

An introduction to OpenStreetMap and some use in research

Luca Delucchi

Fondazione Edmund Mach - GIS & Remote Sensing Unit;
<http://gis.cri.fmach.it>

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Introduction

About

OpenStreetMap is:

- a collaborative geographic project, it was created for road maps, but it grew up and now it's the biggest free geographic database
- like Wikipedia for geographic data; the success of project thanks to the minor cost of technology to use (internet and GPS)

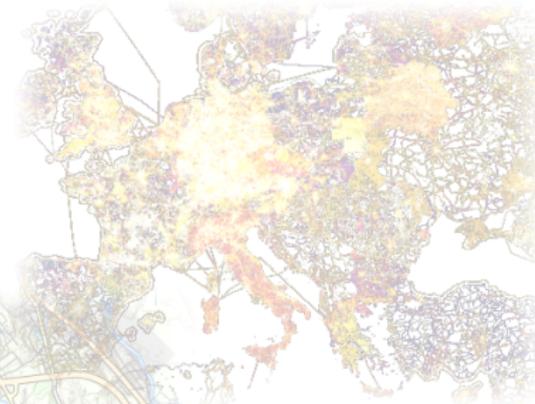


Introduction

What is not

OpenStreetMap is not:

- it's not a GPS tracks collector

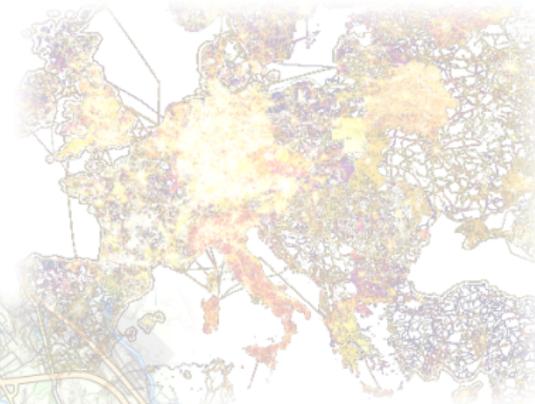


Introduction

What is not

OpenStreetMap is not:

- it's not a GPS tracks collector
- it's not a Google Maps copy



Introduction

Why

OpenStreetMap was created because in 2004 most of geographic data was not free, you had to pay or sign some licenses that limited your freedom.



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ODbL License



Introduction

Story

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Introduction

Story

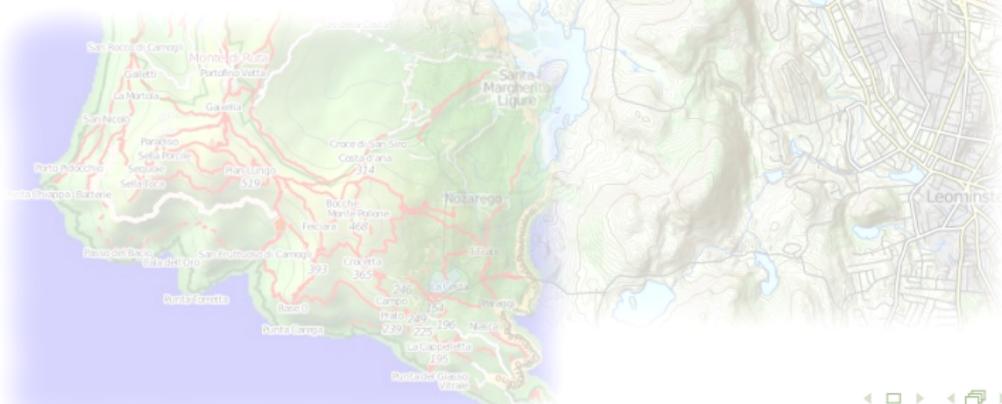
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- 2009: Humanitarian OpenStreetMap Team



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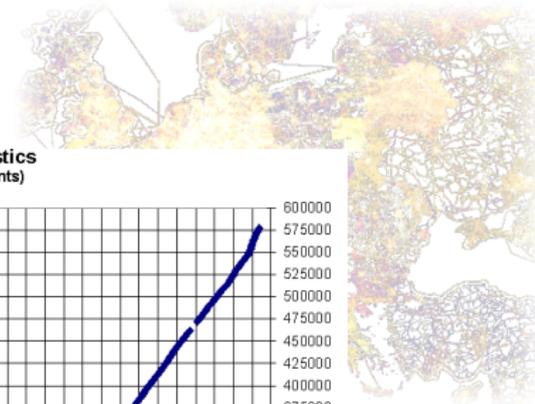
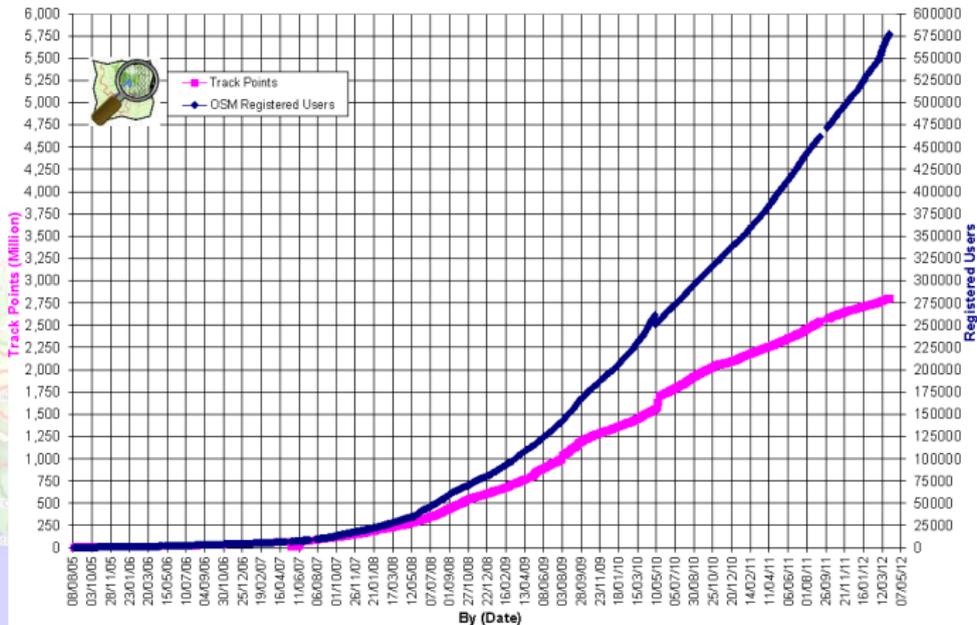
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- 2009: Humanitarian OpenStreetMap Team
- November 2011: 500.000 registered user

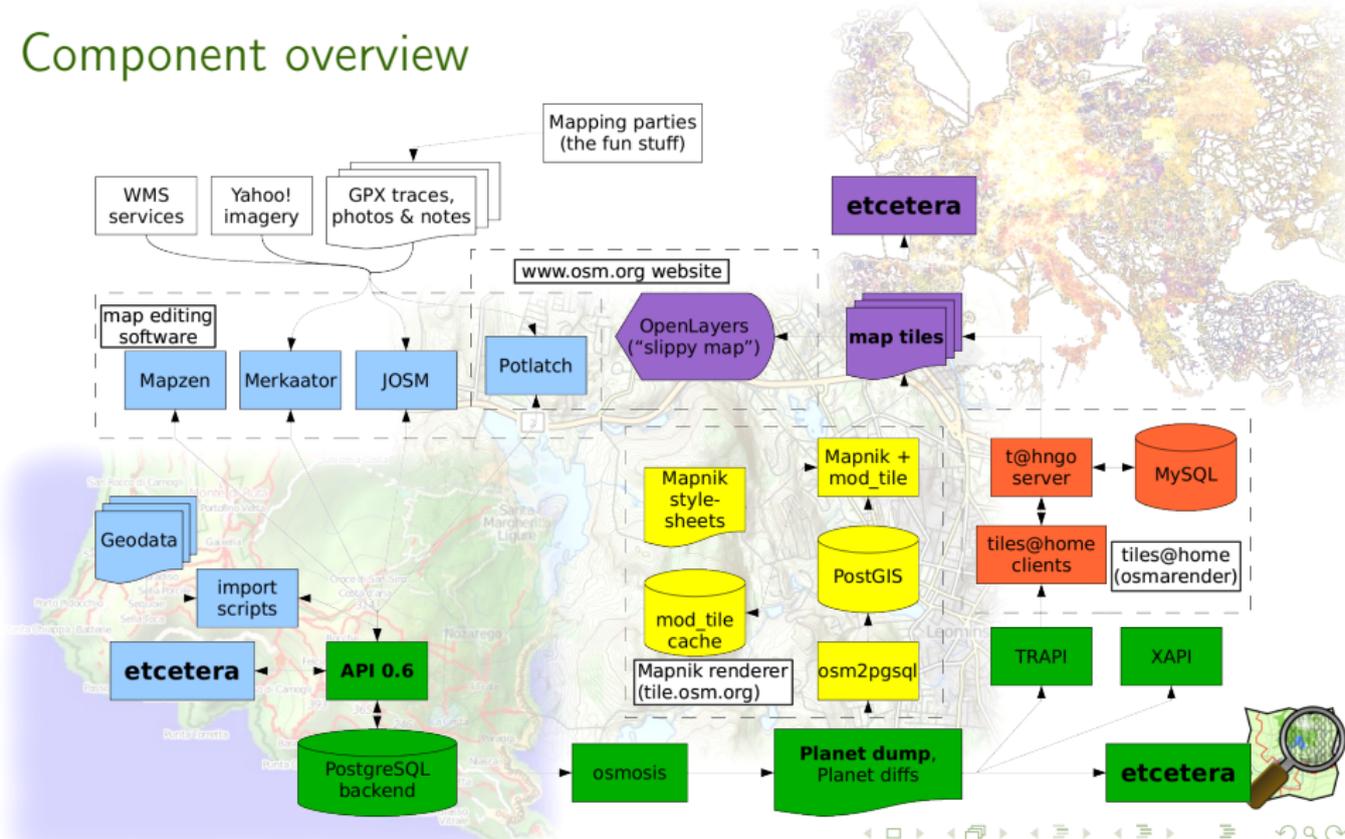


Introduction Story

OpenStreetMap Database Statistics
Users and User gpx Uploads (track points)



Component overview



Components

Quality check

Quality is one of more important element of OpenStreetMap ...



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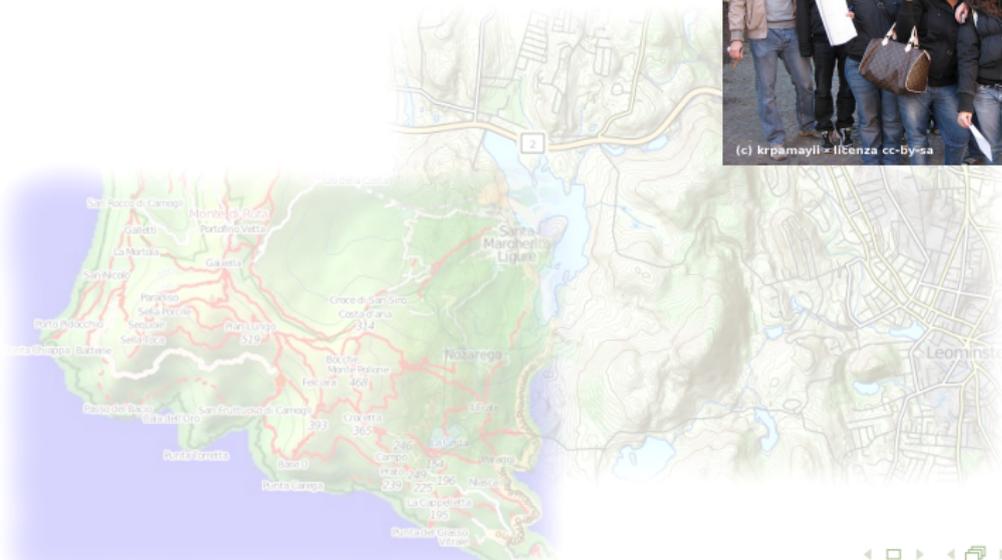
- trust, I can identify the user that did changes
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 - openstreetbugs, OWL, duplicate nodes, OSM Inspector
- scripts, for automatic fixing



Why contribute

Fun

- It's funny...



Why contribute

Fun

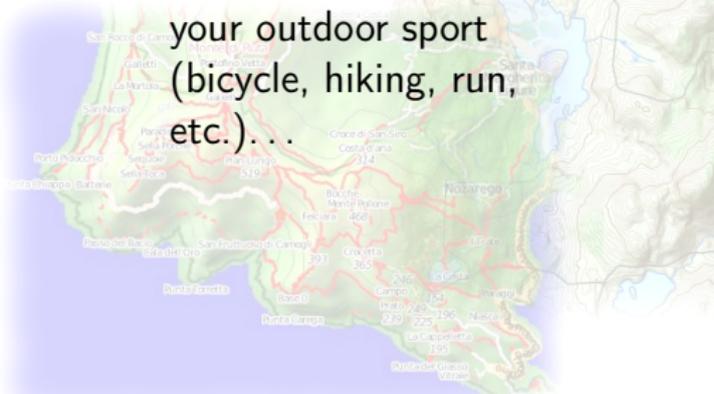
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- ... you can map during your outdoor sport (bicycle, hiking, run, etc.)...



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- ... Warning:
OpenStreetMap can create addicted people :-)



Why contribute

Humanitarian help

HOT = Humanitaria OpenStreetMap Team



(c) Erica 'junipermarie' - licenza cc-nc-sa



(c) Fairfax County Urban Search & Rescue Team



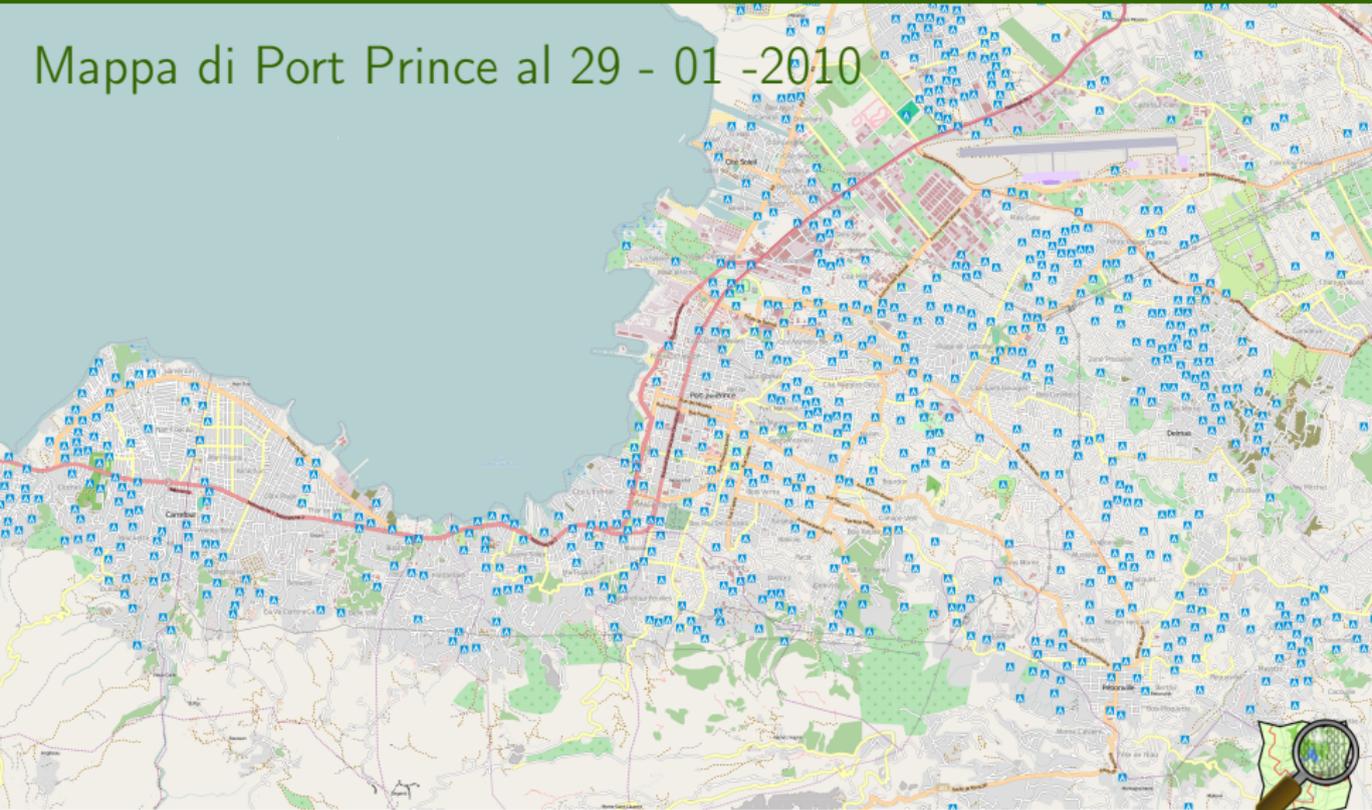
Mappa di Port Prince al 30 - 12 -2009



Introduction
Components
Why contribute
Use data
Community

Fun
Humanitarian help
Professional applications

Mappa di Port Prince al 29 - 01 - 2010



Mapa di Port Prince al 29 - 01 - 2010

MapAction coordinator

Without a doubt, OpenStreetMap has helped to save lives.

Introduction
Components
Why contribute
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Professional applications

Why contribute Humanitarian help

Japan



Why contribute

Professional applications

OpenStreetMap is increasingly used in commercial and professional applications.

<http://switch2osm.org>



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- routing applications

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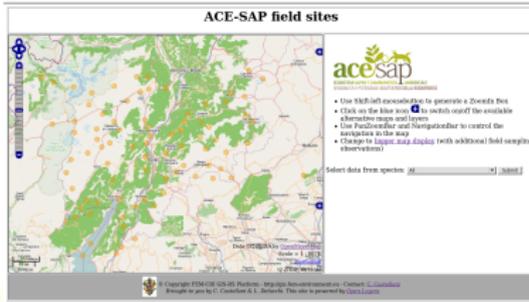
- replace proprietary solution for webGIS using OpenLayers/Leaflet libraries with several tiles repository
- routing applications
- mobile applications
- a lot analysis using raw data

<http://switch2osm.org>



Use data Web

ACES-SAP field sites

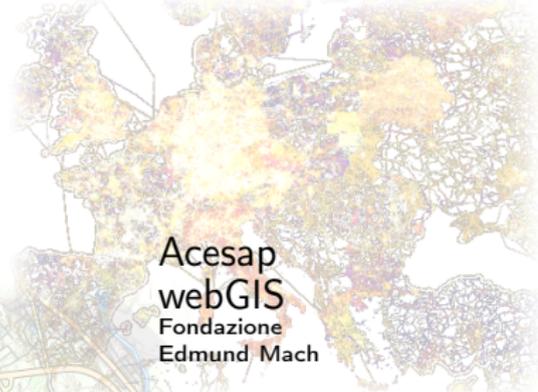


acesap
Ambiente e Salute per il territorio

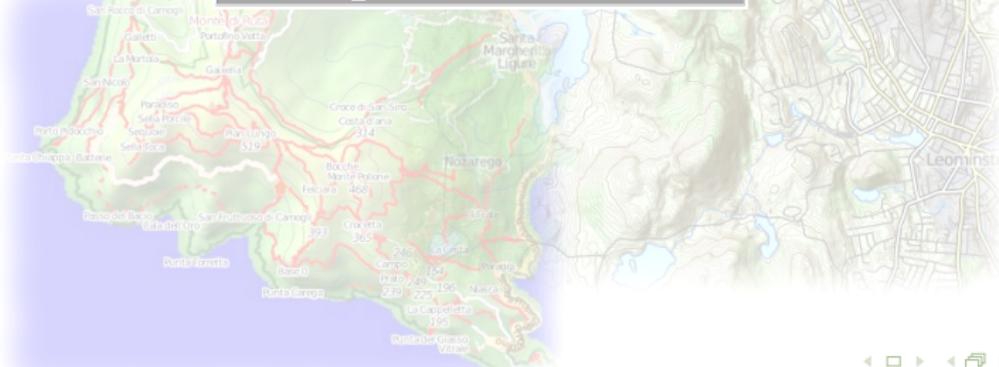
- Use the left hand menu to generate a Google Map
- Click on the blue site **6** to switch on/off the available alternative maps and layers
- Use **Facilities** and **Samples** toolbar to control the appearance of the map
- Change to **ACES-SAP display** (with additional field sampling observations)

Select data from species:

© Copyright FDM CR, IUS-IR, Pardini - All rights reserved. Contact: G. Lombardi
Brought to you by G. Lombardi & S. Bionchi. This site is powered by Google Maps.



Acesap
webGIS
Fondazione
Edmund Mach



Introduction
Why contribute
Use data
Community

Web
Base layer
Routing
Social

Use data Web

ACES-SAP field sites

acesap
Ambiente e Servizi per il Territorio

- Use the left hand navigation to generate a Overview Box
- Click on the blue site **6** to switch on/off the satellite
- Use **Fieldwork** and **Sampling** to control the acquisition of the data
- Change to **Input map display** (with additional field sampling observations)

Select data from species:

Copyright EDM OR, IUS-BO, Regione Liguria, GeoInformatica srl - Contact: info@acesap.it
Finanziato in parte da C. Cavadini & L. Bazzani. This site is powered by www.cav.it



Acesap
webGIS
Fondazione
Edmund Mach



WebGIS: Cavit

FONDAZIONE EDMUND MACH
ISTITUTO AGRARIO
DI SAN MICHELE ALL'ADIGE

Layer tree

- Cartografia di base
- Quantitative (Mapas rendering)
- Vaiuso
- Vaiuso (foto satellitare)
- Vigneti Cavit
- La geometria dei vigneti
- Informazioni sui vigneti
- Clad P.A.T. Sistema Informativo Ambiente e Territorio
- Comuni
- Idrografia
- Vie/Strade
- Vie/Strade del suolo

Legenda

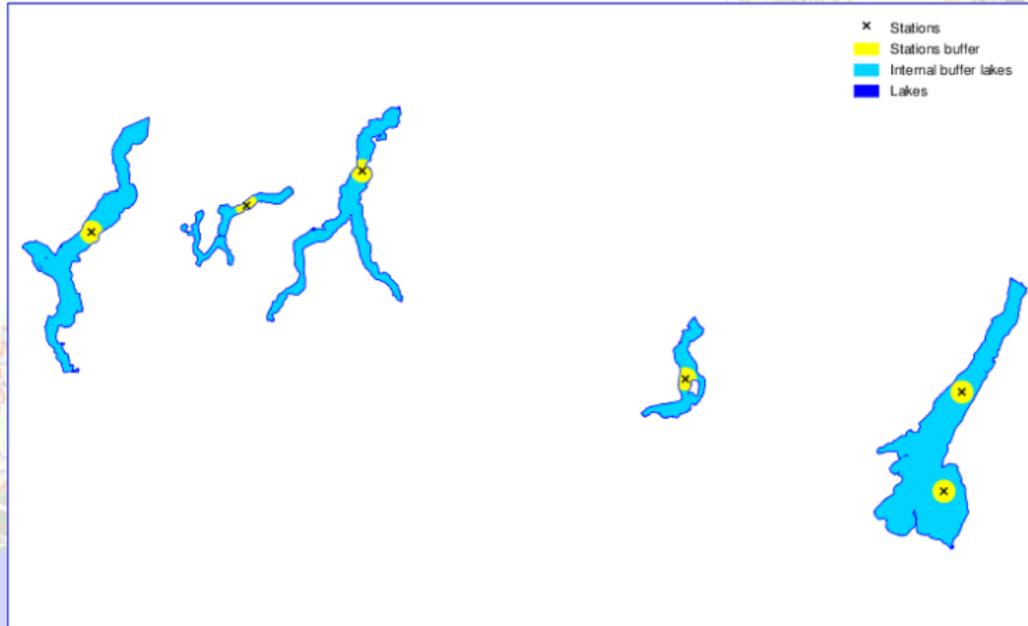
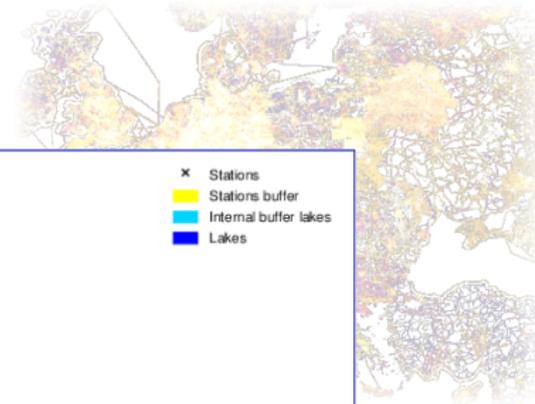
- Vigneti
- Strada del suolo

Developed by **GeoInformatica**
D. 48006-48 31006



Use data

Base layer



Fondazione Edmund Mach
Created by GRASS Cartographic Composer developed by Anna Kratochvilova



Use data Routing

Open Trip Planner opentripplanner.org

Trip Planner
PLAN A TRIP 9 AM TO BARROW ST

1. **Wed, Apr 7th 3:11 PM - Wed, Apr 7th 3:20 PM**
2. **Start at 9 AM**

Walk to SOUTH STREET

1. Walk southwest on 9 AV (0.1 mi)
2. Left at W 50 ST (0.2 mi)
3. Left on 8V SW (0.1 mi)

5:50PM E

3:58PM Depart SOUTH STREET (To World Trade Ctr)

3:24PM Arrive WEST 4 ST - UPPER LEVEL - WASHINGTON SQ

Walk to BARROW ST & W 4 ST

1. Walk southwest on W WASHINGTON PL (0.1 mi)

Buttons: **Reverse** **GO** **Map**

System Map



Use data Routing

Open Transit opentripplanner.org

Trip Planner

PLAN A TRIP 9 AM TO BARROW ST

Wk1: Apr 7th 3:11 PM - Wk5: Apr 7th 3:20 PM

Start at 9 AM

Walk to SOTH STREET

- Walk southwest on 9 AV (01.8)
- Left at W 50 ST (0.2 mi)
- Left on 89 AV (0.1)

Subway E

3:19 PM Depart SOTH STREET (To World Trade Ctr)

3:24 PM Arrive WEST 4 ST - UPPER LEVEL - WASHINGTON SQ

Walk to BARROW ST & W 4 ST

- Walk southwest on W WASHINGTON PL (0.1 mi)

Routes: GMap Image System Map



OpenTripPlanner

Wheelchair routing GIScience Heidelberg University

Route nach Pos@: 7.086973 50.737262
Route Bearbeiten

Informationen zur Strecke

- Strecke = 2063.7 m
- Gesamtzeit: 25 Minuten (bei 4km/h)

Nr. Fahrweisung	Distanz
1. Start (Nordwest)	3 m
2. Fahre links auf Arminiusstraße	117 m
3. Fahre links	98 m
4. Fahre rechts	19 m
5. Fahre rechts	95 m
6. Fahre rechts	119 m
7. Fahre rechts auf Husarenstraße	61 m
8. Fahre links auf Drauseindorfer Straße	174 m
9. Fahre rechts auf Kaiser-Karl-Ring	102 m
10. Fahre links auf Runarstraße	145 m

Karten und Daten: © OpenStreetMap and contributors.
CC-BY-SA



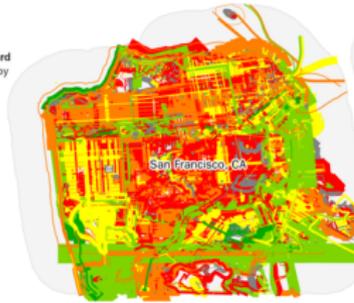
Use data

Social

Community score card

- 95% of edits done by 12% of users
- 9% untouched TIGER
- 4.8 avg version increase of TIGER roads
- 8.3% of features touched in last 3 months, 40% in last year

77°



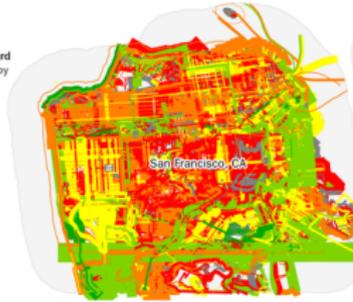
OpenStreetMap
Temperature
Martijn van Exel



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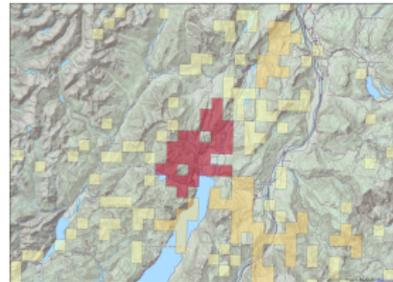


77°

OpenStreetMap MPV Maurizio Napolitano (Napò)



OpenStreetMap Temperature Martijn van Exel



Some links

www.openstreetmap.org

mail: http://wiki.openstreetmap.org/wiki/Mailing_lists

irc: <http://wiki.openstreetmap.org/wiki/IRC>

wiki: <http://wiki.openstreetmap.org/wiki>

forum: <http://forum.openstreetmap.org/>

help: <http://help.openstreetmap.org/>

research: <http://wiki.openstreetmap.org/wiki/Research>



