
OpenStreetMap + landuse import

GeoDEV Slovenia Meetup #6
Ljubljana, 2019-01-23

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What?

- A “wiki” map of the world (crowdsourced)
- Anything, not just streets
- Sustainable licence (cc-by -> ODbL)

Basis

GPS tracks

Right: Status on
September 2007



Evolution

Sept 2006 -

- March 2008

Contributing

- GPS tracks (.gpx)
- Notes on paper maps
- Local knowledge
- Survey with devices ([StreetComplete](#), [Vespucci.io](#))
- Drawing / orthophoto
- Importing (guidelines!)



Editor underlays

- Old (out-of-copyright) maps
- Maps with compatible license (Yahoo, Bing)
- Raba
- GURS (buildings, roads...)
- LIDAR shaded relief
- ...

Edit

- Id editor (web) -->
- JOSM (Java)
- ... API

OpenStreetMap <https://www.openstreetmap.org/edit#map=18/46.04586/14.49499> StefanB

Uredi Zgodovina Izvozi Več

Urejanje predmeta

Naziv: Fakulteta za gradbeništvo in geodezijo

Naslov: Jamova cesta 1000 Mesto

Zgradba: university

Ure: 24/7, Mo-Sa 08:00-20:00, sunrise-sunset...

Dodaj polje: Opis, Nadmorska višina, Elektronski...

Vse oznake (6)

addr:housenumber	2
addr:postcode	1000
addr:street	Jamova cesta
building	university

Odpri na openstreetmap.org

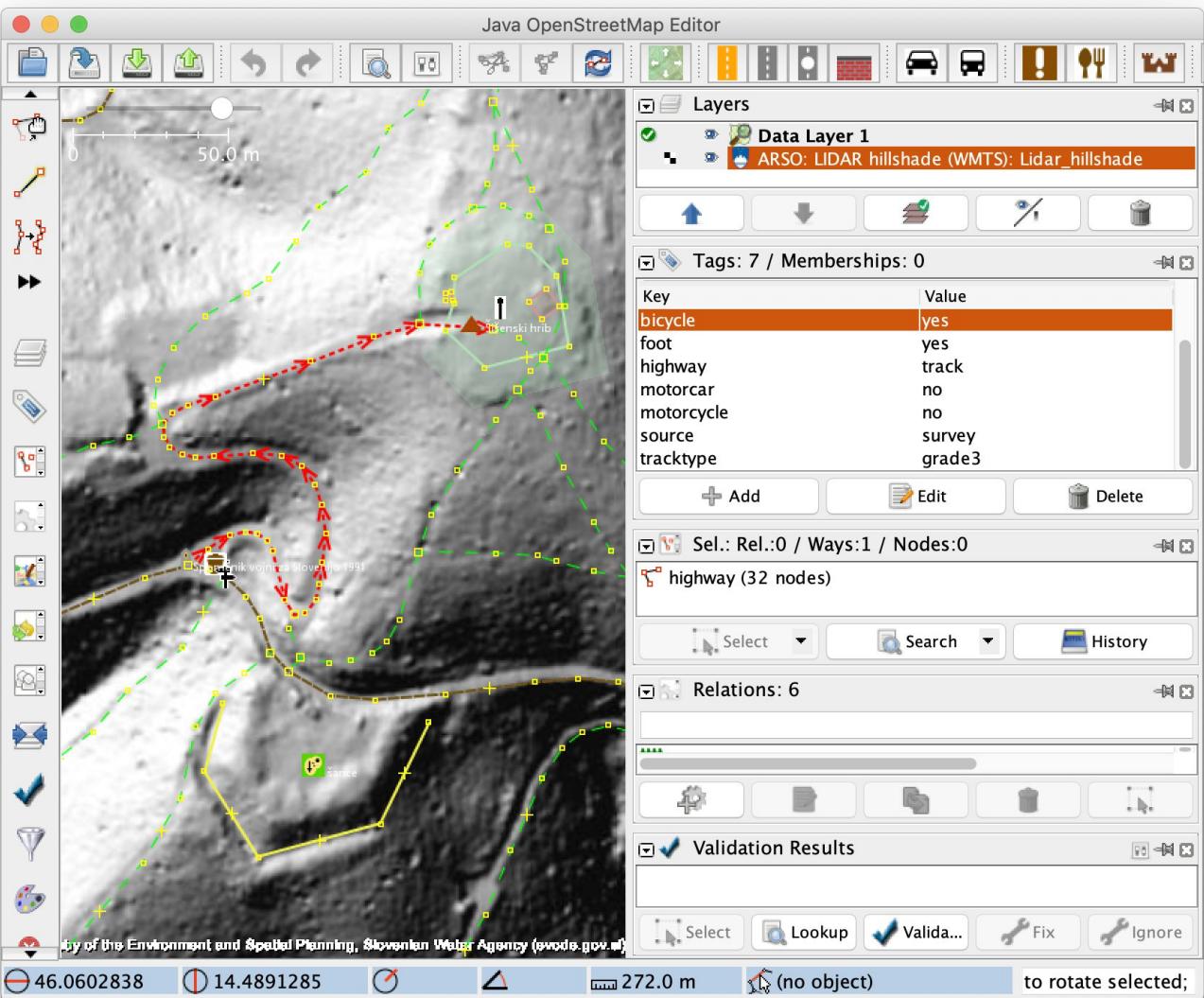
Pogoji uporabe in odziv

40 m

2.12.2

Edit

- Id editor (web)
- JOSM (Java) -->
- ... API



Rendering

Raster:

- Cycling
- Ski resorts
- Public transport
- Humanitarian
- Toner-saving
- Language
- ...

Right:

[OpenWhateverMap.xyz](#)



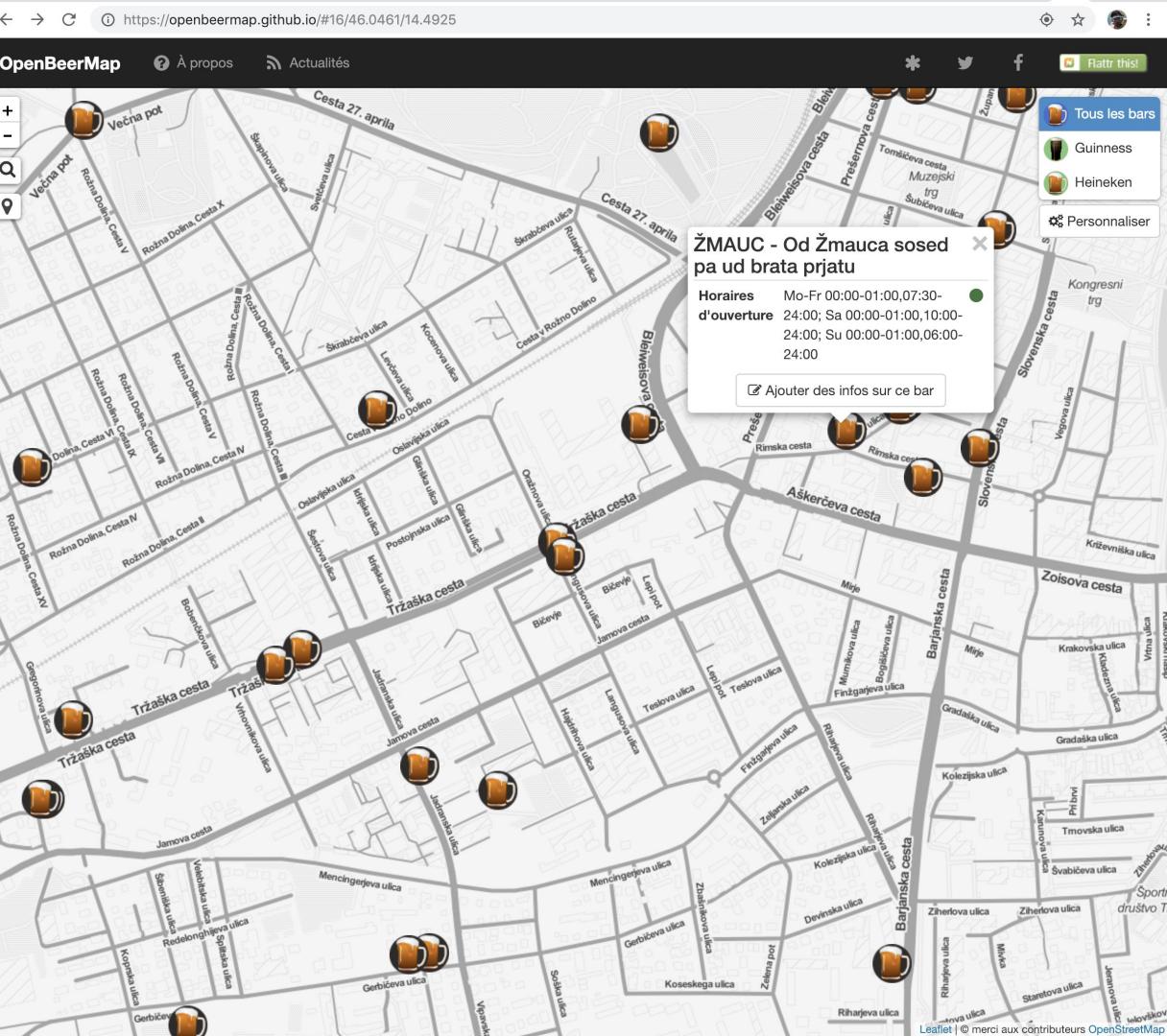
Rendering

Thematic:

- Beer
- 3D
- ...

Right:

openbeermapper.github.io



Download

Vector data:

- Whole world
- Geographic extracts
- Thematic extracts

Right: <https://planet.osm.org/>

← → 🔍 <https://planet.osm.org>

Planet OSM



The files found here are regularly-updated, complete copies of the OpenStreetMap.org database, and those published before the 12 September 2012 are distributed under a Creative Commons Attribution-ShareAlike 2.0 license, those published after are Open Data Commons Open Database License 1.0 licensed. For more information, see the project wiki.

Complete OSM Data

[Latest Weekly Planet XML File](#)
73 GB, created 3 days ago.
md5: dc879f7a90036aa3354d721a557f0ac2.

[Latest Weekly Changesets](#)
2.5 GB, created 3 days ago.
md5: 760228db3a323f9f459f0fe193247c3.

[Latest Weekly PBF File](#)
43 GB, created 3 days ago.
md5: 15fbba6163a61a9a90ab72a8d4bf96.

Each week, a new and complete copy of all data in OpenStreetMap is made available as both a compressed XML file and a custom PBF format file. Also available is the [history](#) file which contains not only up-to-date data but also older versions of data and deleted data items.

A smaller file with complete metadata for all changes ('changesets') in XML format is also available.

If you find data within OpenStreetMap that you believe is an infringement of someone else's copyright, then please make contact with the [OpenStreetMap Data Working Group](#).

Using The Data

You are granted permission to use OpenStreetMap data by [the OpenStreetMap License](#), which also describes your obligations.

You can [process the file](#) or extracts with a variety of tools. [Osmosis](#) is a general-purpose command-line tool for converting the data among different formats and databases, and [Osm2pgsql](#) is a tool for importing the data into a Postgres database for rendering maps.

Extracts & Mirrors

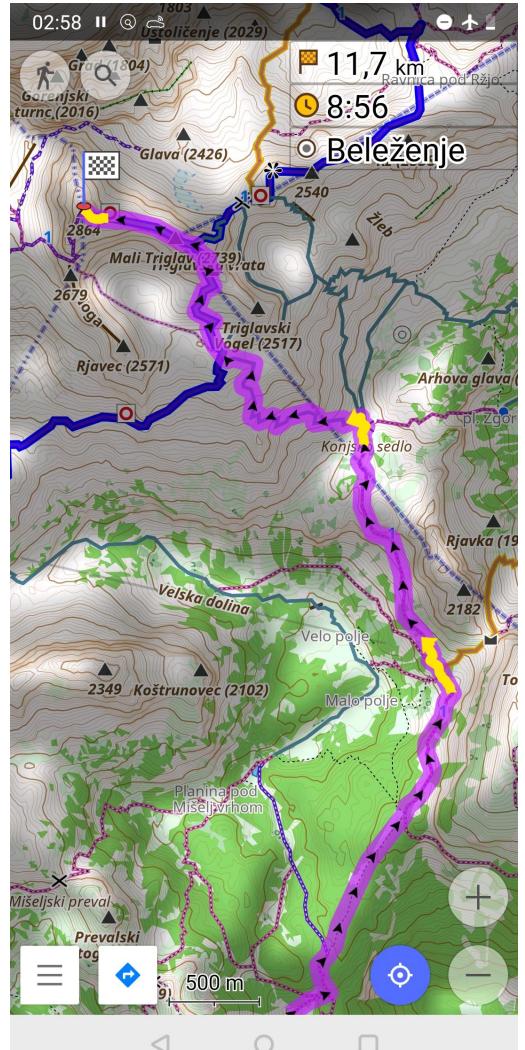
The complete planet is very large, so you may prefer to use one of [several periodic extracts](#) (individual countries or states) from third parties. [GeoFabrik.de](#) and [BBBike.org](#) are two providers of extracts with up-to-date worldwide coverage.

Name	Last modified	Size	Description
replication/	2019-01-13 10:37	-	
users_deleted/	2019-01-13 10:37	-	
tile_logs/	2019-01-13 04:51	-	
notes/	2019-01-13 03:25	-	
pbf/	2019-01-10 03:51	-	
planet/	2019-01-10 03:02	-	
historical-shapefiles/	2013-06-11 21:54	-	
gpx/	2013-04-12 15:28	-	
cc-by-sa/	2012-09-13 15:10	-	
redaction-period/	2012-04-11 13:06	-	
users_agreed/	2011-12-14 10:37	-	

Apps & Services

Vector data:

- Rendering (raster & vector tiles)
- Routing services & algorithm implementations
- Navigation apps



Landuse import

Raba tal

License

Clarified in 2014

Spoštovani,

v imenu OpenStreetMap foruma Slovenija (<http://forum.openstreetmap.org/viewforum.php?id=58>) vas prosimo za soglasje za uporabo grafičnih podatkov RABA, ki so na voljo kot javno dostopni podatki na MKO portalu (<http://rkg.gov.si/GERK/>).

OpenStreetMap (OSM) je projekt, kjer uporabniki sami ustvarjajo prosti dostopen zemljevid sveta. Zemljevid in podatki so prosti dostopni na spletni strani <http://www.openstreetmap.org/#map=9/46.2112/14.9277>. Podatki in izrisani zemljevidi so licencirani pod Open Database licenco.

Podatki bodo uporabljeni predvsem za dopolnitve sloja gozdov (oznaka: landuse=forest). Uporabljeni bodo poligoni z atributom RABA_ID=2000.

Pri uvozu podatkov bodo navedeni še naslednji parametri: source (vir): MKO, <http://rkg.gov.si/GERK/> source_name (ime vira): Evidenca dejanske rabe kmetijskih zemljišč source_date (datum vira): 31.03.2014 (v primeru prevzema podatkov tega datuma)

Lep pozdrav!

Rkg.Mkgp@gov.si

Za meni

Spoštovani,

podatki evidence dejanske rabe so javni in se lahko uporabljajo v vse namene, ob predpostavki, da je naveden vir in datum podatkov ter navedba, da se evidenca dejanske rabe kmetijskih in gozdnih zemljišč sprotno posodablia, glede na dostopnost virov in informacij in da stanje, ki ga prikazujete ne odraža vedno trenutnega stanja.

Lep pozdrav, Alenka Rotter

27.06.2014 09:29
Prosim, odgovorite za rkg.mkgp

Za: rkg.mkp@gov.si,
kp:
Zadeva: Prošnja za soglasje za uporabo grafičnih podatkov RABA v OpenStreetMap

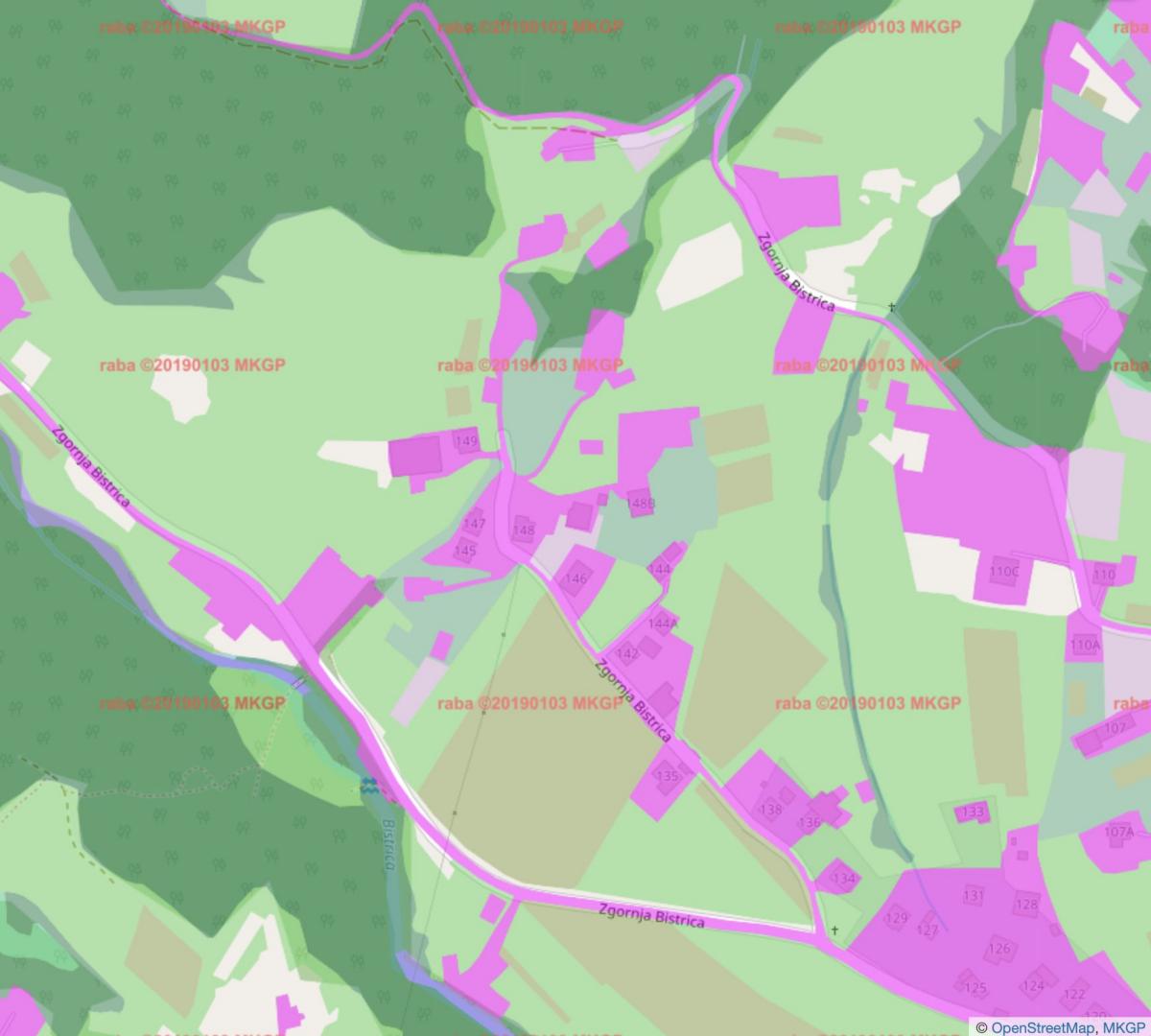
Analysis

RABA WMTS

<http://wms.openstreetmap.de>

Compared with:

- Existing OSM data
 - ESRI imagery
 - ...



Mappings

Wiki (right):

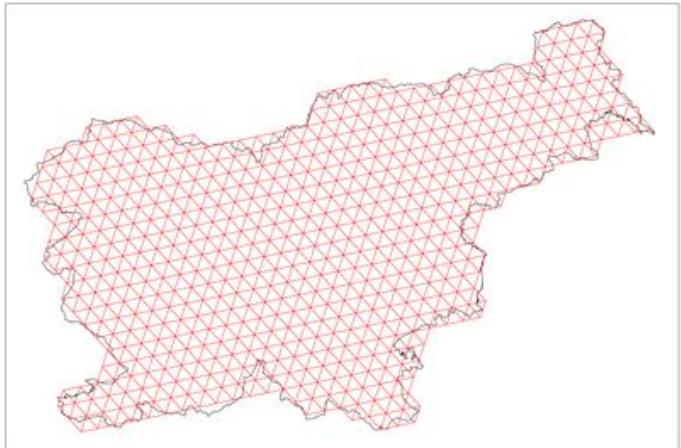
Slovenia Landcover Import - RABA-KGZ

Github: SIF RABA.csv

TRAVNIŠKE POVRŠINE	raba:id=1321	Barjanski travnik (1000 m ²)	natural=meadow	yes	58810487	0,29%	2190	počasi zaraščanje v gozdovih ali mineralno-organskih tleh, na katerem nivo talne vode med letom pogosto doseže površino tal.	natural=
	raba:id=1800	Kmetijsko zemljišče, poraslo z gozdnim drevjem (1000 m ²)	landuse=forest	yes	104516648	0,52%	21126	Površina, porasla s travnjem, na kateri rastejo posamična gozdna drevesa oziroma grmi in se redno, vsaj enkrat letno popase oziroma pokosi. Pokrovnost travinja je vsaj 80%, pokrovnost drevesnih krošenj oziroma grmov pa je manjša od 75%.	
				sum	3629987122	17,90%	353281		
DRUGE KMETIJSKE POVRŠINE	raba:id=1410	Kmetijsko zemljišče v zaraščanju (1000 m ²)	natural=scrub	yes	327755993	1,62%	221292	Zemljišče, ki se zarašča zaradi opustitve kmetovanja ali preskrmono kmetijske rabe. Na njem se pojavljajo mlado olesenelo ali tmasto rastje ter drevesa in grmičevje, običajno različnih starosti, katerih pokrovnost je 20-75%.	Grmovje??
	raba:id=1420	Plantaža gozdnega drevja (1000 m ²)	landuse=forest	yes	3235808	0,02%	492	Plantaža gozdnega drevja je nasad gozdnega drevja, ki je namenjen izključno pridelavi lesa, okrasnih dreves ali plodov oziroma drugih delov drevja v pri katerih so razdalje med drevjem že ob zasaditvi takšne kot ob predvideni končnem razvojnem stanju sestoj.	
	raba:id=1500	Drevesa in grmičevje (1000 m ²)	natural=scrub	yes	279033546	1,38%	228281	Površina, porasla z drevesi in grmičevjem, katerih pokrovnost presega 75 % in niso uvrščena v gozd. Sem uvrščamo tudi obvodno zarast, če so obrečni pasovi porasli z drevjem oziroma grmovjem, ter mojice iz gozdnih dreves oziroma grmičevja.	
	raba:id=1600	Neobdelano kmetijsko zemljišče (1000 m ²)	natural=scrub or natural=heath	no	98872211	0,49%	94868	Površina, ki je npr. rigolana in pripravljena za zasaditev novih trajnih nasadov. Kmetijsko zemljišče, ki se začasno ne uporablja zaradi gradnje infrastrukture ali je neobdelano zaradi socialnih ali drugih razlogov. Kmetijsko zemljišče, na katerem je ograda za konje, prašiči ali druge živali in ni poraslo s travnjem.	
GOZD				sum	708897558	3,49%	544933		
	raba:id=2000	Gozd (2500m ²)	landuse=forest	yes	12018806000	59,25%	114474	Zemljišče, ki je v skladu s predpisi o gozdovih opredeljeno kot gozd.	https://help.should-we-use-naturalwood
				sum	12018806000	59,25%	114474		
	raba:id=3000	Pozidano in sorodno zemljišče (25 m ²)	no import	no	1092898063	5,39%	170266	Površina, na kateri so zgradbe, ceste, ki vodijo do naselij ali hiš, parkirni prostori, rudniki, kamnolomi in druga infrastruktura, ki služi za opravljanje človeških dejavnosti.	NEUPORAB skupaj....)
	raba:id=4100	Barje (5000 m ²)	natural=wetland	yes	449555	0,00%	13	Nizko ali visoko barje, ki se ne uporablja za kmetijsko rabo. Vegetacija je navadno višja kot na barjanskih travnikih in se ne kosí.	Key:wetland
	raba:id=4210	Trstičje (5000 m ²)	natural=wetland + wetland+reedbed	yes	655031	0,00%	75	Močvirno zemljišče, na katerem raste trstika. Na tem zemljišču ni kmetijske	Key:wetland

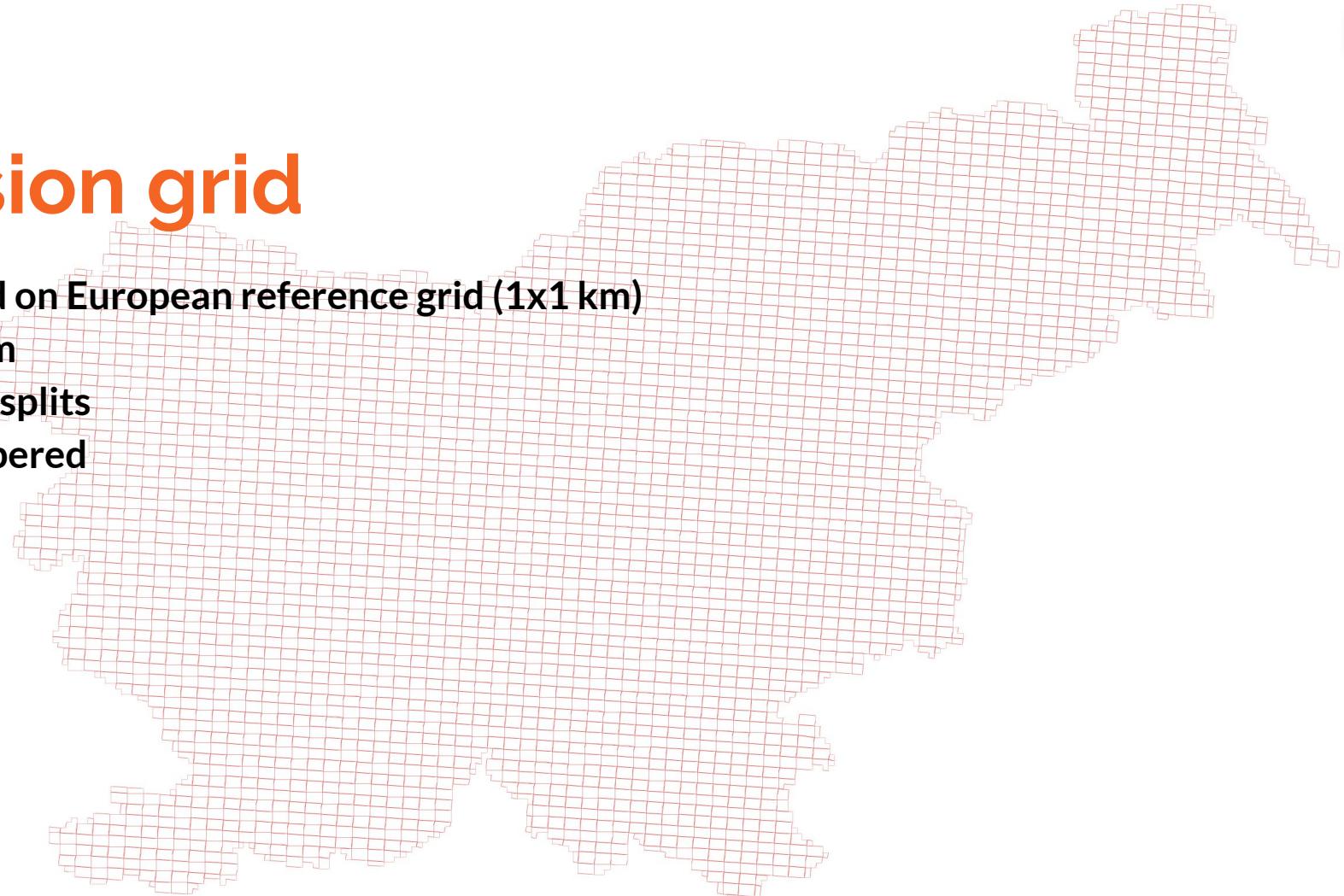
Data preparation - coordinates

- Source: D48 GK (EPSG:3912)
- [GeoCoordinateConverter \(.tk\)](#) (Matjaž Rihtar)
- Intermediate: D96 TM (EPSG:3794)
- Gdal ogr2ogr: -> WGS84 (EPSG:4326)



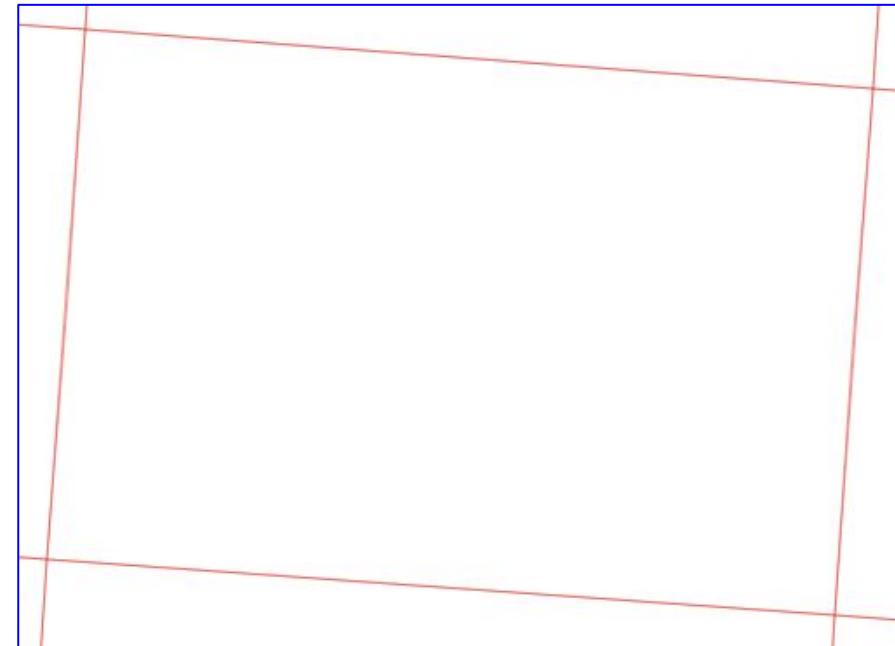
Division grid

- Based on European reference grid (1x1 km)
- 2*3km
- 3640 splits
- Numbered



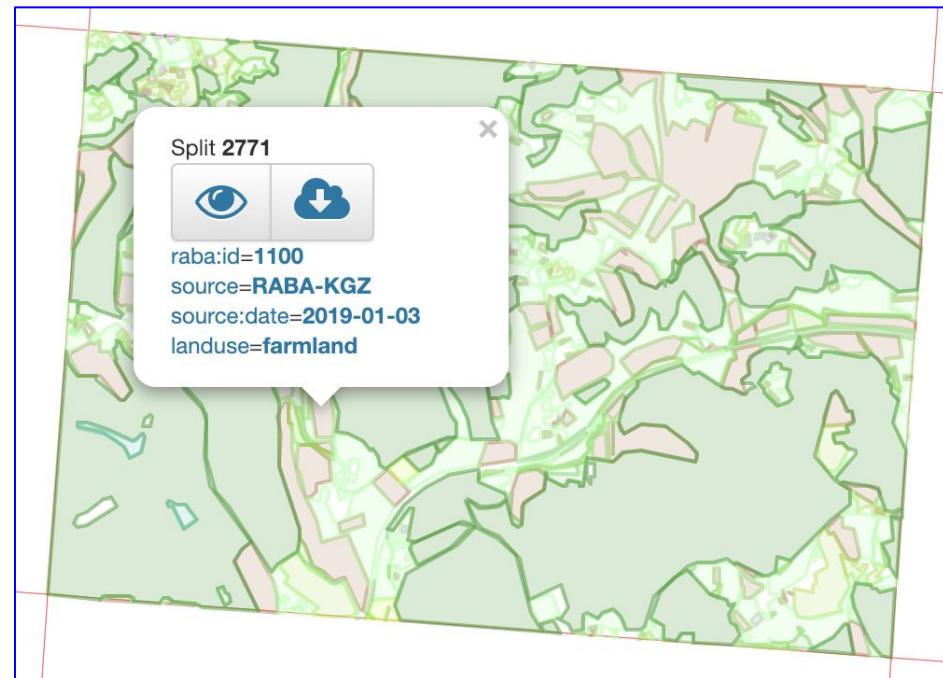
Data preparation - ogr2ogr

- Grid split area by id
- Get + enlarge split extent
- Rough (square) clip (blue)
- Exact clip (red)
- Dissolve areas
- Explode collections



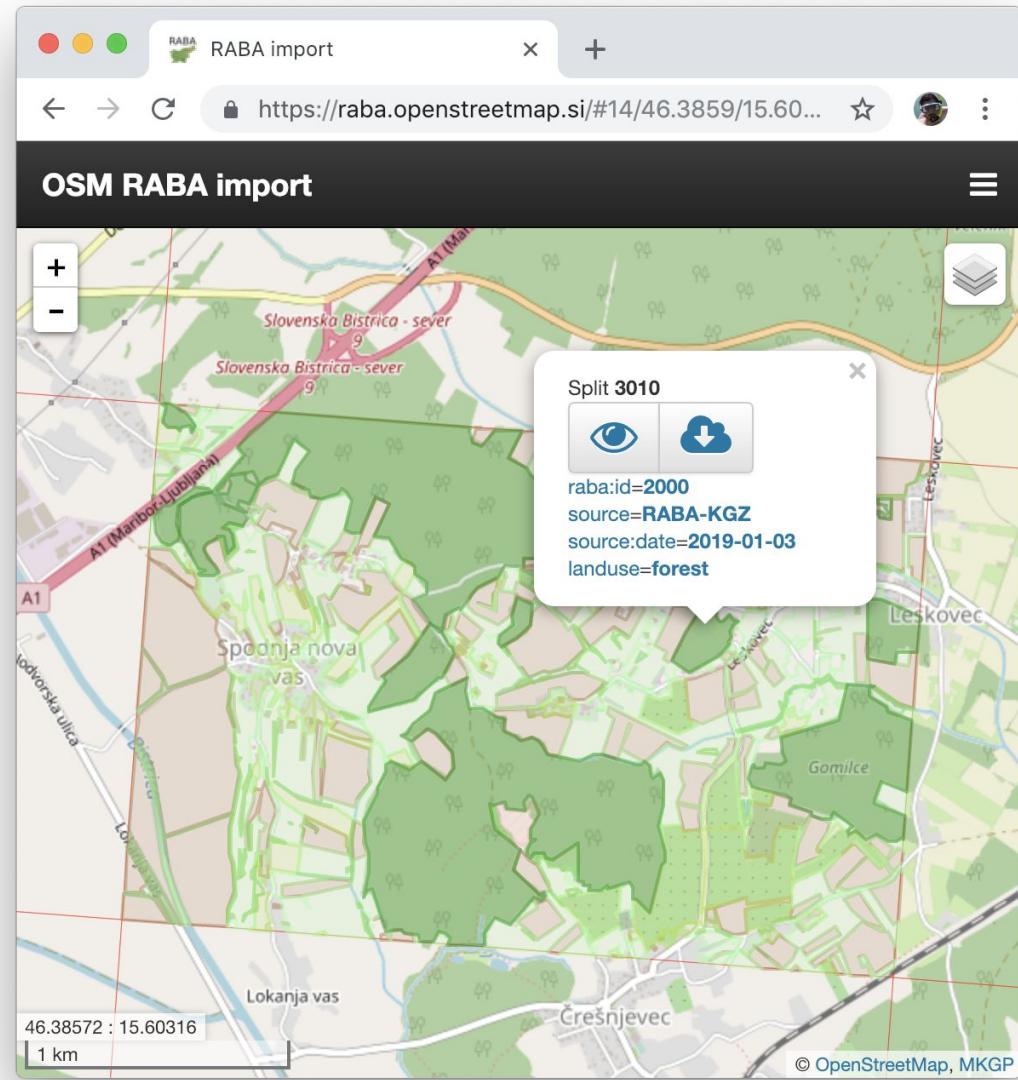
Data preparation - ogr2ogr

- DBF hack: bbe (":", 11-char field names)
- ~48 hours -> ~4 hours -> ~20min
- Result: 3640 zipped shapefiles for JOSM
- Source:
<https://github.com/stefanb/RabaSplitForOSM>



Web GUI

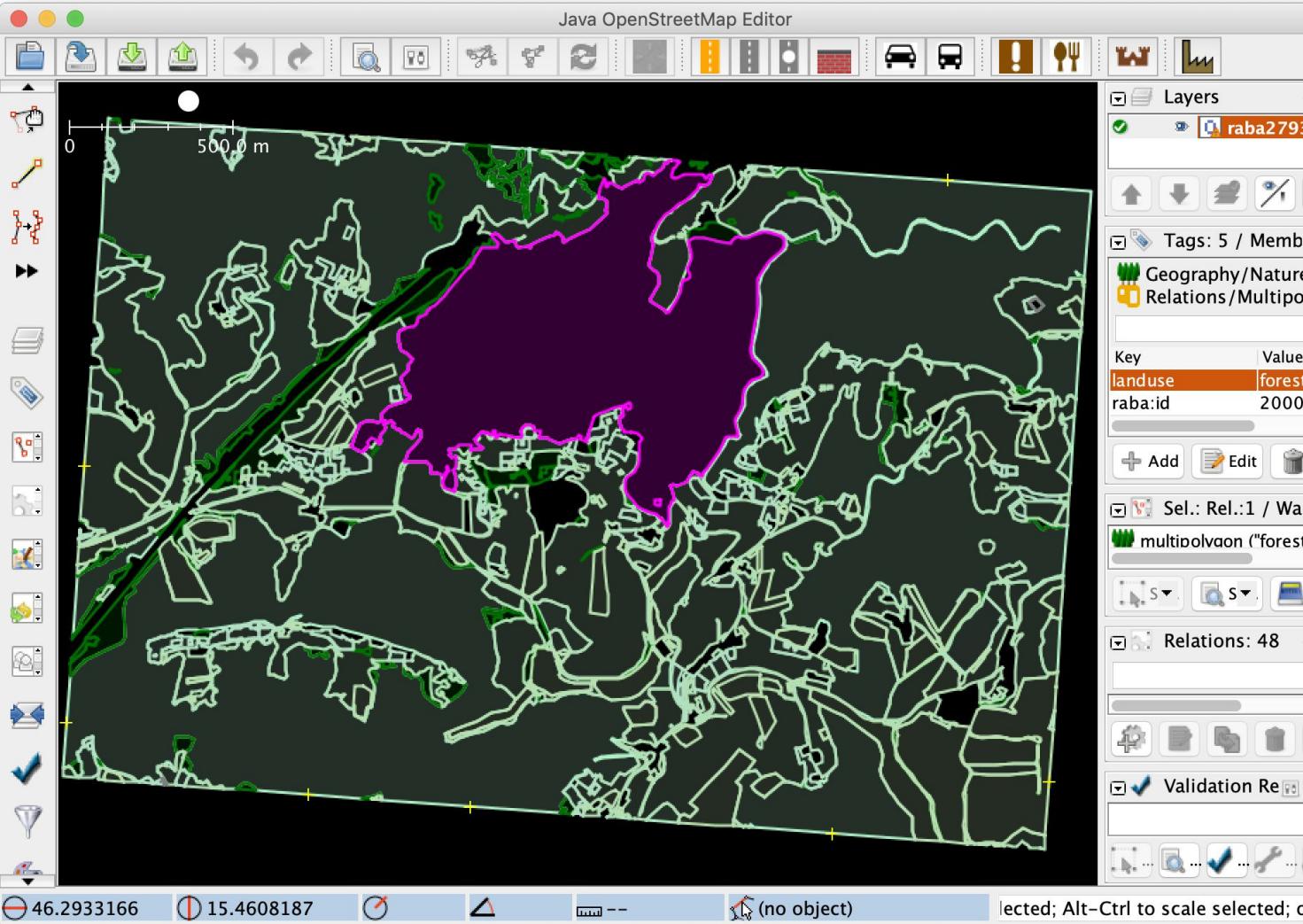
- Leaflet with raster base
- .shp split overlay
- OSM tags preview
- Import into JOSM



JOSM

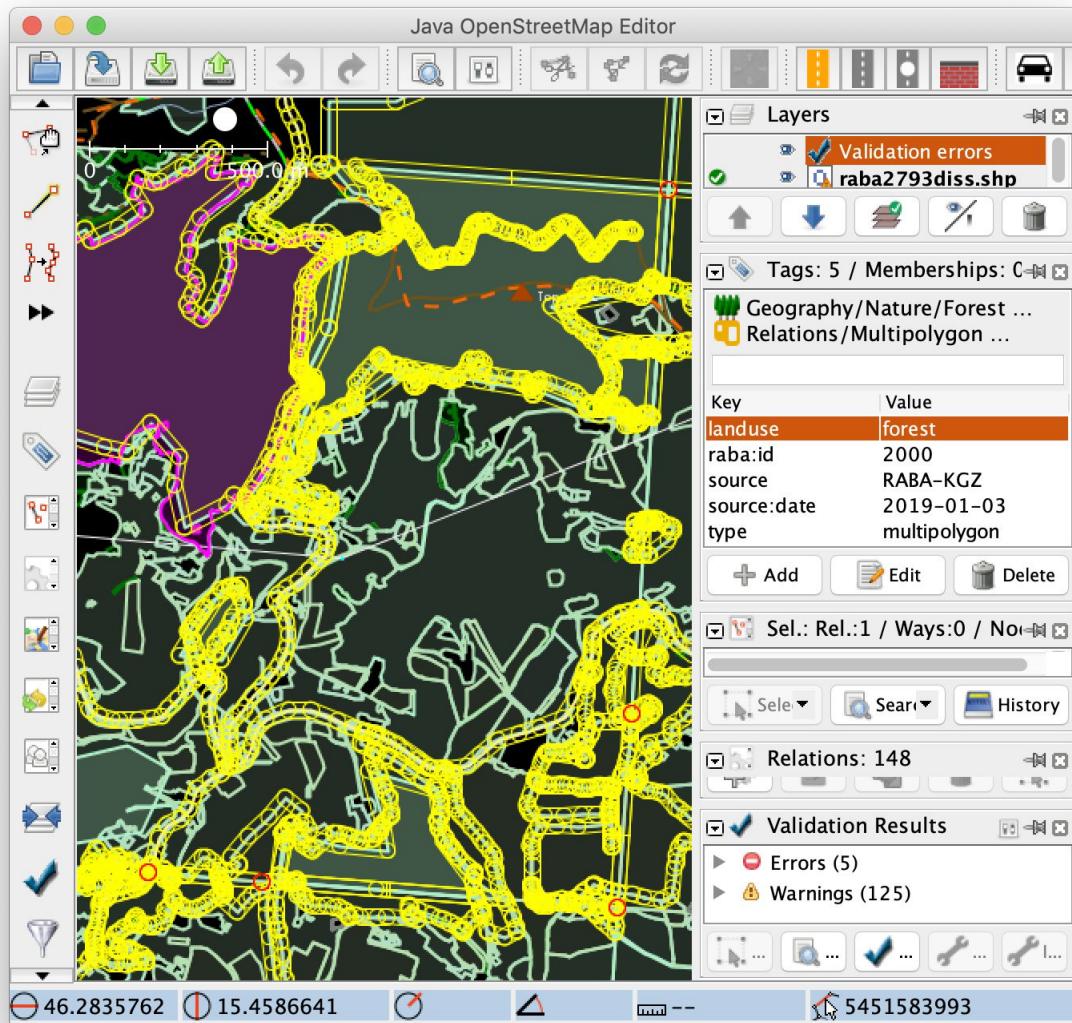
Import

SHP loaded
into JOSM



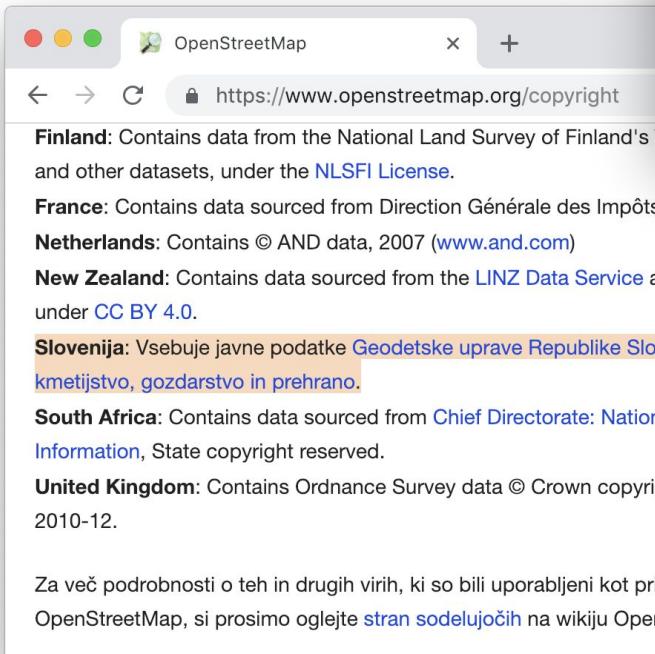
JOSM import

- Download area from OSM
- Prepare the area (resolve conflicts)
 - Delete existing landuses
 - Adjust & add roads
- Validate & fix:
 - Duplicate nodes
 - Overlapping landuses
- Upload with source=RABA-KGZ tag,
- Use *_import user



Attribution

Implemented via:



The screenshot shows the OpenStreetMap homepage with a search bar at the top. Below it, there's a section titled "Oznake" (Tags) containing the following data:

landuse	forest
raba:id	2000
source	RABA-KGZ
source:date	2018-01-31

On the right side of the page, there's a map of a forested area with a red outline around a specific plot of land. A scale bar indicates distances in kilometers and feet. At the bottom of the page, there's a copyright notice: "© OpenStreetMap sodelavci Denarni prispevki".

Finland: Contains data from the National Land Survey of Finland's [Land Information System](#) and other datasets, under the [NLSFI License](#).

France: Contains data sourced from Direction Générale des Impôts.

Netherlands: Contains © AND data, 2007 ([www.and.com](#))

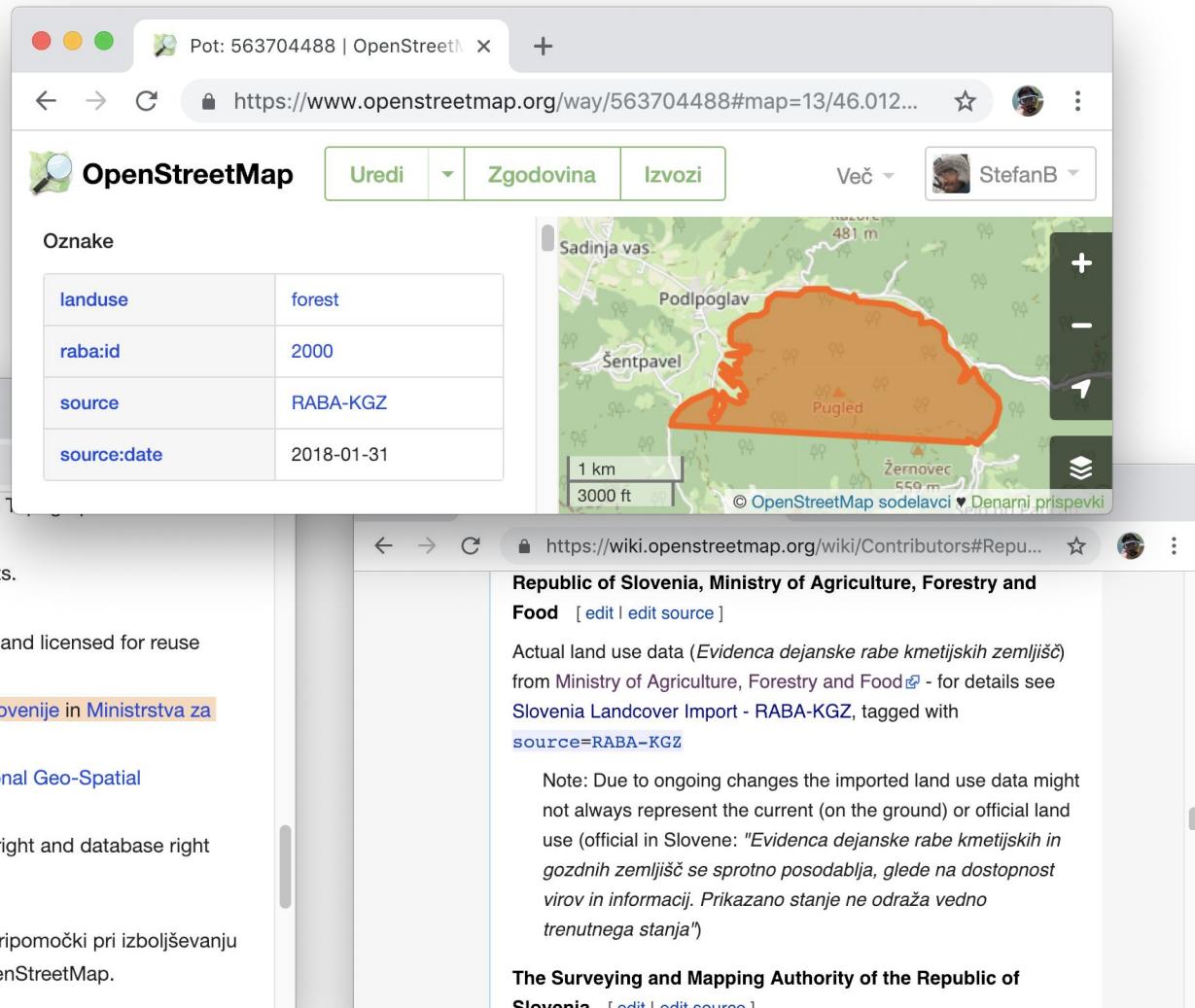
New Zealand: Contains data sourced from the [LINZ Data Service](#) and licensed for reuse under [CC BY 4.0](#).

Slovenija: Vsebuje javne podatke [Geodetske uprave Republike Slovenije](#) in [Ministrstva za kmetijstvo, gozdarstvo in prehrano](#).

South Africa: Contains data sourced from [Chief Directorate: National Geo-Spatial Information](#), State copyright reserved.

United Kingdom: Contains Ordnance Survey data © Crown copyright and database right 2010-12.

Za več podrobnosti o teh in drugih virih, ki so bili uporabljeni kot pripomočki pri izboljševanju OpenStreetMap, si prosimo oglejte [stran sodelujočih](#) na wikiju OpenStreetMap.



The screenshot shows a browser window with the URL <https://www.openstreetmap.org/way/563704488#map=13/46.012...>. The page displays the same map and tag information as the first screenshot. On the right, there's a link to a Wikipedia page titled "Republic of Slovenia, Ministry of Agriculture, Forestry and Food". The page content includes:

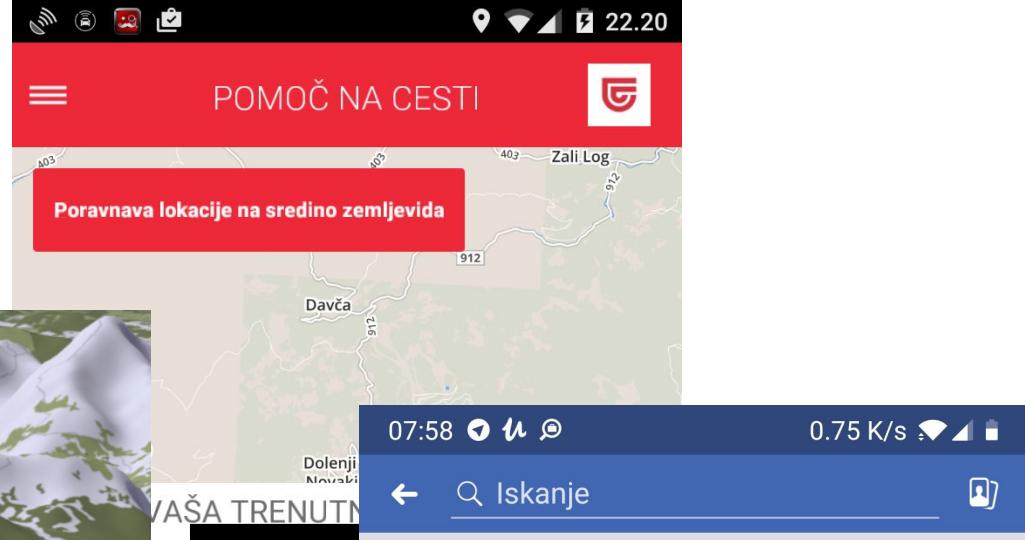
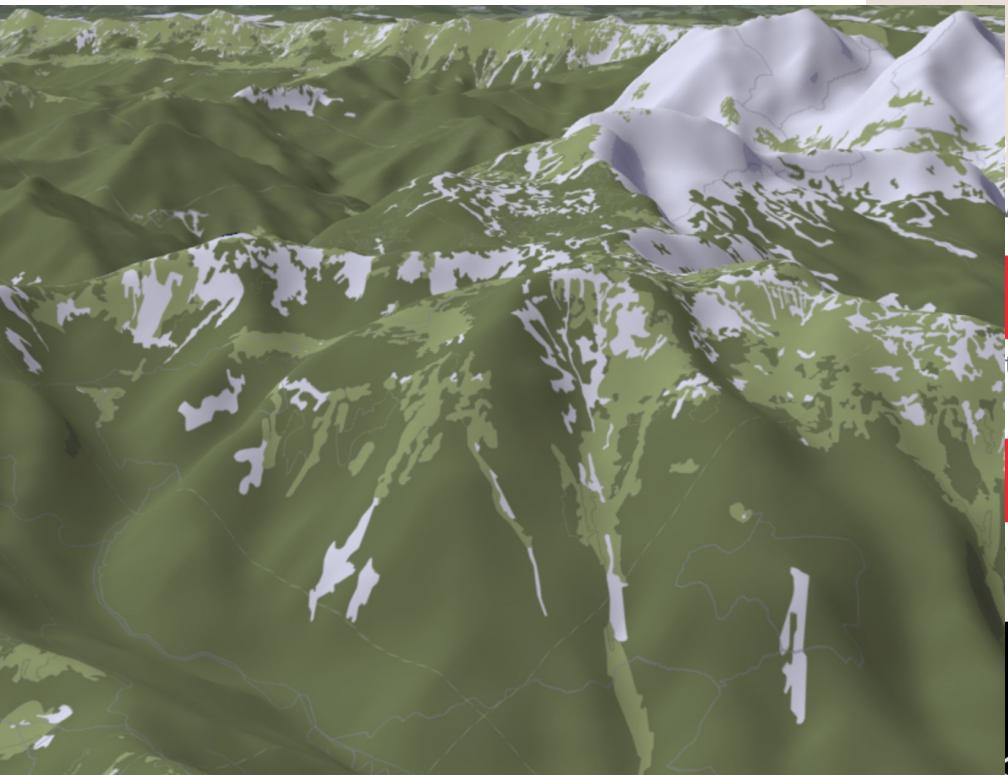
Republic of Slovenia, Ministry of Agriculture, Forestry and Food [edit | edit source]

Actual land use data (*Evidenca dejanske rabe kmetijskih zemljišč*) from Ministry of Agriculture, Forestry and Food - for details see [Slovenia Landcover Import - RABA-KGZ](#), tagged with `source=RABA-KGZ`

Note: Due to ongoing changes the imported land use data might not always represent the current (on the ground) or official land use (official in Slovene: "*Evidenca dejanske rabe kmetijskih in gozdnih zemljišč se sprotno posodablja, glede na dostopnost virov in informacij. Prikazano stanje ne odraža vedno trenutnega stanja*")

The Surveying and Mapping Authority of the Republic of Slovenia [edit | edit source]

Sightings



Questions?

Links - OSM general

- <https://www.openstreetmap.org> (=osm.org)
- <https://wiki.osm.org/Slovenia>
- <https://forum.osm.org> (*Slovenia*)

Links - Mentioned sites

- JOSM: <https://wiki.osm.org/JOSM>
- Live view of edits: <http://osmlab.github.io/show-me-the-way>
- Tile showcase: <http://openwhatevermap.xyz>
- 3D map: <https://demo.f4map.com>
- OsmAnd android navigation: <https://wiki.osm.org/OsmAnd>
- StreetComplete: <https://wiki.osm.org/StreetComplete>

Links - Raba import

- Project: [https://wiki.osm.org/Slovenia Landcover Import - RABA-KGZ](https://wiki.osm.org/Slovenia_Landcover_Import_-_RABA-KGZ)
- Import website: <https://raba.openstreetmap.si>
- Source code:
 - <https://github.com/stefanb/RabaSplitForOSM> (data preparation)
 - <https://github.com/openstreetmap-si/raba.openstreetmap.si> (website)