



# Forest Data Bank - environmental information sharing system

---

Artur Michorczyk, Marcin Myszkowski  
Bureau for Forest Management and Geodesy

Damian Zieliński  
Directorate General of the State Forests



Biuro Urządzania Lasu i Geodezji Leśnej

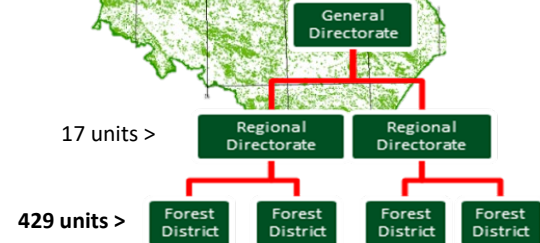


Lasy Państwowe

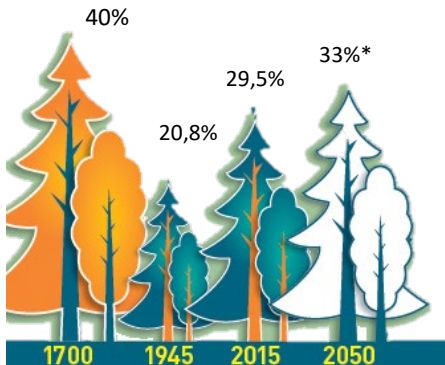


# The significance of the Polish forests

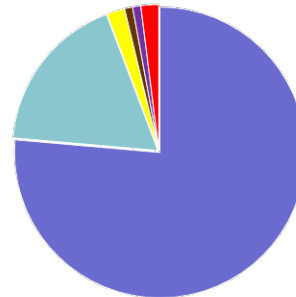
- ❑ Forest area in Poland: 9,4 mln ha
- ❑ Under the management of the SF: 7,4 mln ha
- ❑ Forest cover: ca 30% of the total land area
- ❑ Growing stock of the Polish forests 288 m3/h
- ❑ **Timber harvesting volume ca. 40 mln m3**



## FOREST COVER



## OWNERSHIP STRUCTURE



- 77% administrated by the State Forests
- 18% individual ownership
- 2% national parks
- 0,9% comune owned
- 0,9% other state-owned
- 2% other privately owned



## Forest Data Bank for all ownership types

- 1. The Forest Data Bank (FDB) has been operational since 2012.**
- 2. Its functioning is sanctioned by the Act on Forests, which also regulates its financing and carrying out works**
  1. The FDB is financed by the State Forests
  2. Maintenance and development is carried out by the Bureau of Forest Management and Geodesy



## FDB-field of activity

### Data collection

- systematically complete, update and preserve data on forests of all forms of ownership

### Information processing

- processing of data enabling its interpretation

### Analysis and forecasts

- carrying out analysis and forecasting of the development of forest resources and the possibilities of their use on a macro scale

### Data and information sharing

- distributing and providing information on forests and supporting scientific research

### Standardization

- promoting standards for the collection and processing of data on forest



# Channels for sharing information



**Internet portal**

**Mapping services OGC**

**Mobile application**

**Downloadable data sets**



# Technological solutions in the FDB

## 1. Desktop solutions:

1. ArcGIS Desktop from ESRI technology
2. QGIS

## 2. ESRI Technology:

1. ArcGIS Server (including SDE),
2. ArcGIS Image Server
3. Open source: GeoServer,
4. Open source: PostgreSQL + PostGIS
5. Data transformation: ETL Talend Open Studio

## 3. Dedicated solutions:

1. JAVA applications + applications server Payara
2. C# desktop applications

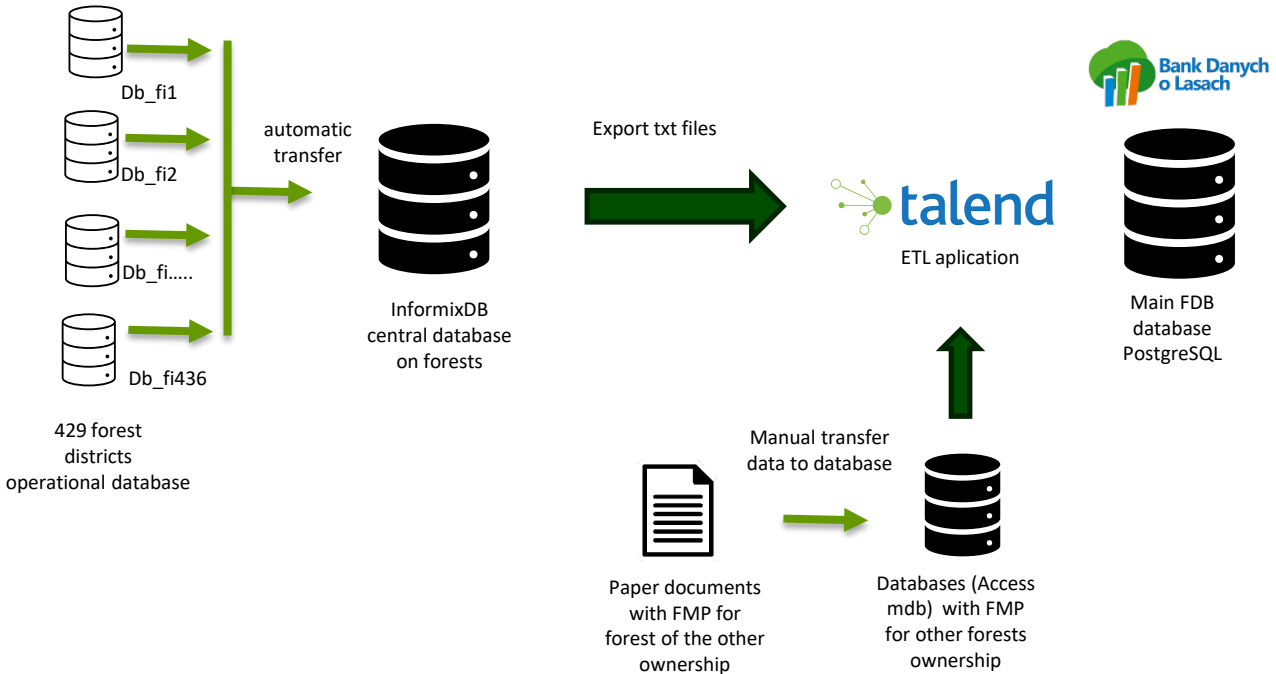




# Semi-automatic data transfer

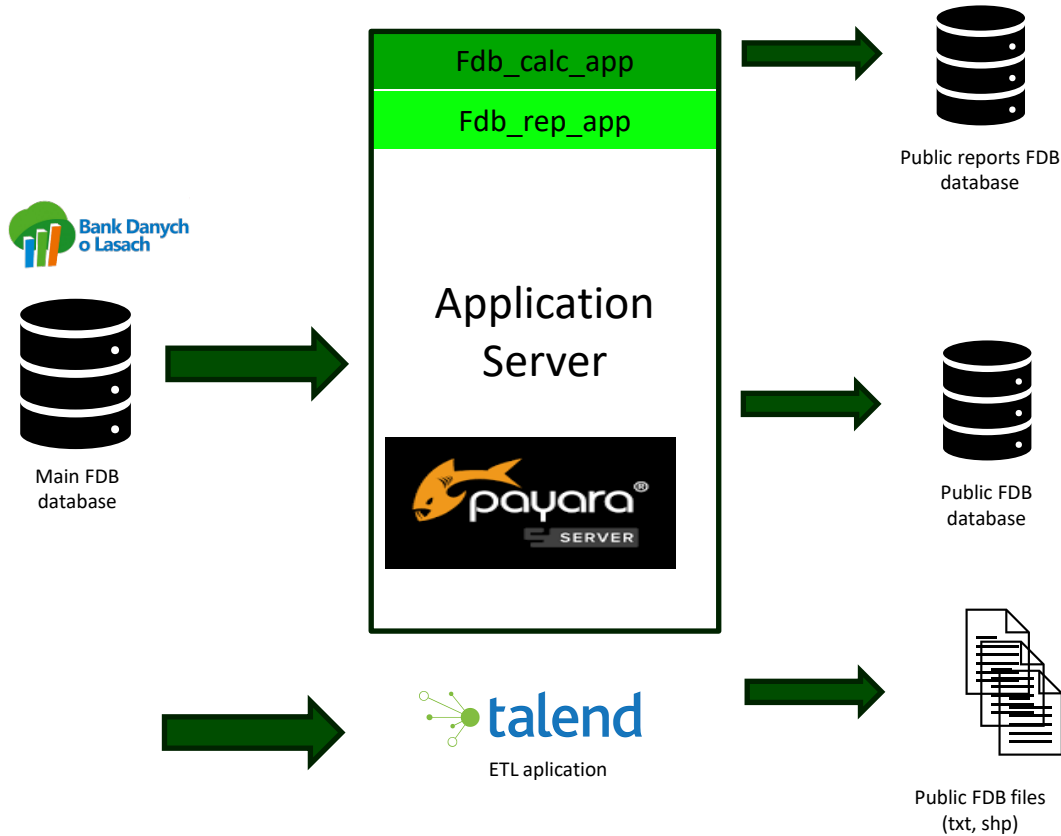


## State Forest





# Data processing







# Data sharing – Internet portal



Descriptive section



Interactive map and OGC services



Forest figures and statistics



Publications and reports

**Bank Danych o Lasach** 10 lat BANKU DANYCH O LASACH

BDL Reports Forests on maps mBDL Publications Data access Help Sign In

We invite you to use the Forest Data Bank mobile application

### Forests in Poland

Area: **9,265 thousand hectares** (without areas connected with forest economy)  
Standing volume: **2,669 million m<sup>3</sup>**  
Average standing volume: **288 m<sup>3</sup>/ha**  
Average stand age: **61 years** in the forests of SF NFH  
Forest area per capita: **0.24 hectares**  
Forest cover: **29,6 %**

According to: "Statistical Yearbook of Forestry 2022"

Welcome to the Forest Data Bank News

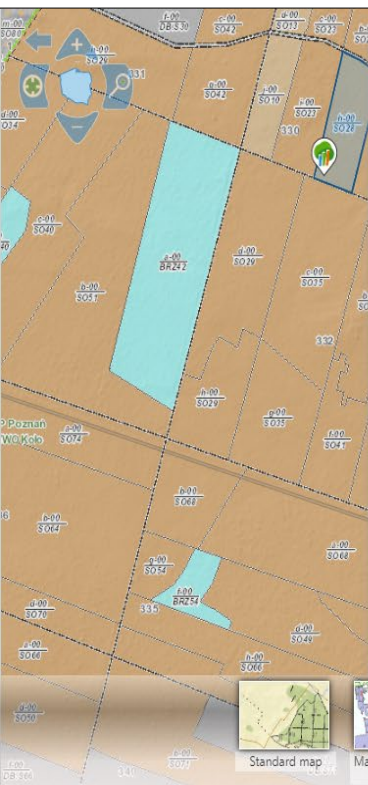
The Bureau for Forest Management and Geodesy provided services commissioned by the Directorate-General of the State Forests under the operational title: "The implementation of structural and functional concepts for a data

[New version 3.48.0 of the BDL portal](#)

[www.bdl.lasy.gov.pl](http://www.bdl.lasy.gov.pl)



# Interactive maps



**Stand description**

09-10-1-02-332-a -00    09-10-1-02-330-h -00

Forest address: 09-10-1-02-330 -h -00    Forest ownership: **National Forest**  
 RDSF: POZNAŃ    Forest district: KOKO    Forest unit: DĄBIE  
 Province: WIELKOPOLSKIE    County: Kolski    Community/Municipality: Dąbie Obszar wiejski  
 Inventory precinct: LADORUDZ    Division and separation: 330h  
 Status as of year: 2022    Years of Forest Management Plan validity: 2013-2022

General data

Area (ha)	Hold.	Fell. a.	Surf. t.	Vert. str.	FHT	Degr. I.	Moisture	Soil t.
1,27	GPZ	100	D-STAN	DRZEW	LM5W	N1	5	RDbr

General data (cont.)

Cover	Veget. sub-comm.	Prot. t.	Forest func.	Nat. hab.	Damage c.	Damage per.
MSZ			GOSP			

Stand layers

Layer	Species mixture	Closure	Afforestation	Density
DRZEW	DKEP	PEŁ		1,0 DUZE
PODSZ				0,3

Species in stand layers

Layer	Spec.	Share	Age	Diam. (cm)	Height (m)	Site index	Standing volume (m <sup>3</sup> /ha)
DRZEW	SO	6	28	13	13	IA	120
DRZEW	DB.S	3	28	9	10	II	19
DRZEW	MD	1	28	15	15	I	20
DRZEW	BK	MJS	28				
DRZEW	BRZ	MJS	28				
DRZEW	JW	MJS	28				
PODSZ	KRU						
PODSZ	BRZ						
PODSZ	ŚLT						
PODSZ	CZM						

Economic indicators

Plot no.	Action	Urgency	No. of cutting periods	Harvest area/Work site (ha)	Perc. of merchantable timber (%)
1	CP	N		1,27	
1	TWP	N		1,27	



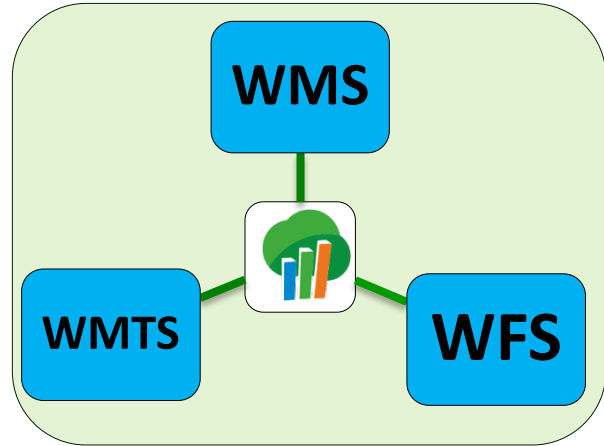
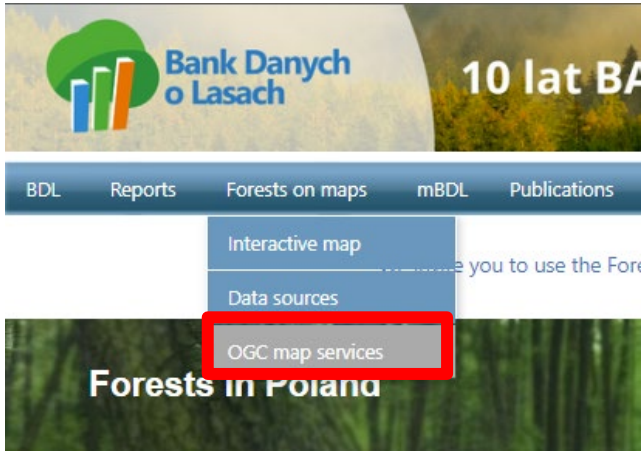
WMS (KOD, GLSK, etc.)    SHP, KML, GPX files

- Forest stands map
  - Provinces
  - Counties
  - Municipalities
  - Cadastral communities
  - Nature and forest regionalisation
  - RDSF
  - Forest districts
  - Forest units
  - Locations of forest fires
  - Divisions in SF NFH
  - Divisions without SF NFH according to Forest Management Plan (PUL)
  - Descriptions of subareas in SF NFH
  - Descriptions of subareas without SF NFH according to Forest Management Plan (PUL)
  - Forest Experimental Stations
  - Promotional Forest Complexes
  - Seed regionalisation
  - Meteorological data
  - Drainage divides
  - Nature conservation
  - Non-afforested forest subareas in SF NFH
  - Non-afforested forest subareas without SF NFH according to Forest Management Plan (PUL)
  - Forest stands in SF NFH by regeneration class (KO, KDO)
- Seed regionalisation
- Meteorological data
- Drainage divides
- Nature conservation
- Non-afforested forest subareas in SF NFH
- Non-afforested forest subareas without SF NFH according to Forest Management Plan (PUL)
- Forest stands in SF NFH by regeneration class (KO, KDO)

Standard map    Map of categories of property    Forest stands map    Forest site map    Plant communities map    Map of hunting    Forest fire danger map    Forest entry prohibited map    Tourist infrastructure map



# OGC mapping services





# Statistics data and reports



BDL

Reports

Forests on maps

mBDL

Publications

Data access

Help

Sign In



## Report of forest management data

[RU-1 Forest area by forms of ownership](#)

[in configuration of voivodeships](#) as of 1st January 2022 r.

### Choose report range:

[for each form of ownership](#)

**private forest**

[lying in administration units:](#)

**no limitations**

[in range of State Forests/national parks:](#)

**no limitations**

[in range of lands:](#)

**no limitations**

[for statistical units:](#)

**no limitations**

clear choice

### Report format:

PDF  XLS

CREATE REPORT

Number of selected reports: 1

- single report
- for each selected form of ownership
- for each voivodeship
- for each selected county
- for each RDSF
- for each selected inspectorate/park
- for each land



## Interactive form

BDL Zestawienia Lasy na mapach Publikacje Udostępnianie UPUL Pomoc Zaloguj

Dane wnioskodawcy

Adres email\*:

Dane do pobrania:

Dane wg stanu na rok:

Dane dla nadleśnictw  [wybrać nadleśnictwa](#)

Warstwa geometryczna  [wybrać nadleśnictwa PGL LP](#)

Inne dane bez podziału na lata:

Obszary programu Zancuj w lesie - 08.2021 r.

Akceptuję [warunki wykorzystania pobranych danych\\*](#)

Wyrażam zgodę na przetwarzanie moich danych osobowych niezbędnych do realizacji zamówienia na dane z Banku Danych o Lasach (zgodnie z Ustawą z dnia 10.05.2018 r. Ochrona Danych Osobowych; tekst jednolity; Dz. U. z 2018 r., poz. 1000)\*  
[Więcej informacji o przetwarzaniu danych osobowych](#)

ZAMÓW WYBRANE DANE DO POBRANIA

udostępnianie danych > \_paczki > BDL\_09\_02\_BABKI\_2021

Przeszukaj: BDL\_09\_02\_BABKI\_2021

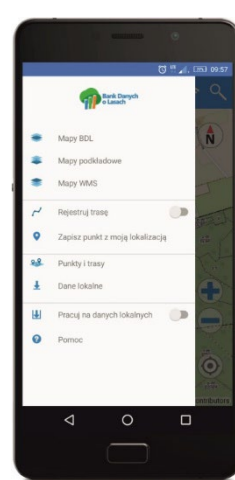
<ul style="list-style-type: none"><li>Data_usage_guide.txt</li><li>f_area_type_dic.txt</li><li>f_ared_category.txt</li><li>f_ared_cue.txt</li><li>f_ared_prod_site.txt</li><li>f_ared_storey.txt</li><li>f_ardes.txt</li><li>f_density_dic.txt</li><li>f_forest_func_dic.txt</li><li>f_inspectorate.txt</li><li>f_mixture_dic.txt</li><li>f_part_dic.txt</li><li>f_plant_comm_dic.txt</li><li>f_prot_categ_dic.txt</li><li>f_prot_site_dic.txt</li><li>f_silviculture_dic.txt</li><li>f_site_type_dic.txt</li><li>f_soil_subtype_dic.txt</li></ul>	<ul style="list-style-type: none"><li>f_storey_dic.txt</li><li>f_storey_species.txt</li><li>f_subarea.txt</li><li>f_tree_species_dic.txt</li><li>G_COMPARTMENT.cpg</li><li>G_COMPARTMENT.dbf</li><li>G_COMPARTMENT.prj</li><li>G_COMPARTMENT.sbn</li><li>G_COMPARTMENT.sbx</li><li>G_COMPARTMENT.shp</li><li>G_COMPARTMENT.shp.xml</li><li>G_COMPARTMENT.shx</li><li>G_COMPARTMENT.shp.xml</li><li>G_COMPARTMENT.shx</li><li>G_SUBAREA.cpg</li><li>G_SUBAREA.dbf</li><li>G_FOREST_RANGE.cpg</li><li>G_FOREST_RANGE.dbf</li><li>G_FOREST_RANGE.prj</li><li>G_FOREST_RANGE.sbn</li><li>G_FOREST_RANGE.sbx</li><li>G_FOREST_RANGE.shp</li><li>G_FOREST_RANGE.shp.xml</li><li>G_FOREST_RANGE.shx</li></ul>	<ul style="list-style-type: none"><li>G_FOREST_RANGE.shp.xml</li><li>G_FOREST_RANGE.shx</li><li>G_INSPECTORATE.cpg</li><li>G_INSPECTORATE.dbf</li><li>G_INSPECTORATE.prj</li><li>G_INSPECTORATE.sbn</li><li>G_INSPECTORATE.sbx</li><li>G_INSPECTORATE.shp</li><li>G_INSPECTORATE.shp.xml</li><li>G_INSPECTORATE.shx</li><li>G_SUBAREA.cpg</li><li>G_SUBAREA.dbf</li><li>G_SUBAREA.prj</li><li>G_SUBAREA.sbn</li><li>G_SUBAREA.sbx</li><li>G_SUBAREA.shp</li><li>G_SUBAREA.shp.xml</li><li>G_SUBAREA.shx</li></ul>	<ul style="list-style-type: none"><li>instrukcja_korzystania_z_danych.txt</li><li>metadane.txt</li><li>metadata.txt</li><li>Terms_of_use.txt</li><li>warunki_wykorzystania.txt</li></ul>
--	--	---	--



# Mobile application



- Access to thematic maps of the FDB
- Background maps
- Other data from WMS services
- Tax description for forests of all forms of ownership
- Online and offline operation





## Cybersecurity in the FDB



1. **Physical security - two locations, fire protected server room, additional power supply, access control to server room.**
2. **Monitoring and logging - infrastructure is monitored, all potential threats are analysed.**
3. **Backups - the infrastructure is protected by archiving systems, systematic backups are made, stored in secure locations.**
4. **Encryption - devices, sensitive data and internal communications are encrypted.**
5. **Direct protection of systems by a central anti-virus protection system.**
6. **Update control of operating systems, hardware and software.**
7. **Firewall - at the level of edge devices. Traffic filtering and analysis, anti-spam and malware network protection. Advanced network protection at the edge devices.**



# API service







**Bank Danych  
o Lasach**

[www.bdl.lasy.gov.pl](http://www.bdl.lasy.gov.pl)

**Thank you very much for your attention  
FOREST DATA BANK Team**



**Biuro Urządzania Lasu i Geodezji Leśnej**



**Lasy Państwowe**