Using participatory modeling and citizen science to help fishermen on the US East Coast identify ways to adapt to a changing climate

Thomas Webler, Seth Tuler, Jessica Whitehead,
Esperanza Stancioff, Elizabeth Fly,
Brian Seitzman, Julie Davis

SERI

Sea Grant North Carolina

cisa carolinas integrated sciences & assessments

Sea Grant S.C. Sea Grant Consortium

Sea Grant Maine at the University of Maine

Supported by NOAA Climate Program Office - COCA

Project Goals

Improve understandings of how a changing climate will affect fishing communities' abilities to maintain fisheries and the local economies dependent upon them

Investigate the role of a structured dialogue and participatory modeling process in addressing consequences, vulnerabilities, and adaptive strategies in a context of climate stressors

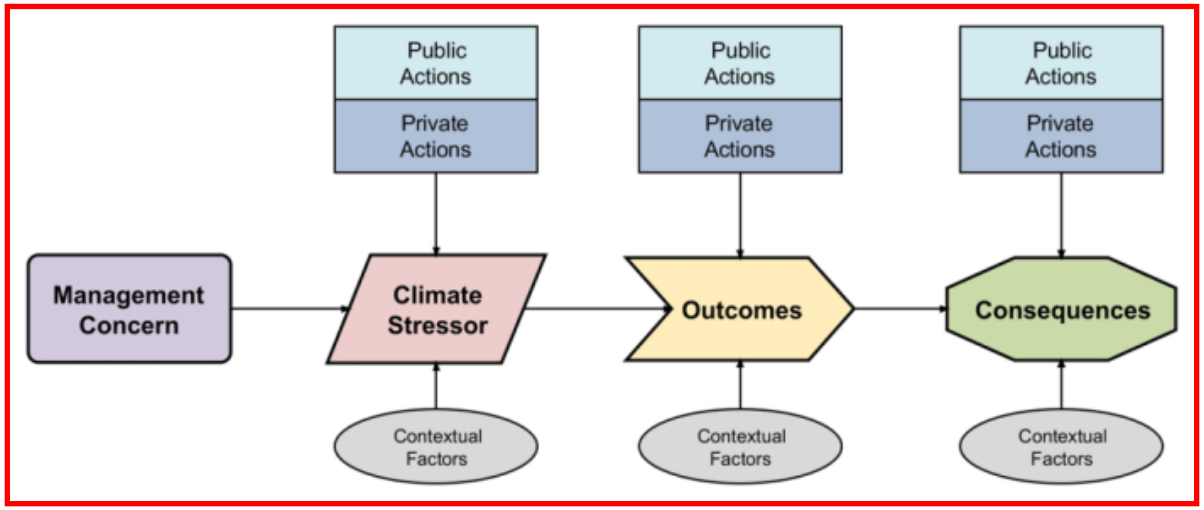




How to Achieve Those Goals…

VCAPS

- Vulnerability, Consequences, & Adaptation Planning Scenarios
- Group dialogue-based concept mapping
- How our community will be affected by climate change



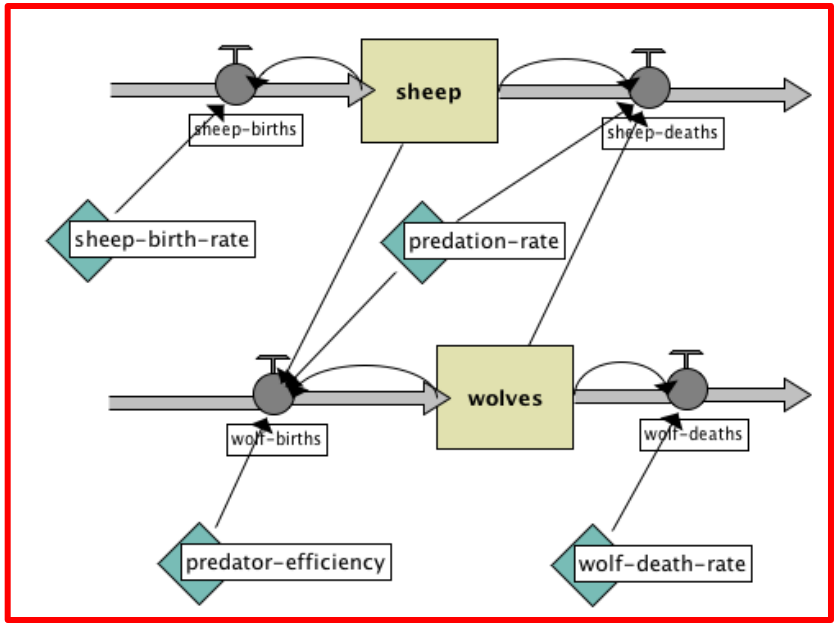
How to Achieve Those Goals…

VCAPS

- Vulnerability, Consequences, Adaptation Planning Scenarios
- Group dialogue-based concept mapping
- How our community will be affected by climate change

System dynamics participatory modeling

- Take a portion of the system
- Understand its dynamic nature
- Explore scenarios for adaptation action



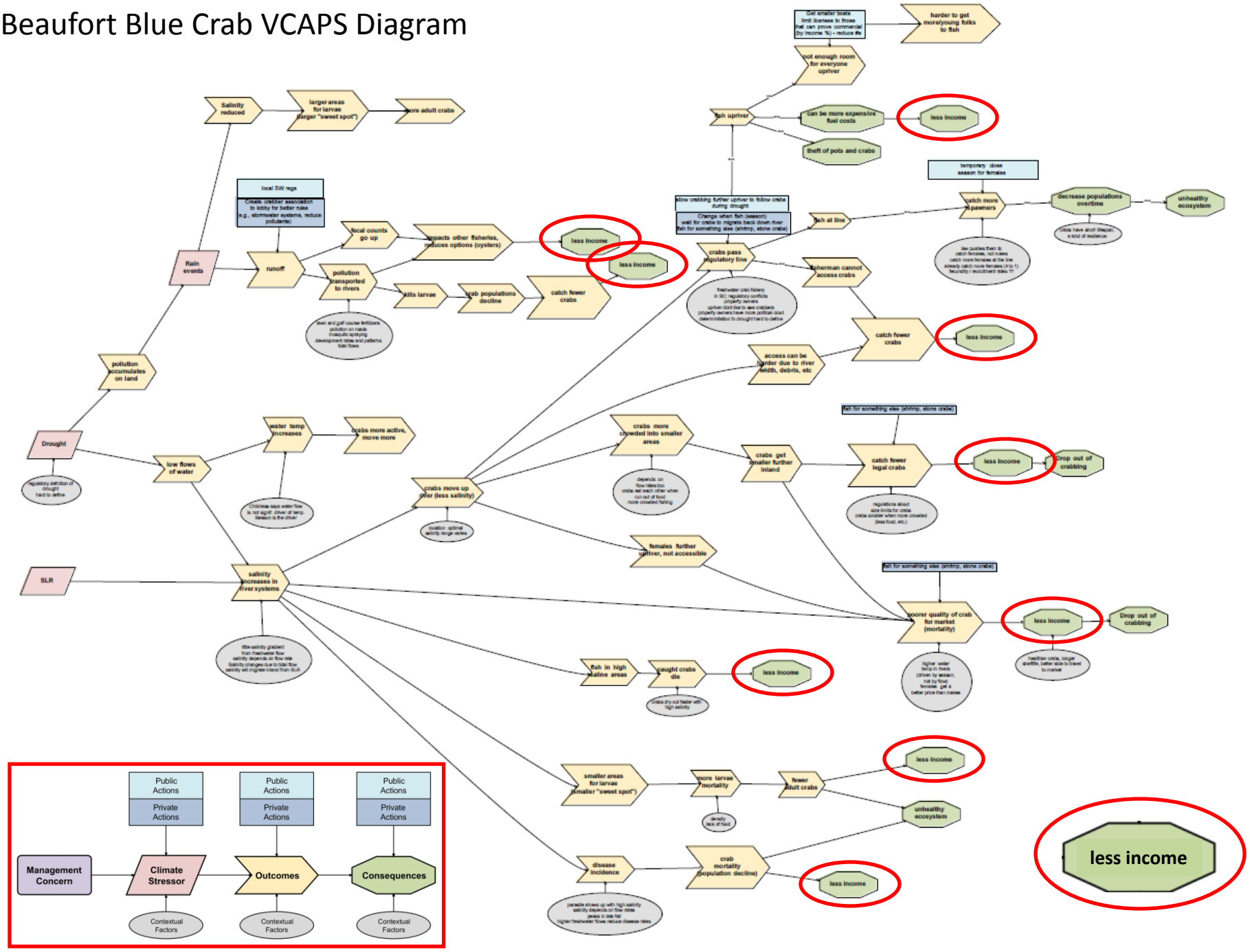
3 Case Studies along U.S. East Coast

South Thomaston, ME

Wellfleet, MA

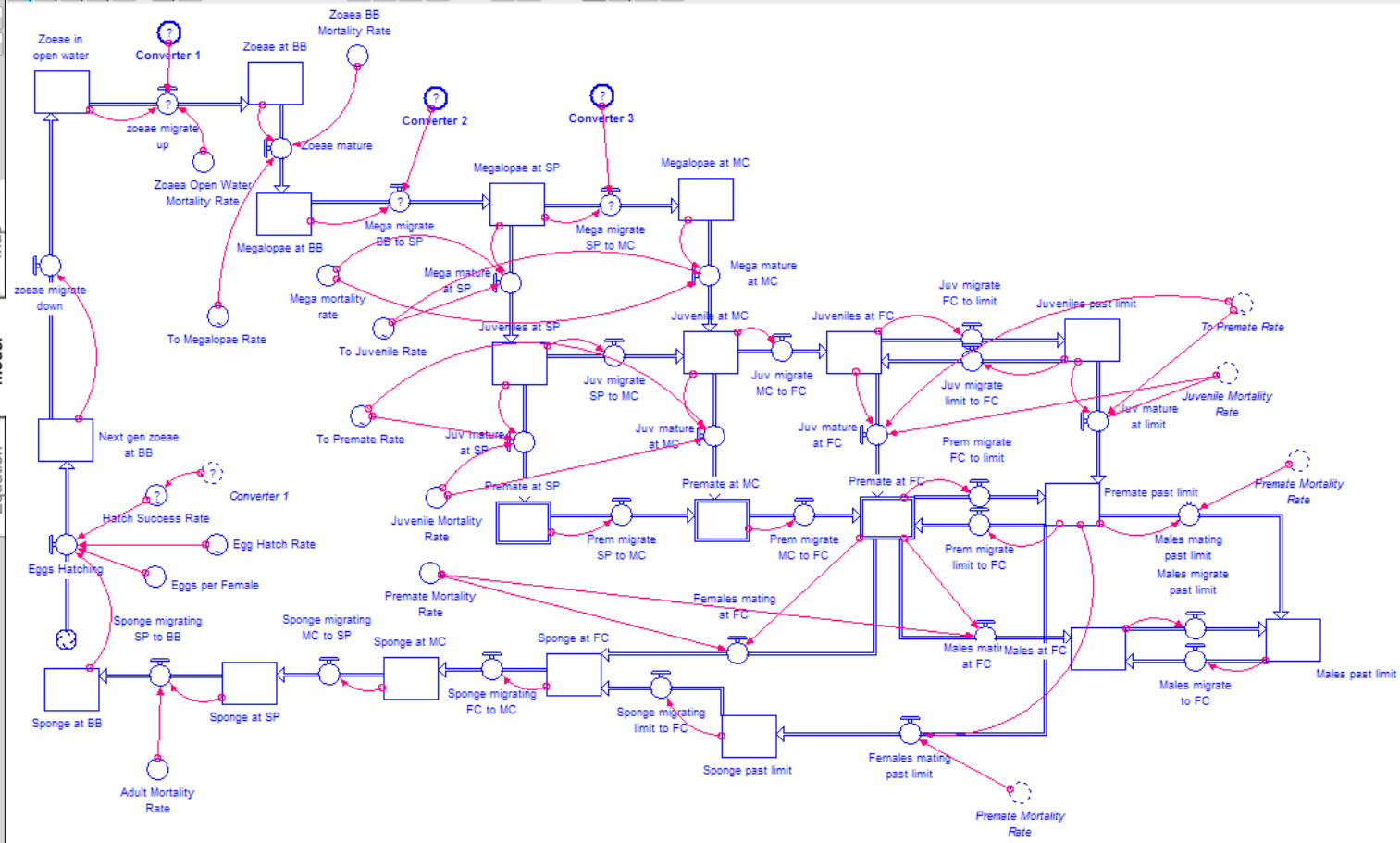
Beaufort, SC

Beaufort Blue Crab VCAPS Diagram

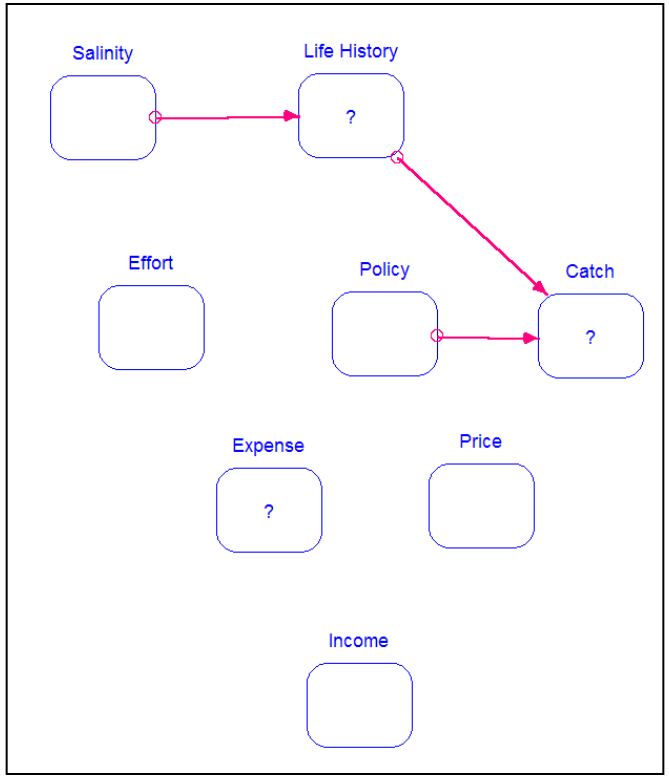


STELLA 10.0.2 - crab model 101414(2).STMX [Life History]

File Edit View Model Run Help



Data Gaps


Salinity
Life History
?
Effort
Policy
Catch
?
Expense
?
Price
Income

Crabbers Who Care Research Network Data Sheet

Name:

Date:

Time:

Tide (circle one): high low rising falling slack

GPS Coordinates at Beginning of Line:

Total # of Traps Fished Today:

Total # of Crabs Caught Today:

Temperature: Units (circle one): Farenheit Celsius

Salinity (ppt): Depth (ft.)

	# males			# females				
Trap	Juvenile	Mature	Peeler	Immature	Mature	Peeler	Sponged	By-catch (# of conch, stone crab, etc.)
1								
2								
3								
4								
5								

Notes:

THANK-YOU FOR CARING ABOUT SOUTH CAROLINA'S MARINE RESOURCES. YOUR EFFORTS ARE APPRECIATED!

Questions? Comments? I want to hear them! 843-255-6060 ext 112 or julie.davis@scseagrant.org

Challenges/Lessons Learned/Opportunities

Integration of climate knowledge and coastal resource management

Fishermen have more climate knowledge than they realize
Importance of LTCK – Local and Traditional *Climate* Knowledge – in resource management

Stakeholder engagement and participation

Maintaining relationships with fishermen
Workshops vs. back-of-the-truck talks

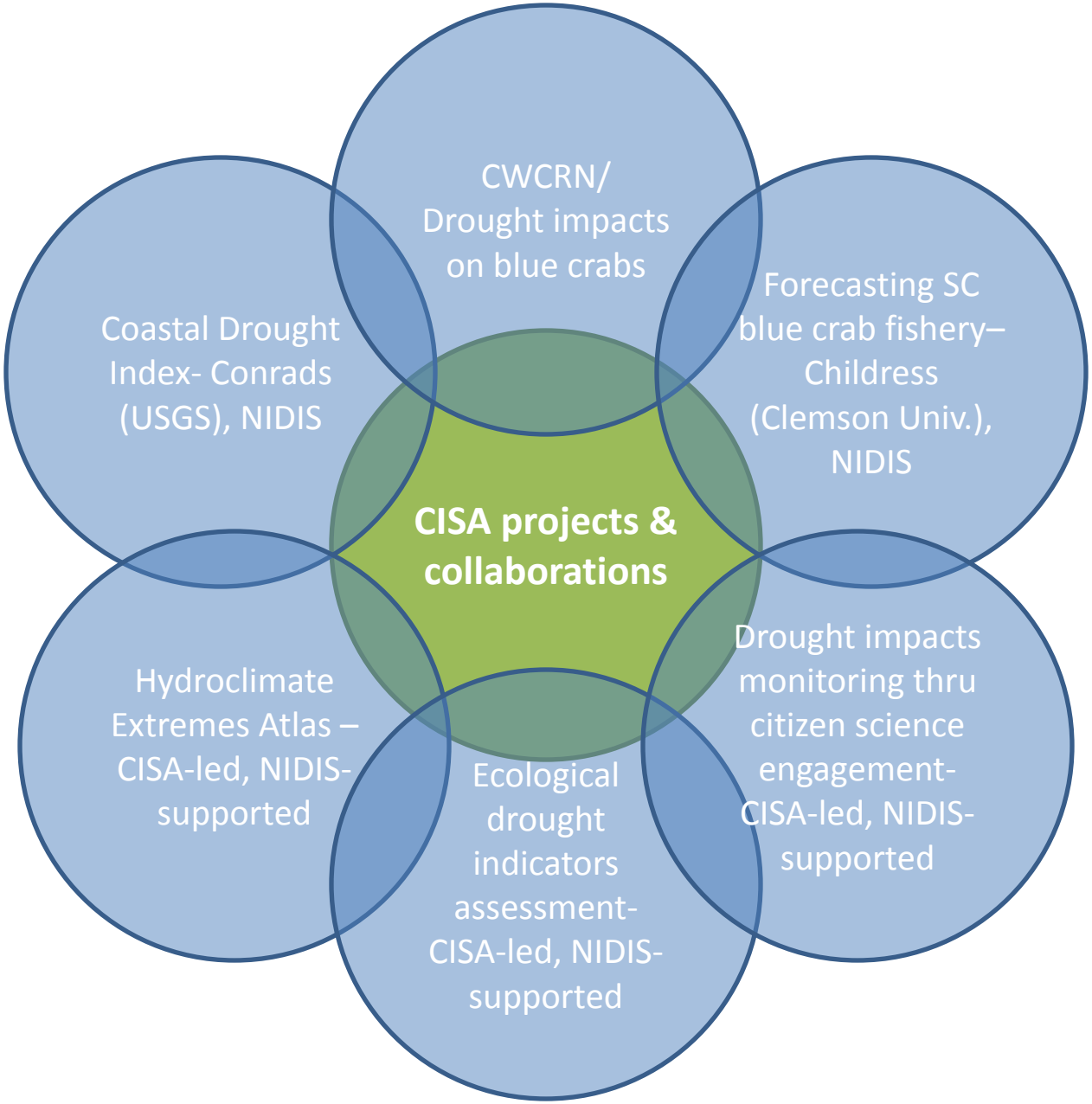
Key communities and networks to engage

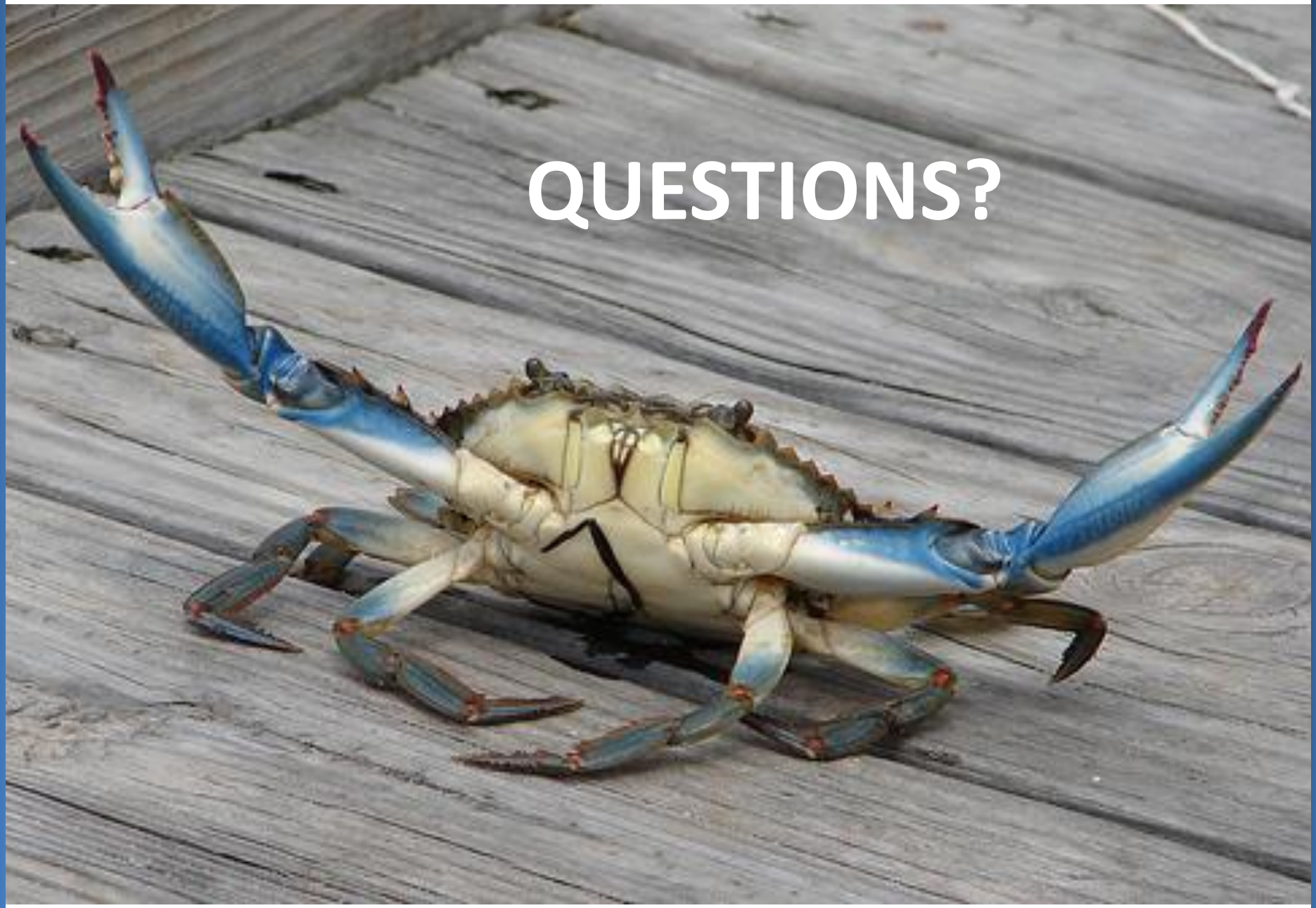
Gain momentum, expand CWCRN to a larger area
Support a regional approach to understanding blue crab populations and climate impacts

Effective pathways to disseminate coastal climate information

Face-to-face engagement
Word of mouth
Build on several efforts in the area

Future Opportunities




QUESTIONS?