

(32-240329-B) Testing and Deploying Low Cost CO₂ Sensors Through Citizen Scientists: Results and Findings

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Ribbit Network is a non profit organization with a vision to deploy a global network of low cost CO₂ sensors that can be used by communities for climate science education and advance our understanding of climate change.

Ribbit Network takes a modular, open source approach to sensor development. As such, the sensor can be extended and improved over time by the community, with minimum amount of funding. As more sensors are being deployed, additional use cases are uncovered.

Deploying large scale networks of low cost sensors is challenging: finding suitable sites, funding, and citizen scientists willing to deploy and maintain their sensors over time.

Ribbit Network's novel approach is centered on deploying sensors and generating funding with educational focus.

We showcase 2 engagements Ribbit Network has had over the last year with schools and universities:

- Rutgers University Summer program
- North Carolina School deployment

These engagements have allowed us to fund several projects with leading ground CO₂ sensor programs in the U.S. and Europe:

- Zurich - ICOS - deployment in an urban environment. data analysis.
- Wind River field deployment - Ameriflux. field deployment in a forest.

We will also present the results of several Citizen scientists experiments:

- testing of Sensirion NR1D CO₂ sensor accuracy in a controlled environment
- solar panel powered sensor



Figure 1. Frog sensor built by Rutgers students during summer program.



Figure 2. Frog sensor installed on a tower 234 ft tower at the NEON Ameriflux site in Washington State National forest.