2023 SNEP Workshop

Navigating Salt Marsh Restoration in Massachusetts: Challenges, Strategies, and Opportunities

Workshop Summary Memo

Developed: September 25, 2023

SNEP hosted a workshop titled *Navigating Salt Marsh Restoration in Massachusetts: Challenges, Strategies, and Opportunities* on September 19, 2023 from 9:30 am to 3:30 pm at the John W. McCormack building (5 Post Office Square) in Boston, MA. The workshop was attended by 55 people (see Attendee List at end of memo).

The primary goals of this workshop were:

- To identify gaps in information to develop a shared understanding between restoration practitioners and regulators of the multiple permit pathways for restoration and existing permitting rules.
- To identify the types of information required and recommended for inclusion in permit applications.
- To discuss the concept of risk and uncertainty when designing adaptive management (AM) strategies and/ or corrective action.
- To have a clearer idea of where/ how regulators and practitioners can work together on restoration projects.
- To identify continued gaps in information that still exist after the workshop.

The desired outcomes of this workshop were:

- Have a better understanding of the regulatory landscape for permitting ecological restoration projects in MA.
- Better understand the concepts of adverse impact, adaptive management, and corrective action; and how to incorporate these principles into permitting applications.
- Benefit from directly engaging with likeminded participants to better understand the existing permitting landscape, determine tangible next steps and opportunities for participants, and suggest ways that participants can further work together to navigate the existing permitting landscape.

This memo summarizes the main points presented and discussed during the workshop. Key points of the workshop are summarized below and provided in more detail in the Breakout Session Summaries section. **This is a truncated memo. Some of the workshop outputs are still being processed by the workshop planning team and will be made available soon. All workshop materials, once finalized, will be posted to the SNEP website: https://www.epa.gov/snep/southeast-new-england-program-workshops**

Presentation: ***The Impact of Climate Change on Salt Marshes*** *(Building Coastal Resiliency Through Salt Marsh Restoration and Conservation)* | *Dr. Mo Correll, USFWS/ ACJV*

- Atlantic coastal marshes are 1 of 7 Keystone Initiatives
- ACJV focuses on coastal marshes through 3 flagship species
- Why salt marsh? Provide significant ecosystem services to Atlantic coast: carbon storage, protection from storm events, fisheries, habitat (supports global species biodiversity)
- Why the need for restoration?
    - Historical agricultural development/ use
    - Mosquito control
    - Tidal restriction from road crossings
    - Nutrient input from surrounding development
    - Synergistic effects with sea-level rise
- Great Marsh, MA example of 294 acres with 1,000+ agricultural berms and 1,300 ditches
- Human alterations accelerate flooding and marsh loss.
    - Altered tidal flooding results in loss of sediment supply.
    - Even small berms can result in standing water.
    - Surrounding development → invasive species.
    - Coastal squeeze (nowhere for marshes to go), resulting in limited marsh migration.
- Restoration strategies
    - Restore functional coastal systems (repair hydrology of marsh platform)
    - Enhance elevation to improve sediment supply
    - Mitigate tidal restrictions
    - Protect migration corridors and facilitate marsh migration
- Urgent timeline- Saltmarsh sparrows facing extinction
- Metonic cycle (19-year lunar cycle that affects tides) will drive additional flooding
- Commonly used restoration strategies:
    - Ditch remediation, runnelling- repair platform hydrology
    - Tidal restriction mitigation and removal- restore natural hydrology/ flow
    - Sediment placement- restarting marshes = promising technique
    - Facilitated marsh migration- helping ghost forests
- Notes for MA marshes:
    - Above and below Cape Cod have different tidal regimes and biological communities.
    - Limited room for marsh migration especially in MA.
    - Most marshes experience lack of sediment supply.

Session 1: ***Discussion of Existing Permitting Landscape*** **|** *Marty Chintala, Georgeann Keer, Rachel Freed (absent)*

Session Goal: To understand as a group the nuances of the existing permitting landscape to encourage more proficient navigation of the existing permitting landscape.

Anticipated Outcome: At the conclusion of Session 1, attendees should have a better understanding of the regulatory landscape for the permitting of ecological restoration projects in Massachusetts. Further, attendees should have a better understanding of the trigger points of various MA regulatory agencies based on project type and/or project approach. Critically, attendees should understand that there is no "one size fits all" approach to the permitting pathway. While each project is unique in how it works its way through the process, at the conclusion of Session 1, attendees should have a better understanding of the "rules of the road" for the permitting process for ecological restoration projects in Massachusetts.

Description: Georgeann Keer and Rachel Freed presented two iterations of hypothetical permitting project examples to illustrate the current permitting landscape for ecological restoration projects. Examples were provided in printouts for all attendees and were shown on the screen for discussion and activity (see **Attachment A**).

Presentation/ Discussion:

- Emphasis on reading the regulations and knowing what regulators will expect. Being prepared will help speed up the permitting process.
- Design process/ permitting should be an iterative process with communication between practitioners and regulators. Approach with a plan, but expect detours.
    - Start permitting as early as possible and consider it a part of the iterative design process.
- Permitting should be based on a solid feasibility study and alternatives, related to the unique triggers and impacts to resource areas.
- Hypothetical model for determining a permit process: flow charts presented (DEP also has flow chart to distinguish ERP vs. ERLP)
    - Ecological Restoration Project (ERP): WPA Regs 310 CMR 10.14
        - ERPs can be exempt from MEPA is consistent with ERP categories, includes water quality certificate with notification.
        - MEPA requires public notice and comment period, does not require individual 401 certification (already DEP certified for general permit).
        - Combined 401/ Ch. 91- one application, two permits, can expediate permitting process (look to DEP for advice)
        - ERP order of conditions- if project meets criteria, conservation commission is required to issue order and ER order already has conditions on it
    - Ecological Restoration Limited Project (ERLP): WPA Regs 310 CMR 10.24 or 10.53
        - MEPA plays a larger role.
        - Similar to ERP, focus on triggers.
        - Should have required local permitting background information already collected once you get to that step.

- Look to DEP for advice on combined 401/ Ch. 91 applications.
- Remember for the timing of applications that Ch. 91 licensing can take multiple days (lengthy process) and can't wrap up CZM until all Ch. 91 info is received.
- ERLP order of conditions- conditions are created by conservation commission

- What about permitting in EJ areas?

Activity: Attendees were asked to provide comments, questions, or recommended changes to the existing flow charts to better facilitate understanding of the process. Results of this activity are summarized below.

ERP Flowchart:

Comments	• The EIR Waiver is not on the chart.
	• Need for accelerated/ streamlined application review
	  ○ Combined application for local, federal, and state
	  ○ Integrate timesteps into process.
	  ○ Integrate monitoring into process (permitting doesn't end with construction).
	• Clarify definitions and provide box for defining acronyms
	  ○ Regulatory salt marsh (State definition)
	  ○ ACEC
	  ○ What does dredging entail in restoration context
	• Clarify if project is not in ACEC what the differences are
	• I would move the "Local Permitting" bubble down and replace with state permitting since the WPA process comes later in the chain, particularly if you need a 401 WQC (for ERPs)
	• MEPA:
	  ○ Given other key reviews/screenings (e.g., NHESP, DMF) a published notice in the MEPA monitor seems like an extra step that is not needed
	  ○ Clarify when a project does not need MEPA review
	  ○ Clarify EJ + MEPA– if in EJ area and requires ENF then automatically requires EIR. Can use new "Rollover EIR" provision
	• Wetland restrictions
	• Existing permitting landscape seems to assume that resources are in good condition
	• Many salt marsh projects are done in partnership with county mosquito control projects which circumvents some of the process
	• Context = Climate + biodiversity crises + degraded existing conditions. Need a radical paradigm shift to review ER projects
	Single App → Joint Review → Joint Approved
	(3 months)

Questions	• Does CZM Federal consistency determination happen before or during USACE review of PNF or permit app? • Does initial notice to MEPA go in monitor for public comment? • When does Section 7 Fisheries consultation occur? • Can a project be broken into components where one is an EP and the other is ERLP? • How historic and what info is needed to determine "filled tidelands"? • Can permitting proceed in parallel e.g., Ch 91 + WQ Cert combine? • Where ditches and/or embankments are blocking natural tidal flow can projects restoring flow be Eco Rest. NOI? • MEPA consultation with state agencies and once MEPA is concluded can/should state permitting proceed expeditiously. Do state agencies raise new issues after MEPA? • What's the timeline for each step of the process? Certain rolling deadlines and review periods? • What is the difference of MassDEP Chapter 91 permit vs. Ch 91 license?

	• Is there existing flow chart or description of this process or permits for public/practitioners, publicly available? • When NEPA required? When to start to limit timeline to complete permitting? • How long/what time range can we expect a project to go through this permitting process? • What's the order? Can some be done at the same time? Which require one step approval? • What constitutes dredging under a ERLP project? What constitutes "impact"? • For a permit reviewer, what is the benefit of an EIR vs and ENF? • Can DEP and DER along with other states and federal partners assess expanding the type of projects that could be included under ERP? Since the intent of one of the ERP projects is "to eliminate tidal restrictions" possibly other techniques could be included as ELP
Changes	• Regional permitting (county level) i.e., Cape Cod Commission Regional Policy Plan • Add footnote that MEPA has a number of pathways if project requires an EIR. i.e., Waivers, Single EIR vs Draft + Final • Federal permit is the trigger for the 401 WQC process • Section 10 is only below MHW • Put CZM Federal Consistency as the last step. The USACE 404 permit is often the trigger for federal consistency • Also note that there may be draft EIR, Final EIR, and Supplemental ERIs required by the Secretary • No separate WQC needed for ERP • Federal CZM Consistency can be done with PCN to Army Corps • WQC: dredging > 100cy isn't eligible for ER OOC, ER from chart showed says dredging <100cy • For ERPL or ERP, there should be a link between "Receive 401 Water Quality Certification" and "Receive General or Individual Permit" • No MEPA required for ERP • Highlight in a different color the differences between the two (i.e., what are extra/missing steps?) • In addition to NHESP, checklist specified prelim determination for state for inland fish passage • Add to flow chart any distribution requirements associated with MEPA Notice or permit apps • Just a clarification that designated geographic area EJ population =/= SNEP disadvantaged community (DAC) necessarily • Provide chart for when each process should be started or what efforts can happen concurrently • Change "state permit" to "agency action" as defined in MEPA regs. • Thresholds that trigger an ENF • Add >5,000sF or more of alteration of BVW and IVW see 11.03(3)(b)(1)(d) • Change the projects that qualify for ER Projects e.g., stream daylighting = risky. Other actions like cranberry bogs are not

ERLP Flowchart:

Comments	• DEP – ACOE Coordination • Provide ballpark timelines for completion of state and federal permitting for Eco Rest limited projects • Describe what info is required (or recommended) in an EIR • Note that USACE has a general permit for aquatic habitat restoration that may encompass a proposed project (GP/O) • Note WQC permitting for dredging 7100 cy processed by DEP Boston office rather than regional office (if correct?) • Fed. Consistency determination may not be received until the project is completed USACE permit review (not before fixing with USACE) • It would be great to have a little acronym glossary in the corner

Questions	• Is thin layer deposition permittable in Mass?
	• We heard that dredging >100cy or dredging in an ORW for tidal restoration automatically triggers ERLP. Is this true?
	• Do applicants provide the restoration OOC's up front if for some reason the project requires project specific EFH consult?
	• Project involves dredging >100cy or any amount in an ORW
	  ○ How about those projects "Fill or Discharge" of dredged materials into waters of the US (Section 404)?
	• Can a project combine different ERP types?
	• What would the process look like to add a new ERP type?
	• What is considered an impact? Is it the physical location of a drainage feature or peat placement? Is maintaining an existing ditch considered impact?
	  ○ What is: Fill? Dredge? Structure? Alteration? BVW?
	• What is the process for considering restoration options on a site that has a wetland restriction order under DEP?
	• Does EJ community within one mile of project area determine if need ERP vs. ERLP?

Changes	• Add flow chart line for EIR waiver process • No publication in Environmental Monitor for Notice of Intent required • Coordination with NHESP + DMF can be done by filing Notice of Intent with them. No prior review necessary • Local bylaw permitting may apply and may not be consistent with Mass WPA • There is no Appendix A checklist for ERLP • Provide pros and cons of going through ERP vs ERPL • FEMA no-rise certificates may be required as well

NOTE: An updated version of the flowchart based on these suggested comments, questions, and changes will be made available later.

Session 2: ***Identifying and Addressing Risk of Adverse Impact in Restoration Projects*** | *Marty Chintala, Danielle Perry, Georgeann Keer*

Session Goal: Using the foundational conversation set in Session 1, the goal of Session 2 is to identify and address risk of adverse impact in project proposals so proponents can more easily navigate the permitting landscape.

Anticipated Outcome: Session 2 offers attendees the unique opportunity to engage with one another about designing stronger project proposals. The concepts of adverse impact, adaptive management, and corrective action are difficult and can be confusing. At the conclusion of this session, attendees should walk away with a stronger understanding of these concepts, how and when to apply them; and have a

better understanding of the expectations and best practices in applying these topics as well as a better understanding of where sticking points exist in applying these concepts.

Description: Danielle Perry and Georgeann Keer presented a broad overview of devising adaptive management and corrective action approaches that incorporate risk of adverse impacts in restoration proposals.

Presentation/ Discussion: Adaptive Management

- Main questions to keep in mind: How can we use the adaptive management framework to manage and mitigate risk? How can adaptive management be used to make us more comfortable with risk?
- Adaptive management (AM) is an iterative process that incorporates learning-based decisions making into management actions. This process recognizes unknowns and still allows the process to continue.
- Repeated assessment to address adverse impacts in a timely manner (as they arise).
- Using lessons learned from previous projects, can use devised alternatives.
- Set-up phase= stakeholders, objectives, alternatives, models, monitoring
- Iterative phase= decision making, monitoring, assessment (*Stay on goals)
- Components of AM:
    - Stakeholder involvement
        - Directly influence decision making
        - Varying levels of involvement
        - AM requires communication throughout process
    - Establish common goal/ action
        - Restoration and research monitoring vs regulatory needs (Venn diagram to relate project to issues each category cares about- find the common objective that everyone can agree upon and move forward)
    - Management and monitoring plan
        - Incorporated into plan:
            - Goals, monitoring design, **metrics and parameters, targets, alternatives (corrective action)**
                - Monitoring efforts gauged on bolded AM factors ^
                - Can be informed based on previous projects

      ^ first 3 components of AM are included in permitting application
    - Monitor, analyze results, iterate
        - Before, after, control, impact (BACI) Experimental Design
            - Control (no restoration) vs impact (restoration site)
        - Combat potential adverse impacts by considering corrective actions ahead of time
            - Corrective actions can hold application up from regulatory standpoint
        - Entering iterative phase – when does it end?
        - Plan with a chart- goal, monitoring measurement, milestone, trigger to ID problem,

corrective action

- Communicate results: outreach and engagement
  - Permitting requirements for communicating results
  - Reporting, workshops, site visits, restoration videos

Activity: The remainder of Session 2 focused on experience sharing. Attendees were asked to share their own experiences in developing AM and corrective action approaches in their own work. What has worked well? What hasn't? How has the quality and quantity of monitoring data aided or detracted from this process? How much monitoring is needed to meet regulatory requirements and demonstrate measures of success?

Activity Discussion:

- Need more funding
  - Cape Cod- funding challenge for restoration projects, what do we have to do?
  - Early coordination will help stretch funds.
  - Funding for AM process needed
- Beneficial use of dredge material for salt marsh restoration (NJ)
- Value of long-term monitoring: monitoring restoration sites, but also salt marsh sites. Sites change quickly. Fear of adverse impacts for taking action, same for taking NO action. Funds for that would be valuable.
  - Somehow want to incorporate "fixes" after 5-year permit length. Not a one-time fix.
  - Monitoring also includes construction phase monitoring and post-construction
    - Post-construction- adverse impacts: Risk assessment on front end of project may help regulators, facilitate permitting process
  - More standardization for monitoring requirements
  - 3 tiers of monitoring- where to apply?
  - Scale? How long?
    - 5-year permit length, project progress restarts every 5 years
    - Depends on the product itself
      - Estimate data points needed based on site-specific factors
- Stakeholder engagement, broader publishing of data needed
  - Coordination between practitioners and regulators
  - Guidance for practitioners on relative risk (risks may be harder to reverse/ adjust, monitoring may not need to be as rigorous)
  - Baseline data- CZM has monitoring data for restoration sites across MA
  - Control site for monitoring helps with unforeseen circumstances
  - Want to monitor far enough to get to point of comfort with goals, would be nice to have other indicators through shared data/ results
- DEP looking for monitoring plan- establish goals for trajectory of restoration, if goals haven't been met, not reversing to original condition, different next phase/ milestones to be discussed with DEP while keeping original milestones in mind
  - Could predict/ anticipate not meeting goals before timeline is met, can plan for that
- AM addresses adverse impacts you can and cannot plan for, then can rely on stakeholder network to walk through unexpected impacts
- Monitoring at 2 scales- smaller project: can throw everything at it, problem comes with bigger scale projects: needs transition using some technology, not about individual runnels or ditches,

but about overall health of system- should have some monitoring done to get pilots off ground, use that rather than scaling monitoring efforts to large projects
    - Improving monitoring techniques has been in SNEP wheelhouse, new approaches for certain salt marsh indicators using remote sensing technology for regional monitoring
    - Larger scale = less monitoring = more risk
        - Tie assumption of risk into project framework
        - Engineers should be required (assumes liability for more risk)
            - Requirement would change approach on projects, more of a re-vegetation project, different standard engineering principles for tidal/ coastal sites
- When ERPs are developed- what was the process to determine level of data needed to allow restoration techniques to be put into this permitting process?
    - Random design/ stratified random design
    - BACI design = baseline data changing, need all info
    - Collaboration of DER and DEP, ERP projects were done many times, had a reasonable understanding of what the outcome will be, very familiar with project
    - ERP list may be ready for a refresh
        - Could go by underlying drivers of projects to get away (i.e., marsh restoration) from labeling specific actions good or bad, understanding of actions is evolving
- Who is responsible for corrective measures? Funding?
    - Monitoring may be incorporated with known adverse effects, engineers will pay mitigation fee
- Most projects that involve wetlands require monitoring, acknowledge potential for adverse effects, once there is enough data, monitoring requirements may be updated

<u>Session 3</u>: *Working Together: Identifying Gaps and Opportunities for the Planning and Implementation of Salt Marsh Restoration Projects* | *Marty Chintala, Adam Reilly*

Session Goal: To find common ground as a group and to identify gaps and opportunities to better navigate the existing permitting process and to promote the future planning and implementation of salt marsh restoration projects more successfully.

Anticipated Outcome: Session 3 offers attendees the opportunity to directly engage with one another on better understanding the permitting landscape, determine tangible next steps and opportunities for participants, and suggest ways that this group can further work together to increase understanding of the existing permitting landscape.

Activity: After a brief recap on what has been discussed so far, attendees broke out into 4 smaller groups according to the group letter assigned to them. Each group (A-D) had small-group discussions prompted by the following questions:

- After what you've heard today, what are some of the topics that still need to be addressed?
- What would it take for us to move forward? Are there more efficient ways for us to work together?

At the end of the activity, groups were asked to "report out" to the larger group on key discussion points. A summary of the activity results is provided below. See **Attachment C** for a full table of all comments by each group.

What still needs to be addressed?	How do we move forward/ work together?

• Capacity and funding for monitoring, corrective actions, and iterative process
  ○ Conflicts between the purpose of funding and getting the actions permitted.
• Scaling up salt marsh restoration projects.
• Need more collaboration.
  ○ Scientists and regulators don't often use the same terminology. Consultants can be helpful to fill that gap (additional upfront cost, but saves time by preventing application kickbacks).
  ○ Integrate academics.
  ○ How can we better engage regs?
  ○ Inconsistencies of coastal resource area delineations.
  ○ Sharing data on control sites.
  ○ Discussion on regulatory roadblocks.
• Need design standards to alleviate permitting delay (streamline and simplify process)
  ○ What are the data gaps?
  ○ Need monitoring standard. What and how many years?
  ○ Increased education on restoration techniques and applications, including training opportunities.
  ○ Consideration of outside state data on restoration practices
  ○ Need guidance document for permitting salt marsh restoration (*underway at DEP)
• Oversight of QA/QC, especially for larger projects, preventing proponent from also being responsible for QA/QC.
• Risk assessment (within permit pathways vs. risk of no action vs. risks outside project footprint- who is liable?)
	• Help having more productive pre-application meetings between proponents and regulators.
	• More workshops for:
	  ○ Data gaps
	  ○ Design and monitoring standardization
	  ○ Increase education of restoration techniques and outcomes.
	• Better coordination.
	  ○ Quarterly check-ins (similar to this meeting) to discuss science priorities.
	  ○ Interagency working groups.
	  ○ Collective understanding of hydrologic restoration (shared picture of what restoration means).
	• Transition discussion from techniques to indicators and metrics on techniques/ pilots of different techniques.
	• Consider using the Neil Ganju salt marsh life cycle tool to prioritize work and to inform actions and anticipated outcomes.
	• Advocacy for regulatory packages
	• Close loopholes.
	• More funding support for baseline research.
	• Guidance document for monitoring and adaptive management.

What still needs to be addressed?	How do we move forward/ work together?
• Realistic expectations on what can be achieved and the necessary involvement. • Timelines for review. • Revised flowcharts.	

Closing and Next Steps

Closing Discussion:

- There are some control sites, group needs access to resources/ historical data, coordinate with scientists
- Salt Marsh Working Group (MA CZM)
    - Meet quarterly to discuss goals for salt marsh resiliency
    - Have 3 or 5 research priorities to advance
    - Can reach out to participate/ get more info
- SHARP USFWS
    - Decision tree for monitoring on marshes from academic side for salt marsh sparrows
- SNEP could potentially help move conversation forward- maybe with partner(s) (i.e., Salt Marsh Working Groups).
- Workshop was focused on MA rather than RI because permitting process is much more complex in MA. (States around MA are more federally focused with permitting.)
- Timeline for making restoration techniques more admissible?
    - MassDEP Coastal Resilience and Restoration working group
        - 1. What can we do with the existing regulations? (Deliverable- guidance to facilitate restoration work of ditch remediation, runnelling, etc., hopefully clears up what DEP is looking for to speed up permitting process, draft guidance hopefully out this year)
        - 2. Wetlands Resilience 1.0 Regulations- basic things to bring regulations into current time (i.e., precipitation projections, introducing performance standards for coastal floodplain, regulation package hopefully out for public review this year)
        - 3. Resilience 2.0 (envisioned regulatory updates), open public conversation to priorities, potentially within first term of administration.
            - Opening comment period for 1.0 to be shared with workshop group

Participants were asked to share their thoughts on the following prompts as a result of the workshop:

- One question that I still have…
- One thing that I learned…
- One action that I will take…

The results of this activity are below.

One question that I still have…	• Is significant streamlining of restoration permitting realistic? • What was the process to select projects that were eligible for ERP back in the 2000s? • Is there guidance for practitioners for how to properly initiate pre-coordination? • When will MA Re. consider the Risk of NO action? • Is there a need for a new coordinating group or is there an existing group that can address the need expressed today? • How can we scale up restoration quickly to meet the urgency? • How much data do we collect and how do we share it to meet funding requirements (i.e., NOAA)? • How can we facilitate and host a central data sharing location from salt marsh reiteration novel/pilot projects?

	• When do practitioners have a sense of total "adverse effects" and when are practitioners engaging with federal regulators? • Can lack of action or regulatory paralysis be viewed as an adverse impact in itself? • Are we going to ever say any marshes are "beyond hope"? • As a scientist, how do we share our data with regulators to help streamline/inform the permit approval process? • Do practitioners feel the science around runnels, ditch remediation, and marsh islands is in a place that it has proven to be successful? (in MA) or is the thought that marshes are in peril and something needs to be done? If the latter, why do you believe these restoration strategies are the best way forward? • Is there a list of partners to talk to when a project is in planning stage? • What data is needed, and is data available from other states/countries to expedite decision-making on thin layer deposition?
One thing that I learned…	• Various perspectives of different groups • "Resiliency Package 1.0" + "Resiliency Package 2.0" • The ER OOC is already conditioned • There is a desire to make change • MassDEP Resiliency Reg Package (1.0/2.0) is coming soon as draft • There is shared good will for positive change • That there is such a diverse group of people interested in enhancing and protecting salt marsh • About the restoration OOC's • MA may be seen as "unimplementable" by Fed. Funders, losing out on coastal resilience funding • That the existing reg. process is way, way, way too complex. Let's simplify! • That there is a Northeast Federal Partners Natural + Nature Based Infrastructure Working Group • The permitting process is more complex than I originally though. I learned the difference between ERP and ERPL projects • Consultants/practitioners are thinking about the proponent's capacity to carry out a project, including monitoring, maintenance, and corrective action • Saltmarsh working group • All the projects underway to help with restoration processes (DEEP) (SMWG) • Know more about permitting frustrations and how unique MA permitting is compared to other states • MA may be losing out on project funding preemptively because of permitting barriers • I learned that there are other groups working to gather guidance docs on the science of marsh restoration • How complex permitting really is! • TLD/sediment deposition ay fit under ERLP if it is associated with a barrier removal, upstream of tidal barrier removal area • Other states are using data from MA to advance salt marsh restoration projects

One action that I will take…	• I will share 2 papers with published marsh platform data on tidal hydrology restoration projects • Learn more about 19-year cycle (SLR/salt marsh levels) • Send any guidance we have on TLP, tide gates, saltmarsh restoration • Really promote active communication between regulators and proponents on data being collected and projects coming down the pipeline • Connect with all my potential partners on my projects! • Review more resources and liaise with partners. Get involved with the Salt Marsh Working Group. • Update flowchart based on feedback from this group • I will advocate for Resiliency Regulatory Package 1.0 to be completed • Better Com with regulations • Better educate myself and others about salt marsh restoration importance • Brainstorm and network with others about monitoring standards • Look into trainings! • Look into all the resources that everyone has brought attention to • Review and comment on Resiliency Package 1.0 and/or 2.0 when released • Meet with state agencies (ongoing) and practitioners to continue progress • I will follow up on these resources to learn more • Find out more about the Neil Ganji salt marsh life span model/tool and how it may be useful in restoration design, planning, site selection, etc.

Post-Meeting Evaluation

Attendees were asking to fill out a post-meeting evaluation answering the following questions:

- What did you take away from the workshop?
- What questions do you still have?
- Would you be interested in attending another workshop?

A total of 31 evaluations were collected. Results of the evaluation are summarized below.

What did you take away from the workshop?	• There is a desire to create change. • There are a lot of groups actively working on permitting. It is evident that these groups hold a lot of diverse knowledge and are approaching their work from different angles. All are valuable, but disparate- collaboration is needed. • We need more of these conversations. • Clarity, especially on what the specific actions that regulators are being asked to take as next steps is still not clear. • Even though there was a wealth of knowledge in the room, the group didn't seem aware of other topically related groups/ initiatives/ reports (e.g., Mass ECAN salt marsh work group, TNC/NROC regional using shoreline monitoring guidance document) • Better understanding of existing regulatory process. • Perspectives on risk. • The ideas about how we work together going forward were also interesting. • Everyone is aware of the problem but nobody seems to have clarity about how to resolve it. • A feeling that MassDEP and EPA regulators are aware of the hardships of the permitting process and that they want to work with scientists/ academics to make it easier. • There are a lot of willing parties with little ability to change the challenging permit system. Fairly discouraged. • There is still a serious disconnect between the timescale for modifying regulations/ streamlining the permitting process and the timescale over which the marshes are going to disappear due to SLR. • Many government institutions work together on the regulatory side, but the academics and practitioners' presence is lacking. • Shared sense of urgency and comradery about restoring wetlands. • DEP moving forward with regulations and planning. • Need guidance on monitoring, corrective actions. • The flowchart is an awesome first step to summarize a complex process. • Great collaboration. Similar issues across a broad range of practitioners. • Connections with potential partners and regulators. • Insite into potential regulation changes that could be beneficial to restoration process. • Real progress is being made in this space, very exciting! • Learned a lot about the permitting/ practical process of salt marsh restoration and current challenges. It was so interesting to hear the questions and discussion between participants. • Workshop again confirms that conversation is critical to advance mutual goals and to increase understanding. • The complexity of the permitting process opportunity to change the process and steps to take to do so. • Guidance documents have been developed for salt marsh restoration. MassDEP is working on Resilience 1.0= a needed advancement towards adapting to climate change in MA. • Better understanding on other perspectives. • That MassDEP is working on guidance for salt marsh projects with runnelling. There will be a 1.0 and 2.0 wetlands regulation guidance which will address thin layer placement. • Space can exist for these conversations to happen productively between regulatory bodies and practitioners. Perspectives of each side of the conversation. • Great to meet everyone, hear different perspectives, and good to connect with specific project proponents. • Strong need for monitoring standards consistent across the state (possibly the region). • Need to frontload stakeholder involvement regarding O&M plan to avoid downstream

	holdups. • There is a lot to do but this is a great start. Looking forward to the next step. • Connecting with so many agencies and organizations. Shared needs and urgency. Great info and perspectives. • Goodwill for positive change. • Functional lift and habitat equivalency (how to present long term outcomes of proposed actions and adaptive management). • Iterative communication between practitioners and regulators requires genuine and meaningful engagement by regulators. Currently, this can be inconsistent.
What questions do you still have?	• Can we respond quickly enough to create real benefit? • Resources for tackling the permitting process- especially when wanting to implement innovative methods for restoration. • How can we move to truly streamline? • What did regulator hear and what will be their next steps in the next year? • Many. • How can we build on the workshops towards some process that shows results of their conversation? Over what timeline? • How do we connect the scientists/ data to regulators? • Any new wetlands restoration techniques? • Are CZM or DER supportive of alternative techniques like ditch remediation? • How will we get practitioners/ regulators/ academics to share info together and with the public? • Would be great to have regulators from each major permitting agency give a presentation of their review process with a specific emphasis on salt marsh restoration projects. • How can we accelerate the permitting process to beat the upcoming Metonic upswing? • Are we putting the cart in front of the horse? If some of these techniques have done pilot projects, can we wait for the data to come in before scaling up? I understand the urgency to move forward, but waiting 2-4 years to understand the monitoring data will not doom the marsh. Unless the sense of urgency is because of all the available funding, which I can appreciate as well. But available funding should not be the primary driver for moving projects forward. • Still processing. • Overriding questions about restoration techniques, their effectiveness and feasibility for permitting. • When to determine more details/ answers? • When do project proponents/ practitioners have a sense of total on the group 'adverse effect.' If MA GP thresholds surpassed → early coordination with federal agencies helpful. • Where can we have a central, data sharing location for restoration pilot/ research projects on novel restoration actions? • When can we develop monitoring on performance standards? • What would practitioners want to see in a guidance document on salt marsh restoration? How/ what would it look like/ what would the outline be? • The conference was more a conversation about further work needed. Many needs identified. • What note do we foresee oyster restoration (specifically in intertidal) to serve as compliment/ natural breakwater to protect SM? • How can all this be structured and coordinated? • How can we speed up salt marsh restoration quickly- now, not in 5 years? • What does the best most streamlined, most effective regulatory structure look like? Let's do that!

	• What lessons learned from evolution of dam removal implementation can be applied to salt marsh restoration to accelerate maturation of salt marsh restoration? • Disconnect between monitoring to prove success vs. monitoring to show no harm. What do regulators actually need? Good service is always beneficial but should creating it be a regulatory requirement?

Would you be interested in attending another workshop?	• Yes (27)
	  o Thank you!
	  o Perhaps focused on one or two of the many issues discussed today.
	  o If it is a narrow/ smaller group, more focus on resolving issues
	  o With more concrete stated goals.
	  o More time dedicated to discussion, less to presentations.
	  o Very informative and look forward to keeping these conversations going in the future.
	  o Consider meeting as small groups earlier in the agenda so there is time to synthesize during lunch/ break.
	• Possibly (2)
	  o The work will need to be much more focused with the goal being to define specific next steps for regulators.

Acronym Bank:

ACESD = Atlantic Coastal Environmental Sciences Division (EPA)

ACJV = Atlantic Coast Joint Venture

ACOE/USACE = [United States] Army Corps of Engineers

AM = Adaptive Management

BACI = Before, After, Control, Impact [experimental design]

BVW = Bordering Vegetated Wetland

CEI = Comprehensive Environmental Inc.

CT = Connecticut

CZM = [MA Office of] Coastal Zone Management

DAC = Disadvantaged Community

DCR = [MA] Department of Conservation and Recreation

DEEP = [CT] Department of Energy and Environmental Protection

DEP = [MA] Department of Environmental Protection

DMF = [MA] Division of Marine Fisheries

ECAN = [Mass] Ecosystem Climate Adaptation Network

EFH = Essential Fish Habitat

EIR = Environmental Impact Report

EJ = Environmental Justice

ENF = Environmental Notification Form

EPA = [United States] Environmental Protection Agency

ERP = Ecological Restoration Project

ERLP = Ecological Restoration Limited Project

FEMA = Federal Emergency Management Agency

GP = [MA] General Permit

IVW = Isolated Vegetated Wetland

MA = Massachusetts

MACC = Massachusetts Association of Conservation Commissions

MEPA = Massachusetts Environmental Policy Act [Office]

NE = Northeast or New England

NEP = National Estuary Program

NH = New Hampshire

NHESP = Natural Heritage and Endangered Species Program

NJ = New Jersey

NMFS = National Marine Fisheries Service (within NOAA)

NOAA = National Oceanic and Atmospheric Administration

NOI = Notice of Intent

NROC = Northeast Regional Ocean Council

O&M = Operations and Maintenance

OOC = Order of Conditions

ORW = Outstanding Resource Water

PCN = Pre-Construction Notification

QA/QC = Quality Assurance / Quality Control

RI = Rhode Island

SHARP = Saltmarsh Habitat and Avian Research Program

SM = Salt Marsh

SMWG = Salt Marsh Working Group

SNEP = [EPA] Southeast New England Program

TLD = Thin Layer Deposition

TNC = The Nature Conservancy

USDA = United States Department of Agriculture

USFWS = United States Fish and Wildlife Service

WPA = MA Wetland Protections Act

WQ/WQC = Water Quality / Water Quality Certification

ATTACHMENT A: Purposely excluded.

During Session 1, workshop attendees were guided through two flowcharts depicting a walk through of a hypothetical ecological restoration project (ERP) and an ecological restoration limited project (ERLP). Attendees were asked to use their expertise to provide comments, questions, and recommended changes to both flowchart processes. The planning team is now in the process of interpreting those comments and working with additional partners to create a more complete picture of the permitting process in Massachusetts.

The draft flow charts were purposely excluded from this summary to avoid confusion and to maintain the integrity of the final draft, once created and approved. A future output of this workshop will include updated flowcharts.

ATTACHMENT B: ERP Flowchart Feedback:

Comments	• We could all use a copy of these flowcharts with the discussed changes • The EIR Waiver is not on the chart • Streamlined app review – combined application for local, fed, and state • Clarify if project is not in an ACEC what the differences are • Clarify definition of regulatory salt marsh (state definition) • I would move the "Local Permitting" bubble down and replace with state permitting since the WPA process comes later in the chain, particularly if you need a 401 WQC (for ERPs) • Need for significant changes to permit/reg. framework, with time being "of the essence". Climate crisis is not waiting • The SLR and the resultant damage is so fast, that there needs to be a way to accelerate/simplify process • Given other key reviews/screenings (e.g., NHESP, DMF) a published notice in the MEPA monitor seems like an extra step that is not needed • Does CZM Federal consistency determination happen before or during USACE review of PNF or permit app? • Clarify when a project does not need MEPA review • Wetland restrictions • Need to integrate time into process. How long for regulators to respond/complete each step? • Integrate monitoring both reporting and field monitoring requirements and timeline into process. Permitting doesn't end with construction. • Existing permitting landscape seems to assume that resources are in good condition • Define ACEC • Helpful to explain what dredging entails in a restoration context • Many salt marsh projects are done in partnership with county mosquito control projects which circumvents some of the process • Clarify EJ + MEPA – if in EJ area and requires ENF then automatically requires EIR. Can use new "Rollover EIR" provision • Does initial notice to MEPA go in monitor for public comment? • Context = Climate + biodiversity crises + degraded existing conditions. Need a radical paradigm shift to review ER projects Single App → Joint Review → Joint Approved (3 months)
Questions	• When does Section 7 Fisheries consultation occur? • Can a project be broken into components where one is an EP and the other is ERLP? • How historic and what info is needed to determine "filled tidelands"? • Can permitting proceed in parallel eg. Ch 91 + WQ Cert combine? • Where ditches and/or embankments are blocking natural tidal flow can projects restoring flow be Eco Rest. NOI? • MEPA consultation with state agencies and once MEPA is concluded can/should state permitting proceed expeditiously. Do state agencies raise new issues after MEPA? • What's the timeline for each step of the process? Certain rolling deadlines and review periods? • What is the difference of MassDEP Chapter 91 permit vs. Ch 91 license? • Is there existing flow chart or description of this process or permits for public/practitioners, publicly available? • What is the difference between ERP and limited? • When NEPA required? When to start to limit timeline to complete permitting? • How long/what time range can we expect a project to go through this permitting process?

	• What's the order? Can some be done at the same time? Which require one step approval? • Has there been discussion at state level to expand the type of projects that fall under ERP? Could lower tech marsh platform tidal hydrology restoration projects that include maintaining selective ditches and digging shallow runnels through agricultural embankments or ditch spoils. • What constitutes dredging under a ERLP project? What constitutes "impact"? • For a permit reviewer, what is the benefit of an EIR vs and ENF? • Can DEP and DER along with other states and federal partners assess expanding the type of projects that could be included under ERP? Since the intent of one of the ERP projects is "to eliminate tidal restrictions" possibly other techniques could be included as ELP
Changes	• Regional permitting (county level) i.e. Cape Cod Commission Regional Policy Plan • Add footnote that MEPA has a number of pathways if project requires an EIR. i.e. Waivers, Single EIR vs Draft + Final • Federal permit is the trigger for the 401 WQC process • Section 10 is only below MHW • Put CZM Federal Consistency as the last step. The USACE 404 permit is often the trigger for federal consistency • Also note that there may be draft EIR, Final EIR, and Supplemental ERIs required by the Secretary • It would be helpful to have all acronyms in a "key box" AKA what they all are • No separate WQC needed for ERP • Federal CZM Consistency can be done with PCN to Army Corps • WQC: dredging > 100cy isn't eligible for ER ODC, ER from chart showed says dredging <100cy • For ERPL or ERP, there should be a link between "Receive 401 Water Quality Certification" and "Receive General or Individual Permit" • No MEPA required for ERP • Highlight in a different color the differences between the two (i.e. what are extra/missing steps?) • In addition to NHESP, checklist specified prelim determination for state for inland fish passage • Add to flow chart any distribution requirements associated with MEPA Notice or permit apps • Just a clarification that designated geographic area EJ population =/= SNEP disadvantaged community (DAC) necessarily • Provide chart for when each process should be started or what efforts can happen concurrently • Change "state permit" to "agency action" as defined in MEPA regs. • Preparation and submission of EIR might include Draft EIR, Final EIR, Supplemental EIRs • Thresholds that trigger an ENF • Add >5,000sF or more of alteration of BVW and IVW see 11.03(3)(b)(1)(d) • Add footnote that there are a # of pathways if a project exceeds an EIR threshold (i.e. Waiver, Single EIR vs Draft + Final EIR) • Change the projects that qualify for ER Projects e.g. stream daylighting = risky. Other actions like cranberry bogs are not

ERLP Flowchart:

Comments	• DEP – ACOE Coordination • Provide ballpark timelines for completion of state and federal permitting for Eco Rest limited projects • Describe what info is required (or recommended) in an EIR • Note that USACE has a general permit for aquatic habitat restoration that may encompass a proposed project (GP/O) • Note WQC permitting for dredging 7100 cy processed by DEP Boston office rather than regional office (if correct?) • Fed. Consistency determination may not be received until the project is completed USACE permit review (not before fixing with USACE) • It would be great to have a little acronym glossary in the corner

Questions	• Is thin layer deposition permittable in Mass?
	• We heard that dredging >100cy or dredging in an ORW for tidal restoration automatically triggers ERLP. Is this true?
	• Do applicants provide the restoration OOC's up front if for some reason the project requires project specific EFH consult?
	• Project involves dredging >100cy or any amount in an ORW
	  ○ How about those projects "Fill or Discharge" of dredged materials into waters of the US (Section 404)?
	• Can a project combine different ERP types?
	• What would the process look like to add a new ERP type?
	• Permitting challenges- what is:
	  ○ Fill?
	  ○ Dredge?
	  ○ Structure?
	  ○ Alteration?
	  ○ BVW?
	• What is the process for considering restoration options on a site that has a wetland restriction order under DEP?
	• Does EJ community within one mile of project area determine if need ERP vs. ERLP?
	• What is considered an impact? Is it the physical location of a drainage feature or peat placement? Is maintaining an existing ditch considered impact?

Changes	• Add flow chart line for EIR waiver process • No publication in Environmental Monitor for Notice of Intent required • Coordination with NHESP + DMF can be done by filing Notice of Intent with them. No prior review necessary • Local bylaw permitting may apply and may not be consistent with Mass WPA • There is no Appendix A checklist for ERLP • I don't think MEPA is the place to start. Start with criteria for ER vs ERLP (DEP wetlands has flow chart) • Mass DEP wetlands has a great flow chart for ER vs ERLP • Provide pros and cons of going through ERP vs ERPL • FEMA no-rise certificates may be required as well

ATTACHMENT C: Full Results from Session 3 Activity

Group A:

What still needs to be addressed?	How do we move forward/ work together?

• Scientists and regulators don't often use the same terminology. Consultants can be helpful to fill that gap (additional upfront cost, but saves time by preventing application kickbacks).
• Need design standards to alleviate permitting delay.
  o What are the data gaps?
  o Need monitoring standard. What are we comfortable with?
  o Increased education on restoration techniques and applications.
  o Consideration of outside state data on restoration practices (including ex. of permitting pathways).
• Oversight of QA/QC, especially for larger projects, preventing proponent from also being responsible for QA/QC.
• Can we increase capacity -> science advisory group for permitters? How can we better engage regs?
• Generic EIR to authorize spec. restoration approaches (MEPA level).
	• Help having more productive pre-application meetings between proponents and regulators. Need a workable solution. Reg. capacity seems to be an issue.
	• More workshops for:
	  o Data gaps
	  o Design and monitoring standardization
	  o Increase education of restoration techniques and outcomes.
	• Quarterly check-ins (similar to this meeting) to discuss science priorities.
	• Transition discussion from techniques to indicators and metrics on techniques/ pilots of different techniques.

Group B:

What still needs to be addressed?	How do we move forward/ work together?

• Guidance document for permitting salt marsh restoration (ditch remediation, runnelling, marsh islands) *underway at DEP
• Reg reforms? Longer timeline.
• Training conservation commissions and contractors (DEP, MACC).
• Capacity and funding.
• Coastal resource area delineation training, inconsistencies.
• Scaling up = runnelling more of a concern re: risk than ditch remediation.
• Monitoring standards- small scale vs. larger.
  o Comparable data.
  o ME and NH have used data from MA projects for other projects.
  o Neil Ganju salt marsh life cycle tool.
	• Early coordination meetings.
	• Consider using the Neil G. tool to prioritize work and to inform actions and anticipated outcomes.
	• Weigh risks of no action vs. risks of projects.
	• How to speed up the regulatory process to meet the urgency- marshes falling apart.
	• Identify who at res. agencies need to be connected/ informed, provide input.
	• More conversations like this.
	• Interagency working groups- meet and work with practitioners.
	• NE Federal Partners: natural and nature-based infrastructure working group.

Group C:

What still needs to be addressed?	How do we move forward/ work together?

• Risk assessment (within permit pathways vs. risk of no action vs. risks outside project footprint- who is liable?)
• Language from local- federal level.
  ○ Realistic expectations (i.e., for presence/ absence invasives)
  ○ Scale of setting baseline.
• Guidance on monitoring <u>what</u> (spatial/ temporal) from restoration activities.
• Realistic expectations of what we can achieve.
• Separation between promises made from permitting vs. funding processes.
• Expectations of human involvement for extended periods of time (beyond 3-5 years).
• How to scale up within regs.
• Overcomplexity of process.
• What are "control" sites -> do these exist?
• How best to share data?
	• Creative thinking.
	• Translating/ communicating success of pilot projects.
	• Advocacy for regulatory packages (1.0 and 2.0 upcoming-early steps in public comment).
	• Collective understanding of hydrologic restoration (next wave of the process).
	  ○ Shared picture of what restoration means. Definitions differ across agencies.
	  ○ Temporal dimension of complex issue on climatic scales.
	  ○ Details on definitions.

Group D:

What still needs to be addressed?	How do we move forward/ work together?
• Agreement on minimum metrics to monitor and frequency. (What and how many years of monitoring?) • Agreement on how current permitting pathway can be streamlined and simplified for nature-based restoration. • How to fund monitoring, corrective actions, and the iterative process. • Better coordination. • Mosquito control. • The "boundaries" between current salt/ brackish/ fresh that have different permits but shared future characteristics. • Conflicts between purpose of funding and getting actions permitted. • Disconnect between concept/ planning level information needed for funding proposal vs. design details needed for permit review. • Integrating academics for informing projects and sustainable monitoring. • Similar meeting for each of the permits to get into the weeds of the process. • Liability and corrective actions deter doing these projects. • Permitting for thin layer deposition. • Make space in permitting for research projects. • Timelines for review. • Revise the flowchart with DEP and MEPA feedback and distribute. • Specific discussion of what regulatory roadblocks to restoration projects exist (identify and clearly document roadblocks & discuss how to make appropriate changes).	• Have more of these joint conversations. • Regulators and land owners pool resources to permit and complete projects, especially for pilot and science projects. • Prioritization. • Close loopholes. • Better coordination. • More funding support for baseline research and feasibility and coastwide data. • Develop a jointly authored (DEP + others-practitioners) guidance document for monitoring and adaptive management. • Culverts. *DPW: DER/ restoration. Mosquito control: restoration. Replacing "in-kind" is an issue. • Fold more scientists/ academics into the monitoring conversation (how much and how long).