DESIGNING MANAGING + ASSESSING CREDIBILITY AND RELEVANCE of DATA IN CITIZEN SCIENCE

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ALLARM: 32 years

VOLUNTEER MONITORING

Each state has a different approach

POWER OF VOLUNTEERS

INGREDIENTS

MONITORING BEST PRACTICES

? → assistance → collection
interpretation → evaluation

BUILDING CREDIBILITY

- study design, quality assurance monitoring methods, volunteer plan evaluation + assessment

CHESAPEAKE BAY MONITORING

- community survey ↳ increased sites + data
- tiered framework
  - data in boxes
- integrated tools
- standard operating procedures

ie. Otsego County

ALL DATA OF KNOWN QUALITY HAVE USE

QUESTIONS

? DATA QUALITY: TIERED FRAMEWORK?

- its easier to integrate people that are new monitors
- hidden tiers: P, P1, P2, P3 provisional

? CITIZEN SCIENCE IS DYNAMIC ARE TIERED FRAMEWORKS BENEFICIAL?

- provides starting point for conversation
- identifies necessary metadata
- you need a service provider to see the big picture and increase quality of data

WHO is the end user? What is the data for?

KAT HARTWIG

Columbia Basin Groundwater Monitoring Program

climate challenges
monitor · education/outreach → additional studies

CREDIBLE DATA

- Standards
- Work with govts
- share data on portal

LESSONS:

- ✓ get it right from the beginning
- ✓ be the navigator amongst the agencies

- normalize Water Stewardship
- cross sector collaboration

- studies show that we are far behind in Canada

Sensitive Habitat Inventory Mapping (SHIM)

assessment · guidelines
outreach/edutation
implementation
monitoring + compliance

SCIENCE → POLICY

NEEDS POLITICAL WILL

- Cultural Sensitivities
- First Nation Values

CABIN

- Workshops
- Interweave Indigenous knowledge
  - including language
- field testing

case study: Windermere Creek

MOVING DATA INTO GOVERNANCE

Scientists, nations, etc = building data hub
Inviting Groups · Roundtables

? HOW TO DEAL WITH EXTERNAL SCRUTINY? WHAT IF DATA IS DIFFERENT THAN EXPECTED?

get it right from beginning
follow protocol
time + effort in protocol development PRIOR to implementation
be nimble + responsive to questions changing

ie. FRACKING protocol - 9 months

? LOCAL INTEREST → BROADER, GLOBAL INTEREST · IS THAT HELPFUL?

Yes!

QUESTIONS

GARY REDMOND

AIR QUALITY CITIZEN SCIENCE

Monitoring Alberta:
75 continuous
230 passive

All sites follow Common rulebook
= CREDIBILITY + CONSISTENCY

CITIZEN SCIENCE FIT?

- ✓ Air quality + health · concerns about impact tolerance
- ✓ Lack of "blind acceptance"
- ✓ govt on the hook

BRIDGE the GAPS

NEW TECHNOLOGIES:

- resident sensor pilot
- Internet of Things (IoT)

PASSIVE MONITORING sponsored by local communities

AIRBEAMS: INSIDE EDUCATION U of A ↳ PLUME

CHALLENGES:

- located close to emitters
  - "not even half where we should be"
- don't have quantity or breadth to dive down

case study:

- PSAMS

network built by farmers

- BUCKET BRIGADE

air collected in bags

OBJECTIVES: of the ACA

- ASSESS
- ENGAGE
- CONTRIBUTE DATA

- ✓ demand
- ✓ data
- ✓ technology advancements
- ✓ more sensors → better
- ✓ how to encourage citizen science?

? DID IT CORRELATE?

Yes! and there's more to the story

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