



**ECSA annual report**  
**2018**

## **ECSA headquarters**

### **Address**

c/o Museum für Naturkunde Berlin  
Leibniz-Institut für Evolutions- und Biodiversitätsforschung  
Bereichsleitung Wissenschaftskommunikation und Wissensforschung  
Invalidenstraße 43  
D-10115 Berlin

### **Chair**

Prof. Dr. Johannes Vogel

### **Vice-chair**

Lucy Robinson

### **Board of directors**

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Gaia Agnello  
Barbara Carneiro  
Veronica French  
Claudia Göbel  
Margaret Gold  
Andre Mascarenhas  
Gina Maskell  
Giulia Melilli  
Dorte Riemenschneider  
Simone Rüfenacht

## **About this report**

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## **Executive summary**

Citizen science is an approach that fosters scientific literacy and the democratisation of scientific expertise, in order to increase the social relevance and sustainable impact of research, and to improve the evidence base for social, environmental, biodiversity and climate protection policies, both in Europe and worldwide.

The European Citizen Science Association (ECSA) is a non-profit organisation that supports the growth of the citizen science movement in Europe and enhances the participation of the public in scientific processes. Since its establishment in 2013, its member base and support has grown, with individual and organisational members now spread across Europe and the world.

ECSA's headquarters, which is hosted by the Museum für Naturkunde (MfN) in Berlin, Germany, has a talented and diverse team dedicated to supporting and developing citizen science in practice, politics and science. They work passionately to expand and strengthen the citizen science network in Europe and beyond. They engage with and support ECSA members and non-members through a wide range of activities, which they promote through ECSA's working groups and participation in several Horizon 2020 (H2020) projects.

For ECSA, 2018 was an exciting year with many changes and innovations. Through this annual report, we would like to inform you about these, as well as the challenges we faced, the many great events we participated in, and the cooperation and working group activities that progressed during the year.

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# 1. Organisational development

## 1.1 ECSA board

During the 2018 General Assembly in Geneva, Switzerland, ECSA appointed not only a new vice-chair, but also a new board of directors. Luigi Ceccaroni and Andrea Sforzi remained on the board, while Aletta Bonn, Margaret Gold and Zen Makuch stood down. The board now consists of Luigi Ceccaroni, Muki Haklay, Soledad Luna, Andrea Sforzi and Svetlana Klessova, who acts as our treasurer.

As ECSA is still a young association, many structures have not yet been set up; achieving this will require a lot of work, investment and commitment. The ECSA board, alongside the ECSA headquarters team, will combine their efforts to put these in place.

## 1.2 Project funding

ECSA is fortunate to receive support from the European Commission (EC) to fulfil its mission. This is achieved in particular through the approval of support for three new projects in 2018:

- **D-NOSES** aims to empower citizens through responsible research and innovation (RRI), civic science and co-creation tools to design odour control measures at the local, national and global levels, by working with civil society organisations (CSOs), non-governmental organisations (NGOs), local authorities, odour-emitting industries and universities.
- **EU-Citizen.Science** is building a central platform for citizen science in Europe. It will be a place to share useful resources on citizen science, including tools and guidelines, best practices and training modules. This will make the knowledge created in Europe accessible to all and enable people to start their own citizen science activities.
- **PANELFIT** focuses on facilitating the implementation of the new European General Data Protection Regulation (GDPR) by developing a set of outcomes that will serve as operational standards and practical guidelines to reduce the ethical and legal issues of ICT technologies, while fostering innovation and market growth.

## 1.3 ECSA headquarters

Many personnel changes occurred in 2018. In March, **Veronica French** ended her employment at ECSA. Fortunately, **Dorte Riemenschneider** was able to take over the role of administrator in April.

**Margaret Gold** stood down from the executive board to become involved in the EU-funded WeObserve project from April onwards. In June, she also took over the EU-funded LandSense project from **Andre Mascarenhas**. Also in June, ECSA welcomed **Simone Rüfenacht**, who joined ECSA from an extended working placement in Australia to combine citizen science with odour pollution through the D-NOSES project. ECSA was also delighted to appoint **Giulia Melilli** as a student assistant for this project.

In July, our student assistant **Gina Maskell** left the DITOs project. Fortunately, **Barbara Carneiro** assumed this role in her place.

Due to the many structural changes with the ECSA headquarters team, including its growth and the departure of **Katrin Vohland** as our contact person at MfN, Dorte Riemenschneider's position was changed in November from administrator to managing director – a much-needed step.

To meet the expectations set out in the new EU-funded projects, ECSA plans to appoint two new staff members in early 2019, one of whom will focus on our community and communications.

## 1.4 UN accreditation

We are pleased to announce that, thanks to Martin Brocklehurst's continued commitment in collaboration with ECSA headquarters, ECSA is now an accredited observer at the UN Environment Assembly.

## 1.5 Citizen Science Global Partnership

Following the establishment meeting of the Citizen Science Global Partnership at the UN Policy Business Environment Forum and the 3rd UN Environment Assembly in December 2017, a second meeting was held in Dubai at the World Data Forum in October 2018.



*The Citizen Science Global Partnership meeting in Dubai, October 2018.*

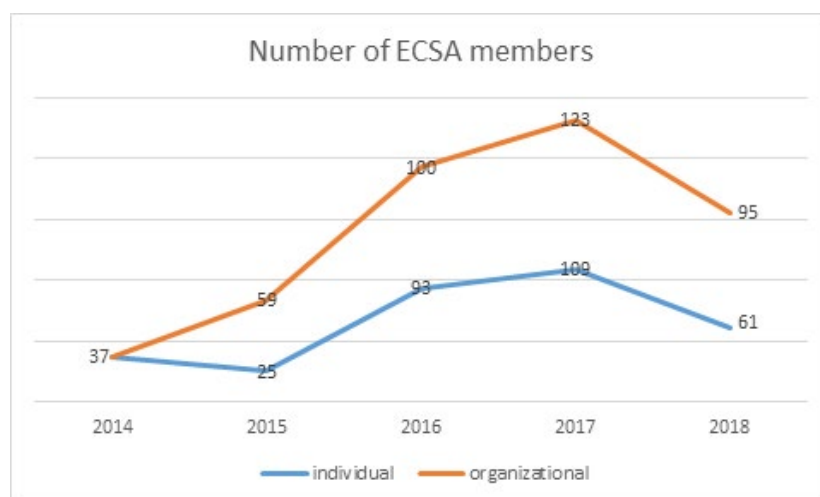
## 2. Membership

Members are the reason for ECSA's existence: our founding idea is to support each other in our commitment to citizen science, and to expand the field and knowledge base through networking in order to strengthen the approach at practical, scientific, political and media levels.

### 2.1 Individual and organisational members

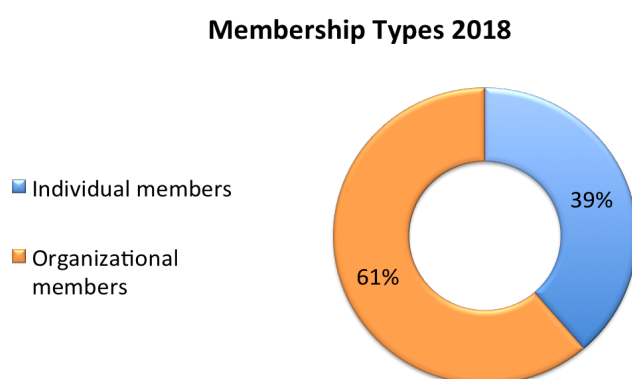
As of December 2018, ECSA has 156 individual and organisational members from 30 countries, across Europe and beyond (Figure 1). In 2018, ECSA revised its membership figures for the first time and cleaned up the database (to remove non-paying members); as a result, we recorded a slight drop in numbers compared to 2017.

**Figure 1. ECSA membership, 2014-18**



Compared to previous years, when about half of our members were individuals, we saw a greater proportion of organisational members in 2018 (Figure 2). It seems that organisational members are better able to keep up their membership over a number of years; by contrast, individual members may see a shift in personal circumstances (e.g. a change of interests, a new job) that cause them to end their membership.

**Figure 2. Membership by type, 2018**



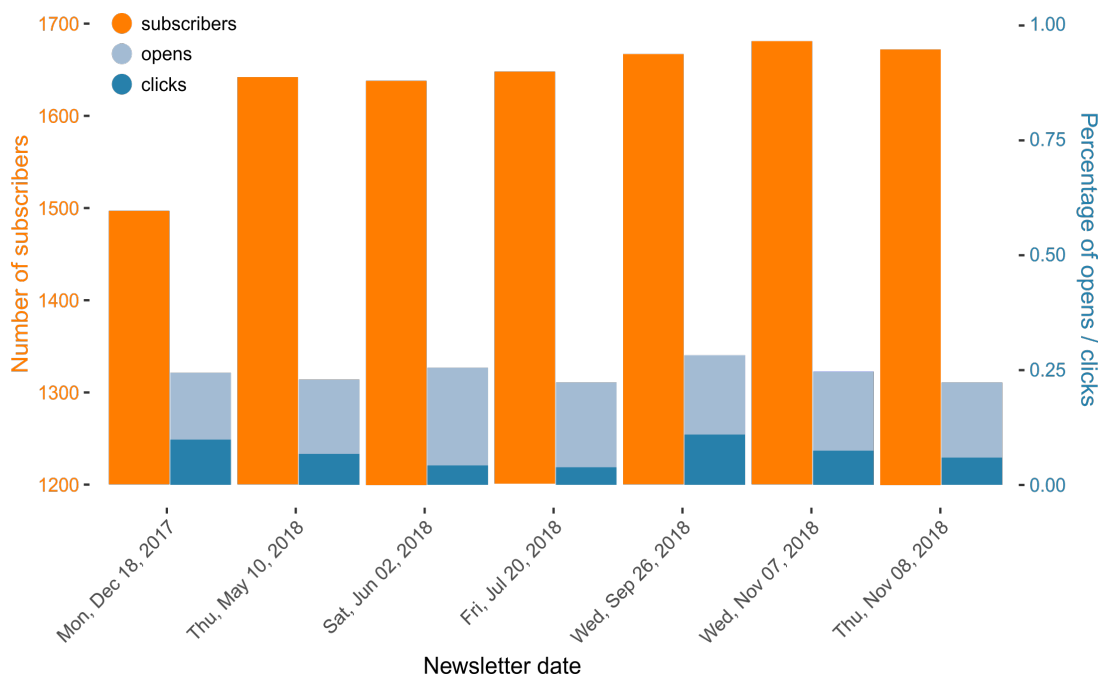
### 3. Communication

There was great interest in our social media channels in 2018, and we plan to be more active on Facebook and Twitter in 2019. Furthermore, we will focus on creating a more attractive and interactive newsletter to increase further interest in ECSA and its goals.

#### 3.1 Newsletter

ECSA sent out six newsletters during 2018, to 1,699 subscribers (peak number) from all over the world (Figure 3). This represents a steady growth in the number of subscribers.

**Figure 3. ECSA newsletter analytics, December 2017-December 2018**



*Source: MailChimp. In November, a corrected version of the newsletter was sent out a day after the original edition.*

#### 3.2 Social media

We saw growth in the number of followers on our two main social media accounts. In 2018, visitors to our Facebook page ‘liked’ us 1,200 times, while the number of followers increased from 940 to 1,279. On Twitter, we gained 926 new followers to reach approximately 1,750 by the end of the year.



## 4. Events

The following events are a selection of those at which ECSA participated in 2018.

### 4.1 D-NOSES kick-off meeting

**London, UK, 25 April**

Dorte Riemenschneider represented ECSA at the kick-off meeting, which was attended by 14 project partners from nine countries. The meeting included workshops on national and local engagement strategies, to select case studies, and to define user requirements for the International Odour Observatory.

### 4.2 Second International ECSA Conference

**Geneva, Switzerland, 3-5 June**

The Second International ECSA Conference, held under the theme ‘Citizen Science: empowering citizens, social innovation, scientific literacy’, was organised by the Foundation Science et Cité, with local support from the University of Geneva. It started with a public citizen science festival on the Sunday (3 June), in which ECSA invited participants to explore different citizen science projects from Geneva, Switzerland and abroad. Participants could also discover local projects through hands-on do-it-yourself (DIY) activities, meet activists from all over the world, or contribute to a research project on biodiversity at the Bioblitz excursion organised by Bioscope at the University of Geneva.

On Monday and Tuesday (4-5 June), almost 400 participants from all continents met to focus on the role that citizen science can play in: (1) empowering (individual) citizens; (2) social innovation and societal goals; (3) increasing scientific literacy; and (4) how citizen science changes science. The programme comprised 155 contributions<sup>1</sup> from 15 countries, forming five parallel sessions, many of which were interactive.

Other events held around the conference included working group meetings, organised by the specific group chairs, and the ECSA General Assembly for ECSA members, organised by ECSA headquarters.

The day after the conference (6 June), several ECSA working groups held further meetings, while the management committee of the Citizen Science COST Action (CA15212) met at the University of Geneva. The conference committee also held a debriefing meeting.

Contributions are still available on the [conference website](#), while a publication by a small group derived from members of the Scientific Committee is in production; it is planned for submission to the journal *Citizen Science – Theory and Practice* as a conference report focusing on strategic

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<sup>1</sup> In total, 250 proposals were submitted. The conference committee reviewed them all and accepted 185 (74%). However, some contributions had to be revised by the authors (e.g. a new format, a joint contribution with others). A small number of authors (4) had to cancel their participation, mainly due to a lack of funding.

and epistemological benefits. Impressions from the festival and conference can still be found on social media under the hashtag #ECSA2018, as well as on the conference website.

### **4.3 D-NOSES six-month interim meeting**

#### **Zaragoza, Spain, 17-19 September**

Soledad Luna represented ECSA at this meeting, where partners with pilot case studies presented their stakeholder analysis and received feedback from partners. The D-NOSES engagement framework was presented, while a role-playing activity enabled partners to familiarise themselves with and test different methods of engagement.

Through a series of workshops, partners demonstrated the tools and methods to be used in the pilot cases, and to establish reasonable timelines for these. The results from these workshops were then presented to the consortium for feedback. These exercises helped the pilot case study leaders to progress their preparation into actual engagement activities, and gave all remaining partners a taste of what they will need to do in future by introducing them to practical use of the methodology.

### **4.4 PANELFIT kick-off meeting**

#### **Frankfurt, Germany, 27 November**

Dorte Riemenschneider represented ECSA at the kick-off meeting for this project, at which participants presented their ideas about their tasks and roles within the project. This meeting was also an opportunity to discuss open questions, present the project structure and clarify how to organise communication in the project. All work package leaders presented their work and initiated connections with partner projects.

## 5. ECSA projects

### 5.1 Doing It Together Science



[Doing it Together Science](#) (DITOs) is a three-year Project Action funded by the EC through its H2020 programme to **increase awareness of and participation in citizen science** across Europe and beyond. It focuses on communication, coordination and support of citizen science activities. Through a wide range of events and activities, it promotes the sharing of best practices among existing networks for greater public and policy engagement with citizen science.

DITOs supports existing and new projects across the landscape of citizen science, including:

- **top-down projects** in which people join an activity that is designed and coordinated by scientists
- **bottom-up science activities** in which people, scientifically trained or not, organise a research project around a problem of direct concern; this is sometimes known as DIY (Do It Yourself) science
- **collaborative projects** that scientists and participants create jointly.

Activities include undertaking actual citizen science, as ‘engaging by doing’ is central to the project’s efforts. Other activities, both online and offline, focus on communicating different facets of citizen science, from in-depth engagement with small, organised groups to large-scale engagement via social media.

The consortium includes UCL (which acts as coordinator), Tekiu, Eutema, Universite Paris Descartes, the University of Geneva, Kapelica Gallery / Kersnikova, Medialab-Prado, the Royal Belgian Institute of Natural Sciences (RBINS), Meritum Association, Waag Society and ECSA.

### ECSA activities and milestones

ECSA activities in the project include leading the work package on policy engagement for RRI, and cooperating closely with consortium members on environmental sustainability, biodesign, and communication. In addition, ECSA will act as the legacy institution for the overall sustainability of the capacity building conducted by the project.

### Contacts

[Gaia Agnello](#), project officer

[Claudia Göbel](#), project officer

[Barbara Carneiro](#), student assistant

## 5.2 LandSense



[LandSense](#) is a four-year Research Innovation Action funded by the H2020 programme to **connect citizens with satellite imagery** to transform environmental decision-making, and to demonstrate the concept of citizen observatories. Running from September 2016 to August 2020, and with a budget of €5.7m, it is coordinated by IIASA (International Institute for Applied Systems Analysis) in Vienna, Austria, and supported by 18 partner institutions from nine European countries. The project aims to uncover the potential of citizen science and earth observation to improve the way we see, map and understand the world. The project's objectives are to:

- **assess** the current practices, user requirements and barriers of present land use and land cover (LULC) technologies, and illustrate the potential of citizen observatories
- **engage** key stakeholders in the LandSense platform, facilitating the collection, integration, management and presentation of LULC data
- **deliver** innovative and scalable services, and implement a strategy detailing the sustainable exploitation of these technologies post-project
- **demonstrate** the quality, confidence and benefit of citizen-driven observations and citizen engagement for improved LULC monitoring
- **promote** the uptake of LandSense technologies, solutions and products for large-scale LULC monitoring across the European Union (EU), using the LandSense Services Incubator.

LandSense held its first periodic review in Brussels on 15 May 2018. The project officer and the two external reviewers were very happy with progress and see great potential for achieving the anticipated outcomes.

### ECSA activities and milestones

#### Deliverable 2.1

ECSA's primary role was to complete Deliverable 2.1: to assess user requirements, barriers and engagement strategies for the LandSense citizen observatory. This was completed in February 2017 and the remainder of ECSA's time is spent supporting the communication and dissemination of demonstration (demo) cases within work packages 4 and 6.

#### The LandSense Challenge

As part of its conference in Geneva, ECSA co-organised the LandSense Challenge, which targeted individuals, web entrepreneurs, start-ups and small and medium enterprises from all participating H2020 countries. Six teams from four European countries presented ground-breaking ideas for: monitoring water levels; optimising bioenergy potential; agricultural satellite monitoring; land-surface temperature monitoring; automated monitoring of LULC; and

change-detection mapping. Participants took part in ‘boot camp’ sessions led by LandSense partners, with topics including sentinel hub services, citizen science and idea-pitching skills, thereby encouraging contributions to earth observatories, citizen science and investor communities.

First prize went to Rosalie van der Maas and Daniel van der Maas for ‘Bird’s AI - Automated Monitoring of Land Use and Land Cover’. They received a one-year subscription to Sentinel Hub Enterprise (worth €5,000) provided by Sinergise, online business coaching and mentorship services provided by InoSens, and a grand prize of €1,500.

## **Year 2 workshop demo cases**

On 7-8 November, the LandSense consortium held their second annual workshop at IIASA to move forward to the next project deliverables and present the demo cases and platforms that have been successfully launched:

1. Vienna green space monitoring
2. Amsterdam Rembrandt Park
3. Toulouse LULC monitoring
4. Heidelberg/OSM land use mapping
5. CropSupport for farm management
6. Biodiversity threat monitoring
7. LandSense engagement platform

## **Contact**

[Margaret Gold](#), project officer

Twitter: [@LandSense](#)

## **5.3 WeObserve**



Rising trends in citizen science have led to the development of [citizen observatories](#) focused on **engaging citizens in environmental monitoring** across Europe. These initiatives are widely supported by the EC under two main research and innovation funding programmes: FP7<sup>2</sup> and H2020. [WeObserve](#) is “an ecosystem of citizen observatories for environmental monitoring” and is funded under the H2020 programme to **improve collaboration** between existing citizen observatories and related regional, European and international activities.

WeObserve tackles key challenges around awareness, acceptability and sustainability, aiming to create a sustainable and vibrant ecosystem of citizen observatories to advance citizen science into the mainstream of environmental monitoring. Specifically, it aims to develop five

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<sup>2</sup> The seventh Framework Programme for Research and Technological Development.

communities of practice to assess the current knowledge base and strengthen it to address future environmental challenges, using science driven by citizen observatories. The project consortium will also extend the geographical coverage of this knowledge base to new communities, and support the implementation of best practices and standards across multiple sectors. Moreover, it will:

- reinforce links between ongoing citizen observatories and regional and global initiatives, including GEOSS, Copernicus and the UN Sustainable Development Goals (SDGs)
- promote the uptake of information from citizen observatory-powered activities across various sectors
- foster new opportunities and innovation in the sector of *in situ* earth observation.

To achieve these objectives, WeObserve brings together a strong consortium of seven partners, built upon the four H2020 citizen observatory projects: (1) Ground Truth 2.0; (2) GROW; (3) LandSense; and (4) Scent. It also pursues strong links with a wide range of other networks, users and stakeholders.

### ECSA activities and milestones

ECSA plays a leading role in the task of mapping the EU landscape of existing citizen observatories initiatives, relevant communities and their interactions. ECSA also supports a number of other tasks including the development of communities of practice for knowledge exchange on citizen observatories, as well as project dissemination and outreach to ECSA members and the citizen science community.

### Contact

[Margaret Gold](#), project officer

Twitter: [@WeObserveEU](#)

Facebook: [WeObserveEU](#)

## 5.4 D-NOSES



Did you know that odour pollution is the second-leading reason for environmental complaints across Europe? D-NOSES, a three-year Coordination and Support Action funded by the EC's H2020 programme, aims to provide a bottom-up approach to tackling odour pollution issues.

This project will introduce new **mapping, data collection and community engagement tools** to facilitate citizen science interventions across Europe and beyond. Data will be collected in the International Odour Observatory, an open access platform dedicated to promoting engagement at all levels, and literally putting odour pollution on the map. Citizens will then join other stakeholders such as industries, local authorities and NGOs, in at least 10 pilot sites, to **co-create solutions** to their odour problems.



D-NOSES will produce a green paper on odour pollution, scientific and policy guidelines, and a strategic roadmap on odour pollution to embed the issue in the policy agenda and help promote sustainability through community action.

### ECSA activities and milestones

ECSA is one of the major citizen science experts in the project and is simultaneously responsible for the pilot study and the evaluation of the odour pollution situation in Germany. ECSA leads tasks on policy–society scientific dialogues and writing the DIY guidelines for project replicability, and contributes significantly to D-NOSES advocacy actions.

#### Kick-off meeting

D-NOSES held its project kick-off meeting in London, UK, in April 2018. Dorte Riemenschneider represented ECSA and met the other 13 partners. At the meeting, participants brainstormed important aspects of the project, including: (1) contents of the International Odour Observatory; (2) national engagement strategies; (3) co-creation approaches for societal engagement; (4) local engagement strategies; (5) selection of the different case studies; and (6) the global engagement strategy. In addition, the consortium simulated different D-NOSES pilot case studies, which will take place in five partner countries (Bulgaria, Chile, Greece, Portugal and Spain), starting in January 2019.

#### Mapping of German odour issues

ECSA conducted a thorough online media analysis and contacted environmental offices and local municipalities in all German states to gather information about odour issues in Germany. The results of this analysis were published in the deliverable on the map of odour issues and priorities ([D4.1](#)) and in the [community-mapping tool](#) created by Mapping for Change.

#### Policy brief on odour pollution

ECSA led the writing of the [first D-NOSES policy brief](#) entitled ‘Odour pollution – a growing societal concern’. This describes what odour pollution is, how it is conventionally measured and mitigated, how it is regulated in the different project partner countries, and what the D-NOSES approach entails. This policy brief is in English, dealing with the issues on a European level. It will be translated and adjusted by each partner country to fit the local regulations; the German policy brief will be written by ECSA. These will be used in all pilot case studies to facilitate engagement with policy-makers.



## Next steps

ECSA is contributing significantly to the definition of selection criteria for the remaining case studies, to ensure a transparent decision-making process. Using these criteria, all partners will assess their potential case studies (identified through the media analysis and direct communications with stakeholders) and decide on the most suitable case study within each country. Upon selection, each partner will perform a detailed stakeholder analysis and begin stakeholder engagement, incorporating all experiences and results from the pilot case studies. ECSA is also continuing the analysis of odour issues in Germany and will soon start to contact local authorities and emitters to identify a suitable German case study for the D-NOSES project.

The D-NOSES consortium will also attend numerous conferences, meetings and other events throughout 2019 to present the project methodology and preliminary results from the pilot case studies. The next consortium meetings will take place in May 2019 in Porto, Portugal, in conjunction with the [International Conference on Odours](#) organised by APEA (a D-NOSES partner), and in October 2019 in Brussels, Belgium (in conjunction with the Pilot Leaders review meeting).

## Contacts

[Simone Rüfenacht](#), D-NOSES project officer

[Giulia Melilli](#), D-NOSES student assistant

Twitter: [@dNOSES\\_EU](#), #dNosesEU

Facebook: [@dNOSES.EU](#)

## 5.5 PANELFIT



PANELFIT (Participatory Approaches to a New Ethical and Legal Framework for ICT) is an H2020-funded project that aims to facilitate adaptation to the new EU regulations on data protection, data commercialisation and security/cybersecurity issues. It will do this by producing a set of outcomes that includes an open-access guidelines document (validated by two data-protection agencies); a critical analysis of the information and communication technology (ICT) data protection regulatory framework; and a report on the governance of ICT data protection ethical and legal issues.

PANELFIT will perform a deep analysis of the ethical issues around this through: (1) an extensive public consultation; (2) a set of workshops; and (3) mutual learning and networking encounters with policy-makers, stakeholders, end-users and citizens, who will help check and refine this analysis.

Overall, PANELFIT will provide its target end-users (which include researchers, innovation services, data protection officers and policy-makers) with operational standards and practical guidelines that minimise the ethical and legal issues posed by ICTs, while also promoting the innovation and market growth that will create high-quality jobs and ensure high levels of



privacy and security/cybersecurity. These standards and guidelines will be shared through monthly chats, newsletters, Massive Online Open Courses (MOOCs) and face-to-face courses, and public discussions.

### **ECSA activities and milestones**

ECSA will be part of the team producing a citizens' information pack, and leading on a version of this tailored specifically for vulnerable groups. We will also contribute to the creation and delivery of MOOCs for different user groups.

Dorte Riemenschneider represented ECSA at the kick-off meeting in Frankfurt, at which all work package leaders presented their work and connections with partner projects.

### **Next steps**

Tasks in 2019 will include gathering ideas for the citizens' information packs and establishing the vulnerable groups that will receive the tailored version: who these groups are and what their specific requirements are. Consortium meetings are planned for May (in Brussels) and June (Bilbao), which will be excellent opportunities to discuss these elements with the consortium partners involved.

### **Contact**

[Tim Woods](#), project officer

Twitter: [@Panelfit](#)

Facebook: [Panelfit.news](#)

## **6. ECSA working groups**

### **6.1 Air quality**

**Co-chairs: Linda Carton, Hester Volten and Nuria Castell**

The ECSA working group on air quality was set up on 4 June 2018 in Geneva to develop a network of scientists and citizen scientists for exchange and peer support about air quality monitoring and policy-making. It originated from an earlier activity, a Lorentz workshop held at the University of Leiden, Netherlands, in January 2018, at which the idea to work jointly towards a collaborative European Clean Air Day was born during a group brainstorm. In 2019, Clean Air Day will start as a small event, with the aims of getting a website established and the organisation up and running. In 2020, we will aim for the second European Clean Air Day to be a bigger event with dedicated media outreach.

As a working group, we have been active in self-organisation to connect easily with each other (e.g. sharing documents, co-writing, meetings), as we are based in various European countries. We found that we like to hold monthly Skype meetings that are planned well in advance for the whole academic year, and share our documents in a folder on Google Drive (with subfolders and specific Google documents for specific pieces of co-writing).

Our internal organisation functions through ‘hubs’ for collaboration, communication and information-sharing. Below are the links to our various communications channels:

- Working Group mailing list: [ecsa-air-quality@listserv.dfn.de](mailto:ecsa-air-quality@listserv.dfn.de)
- [Skype meetings](#)
- [Google Drive folder](#)
- [ECSA website page](#)

### **Purpose and major objectives**

The collaborative purpose of the working group is to organise an annual European Clean Air Day on which citizen scientists can easily find and join activities to monitor air quality in European cities. Starting in 2019, this annual event will bring together knowledge from various institutions, scientists and practitioners, and enable people to collaborate on shared goals.

Our major objectives are to:

- scale up existing methods in air quality monitoring with citizen science approaches to the European scale, by focusing efforts towards an annual Clean Air Day
- connect existing but differing initiatives, comparing and harmonising different approaches, with the aim of a collaborative pan-European mapping
- engage more citizens in Europe in monitoring air quality
- improve our understanding of upscaling citizen sensing.

### **Activities 2018-19**

To maintain an overview of our activities, we have assembled a joint calendar for 2018 and 2019. These are activities in which working group members have collaborated and joint activities organised by members.

**JRC–Hackair Roundtable, 24 October 2018**

Many working group members were present at this event, held in Frankfurt, Germany, including: Sven Schade (JRC), Wiebke Herding (ON:SUBJECT), Hester Volten (RIVM), Linda Carton (Radboud University), Lukas Mocek (Luftdaten), Ivonne Jansen-Dings (WAAG Society Amsterdam) and Panagiota Syropoulou (Draxis).

#### **CAPTOR Conference, 14 November 2018**

This was held in Milan, Italy.

#### **WOWM, 27-30 November 2018**

This was held in Venice, Italy.

#### **COP 24, December 2018**

At the UNFCCC's 24th Conference of the Parties, held in Katowice, Poland, working group members attended a side event on 6 December about air quality, with Pawel Wyszomirski handing over the DITOs policy brief on air quality (see written outputs, below) to the Polish Minister of Environment.

Events planned for 2019 include the following:

- **Meeting with ECSA steering committee, 29 January:** we will discuss preparations for the first European Clean Air Day on 20 June 2019 and ask for assistance (e.g. on website, from communications officer, funding, serving as a legal entity organising this event).
- **22 February and 22 March:** monthly Skype meetings.
- **Workshop session, 2 April:** this will be held in Brussels as part of the ECSA General Assembly.
- **April 2019:** multiple consortia are forming to prepare research proposals for H2020. We know that at least two 'consortia in the making' have been discussing possibilities for participation within the working group. After the submission deadlines have passed, and review processes have taken place, the working group will ask which projects have emerged from this; we aim to remain a 'collaborative space' where we, as scientists and citizen scientists, can collaborate on citizen science research for commonly agreed societal goals, beyond or alongside competitive endeavours like H2020 grant proposals.
- **Urban Futures Global Conference, 22-23 May:** NILU organises a campaign with schools to measure air pollution in Oslo, Norway, using 'Vaseline cards' for one week to take a sample and upload the results to an online map of the city. At a conference held as part of Oslo Green Capital, the outcomes of this 'Luftmaler' Vaseline method and measurement campaign (see below) will be presented at the conference, which is targeted at 'city changers' including policy-makers and civil servants.
- **European Clean Air Day, 20 June:** our objective is to hold our first event, with a website full of information and a physical event at the Waag Society, Amsterdam, Netherlands.

## Written outputs in 2018-19

- The [Joint Statement of the JRC–Hackair Roundtable](#) on 24 October 2018 in Frankfurt, Germany, was drafted with input from working group members and edited by Sven Schade.
- The DITOs policy brief on ‘[European Clean Air Day - citizen science for clean air](#)’ was presented to the Polish Minister of Environment at the UNFCCC in Katowice, Poland, in December 2018. This was drafted with input from working group members and edited by Pawel Wyszomirski, in collaboration with DITOs.
- The [Clean Air day website](#) was prepared for 20 June 2019.

## Joint analysis: methods/approaches and platforms for citizen science on air quality

Many approaches, methods, sensors, platforms, channels and community engagement approaches for monitoring air quality have been discussed during working group meetings. Some are more professional than others, with greater complexity, calibration efforts and costs involved. Others are based more on the DIY philosophy and adopt low-cost approaches. Two citizen science methods have been selected for promotion on Clean Air Day: the Luftmaler Vaseline card method and the Luftdaten method.

### Vaseline card method

At a Lorentz workshop in Leiden, Netherlands, in January 2018, Ivonne Jansen-Dings of Waag Society explained their experience with a method that uses Vaseline and milk cartons. This has been refined by Nuria Castell at NILU and was used in a campaign with schools throughout Oslo in May 2019. Schoolchildren created an online map based on their measurements of air quality, noting weekly levels of air pollution.

### Luftdaten method

The Luftdaten project developed as a grassroots project at the Stuttgart Code for Germany Open Knowledge Lab. Over recent years, it has become institutionalised as an independent entity and is growing fast as a particulate matter sensing method for measuring PM2.5 and PM10. The Luftdaten platform offers, among other things, a platform (API) for sharing sensor data as open data, a Luftdaten map, and YouTube movies for assistance. It also hosts a facilitated community organisation for self-organising local groups and supporting community networks to monitor air quality with self-built sensors (NOVA SDS011) that can be plugged into the Luftdaten platform.

## 6.2 BioBlitz

To be updated.

## 6.3 Citizen science and open science

To be updated.

## 6.4 Conference

The Second International ECSA Conference took place in Geneva, Switzerland, from 3-5 June 2018. Organised by the Foundation Science et Cité, it began with a public citizen science festival on Sunday (3 June), at which participants were invited to explore different citizen science projects from Switzerland and abroad. Participants could also learn about local projects through hands-on DIY activities, meet activists attending the conference from all over the world, or contribute to a research project on biodiversity at the BioBlitz excursion organised by Bioscope at the University of Geneva.



The conference took place on Monday and Tuesday (4-5 June), with almost 400 participants from all continents. The focus was the roles that citizen science can play in: (1) empowering (individual) citizens; (2) social innovation and societal goals; (3) increasing scientific literacy; and (4) changing science. The conference committee shaped the programme out of 155 contributions<sup>3</sup> from 15 countries. There were five parallel sessions, many of which were interactive.



Other events organised around the conference and the public festival included working group meetings and the ECSA General Assembly, which was held on Tuesday evening. After the conference, several working groups held further meetings, and the management committee meeting of the Citizen Science COST Action (CA 15212) took place at the University of Geneva. The conference committee also met for a debrief.

Contributions (including posters) are available on the [conference website](#). A publication by a small group, mainly derived from members of the scientific committee, is in progress and is planned for submission to *Citizen Science – Theory and Practice* as a conference report focusing on strategic and epistemological added value.

Festival and conference impressions can be found on social media under the hashtag #ECSA2018 and on the conference website.

Photos: © Eva Zornio / Science et Cité

## 6.5 Empowerment, Inclusiveness, Equity

### Co-chairs: Claudia Göbel and Michael Sogaard Jorgensen

This working group was set up at the ECSA General Assembly in Geneva, June 2018, in cooperation with the [Living Knowledge Network](#) for science shops and community-based

<sup>3</sup> 250 proposals were submitted, the conference committee reviewed them all and has accepted 185 (74%). However, some contributions had to be revised by the authors (new format, joint contribution with others) and very few authors (4 in total) had to cancel their participation mainly because they lacked funding for the trip.

research. Its background is a joint interest from the field of citizen science and community-based research for increased cooperation, exchange of experiences and development of methods – which is one of the three strategic pillars in the [ECSA strategy](#). This, we hope, will contribute to strengthening the focus on empowerment of civil society as the focus and impact of citizen science activities.

Our activities from 2018 to February 2019 include:

- **sharing information through [our mailing list](#)**, e.g. calls for participation, partnerships or publications, job adds, relevant literature, interesting events
- **regular online working group meetings** to discuss joint activities, learn more about each other's work and shape how we work together:
  - The meeting space is usually [this platform on Adobe Connect](#).
  - [Agenda / minutes for the meetings are here](#).
  - Since October 2018, there have been four online meetings with 1-2 presentations each time by Working Group members about their activities.
- **organising face-to-face workshops** for exchanging experiences and creating resources together:
  - Here is the [documentation of our two previous workshops with ECSA and the Living Knowledge Network over the summer 2018](#).
  - During 1-2 February 2019, we held the [workshop 'Empowering civil society through participatory investigation?'](#) in Marne-la-Vallée, France, together with the LISIS lab and the ALLISS network.
  - We organised a face-to-face [meeting on 2 April 2019 in Brussels, Belgium](#), before the ECSA General Assembly. This will include a session to share experiences with citizen participation and empowerment from citizen science and other participatory activities, and a working session where we will start working on joint projects that the working group members agree upon.
- **collecting literature and case studies** on empowerment, inclusiveness and equity in citizen science and community-based research; we are [building a collection on GDrive](#)
- **co-creating the purpose and activities of the working group**
  - We started by [asking for member input on our draft working group description](#).

All ECSA members are warmly invited to subscribe to [our mailing list](#), share experiences from their work, join our regular online and face-to-face working group meetings and more. Please find out how to get involved [through our website](#) and/or get in touch with [Claudia](#), [Michael](#) or [Dorte](#)!

## 6.6 Learning and education in citizen science

**Chair: John Harlin; co-chairs: Julia Lorke and Rick Hall**

This working group aims to facilitate collaboration between, and increase the use of citizen science by: (1) school and higher education teachers; (2) educators from museums, community spaces and after-school activities; (3) educational researchers; (4) scientists; and (5) other communities interested in developing the informal learning and educational aspects of their citizen science projects. Our primary actions over the last year included the following.

## Symposium in Leysin

In March 2018, the Leysin American School in Switzerland hosted a [2.5-day workshop](#) on using citizen science to inspire students and teachers in school-based science education. The goal was to learn alongside a distinguished group of science educators and researchers. The workshop was funded by COST Action and co-organised by learning and education working groups within COST and ECSA. It was designed to inspire and foster critical discussion between participants from overlapping communities: educational researchers, scientists, science educators and teachers. All talks were filmed for the [series of videos](#).

## Website for the working group

We created a [working website for the working group](#). Anyone is welcome to visit it, but it is intended purely for internal communication. We are using the site to circulate surveys that solicit recommendations for citizen science projects that are specifically useful in the classroom and in outside learning. Visitors are asked to use the form ‘Survey of CS projects’ on the top bar.

## Workshop in Brussels, 1-2 April 2019

Before the ECSA General Assembly in Brussels, we have organised a COST Action-funded workshop to help build a community network for educators, teachers, citizen science practitioners and researchers on synergies between citizen science and education. The goal is to explore the needs of the community, draft community participation guidelines, scope available platforms, applications and software and develop a communication strategy that would pool efforts and resources from different organisations. We are attempting a new approach (for us): [Mozilla Open leadership - Personas & Pathways](#).

## 6.7 Policy

### Chair (retiring): Martin Brocklehurst

The 2018 ECSA General Assembly agreed that the work of the ECSA Policy Working Group would continue and that the priorities for 2018-19 would be to:

- support the Board Member responsible for Policy
- promote the development of citizen science policy and the institutional framework that supports it within the:
  - EU and Member States
  - United Nations (UN), through the Citizen Science Global Partnership
  - academia
- develop political support among Members of the European Parliament (MEPs) for citizen science
- develop EU-wide demonstration citizen science programmes that demonstrate the value of citizen science in policy development and implementation for invasive species, pollinators, air quality and vector-carrying mosquitoes.

In addition, post General Assembly the ECSA steering committee agreed to the establishment of a working group to explore how citizen science could support the SDGs.



Progress has been made this year in developing an institutional framework for citizen science with both the EU and the UN. At the EU level, the first ever piece of environmental legislation built on the foundations of citizen science data was drafted: **the Directive of the European Parliament and of the Council on the reduction of the impact of certain plastic products on the environment**. At the national level, the Deputy Head of the Belgium Mission to the UN confirmed the impact of CurieuzeNeuzen, a citizen science air quality programme. This involved over 20,000 people and triggered a national debate on one of the biggest global challenges, now responsible for 6-7 million early deaths globally per year. Both illustrate how citizen science data can be instrumental in providing the evidence to drive change in our society when it is gathered at sufficient scale.

Citizen science was again at the forefront of debate at the UN World Data Forum in Dubai in October 2018 and at UNEA4 in Nairobi, Kenya, in March 2019, where citizen science was referenced over 100 times in the newly published 6th Global Environmental Outlook (GEO-6). In addition, the world's environment ministers agreed in their Ministerial Declaration that they would take the following action:

“We will invest in environmental research, education and awareness raising in the framework of sustainable development with a strong focus on women and youth and we promote a wider use of innovative approaches, such as inclusive citizen science.”



*Satya S. Tripathi, UN Assistant Secretary-General and head of the New York office, joins the global citizen science delegation at the UN Science Policy Business Forum, in Nairobi, Kenya, March 2019. Delegates are from China (Hong Kong), Africa, USA, Europe & Australia.*

At UNEA4, the Chief Scientist of UNEP, Dr Jian Liu and Stephen Stec, Joint Chair of the UN Major Groups Science & Technology Committee, both referred to the importance of citizen science in delivering the SDGs in their statements to the closing plenary. In response, UN staff are now in discussions with the Citizen Science Global Partnership on drafting a memorandum of understanding to ensure that citizen science data can become an integral part of the UN planning for the World Environment Situation Room. They are also in discussions on how we can support UN staff to engage fully with the citizen science community. We can have no



clearer indication that where we organise and co-operate to deliver regional and global scale citizen science programmes, policy regulators will engage and support us.

The challenge for ECSA during 2019-20 is: can we find the resources and the people to ensure ECSA stays at the forefront of citizen science in Europe, and continues to support the emergence of the Citizen Science Global Partnership on the world stage?



*Martin Brocklehurst, retiring chair of the ECSA Policy Committee, at the UNEP World Data Stand at UNEA4.*

## 6.8 Projects, Data, Tools and Technology

### Chair: Jaume Piera

This [Working Group](#)<sup>4</sup> is trying to formalise a common understanding of interests in the citizen science data space by analysing problems that citizen science projects face regarding data, such as interoperability, data reliability (e.g. how citizen science data can be trusted and plugged into environmental regulation and monitoring requirements from governments), privacy and data intellectual property rights.

To do so, it is establishing collaborations with other technical organisations such as the Open Geospatial Consortium (OGC), Biodiversity Information Standards (TDWG) and the Group on Earth Observation (GEO); other citizen science associations, especially via a liaison with the Citizen Science Association (CSA) international working group on citizen science data and metadata; and relevant initiatives, including the COST Action 15212 on citizen science, and the WeObserve community of practice on interoperability. It is also participating in the H2020-funded PANELFIT project.

In the highly dynamic and fluid situation of citizen science standards and technologies, it became increasingly important to ensure the interplay and exchange between the above-mentioned initiatives, and to follow an inclusive approach in which the members of the different

<sup>4</sup> This report summarises activities since the last ECSA General Assembly on 5 June 2018 in Geneva, Switzerland.

existing groups work in close collaboration. The activities of this working group follow this principle and illustrate how we could establish successful working relationships.

### Summary of activities

Since the last ECSA General Assembly, the working group co-organised and attended the following meetings and events:

- [Workshop on citizen science standards](#), 6 June 2018, in Geneva, Switzerland
- [OGC Citizen Science Domain Working Group](#) meeting, 13 September 2018, Stuttgart, Germany
- Kick-off of the [OGC interoperability experiment on citizen science](#), 13 September 2018, Stuttgart, Germany
- [PANELFIT kick-off meeting](#), 19-20 November, Goethe Universität, Frankfurt, Germany
- [2nd International Conference on Citizen Observatories for Natural Hazards and Water Management](#), 27-30 November 2018, Venice, Italy
- [CitSci 2019](#), 13-17 March 2019, Raleigh, USA
- [Workshop of the COST Action 15212 Working Group on 5 - Improve data standardization and interoperability](#), 21-22 March 2019, Enschede, Netherlands
- Regular phone conferences of the [WeObserve community of practice on interoperability](#), including coordination meetings for the OGC interoperability experiment on citizen science
- Regular phone conferences of the [GEO community activity on citizen science](#)
- Phone conferences of the [CSA International Working Group on Citizen Science Data and Metadata](#)

Since the last ECSA General Assembly, members of the working group co-authored the following scientific publications:

- European Commission, Directorate-General for Environment; European Commission, Joint Research Centre; Bio Innovation Service. 2018. [An inventory of citizen science activities for environmental policies](#). European Commission, Joint Research Centre (JRC) [Dataset] PID.
- Luna S. et al. 2018. [Developing Mobile Applications for Environmental and Biodiversity Citizen Science: Considerations and Recommendations](#). Multimedia Systems and Applications. Springer, Cham.
- Roy H. et al. 2018. '[Increasing understanding of alien species through citizen science \(Alien-CSI\)](#)', *Research Ideas and Outcomes* 4: e31412.
- Williams J. et al. 2018. '[Maximising the impact and reuse of citizen science data](#)'. UCL Press, pp: 321-336.
- Ceccaroni L. and Piera J. 2018. '[Stakeholder engagement in water quality research: A case study based on the Citclops and MONOCLE projects](#)'. UCL Press, pp. 201-209.
- Mazumar S. et al. 2018. '[Citizen science technologies and new opportunities for participation](#)'. UCL Press, pp. 303-320.

Since the last ECSA General Assembly, we also contributed to:

- the [Geneva Declaration on Citizen Science Data and Metadata Standards](#)
- a proposal for an update of PPRS-Core
- inputs to the proposal for a GEO initiative on citizen science
- an [initial demonstrator for a citizen science project explorer](#)
- initial connectivity demonstration of DIY instruments with [The Things Network](#), in the framework of H2020-[MONOCLE](#) and CSIC-ATiCO projects.

### Next steps

- Spearhead the sharing of resources (projects, data, tools and technologies) for citizen science by providing examples and developing best practices.
- Intensify collaborations with the CSA working group, especially to promote international standards for citizen science data and metadata.
- Contribute to a newly proposed citizen science initiative for GEO.
- Contribute to the wrapping up of the OGC interoperability experiment on citizen science.
- Contribute to the PANELFIT project.
- Collaborate with The Things Network, a community that is building a worldwide open, decentralized Internet of Things with the following principles:
  - ownership (your data is your data): data is encrypted end to end
  - net neutrality: all data is treated equally
  - open source: technology developed in the stack is made open source.

## 7. ECSA finances

ECSA budget 2018		
	balance	plan
<b>Income</b>	<b>61.450,02 €</b>	<b>55.713,04 €</b>
Balance carried forward 2017	7.913,04 €	7.913,04 €
Membership contributions	13.139,76 €	8.000,00 €
DITOs	22.000,00 €	22.000,00 €
LandSense	5.000,00 €	5.000,00 €
WeObserve	5.000,00 €	5.500,00 €
D-Noses	7.300,00 €	7.300,00 €
Panelfit	1.097,22 €	-
<b>Expenses</b>	<b>52.158,51 €</b>	<b>54.086,69 €</b>
Personnel	37.497,89 €	30.086,69 €
Rent / Computer Expenses	10,99 €	
Third Parties	8.329,74 €	11.000,00 €
General Administration	4.029,59 €	8.000,00 €
Travel Cost	2.290,30 €	
Activities		5.000,00 €
<b>Balance</b>	<b>9.291,51 €</b>	<b>1.626,35 €</b>

Project budgets for H2020-funded projects, 2018 (€)						
	DITOs	LandSense	WeObserve	D-NOSES	PANELFIT	
<b>Overall ECSA project budget</b>	<b>383,750.00</b>	<b>105,000.00</b>	<b>84,000.00</b>	<b>219,250.00</b>	<b>98,750.00</b>	
Project start	01 June 2016	01 Sep 2016	01 Dec 2017	01 April 2018	01 Nov 2018	
Project end	31 Mai 2019	31 August 2020	30 Nov 2020	31 Mrz 2021	31 Oct 2021	
	(Jan-Dec)	(Jan-Dec)	(Jan-Dec)	(Jun-Dec)	(Nov-Dec)	
<b>Expenses</b>						<b>Total spending</b>
Unrestricted funds for ECSA	22,000.00	5,000.00	5,000.00	7,376.84	1,097.22	40,397.22
Personnel	69,957.71	44,283.00	23,106.00	27,305.67	0.00	164,652.38
Other direct costs	21,355.81	7,989.00	2,870.00	2,201.69	0.00	35,303.34
Total spending 2018	91,313.52	52,272.00	25,976.00	29,507.36	0.00	199,955.72
<b>Balance</b>	<b>128,661.13</b>	<b>47,728.00</b>	<b>53,024.00</b>	<b>182,365.80</b>	<b>97,652.78</b>	

## **8. Acknowledgements**

### **8.1 In-kind contributions**

#### **Museum für Naturkunde Berlin**

- ECSA Executive Chair Johannes Vogel, Museum für Naturkunde Berlin.
- Office space, administrative support, design support, travels, print materials, website hosting, administration and development, writing and administering research proposals.

#### **Other contributions**

ECSA's success is only made possible by its many supporters we would like to thank and acknowledge.

The chairpersons for their tireless dedication and great service to ECSA. The board of directors for their great commitment. Those who stood for election to the board of directors this year, and special thanks to those who have taken on the task of working as directors for the next two years. The ECSA advisory board, all ECSA members, and working group chairs and members and their commitment and support, and making ECSA possible in the first place. The headquarters team and their tireless commitment to ECSA.