Wikipedia maps

*Integrating OpenStreetMap*

Project team: Ævar Arnfjörð Bjarmason, Christian Becker, Jens Frank, Daniel Kinzler, Sven Anders, Tim Alder, Tim Bartel, Aude, and others.

http://meta.wikimedia.org/wiki/OpenStreetMap
Maps on Wikipedia

Approximately 25% of articles on Wikipedia have or could use a map

- Place articles need locator maps (20%)

Biography (29%)
Places (20%)
Culture (19%)
Species (6%)
Sports (5%)
Science (3%)
Politics (3%)
Military (3%)
Other …

Survey of 250 English Wikipedia articles, via Special:Random
Wikipedia places

Survey of 250 English Wikipedia articles, via Special:Random
Locator maps

Fenwick, Connecticut
From Wikipedia, the free encyclopedia

Fenwick is a borough in Middlesex County, Connecticut, United States, in the town of Old Saybrook. The population was 52 at the 2000 census, making it the least populous municipality in Connecticut. It is considered one of the most prestigious summer colonies in the country.

Contents
1 Description
2 Geography
3 Demographics
4 References

Description

Fenwick is set apart from the town of Old Saybrook by a large cove over a causeway. It is located exactly where the Connecticut River meets the Long Island Sound. Most residents are related, and there is a strong sense of family bonds that have existed since the 1600s. Fenwick was the lifelong home to actress Katharine Hepburn until she died on June 29, 2003 at the age of 96. Actress Rosemary Murphy, New York City mayor John Lindsay, and several members of the Whitney family have also lived there at one time or another.

Fenwick has two lighthouses, the Inner and the Outer. The Inner is at the tip of Lynde Point. Fenwick's peninsula, and the Outer is a quarter mile offshore, connected by a rough jetty. The Outer Light is the lighthouse shown on many Connecticut license plates.

There is a single public beach about a quarter of a mile away from the lighthouse. The beach is open weekdays, weekends, and some holidays. There are lifeguards there until 5:00 on all days.

Fenwick also contains a public 9 hole golf course, public clay tennis courts, and a boating club.

http://en.wikipedia.org/wiki/Fenwick,_Connecticut (CC-BY-SA 3.0)
Thematic maps

Northern Bald Ibis

From Wikipedia, the free encyclopedia

The Northern Bald Ibis, Hermit Ibis, or Waldrapp (Geronticus eremita) is a bird found in barren, semi-desert or rocky habitats, often close to running water, although unlike other ibises it does not wade. This 70–80 cm (26–31 in) glossy black ibis has an unfeathered red face and head, and a long, curved red bill. It breeds colonially on coastal or mountain cliff ledges, where it lays 2–3 eggs in a stick nest, and feeds on lizards, insects, and other small animals.

The Northern Bald Ibis was once widespread across the Middle East, northern Africa and southern Europe, with a fossil record dating back at least 1.8 million years. It disappeared from Europe over 300 years ago, and is now critically endangered: there are only around 500 wild birds in southern Morocco, and fewer than ten in Syria, where it was rediscovered in 2002. The reasons for its long-term decline are unclear, but hunting, loss of foraging habitat, and pesticide poisoning have been implicated in the rapid loss of colonies in recent decades.

This ibis was migratory, wintering well south of its breeding areas, although the current wild Moroccan population is resident year-round. This species is common in zoos, and there are reintroduction schemes at a semi-wild breeding colony in Turkey, and at sites in Austria, Spain and northern Morocco.

http://en.wikipedia.org/wiki/Northern_Bald_Ibis (CC-BY-SA 3.0)
Thematic maps

Habitat and range

Unlike other ibises, which nest in trees and feed in wetlands, the Northern Bald Ibis breeds on undisturbed cliff ledges, and forages for food in irregularly cultivated, grazed dry areas such as semi-arid steppes, and fallow fields. The close proximity of adequate steppe feeding areas to breeding cliffs is an important habitat requirement. [2]

The Northern Bald Ibis was once widespread across the Middle East, northern Africa, and southern Europe; it bred along the Danube and Rhone Rivers, and in the mountains of Spain, Italy, Germany, Austria, and Switzerland (Gessner's original description was of a Swiss bird). [23] It used castle battlements as well as cliff ledges for nesting before vanishing from Europe at least three centuries ago. [24] It is also extinct over most of its former range, and now almost the entirety of the wild breeding population of just over 500 birds is in Morocco, at Souss-Massa National Park, where there are three documented colonies, and near the mouth of the Oued Tamri (north of Agadir), where there is a single colony containing almost half the Moroccan breeding population. There is some movement of birds between these two sites. [1]

Religious traditions helped this species to survive in one Turkish colony long after the species had disappeared from Europe, since it was believed that the ibis migrated each year to guide Haj pilgrims to Mecca. The ibis was protected by its religious significance, and a festival was held annually to celebrate its return north. [24] The Turkish ibis population was centred near the small town of Birecik in the south east of the country, and during the first half of the twentieth century, the Birecik colony maintained a relatively stable population of about 500 breeding pairs, reaching an estimated total population of about 3,000 around 1950. By the 1970s, numbers had drastically declined and a captive breeding program was initiated in 1977 with one adult pair and nine chicks taken from the wild. This program largely failed to revert the decline; there were 400 birds in 1982, five pairs in 1985 and seven pairs in 1987. Only three birds returned from their wintering grounds in 1989, and just one in 1990. The returning birds died before they could reproduce, thus rendering the species extinct in the wild in Turkey as of 1992. Once the wild Turkish population became non-viable, the colony was maintained as a flock which was free-flying for most of the year but caged in autumn to prevent migration. [25]

After the demise of the migratory Turkish colony, the Northern Bald Ibis was known to survive in the wild only at the Moroccan sites, although occasional sightings of birds in Yemen, Eritrea, Saudi Arabia and Israel during the 1980s and 1990s suggested that there was still a colony somewhere in the Middle East. [28] Intensive field surveys in spring 2002, based on the knowledge of Bedouin nomads and local hunters, revealed that the species had never become completely extinct on the Syrian desert steppes. Following systematic searches, 15 old nesting sites were found, one, near Palmyra, was still hosting an active breeding colony of seven individuals. [16][29][30] Although the ibis had been declared extinct in Syria more than 70 years earlier, the bird appears to have been relatively common in the desert areas until 20 years ago, when a combination of overexploitation of its range lands and increasing hunting pressures initiated a dramatic decline. [29][30]

The Moroccan breeding birds are resident, dispersing along the coast after the nesting season. It has been suggested that coastal fog provides extra moisture for this population, and enables the ibises to remain year-round. [1] In the rest of its former range, away from the Moroccan coastal locations, the Northern Bald Ibis migrated south for the winter, and formerly occurred as a vagrant to Spain, Iraq, Egypt, the Azores and Cape Verde. [19]

Satellite tagging of 13 Syrian birds in 2006 showed that the three adults in the group, plus a fourth untagged adult, wintered together from February to July in the highlands of Ethiopia, where the species had not been recorded for nearly 30 years. They travelled south on the eastern side of the Red Sea via Saudi Arabia and Yemen, and returned north through Sudan and Eritrea. [26][27]

http://en.wikipedia.org/wiki/Northern_Bald_Ibis (CC-BY-SA 3.0)
Thematic maps

Automated maps on Wikipedia

March 2009:

The German Wikimedia chapter announced they would provide funding to purchase three servers to use for integrating OpenStreetMap with Wikipedia.

- Database server to host copy of OSM data
- Rendering server to generate tiles and maps
- Map toolserver for development and experimental projects
Back-end

OSM → Wikimedia-OSM database server
* PostgreSQL

Wikimedia-OSM rendering server
* Mapnik rendering
* Generate tiles
* Static maps

SlippyMap MediaWiki extension
* Add to wiki pages

Wikimedia squid caching

Wikipedia users
Front-end

Slippy Map / Open Layers MediaWiki extension

Embed maps in wiki pages, where <slippymap> tag is used:

- Maps are static images by default (generated server-side using Mapnik)

- Interactive maps can be activated by clicking on map (tiles generated server-side with Mapnik, with interactivity and map layers assembled client-side with OpenLayers JavaScript library)
OSM – not ideal?

Default OSM maps are not ideal for some wiki articles.

- Default OSM styling focuses on set list of features
- Does not include terrain shading, which may be appropriate for maps of natural features and phenomena.
- Not suitable for thematic (e.g. choropleth / statistical) maps
Future - Custom maps

- Each set of map styles or layers (e.g. satellite, OSM) with full global coverage and zoom levels requires substantial disk storage space for all the map tiles.

- We are limited in the number of custom styles that we can provide with full global coverage and zoom levels.

- But, Default OSM maps are not ideal for some wiki articles.

- With the PostgreSQL and rendering infrastructure in place, it will be possible to provide custom map making tools for maps with limited spatial coverage and zoom levels.
Future - Base map options

Provide a number of base map layers

OpenStreetMap (default base layer)
  - Mapnik?
  - OpenLayers vector rendering?

Satellite imagery (optional)

Political boundaries for thematic (statistical) maps

Terrain hillshading
Future - Base map options

Satellite imagery

Landsat
- global coverage to 83 N / 83 S
- 15 meter monochromatic resolution

Blue Marble
- global composite from MODIS (2004)
- lower resolution, true color mosaic

Aerial imagery
- NAPP (national aerial photography program)
- U.S. only
- One meter resolution
- Possibly other sources?
MapMaker – base layers

Wiki MapMaker

Make a map:  >>> Select base layer  >>> Set parameters  >>> Select overlays  >>> Generate map  >>> Preview in wiki page  >>> Add to wiki page

Map title

Author

Base Layers
- Boundaries
- OpenStreetMap
- Blue Marble

Next >>
MapMaker – parameters

Parameters
Center
Latitude: -34.600000  Longitude: -58.435417
Zoom level
8
MapMaker – overlays

Map overlays:

- WMS layers
- Vector layers (points, lines, polygons)
  - KML
  - Shapefiles
  - GML
  - WFS
- Markers

Data sources:

- http://www.data.gov - earthquakes, weather, census data …
- other remote sites (like pulling videos from Internet Archive)
- user uploaded data?
MapMaker – map stylesheet

Generate map style sheet, containing:

- Map base layer
- Parameters
- Overlays
- Styling information
MapMaker – generate map

Generate map from style sheet:

- Static map generated with Mapnik

- Interactive, but limited zoom maps, with OpenLayers for statistical maps, with mouseovers

- Add to Wikimedia Commons and make available

- Users can add to wiki pages

- If tied to live dataset (e.g. earthquakes), allow updated maps to be generated on a schedule?
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