The Ecology of Governance

Ecosystem Management in an Intergovernmental Setting

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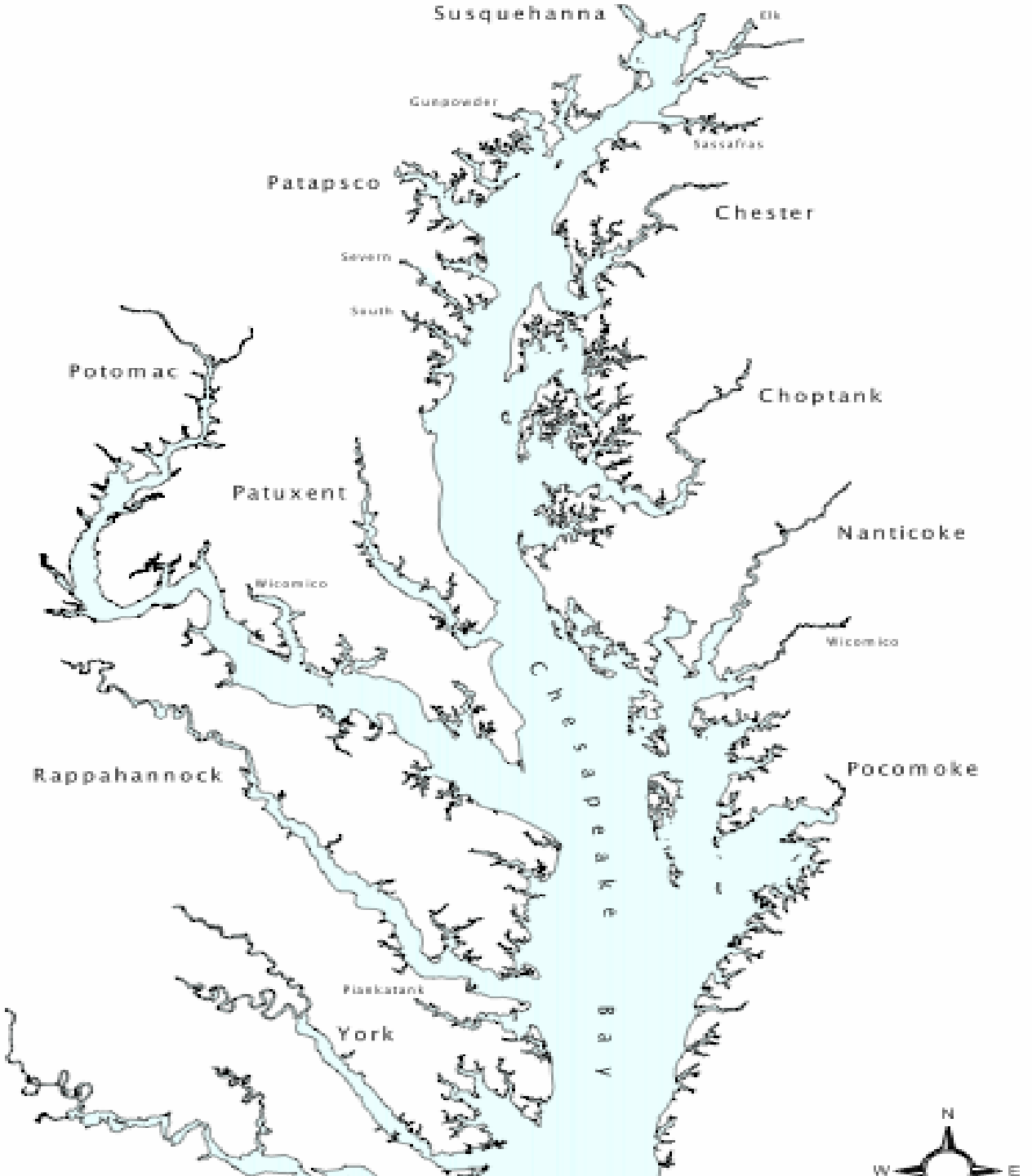
Policy for Watershed Ecosystems

The Implications for Integrated Adaptive Governance

Adaptive Management

- Policies as Experiments
- Adapting Administrative Structures and Processes.
- Science and The Policy Process
- Ecosystem Space and Political Space. Are they compatible?

The Prototype of Watershed Ecosystem Management: The Chesapeake Bay Program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Elk
Gunpowder
Sassafras
Patapsco
Chester
Severn
South
Potomac
Choptank
Patuxent
Nanticoke
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Rappahannock
Pocomoke
Chesapeake Bay
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The Chesapeake Bay

- Is the largest and longest estuary in the US.
- Its watershed encompasses 165,000 square kilometers and stretches from Cooperstown, NY, to the Atlantic Ocean at Virginia Beach, Virginia.
- This area includes portions of six states, New York, Pennsylvania,Maryland, Virginia,Delaware,West Virginia -as well as the District of Columbia.
- Half the water in the bay comes from the Atlantic Ocean, the remainder is fresh water from the rivers and streams that work their way to the bay, the largest source of which is the Susquehanna River.

Choice of Governance Structure

- Criteria and assumptions in choosing CBP institutions
- Regional institutions have not performed well because they have been resisted by states, local governments and federal entities.
- Jurisdictional scope and institutions should correspond to impact boundaries'.
- Small institutions are more efficient and responsive than large institutions and should be no larger than necessary to incorporate preferences of all parties.
- A multi-institutional governance system is to be preferred for dealing with problems in the face of

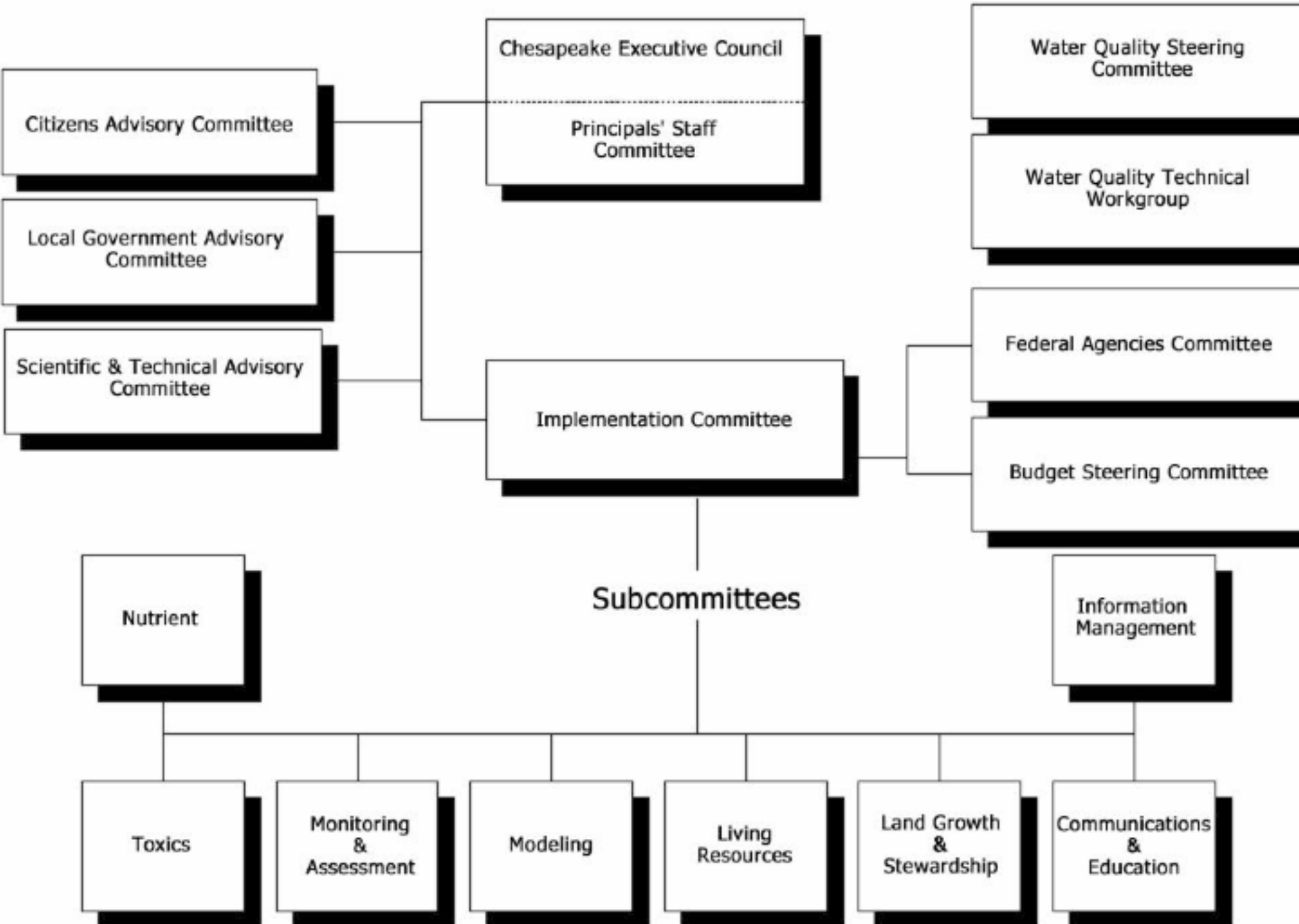
Governance Structure Cont'd

- 1983 agreement signed by EPA and the states of Virginia, Maryland and Pennsylvania and the District of Columbia.
- Established the major elements of a cooperative structure to develop and coordinate the comprehensive bay cleanup: The Chesapeake Bay Executive Council,The Implementation Committee, and EPA's Chesapeake Bay office.
- The council membership included representatives from each of the four jurisdictions and EPA. Chairmanship rotates between the states governors, the mayor of DC. and EPA. It operates by consensus.

Governance Structure Cont'd.

- The implementation Committee, the councils operating arm, has 26 members: delegates from the jurisdictions and representatives from the seven federal agencies and three interstate commissions.
- Subcommittees for planning, Non-point Sources Data Management, Modeling and Research, Monitoring and Living Resources. A Scientific and Technical committee. The council also has a Citizens Advisory Committee which has 25 members: four appointed by the governors of each state and nine at large members nominated by Citizens for the Chesapeake Bay.

Chesapeake Bay Program Organizational Chart



Stages of Evolution In Chesapeake Bay

- Stage one- 1976-83,problem recognition and agenda setting
- Stage two-1983-86,restoration objectives and management structures.
- Stage three-1987-1992-goal expansion and governance system
- Stage four-1992-1997-expanding the management scope to watersheds
- Stage five:watershed ecosystem partnerships between The federal government the states and local governments

Stage Two: 1983-1986: Restoration Objectives and Management Structure

- Chesapeake Bay Program Partnership
- Chesapeake Bay Executive Council
- Implementation Committee
- Scientific and Technical Committee
- Citizens Advisory Committee
- 1985: four general goals: water quality,living resources,toxic reduction,public input and cooperation among institutions around the bay.

Stage Three 1987-1992: Expansion of Goals and Governance Structure

- 1987 Chesapeake Bay Agreement
- Expanded the scope of the 1983 commitments
- Established 29 specific goals in the areas of water quality, living resources, population growth and development, governance, public information and public access
- A 40% reduction in phosphorus and nitrogen by the year 2000.
- Identified living resources as the ultimate indicators of bay health.

Stage Four: 1992-2000.

- 1996 Nutrient reduction reevaluation
- Reaffirmed commitment to the nutrient reduction goal
- Permanent nutrient cap after 2000
- Recognized the critical role of local action to reduce non-point source pollution.
- The bays watershed is divided into sub watersheds that drain into the estuary.
- Within each of the tributaries locally based strategies were to be developed by 1993 to achieve nutrient reduction goals.

Stage Four cont'd.

- Set nutrient reduction goals for tributaries.
- 1997 watershed model: phase IV
- 1996-1997 pfiesteria outbreaks associated with agric

Stage Five-Watershed Partnerships-2000-10.

- The scale paradox:Large scale watershed management requires cooperation with 1653 local governments in several states
- By 2010 implement locally supported watershed plans in two thirds of the bay
- By 2004 each jurisdiction will develop stream corridor restoration goals based on local planning.
- By 2010 correct the nutrient and sediment problems in the bay and its tidal tributaries to remove the bay from the impaired waters list

Watershed Ecosystem Management :Research Implications

- Institutional design and performance
- Challenges: long term sustainability,
- clearly defined goals.
- sound ecological models,
- complexity and interconnectedness,
- adaptability and accountability.