Analysis of US Fisheries Management Decision Networks

Connectivity across government boundaries

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Sea Grant Virginia

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Governance Network Analysis:
EBFM, Fish-Watershed boundaries

Series of studies over five years (2007—2011):

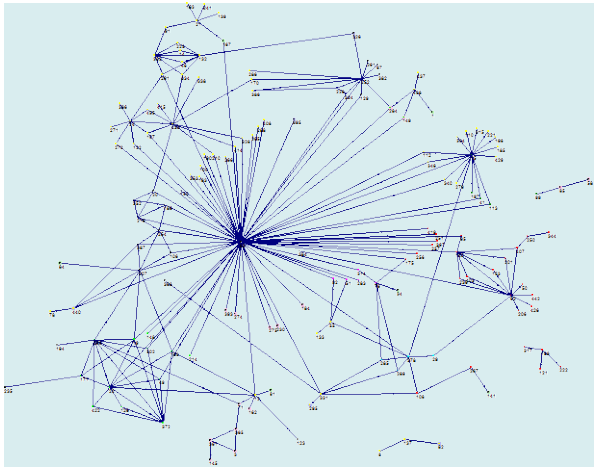
Governance Networks

Social network analysis

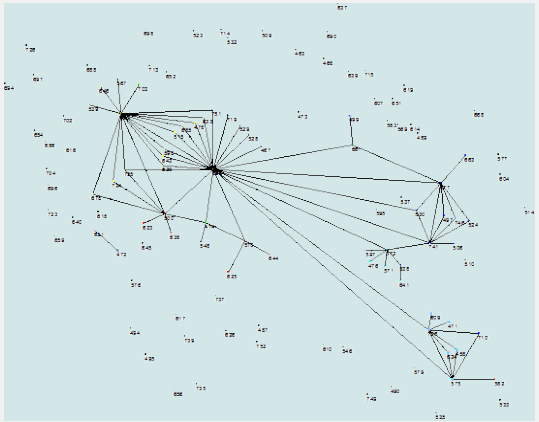
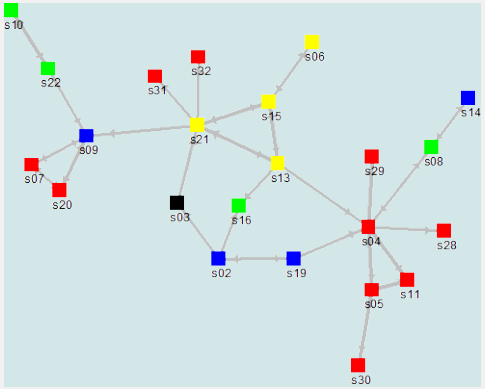
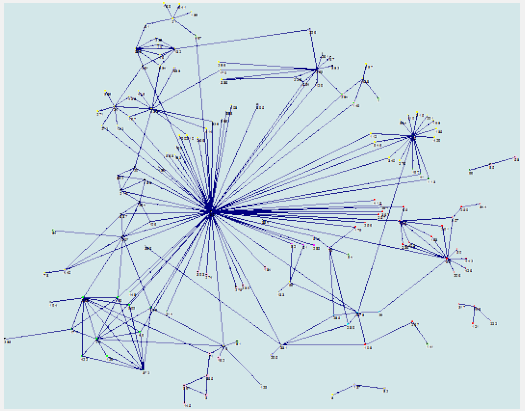
- Social Capital (qualitative) and Graph Theory (mathematics)
- Relational measures – centrality, connectivity (quantitative)
- Graphics software development
- Applications: organization theory, social capital

Communication and governance network analysis:

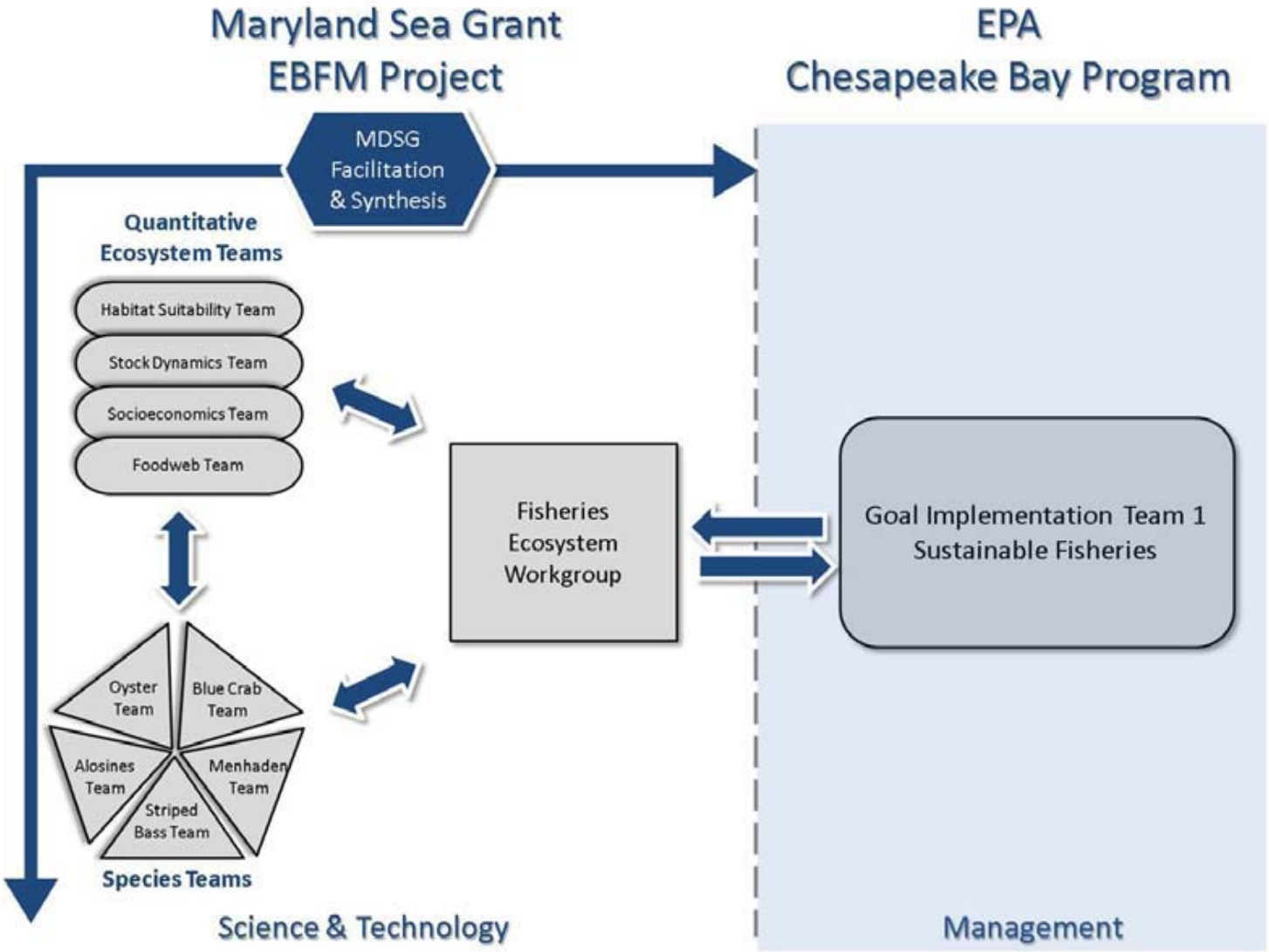
- Communication links – frequency, significance (questionnaires)
- Individual nodes
- Informal + formal
- Snap shots
- Under estimate



Governance Networks

Nova Scotia Canada	NH Coastal Zone	Atlantic Herring
		
Structure Size: 53 Density: 3% Function Wght Avg Path Length: 2.5 Connectivity: 6x	Structure Size: 23 Density: 8% Function Wghtd Avg Path Length: 2.5 Connectivity: 1/3x	Structure Size: 146 Density: 1% Function Wghtd Avg Path Length: 2.5 Connectivity: 3x

Governance Networks



Maryland Sea Grant

Quantitative Ecosystem Teams

C-i C-i C-i

C-o

C-i

Management

Weekly:

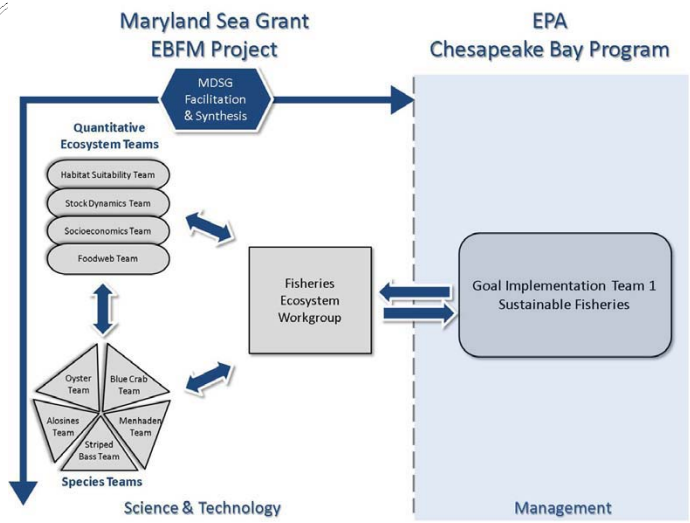
60N (68%)

5% density

3.4 Wght Avg Pathlength

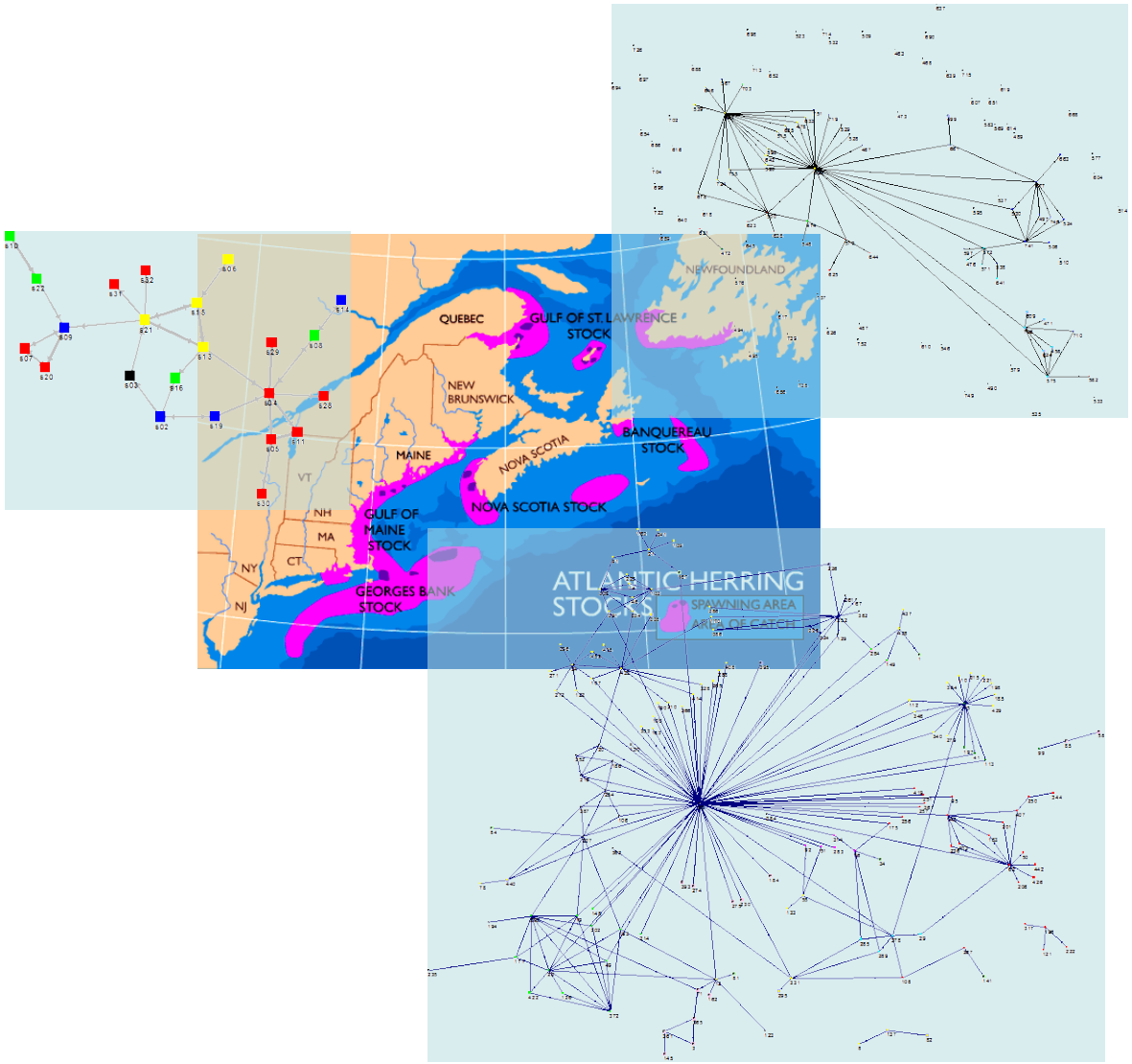
B B

Species Teams



Connectivity:

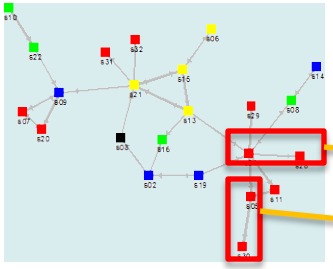
Across local-state-federal, fish-watershed boundaries

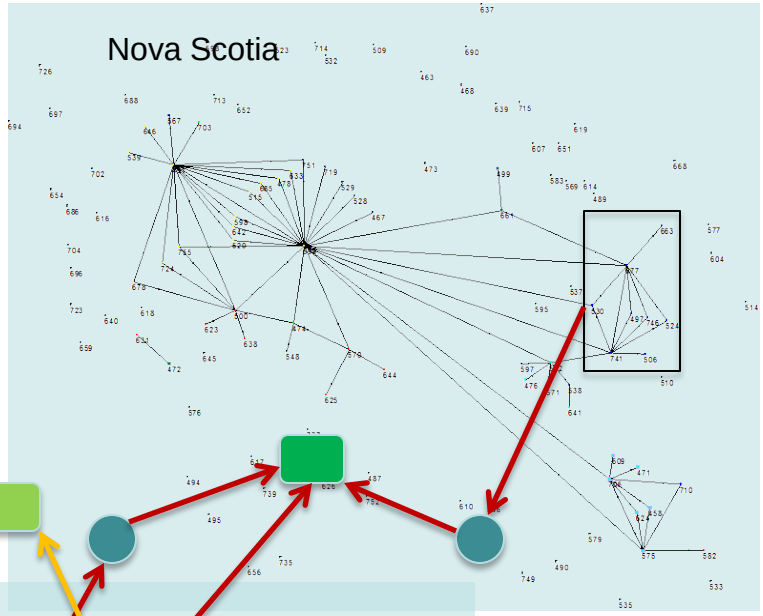


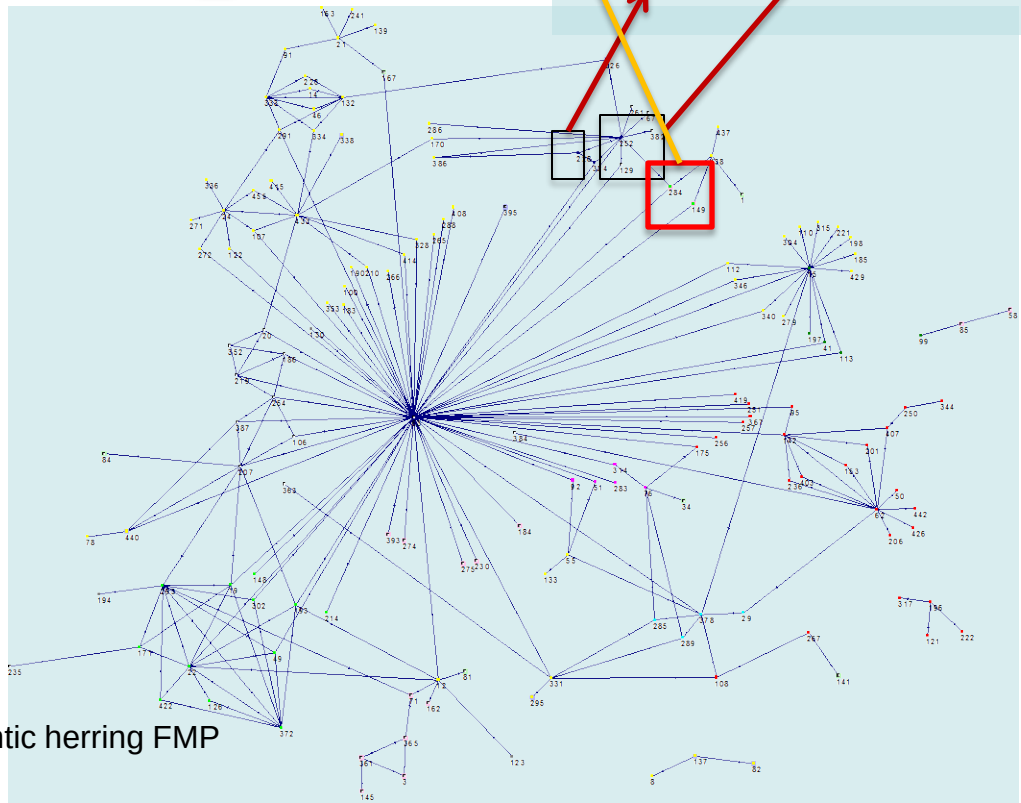
Connectivity

Nova Scotia

NH Coastal Zone



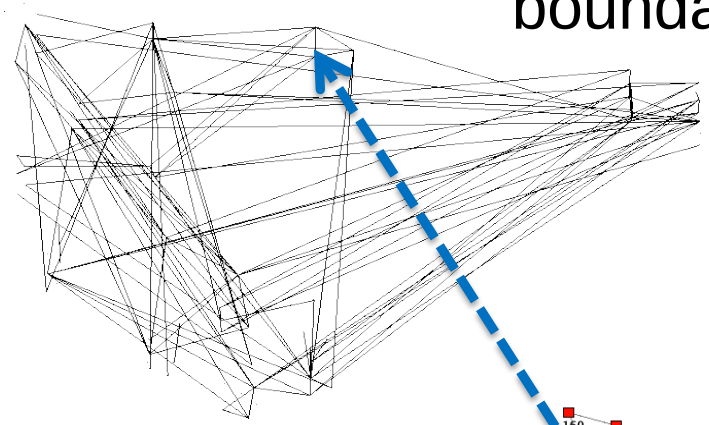




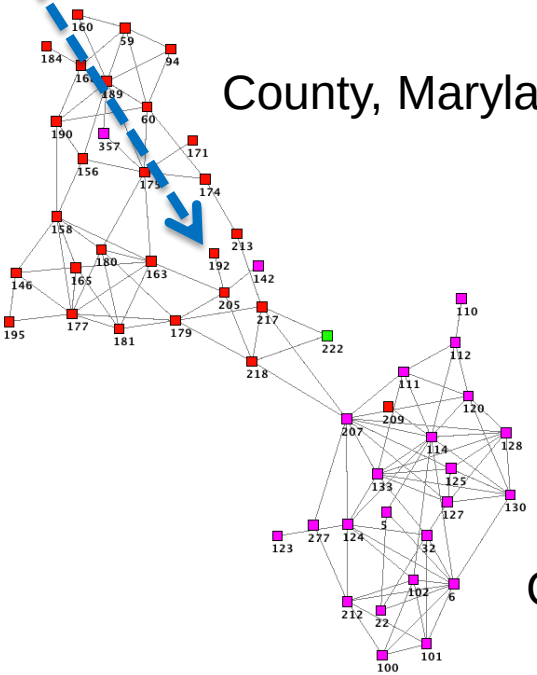
Atlantic herring FMP

Connectivity:

Across local-state-federal, fish-land use boundaries



Chesapeake Bay EBFM



County, Maryland

County, Virginia

Connectivity in Fisheries Governance

Governance Networks at local, state and federal levels have structural and functional characteristics

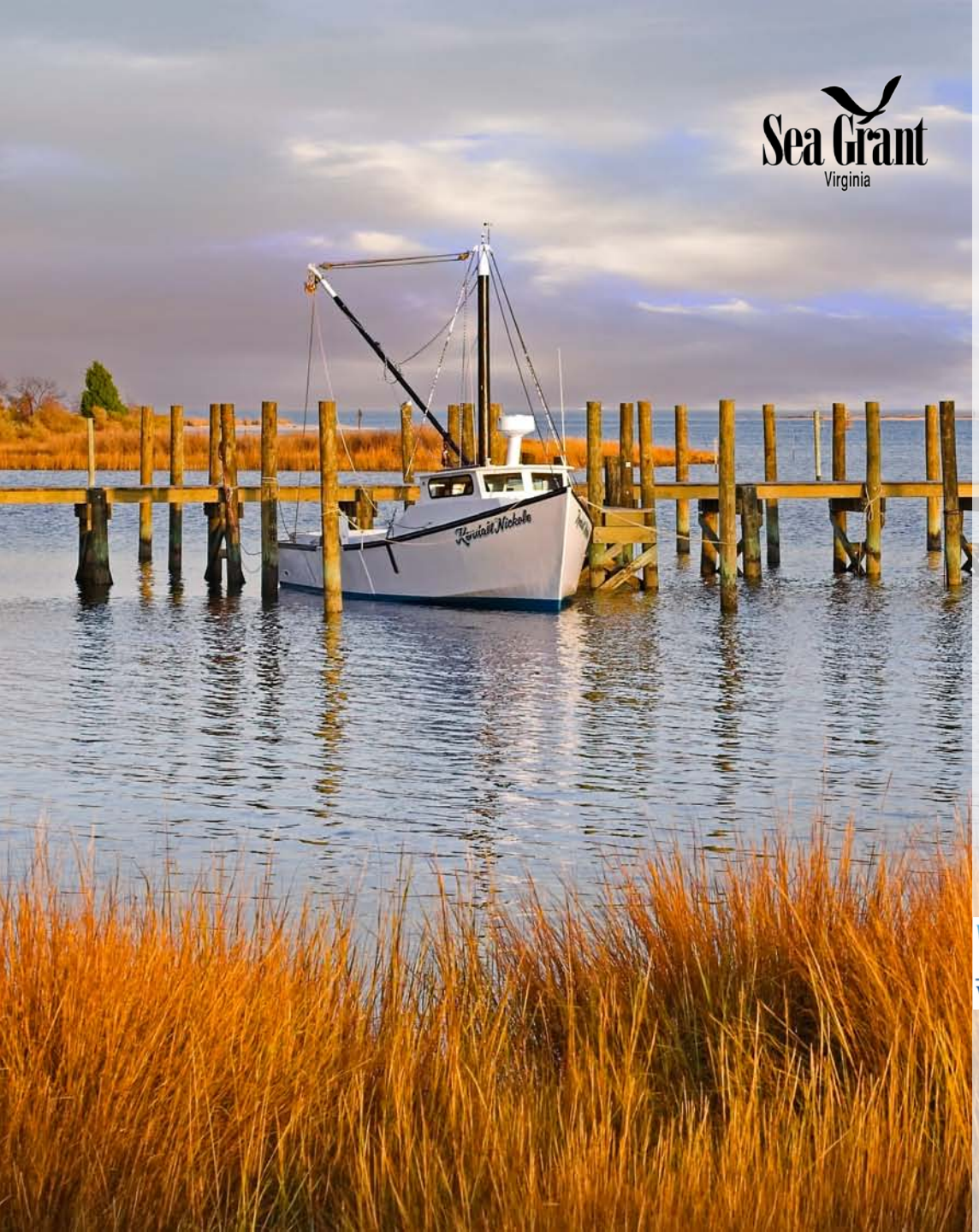
- Different structures can product similar functionality
- Networks are unique—do not perfectly align with org charts, chain-of-command
- Certain individuals can serve critical connectivity roles

Local-state-federal connectivity: beyond Horizon of Observability (3 links apart)

- US-Canada Herring & Watershed Planning: >4 org chart
- US Chesapeake Bay—County Land Use Planning: ~no links

Conclusions & Recommendations

- Insufficient connectivity for EBFM to be implemented
- Look beyond organizational structure to find connections
- Look for the high connectivity attributes—opinion leaders, champions: what capacity? {Next: modeling?}



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Thanks!

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