

**2014 ANNUAL GENERAL MEETING**  
*Innovative Monitoring and Citizen Science*



# Agenda

- What is Citizen Science?
- Why is it of interest to the ACA?
- Testing Accessible Innovative Monitors:  
The Air Quality Egg
- Future potential

# What is Citizen Science?

Citizen Science is the collection and analysis of data relating to the natural world by members of the general public.

Typically includes:

- **Collaboration with large groups of citizens**
- **Partnerships with professional scientists**
- **Support from policy makers and/or non-government organizations**

Includes contributory (participatory) and community lead or co-created

# Levels of Citizen Science

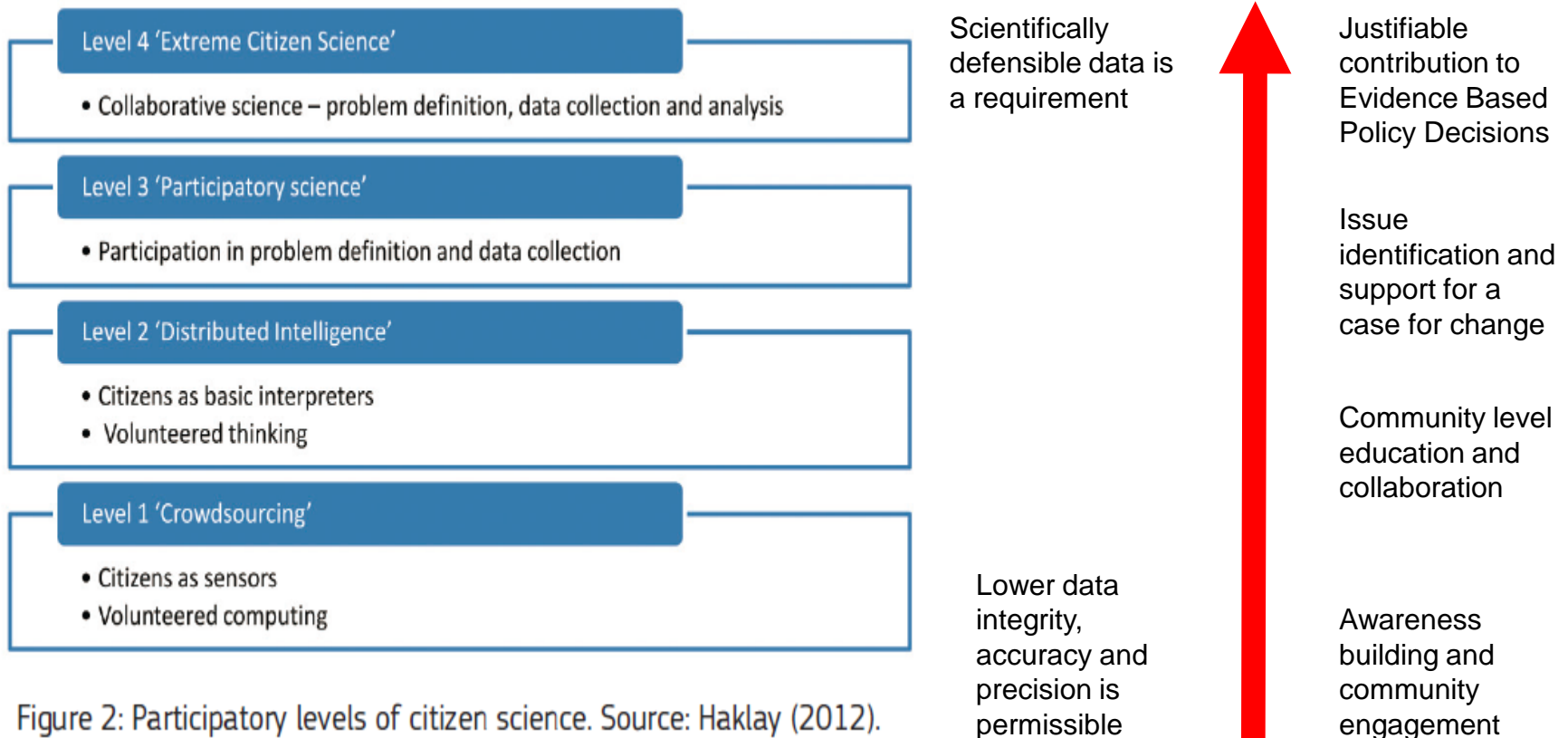


Figure 2: Participatory levels of citizen science. Source: Haklay (2012).

# Challenges and Opportunities

Key challenges facing citizen science can be summarised as:

- \* Recognition of scientific value
- \* Maintaining scientific rigour and data quality
- \* Involvement of citizen scientists representing a broad spectrum of society
- \* Political and financial guarantees for action on findings

Its key opportunities can be summarised as:

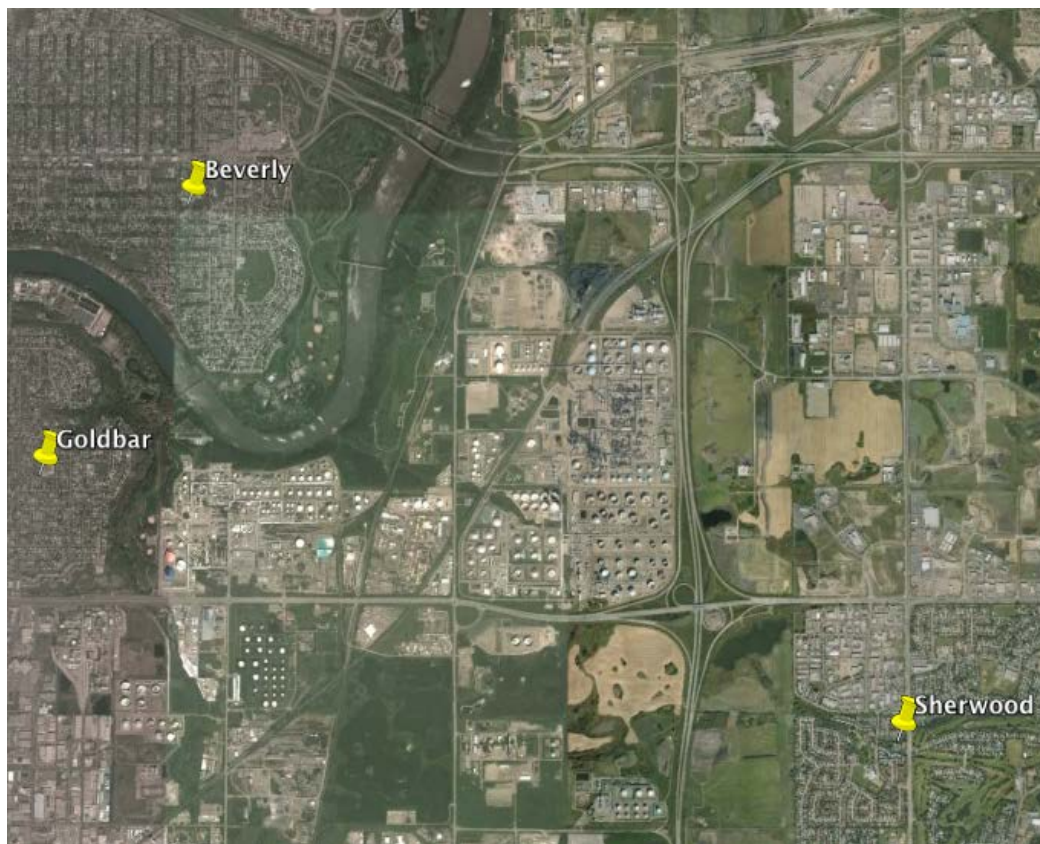
- \* Timely data from disperse sources
- \* Power to address large knowledge and funding deficits
- \* Educating public about environmental policy issues such as biodiversity
- \* Participatory democracy

# AQ Egg Objectives

1. Simple to Use – plug and play
2. Streaming Data
3. Good Data Quality



# Project Implementation



- Deployed  
October 2013
- Retrieved  
May 2014
- Measure NO<sub>x</sub>

# Objectives 1 & 2

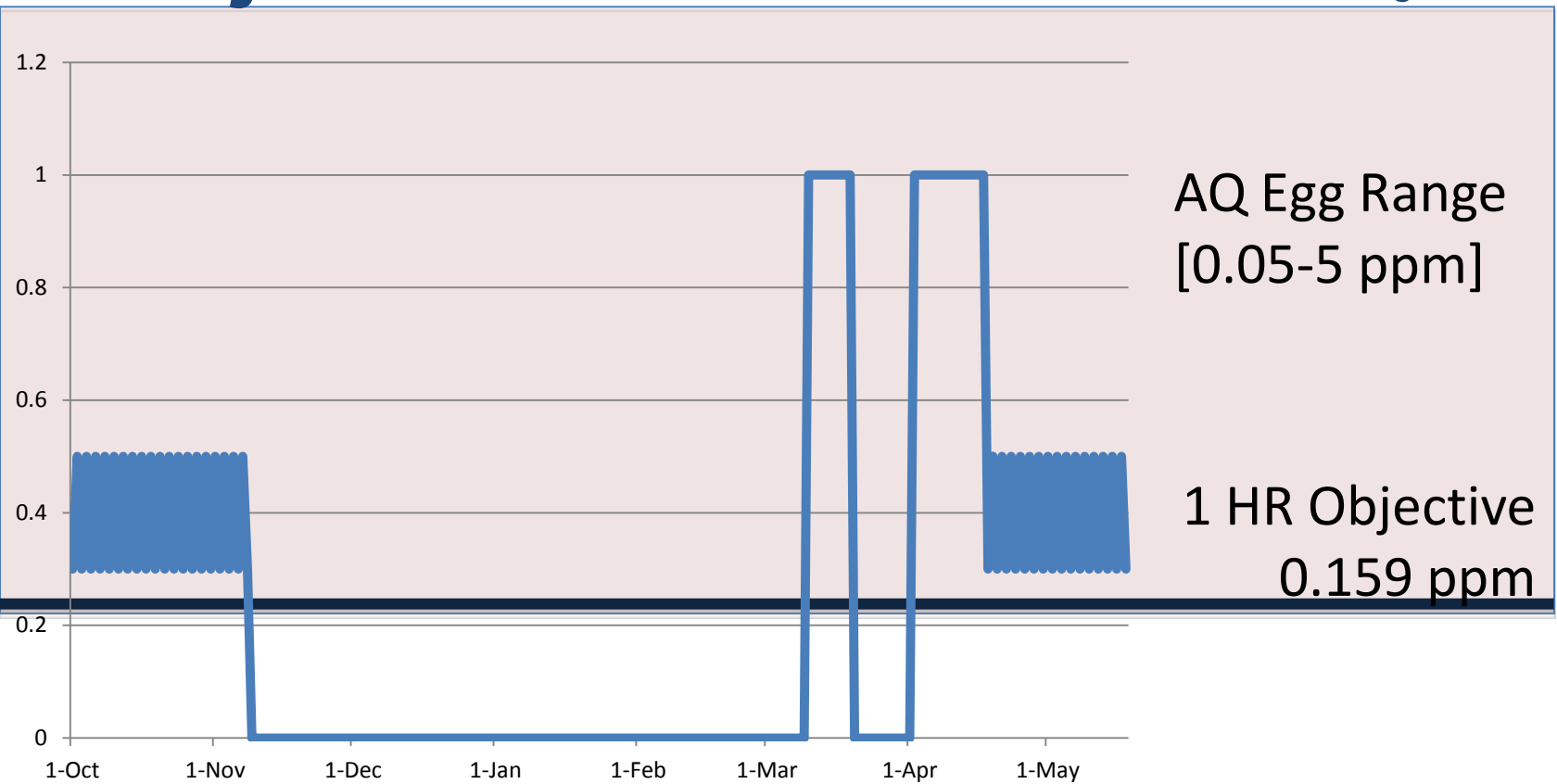
**1. Simple to Use and;**

**2. Streaming – plug and play**

- Issues include:
  - ✓ Wi-Fi access, registration of device and management if it ‘drops off’ Wi-Fi.
  - ✓ Back end technology – does the Cloud technology keep on working as expected?
    - NO – issues with both



## Objective 3 *Goldbar* Oct 2013 – May 2014



# **New Citizen Science AQ Technologies**

- 1. Propeller Health: Mashing a GPS onto an asthma inhaler.**
- 2. Real-time AQ push feeds to a smart phone, for your location.**
- 3. On-line dispersion models.**
- 4. Eventually, small, cheap and accurate AQ sensors.**

# AQ Technology Drivers

## 1. Free and open AQ data.

- A. Permissive license
- B. Real-time data feeds

## 2. Community engagement.

- A. School groups
- B. Software Developers – Researchers –  
Policy makers – Citizens

## 3. Advances in hardware.



Our sphere  
of influence

# Summary

- Formalized citizen science can help inform evidence based policy (at lower cost)
- There are gaps in air quality monitoring in the region
- Technology is emerging quickly and can assist filling those gaps
- Citizen science can be used to build awareness and engagement around air quality
- Perception that the quality of research and data is less accurate/precise is a key challenge that can be addressed with competent organizations assisting in the delivery

# Recommendations

- ACA continues to test emerging, low cost monitoring devices
- Advocate for open AQ data
- ACA co-creates a citizen science project in 2015 to:
  - Build awareness of air quality;
  - Address gaps in monitoring; and/or
  - Inform policy decisions.