



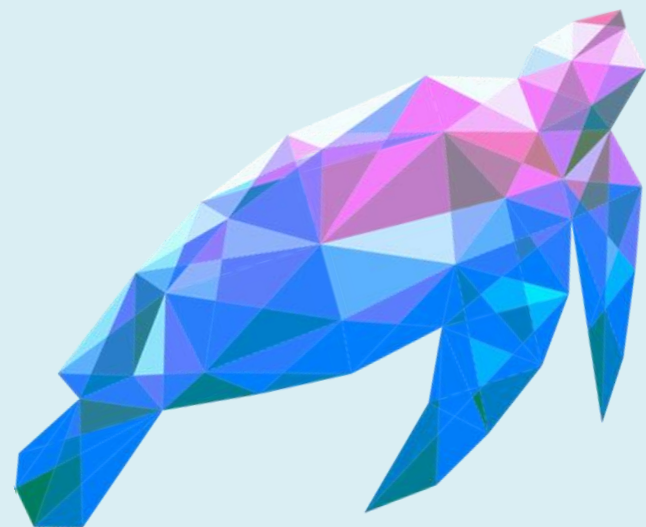
LIFE CONCEPTU MARIS

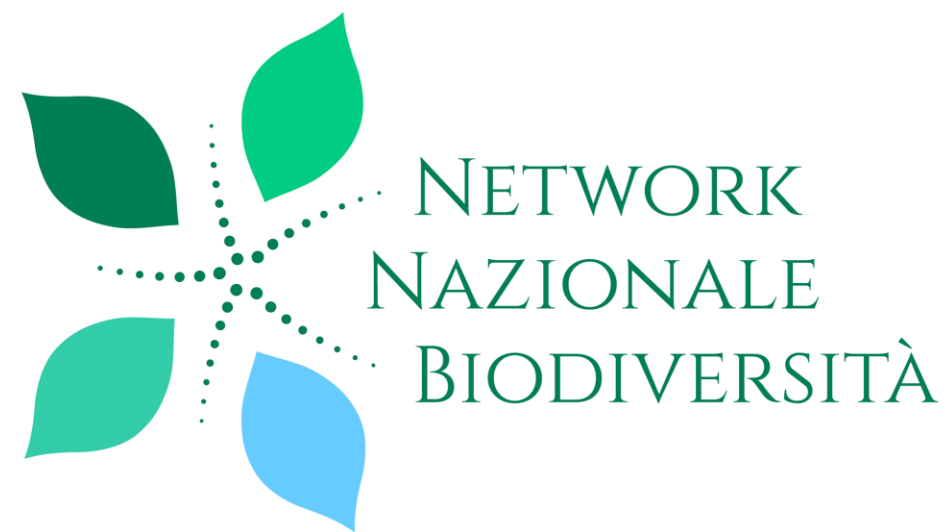
LIFE20 NAT/IT/001371

“CONservation of CEtaceans and Pelagic sea TUrtles in Med Managing Actions for their Recovery In Sustainability”

Il ruolo del Network Nazionale della Biodiversità nella gestione dei dati storici e futuri delle attività di monitoraggio

Roma, 16 Maggio 2023

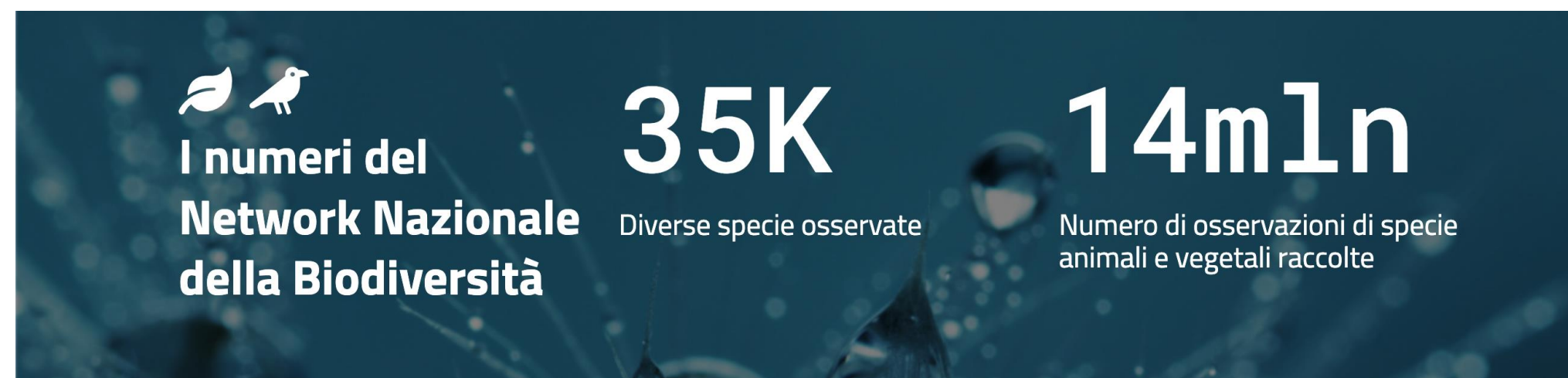




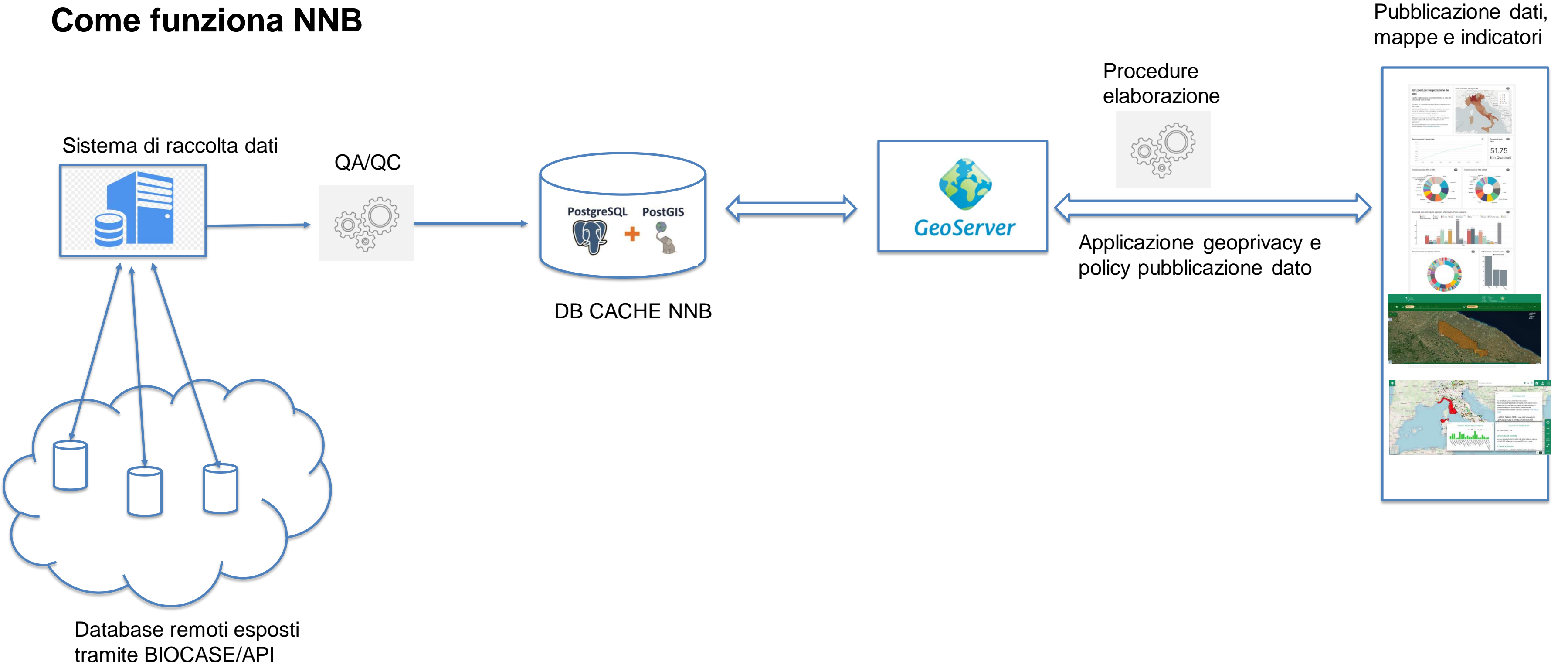
Il Network Nazionale della Biodiversità a supporto della Strategia Nazionale per la Biodiversità

Il Ministero dell'Ambiente e della Sicurezza Energetica (MASE) ha promosso il progetto "Network Nazionale della Biodiversità" che svolge una forte azione corale a supporto della Strategia Nazionale per la Biodiversità.

NNB fornisce e gestisce le informazioni in tema di biodiversità relative al territorio nazionale attraverso un sistema a rete che prevede il popolamento continuo di dati di rilievo, ai fini della loro condivisione, in possesso da enti nazionali e regionali, inclusi gli Enti di ricerca.



Come funziona NNB



Il sistema realizzato nel progetto LIFE Conceptu Maris

Applicazione web per la gestione dei dati

Conceptu Maris

Menu items: CC, Main, Naval, Os, OsOff, Provider, Sight, Track, Weather.

List Track

Cod Effort	Date	Time	Time Effective
SVNI_0001	2018-11-09	14:34:39	14:34:39
SVNI_0001	2018-11-09	14:34:53	14:34:53
SVNI_0001	2018-11-09	14:35:27	14:35:27
SVNI_0001	2018-11-09	14:36:37	14:36:37
SVNI_0001	2018-11-09	14:38:46	14:38:46

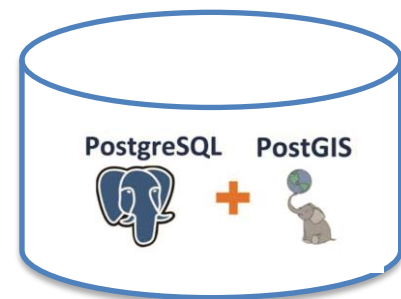
Endpoint OpenAPI per interoperabilità

CCModelApi

- GET /api/v1/ccmodelapi/
- POST /api/v1/ccmodelapi/
- GET /api/v1/ccmodelapi/_info
- DELETE /api/v1/ccmodelapi/{pk}
- GET /api/v1/ccmodelapi/{pk}
- PUT /api/v1/ccmodelapi/{pk}

MainModelApi

- GET /api/v1/mainmodelapi/
- POST /api/v1/mainmodelapi/



Banca dati geografica condivisa con NNB

GeoNode

Map showing tracks in the Ligurian Sea region.

Sighting Data:

- sight_species: S.coerulealba
- sight_min_n: 10
- sight_max_n: 20
- sight_best: 15
- sight_juv_n: 0
- sight_distance: 0
- sight_angle: 0
- sight_swim_direction: 280
- sight_response_ship: Ind
- sight_behaviour: 0
- sight_sup_behaviour: 0
- sight_note: 0
- sight_photo: false
- sight_collision: false
- sight_near_collision: false
- sight_edna: false
- os_shipside: 0
- os_observer: 0

ALCE Species (Bar chart showing sightings over time)

Total kilometers per transect (Bar chart showing distance per transect)

Species per transect (Table showing species counts per transect)

metric	Mean number of sights
sight_species	11
B.physalis	1
D.rosalia	1
G.grievus	1
O.mellis	1
Large	1
O.oncas	1
F.macrocephalus	1
S.coerulealba	11

Il processo di realizzazione del sistema

1) Analisi dati
esistenti su
Excel

2) Definizione
del modello dati

3) Trasformazione
e pulizia Excel

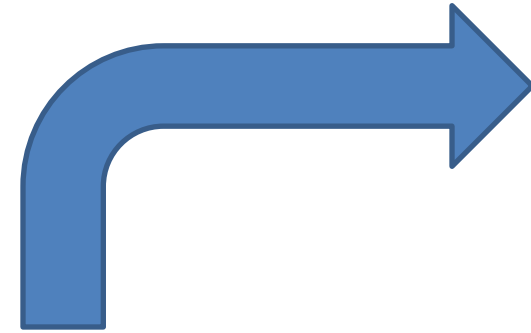
4) Procedura di
caricamento e
controllo qualità

5) Realizzazione
interfaccia web
di gestione dati
e Open API

6) Generazione
mappe,
indicatori,
servizi OGC

Apertura, standardizzazione e miglioramento dei dati

1) Analisi dati esistenti su Excel



Source	Lat	Lon	Date	Month	Year	Time-1	Time-2	COD_Effort	ID_Transect	Survey_N	Section	Cod points	Sea state	Speed	Directic
GPS SHIP	39,15385	20,31155	2014-12-14	12	2014	8:34	9:34	ANPA_0001	ANPA	0001		BEG	1	24,60	SE
GPS SHIP	39,08281667	20,33383333	2014-12-14	12	2014	8:45	9:45	ANPA_0001	ANPA	0001		NAV	1	24,60	SE
GPS SHIP	38,96263333	20,36781667	2014-12-14	12	2014	9:03	10:03	ANPA_0001	ANPA	0001		MET	1	25,20	SE
GPS SHIP	38,75383333	20,43253333	2014-12-14	12	2014	9:36	10:36	ANPA_0001	ANPA	0001		NAV	1	25,20	SE
GPS SHIP	38,6235	20,48355	2014-12-14	12	2014	9:53	10:53	ANPA_0001	ANPA	0001		AVV	1	25,20	SE
GPS SHIP	38,55036667	20,53711667	2014-12-14	12	2014	10:05	11:05	ANPA_0001	ANPA	0001		MET	1	24,60	W
eTrex 10	38,546484	20,549157	2014-12-14	12	2014	10:19:35		ANPA_0001	ANPA	0001			1	24,60	W
eTrex 10	38,545800	20,552463	2014-12-14	12	2014	10:19:56		ANPA_0001	ANPA	0001			1	24,60	W
eTrex 10	38,545345	20,554939	2014-12-14	12	2014	10:20:12		ANPA_0001	ANPA	0001			1	24,60	W
eTrex 10	38,544845	20,557467	2014-12-14	12	2014	10:20:28		ANPA_0001	ANPA	0001			1	24,60	W
eTrex 10	38,544421	20,559819	2014-12-14	12	2014	10:20:44		ANPA_0001	ANPA	0001			1	24,60	W
eTrex 10	38,544140	20,561911	2014-12-14	12	2014	10:20:58		ANPA_0001	ANPA	0001			1	24,60	W
eTrex 10	38,543676	20,564235	2014-12-14	12	2014	10:21:13		ANPA_0001	ANPA	0001			1	24,60	W
eTrex 10	38,543199	20,567238	2014-12-14	12	2014	10:21:33		ANPA_0001	ANPA	0001			1	24,60	W
eTrex 10	38,542423	20,571510	2014-12-14	12	2014	10:22:01		ANPA_0001	ANPA	0001			1	24,60	W
eTrex 10	38,541750	20,574959	2014-12-14	12	2014	10:22:24		ANPA_0001	ANPA	0001			1	24,60	W
eTrex 10	38,541017	20,578645	2014-12-14	12	2014	10:22:48		ANPA_0001	ANPA	0001			1	24,60	W
eTrex 10	38,540376	20,582132	2014-12-14	12	2014	10:23:11		ANPA_0001	ANPA	0001			1	24,60	W
eTrex 10	38,539687	20,585967	2014-12-14	12	2014	10:23:36		ANPA_0001	ANPA	0001			1	24,60	W
eTrex 10	38,538918	20,589901	2014-12-14	12	2014	10:24:02		ANPA_0001	ANPA	0001			1	24,60	W
eTrex 10	38,538259	20,593737	2014-12-14	12	2014	10:24:27		ANPA_0001	ANPA	0001			1	24,60	W
eTrex 10	38,537348	20,598342	2014-12-14	12	2014	10:24:57		ANPA_0001	ANPA	0001			1	24,60	W

track: tabella con i punti navi come registrati da GPS

weather: tabella con informazioni relative alle condizioni meteo

naval: informazioni sul traffico marittimo

sight: tabella con informazioni sugli avvistamenti di cetacei

sight_off: tabella con informazioni sugli avvistamenti di cetacei prese in assenza di una track della nave

os: tabella con informazioni sugli avvistamenti di altre specie

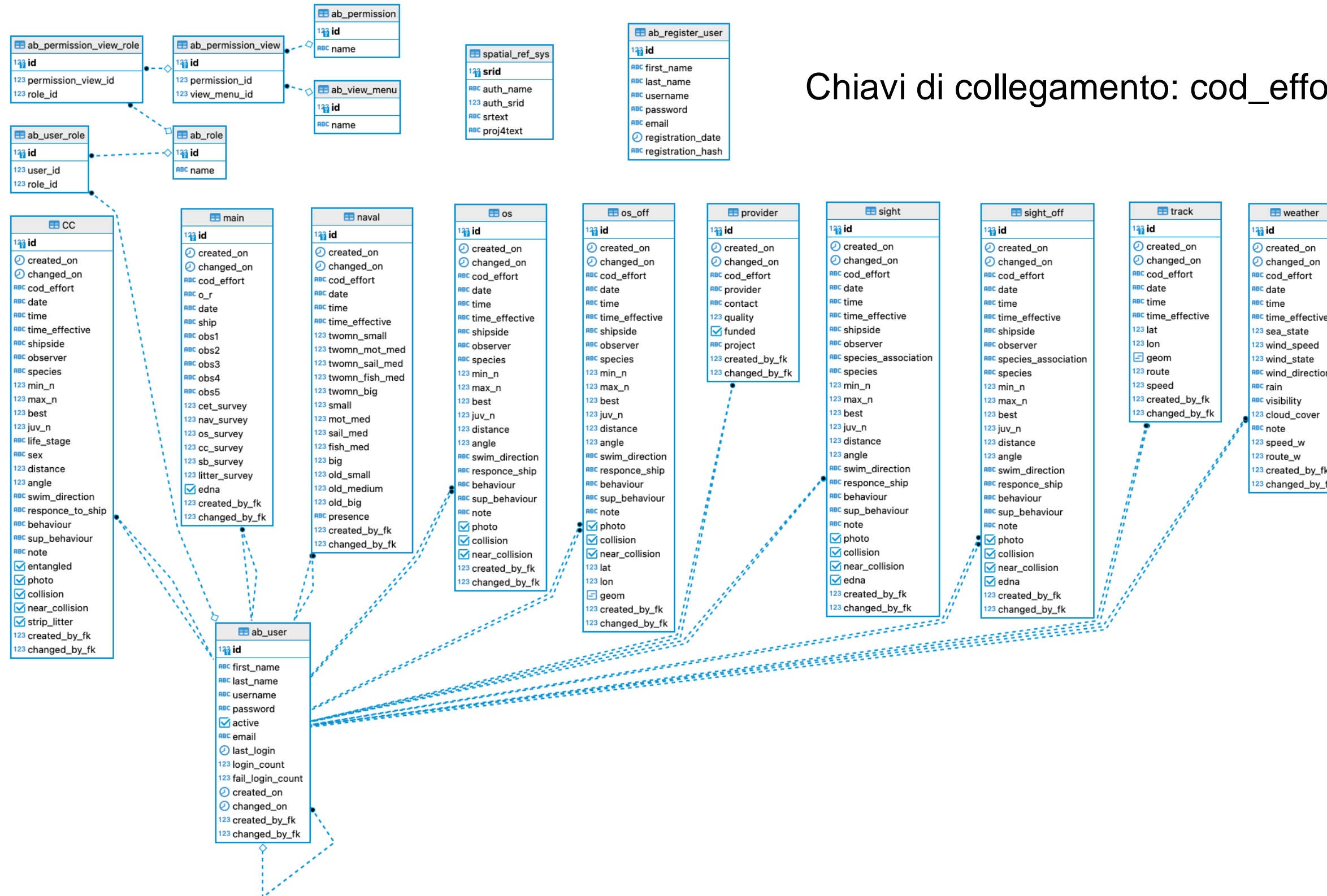
os_off: tabella con informazioni sugli avvistamenti di altre specie prese in assenza di una track della nave

main: tabella generica che contiene informazioni sul survey

cc: tabella con informazioni sugli avvistamenti di tartarughe

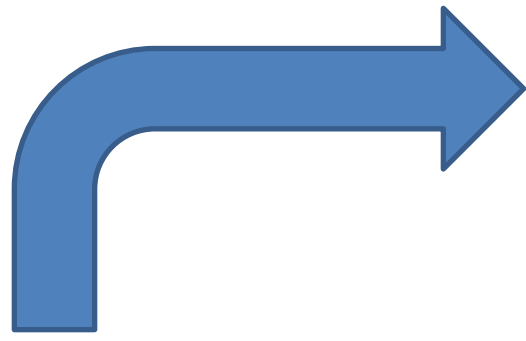
provider: tabella generica che contiene informazioni sul fornitore del dato per ciascun survey

2) Definizione del modello dati



Chiavi di collegamento: cod_effort, date, time_effective

3) Trasformazione e pulizia Excel



Source	Lat	Lon	ns1.time2	Date	Month	Year	Time-1	ime effectiv	COD_Effort	ID_Transect	Survey_N	Section	Cod points	Sea state	Speed	Ind Directic
1	39.15385	20.31155		2014-12-14	12	2014	8:34	9:34	ANPA_0001	ANPA	0001	BEG	1	24,60	SE	
2	39.08281667	20.33883333		2014-12-14	12	2014	8:45	9:45	ANPA_0001	ANPA	0001	NAV	1	24,60	SE	
3	38.96263333	20.36781667		2014-12-14	12	2014	9:03	10:03	ANPA_0001	ANPA	0001	MET	1	25,20	SE	
4	38.75383333	20.42533333		2014-12-14	12	2014	9:26	10:26	ANPA_0001	ANPA	0001	NAV	1	25,20	SE	
5	38.6235	20.48355		2014-12-14	12	2014	9:53	10:53	ANPA_0001	ANPA	0001	AVV	1	25,20	SE	
6	38.55036667	20.53711667		2014-12-14	12	2014	10:05	11:05	ANPA_0001	ANPA	0001	MET	1	24,60	W	
7	38.546484	20.549157		2014-12-14	12	2014	10:19:35		ANPA_0001	ANPA	0001		1	24,60	W	
8	38.545800	20.552463		2014-12-14	12	2014	10:19:56		ANPA_0001	ANPA	0001		1	24,60	W	
9	38.545345	20.554939		2014-12-14	12	2014	10:20:12		ANPA_0001	ANPA	0001		1	24,60	W	
10	38.544845	20.557467		2014-12-14	12	2014	10:20:28		ANPA_0001	ANPA	0001		1	24,60	W	
11	38.544421	20.559819		2014-12-14	12	2014	10:20:44		ANPA_0001	ANPA	0001		1	24,60	W	
12	38.544140	20.561911		2014-12-14	12	2014	10:20:58		ANPA_0001	ANPA	0001		1	24,60	W	
13	38.543676	20.564235		2014-12-14	12	2014	10:21:13		ANPA_0001	ANPA	0001		1	24,60	W	
14	38.543199	20.567238		2014-12-14	12	2014	10:21:33		ANPA_0001	ANPA	0001		1	24,60	W	
15	38.542423	20.571510		2014-12-14	12	2014	10:22:01		ANPA_0001	ANPA	0001		1	24,60	W	
16	38.541750	20.574959		2014-12-14	12	2014	10:22:24		ANPA_0001	ANPA	0001		1	24,60	W	
17	38.541017	20.578645		2014-12-14	12	2014	10:22:48		ANPA_0001	ANPA	0001		1	24,60	W	
18	38.540376	20.582132		2014-12-14	12	2014	10:23:11		ANPA_0001	ANPA	0001		1	24,60	W	
19	38.539687	20.585967		2014-12-14	12	2014	10:23:36		ANPA_0001	ANPA	0001		1	24,60	W	
20	38.538918	20.589901		2014-12-14	12	2014	10:24:02		ANPA_0001	ANPA	0001		1	24,60	W	
21	38.538259	20.593737		2014-12-14	12	2014	10:24:27		ANPA_0001	ANPA	0001		1	24,60	W	
22	38.537348	20.598342		2014-12-14	12	2014	10:24:57		ANPA_0001	ANPA	0001		1	24,60	W	

```
cc_CBAR.csv
1 COD_Effort;date;time;time_effective;ShipSide;Observer;Species;Min_N;Max_N;Best;juv_n;Life_stage;Sex;Distance;Angle;Swim
direction_orientation;Responce to ship;Behaviour;Sup behaviour;note;Entangled;photo;Likely Collision;Near collision;Strip_litter;;
2 CBAR_0045;2013-04-18;;07:39:00;;;Caretta caretta;;;1;;;;;;false;false;false;false;false;;
3 CBAR_0045;2013-04-18;;10:35:03;;;Caretta caretta;;;1;;;;;;false;false;false;false;false;;
4 CBAR_0045;2013-04-18;;11:17:31;;;Caretta caretta;;;2;;;;;;false;false;false;false;false;;
5 CBAR_0055;2013-06-12;;14:45:14;R;Caretta caretta;;;1;;;;;;false;false;false;false;false;;

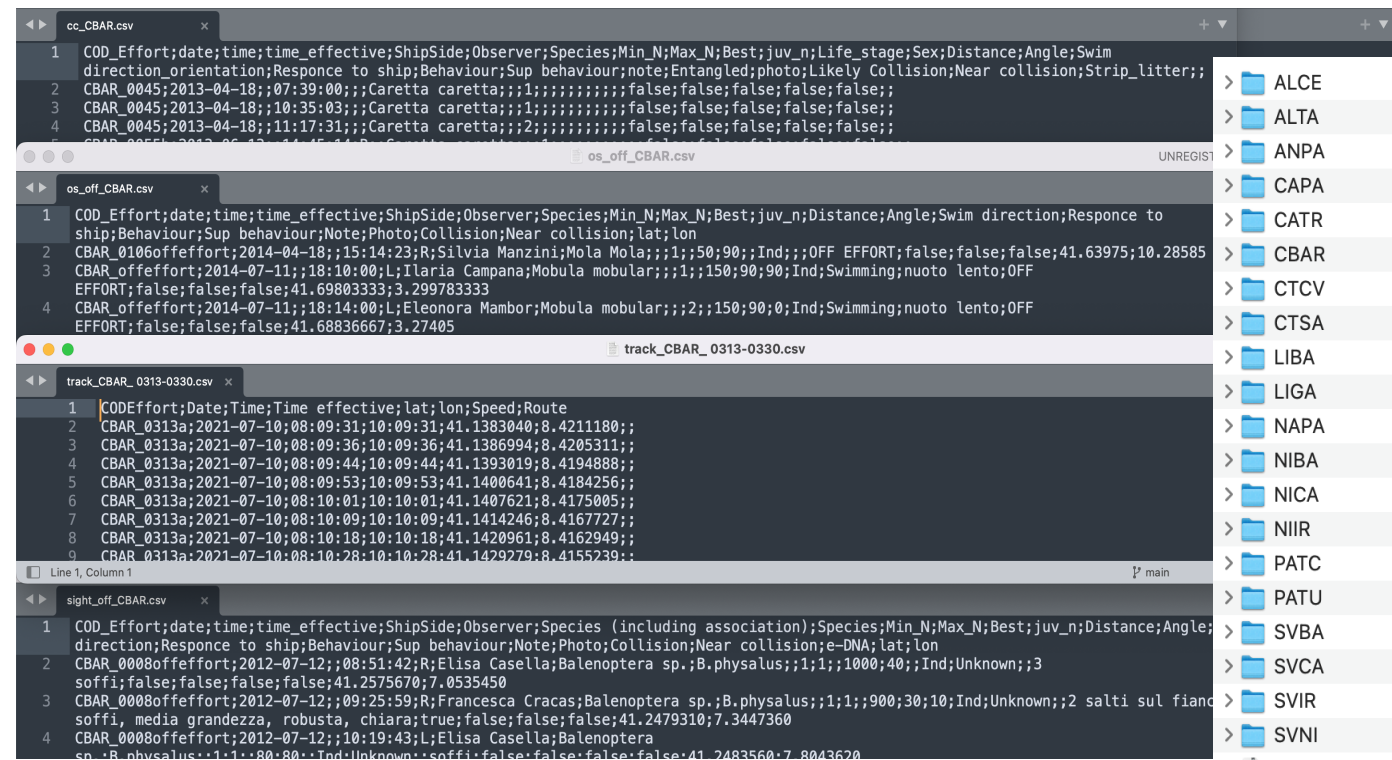
os_off_CBAR.csv
1 COD_Effort;date;time;time_effective;ShipSide;Observer;Species;Min_N;Max_N;Best;juv_n;Distance;Angle;Swim direction;Responce to
ship;Behaviour;Sup behaviour;Note;Photo;Collision;Near collision;lat;lon
2 CBAR_0106offeffort;2014-04-18;;15:14:23;R;Silvia Manzini;Mola Mola;;;1;;50;90;;Ind;;;OFF EFFORT;false;false;false;41.63975;10.28585
3 CBAR_offeffort;2014-07-11;;18:10:00;L;Ilenia Campana;Mobula mobular;;;1;;150;90;90;Ind;Swimming;nuoto lento;OFF
EFFORT;false;false;false;41.69803333;3.299783333
4 CBAR_offeffort;2014-07-11;;18:14:00;L;Eleonora Mambor;Mobula mobular;;;2;;150;90;0;Ind;Swimming;nuoto lento;OFF
EFFORT;false;false;false;41.68836667;3.27405

track_CBAR_0313-0330.csv
1 CODEffort;Date;Time;Time effective;lat;lon;Speed;Route
2 CBAR_0313a;2021-07-10;08:09:31;10:09:31;41.1383040;8.4211180;;
3 CBAR_0313a;2021-07-10;08:09:36;10:09:36;41.1386994;8.4205311;;
4 CBAR_0313a;2021-07-10;08:09:44;10:09:44;41.1393019;8.4194888;;
5 CBAR_0313a;2021-07-10;08:09:53;10:09:53;41.1400641;8.4184256;;
6 CBAR_0313a;2021-07-10;08:10:01;10:10:01;41.1407621;8.4175005;;
7 CBAR_0313a;2021-07-10;08:10:09;10:10:09;41.1414246;8.4167727;;
8 CBAR_0313a;2021-07-10;08:10:18;10:10:18;41.1420961;8.4162949;;
9 CBAR_0313a;2021-07-10;08:10:28;10:10:28;41.1429279;8.4155239;;

sight_off_CBAR.csv
1 COD_Effort;date;time;time_effective;ShipSide;Observer;Species (including association);Species;Min_N;Max_N;Best;juv_n;Distance;Angle;
direction_orientation;Responce to ship;Behaviour;Sup behaviour;Note;Photo;Collision;Near collision;e-DNA;lat;lon
2 CBAR_0008offeffort;2012-07-12;;08:51:42;R;Elisa Casella;Balenoptera sp.;B.physalus;;1;1;;1000;40;;Ind;Unknown;;3
soffi;false;false;false;false;41.2575670;7.0535450
3 CBAR_0008offeffort;2012-07-12;;09:25:59;R;Francesca Cracas;Balenoptera sp.;B.physalus;;1;1;;900;30;10;Ind;Unknown;;2 salti sul fianco
soffi, media grandezza, robusta, chiara>true;false;false;false;41.2479310;7.3447360
4 CBAR_0008offeffort;2012-07-12;;10:19:43;L;Elisa Casella;Balenoptera
sp.;B.physalus;;1;1;;80;80;;Ind;Unknown;;soffi;false;false;false;false;41.2483560;7.8043620
```

- > ALCE
- > ALTA
- > ANPA
- > CAPA
- > CATR
- > CBAR
- > CTCV
- > CTSA
- > LIBA
- > LIGA
- > NAPA
- > NIBA
- > NICA
- > NIIR
- > PATC
- > PATU
- > SVBA
- > SVCA
- > SVIR
- > SVNI

4) Procedura di caricamento e controllo qualità

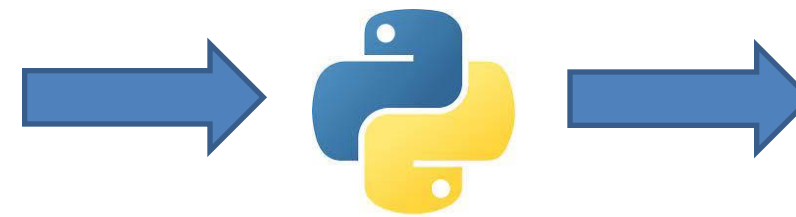


```
cc_CBAR.csv
1 COD_Effort;date;time;time_effective;ShipSide;Observer;Species;Min_N;Max_N;Best;juv_n;Life_stage;Sex;Distance;Angle;Swim
direction_orientation;Response to ship;Behaviour;Sup behaviour;note;Entangled;photo;Likely Collision;Near collision;Strip_litter;;
2 CBAR_0045;2013-04-18;;07:39:00;;;Caretta caretta;;1;;;false;false;false;false;false;;
3 CBAR_0045;2013-04-18;;10:35:03;;;Caretta caretta;;1;;;false;false;false;false;false;;
4 CBAR_0045;2013-04-18;;11:17:31;;;Caretta caretta;;2;;;false;false;false;false;false;;
5 CBAR_0051;2013-06-15;;14:15:16;;;Caretta caretta;;1;;;false;false;false;false;false;;

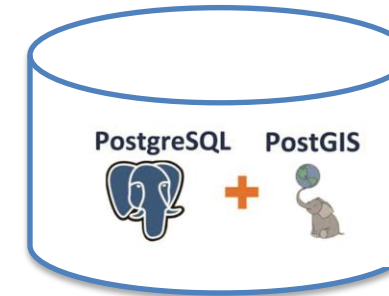
os_off_CBAR.csv
1 COD_Effort;date;time;time_effective;ShipSide;Observer;Species;Min_N;Max_N;Best;juv_n;Distance;Angle;Swim direction;Response to
ship;Behaviour;Sup behaviour;Note;Photo;Collision;Near collision;lat;lon
2 CBAR_0106offeffort;2014-04-18;;15:14:23;R;Silvia Manzini;Mola Mola;;1;;50;90;;Ind;;OFF EFFORT;false;false;false;41.63975;10.28585
3 CBAR_offeffort;2014-07-11;;18:10:00;L;Ilenia Campana;Mobula mobular;;1;;150;90;90;Ind;Swimming;nuoto lento;OFF
EFFORT;false;false;false;41.69803333;3.299783333
4 CBAR_offeffort;2014-07-11;;18:14:00;L;Eleonora Mambor;Mobula mobular;;2;;150;90;0;Ind;Swimming;nuoto lento;OFF
EFFORT;false;false;false;41.68836667;3.27405

track_CBAR_0313-0330.csv
1 CODEffort;Date;Time;Time effective;lat;lon;Speed;Route
2 CBAR_0313a;2021-07-10;08:09:31;10:09:31;41.1383040;8.4211180;;
3 CBAR_0313a;2021-07-10;08:09:36;10:09:36;41.1386994;8.4205311;;
4 CBAR_0313a;2021-07-10;08:09:44;10:09:44;41.1393019;8.4194880;;
5 CBAR_0313a;2021-07-10;08:09:53;10:09:53;41.1400641;8.4184256;;
6 CBAR_0313a;2021-07-10;08:10:01;10:10:01;41.1407621;8.4175005;;
7 CBAR_0313a;2021-07-10;08:10:09;10:10:09;41.1414246;8.4167727;;
8 CBAR_0313a;2021-07-10;08:10:18;10:10:18;41.1420961;8.4162949;;
9 CBAR_0313a;2021-07-10;08:10:28;10:10:28;41.1429279;8.4155239;;

sight_of_CBAR.csv
1 COD_Effort;date;time;time_effective;ShipSide;Observer;Species (including association);Species;Min_N;Max_N;Best;juv_n;Distance;Angle;
direction;Response to ship;Behaviour;Sup behaviour;Note;Photo;Collision;Near collision;e-DNA;lat;lon
2 CBAR_0008offeffort;2012-07-12;;08:51:42;R;Elisa Casella;Balenoptera sp.;B.physalus;1;1;;1000;40;;Ind;Unknown;;3
soffi;false;false;false;false;41.2575670;7.0535450
3 CBAR_0008offeffort;2012-07-12;;09:25:59;R;Francesca Cracas;Balenoptera sp.;B.physalus;1;1;;900;30;10;Ind;Unknown;;2 salti sul fianc
soffi;media grandezza, robusto, chiara>true;false;false;false;41.2479310;7.3447360
4 CBAR_0008offeffort;2012-07-12;;10:19:43;L;Elisa Casella;Balenoptera
sp.;B.physalus;1;1;;80;80;;Ind;Unknown;;soffi;false;false;false;false;41.2483560;7.8043620
```



Controlli sulla qualità del dato (es. formato data, ora, verifica valori interi/decimali)

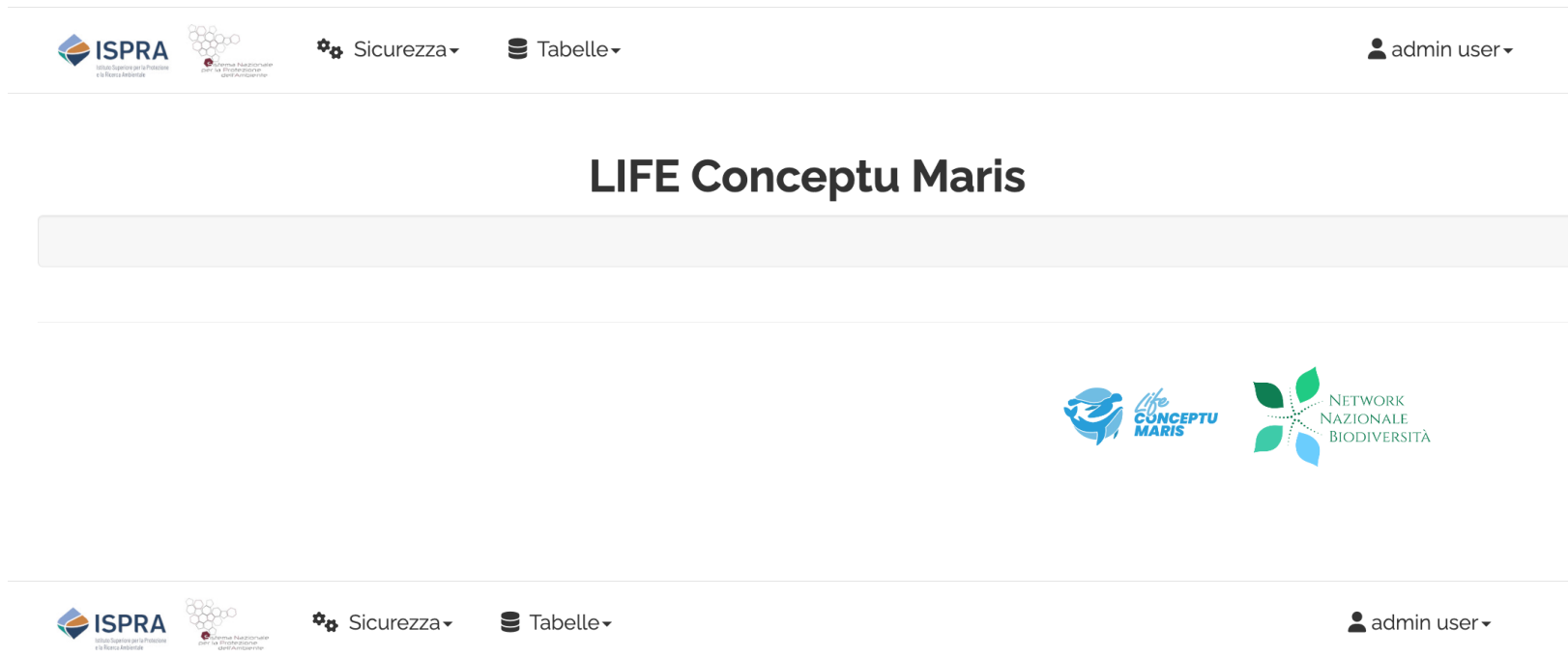


Banca dati geografica condivisa con NNB

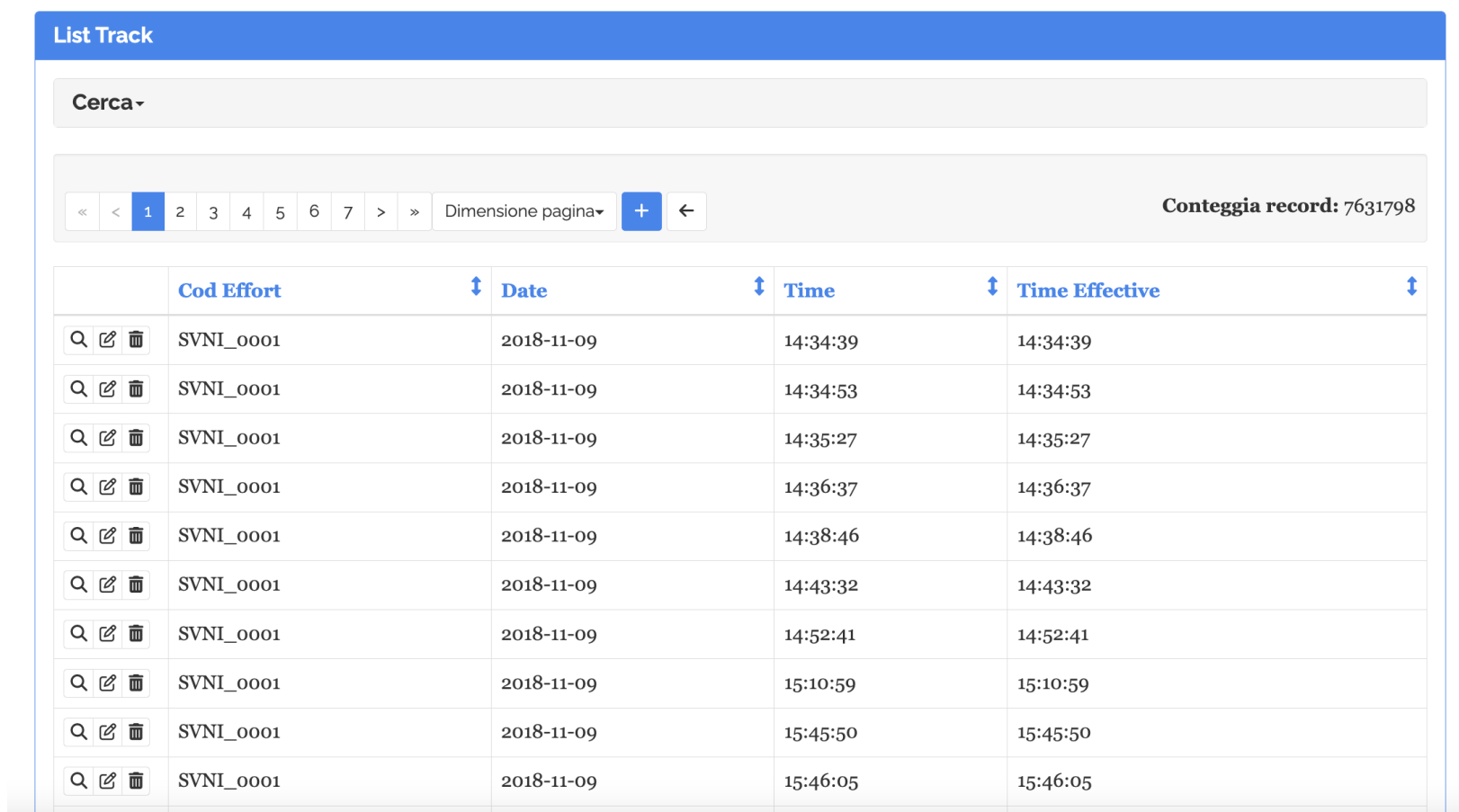
Più di 7 milioni di dati georiferiti

Serie storica dal 2008 al 2022

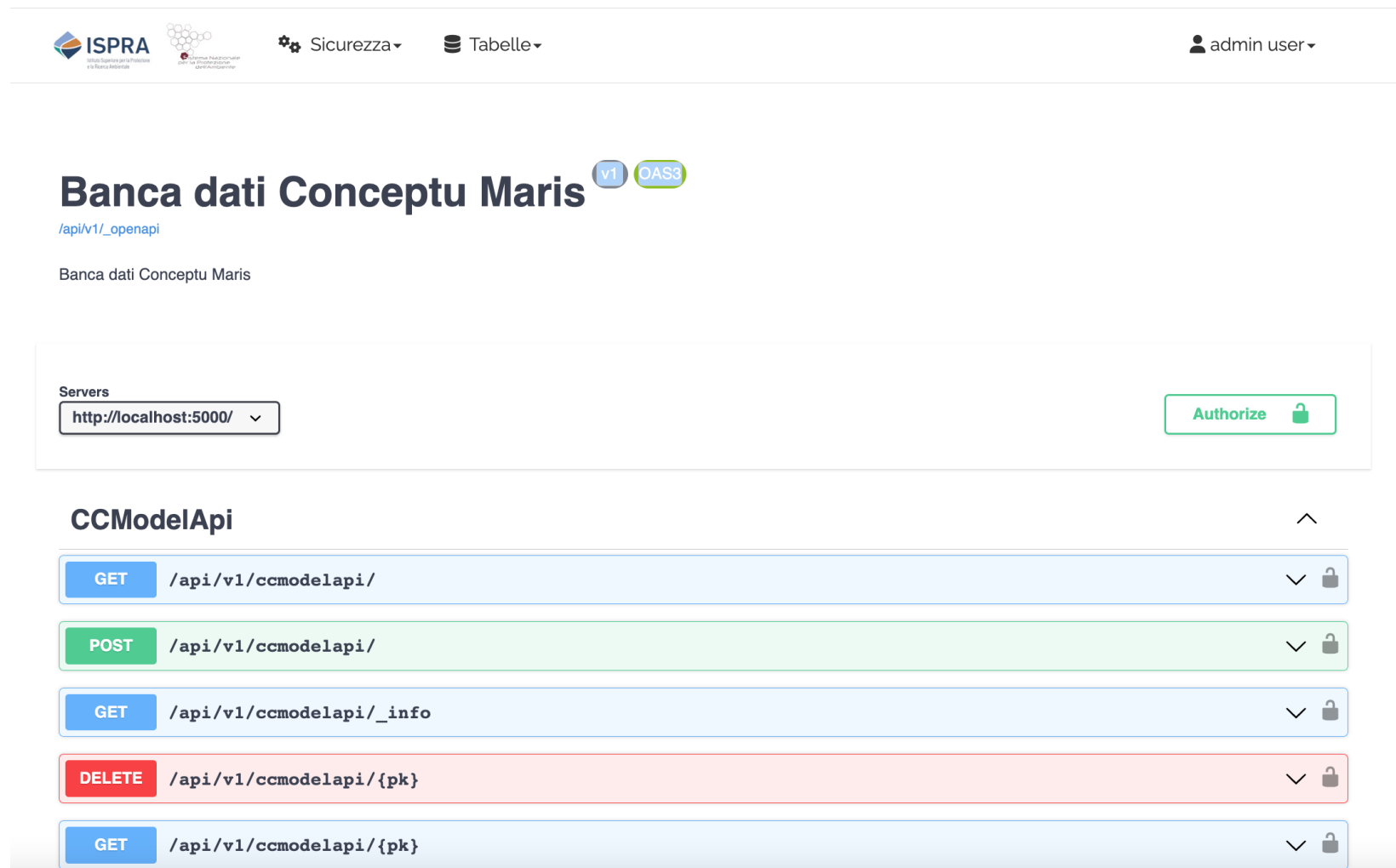
5) Realizzazione interfaccia web di gestione dati



- Interfaccia web per la creazione, lettura, aggiornamento e cancellazione dei dati sulle tabelle (CRUD)
- Gestione Utenti e ruoli con possibilità di definire permessi su ogni tabella
- Interfaccia Open API rispondente alle più recenti specifiche 3.1



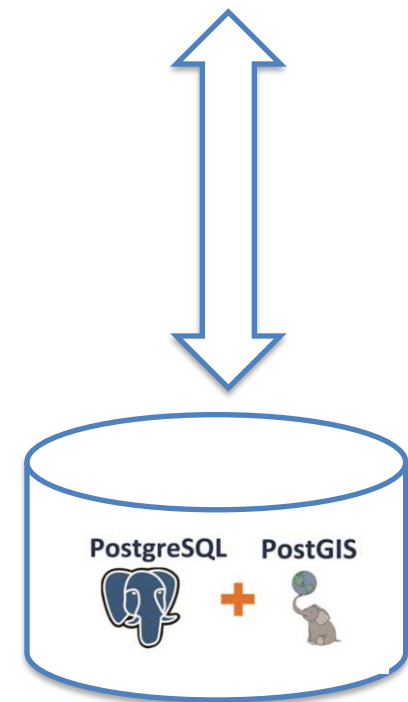
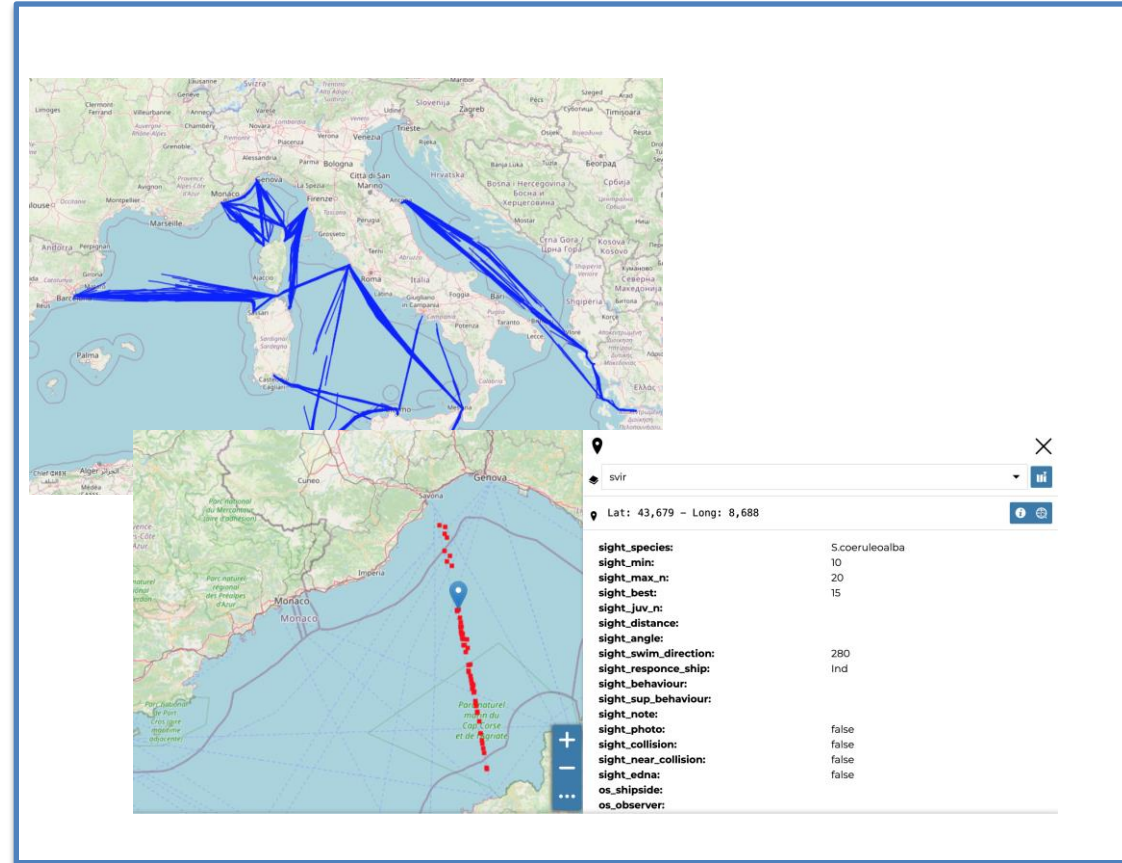
	Cod Effort	Date	Time	Time Effective
Q [edit] [delete]	SVNI_0001	2018-11-09	14:34:39	14:34:39
Q [edit] [delete]	SVNI_0001	2018-11-09	14:34:53	14:34:53
Q [edit] [delete]	SVNI_0001	2018-11-09	14:35:27	14:35:27
Q [edit] [delete]	SVNI_0001	2018-11-09	14:36:37	14:36:37
Q [edit] [delete]	SVNI_0001	2018-11-09	14:38:46	14:38:46
Q [edit] [delete]	SVNI_0001	2018-11-09	14:43:32	14:43:32
Q [edit] [delete]	SVNI_0001	2018-11-09	14:52:41	14:52:41
Q [edit] [delete]	SVNI_0001	2018-11-09	15:10:59	15:10:59
Q [edit] [delete]	SVNI_0001	2018-11-09	15:45:50	15:45:50
Q [edit] [delete]	SVNI_0001	2018-11-09	15:46:05	15:46:05



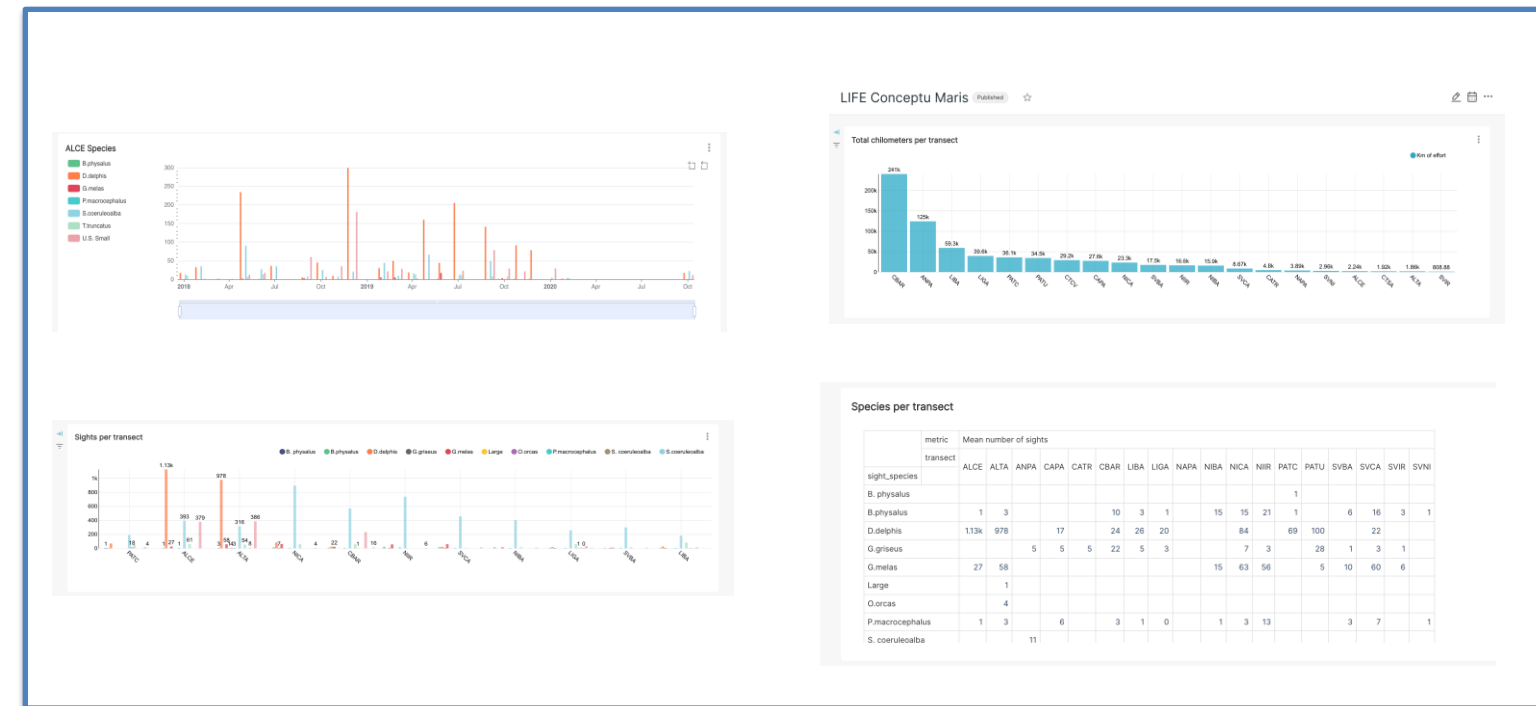
6) Generazione mappe, indicatori e servizi OGC



Servizi OGC: WFS, WMS, CSW



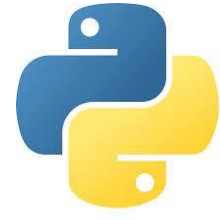
Banca dati geografica condivisa con NNB



I prossimi passi



App per la raccolta di dati



Procedure per la
standardizzazione
della tassonomia e
delle specie

La sinergia con NNB

- Uso di standard condivisi a livello internazionale per la pubblicazione dati (OGC, INSPIRE, OpenAPI)
- Uso di standard condivisi a livello internazionale per la gestione tassonomica delle specie
- Condivisione e riuso dello stack tecnologico (Geoserver, Geonode, Python, Flask, PostGis)
- Apertura dei dati con licenza CC-BY (Open data e Open science)

Contacts



Life
**CONCEPTU
MARIS**



www.lifeconceptu.eu



LIFE Conceptu Maris



@life.conceptumaris



LIFE Conceptu Maris

