The Service Provider's Toolkit for Volunteer Monitoring

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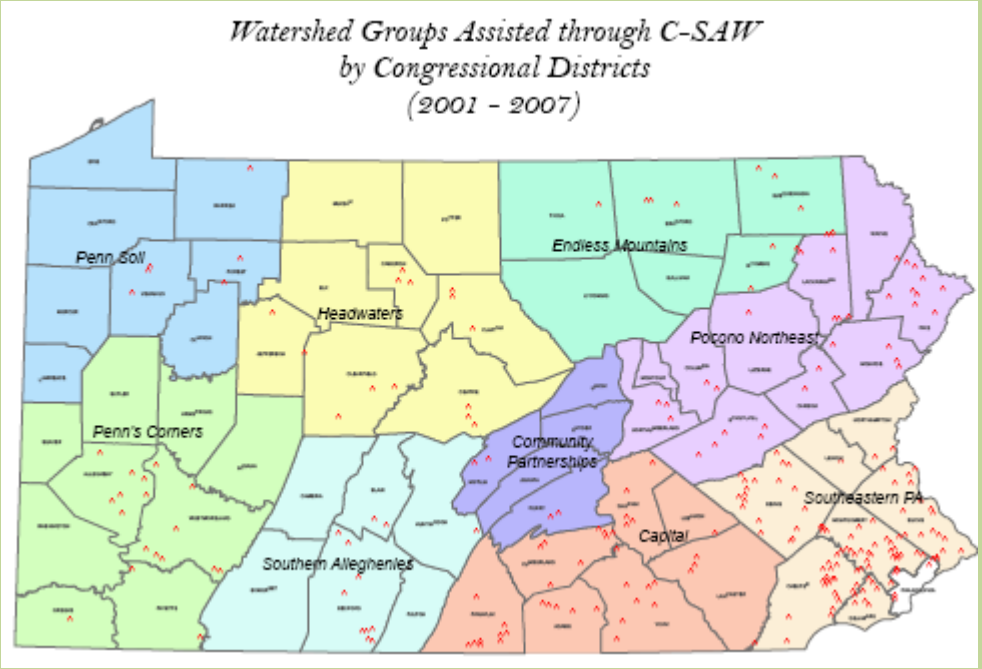
ALLARM Background

- Empower communities with scientific tools to carry out water quality assessments.
- Provide Dickinson College students with opportunities to put classroom-learned skills into practice.

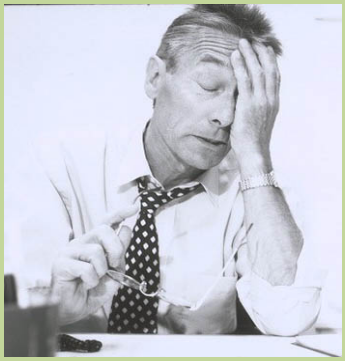
Educate. Engage. Empower.

Volunteer Monitoring in Pennsylvania

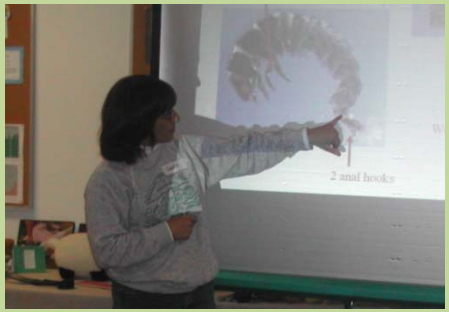


- PA DEP – Growing Greener Stewardship Program
- Consortium for Scientific Assistance to Watersheds

Volunteer Monitoring Evolution

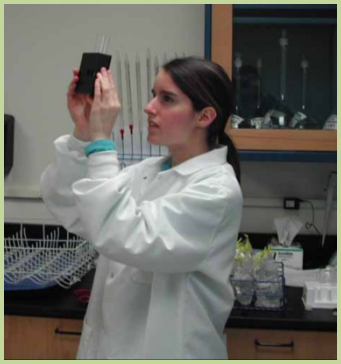


Community Concern



Service Provider/Technical Assistance

Monitoring trainings



Data collection & quality verification

Data interpretation

Communities use data to protect and restore streams

What is a service provider?

Experienced, trained, professional scientists and policy experts

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Volunteer watershed organization with specific water quality concerns.

=

Customized programmatic and scientific assistance.

Models of Assistance

- Short-term
- Long-term
- QA/QC

Key Tools

- Goal 1: Develop comprehensive monitoring plan;
- Goal 2: Build groups' capacity to carry out water quality assessments;
- Goal 3: Diminish the data road block; and
- Goal 4: Verify the quality of data collected.

Anticipate major concerns and how monitoring can achieve goals.

Goal 1: Develop Comprehensive Monitoring Plan

Facilitating the study design process .

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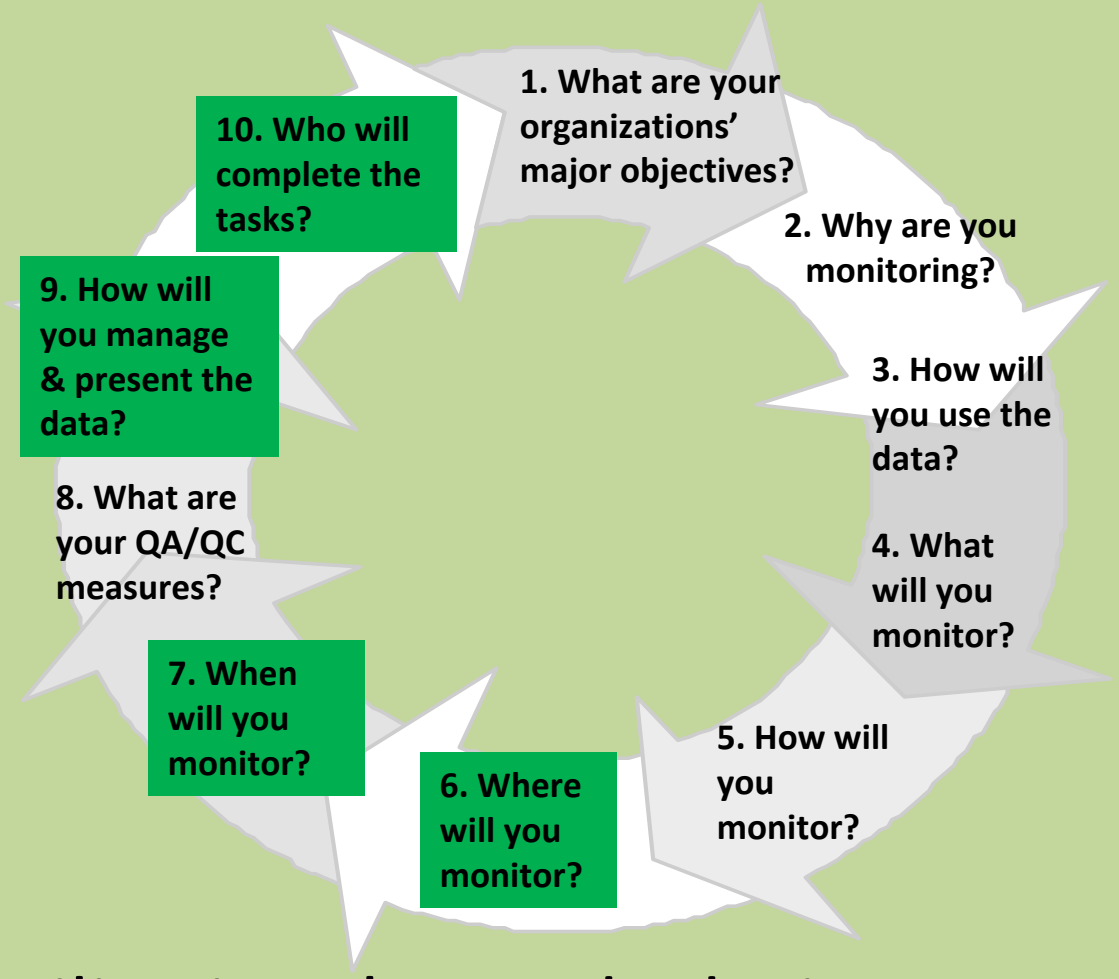


Facilitating the study design process .

Goal 1: Develop Comprehensive Monitoring Plan

Facilitating the study design process .

Goal 2: Build groups' capacity to carry out water quality assessments

Chemical Monitoring

Data collection trainings.

Goal 2: Build groups' capacity to carry out water quality assessments

Biological Monitoring

Data collection trainings.

Goal 2: Build groups' capacity to carry out water quality assessments

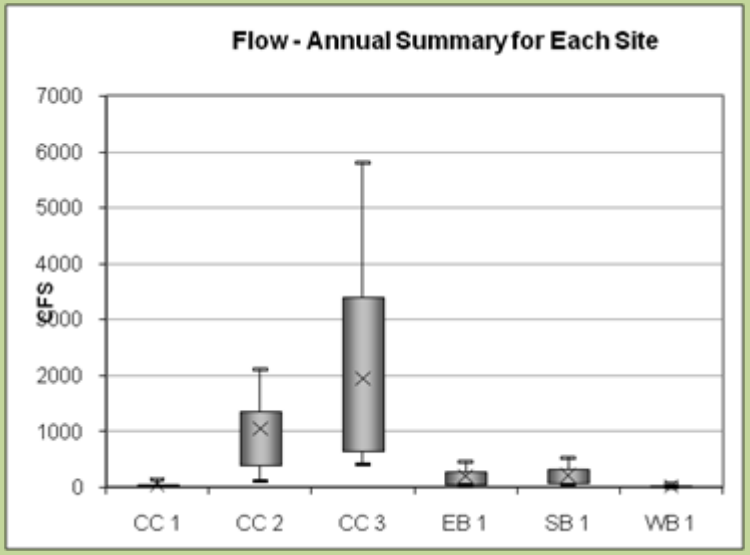
Physical Monitoring

Data collection trainings.

Goal 3: Diminish the data road block

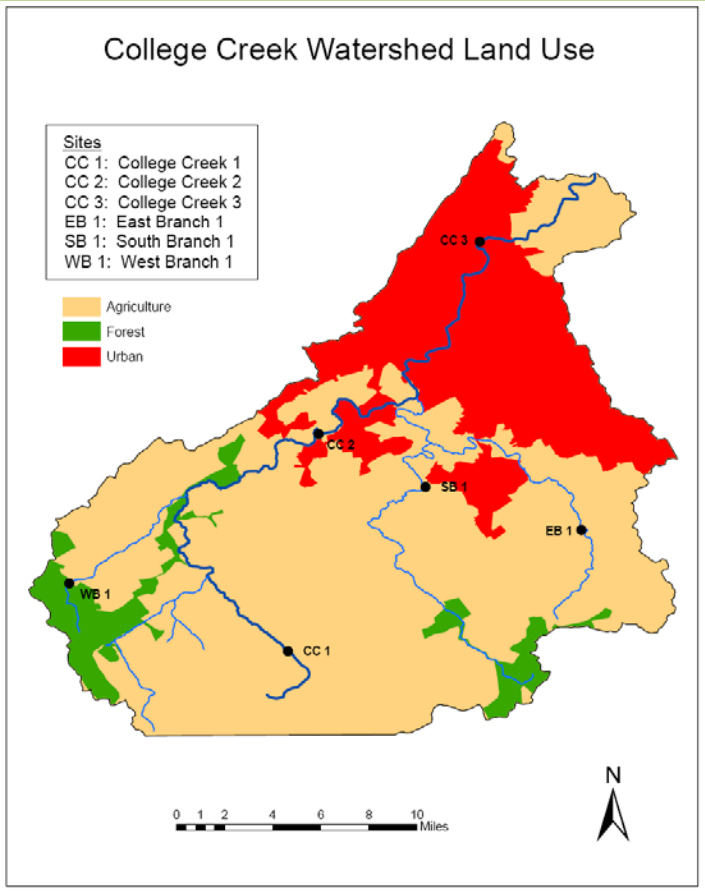
- Data management
  - Provide database template
  - Encourage statewide database use

	A	B	C	D	E	F	G	H	I
1	**Nitrate**								
2	Site	Jan	Feb	Mar	Apr	May	June	July	Aug
3	Site 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Site 2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Site 3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Site 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Site 5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Site 6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Site 7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	Site 8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	Site 9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Site 10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	Site 11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14									
15	**Nitrate- Annual Summary for Each Site**								
16	SITE	Average	Min	25th	Median	75th	Max	Range	IQ Range
17	Site 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	Site 2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	Site 3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	Site 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	Site 5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	Site 6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	Site 7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	Site 8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	Site 9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	Site 10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	Site 11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



Goal 3: Diminish the data road block

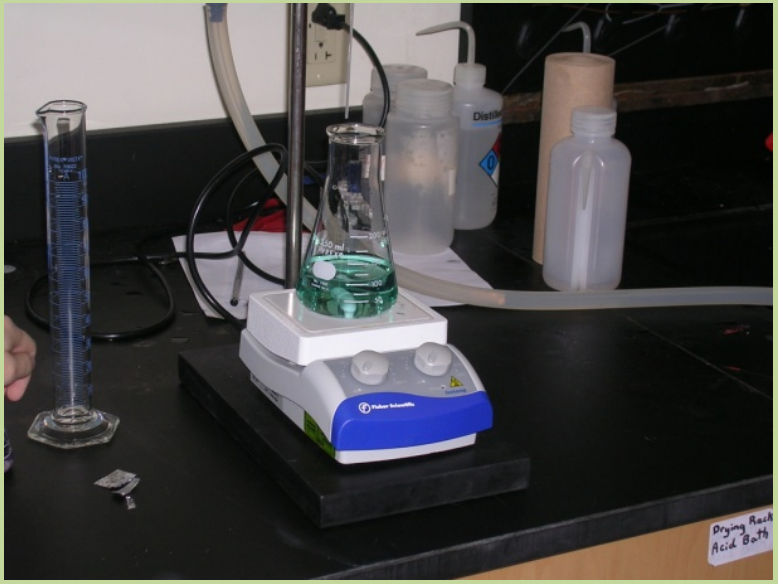
- Data interpretation
  - Develop easy tools to condense data and identify trends
  - Use virtual watershed to build confidence then examine real data



Goal 3: Diminish the data road block

- Data communication
  - Build confidence to use different media to convey data story

Goal 4: Verify the quality of data collected



Increase confidence in data collected.

Strength in Numbers - Successes

- Lawsuit against a paper mill plant that resulted in $25 million in plant upgrades;
- Petitions to the state to upgrade stream designations;
- Collaborations with local governmental entities to incorporate stream protection into new development projects; and
- Increased stream health awareness in local communities.