Community and Citizen Science on the Elwha: Past, Present, and Future




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September 1, 2022

What is community and citizen science (CCS)?

Definition

A broad reference to the wide range of ways that **people who are not professional scientists participate in science processes,** from collecting data to co-leading investigation.

Common Characteristics of CCS Projects

- Actively engage participants, often with data.
- Use systematic approaches to produce reliable knowledge.
- Meet standards of scientific integrity and use practices common in science.
- Engage participants who are (primarily) not project-relevant scientists.
- Use the knowledge gained to contribute to science and/or community priorities.
- Confer some benefit to participants.
- Communicate results.

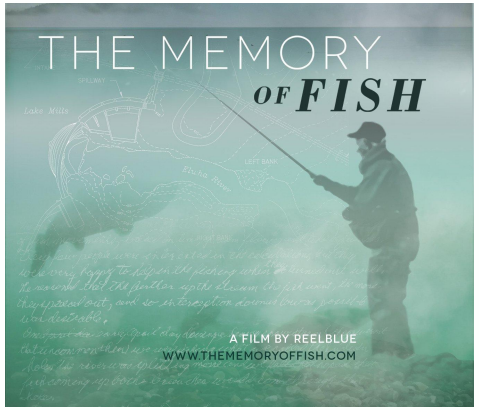
(NAS 2018)

Past Elwha CCS – Peer-Reviewed Literature

- 78 articles looked at so far
- No papers use “Community/Citizen Science”
- 11 mentioned volunteers in Acknowledgments sections, with another 8 possibly describing community contributions
- Mostly post-dam removal
- Range of academic disciplines/topics, with a bias towards the biological side (wildlife, fish, etc)

Past Elwha CCS – Examples

- Dick Goin's long-term records
- Water quality via invertebrate surveys
- College students as part of field classes
- NatureBridge water quality data
- Clallam Streamkeepers

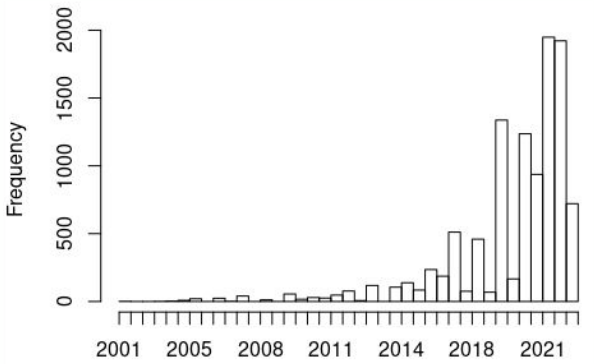


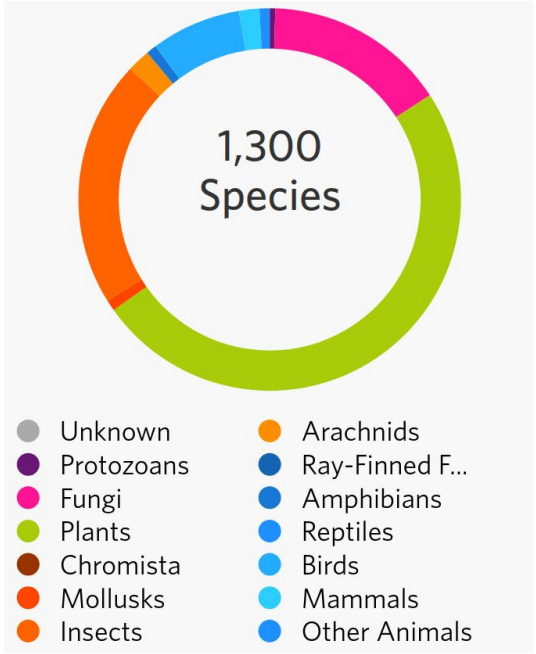
iNaturalist observations

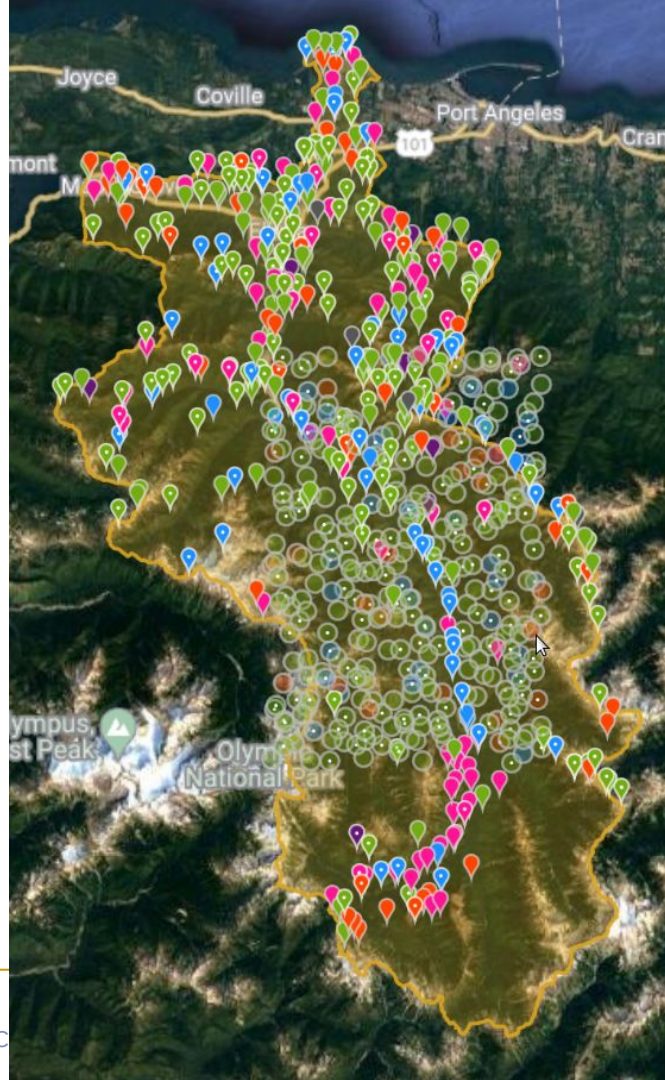
10,650 observations

1,290 Identifiers

1,322 Observers







Present and Future Elwha CCS – Biotic

- More concerted effort to encourage iNaturalist observations
- Bird monitoring in estuary and on former reservoirs
- Camera traps, including recovery and initial data processing
- Backcountry redd surveys and/or temperature logging
- NatureBridge – stable isotopes

Present and Future Elwha CCS – Abiotic

- Clallam Streamkeepers – water temperature loggers
- Photo points/photo re-surveys
- Crowdsourced remote sensing data analysis
- Grain size surveys
- Subtidal dive surveys

Themes from existing and proposed projects

- Some projects require more **highly-trained volunteers** (e.g. expert birders/botanists) while others can be crowdsourced
- Some projects need **partners who can recruit and manage volunteers** (e.g. NatureBridge)
- Some projects need a **home for the data** to be curated/shared

Themes from existing and proposed projects

- Some barriers are **institutional**: red tape, paperwork reduction act
- Some projects can serve **multiple disciplines** (e.g. iNaturalist for vegetation & wildlife, photo-points and remote sensing for vegetation & geomorphology)
- Some projects require **more than one partner organization/group** depending on site accessibility

Questions from public event

- **Interest across topics**: fish, vegetation, sediment, people, and wildlife
- But **fish was most often-mentioned**
- Many people just said "**everything**!" or "all changes to the ecosystem"
- How has reality matched what was predicted? **Any surprises**?
- **Human aspects** least reported on

Justice, Equity, Diversity, and Inclusion

How can science better contribute to more just and equitable futures for local communities and ecosystems in the Elwha?

Questions to consider:

- How can we **leverage partnerships** to honor and uplift the perspectives of non-dominant communities?
- How can we **center reciprocity** and **maximize positive impacts** for volunteers and partners?
- How can we design projects that **broaden participation** across their stages - from defining research questions to disseminating findings?

Thank you!

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