

# Designing a (Water) Monitoring Program for the Albemarle-Pamlico National Estuary Partnership



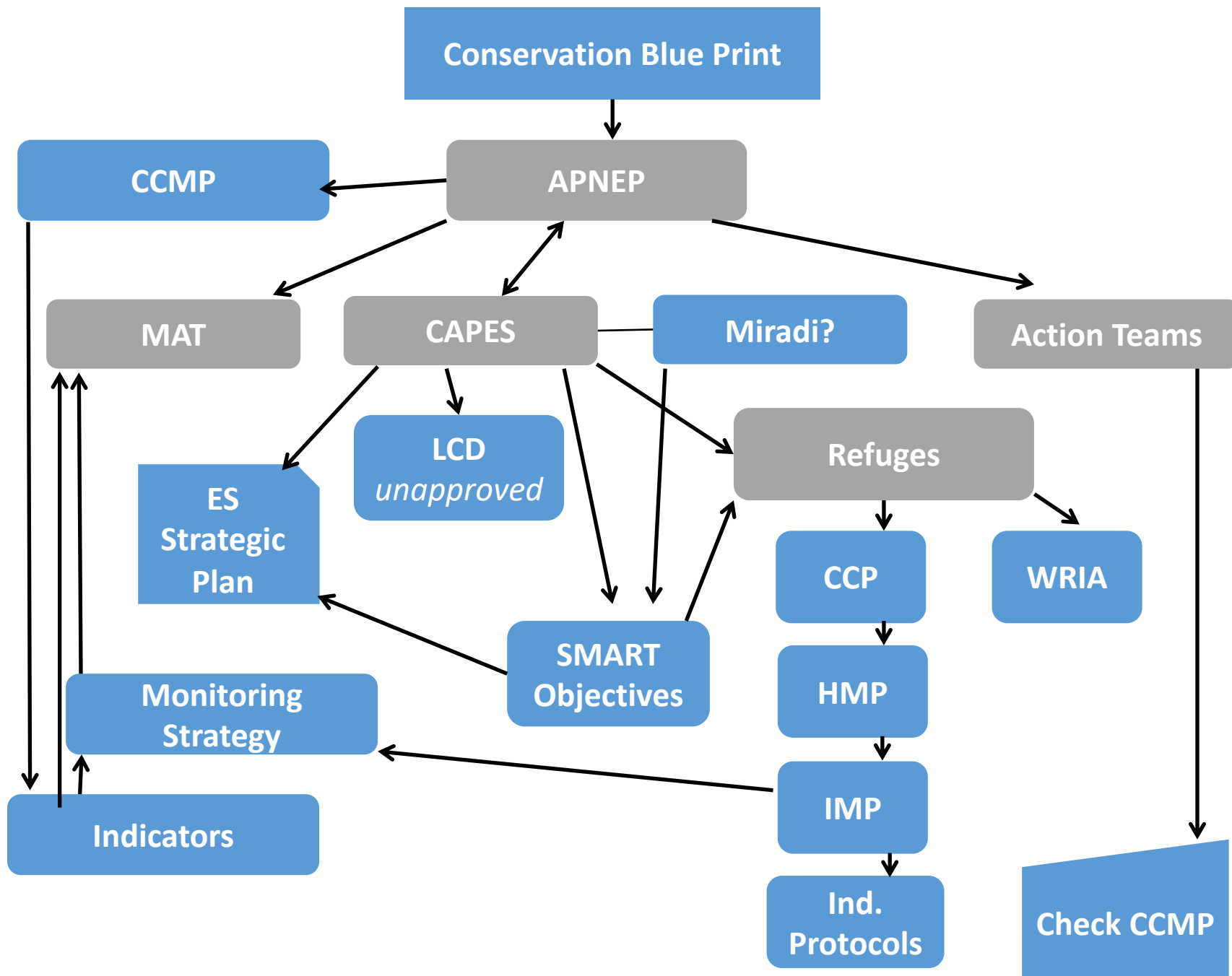
Michelle Moorman, USFWS

# The Planning Process



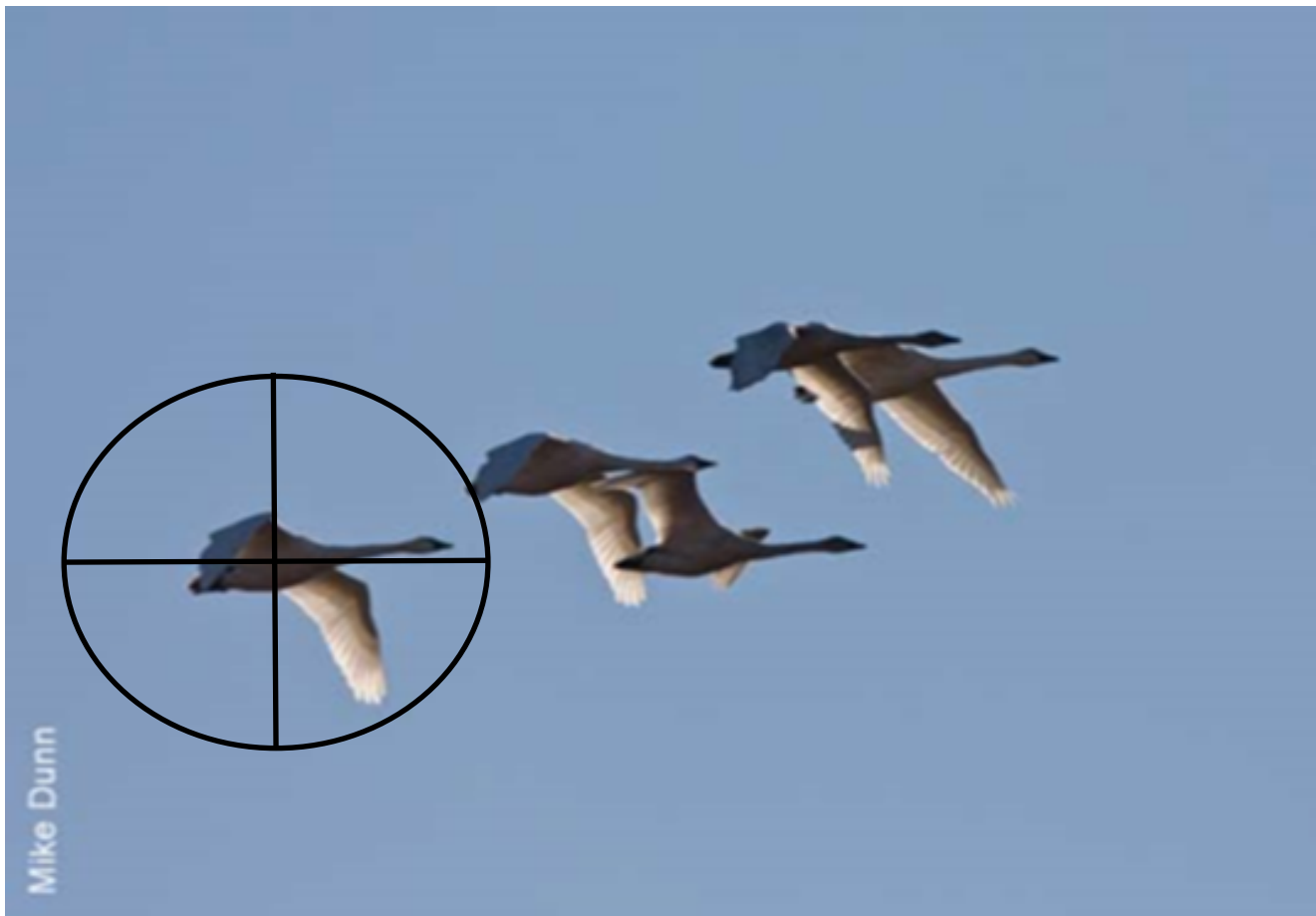
There are many plans, indicators, and actions

- APNEP CCMP
- USFWS Strategic Planning
- National Monitoring Network Monitoring Design
- LCC Conservation Blueprint





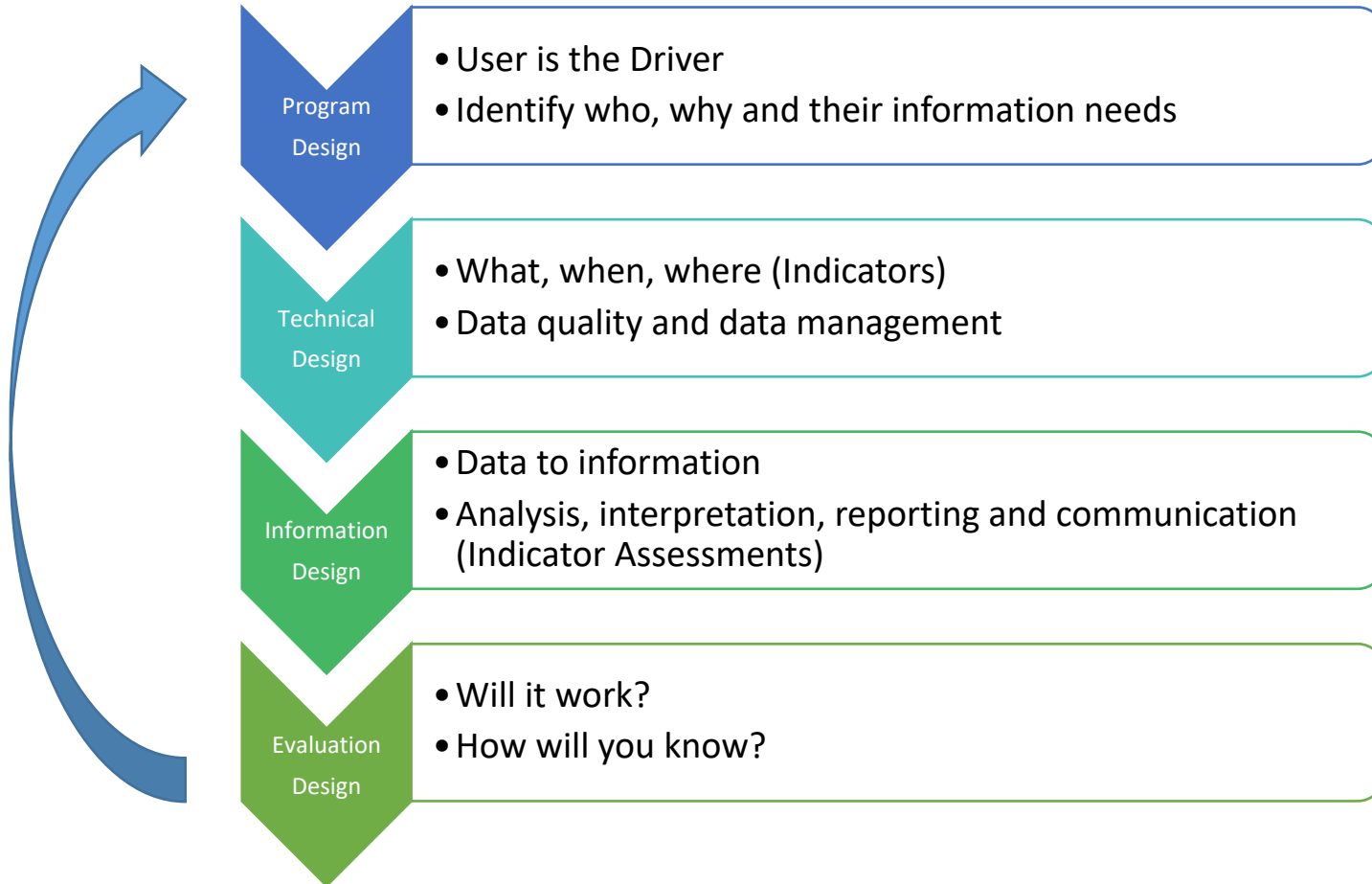
USFWS has decided to focus Strategic Planning Process on using Miradi Information to develop mutual conservation goals, objectives, strategies, and metrics on CAPES Refuges



Mike Dunn

How can we take all the great work  
APNEP has done to develop a  
monitoring design that works for us?

# Designing a monitoring program for measurable, trackable and identifiable outputs, outcomes, impacts, and results



# What is our study purpose and how will our monitoring design inform this?



- Is it a condition and trend investigation?
- Is it an impact investigation?
- Effectiveness investigation?
- Use support investigation?



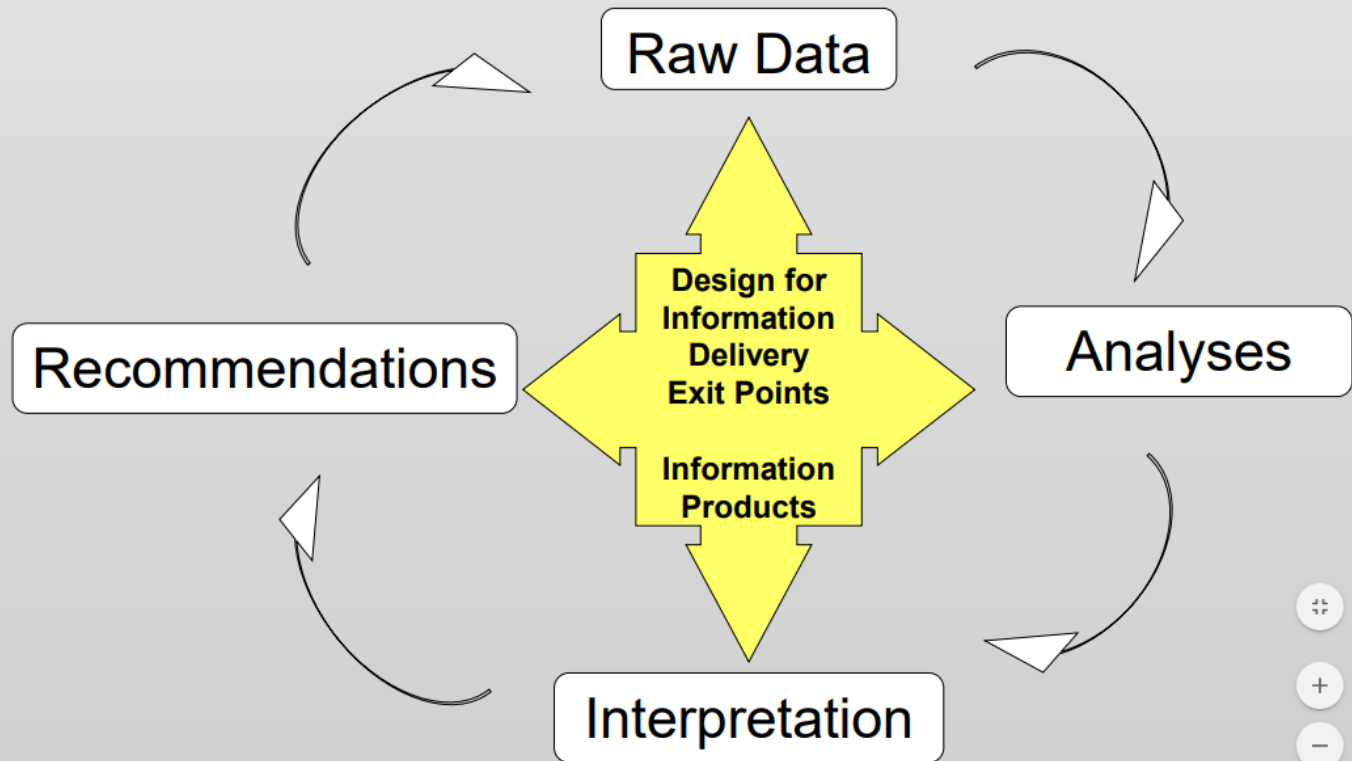
# What are the data uses, decisions, and management uses?



- Education/Community Inquiry
- Community or Agency Advocacy/ Planning
- Regulatory/ Legal

# What is the information we will deliver?

IDENTIFY INFO NEEDS, INFORMATION PRODUCTS & DELIVERY..

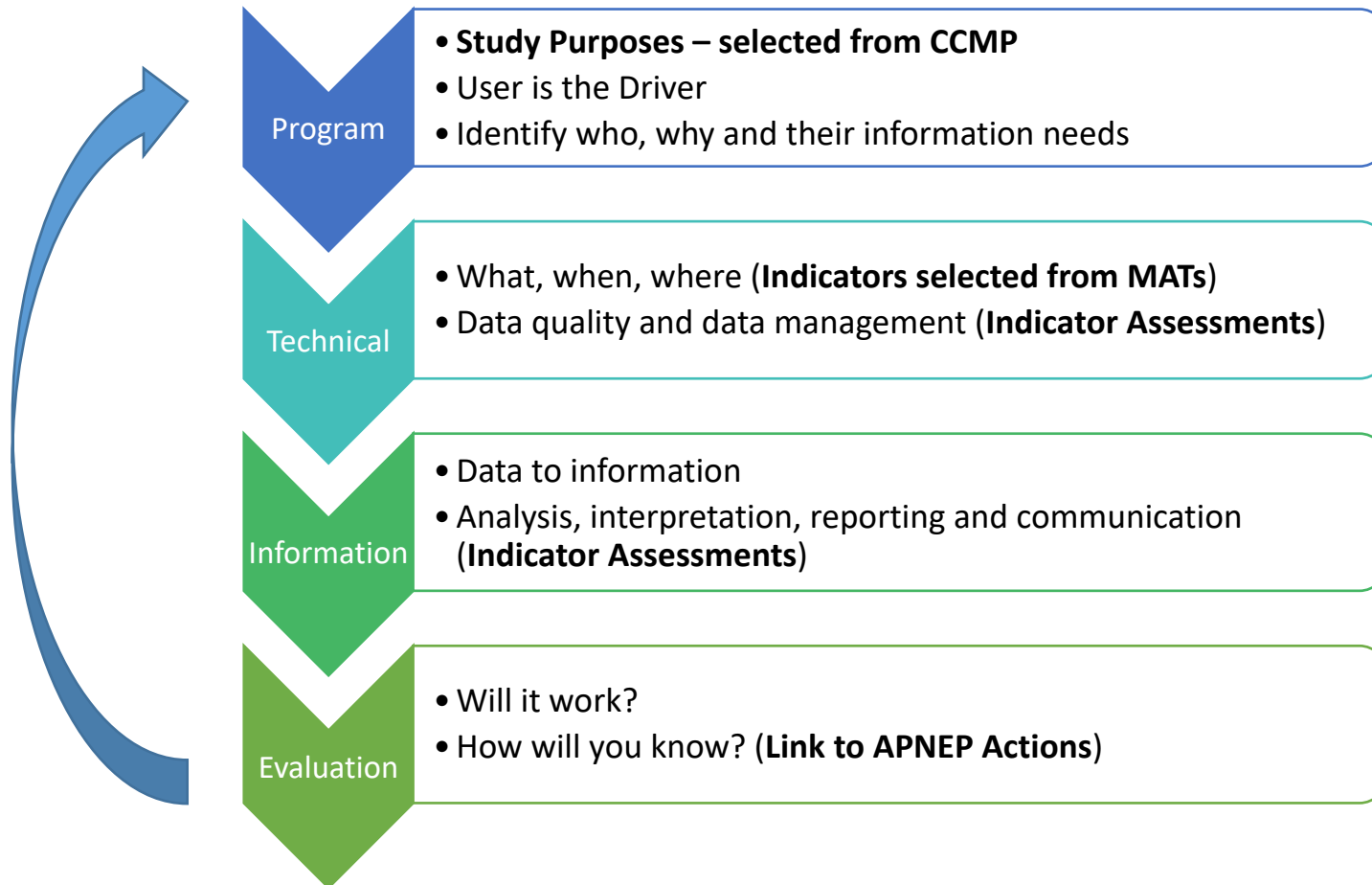


Effective Monitoring Design =  
Clearly articulating our study purpose  
so we can generate information  
products for our data users that  
generate results, outcomes, and  
impacts

Study Purpose	Data Uses or Decisions (Management use or Scientific Question)	Data Users	Information Products	Results Outcomes Impacts

What does the STAC want  
to learn from a  
collaborative monitoring  
design for the Albemarle-  
Pamlico National Estuary  
Program?

# APNEP charge: Design a monitoring program for measurable, trackable and identifiable outputs, outcomes, impacts, and results



# STAC Monitoring Design: An approach

Monitoring Design = Determined by STAC from APNEP Ecosystem Outcomes

Study Purpose	Data Uses or Decisions (Management use or Scientific Question)	Data Users	Information Products	Results Outcomes Impacts
Indicator Assessments				CCMP Supporting Actions

# An effective monitoring design starts with a question

- CCMP provides the questions, but given APNEP and the STAC's limited time and resources we need to focus our efforts on a subset of questions
- I'd like everyone to write down 1-3 priority questions they would want to answer as part of a collaborative monitoring program run by the Albemarle-Pamlico National Estuary Program

# Example priority questions, 2019

## 1) Is water safe for human use?

- Is it safe for personal contact in areas where people are recreating (i.e., free of pathogens and cyanotoxins)?
  - See CCMP Ecosystem Outcomes 1a, 3b
    - Supporting Actions B1.1, B1.2, C1.1, C1.2, C1.5, E1.1, E1.2, E1.3
- Are fish and shellfish safe for consumption?
  - See CCMP Ecosystem Outcomes 1d, 2a
    - Supporting Actions B1.1, B1.2, C1.1, C1.2, C1.5, E1.1, E1.2, E1.3



# Example priority questions, 2019

2) Does the estuary support keystone estuarine habitats (i.e., SAV and shellfish)? Does water quality meet the standards for supporting these species?

- See CCMP Ecosystem Outcomes 2b, 3b, 3c, 3d
  - Supporting Actions B2.2, C3.3, C5.1, C5.2, C5.3, E1.1, E1.2, E1.3

3) How does climate, water resource management, and weather patterns impact flooding and droughts in lands adjacent to the Albemarle-Pamlico System, as well as water quality in the system?

- See CCMP Ecosystem Outcomes 1c, 3a
  - Supporting Actions A2.3, A3.3, D3.3, E1.1, E1.2, E1.3

# An incomplete example of how this might work

Monitoring Question = Is water safe for human use? Is it safe for personal contact in areas where people are recreating (i.e., free of pathogens and cyanotoxins)?

Study Purpose	Data Uses or Decisions (Management use or Scientific Question)	Data Users	Information Products	Results Outcomes Impacts
Status and Trend Assessment: cyanotoxins and pathogens	Community or Agency Advocacy and Planning	NC DENR, APNEP MAT, municipalities	Indicator report, swim guide app, uniform dataset in WQX portal	B1.2, C1.1, C1.2, C1.5, E1.1, E1.2, E1.3
Status and Trend Assessment: cyanotoxins and pathogens	Education, Community inquiry	Recreational Users	Swim guide app, Fact Sheet	E1.3

