Marine Megafauna Data for EU Digital Twin Ocean

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Sea Watch Foundation

- Established > 30 years

- Purpose to improve conservation and protection of marine mammals.

- Dedicated research projects monitoring cetaceans, seals and other marine megafauna (e.g. sea turtles, sharks, tuna and sunfish).

- Geographic coverage focuses on the North Sea, English Channel, West Scotland, Celtic and Irish Seas, but also includes Norwegian Sea and Bay of Biscay.

Data Sources

- Historic sightings (from 1960 onwards) **
    - >335,000 records, ~4000 observers
    - largest and longest running database of its kind in Europe

- SWF Website – casual sightings **

- External sightings data **

- Marine Ecosystems Research Programme (MERP) & Poseidon Project data collations. **

- **Seawatcher App** (Android & iOS, since 2020)
    - Data stored on cloud-based database on AWS (**SWA-db**).

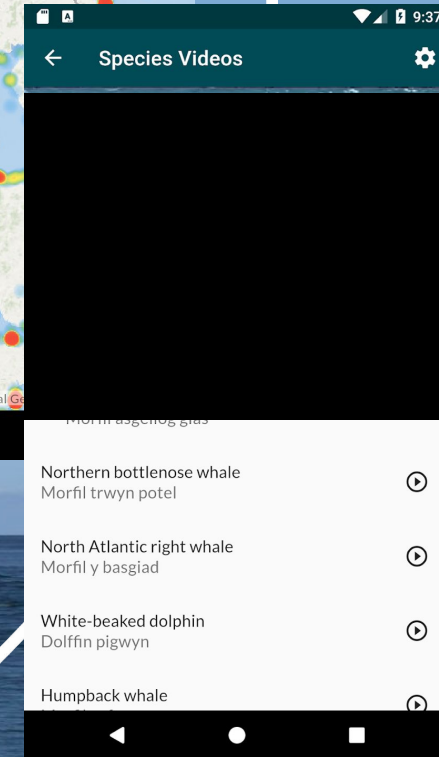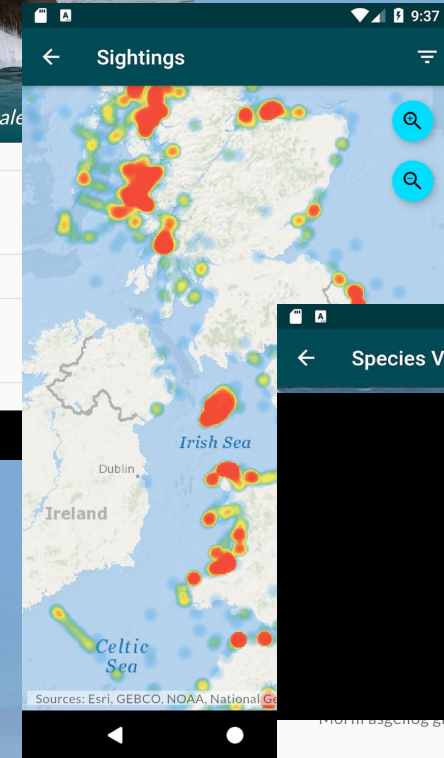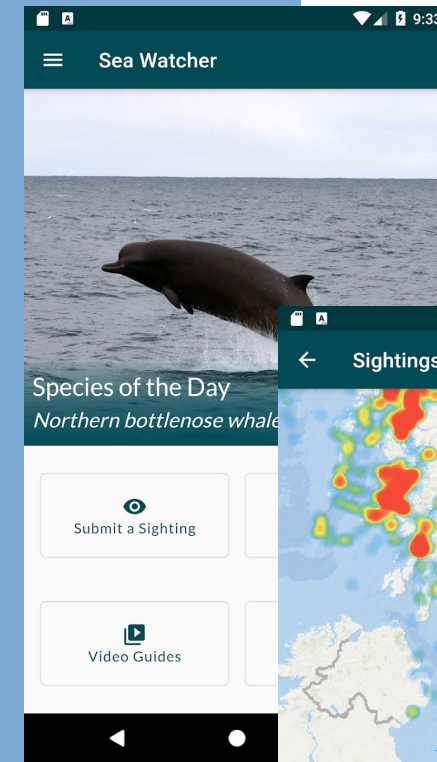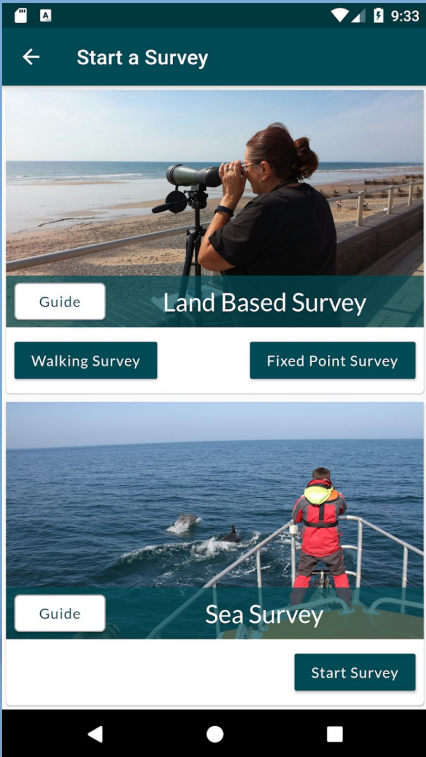** offline media: CSV, spreadsheets, Access database

DTO-BioFlow Project

- Develop a common point of data ingestion for all future and historic data
    - Develop a web-based data management system for the Seawatcher App
    - Develop data quality control reports and mechanisms
    - Develop a new webform for casual sightings

- Consolidate all offline data
     All SWF data in single cloud-based database (developed from Seawatcher App db)

- Develop two automated API based data flow pipelines from SWA-db
    - Effort-based cetacean data into JCDP (from where it will go to EDITO)
    - Sightings only data for all species into EMODnet Biology.

- Data delivery to EMODnet Biology & ICES JCDP
    - Once established the data flows will send historic and future data (after QA checking)

Sea Watcher App

- App developed by Imardis group at Bangor University

- First released in 2020

- Resources:
  - Species fact sheets, Video guides, Codes of conduct, Abundance maps etc

- Casual sightings – citizen science

- Surveys – effort-based observations

Sightings Data from App

- Users: ~2000 downloads, ~600 observers

- Sightings: ~7,000

- Surveys: Sea: 950, Land: 957, Walking: 238

- Species (listed in order of abundance):
  - Common (>200 sightings):
    - Harbour porpoise, Common dolphin, Bottlenose dolphin, Grey seal, Minke whale, Risso's dolphin,
  - Less common (20-200 sightings):
    - Harbour seal, Killer whale, Basking shark, White-beaked dolphin, Humpback whale, Ocean sunfish, Atlantic white-sided dolphin,
  - Uncommon (<20 sightings):
    - Fin whale, Sei whale, Long-finned pilot whale, Leatherback turtle, Striped dolphin, Sperm whale, Cuvier's beaked whale, Sowerby's beaked whale, North Atlantic right whale, Northern bottlenose dolphin