

# Workshop Citizen Science, 10 May, Malmö

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*Approx. 30 participants in the room, 17 on-line.*

**In-room Moderator:** Emelie Breverie, SMHI

<https://www.smhi.se/en/research/research-departments/oceanography/emilie-breviere-1.158015>

**On-line Moderator:** Arianna Liconti, OutBe

<https://www.outbe.earth/>

**Head of Session:**

**Uta Wehn**

<https://www.gu.se/en/about/find-staff/utawehn>

Ocean literacy expects communication, but also informed decisions.

## Citizen science in a nutshell

- Boosting new technical equipments, but is actually a very old tradition.
- There is an over- and underestimation of what it is. It is not just data-collection, but to be involved in any steps of science.
- **Citizen science is not only a contribution to science. It aims to foster knowledge production and action – foster science literacy**
- CS is a "community" that involves NGO:s, academia, authorities, etc with different aims. It is a multistakeholder phenomenon with many dimensions. **There is multiple motivation at play!** It can improve how stakeholders work together.

## Citizen science in the world

- 724 marine citizen science projects world wide. Those with on-line presence, 672,
- 654 with more detailed descriptions.
- Covid has slowed down the projects.
- **Data but not only data, understanding, impacting etc. Knowledge improvement.**
- How to set up an initiative? Know your target audience.

## Comment:

**We should not only to use citizen science for the science per se, but to drive policy change.**

Tool to inform about ocean literacy. Needs to be science proof. Always the question of data is accurate enough?

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## 5 pitched Citizen science projects

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### Koster Sea Floor Observatory, Mattias Obst, Gothenburg University

<https://www.zooniverse.org/projects/victorav/the-koster-seafloor-observatory>

- Uses data to build machine learning modules. People can upload their own movies and let the module identify species.
- 4600 users during the last 2,5 years.
- Offers a direct channel to experts and a **good connection between citizens and experts.**

#### Comment:

- How do you keep the dialogue going?
- Moderators take in questions and send it to the experts. Moderators must find the right people to adress. Everybody can see the dialogue on the platform. People learn more and more.

### Sailing for science, Martin Hassellöv, Gothenburg University

<https://www.sailing4science.org/>

- Sailors can bring and use: Eg. sensor tools, secchi discs etc. while sailing.
- This is transforming the ocean connectedness of the sailors and gives new experiences.
- Observations, awareness, commitments, influencing – all this is even more important than collecting data!

### Deepod. Fredrik Gustavsson

<https://deepod.org/>

- Deepod is a data logger for fishing line when game-fishing. Price: 200 USD. Value for the fishers who learns where the fish are.
- Share data with others, eg. SMHI. The science value lies in that it is sometimes hard to get this type of data. Works at 10-20 m depth. A lot of profile data. Deepod can measure: Fish prevalence, temperature etc.

#### Comment:

- Does it measure salinity, connectivity, water quality?
- Not all of this yet, but should be possible in the future. Financing is crucial. Perhaps sponsoring.

### Plastexperimentet, Bethaney Carney Almroth, Gothenburg University

<https://skraplabbet.se/sektion/plastexperiment>

- Working with nudging, "The plastic experiment" involves the science group "Vetenskap och allmänhet", Keep Sweden Tidy etc.
- Data logging of collected trash presented on a map
- Cooperation with environmental psychologists.
- Student engagement.
- Webinar with questions to increase the dialogue.

### Earthwatch, Heather Moorhouse

<https://freshwaterwatch.thewaterhub.org/>

- Project since 2012, involving 11000 persons world wide to monitor freshwater.
- 40 languages. Use of toolkit to measure turbidity, N, P etc.
- Uploading of data on an international platform.
- Quality checked data which is used in different projects, eg. for the SDG goals.
- Used on a catchment scale. 30 publications.

## Group discussions, group 4

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- Maria Lewander, SIME
- Örjan Karlsson, Naturum Kosterhavet
- Sophie Lewenhaupt, Baltic Sea Science Centre, Skansen
- Lydia Rysarvy, student

### What are the specific synergies between citizen science and ocean literacy??

- **Simple way to get data. Good way to involve the public. It is for real, we can make a difference.**
- Be a part of designing the whole project is important.
- Use local knowledge. Prevent people from feeling excluded, by including local community to design projects.

### Examples of CS from the group:

*Climate portal Baltic Sea Science Centre.* Guillemot-project at Stora Karlsö. Uses movie clips from webcam to monitor if and how the guillemots are affected by warmer climate/weather. Too hot on the cliffs? Leaving the eggs? Students can watch the movieclips and try to identify four behaviours from the guillemots; turning, movements of wings, breathing etc.

<https://bssc.se/vart-varmare-hav/var-med-och-forska/>

*Go sea science.* About neuston – a project to monitor where these fascinating species are that live on the very sea surface. Database. Workshops to meet others interested in these very small organisms.

<https://goseascience.org/>

Open data from CS and environmental monitoring – encourage schools to use open data and make their own analyses.

**Citizen science is not only about the delivery of data, but it can be a part of something bigger. Create connection and build communities.**

## Panel discussion

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- Uta Wehn, Gothenburg university
- Björn Källström, Gothenburg Marine Biological Laboratory
- Patrick Gorringer, SMHI,
- Arianna Liconti, OutBe
- Fredrik Gustavsson, Deepod

Citizen science is about collecting the knowledge – The Citizen science umbrella should be bigger because it is a more diverse set than Ocean literacy.

- **Citizen science is about collecting the data and the knowledge**
- **Ocean literacy is about sharing the knowledge.**
- How to couple the two? Sharing knowledge in different ways.
- Citizen science can provide very hands on learning.
- **Power of the and data power of the people!** People are many more than the scientists.
- Join forces.
- Collaboration and codesign.
- Use the same vocabulary.

*Extra input:* Björn Källström demonstrated live invasive crab species collected from nearby beach. **Monitoring of invasive species is a field where citizen science can be very useful.**

### Challenge of funding?

Involve companies to sponsor, and involve employees.