

Information for Decisions: A Case for a National System of Environmental Indicators

National Water Quality Monitoring Council
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The State of The Nation's Ecosystems 2008

Measuring the Lands,
Waters, and Living Resources
of the United States

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Environmental Information: A Road Map to the Future

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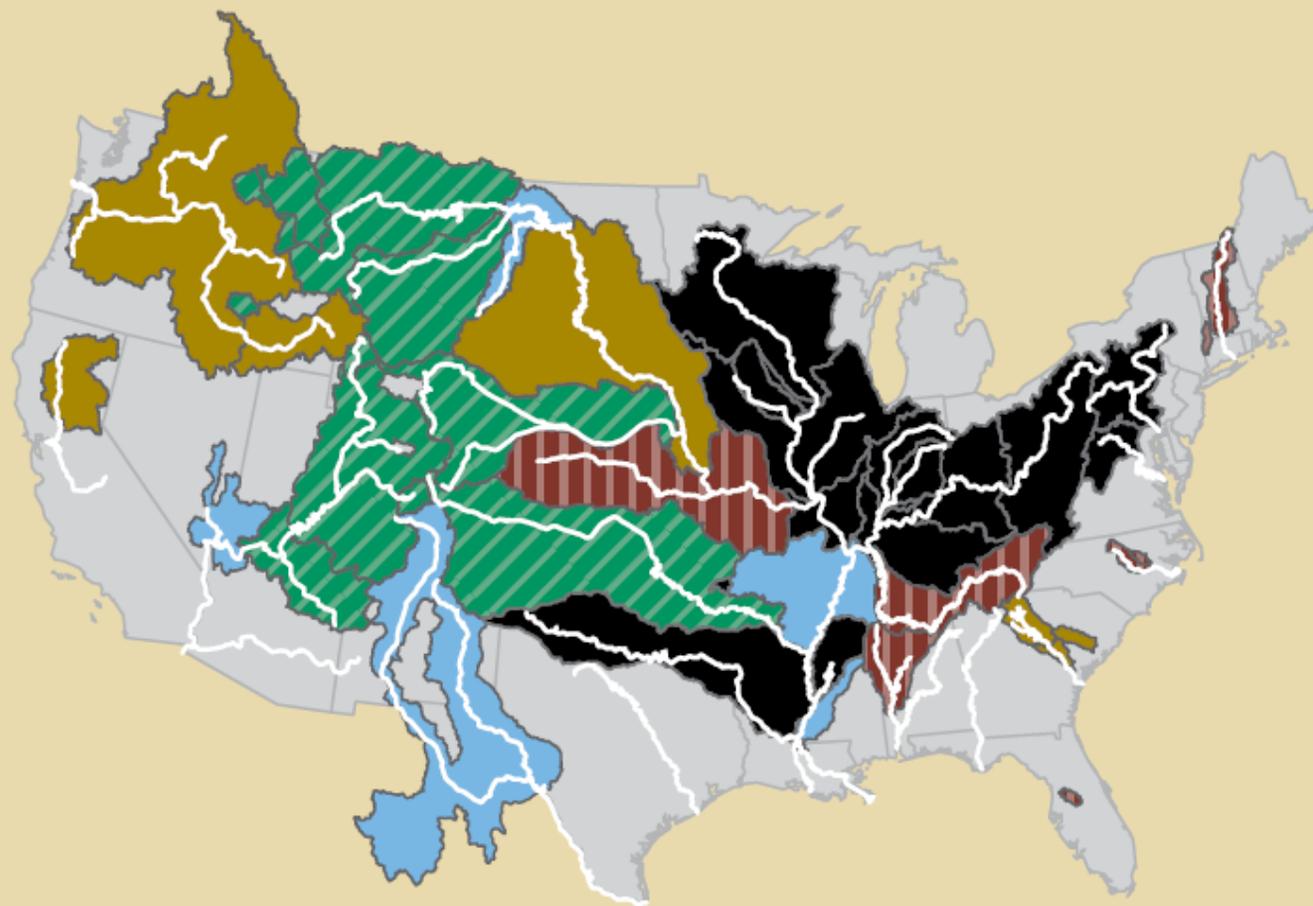
QUESTIONS

- ❖ Is the water in Snowdon Creek cleaner now than it was 10 years ago?
- ❖ Are the Snowdon watershed's main problems sediment or nutrients?
- ❖ Are water quality problems more persistent in Wicomico County than Sussex County?
- ❖ Are there snakeheads here yet?
- ❖ Is the Chesapeake "dead zone" bigger this year?
- ❖ Has reduced stream flow affected bay salinity?
- ❖ Is the water at Maryland bathing beaches cleaner this year? How many people got sick from bathing this year?

SAME QUESTIONS, BUT BUT AT LARGER SCALE

- ❖ Are the nation's waters cleaner now than 10 years ago?
- ❖ Which water quality problems are increasing?
- ❖ What regions are leading, lagging?
- ❖ Are efforts to reduce the rate of spread of key invasive species working?
- ❖ Are "dead zones" increasing in number and size / duration?
- ❖ Are stream flows changing as predicted by climate models?
- ❖ Are more beaches cleaner? Are more people getting sick from bathing in dirty water?

Delivery of Total Nitrogen to Streams and Rivers from Major Watersheds (2001–2005)



Total Nitrogen (pounds of nitrogen per square mile per year)

- | | | |
|--------------------|--------------|-----------------|
| Data not available | 10 to 599 | 1,500 to 2,999 |
| Less than 10 | 600 to 1,499 | 3,000 and above |

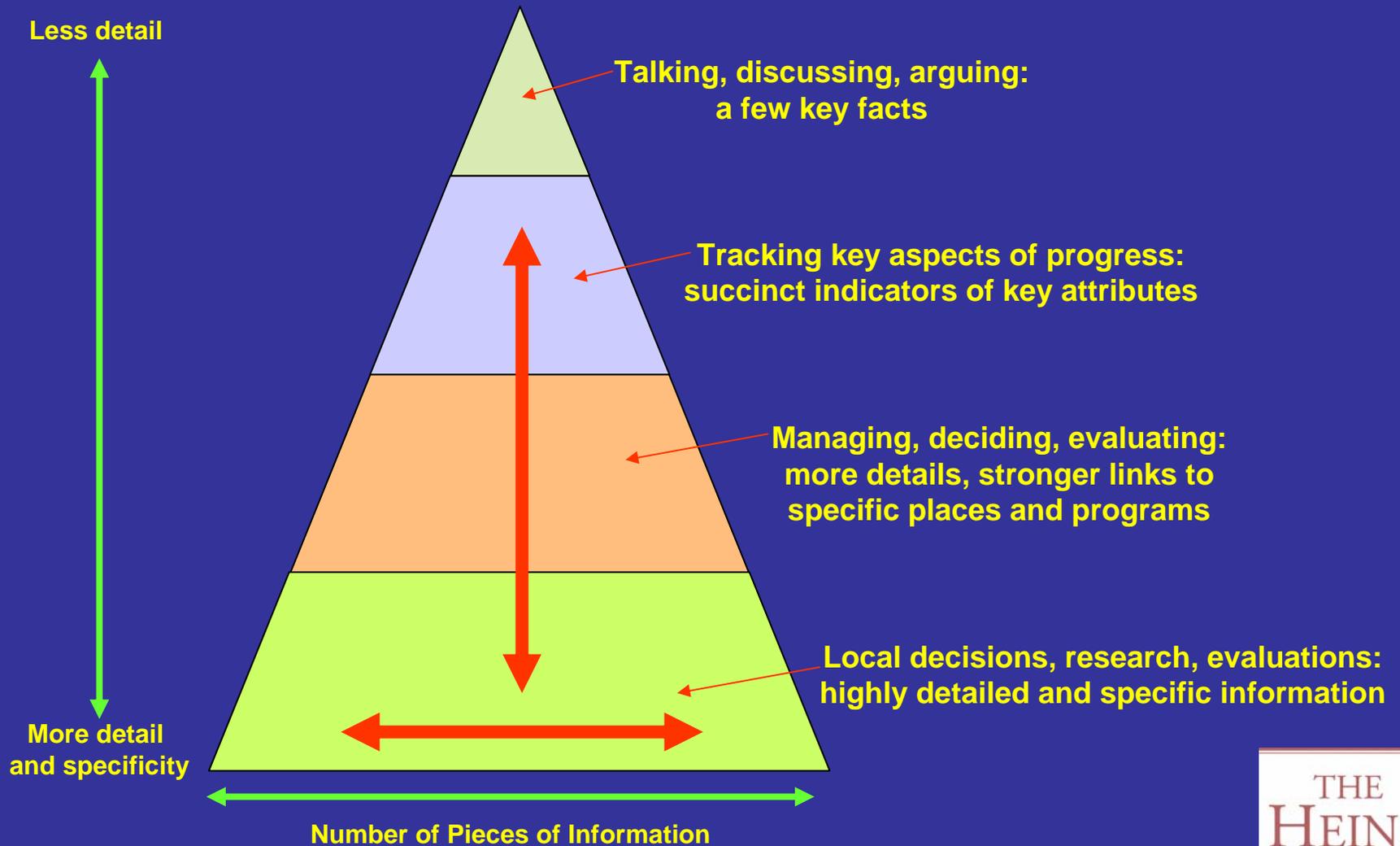
Data source: U.S. Geological Survey's National Stream Quality Network (NASQAN), National Water Quality Assessment (NAWQA), and Federal-State Cooperative Program.

ASSERTIONS

- ❖ Need information to manage well – to identify and quantify problems, to understand links to sources, to assess effect of controls
- ❖ Need consistent information across jurisdictions to manage common problems across places, states, watersheds (horizontal consistency)
- ❖ Need aggregated (“rolled up”) information to manage problems affecting broad areas and multiple jurisdictions, and to manage national programs (vertical consistency)

Information and Indicators for Multiple Needs

Thinking About What's Needed and Where



ROAD MAP Recommendations

- ❖ Congress should formally establish a national system of indicators
 - Involve all parties in selection
 - Use to drive key monitoring actions
 - NOT all indicators / monitoring included
- ❖ Executive branch should move ahead in advance
- ❖ Congress and executive branch should provide greater funding, including transition funds
- ❖ States should participate as full partners

- ❖ Not everything needs to be consistent, rolled up
- ❖ If you plan for multiple uses and needs, the likelihood of getting a system to meet those needs goes up (and vice versa)
- ❖ (or) United we stand, divided we have only our own data....
- ❖ A larger system may not meet ALL needs, but the current one doesn't either.
- ❖ The demand for accountability and efficiency won't go away
- ❖ The scale of problems – especially as exacerbated by climate – will increase.

Vision for NEST

- ❖ Hands-on involvement by states, NGOs, business, etc. in federally-coordinated effort
- ❖ Work topically (waters, species, land cover, etc.)
- ❖ Address key needs and priorities (i.e., optimize over several objectives) as defined by key stakeholders
- ❖ Identify needed resources

>>>>> **National Water Quality Monitoring Network**



“STARTER SET”

- ❖ Nitrogen, phosphorus
- ❖ Sediment
- ❖ Contaminants
- ❖ Flow regime
- ❖ Linked to local information (land cover, etc)
- ❖ Physical condition
- ❖ Biological condition (inc. natives, non-natives)

Envision a 21st Century Environmental Information System

- ❖ Better integrated
- ❖ Better resourced
- ❖ Better delivery to users (and thus greater use)
- ❖ Broad acceptance by stakeholders
- ❖ Not limited to existing data
- ❖ Regular periodic reporting
- ❖ Highest technical standards



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