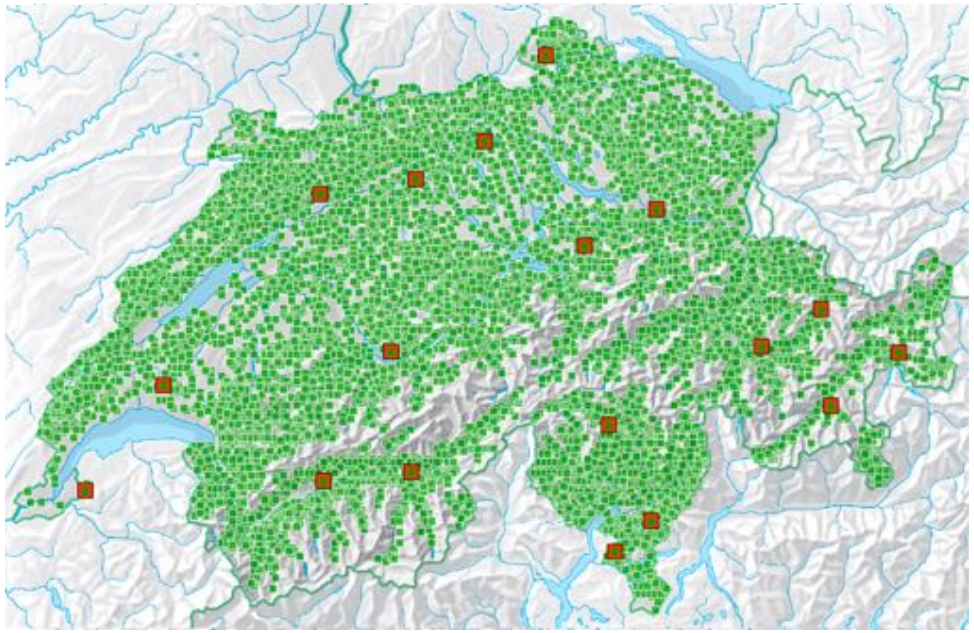
One time token



Benefits

- **Unified access** but **distributed curation**
- Integration of **existing operational systems**
- **No data redundancy, no duplication of efforts**
- **Specific functionality** available/possible (in external system)





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EnviDat@WSL

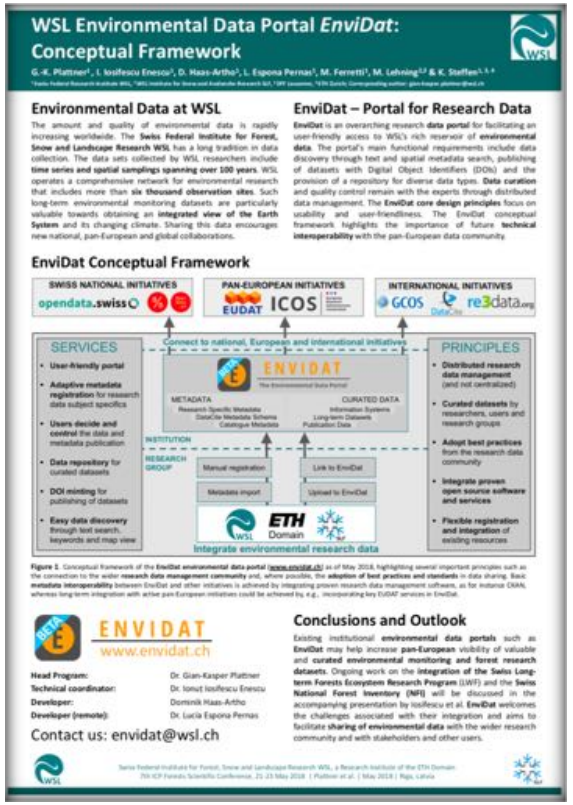
WSL acknowledges the responsibility to make publicly funded research data accessible & we are committed to ensure long-term access to our data

- Enable WSL data producers to **exploit the data and publish**
- Share WSL data and **benefit from added value** – as individual researchers and as institution
- Increase national and international **collaborations**
- Increase numbers of **publications and citations**
- **Foster environmental science**

EnviDat: a Service for Researchers

*EnviDat is the **WSL portal** providing **unified and managed access** to environmental monitoring and research data.*
*EnviDat has the capability to **host and publish** data sets.*

- **Unified access** but **distributed curation**
- **Balance interests** of data producers and data users
- Enable WSL data producers to **exploit the data and publish**
- Online at www.envidat.ch

  Contact envidat@wsl.ch

EnviDat poster is on display!