Gulf of Mexico Water Quality Information User Workshop

NOAA National Water Center, Tuscaloosa, AL
March 6-7, 2018
Hosted by the Gulf Coast Ecosystem Restoration
Council Monitoring and Assessment Program (CMAP)

Summary of Workshop Minutes

Contents

Workshop Objectives 3

Tuesday, March 6th 3

1. Welcome and Review of Agenda 3

1.1 Objective: 3

1.2 Activities: 3

2. Introduction to the Gulf Coast Ecosystem Restoration Council Monitoring and Assessment Program (CMAP) 3

2.1 Objective: 3

2.2 Activities: 3

3. Large Group Discussion: Feedback on Documented Assumptions and Constituents Important for CMAP to Capture 4

3.1 Objective: 4

3.2 Activities: 4

3.2.1 Reactions to the documented assumptions? 4

3.2.2 Which water quality parameters and constituents are considered important for the CMAP program to capture? 4

4. Breakout Groups: How Can CMAP Address User Needs for Gulf of Mexico Water Quality Information and Tools 4

4.1 Objective 4

4.2 Questions 4

4.2.1 Question 1 SUMMARY: How are you using water quality information and tools now? 5

5. Ongoing Water Quality/Observations Program Inventory Efforts, Minimum Monitoring Elements for CMAP 6

5.1 Objective 6

5.2 Activities 7

6. Large Group Discussion: Continuing to Build the Inventory 7
6.1 Objective 7
6.2 Activities: 7
6.2.1 What databases are missing? 7
6.2.2 What constituents are you monitoring? 7
6.2.3 Minimum monitoring elements: 7
Wednesday, March 7th 8
7. Review of Day 2 Agenda, Reflections from Day 1 8
7.1 Objective 8
7.2 Activities 8
8. Large Group Discussion: Review of and Feedback on Planned Products 8
8.1 Objective 8
8.2 Activities: 8
8.2.1 General Discussion 8
8.2.2 Spatial 9
8.2.3 Parameter Table Additions (from Day 1) 9
9. Large Group Discussion: Obvious Spatial/Temporal Water Quality Gaps, Priorities 9
9.1 Objective 9
9.2 Activities 9
9.2.1 Prioritization Exercise 10
9.2.2 Explain and justify gap analysis (with CMAP overview document) 11
10. Next Steps and Meeting Wrap-Up 12
10.1 Objective 12
10.2 Activities 12

Gulf of Mexico Water Quality Information User Workshop

Workshop Objectives

- Share the structure, desired outcomes, and timeline of the RESTORE Council's Monitoring and Assessment Project (CMAP)
- Identify how CMAP can address user needs for Gulf of Mexico water quality information and tools
- Get feedback from users on the products of CMAP, including identifying processes or products that could enhance the utility of the project
- Coordinate with regional stakeholders to continue gathering Gulf-wide information on existing baseline assessments, monitoring efforts, and monitoring standards
- Identify and prioritize gaps in water quality mapping and monitoring that CMAP might be able to help fill, considering the minimum monitoring elements needed to achieve CMAP's desired outcomes

Tuesday, March 6th

1. Welcome and Review of Agenda

1.1 Objective:

Welcome attendees, set the context: why we're here, what we hope to accomplish

1.2 Activities:

- Mark Monaco, Steve Giordano, Randy Clark, and Jessica Henkel welcomed attendees, reviewed overall purpose of the meeting, touched on how attendees were selected and what CMAP group hoped to accomplish by the end of the meeting.
- Chris Ellis (workshop facilitator) reviewed the agenda, ground rules, and logistics.

2. Introduction to the Gulf Coast Ecosystem Restoration Council Monitoring and Assessment Program (CMAP)

2.1 Objective:

Provide an overview of program components, goals, etc., with a focus on water quality constituents, and allow some time for questions

2.2 Activities:

- Steve and Randy presented on CMAP - overview, goals, and objectives of CMAP, and components to be used to reach those goals and objectives
- Mike Lee and Richard Rebich presented on water quality parameters and constituents included in the CMAP review of programs, documented assumptions, and the products intended to be provided as a result of CMAP
- Chris facilitated questions from the audience on the overall CMAP program. Attendees were asked to give name and affiliation the first time they spoke.

3. Large Group Discussion: Feedback on Documented Assumptions and Constituents Important for CMAP to Capture

3.1 Objective:

Get input from users and contributors to Gulf of Mexico water quality monitoring programs on water quality constituents that should be monitored and included in the CMAP inventory.

3.2 Activities:

- Chris asked group for “Reactions to the documented assumptions?”
- Chris asked “Which water quality parameters and constituents are considered important for the CMAP program to capture?”

3.2.1 Reactions to the documented assumptions?

- Overall no significant questions with relation to documented assumptions. Two questions were clarified about new programs that have been in existence for less than 5 years. CMAP intends to keep those programs that are newly developed that anticipate long term implementation.

- Program POC’s will have the opportunity to review CMAP program entries. Programs are not being evaluated rather CMAP is looking for long term, comprehensive monitoring. Program information is being collected and assessed at various scales to determine commonalities.

3.2.2 Which water quality parameters and constituents are considered important for the CMAP program to capture?

- Approximately 20 parameters were suggested for addition to the list of water quality parameters. This list was revisited in the large group setting on day 2.

4. Breakout Groups: How Can CMAP Address User Needs for Gulf of Mexico Water Quality Information and Tools

4.1 Objective

Get input from attendees on applications and users of water quality information and tools

4.2 Questions

1. Are you using water quality information and tools and, if so, how?
2. Are there new applications of water quality information and tools you would like to pursue?
3. Is there anything that you would like, or need, to do that cannot currently be supported by available WQ information available to you?
4. Who is missing from this conversation? Who else uses water quality information and tools? Are there applications being done that we haven’t listed yet?

4.2.1 Question 1 SUMMARY: How are you using water quality information and tools now?

Top 5 Responses

1. Regulatory
2. Parameters for models
3. Restoration planning/prioritization
4. Assessments/management plans
5. Baseline performance monitoring

Key Points

1. Not many analytical tools, most are for discovery
2. Primary data sources: State agencies, USGS gauge stations, Academics, GCOOS, NCEI, CRMS, CIM, WaterCat
3. Needs: researchers need quality quantitative data. Boaters/beachgoers need interpreted data.
4. Need more baseline information for restoration.
5. Limitations: proprietary data

4.2.2 Question 2 SUMMARY: Are there new applications of water quality information and tools you would like to pursue?

Top 5 Responses

1. Comprehensive searchable database (one-stop shop) with metadata
2. Modeling/forecasting
3. Analytical capabilities
4. Linking with other resources (fish, sediment, etc)
5. Reporting tools

Key Points

1. NGOs not using tools all that much
2. Would like to see models/tools vetted by more levels of users so that irrelevant tools are weeded out and more common tools are used
3. Ability to discern users (research/management/public)
4. Most would like to see site level information

4.2.3. Question 3 SUMMARY: Is there anything that you would like, or need, to do that cannot currently be supported by available WQ information available to you?

Top 5 Responses

1. Ability to download/store/analyze raw data
2. Scalable data
3. More nutrient data
4. Data quality/citizen science information
5. More continuous spatial and temporal data

Key Points

1. CMAP tool should share metadata
2. CMAP tool should share data services
3. CMAP tool should have clear outputs/results
4. CMAP tool should be user friendly
5. CMPA data should be scalable
6. Long term monitoring covering more than 10 years of time is lacking
7. CMAP will need to be dynamic, not static

4.2.4. Question 4 Summary: Who is missing from this conversation? Who else uses water quality information and tools? Are there applications being done that we haven't listed yet?

Top 5 Responses

1. Academics
2. Natural Resource Monitors
3. Oil and Gas
4. Tribes
5. Local Jurisdictions

Key Points

1. End user very important (research/applied research/public)
2. Other key groups not present: USACE, restoration practitioners
3. System monitoring vs project monitoring
4. Make better use of citizen science

5. Ongoing Water Quality/Observations Program Inventory Efforts, Minimum Monitoring Elements for CMAP

5.1 Objective

Build awareness on CMAP inventory and approach.

5.2 Activities

- Randy and Richard presented the CMAP inventory and approach; what has been accomplished to date; the evaluation approach and criteria – including identification of Minimum Monitoring Elements for CMAP Network Components; an explanation of the minimum monitoring elements considered in the evaluation.
- Chris facilitated questions

6. Large Group Discussion: Continuing to Build the Inventory

6.1 Objective

Get input from attendees on additional databases and monitoring efforts to build out the inventory

6.2 Activities:

For Discussion

- Are there other databases beyond The Ocean Conservancy that we haven't included yet?
- What constituents/parameters are you monitoring?
- Feedback on minimum monitoring elements
- Are your data sets publically available and how are they available?

6.2.1 What databases are missing?

- Water quality portal associated with National Water Quality Monitoring Council
- CUAHSI database on academic water data
- Data one ecological database
- ERMA

6.2.2 What constituents are you monitoring?

- Decided to walk through the list and add recommendations on the following day.

6.2.3 Minimum monitoring elements:

- Call it something else & define clearly! Lots of discussion about what this is.
- Participants liked **monitoring program attributes** (more details in full notes document)

- Monitoring program attributes are program criteria that may identify how robust your data is. These criteria may become recommendations for future restoration projects.

6.2.4. Are your data sets publicly available; if so, how are they available?

- Florida, Louisiana: yes
- Louisiana DEQ available on a website, but currently being re-done

- Alabama, everything but biological data is available,
- ICOOS: available and query-able only some via a web service
- EPA coastal survey is Up to 2006 is available through WQX
- TCEQ is available through map viewer, and via data management group

6.3.5. Additional Discussion: Programs and site level information

- Most data that is needed is kept in multiple databases
- Which key databases with site level information should be included
- Seems that there are probably only a few within each state that are really important; but we need to figure out where the line falls between important and not important
- There are only a handful of folks who are accessing and collecting a lot of water quality
- Florida has over 100 groups but most go to Storet or WaterCat
- Engage the CoP with this down the road
- Who, on a local level, should be invited to joining the CoP? Need this information from the different states for water quality and habitat. This list should include who the state needs to help them look after their own interests.

Wednesday, March 7th

7. Review of Day 2 Agenda, Reflections from Day 1

7.1 Objective

Welcome back, set expectations for day

7.2 Activities

Review agenda for day 2, including substituting large group discussions for break out group sessions

8. Large Group Discussion: Review of and Feedback on Planned Products

8.1 Objective

Get input from Gulf of Mexico users of water quality data on CMAP products

8.2 Activities:

Discussion Points

- Are we covering what is useful? What is needed? What is missing?
- Feedback on functionality/utility of the products
- Feedback on functionality/utility of the geospatial database

8.2.1 General Discussion

- Talked about CMAP structure and participating groups (CMAWG, MCC, CoP).

- CMAWG Workgroup: Need a representative from Texas
- Monitoring Coordination Committee:
- Missing: no one identified
- CMAP Milestones & deliverables w/dates shown

8.2.2 Spatial

- Consider using or linking National Coastal Survey for EPA: data cut off is salinity concentration.
- Programs will extend well beyond the yellow boundary line. Sturgeon, birds, etc.
- Will examine the entire water column
- Will eventually look at living marine resources (future Phases)
- Water quality, especially pathogens, will this include sediments?

8.2.3 Parameter Table Additions (from Day 1)

Suggestions to add or condense

- BOD & CBOD (Under Carbon)
- Delete NH4
- Color (field parameters)
- Don't we want % saturation to be under field parameters?
- Fecal coliform under pathogens
- Total alkalinity (field parameter)
- DIC & aragonite potential (Omega) (under field parameters?) Ocean & coastal suite
- Need a wet chemistry section
- Grain size (habitat parameters?)
- Chlorophyll a
- Groundwater (habitat we account for in water column) Need to know groundwater inputs when modeling—possibly put in separate matrix with groundwater DO, etc.
- Demoic acid as a toxin (or just algal toxins?)
- Suspended sediment concentration (inorganic (mineral) and organic (organic fraction) need them indicated separately): TBS has a bunch of this, called VSS

ACTION: CMAP team will review these recommendations

9. Large Group Discussion: Obvious Spatial/Temporal Water Quality Gaps, Priorities

9.1 Objective

Get input from attendees on gaps/needs and prioritize

9.2 Activities

Discussion Topics

Participants identify from workshop what are the remaining gaps or inconsistencies? What is CMAP not doing with regards to products and services?

9.2.1 Prioritization Exercise

Group first took a tangent discussion about CMAP and Community of Practice (CoP).
CMAP goal is to develop a web-accessible tool to access the information and develop a CoP. Are there things missing?

- Need a **glossary** of terms (define discrete, continuous, contiguous, habitat, etc.)
- Need **sales pitch** to convince data providers why they should put their data in CMAP
- Develop **marketing tools** for future/resource development

CoP: key function is to develop a mechanism for coordination

- Response: Can we divide CoP into broad functionality and CMAP-specific functionality? For example, CoP will offer specific things for CMAP, but not operate entirely under CMAP
- Need a **CoP charter w/ objectives and subgroups**
- CMAP/CoP bleeding together… clarity on CMAP objectives? Provide clarity in June at GOMA all hands
- Subgroups in CoP- some CMAP oriented, others may be broader. Lets let the process self-organize

Inventory suggestions
Cross reference inventory with other lists/designations

- Impaired waters
- Landscape Conservation Cooperative
- Other MPAs

How will the users and practitioners be able to access/interface with products?

- CMAP will develop a web-enabled georeferenced queryable tool.
- Products are targeted for practitioners/users/professionals not necessarily the public.
- Tool/products should be service enabled, so others' tools can pick it up

Gap analysis: What is the overall objective?

- CMAP needs to fully define what the gap analysis is.
- The inventory provides a Gulf wide network of existing programs… look for
- Spatial gaps
- Temporal gaps
- Monitoring program elements/gaps
    - Examples:
    - If you're restoration practitioners/restore council, a number of projects being implemented, want to make sure we have the ability to comment on their performance

- E.g. don't have satisfactory distribution of sites for monitoring
- Master mapping plan wants every inch of the gap characterized… can easily identify these gaps
- Difference in scale and utility

ACTION: Participants suggested that a summary document for CMAP be developed to help clarify objectives, tasks and products.

What happens after the gap analysis? Do you expect states to participate?

- how we rank them in priority
- availability of resources to go out and get them
- If offshore, NOAA; if coastal zone, USGS/NOAA/State will potentially collaborate

9.2.2 Explain and justify gap analysis (with CMAP overview document)

- Address questions in succinct way
- Alter some of the pre-existing language (e.g. min. Monitoring standards)
- CMAP needs to hold to some language with federal standard- can't change language too dramatically

Project specific information

- Council is starting to put together project pages. Can be a source of information.
- Happening on project by project basis

Is it worthwhile knowing where projects have contributed to models? If someone is interested in similar modeling? (e.g. nutrients/sediment flux)

- Useful- but how could we discover that?
- User responsibility vs. ours
- Inventory of models in Southeast through EPA? Could be a start
- A place to share code for modelers? Briefly discussed in breakout group, github for example? Formulation of a Modeling CoP?
  - Could be included under marketing materials… cool thing but is it a gap? Is it within scope?

Tribes, academics not present at workshop, potential gap

- How do we engage them?
- Where can they leave comments/suggestions?
  - CoP is a start and most direct
  - Market to CoP, what's in it for them? Purpose driven community; how does it make their jobs easier

Other Discussion

Some participants struggled with complexity of CoP

- probably needs to be self organizing

- Two way communication
- Some more involved than others
- Using information from CoP vs. influencing/providing information for CoP?

Participants suggested seven additional products/information that might help CoP Group voted to prioritize

Top 4 ranked priorities:

1. CMAP Overview Document (simple, clear document)
2. Glossary of terms
3. CoP Charter (objectives/subgroups) To be developed during GOMA all hands
4. Sales pitch to data providers
    a. Several ideas were brought up but the scope may have been breached. Reminder CMAP is not providing or serving data, but focusing on program metada. CMAP team is providing man power to develop inventory, need buy in from program POCs to vet program information.
5. Other items
    - Integrate CMAP inventory with Impaired waterways list/key mgmt boundaries
    - Marketing tools for future development
    - Broader stakeholder engagement

10. Next Steps and Meeting Wrap-Up

10.1 Objective

Thank attendees, share next steps, pass out voluntarily workshop evaluations

10.2 Activities

- Describe how the input received at the workshop will be used
- Listed next steps for CMAP
- Provided information for upcoming monitoring CoP kick-off meeting in June 2018
- Workshop Adjourned

Habitat monitoring/Mapping Workshop		Mobile, AL
Name	**Organization**	**Email Address**
Steve Giordano	NOAA	steve.giordano@noaa.gov
Randy Clark	NOAA	randy.clark@noaa.gov
Heidi Stiller (moderator)	NOAA	heidi.stiller@noaa.gov
Eric Sparks	MASGC	eric.sparks@msstate.edu
Michelle Meyers	USGS	mmeyers@usgs.gov
Nicholas Enwright	USGS	enwrightn@usgs.gov
Dave Reed	FWC-FWRI	dave.reed@myfwc.com
Heidi Burkart	NOAA	heidi.burkart@noaa.gov
Kevin Owen	NOAA - ERT	kevin.owen@noaa.gov
Jake Howell	NOAA	jacob.howell@noaa.gov
Mark Monaco	NOAA	mark.monaco@noaa.gov
Renee Collini	DISL	rcollini@disl.org
Cheryl Hapke	USGS	chapke@usgs.gov
Kathy Goodin	NatureServe	Kathy_Goodin@natureserve.org
Janet Nestlerode	USEPA	nestlerode.janet@usepa.gov
Alexandra Fredericks	USGS	afredericks@usgs.gov
Phil Kramer	FCOE/FIO	philipkramer@usf.edu
Eric Weissberger	NOAA/OHC/RC	eric.weissberger@noaa.gov
Mark Defley	USDA	mark.defley@ms.usda.gov
Paul Turner	NOAA/OCS	paul.turner@noaa.gov
Ali Robertson	GOMA	ali.robertson@gomxa.org
Cheryl Clark	FDEP	Cheryl.P.Clark@dep.state.fl.us
Caitlin Snyder	FDEP	Caitlin.M.Snyder@dep.state.fl.us
Brian Spears	FWS	brian_spears@fws.gov
Kate Rose	MSU/NGI/NOAA	kate.rose@noaa.gov
Emma Clarkson*	TPW	emma.clarkson@tpwd.texas.gov
Steve Jones*	GSA	sjones@gsa.state.al.us
Syed Khalil*	CPRA	syed.khalil@la.gov
Emily Cotton*	MDEQ	ecotton@mdeq.ms.gov
Robert Gruba*	MDMR	robert.gruba@dmr.ms.gov
Karen Clark*	MDMR	karen.clark@dmr.ms.gov
Sean Keenan*	FWC-FWRI	sean.keenan@myfWC.com
Kelly M. Darnell	USMs-MSCtrEx	kelly.darnell@usm.edu
Julie Bosch	NOAA/NCEI	julie.bosch@noaa.gov
Thomas Strange	MDEQ	tstrange@cce.ms
Chris Robbins	Ocean Conserv	crobbins@oceanconservancy.org
Brittany M. Bernik	GCERC	brie.bernik@restorethegulf.gov
Danny Weigand	USEPA	wiegand.danny@epa.gov
Matthew Snider	USFWS	matthew_snider@fws.gov
Kelly Barfoot	Mobile Bay NEP	kbarfoot@mobilebaynep.com
Jason Kudulis	MBNEP	jkudulis@mobilebaynep.com
Brian Walker	NOVA SEU	walkerb@nova.edu
Greg Steyer	USGS	steyerg@usgs.gov
Stan Bosarge	Univ. South AL	sbosarge@southalabama.edu
Dina Knight	The Nature Conservancy	dina.knight@tnc.org
Mary Kate Brown	The Nature Conservancy	mkbrown@tnc.org
Shin Kobara	GCOOS	shinichi@tamu.edu
Rachel Guillory	Ocean Conserv	rguillory@oceanconservancy.org
Becky Allee	NOAA	becky.allee@noaa.gov
Christina Mohrman	GOMA	Christina.Mohrman@gomxa.org
Christopher Macon	USACE	christopher.l.macon@usace.army.mil
Kristopher Benson	NOAA	kristopher.benson@noaa.gov
Jeff Rester	GSMFC	jrester@gsmfc.org
LeDon Swann	MS - AL Seagrant	swanndl@auburn.edu