

WHEN SCIENTISTS GO UNDER THE WATER
BİLİM İNSANLARI SUYUN ALTINA İNDİĞİNDE

CITIZEN SCIENCE IN THE SEAS

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WHAT IS
SCIENCE IN BLUE

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EUROPEAN SCIENCE FESTIVAL-RESEARCHERS' NIGHT

THE LAST WEEK OF SEPTEMBER EVERY YEAR ACROSS EUROPE

27-28 September 2024
Galatasaray University

26-27 September 2025
Akdeniz University



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MAVİ
HACKATHON
Denizin derinliklerinde teknoloji macerası başlıyor!
Mavi Hackathon, lise öğrencilerini İstanbul Boğazı'nı keşfetmeye ve kodlama becerilerini geliştirmeye çağırıyor. Galatasaray Üniversitesi'ndeki etkinlikte öğrenciler, boğazın verilerini toplayacak bir cihaz geliştirecek. Tasarlanan ürün bir ROV'a monte edilecek ve öğrenciler, kendi kodladıkları cihazın dalışını kamplerden izleyebilecekler.
MAVİDE BİLİM
www.scienceinblue.eu


KÖPRÜÜSSÜ
SİMÜLATÖRÜ
27 Eylül 2024
09:00 - 18:00
Denizciliğe yelken açmaya hazır mısın?
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TEA TALK
27 Eylül 2024
AYDIN DOĞAN SALONU
16:00 - 17:00 Çay/Kahve İkramı
17:00 - 19:00 Sunumlar
The Science of Diving
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BOĞAZDA
GECE
DALIŞI
27 Eylül Cuma
17:00 - 23:00
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ARAŞTIRMA
VE
DALIŞ
ARAÇLARI
27 Eylül 2024
10:00 - 18:00
Cuma
SARAY BİNASI
SERGİ SALONU
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BOĞAZDA
SATIH
DESTEKLİ
BİLİMSEL
DALIŞ
28 Eylül Cumartesi
10:00 - 12:00
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DENİZLERİN
MİRASI
Okyanuslar ve sualtı kültür mirası hakkında ne kadar bilgiye sahibiz?
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ROBOTLAR
SENİ ÇAĞIRIYOR!
28 Eylül Cumartesi
13:30 - 18:00
Bu etkinlik, Boğaziçi Sualtı Araştırma Merkezi (DURC) tarafından sağlanan üç sualtı robotunun desteğiyle düzenlenecektir.
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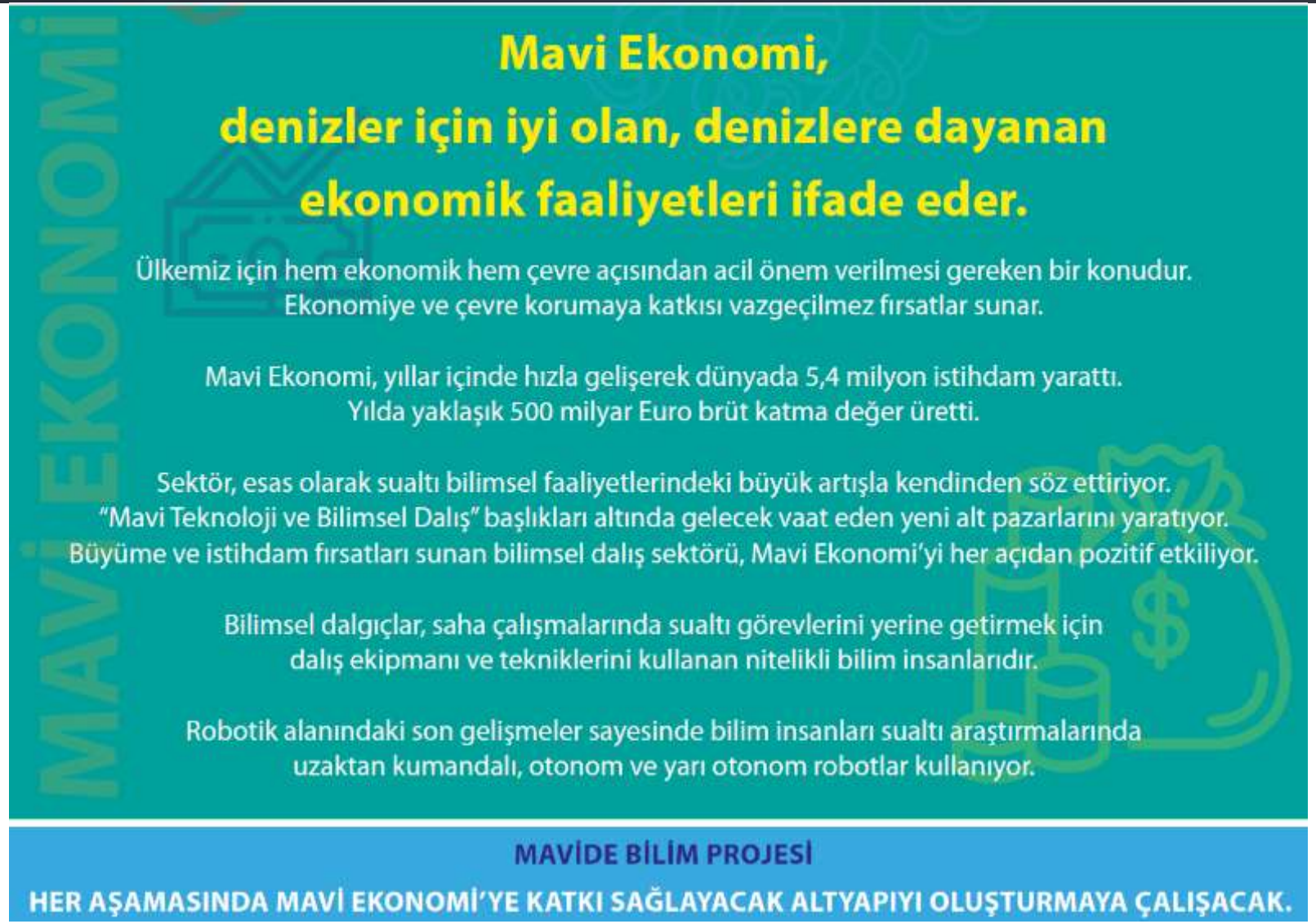
RESEARCHERS AT SCHOOLS

7 Bölgede
140 Okulda



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RESEARCHERS AT SCHOOLS



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Prof Dr S. Murat Egi
Dr Tamer Özyiğit
Underwater Tech. Ebru Öksüz
Eng. Burak Tekdamar

CITIZEN SCIENCE IN THE SEAS

- 1976-1984
- 20 hrs of glider piloting
- Breathold Diving
- Graduated with Excellence









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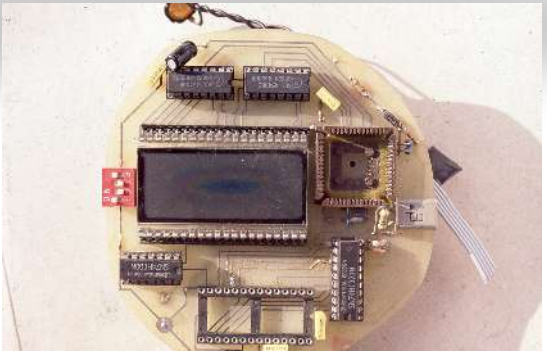
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- Electronic Engineering (Bsc)
- + Biology department
- 1984-1989
- English
- Instructor/Head of SCUBA diving clu
- NAVY Frogsman course with excellence
- Dive Computer Design (1989)
- Graduated with Rectors Award









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Dive Computers















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Dive Computers

2016 ScubaLab Testers Choice
Dive Computer
Oceanic VTX





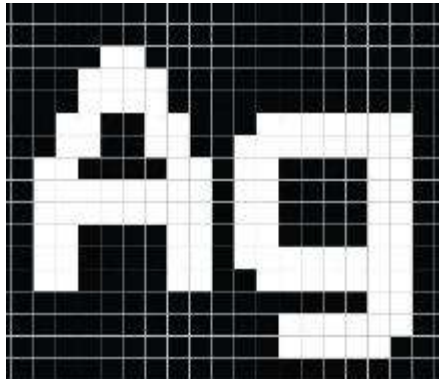




Algorithm

Part of the Firmware

Op Logic, Spec, Display



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I CAN DIVE WITH MY TABLET



INNOVASUB

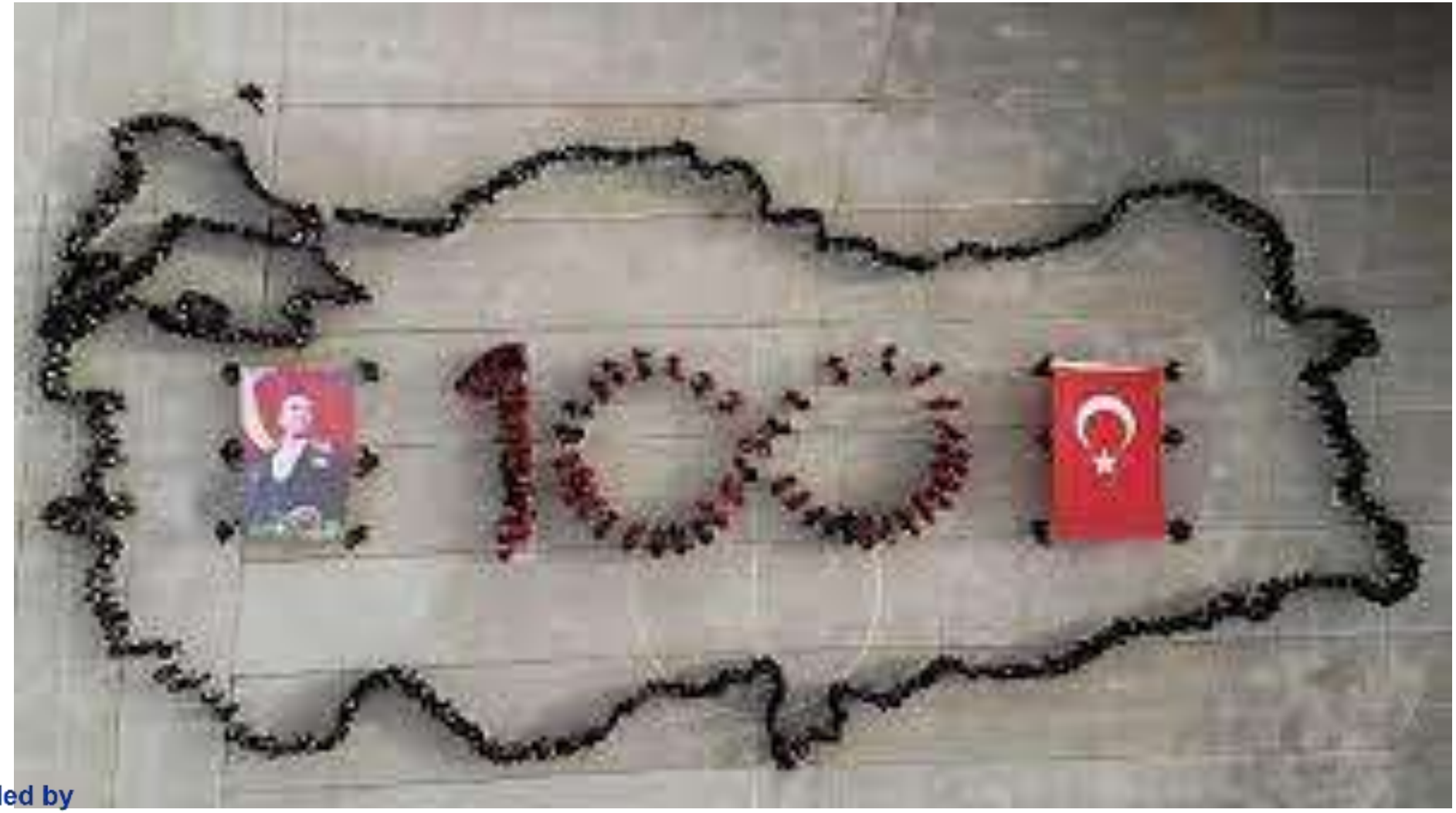
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NATION



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Internet and Information Pollution





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Citizen Science

- Citizen-Participated Science (Alm. wissenschaftliche Bürgerbeteiligung, f; Fr. science citoyenne, f; science collaborative, f; science participative, f; İng. citizen science; civic science; community science; crowd-sourced science; crowd science; online citizen science; volunteer monitoring) blşm.
- Scientific studies conducted by citizens, often focused on data collection and observation, in collaboration with or under the supervision of professional scientists and scientific institutions

(Boğaziçi University, INFORMATION Engineering Terms; https://academics.boun.edu.tr/bulent.sankur/sites/bulent.sankur/)

Science Terms Dictionary (*https://terimler.org*)

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Citizen Science

There are many intelligent and educated individuals who have not chosen the academic path but are capable of contributing to the world.

People who produce science without l
of an institutional framework.



"There are a lot of smart, educated, thinking people who are not in the tenure track who have a lot to contribute to the world."

- Jessica Richman, uBiome

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Citizen Science

- Citizen science is the participation of non-academic individuals in the scientific research process, either through community-focused or global research initiatives (citizenscience.org).

- Citizens often collaborate with experts or scientific institutions to conduct scientific studies. They contribute valuable support to science by assisting in the collection, analysis, or identification of research data.

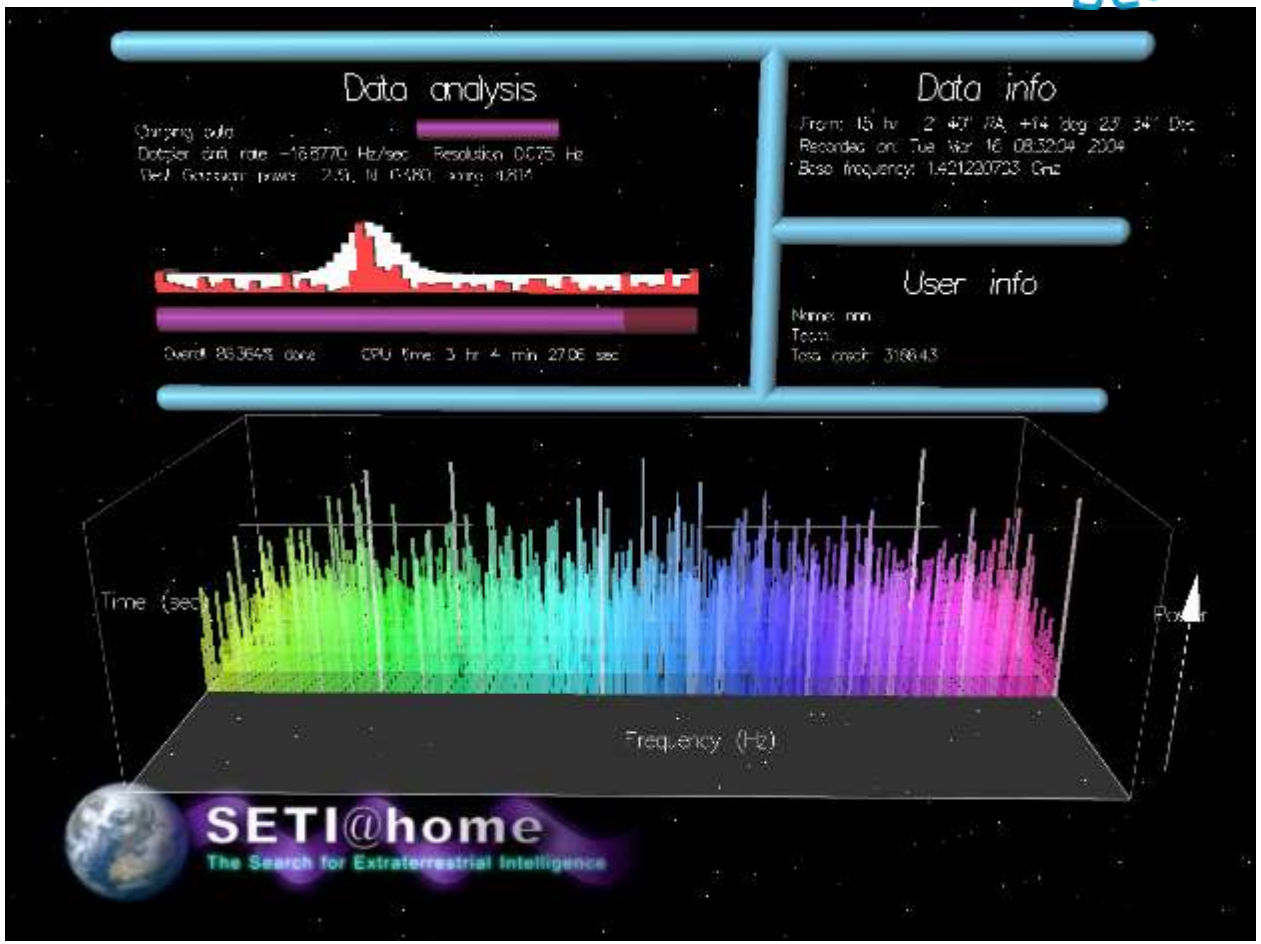
Open Science Education Handbook: Citizen Science | TÜBİTAK-ULAKBİM Open Course Platform (ulakbim.gov.tr)

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Milestones

- 1900: National Audubon Society's **Christmas Bird Count**
- **Galaxy Zoo**, which classified galaxies within a year with over 150,000 participants
- **SETI** (Search for Extra-Terrestrial Intelligence)
- European Citizen Science Association (ECSA)
- The **10 Principles of Citizen Science**
- Open Science policies under the **H2020 Research Framework**



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SETI - Search for Extra-Terrestrial Intelligence

- University of California, Berkeley's Space Sciences Laboratory
- May 17, 1999
- Arecibo Observatory Radio Telescope in Puerto Rico
- With over 900,000 computers, SETI@home achieved a computing power of 312.332 teraflops (November 13, 2010).
- Blue Gene has a processing power of 280 teraflops.
- A total of 10^21 mathematical operations had been performed, marking the largest computational effort in history and earning a place in the Guinness Book of Records.

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History

Ornithology – The Study of Birds



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History





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Joseph Wright of Derby - National Gallery, London

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Birdwatching

What is Birdwatching Tourism?

Birdwatching tourism refers to the observation, photography, and identification of wild birds in destinations known as "bird paradises," followed by the use of tourism-related goods and services available in these areas.



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First Systematic Observation



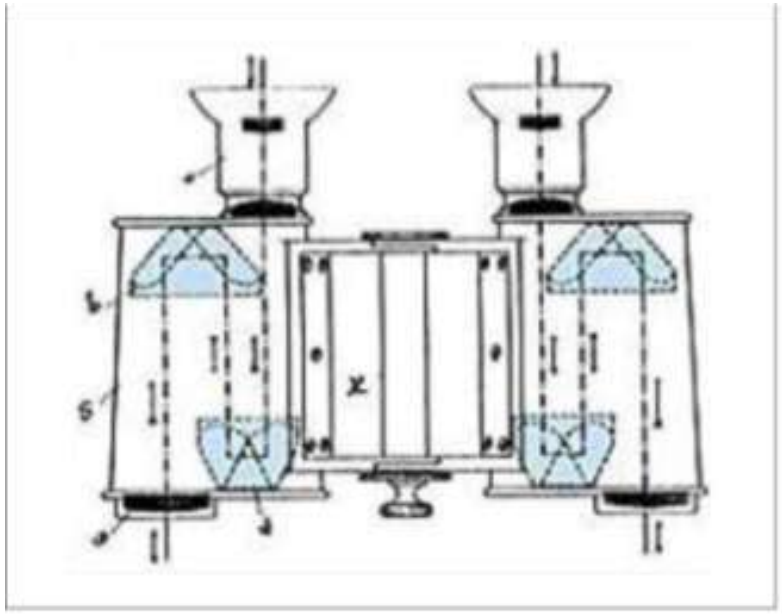
Oskar and Magdalena Heinroth

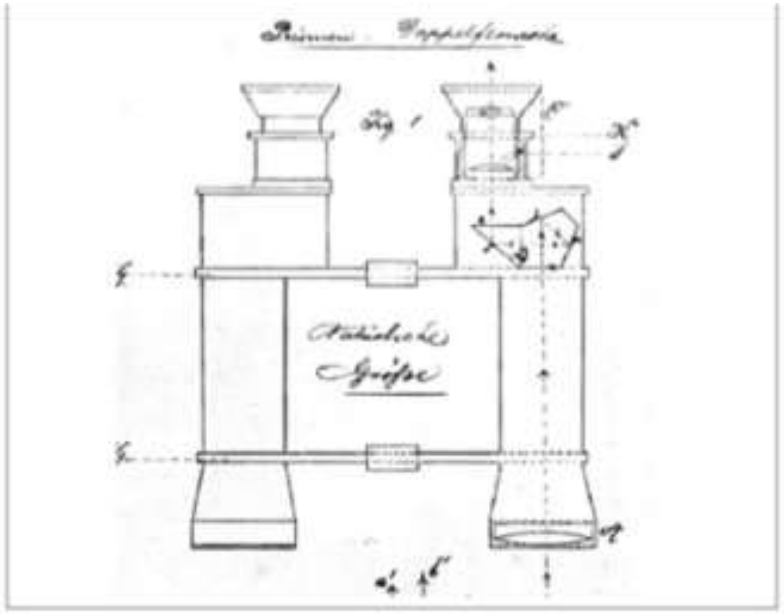


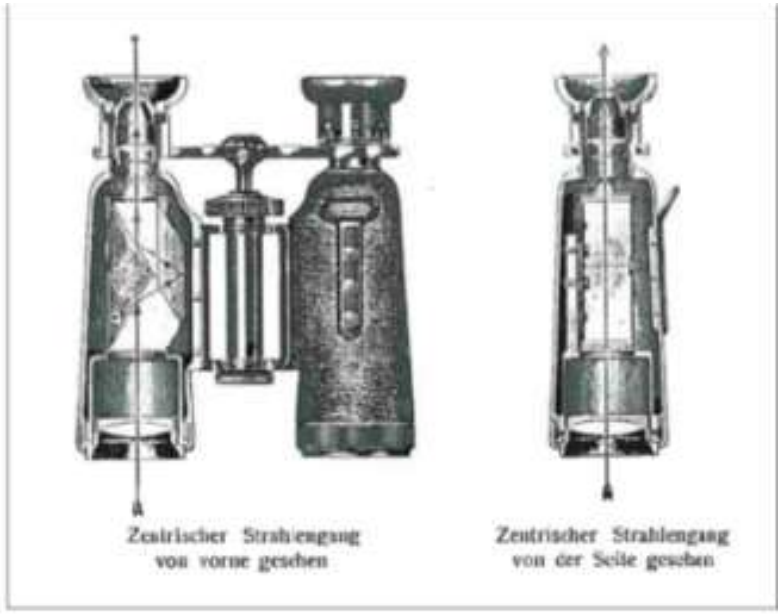
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Invention of the Binoculars

- Carl Zeiss & Ernst Abbe







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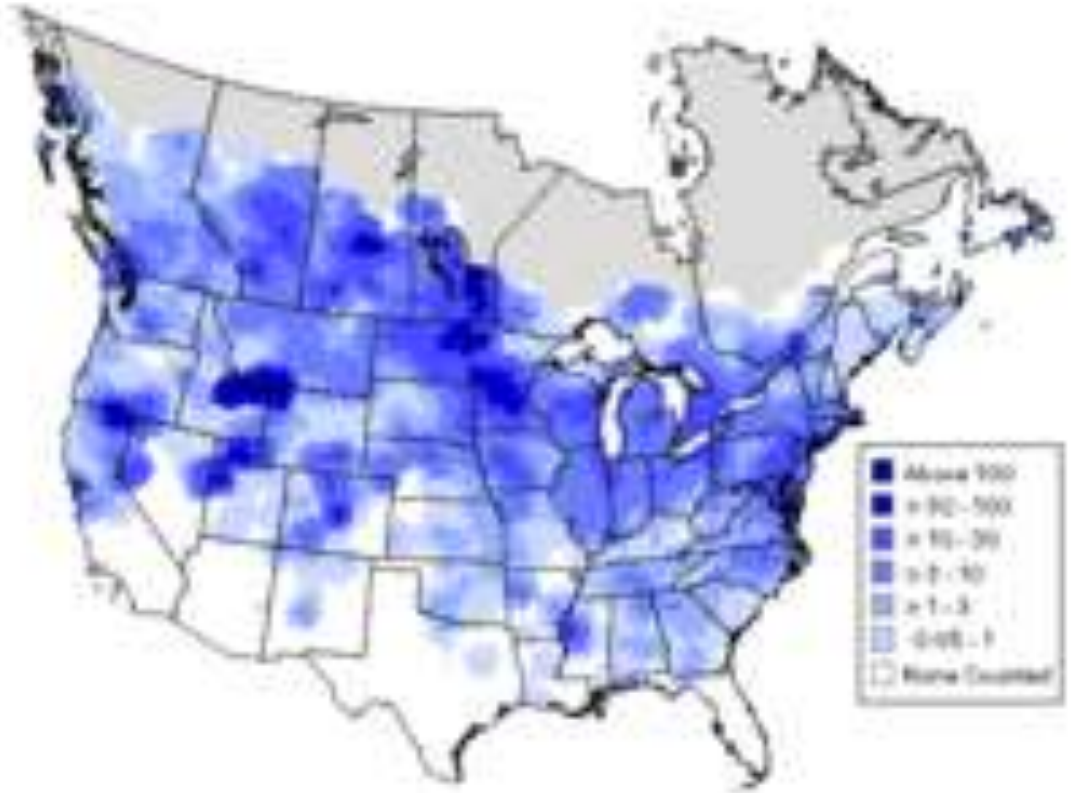
Birdwatching Today



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Information Technology Applications

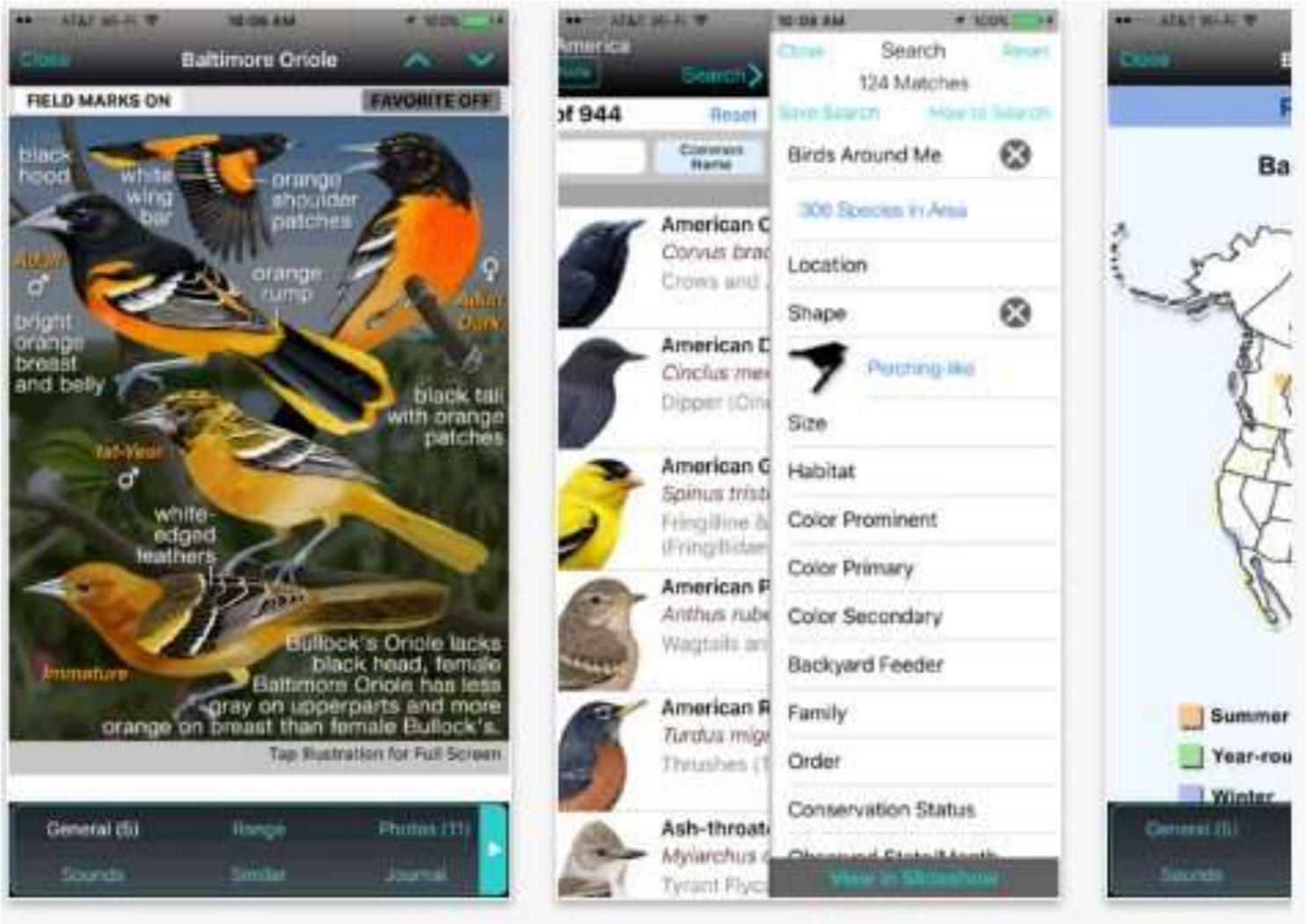
- Bird Recognition with Machine Learning
- Databases
- Mapping



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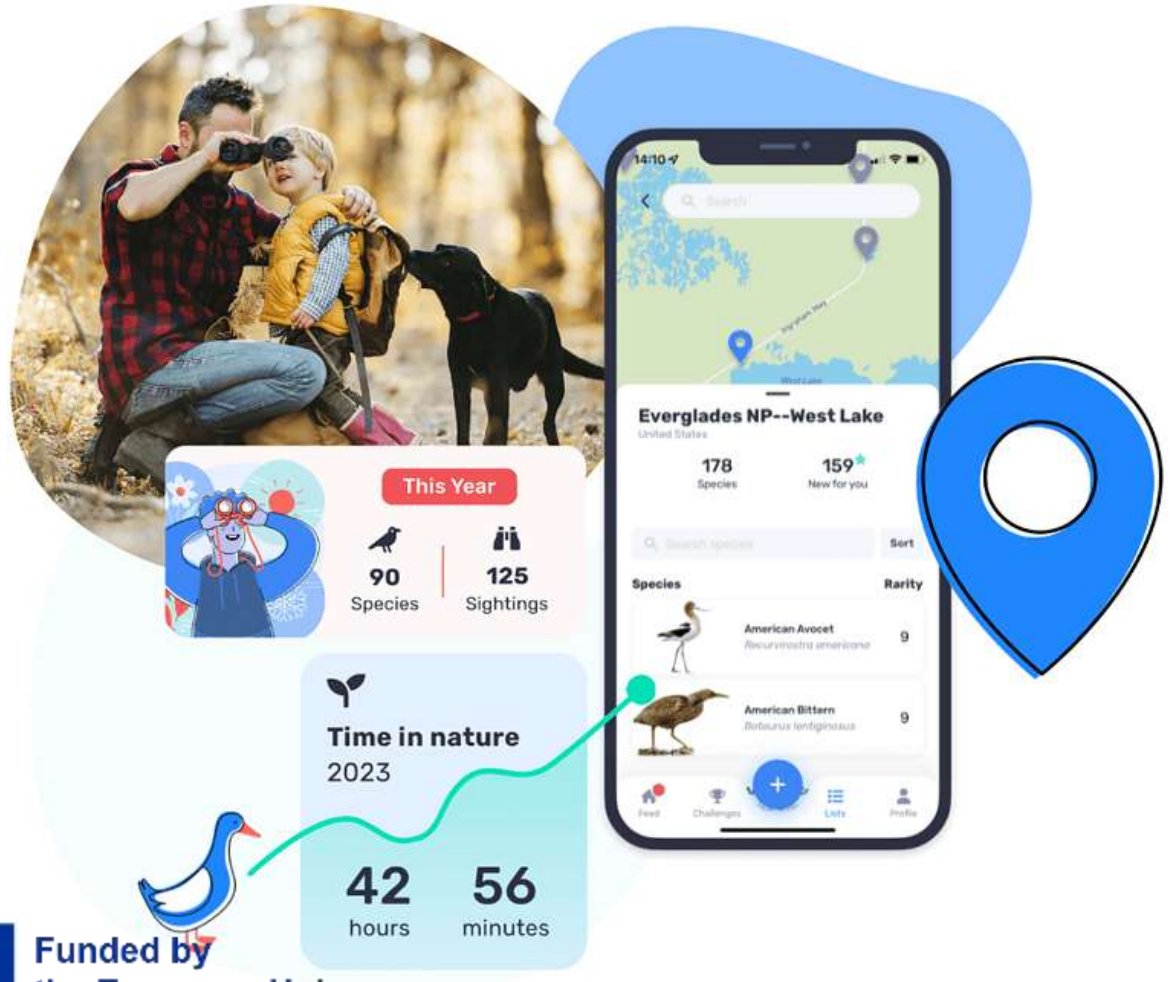
Applications

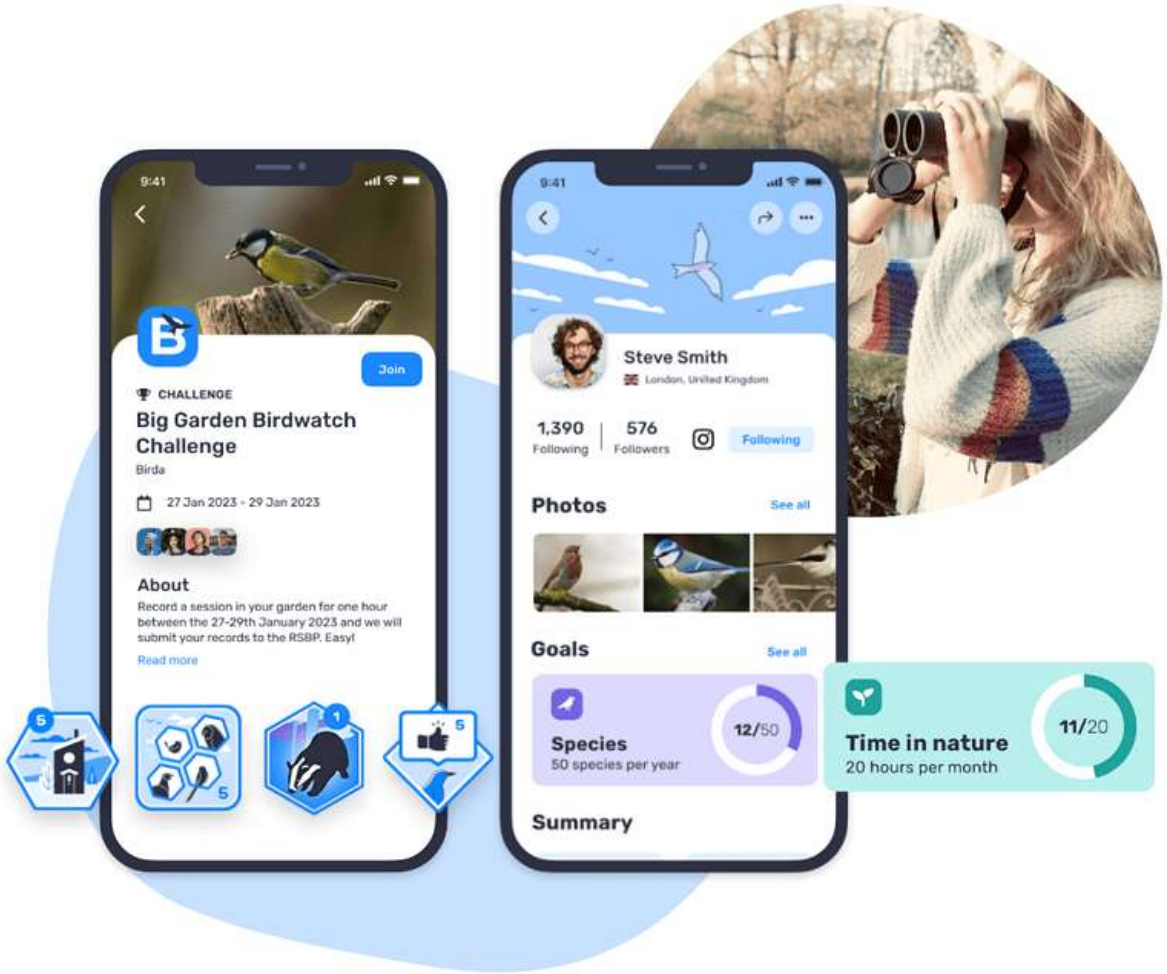


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Birda

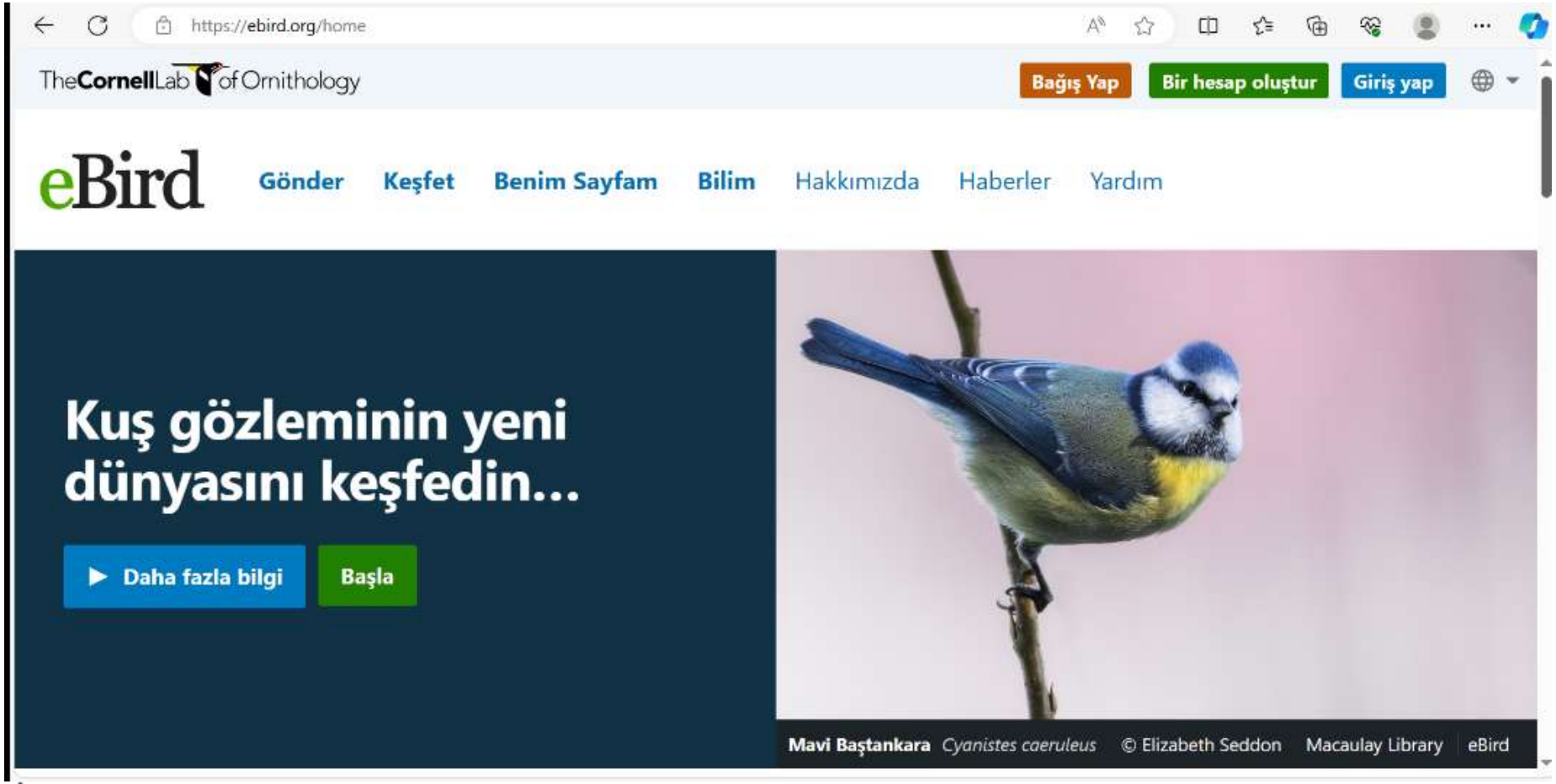




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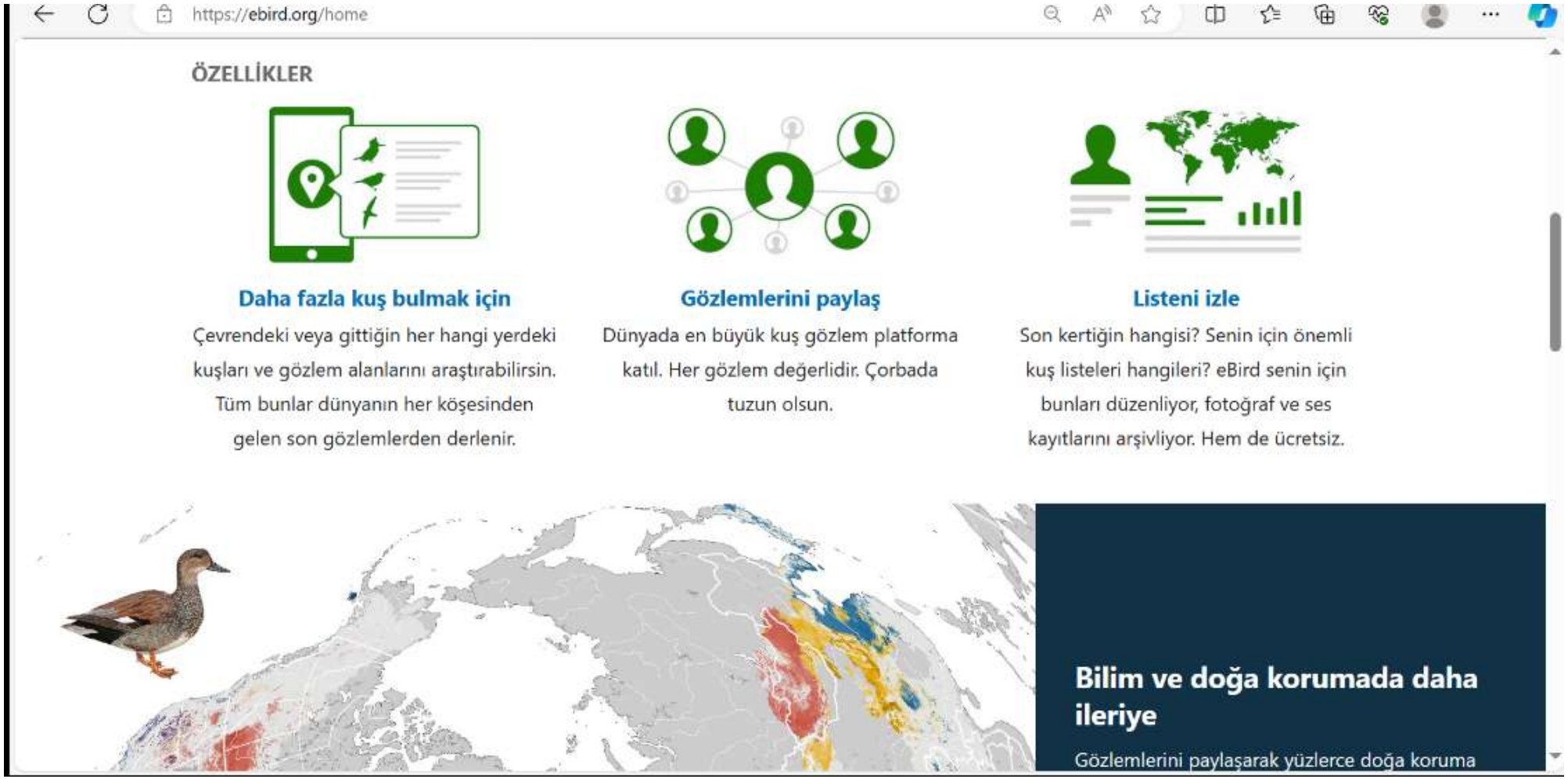
E-bird



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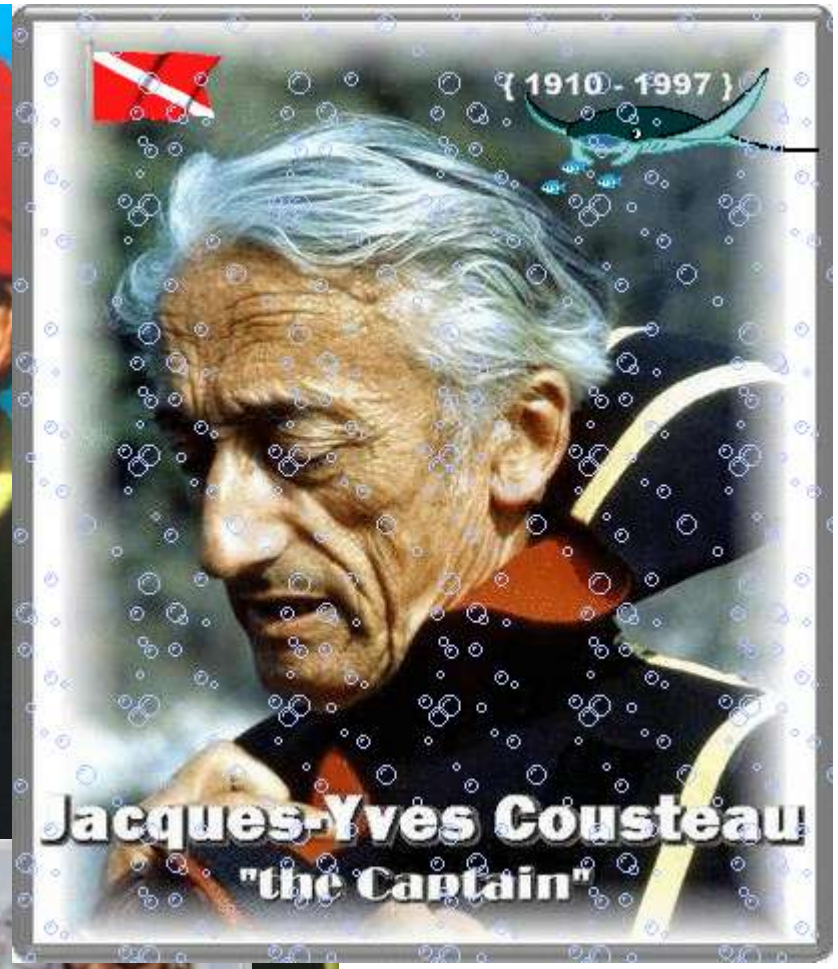
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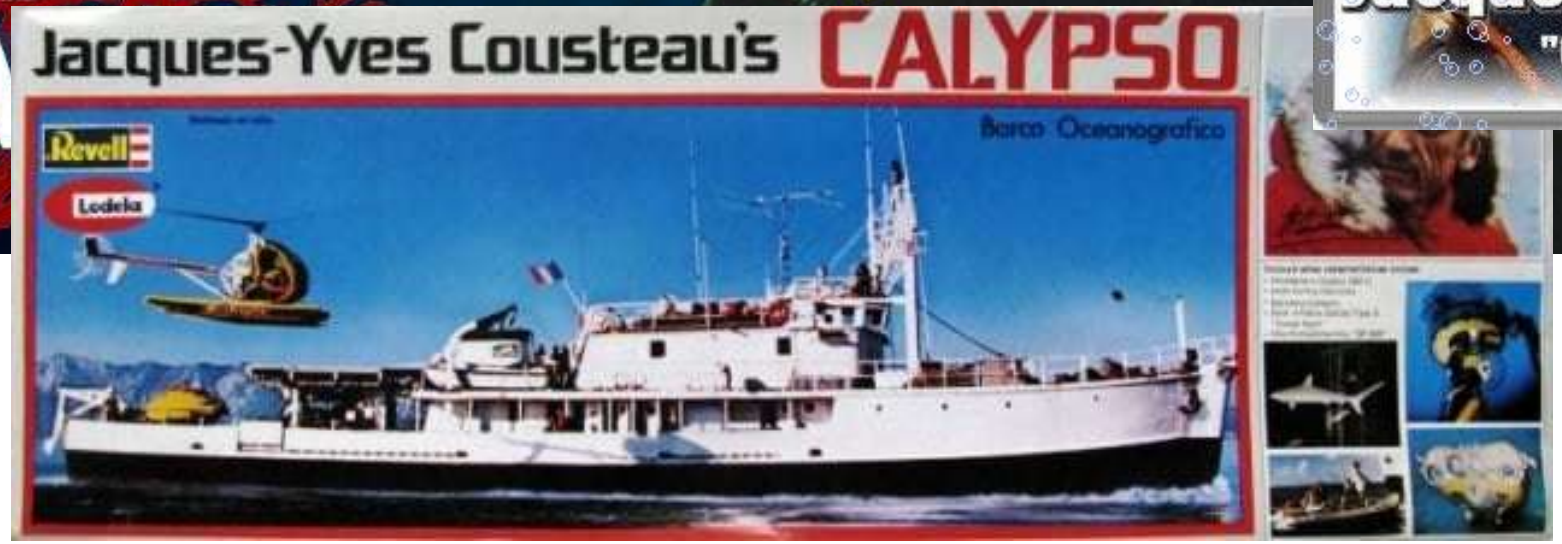
E-Bird



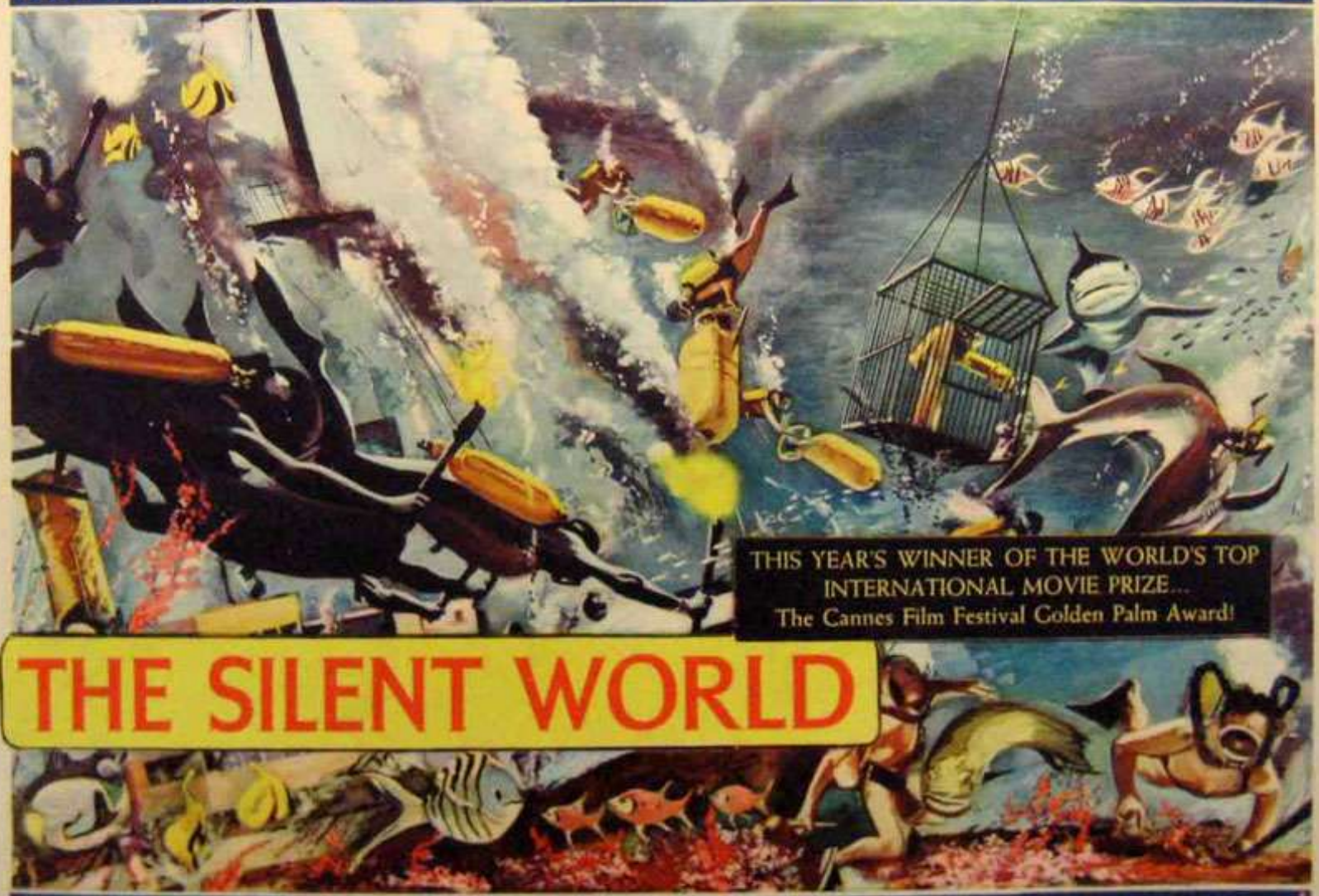
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JACQUES
COUSTEAU
INVENTOR
OF SCUBA
DIV


{ 1910 - 1997 }
Jacques-Yves Cousteau
"the Captain"


Jacques-Yves Cousteau's CALYPSO
Revell
Lodela
Barco Oceanografico

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THE SILENT WORLD

A Film by Jacques-Yves Cousteau and Louis Malle with Frederic Dumas, Albert Falco, the divers and the crew of the Calypso - A Columbia Picture TECHNICOLOR®

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1957 OSCAR



1965 OSCAR



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Scientific ???



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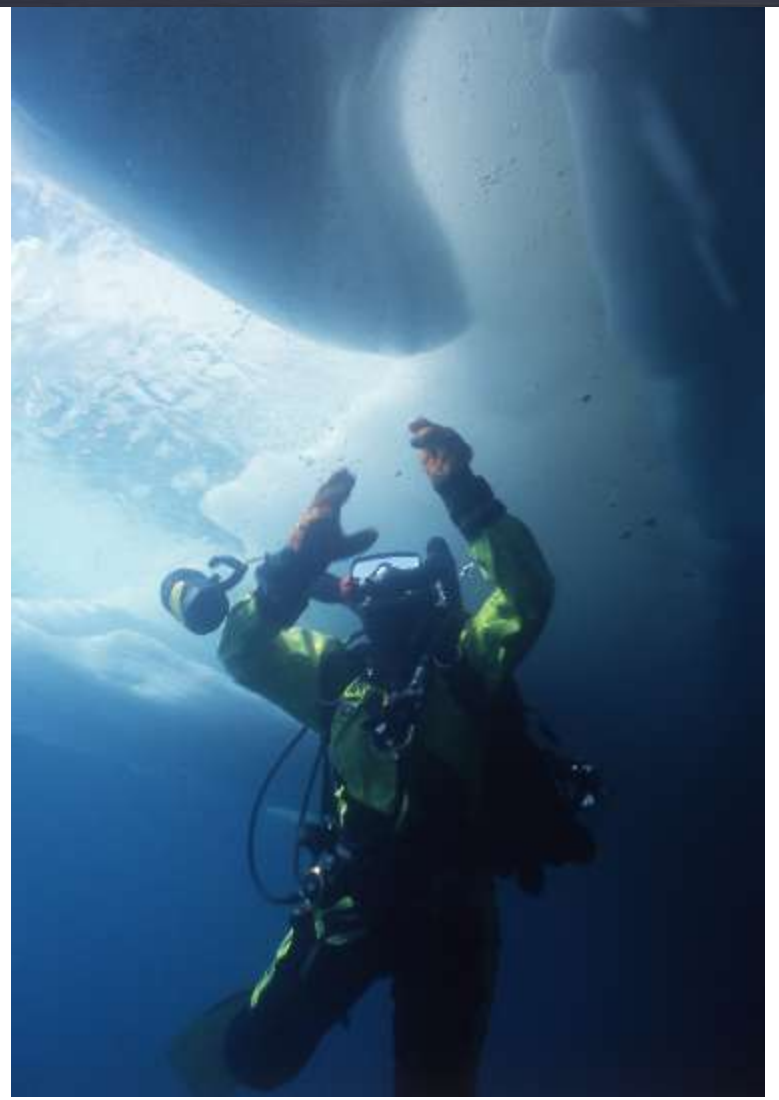


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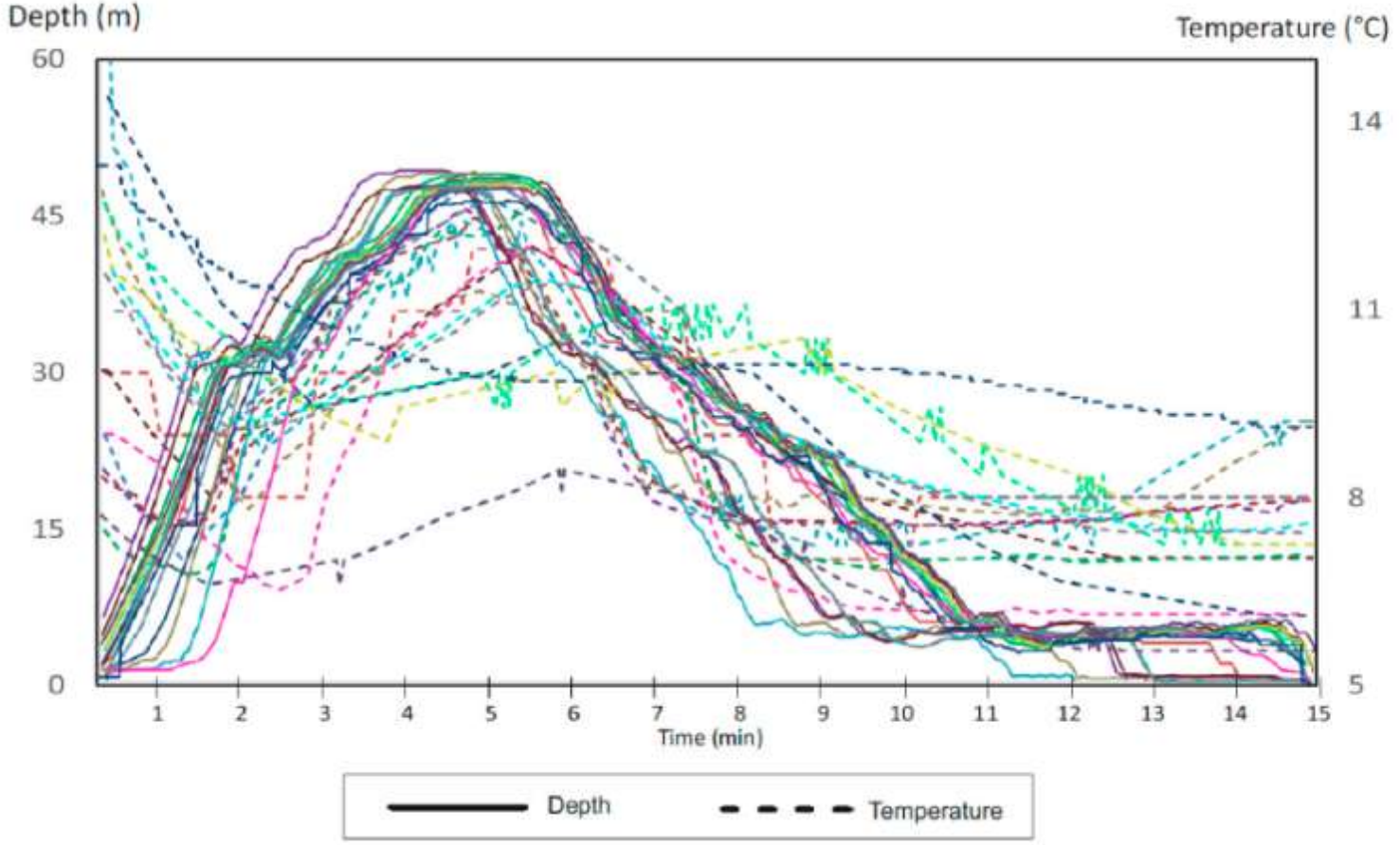
Scientific ???



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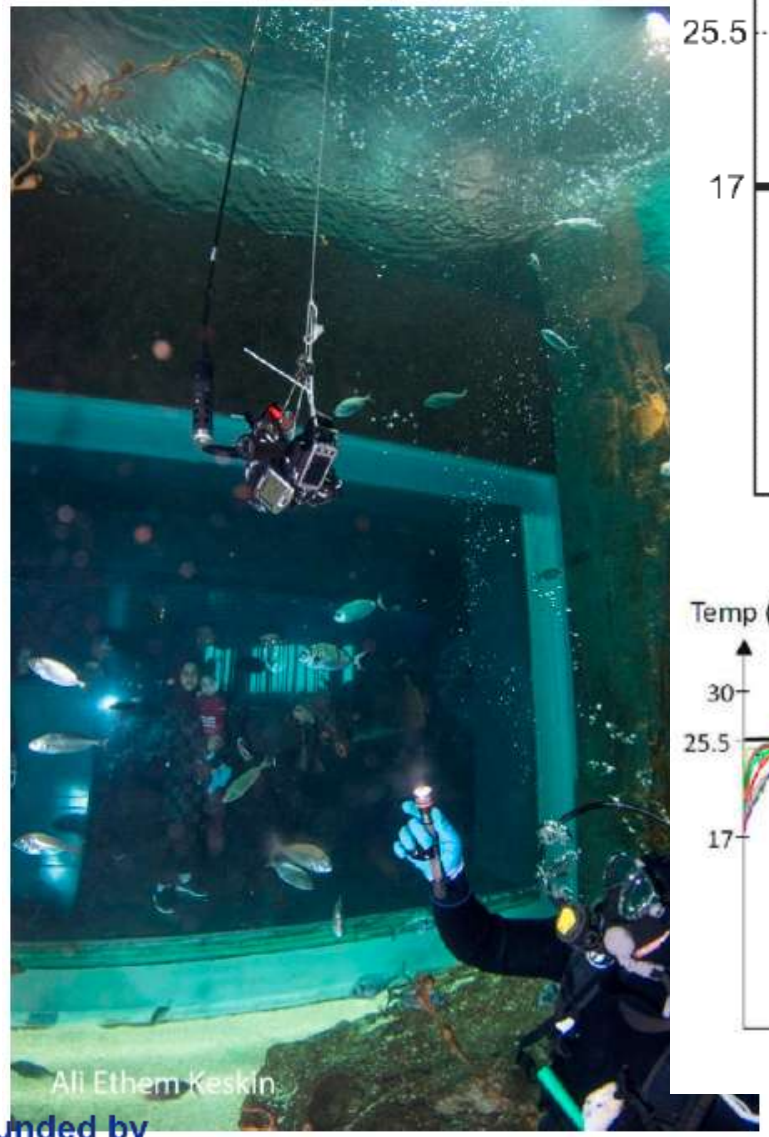
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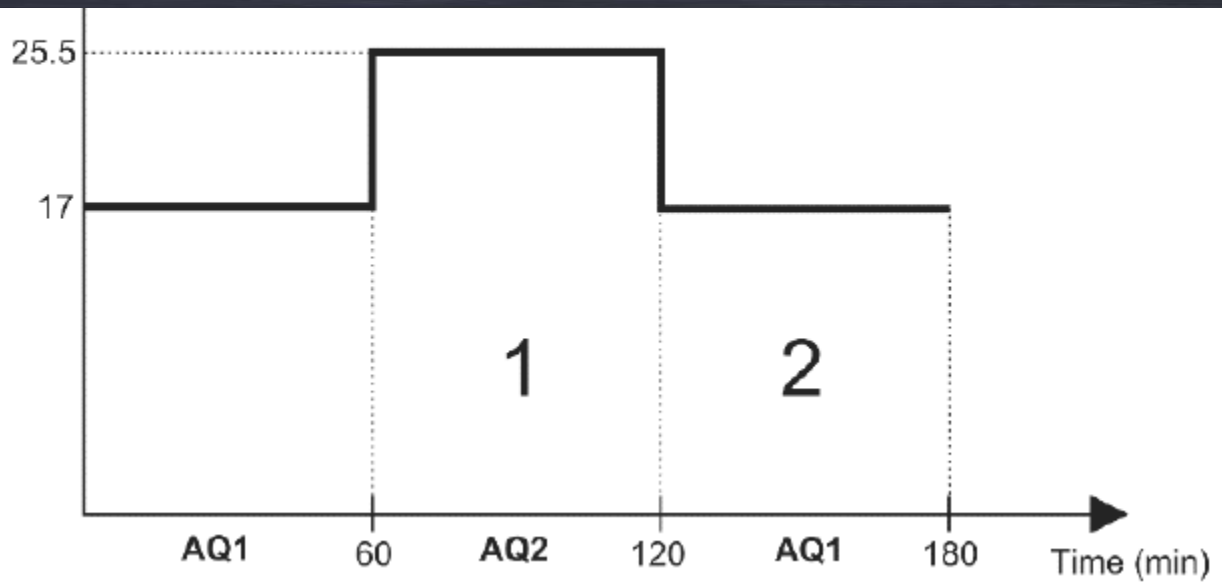


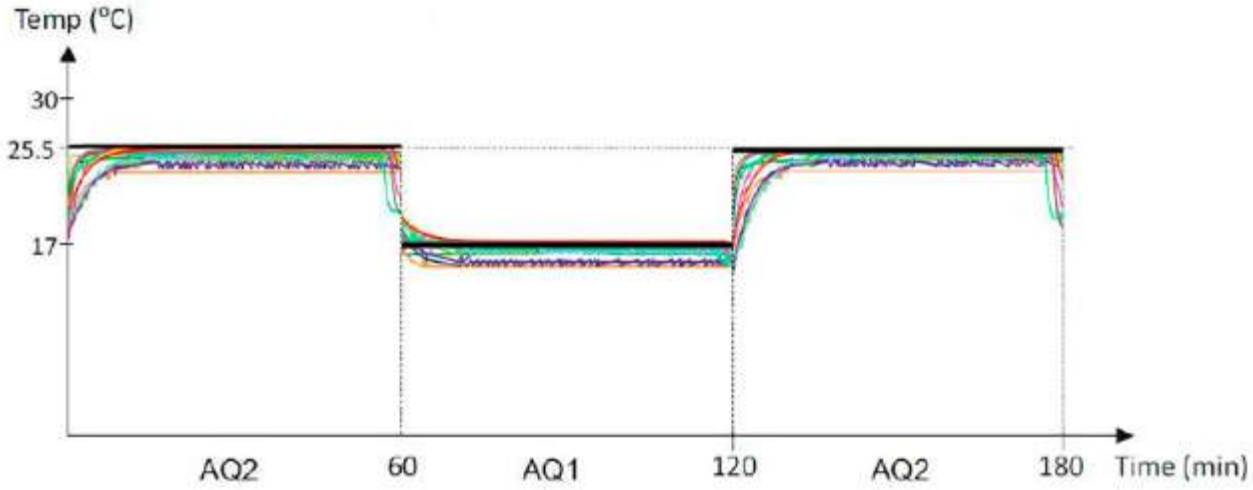


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CITIZEN SCIENCE IN THE SEAS

Scientific Analysis

applied sciences

MDPI

Article

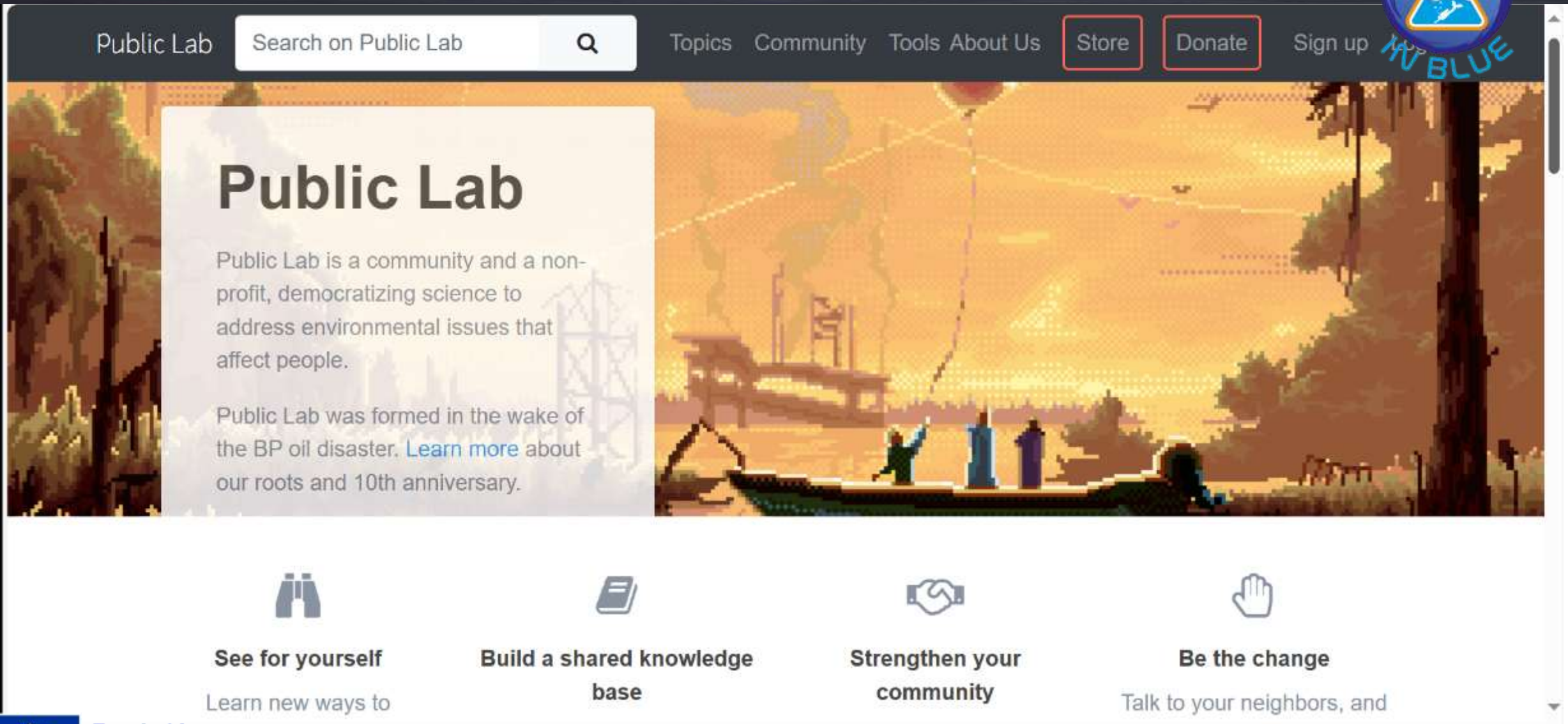
Designing a Diving Protocol for Thermocline Identification Using Dive Computers in Marine Citizen Science

Salih Murat Egi [1,2], Pierre-Yves Cousteau [3], Massimo Pieri [1], Carlo Cerrano [4,*], Tamer Özyigit [2,*] and Alessandro Marroni [1]

1 Research Department, DAN Europe Foundation, 64026 Roseto degli Abruzzi, Italy; smegi@daneurope.org (S.M.E.); mpieri@daneurope.org (M.P.); amarroni@daneurope.org (A.M.)
2 Department of Computer Engineering, MTF, Galatasaray University, Istanbul 34349, Turkey
3 Cousteau Divers, 75017 Paris, France; pyc@cousteau.org

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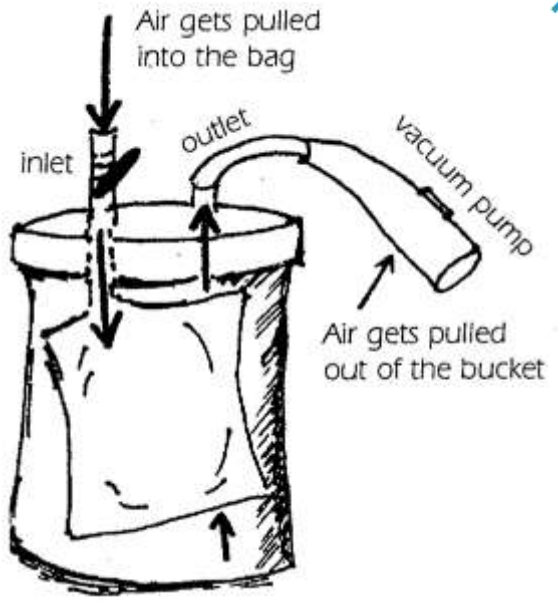
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- Val Verde Air Quality Monitoring Program
- Mountain and Mining Observation
- Bourj Al Shamali Refugee Camp Green Energy
- Air Quality
- Water Quality Measurement



Agriculture
Air quality
Climate change
Disaster response
Education
Indoor air quality
Land use
Law and policy
Lead
Microplastics
Noise
Odor
Oil and gas
Organizing
Soil
Stormwater
Transportation
Waste
Water quality
Wetlands

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CITIZEN SCIENCE IN THE SEAS

The Ten Principles of Citizen Science

1. Citizen science projects actively engage citizens in the scientific endeavor that generates new knowledge and understanding.
2. Citizen science projects include a genuine scientific outcome.
3. Both professional scientists and citizen scientists benefit from their participation.
4. Citizen scientists can contribute to multiple stages of the scientific process if they wish. This includes developing the research question, designing the research methodology, collecting and analyzing data, and communicating results.
5. Citizen scientists receive feedback from the project.

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The Ten Principles of Citizen Science

6. Citizen science is considered a research approach, like any other, with its limitations and biases accounted for and controlled. However, unlike traditional research approaches, citizen science offers opportunities for greater public participation and the democratization of science.

7. Data and metadata from citizen science projects are made publicly accessible, and whenever possible, results are published in an open-access format. Data sharing may occur during or after the project, provided there are no security or privacy concerns.

8. Citizen scientists are recognized and appreciated in project outcomes and publications.

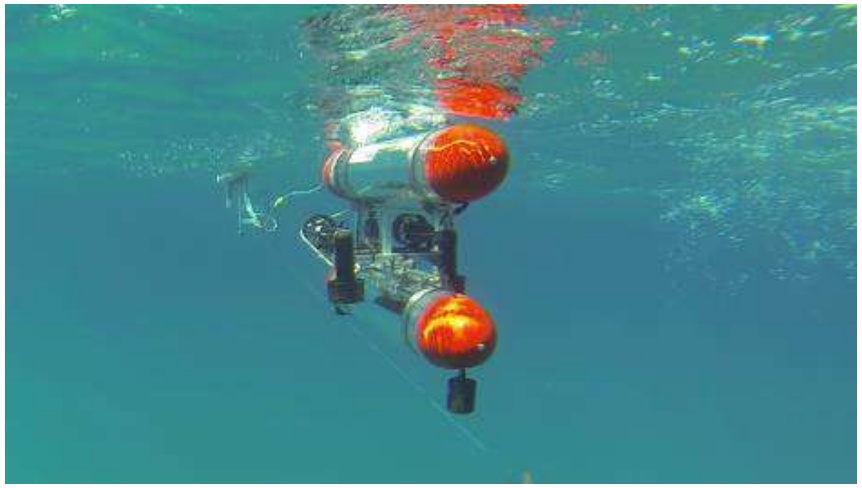
9. Citizen science programs are evaluated in terms of scientific outcomes, data quality, participant experience, and broader societal or policy impacts.

10. Leaders of citizen science projects consider legal and ethical issues, such as copyright, intellectual property rights, data-sharing agreements, privacy, attribution, and environmental impact, for any activities conducted.

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AUTONOMOUS UNDERWATER ROBOT COMPETITION









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QUESTIONS

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