

# The LifeWatch Taxonomic Backbone:

- what is it, how is it built?
- how can it help you with your research?
- how can you help to make it more complete?

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## LifeWatch?

- E-Science European Infrastructure for Biodiversity and Ecosystem Research
- Part of European Strategy Forum on Research Infrastructures (ESFRI)
- Legal status of a European Research Infrastructure Consortium (ERIC)
- Mission:
  - Advance Biodiversity & Ecosystem Research
  - Provide major contributions to addressing the big environmental challenges
  - Provide access through a pan-European distributed e-Infrastructure
  - Construction and operation of Virtual Research Environments (VREs)
- Virtual laboratory for biodiversity research:
  - Biodiversity observatories, databases, web services and modelling tools
  - Integration of existing systems, upgrades, new systems
- Belgium:
  - Taxonomic Backbone
  - Marine VRE

*=> Based on existing data resources, web services, analysis services & tools*

  - Observatory

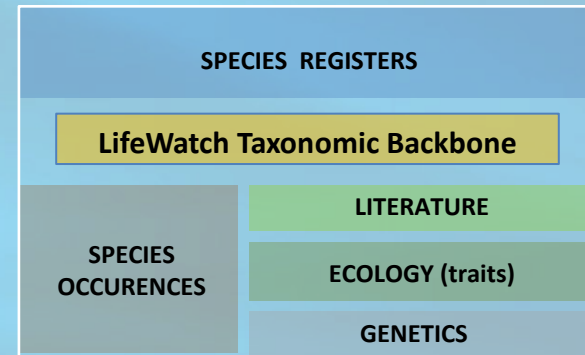


## LifeWatch Taxonomic Backbone?

- Facilitate the standardisation of species data
- (Virtually) bring together different component databases & data systems
- Offer better-quality data & try to avoid duplication of efforts

- 5 components:

- Taxonomy
- Geography
- Literature
- Ecology
- Genetics

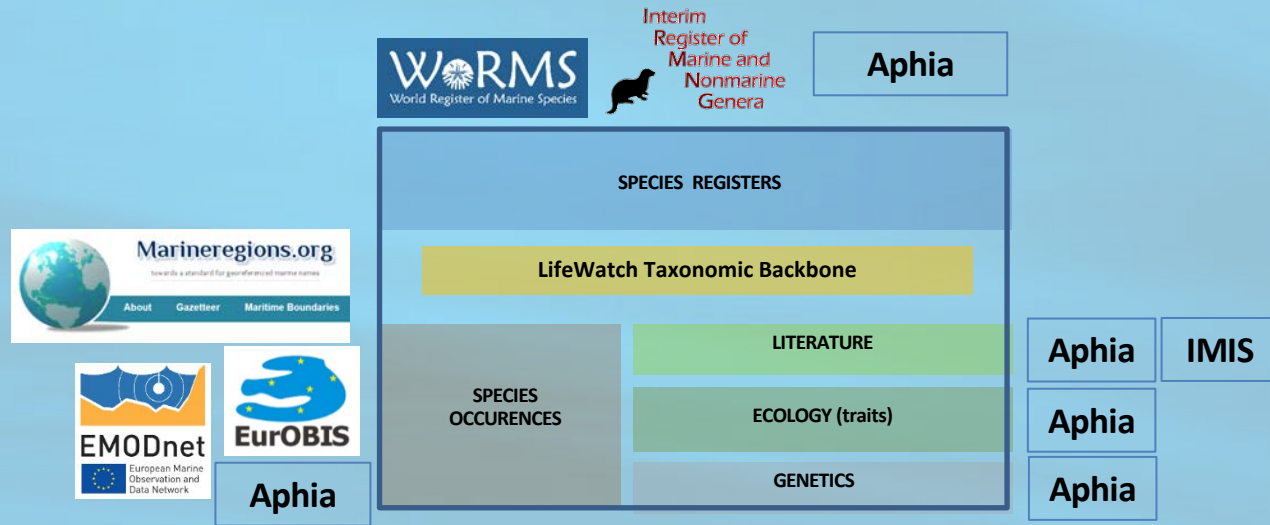


- 3 pillars:

- System architecture & development  
= *setting up the LW-TaxBB*
- Data management  
= *completing and updating taxonomic & related data (DMT)*
- Community support  
= *organize & mobilize (taxonomic) experts*

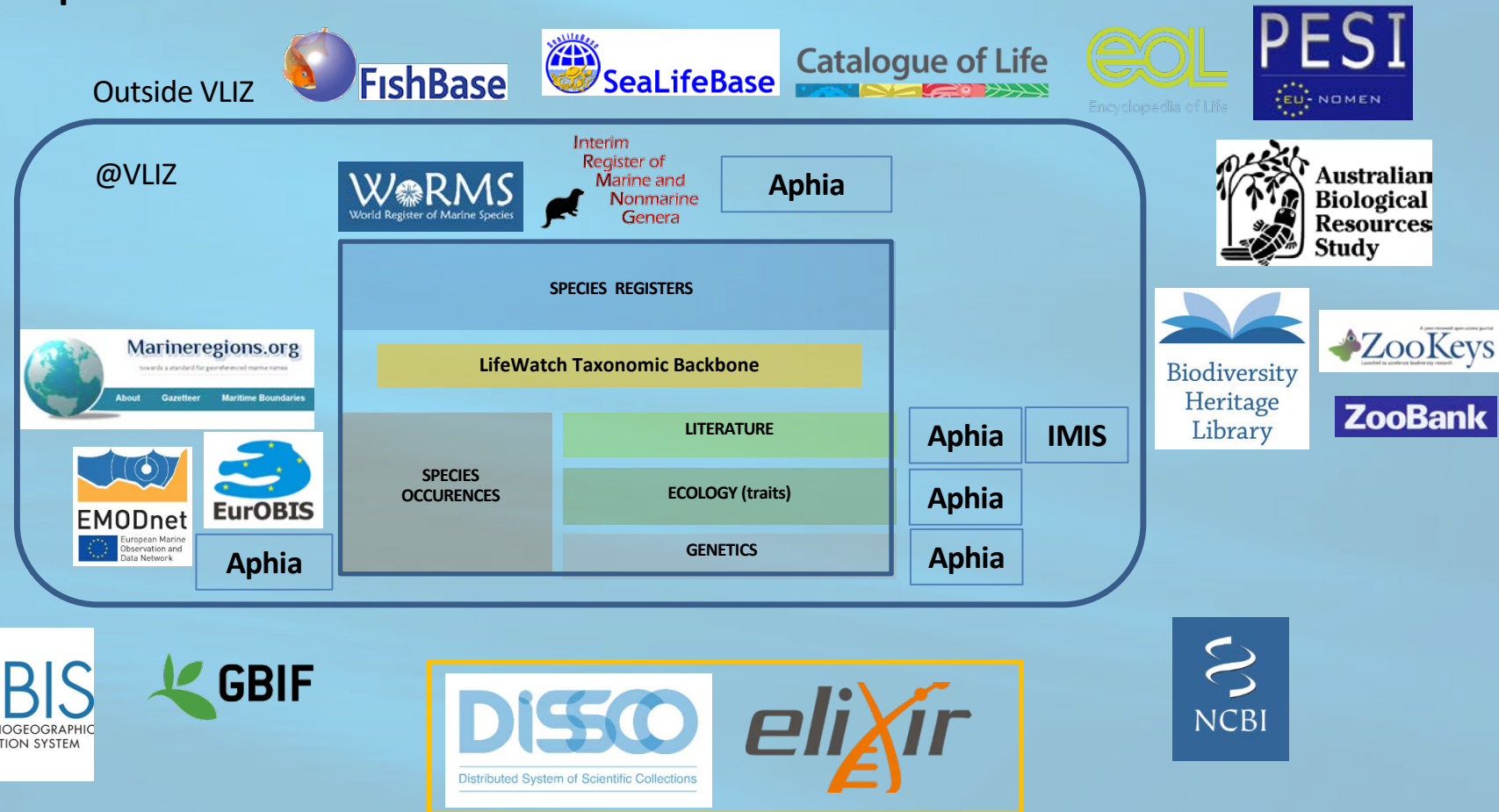
# LW-TaxBB: linking several systems

5 components, several data systems...

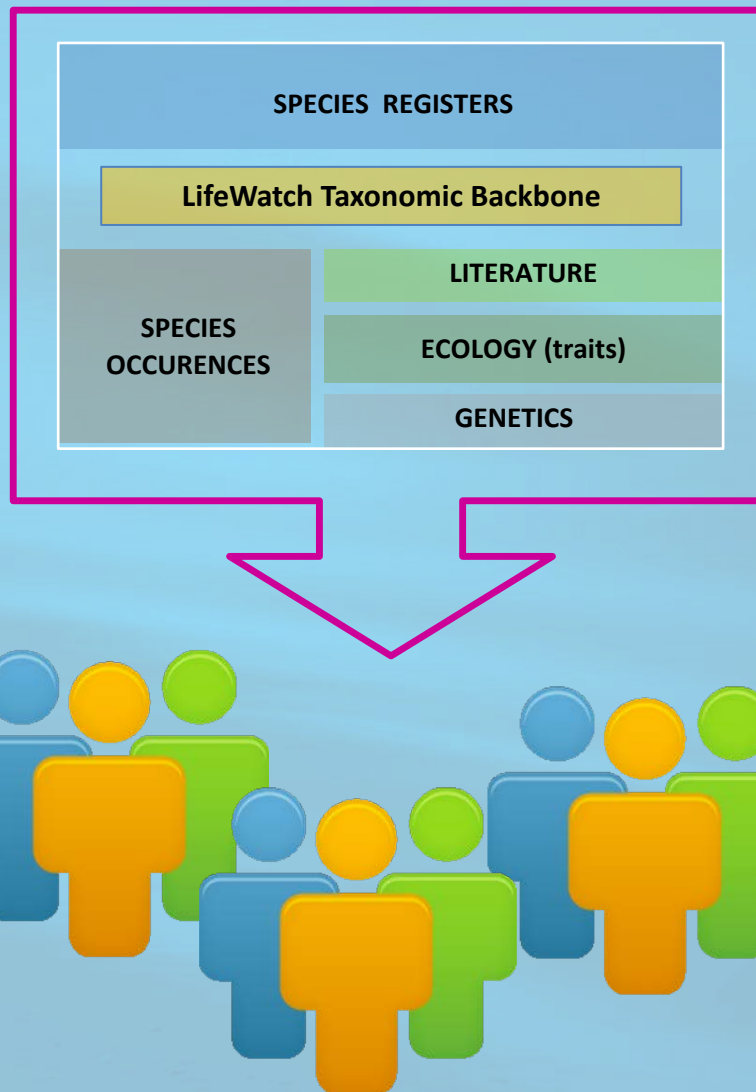


# LW-TaxBB: linking several systems

## Broader picture

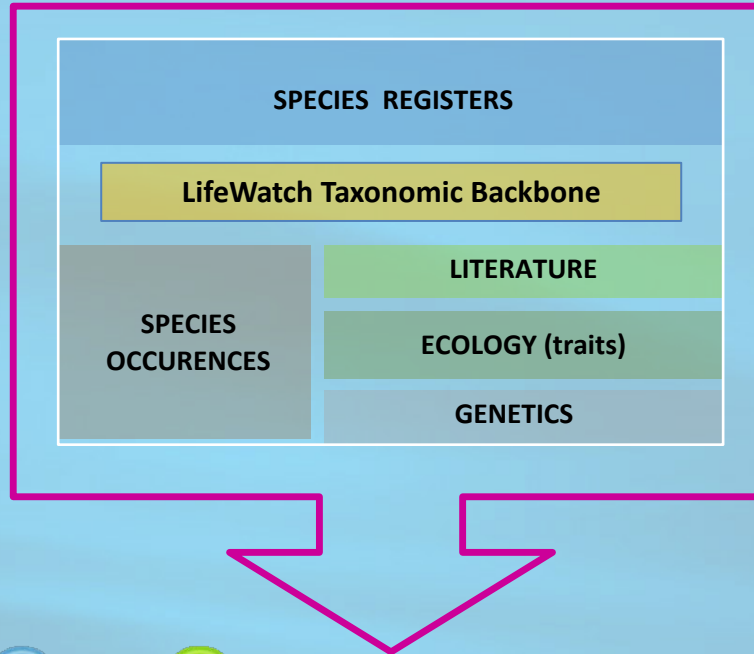


## How can this LW-TaxBB help you?





## How can this LW-TaxBB help you?



- Easy access to data and information
- Opportunity to QC your own data
- Possibility to link ≠ data systems
  - Data-services/web-services
  - Combine services into workflows
  - R: building your own scripts
- Dois

# How can this LW-TaxBB help you?

## Biodiversity research

Van veen grab at x,y,t

Observation:

Location X,Y

Time t

Depth: 20m

Sediment : sand



Species

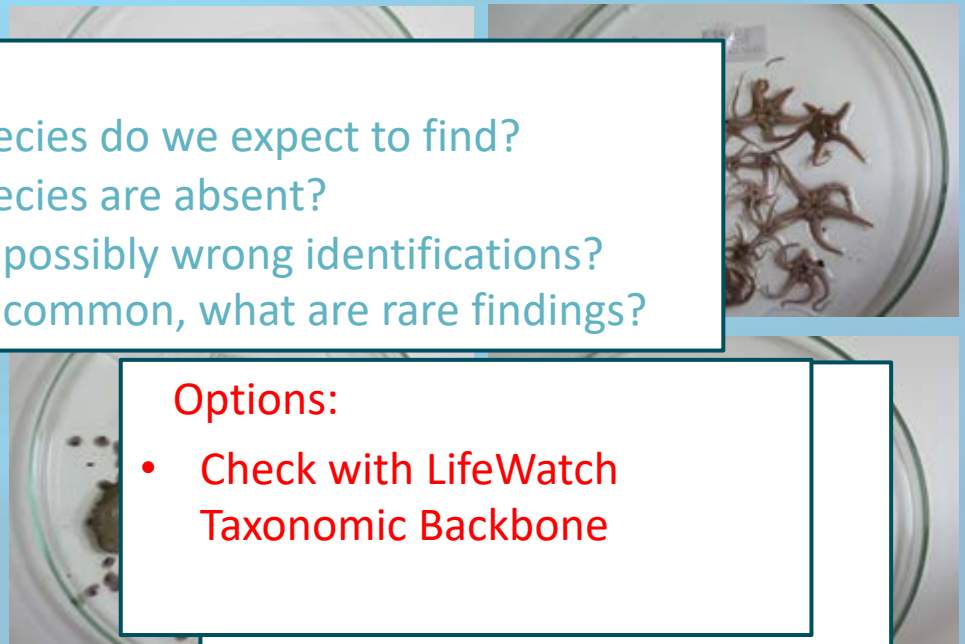
*Amphiodia atra* (Stimpson, 1852)  
*Hemipholis elongata* ( Say, 1825)  
*Chione* sp.  
*Corbula caribea* (Orbigny, 1842)  
*Corbula* sp.  
*Cyclinella tenuis* ( Rècluz, 1852)  
*Lioberus castaneus* (Say, 1822)  
*Nucula semiornata* (Orbigny, 1846)  
*Periploma compressa* (Orbigny, 1846)  
*Temnoconcha brasiliiana* (Dall, 1921)  
*Thysanocardia catharinae* (Grube, 1868)  
*Branchiostoma platae* (Hubbs, 1922)

Analysis:

- Which species do we expect to find?
- Which species are absent?
- What are possibly wrong identifications?
- What are common, what are rare findings?

Options:

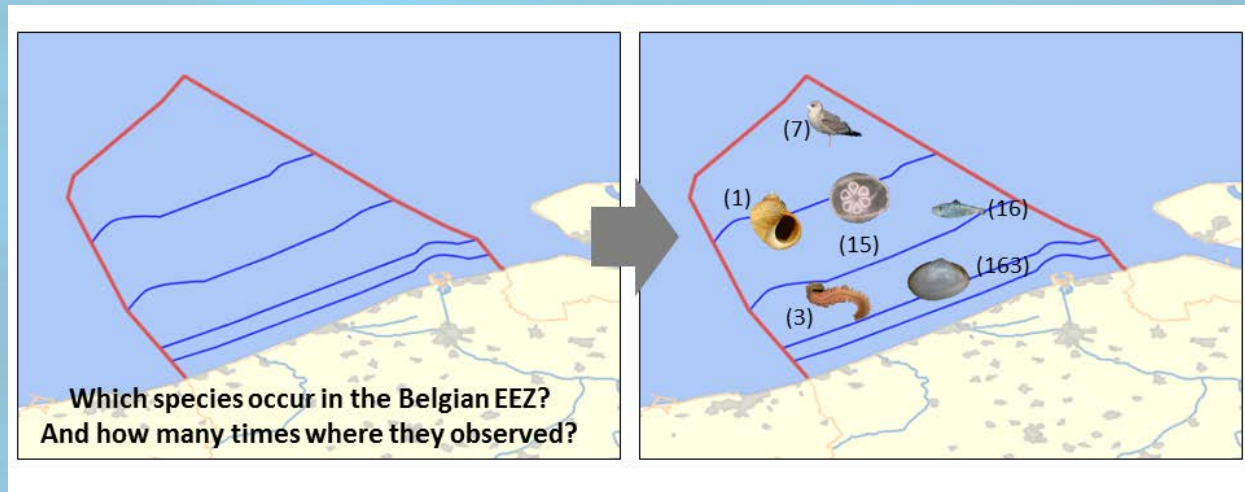
- Check with LifeWatch Taxonomic Backbone



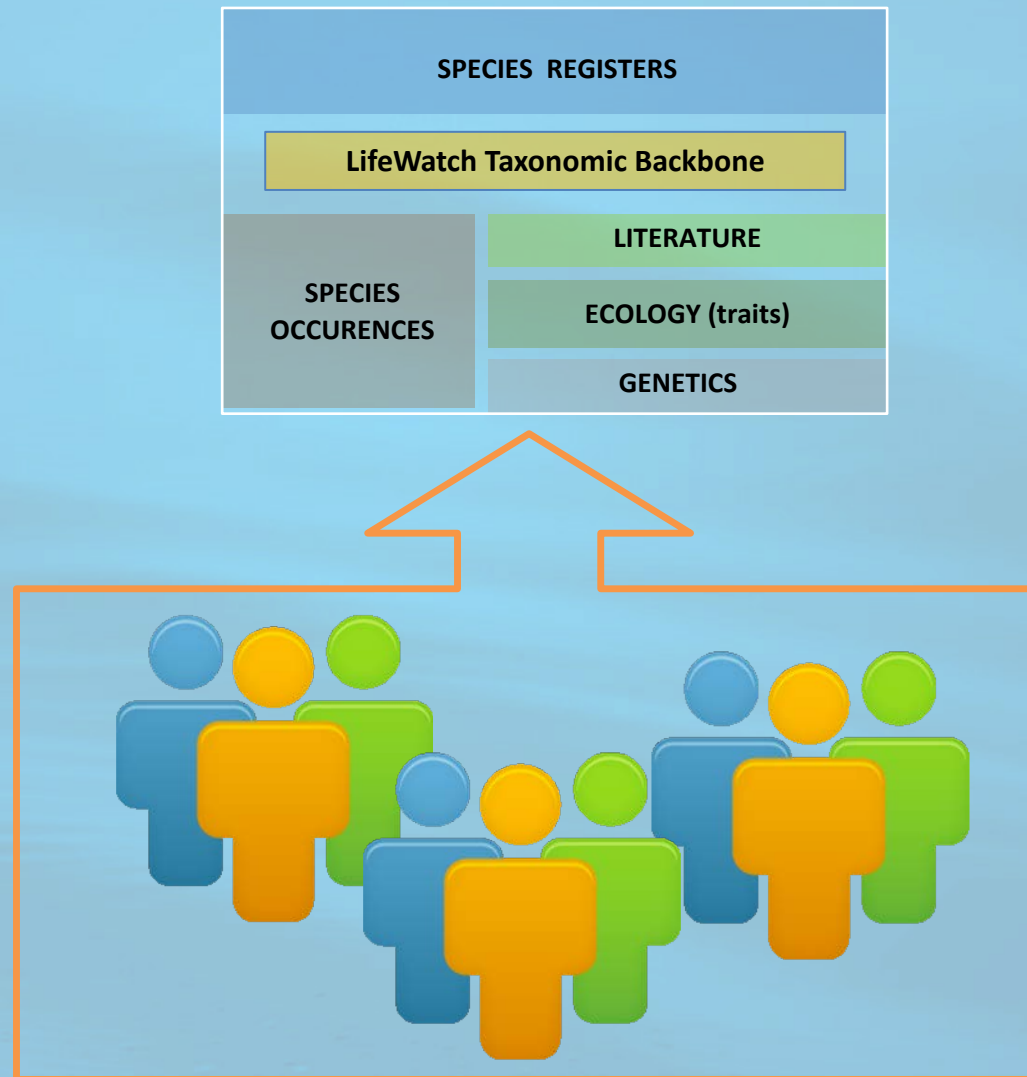


## How can this LW-TaxBB help you?

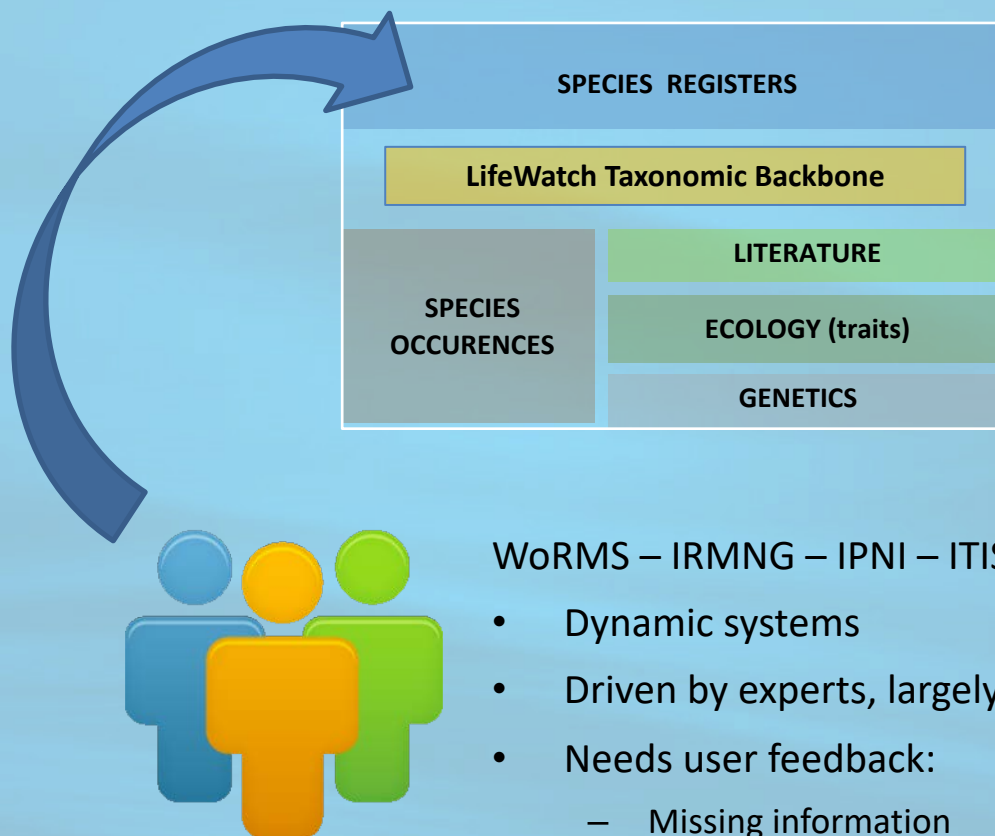
- Data-services
  - One-stop-shop: concatenation of services
  - Possible questions:
    - Where does species X appear?
    - I'm planning to take a Van Veen grab at a particular location. Which species can I expect to capture?
    - Which invasive planktonic species are known to occur in the Black Sea?
    - How does my North Sea species list relate to the African region?
    - ...



## How can you help the LW-TaxBB?



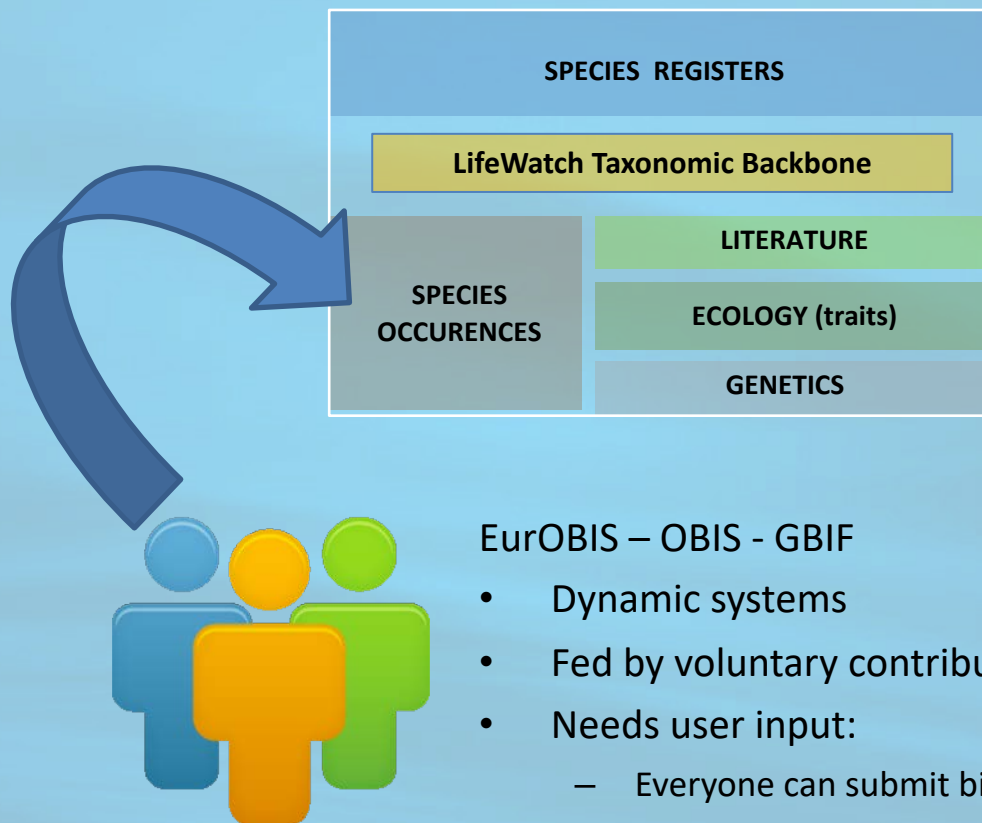
## How can you help the LW-TaxBB?



WoRMS – IRMNG – IPNI – ITIS – CoL - ...

- Dynamic systems
- Driven by experts, largely on voluntary basis
- Needs user feedback:
  - Missing information
  - Possible errors / duplicates
- Follow-up by dedicated Data Management Teams

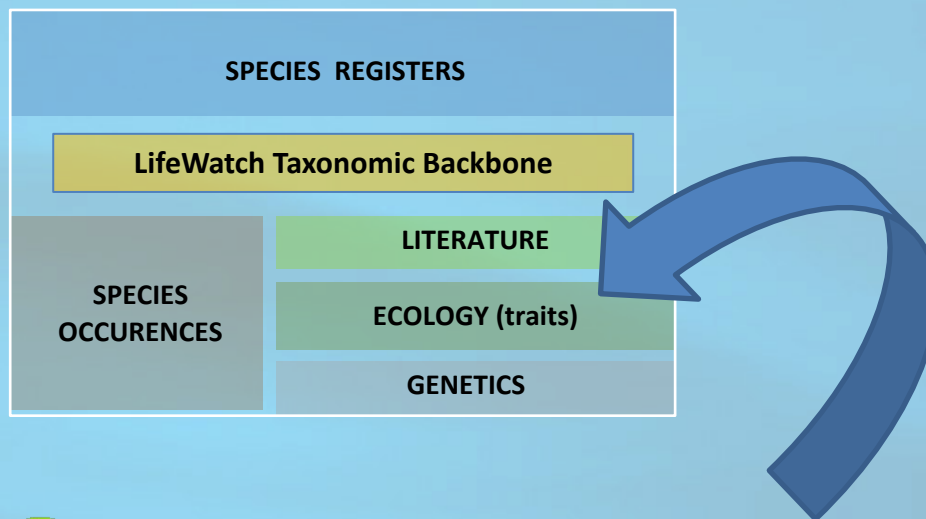
## How can you help the LW-TaxBB?



### EurOBIS – OBIS - GBIF

- Dynamic systems
- Fed by voluntary contributions of scientists
- Needs user input:
  - Everyone can submit biogeographic data!
  - System only as good/complete as what goes in...
- Needs user feedback
  - No system is perfect...
  - Highlight (possible) incorrect information
- Follow-up by dedicated Data Management Teams

## How can you help the LW-TaxBB?

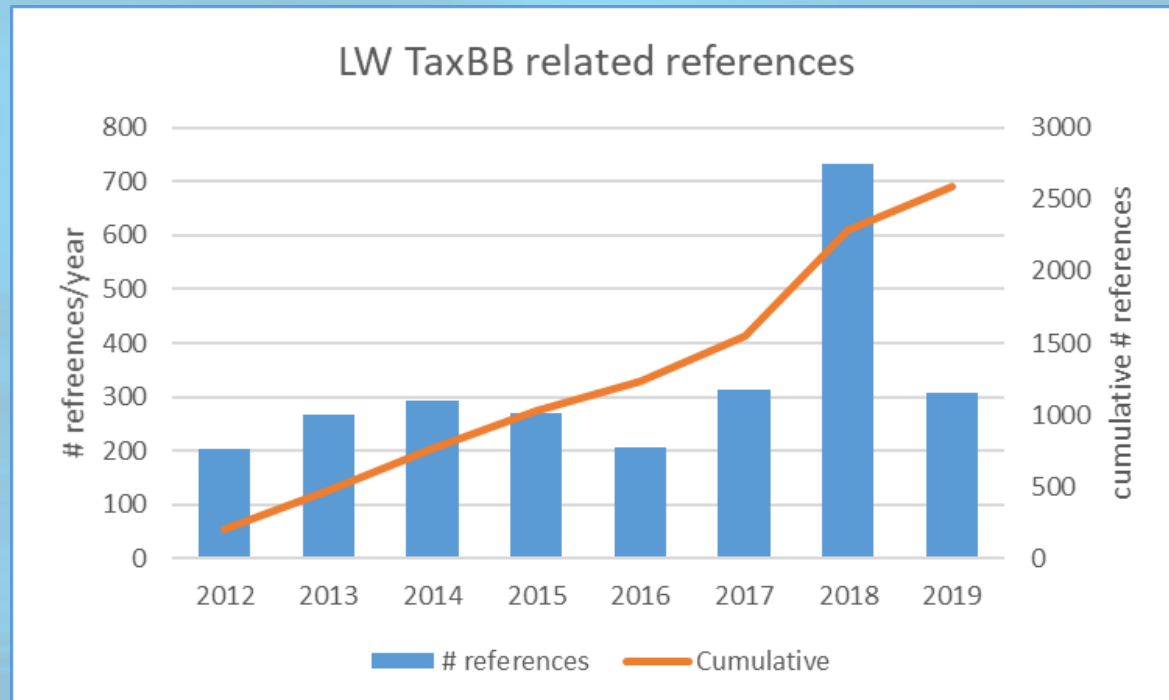


### Literature – Ecological traits

- Dynamic systems
- Driven by experts, largely on voluntary basis
- Needs user feedback:
  - Missing information
  - Possible errors / duplicates
- Follow-up by dedicated Data Management Teams

## How can you help the LW-TaxBB?

- Citation of/reference to the systems that you are using
- Scientific impact since construction phase start (2012):
  - Reference to LW-TaxBB related systems in 2,592 publications



- *Taxonomy-related systems: 2,288 references*
- *(Bio-)geography-related systems: 111*
- *Multiple systems: 72*



Thank you!

Questions?

[www.lifewatch.be](http://www.lifewatch.be)

[www.lifewatch.be/data-services/](http://www.lifewatch.be/data-services/)

[marine.lifewatch.eu](http://marine.lifewatch.eu)

[www.lifewatch.be/en/e-lab](http://www.lifewatch.be/en/e-lab)

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