

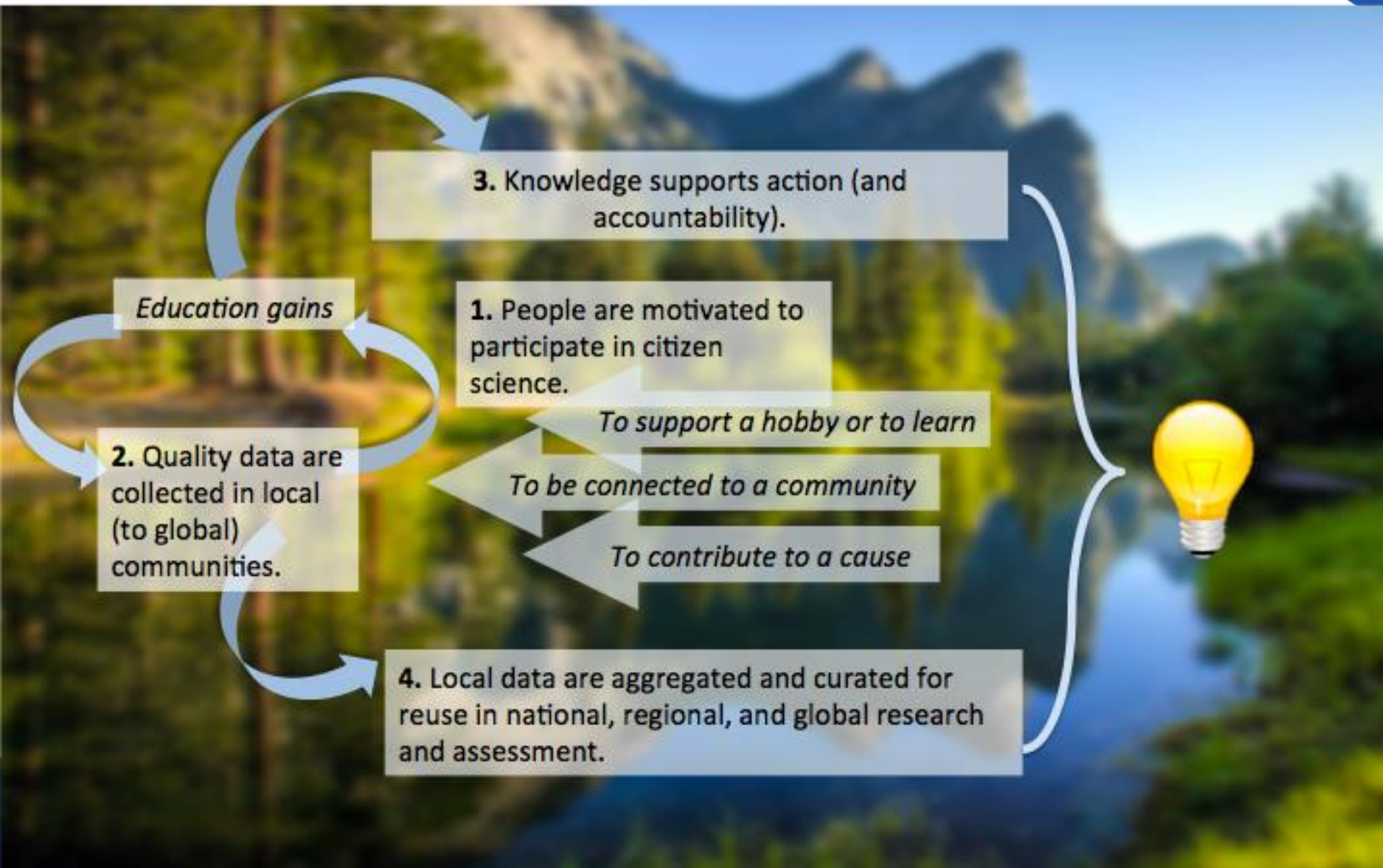
Citizen Science and Monitoring Marine Litter

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Citizen Science



Citizen Science for Marine Litter

- Citizen science can expand our knowledge of the distribution of marine litter by increasing both temporal scales and spatial coverage, especially in remote areas (“**monitoring**”)
- The literature says citizen engagement in beach litter projects leads to positive behavioral change (“**implementation**”; e.g., Jambeck & Johnsen, 2015).



Citizen Science

Project Slam!

The Australian Marine Debris Initiative



Beach & river clean-ups



Sorting debris



Data collection

Source Reduction Plans



Track to the source



AMDI Database



AMDI Statistics – 2004 - 2018

- 2,800 clean-up sites
- 118,000 volunteering opportunities
- 12 million items removed and recorded in the AMDI Database
- 250 source reduction plans implemented



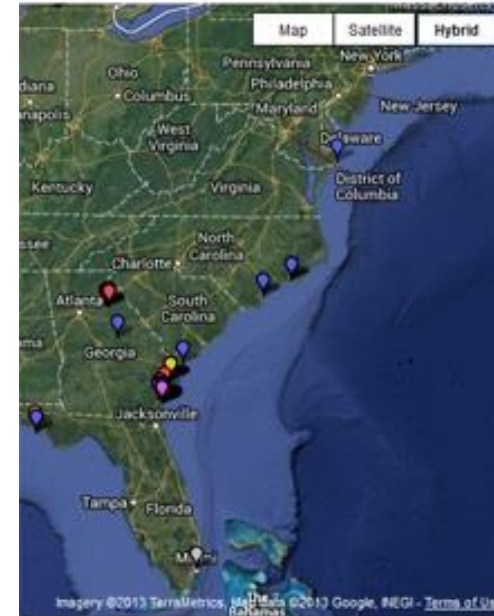
NOAA Marine Debris Tracker

Marine debris is one of the most pervasive global threats to the health of the ocean. It can harm or kill wildlife, damage and degrade habitats, and threaten navigational safety, economies, and human health. Monitoring marine debris can be used to track the progress of marine debris prevention efforts, adds value to beach cleanups, and provides important baseline knowledge which can be used to inform solutions.

The Marine Debris Tracker is a unique way for **YOU** to get involved in collecting marine debris monitoring data in your community!

Marine Debris Tracker Features:

- No data card! The Tracker is 100% mobile
- Easy to use! Anyone can contribute
- GPS coordinates are automatically recorded for every item of debris
- You can enter data anywhere, even without mobile service! Data automatically uploads when you reconnect



By the Numbers

Over 958,000
ITEMS LOGGED

From **46** Countries

MORE THAN
108,000
Submissions



Dive Against Debris

A year-round, **underwater** effort

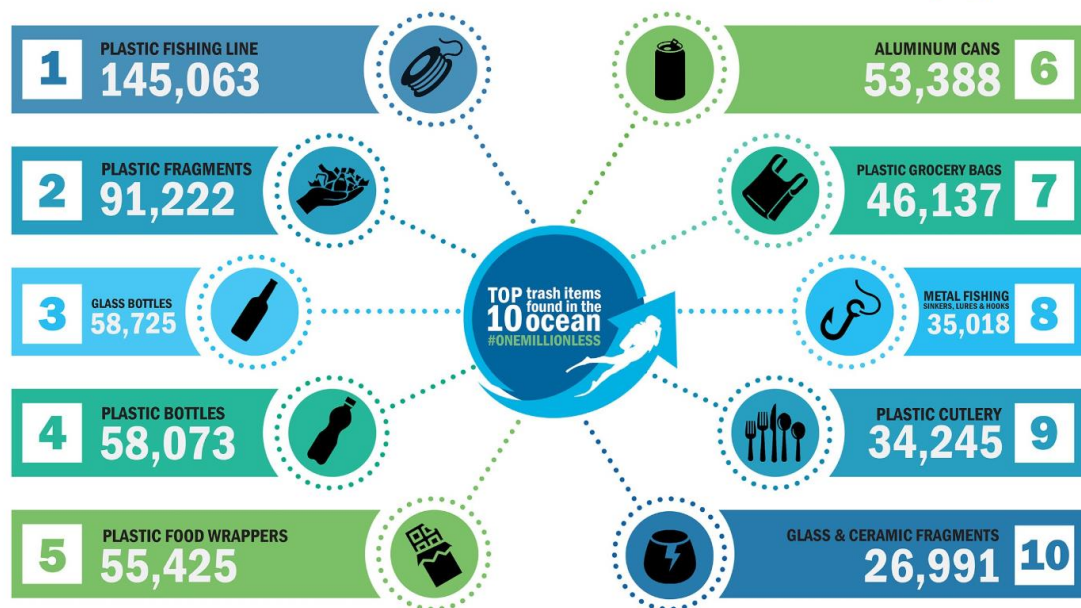
Divers report on locations, types and quantities of litter

A training manual, a data card, a marine debris ID guide, and other support tools

Divers repeat the survey of their chosen dive site as often and as regularly as they can

Top 10 Trash Items Found in the Ocean

More than **one million pieces** removed & reported through Dive Against Debris®



PROJECTAWARE.ORG
Where Conservation Meets Adventure™



OBSERVATION AND SEABIRD SURVEY TEAM

what's coasst?

MISSION OUR STORY PARTICIPANTS STAFF SUPPORTERS ADVISORS

WHAT WE DO

The Coastal Observation and Seabird Survey Team (COASST) is a 17 year old rigorous citizen science project housed at the University of Washington. COASST trains coastal residents in their communities. Post-training, participants pledge to conduct monthly surveys on a beach that has special meaning to them. At present, three basic types of data are collected:

1. beachcast birds
2. marine debris
3. evidence of human use of the beach environment

Citizen science projects often edit or augment their protocols to meet emerging needs.



14.1.1 ... Floating Plastic Debris Density

Plastic debris washed/deposited on beaches or shorelines (beach litter)

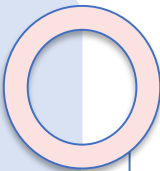


Plastic debris in the water column

Plastic debris on the seafloor/seabed



Plastic ingested by biota (e.g. sea birds)



Earth Challenge 2020

Activating a global movement of people and data

Premise

April 22, 2020 marks the 50th anniversary of Earth Day. In recognition, Earth Day Network (EDN), the U.S. Department of State, and the Wilson Center are launching *Earth Challenge 2020* as the world's largest coordinated citizen science campaign to date.

Practice

- “Focused” and “Big tent” approach.
- Data and metadata standard.
- Data directory.
- Platform(s) for citizen science data integration, analysis, and visualization.
- Mobile application.
- Massive outreach campaign.
- “What you can do.”



Earth Challenge 2020

Research Questions



[1] What is in my drinking water?



[2] How does air quality vary locally?



[3] What are the local impacts of climate change?



[4] How are insect populations changing?



[5] What is the extent of plastics pollution?



[6] Is my food supply sustainable?

1

Identify RQs

2

Map to SDGs

3

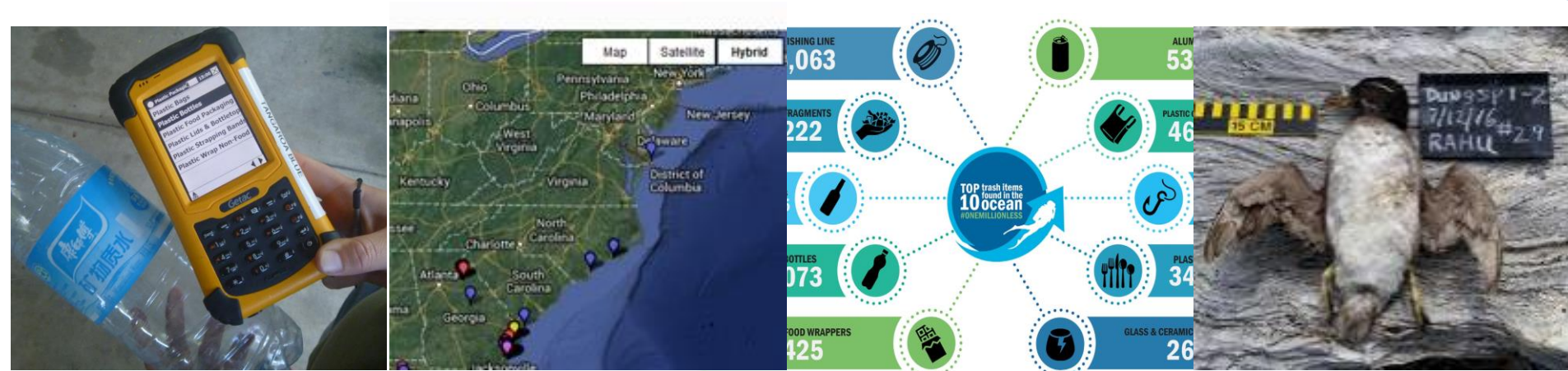
Scope data
assets and
needs

4

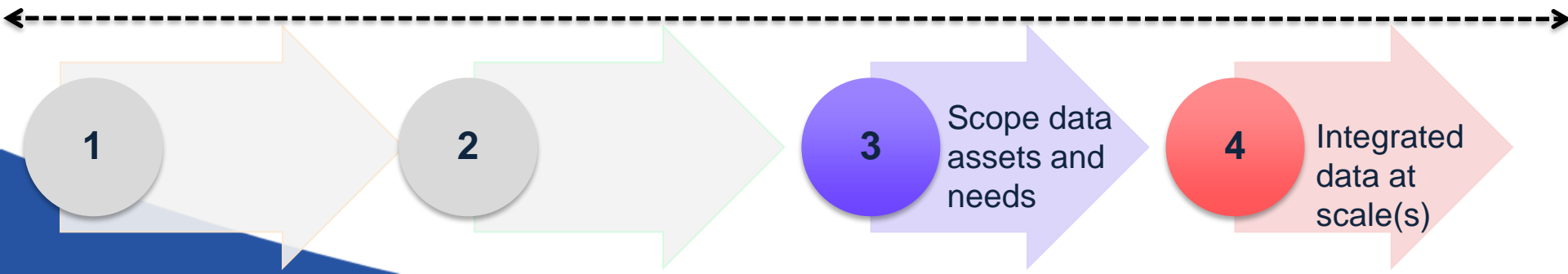
Integrated
data at
scale(s)

Earth Challenge 2020

Research Teams



6 teams will work together to
Identify methodologies for monitoring; find (and register)
data sets; integrate data; develop protocols for mobile app
(and training); facilitate stakeholder engagement.



Reflections from this morning

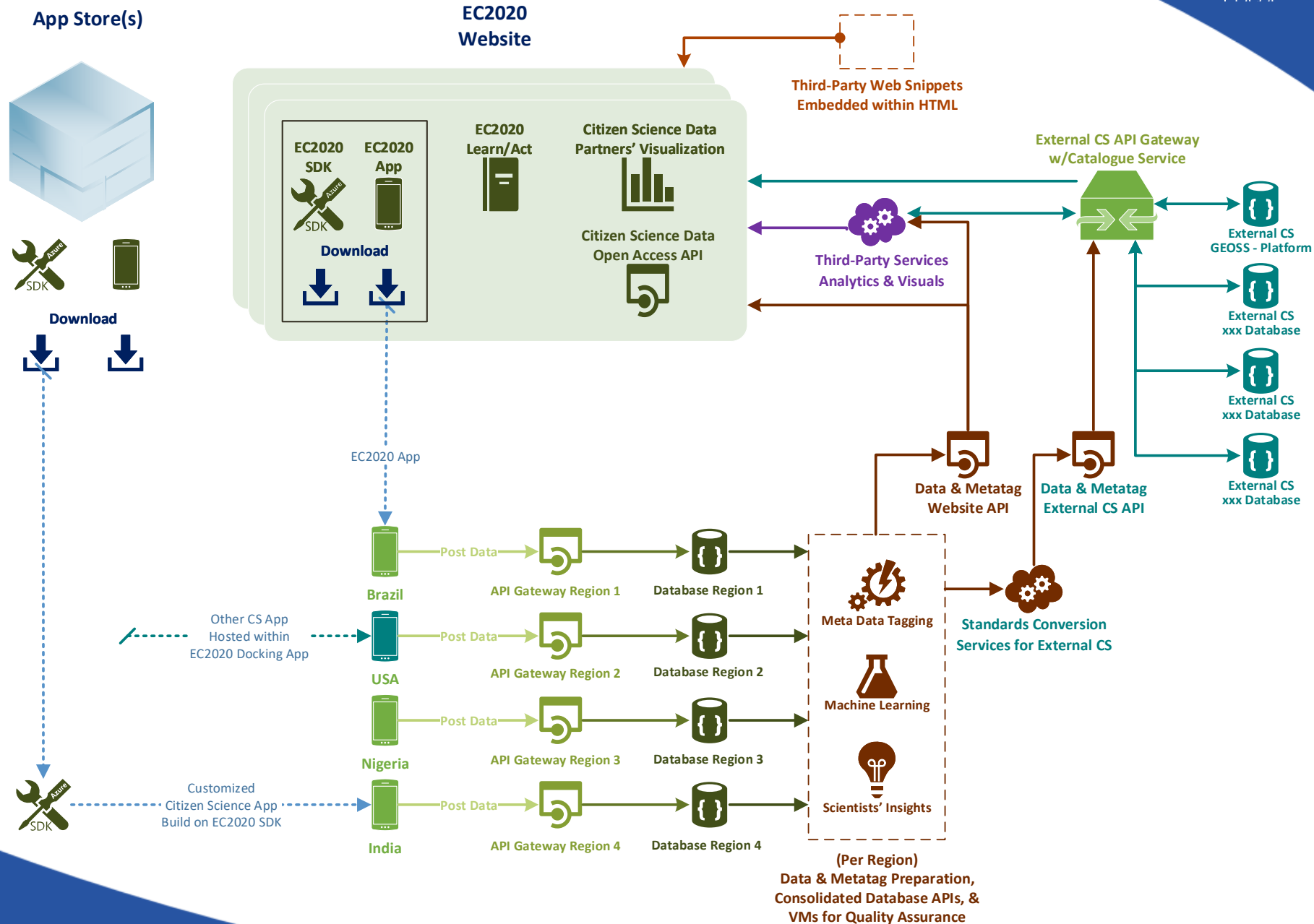
- 1 protocol (beach litter), 2 protocols (+ beach floor), 3 protocols (+ ingested)?
- “Bioblitz” model to establish baseline, versus longer-term monitoring?
- What is the role of different platforms, including ArcGIS, Situation Room, and GEO Hubs?
- Is monitoring marine debris around 14.1 the **best** point of entry for citizen science?
- Who needs to be in the room?

Thank you!

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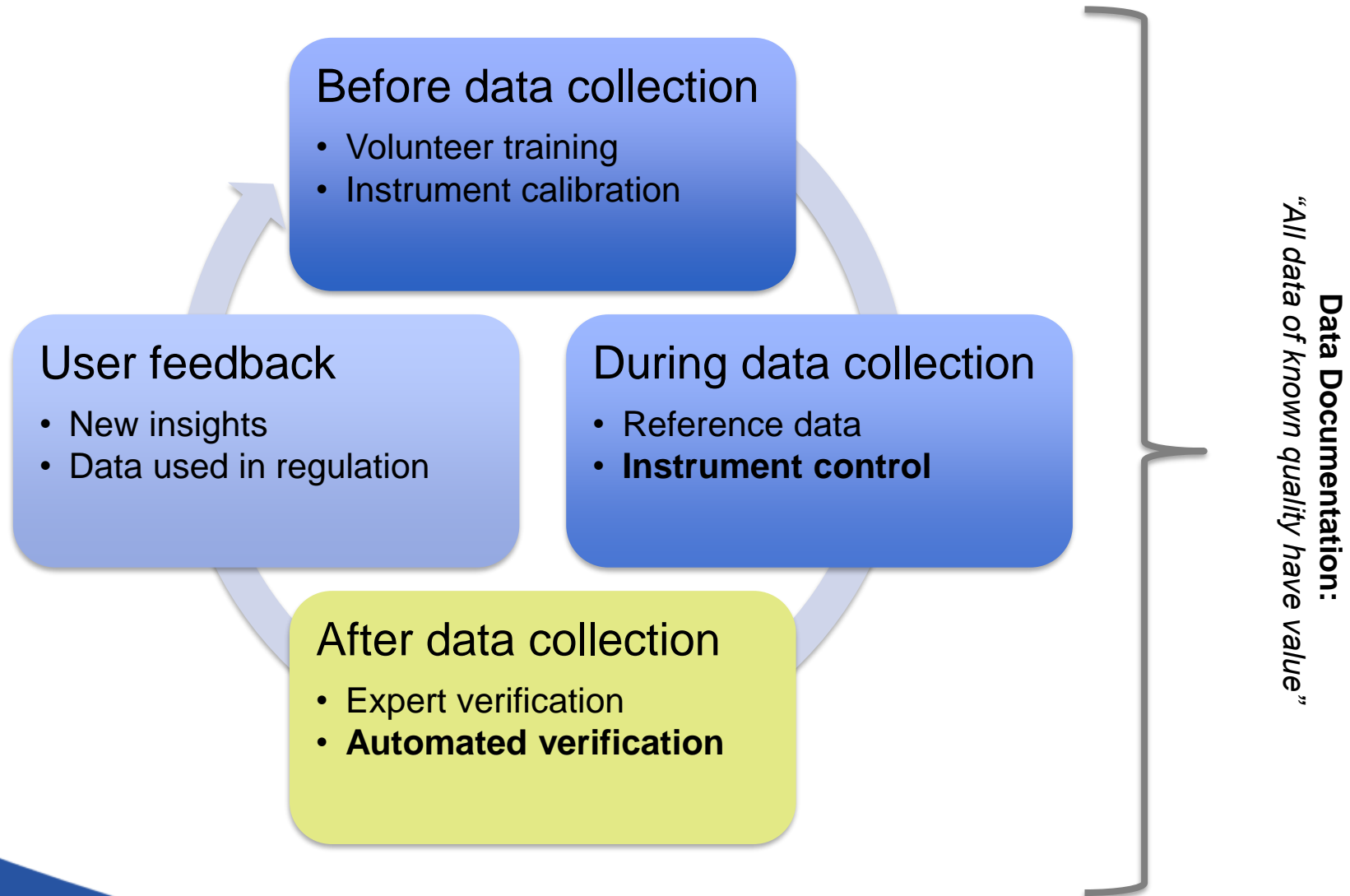
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Earth Challenge 2020

Data Quality



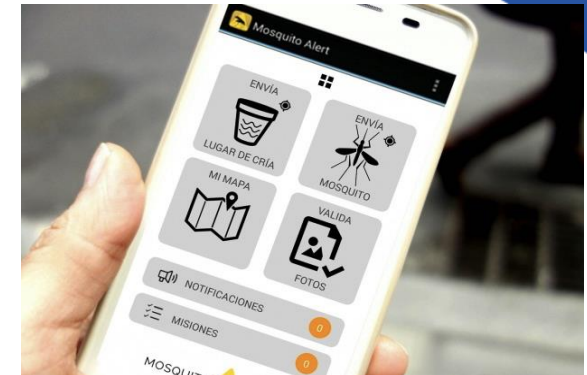
Global Mosquito Alert



Protocol 1



Protocol 2



Mosquito Alert V1 (Barcelona)



Protocol 3



Protocol 3



Mosquito Alert V2 (Hong Kong)

The Global Mosquito Alert Consortium (GMAC) is a network of citizen science mosquito-monitoring projects. After coming together at a UN-Environment workshop, these projects meet monthly to build the citizen science mosquito vector-monitoring community. Consortium members agree on common protocols and best practices, develop open source technologies, and work together to share and integrate their data.

The Citizen Science Global Partnership is developing the Earth Challenge 2020 research team model based on Global Mosquito Alert. The research team model will enable targeted capacity building around a range of