Adaptive Governance of Urban Social-Ecological Systems

Ahjond Garmestani

*The views expressed in this presentation are those of the author and do not represent the views or policies of the U.S. Environmental Protection Agency*
Green Infrastructure (GI)

- Parks, green roofs, wetlands and trees
- Engineered plant-soil systems
  * Rain gardens
Soil surveys
- Adaptive Management (AM) Framework

- AM = Iterative process
  - incorporates citizen and stakeholder input

- AM: critical aspect of Adaptive Governance
Green Infrastructure (GI)

Direct GI benefits:
- Reduction in runoff volume
- Increased detention capacity
- Restoration of natural hydrologic cycle
Green Infrastructure (GI)

Co-benefits from GI:

- Aesthetics
- Recreation
- Pollination
Resilience

- For our purposes, urban watershed is in a degraded regime

- Resilience isn’t a “good” thing here

- Must erode the resilience of the degraded regime
  - transform watershed to a more desirable regime that mimics the natural system
Adaptive Management

- Integration of resilience theory into natural resources management
- Alter management in response to monitoring
Adaptive Governance

1) Legislation and Accountability
   *Adaptive Management

2) “Intermediaries”
   *Bridging organizations (SVDC) and networks

3) Matching organizations to the appropriate scale
   *Panarchy
Cleveland: Slavic Village Project

- Phase 1: Collected baseline data
  - Gathered data on soils, hydrological and pollinators

- Phase 2: Control sites and treatment sites (i.e., implement GI in vacant lots)
Slavic Village Project

- Cleveland Botanical Garden is a key player in project
  * 12 rain gardens into vacant lots

- Plants were selected for provisioning of ecosystem services (e.g., pollination)

- Ohio State University planted 30 vacant lots (“minimalist” GI)
Pollinators

- Trade-off between citizen preferences and best plants for pollinators

- Why? If citizens don’t like what they see they will be less likely to stay engaged in work

- Worse……..might chop plants down
Barriers

AM and Urban GI

- High uncertainty
- High controllability
Barriers to GI

Problems with AM

1. Control – NEORSD
   *MOU not binding

2. Distance
Bridges for GI

- Adaptive element
- Monitoring = capacity for adaptation