Proceedings Report on Great Lakes Coastal and Nearshore Habitat Assessment Project—Illinois

December 3rd, 2019
Heller Nature Center
2821 Ridge Rd
Highland Park, IL
9:00 am 4:00 pm

Prepared for:
Coastal States Organization

FINAL

3/25/2020

LimnoTech
Water Environment | Scientists Engineers

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Prepared by:
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Ann Arbor, MI 48108

Funding for this project was received via Great Lakes Restoration Initiative

Workshop developed in partnership with:

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Introduction

Many Great Lakes shoreline reaches have deteriorated in function and quality due in part to land use change, shoreline alterations, coastal infrastructure, and other influences. Effective restoration actions in these dynamic, complex systems require integrated approaches to enhance coastal biodiversity and promote ecological resilience. To help facilitate the development of these approaches, National Oceanic and Atmospheric Administration (NOAA), the Coastal States Organization (CSO), and Great Lakes Coastal Zone Management Programs conducted workshops in each of the eight Great Lakes states. These workshops were an opportunity for state-level partners to influence the direction of potential future restoration actions in the Great Lakes, and to advocate for funding to be spent at state-prioritized locations for coastal management and habitat objectives.

The overarching purpose of these workshops was to convene stakeholders and partners and to identify shared coastal management principles, goals, priorities, currently available data sources, and outstanding data needs. Emphasis was on identifying, to the extent possible, place-based actions; partners who could support the planning, execution, and maintenance of restoration actions; and identifying and describing data needs associated with these preferred actions. To meet these objectives, state partners developed invitee lists that drew from a wide range of partners, including representatives from local, state, federal, and tribal organizations. A full summary of the workshop invitees and attendees is provided in Section 5. The workshop results are based on the events of the day and participants in attendance. Organizers made an effort to invite a representative, broad based group of experts. Results are not intended to replace or supplant any current or future planned processes.

This report covers the proceedings of the one-day workshop held in Highland Park, IL on Tuesday, December 3, 2019 as well as the background materials used during the workshop.

1 Morning Session (9:00 AM – 12:00 PM)

1.1 Opening Remarks

Mike Molnar from the Coastal States Organization (CSO) started the meeting with introductions and by providing the following background on the workshops:

This series of workshops is an outgrowth of three years of work between CSO, the US Army Corps of Engineers (USACE), NOAA, other Federal Agency partners, and each of the Great Lakes State Coastal Programs to address coastal resiliency issues in the Great Lakes Region. Group efforts originally focused on developing scope of work, and securing funding for the Great Lakes Coastal Resiliency Study (GLCRS). The purpose of the proposed GLCRS was to assess coastal conditions, and develop a risk based management approach for the next 50 years. While the GLCRS did not receive funding in the FY20 USACE budget, and future direction is uncertain at this time; this workshop is an outgrowth of the GLCRS discussions and an opportunity to align state habitat restoration needs with the EPA Great Lakes Restoration Initiative (GLRI) Action Plan. Funding for the workshops provided by agreement with NOAA Office for Coastal Management via US EPA GLRI Focus Area 4. State-level partners worked together to identify and numerically rank habitat restoration projects that align with the restoration goals identified by the GLRI Focus Area 4—Species and Habitat in the draft GLRI Action Plan III (USEPA, 2019). The study area for restoration projects extends from the 80-m bathymetry contour in Lake Michigan waters to the ordinary high water mark including terrestrial or inland aquatic habitats including "connecting habitats for coastal species or critical zones of influence for priority nearshore areas" (FA4 Coastal Systems Work Group). (Figure 1).

The goals of this workshop are to:

1. Identify shared coastal management principles and goals for Illinois;
2. Develop a list of coastal and nearshore habitat restoration projects for funding in FY21 and beyond that target habitat benefits for lake trout, walleye, lake sturgeon, yellow perch, cisco, and migratory birds and waterfowl; and,
3. Develop a list of available data, identify gaps, and prioritize data needs.

At the conclusion of all state workshops, NOAA will coordinate with other state and federal partners to identify funding mechanisms and determine potential projects to fund. NOAA OCM, NOAA Restoration Center, USFWS, USACE, USGS, EPA, and NFWF, amongst other funders, will look to this list for projects to fund.

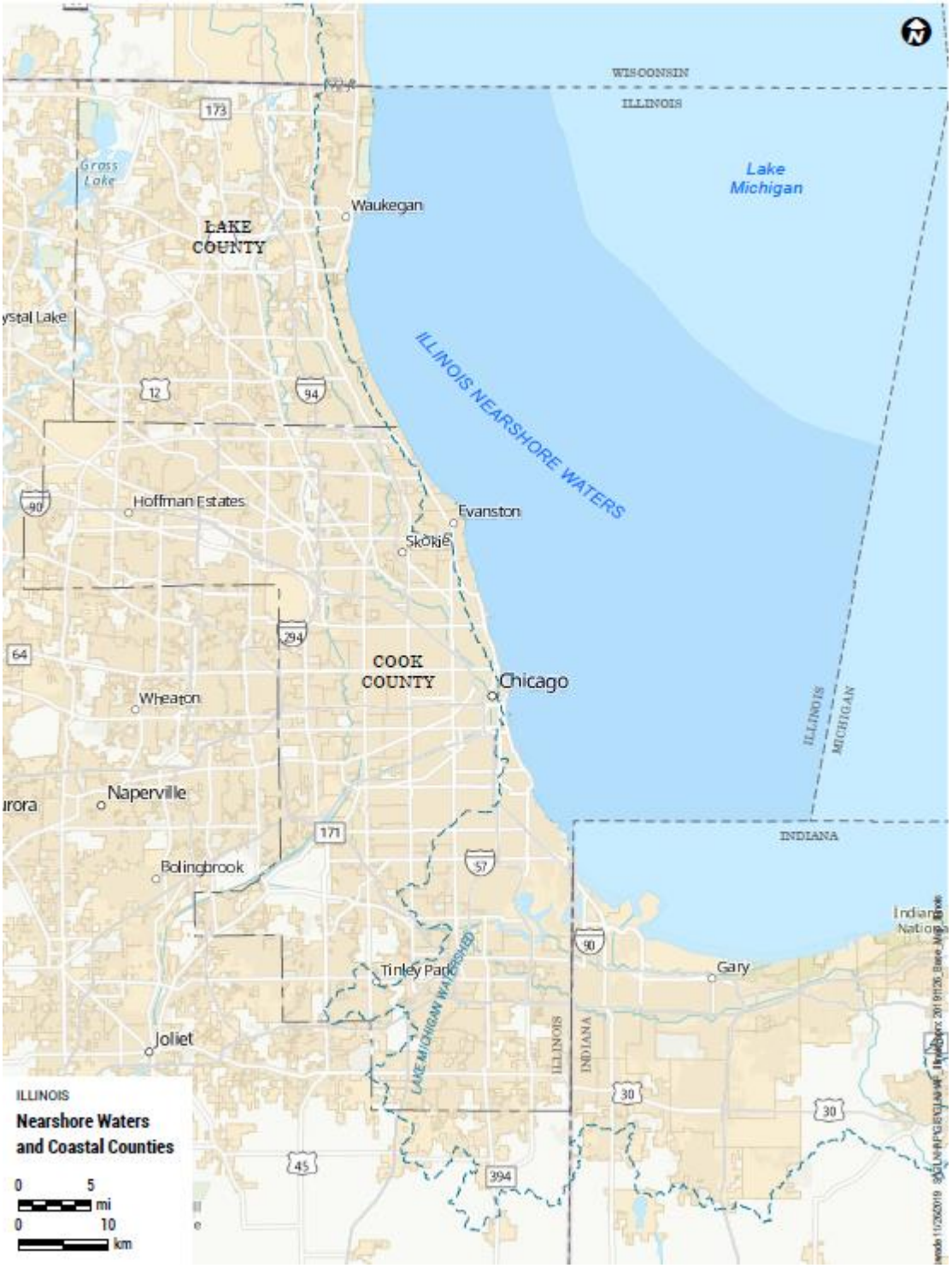

Figure 1. Map of the Illinois Study Area

1.2 Overview Workshop and Agenda

The workshop agenda is summarized in Table 1.

Table 1. Workshop Agenda

Workshop Segment	Purpose	Format
Introduction (9-9:20 AM)	Describe workshop purpose, preview agenda	Welcome and introductory statements
Icebreaker Activity (9:20-9:40)	Prepare group for interactive workshop	
Shared Principles and Goals: An overview of state and regional plans (9:40-10)	Prepare audience for discussions by providing overview of past communicated priorities, and identifying alignments with GLRI Action Plan III Focus Area 4	Very brief presentation summarizing state-level reports and GLRI Action Plan III Focus Area 4
Identification of Coastal Habitat Principles (10-10:25)	Start prioritization process by considering high-level principles guiding action	Small group brainstorming and reporting cycles for two questions prompting discussion
Mid-Morning Break		
Identification of Coastal Habitat Goals (10:45-12:00)	Transition to identification of regional or species-specific goals, target 3-5 goals per region	Small group brainstorming organized by region
Lunch Break		
Identifying and Prioritizing Projects and Locations: An overview of state and regional plans (12:30-12:50)	Prepare audience for discussions of project prioritization and data needs by summarizing past projects	Very brief presentation summarizing past projects
Identification and Prioritization of Project Locations (12:50-2:20)	Roughly identify extent of potential projects and prioritize these. Complete worksheets summarizing potential project details.	Small group identification of potential projects on physical maps organized by region or target species
Mid-Afternoon Break		
Overview of Data Availability (2:35-2:45)	Prepare audience for discussion of data gaps by summarizing presently available data	Very brief presentation of available data related to habitat
Collaborative Identification of Data Needs (2:45 – 3:45)	Identify data gaps and articulate why these data are needed. Complete worksheets summarizing data needs.	
Wrap-up and Evaluation (3:45 – 4)	Note forthcoming reports and request completion of evaluation forms	Paper evaluation form

1.3 Shared Principles and Goals: A Review of State and Regional Plans

Before working together to identify common habitat restoration goals and principles, LimnoTech staff gave a brief presentation highlighting regional principles and goals for habitat restoration in Lake Michigan. The purpose of this presentation was to help workshop attendees consider their own principles and goals related to habitat restoration in the lake.

LimnoTech first started by defining the terms "principles" and "goals", and then gave several examples from the GLRI Action Plan III and the Lake Michigan Biodiversity Conservation Strategy (Pearsall et al., 2012). Principles were defined as foundational science-based ideas that would influence action. Goals were defined as the desired result of an action. Principles and goals from the GLRI Action Plan III and The Lake Michigan Biodiversity Conservation Strategy are summarized in Figures 2 and 3. To link the regional plans to state-level planning efforts, LimnoTech also presented several principles and goals from several state-level reports (ILDNR, 2013; ILDNR, 2015; PRC, 2014; GRC, 2016). These principles and goals are summarized in Figure 4.

LimnoTech discussed how alignment exists between principles and goals defined in past reports and the objectives, commitments, and measures expressed in GLRI Action Plan III Focus Area 4 (Habitat and Species). Attendees were encouraged to identify alignment between their current principles and goals expressed during the workshop, and the GLRI action plan.

Focus Area 4: Habitats and Species	4.1. Protect and restore communities of native aquatic and terrestrial species important to the Great Lakes.	• Identify, restore, and protect habitats and provide habitat connectivity to support important species and associated habitats.
	4.2. Increase resiliency of species through comprehensive approaches that complement on-the-ground habitat restoration and protection.	• Update and implement recovery actions for federal threatened, endangered, and candidate species. • Support population-level protections, enhancements, and re-introductions for tribal, state, and Great Lakes native species of importance.

Figure 2. Summary of Focus Area 4—Species and Habitat Principles and Goals Excerpted from GLRI Action Plan III (USEPA, 2019)

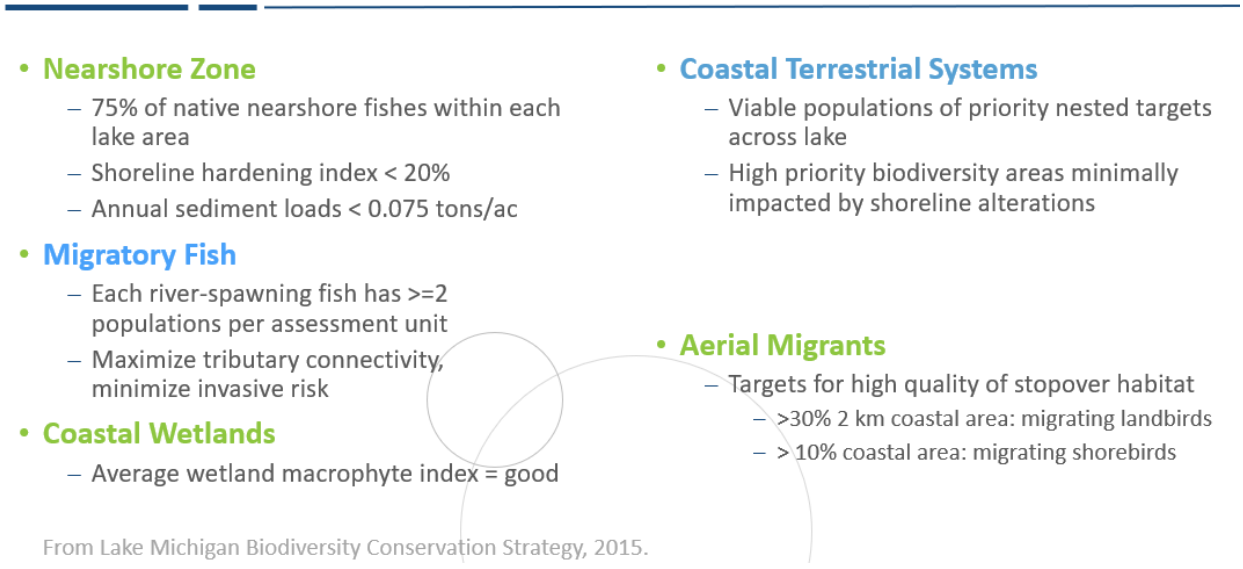

Figure 3. Summary of Select Habitat Restoration Goals Presented in the Lake Michigan Biodiversity Conservation Strategy (Pearsall et al., 2012)

Figure 4. Summary of Select Principles and Goals from Illinois State-Level Reports (ILDNR, 2013; ILDNR, 2015; PRC, 2014; GRC, 2016)

1.4 Identifying Principles

During an approximately 25-minute interactive session, workshop attendees organized themselves into groups of approximately six people and responded to the following prompt:

1. What do you think are the key principles for achieving success in nearshore habitat restoration in the great lakes and/or your state?

Each small group reported out on three words or phrases representing the key principles underlying successful habitat restoration projects (Figure 5 and 6). The words and phrases could generally be broken into four broad categories: partnerships and planning, support, science and data, and sustainability. The full results from the first prompt are summarized in Table 2.

After each group reported out their key principles for a successful habitat restoration project, participants were asked if any principles were missing. Workshop participants emphasize that it is important to try and integrate small scale projects with larger-scale projects. This can be achieved with additional regional coordination and a solid working knowledge of other habitat restoration projects in the region. Often, minor adjustments to a small-scale restoration project will result in a better fit with large-scale restoration efforts, and will increase the impact of the small-scale project.

There was also a robust conversation around climate change and inter-annual variability of parameters such as water levels and precipitation. Ultimately, participants all agreed that it is important to understand future conditions of a site and that understanding should be used during the planning phase and as part of adaptive management. Projects should take into account extreme events in the future, and should use larger datasets and predictive models to guide the design work. There was a general desire to move away from "reactive" restoration planning (e.g., 5 years ago, participants would not have been discussing high lake levels, but now it is a frequent topic of conversation).

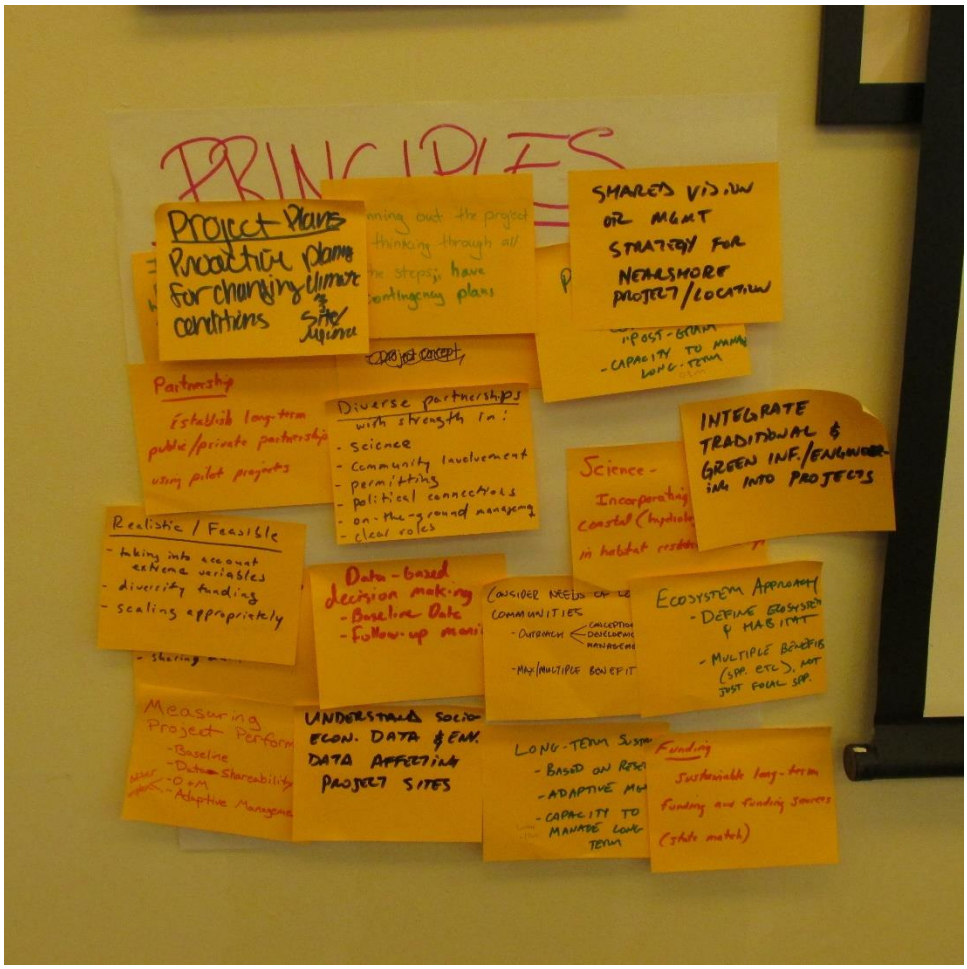

Figure 5. Snapshot of the Results from the Principles Discussion

Figure 6. Participants Working Together to Develop Common Principle

Table 2. Summary of Key Principles Reported by Each Working Group

Category	Key Principle	Further Details
Partnerships and Planning	Identify the best partner or group to handle different parts of the project	Making sure you evaluate the strengths of the partnerships and they're doing what they are best equipped to do

	Establish long-term public/private partnerships
	(combination of several groups)
		Good partnerships:
		• Have a shared vision
		• Increase capacity
		• Help to manage site at the completion of the initial project
		  ○ Operations, monitoring, maintenance
		• Define clear roles for each partner
		  ○ Identify the strengths of each partner
		  ○ E.g., know which partners can help with permitting issues and political connections (getting the push for support, developing political will)
		Using pilot projects is a great way to develop these relationships

	Local buy-in	• Need to consider the wants/needs of the local community • Project should balance community wants with natural processes (e.g., the community wants a picnic area/beach vs stormwater detention)
	Shared vision	• Need to get buy-in and make sure everyone is on board for a nearshore region management strategy
	Planning	• Take time to think through all the steps and having contingency plans for them (e.g., what to do if you run into funding issues or planning for adaptive management)
Support	Funding	• sustainable long-term funding and funding sources. Federal dollars can be difficult to get the match.

Category	Key Principle	Further Details
	Funding	• diversifying funding to have a more sustainable project into the future
Data/Science	Incorporate natural coastal and hydrologic processes	• a solid understanding of the natural processes that dominate a site. Developing a solution that accounts for an accommodates natural processes.
	Ecosystem approach	• define the ecosystem and habitat so that we can target multiple benefits during restoration
	Integration of innovative and traditional solutions	• Consider green infrastructure and traditional infrastructure approaches
	Strong data/monitoring program	• Will help demonstrate biological need • Leads to adaptive management • Facilitates sharing out of data
	Measuring project performance baseline, share-ability, adaptive management	• Develop a baseline • Improves share-ability • Leads to adaptive management
Sustainability	Long-term project sustainability	• Based on research • Needs adaptive management to be successful long term • Need capacity to manage site long-term
	Building projects that are realistic/feasible but taking into account extremes (like high water levels)	• Start with pilot projects for proof of concept • Scale up from there

1.5 Break (15-min)

1.6 Identifying Goals

During an approximately 90-minute interactive session, workshop attendees worked together to identify a common set of goals that could be used to later prioritize habitat restoration projects. Participants self-organized into one of three groups: North, Central, and South (Figure 7). The study area for restoration projects extended in from the 80-m bathymetry contour in Lake Michigan to two coastal counties inland (Cook and Lake). Each group was asked to develop 3 to 5 goal statements related to either a target species of interest or a region or location of interest (Figures 8 through 12).

When setting goals, participants were asked to be specific. Each goal statement needed to contain the following four elements:

1. The *subject or resource of concern*
2. The *characteristic or attribute* for the subject or resource of concern
3. The *desired future condition or conceptual target* for that attribute within a 10-year implementation timeframe
4. A measure, if possible

Using these four elements, an example of a full goal statement could be something like "hydrologic connectivity will be restored (by 10%) for fish species that spawn in upstream tributaries". It should be noted that the fourth element of a complete goal statement (a quantitative measure) was challenging for all groups. There were two primary reasons for this difficulty: first and foremost, many attendees did not know if the data they needed to quantify their goals exists; second, for data that did exist, attendees did not have access to it during the workshop and therefore were not able to determine if their measures were reasonable. Ultimately, these goal statements were developed over a short period of time (<1.5 hours), and it was not possible to refine them in light of the best available data.

Each small group reported its goal statements to the full group, and a nominal voting process was conducted to prioritize goals. The nominal voting process allowed all workshop participants to comment on goal statements that they were not able to directly participate in identifying. To vote, participants were given two dots for each region: one green and one red. For each region, participants had to select their highest priority using a green dot and their lowest priority using a red dot. The goal statements and the results of the nominal voting process are summarized in Table 3.

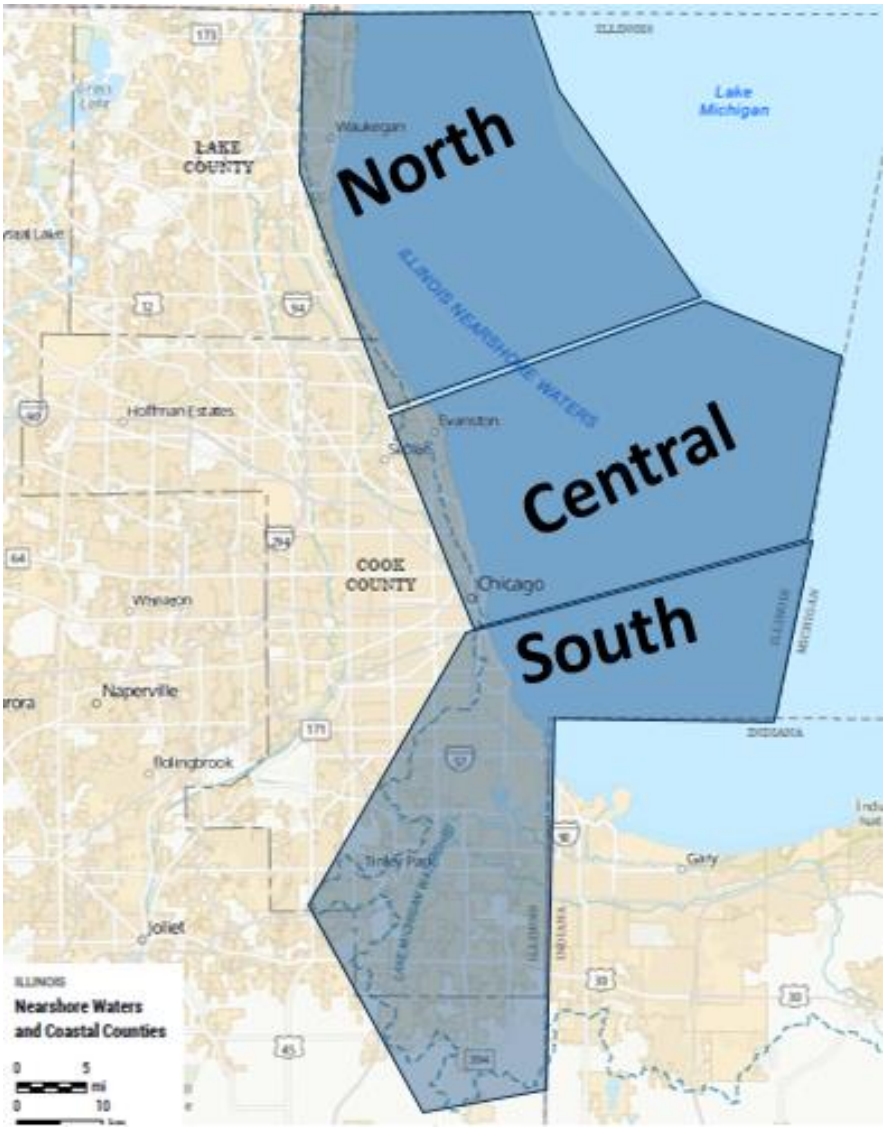

Figure 7. Map of Illinois Lake Michigan Coastline and the Approximate Geographic Extent of the Three Groups: North, Central, and South

Figure 8. North Group Developing Goal Statements

Figure 9. Central Group Developing Goals Statements

Figure 10. South Group Developing Goals Statements

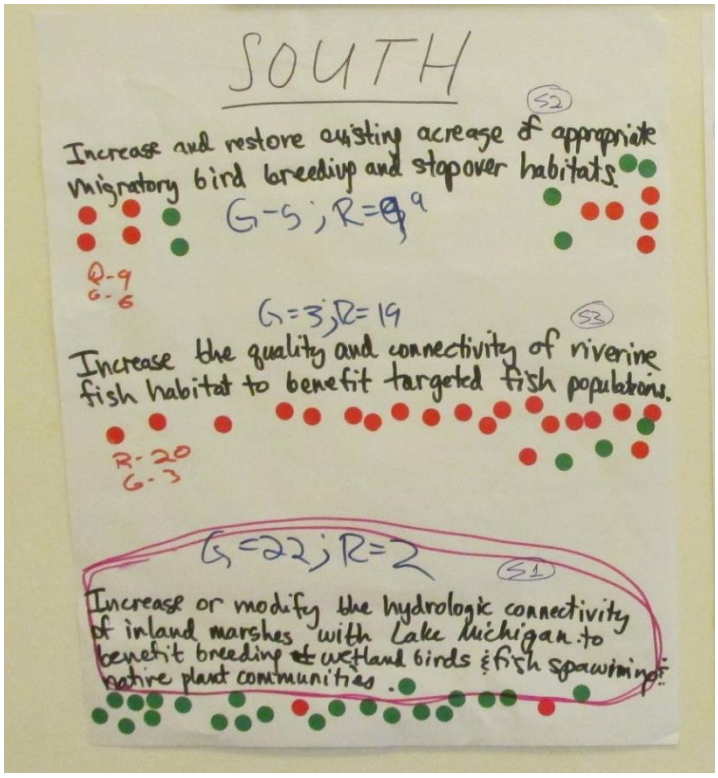

Figure 11. Sample Goal Statements for South Group

Figure 12. Nominal Voting on Goal Statements by Group

Table 3. Summary of Goal Statements by Region and the Results of the Nominal Voting Process

Region	Goal	Green Dot	Red Dot
North	Stabilize and enhance a to-be-determined percentage of coastal and riparian habitat for long-term resiliency by 2030	24	4
	Increase connectivity to optimize habitat for waterfowl and fishes	6	5
	Reduce invasive species in terrestrial and aquatic habitats as measured by a to-be-determined amount of acres cleared	2	22
Central	Increase in-water and coastal habitats on Chicago/Evanston lakefront through sustainable onshore and nearshore practices (by a "to-be-determined" percentage)	22	1
	Increase protection of aquatic and lakefront areas with significant ecological value	7	7
	Increase littoral habitat in the Chicago River by a to-be-determined percentage	1	22
South	Increase or modify the hydrologic connectivity of inland marshes with Lake Michigan to benefit breeding wetland birds and fish spawning, and native plant communities	22	9
	Increase and restore existing acreage of appropriate migratory bird breeding and stopover habitats	6	20
	Increase the quality and connectivity of riverine fish habitat to benefit targeted fish populations	3	2

2 Afternoon Session (12:30 PM – 4:00 PM)

2.1 Identifying and Prioritizing Projects and Locations: A Review of State and Regional Plans

Before working together to identify and prioritize habitat restoration projects, LimnoTech staff gave a brief presentation highlighting the different types of restoration projects targeted by the GLRI and examples of both GLRI-funded habitat restoration projects and other types of habitat restoration projects that have been funded in the state. The purpose of this presentation was to provide some background of recently completed and planned projects in the state to help spur conversations between participants.

According to GLRI Action Plan III, the GLRI funds habitat restoration projects that target the "…protection, enhancement, rehabilitation, and restoration" of ecosystems. LimnoTech provided definitions for the four types of projects and examples of projects recently completed in Figures 13 and 14 (USEPA, 2016).

Figure 13. Types of Habitat Restoration Projects as Defined by USEPA (USEPA, 2016)

Restoration Type	GLRI Funded Projects	Other Illinois Projects
Protection	Sustainable nearshore management solutions to prevent critical habitat loss at Illinois Beach State Park - preserve the only remaining natural shoreline in the state	Illinois Beach Shoreline Protection Project
Enhancement	Improved Water Control of Big Marsh - upgrade a poorly functioning water control structure at Big Marsh, the largest individual wetland within Chicago's Calumet Open Space Reserve.	Enhancing Native Habitat Along the Calumet River at SEPA Station #1
Re-establishment	Rosewood Park, IL Restoration - remove parking lot and daylight stream that drains to LM	Chiwaukee Prairie Illinois Beach Lake Plain Restoration Project - includes re-establishment of native plants
Rehabilitation	Hegewisch Marsh, IL Restoration - restore 34 acres of degraded wetland	Northeast Illinois Ravine Restoration - includes clearing woody invasive species to increase light penetration

Figure 14. Examples of funded projects in the State of Illinois

2.2 Identifying and Prioritizing Locations

During an approximately 90-minute interactive session, workshop attendees brainstormed potential project locations and marked up maps to document these projects (Figures 15 through 17). Each group then presented three of their proposed projects, and summarized how these locations align with principles and goals for regional habitat restoration that were developed in the morning session.

After each region pitched their top three projects, all workshop attendees were given the opportunity to vote on them using blue, orange, and yellow sticky dots (indicating their first, second, and third ranked projects). Attendees were asked to rank the projects within each region against each other in order to determine the top project within each region. After workshop attendees voted, each project then received a score according to the scoring system summarized in Table 4. The top projects from each region then went on to a second round of voting. Participants were each given one purple dot and asked to select their top project out of all the regions. This resulted in a ranking of all the top projects across all the regions. This information is also summarized in Table 5.

After the ranking process, many attendees noted that this step was difficult because there was value in all of the proposed projects. To ensure that no project information was lost, all projects that were discussed by individual groups are included in Attachment A.

There was a brief question and answer period after each group presented their proposed projects. Questions and answers by region are presented below.

- North
    - Question: How far along is the modeling project in terms of readiness?
        - Answer: We believe that a lot of the necessary data is out there. We need to organize it and prepare it for use.
- Central
    - Question: What is the footprint of Rogers Park and LaRabida?

        - Answer: We are not completely sure. We need engineering support to fully answer this question.

- South
    - No questions

After the conclusion of the workshop, NOAA and Illinois Coastal Management Program (ILCMP) had some concerns about the inclusion of the third-ranked project, the Diversey Harbor project identified by the Central region group. This project was described as being "ready to go" and only in need of funding. However, ILCMP is currently working with Chicago Park District to fund this project. In order to ensure that Illinois has at least three ranked habitat restoration priorities for future funding sources, the Rogers Park project was included as a fourth option. Selecting the Rogers Park project seemed like a better choice than the equally-popular LaRabida project because the Rogers Park project is further along conceptually than LaRabida.

Figure 15. North Group Discussing Proposed Project Locations

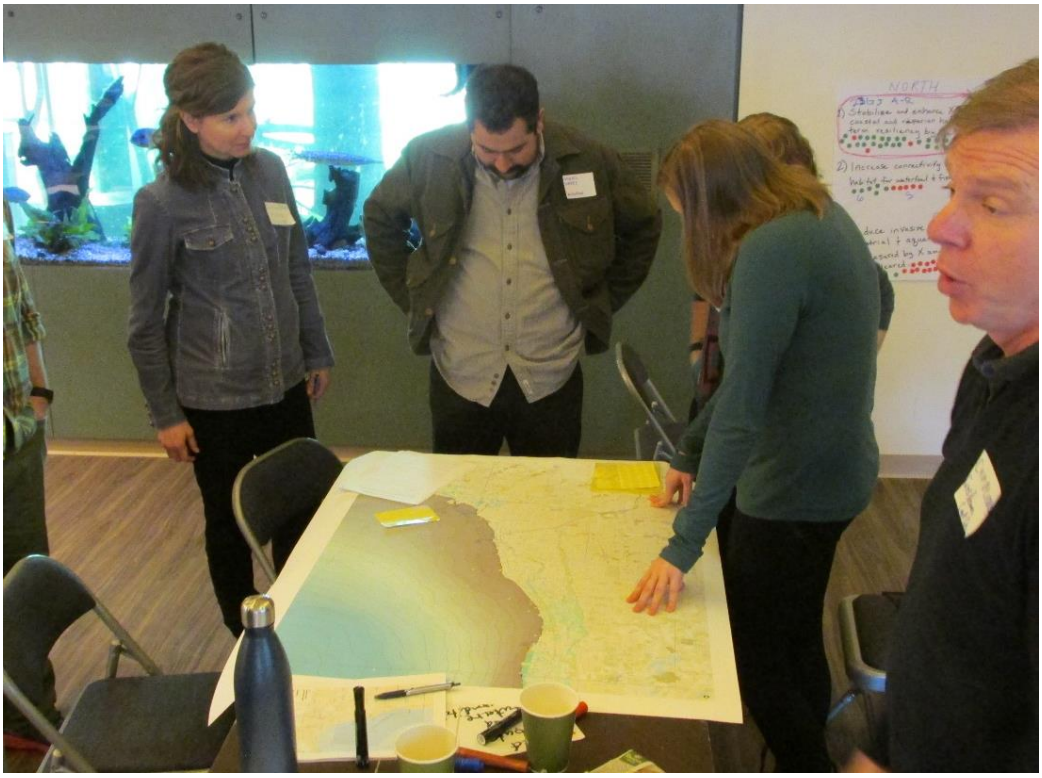

Figure 16. South Group Discussing Proposed Project Locations

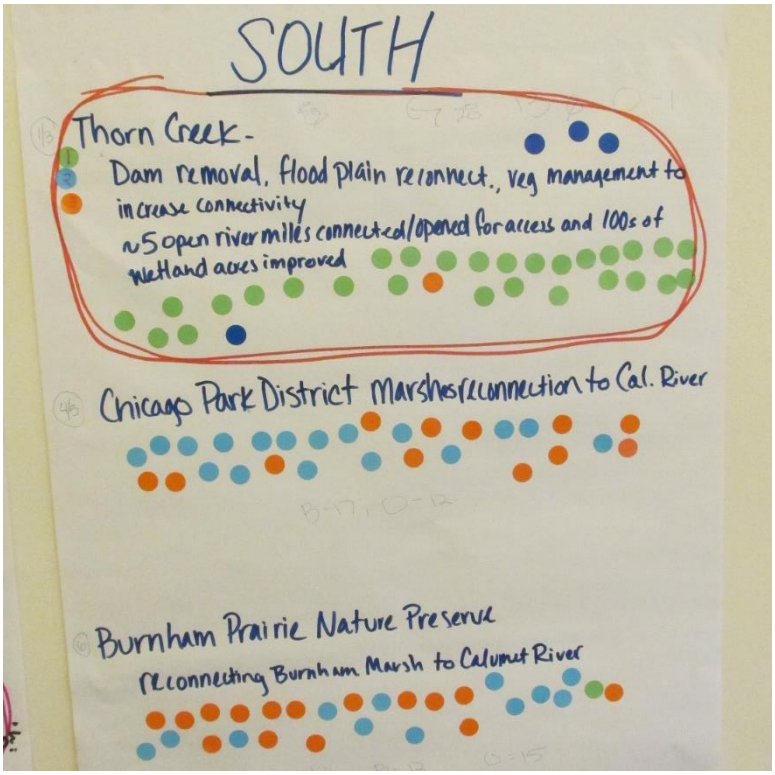

Figure 17. Participant Voting on Proposed Project Locations

Table 4. Summary of Voting System

Dot Color	Rank	Point Value
Green	First	3
Blue	Second	2
Orange	Third	1

Table 5. Summary of Proposed Projects by Lake

Region	Map #	Project	Further Details	Green (1st)	Blue (2nd)	Orange (3rd)	Region Specific Score	Region Specific Rank	Final Score	Final Rank
North	2+3	Living shoreline pilot projects	We want to study which living shoreline best management practices are most sustainable. This project would utilize sediment transport models proposed at Map location #1 and studies of on-the-ground projects to identify key, strategic locations for living shoreline pilot projects along the northern shoreline.	14	12	2	68	1st	21	1st
	1	Model and evaluate north shore coastline as integrated habitat and develop a master plan	This is a comprehensive collaborative effort to protect, enhance, and rehabilitate the coastal zone into a resilient regional asset by sustainably facilitating coastal processes (i.e., wave energy) • We really need to take the outputs from a sediment transport study, and use that output to create a master plan • The study would also identify partners and find a way to bring them together in terms of funding and permitting	9	12	8	59			
	4	North Unit Illinois Beach State Park: Kellogg Creek and Hosah Park stabilization	We need a project defined in this region, and it is dependent on the results of the modeling study we proposed.	6	4	17	43			
Central	1	Diversey Harbor Turf-to-Wetland Project	• This project would restore 15 acres of habitat that is flooded 80% of the time • Benefits multiple target species • Turnkey: this project is ready to go (ILCMP comment: "this project is	15	8	7	68	1st	2	3rd

Region	Map #	Project	Further Details	Green (1st)	Blue (2nd)	Orange (3rd)	Region Specific Score	Region Specific Rank	Final Score	Final Rank
			currently moving forward with funding in 2020")							
	2	Rogers Park lakefront protection and habitat creation	There is a hardscape building going into the lake. The project will increase elevation onshore, and be coupled with innovative offshore protections, including nearshore fish habitat. • Replace emergency erosion controls with innovative infrastructure that could create habitat while protecting the lakefront and emergent vegetation. • Offshore protections to dissipate wave energy could create fish habitat • Good pilot site for creating fish habitat in the intertidal zone. • Well supported by community. Many people want to preserve the lakefront. • We need a bit of engineering and modeling to support this. • Middle of the road in terms of readiness	7	12	9	54			4th
	4	Lake front near LaRabida hospital:	This is a plan for offshore wave dissipation utilizing existing onshore rubble. It may also establish dune/swale along shore, including fishhook breakwater. It is the most conceptual of our three projects. • Lake wall is currently crumbling • We need a breakwater or something to dissipate the wave energy • This project also meets our desire to create more dune/swale habitat (if you properly orient the breakwall)	8	9	12	54			

Region	Map #	Project	Further Details	Green (1st)	Blue (2nd)	Orange (3rd)	Region Specific Score	Region Specific Rank	Final Score	Final Rank
South	1+3	Thorn Creek floodplain and habitat restoration	This project involves dam removal and reconnecting the floodplain by connecting two wetlands at Indian Ridge Marsh and the Calumet River/Lake • Cook County owned dam that is a known fish barrier • Sits in a large valley that could be converted into a wetland • Currently marsh birds are trying to use it but the current habitat isn't great	28	0	1	85	1st	3	2nd
	4+5	Chicago Park District Marshes reconnection to Calumet River	This project is focused on hydrologic connectivity between two wetlands at Indian Ridge Marsh and Lake Michigan. Some sites have better connectivity than others. This project would: • Install water control structures where possible to lower water levels for native plants. • Involve some regrading of hard shorelines for better fish habitat. • Eliminate carp This project is placed within a larger IL/IN Calumet River project. Should help with water quality in marsh and river. Many concepts have been drafted. This is primarily a funding and capacity issue.	0	17	12	46			
	6	Burnham prairie nature preserve: reconnecting Burnham Marsh to Calumet River	This site is an 80 ac nature preserve in a bend of the Calumet River. Has had one round of restoration. Current issue is connection with the river: water quality is low when water level is high. This project would:	1	12	15	42			

Region	Map #	Project	Further Details	Green (1st)	Blue (2nd)	Orange (3rd)	Region Specific Score	Region Specific Rank	Final Score	Final Rank
			• Install a water control structure. We need a better, two-way control structure here (currently has a one-way structure). This project is part of Audubon's plant for secretive marsh birds. It's a small scale project, but a marsh with high levels of biodiversity.							

2.3 Break

2.4 Overview of Data Availability

Before working together to identify data needs, LimnoTech staff briefly presented their understanding of data gaps for the state of Illinois. Data gaps were described in terms of presence/absence, spatial resolution (low to high), and temporal resolution (low to high). As part of the data gap analysis, LimnoTech identified thirty-four types of data that could be useful for planning habitat restoration projects. This list of data types was generated after a review of papers produced as part of the Great Lakes Aquatic Habitat Framework (GLAHF) (Kovalenko et al., 2018; Wang et al., 2015) and an in-house review by a LimnoTech fish biologist.

In summarizing datasets LimnoTech divided data sets into three groups: physical, biological, and environmental (Figures 18 through 21). A glossary of terms used in Figures 18 through 21 can be found in Section 6.

- **X**
  - We have found a dataset that matches the metric
- **OK**
  - sufficient level of information for project-scale work
- **LOW**
  - The resolution of the data is technically insufficient to complete project-scale work
- **MODERATE**
  - The resolution of the data is more coarse than desired to complete project-scale work, but useable
- **HIGH**
  - There is sufficient high-resolution to use this dataset for project scale work

Spatial Resolution	Temporal Resolution
Ok	Ok
Low	Low
Moderate	Moderate
High	High

Figure 18. Summary of Short-Hand Used in Data Gap Analysis Presentation

Data Type	Present?	Spatial Resolution	Temporal Resolution	Notes
Discharge infrastructure: volumes and types	X	Ok	Ok	NPDES permits
Ecoregions (ecoprovinces)	X	Ok	Ok	
Dams (river access)	X	Ok	Ok	
Road crossings	X	Ok	Ok	
Shoreline classification	X	Ok	Ok	
Stream mouths (watershed pour points)	X	Ok	Ok	
Watersheds	X	Ok	Ok	
Bottom ruggedness (rugosity)				GAP
Bottom slope	X	Low	Low	Derived depth & relief
Connectivity to adjacent habitats				GAP
Hydrogeoforms	X	Low	Low	Derived depth & relief
Relative exposure index (REI)				GAP
River substrate				GAP
Spawning reefs	X	Ok	An update?	Many old srcs, 2011
Substrate composition, variability, and distribution	X	Low	Low	2015, GLAHF 30-m
Water depth	X	High	Moderate	LMCP
Wave energy	X	Moderate	Moderate	USACE modeled results
Wave height	X	Low	High	GLOS buoy (no win. data)

Figure 19. Data Gap Summary for Physical Data

Data Type	Present?	Spatial Resolution	Temporal Resolution	Notes
Benthos (trophic str/function)	X	Moderate	High	GLNPO points, most recent 2011
Coastal wetlands	X	Moderate	Ok	MTRI 12.5-m
Fish (trophic str/function)	X	Moderate	Low	CSMI, may not be sufficient depending on project location
Plankton (trophic str/function)	X	Moderate	High	GLNPO data, may not be sufficient depending on project location
Prevalence of invasive species	X	Moderate	Moderate	GLANSIS, most recent 2014 Phragmites stands
Submerged aquatic vegetation (presence/absence)	X	Low	Low	Mich. Tech Research Inst, 2012, 30-m
Vegetation density				GAP
Vegetation heterogeneity				GAP
Vegetation morphotype				GAP
Vegetation species composition				GAP

Figure 20. Data Gap Summary for Biological Data

Data Type	Present?	Spatial Resolution	Temporal Resolution	Notes
Chlorophyll-a				GAP
Turbidity				GAP
Suspended minerals				GAP
Water temperature (incl. timing/variability)	X	Low	Moderate	Derived from NOAA coastwatch satellite
Dissolved oxygen				GAP
Turbidity				GAP

Figure 21. Data Gap Summary for Environmental Data

2.5 Collaborative Identification of Data Needs

Data was discussed two ways during the workshop. The two-step approach was used to try to encourage and capture conversations related to data throughout the course of the workshop. The first method was to use a data wall (Figures 22 and 23). On the data wall, workshop participants had the opportunity to identify two types of datasets: those that they needed and those that they had. Participants were also able to qualitatively identify the spatial resolution of the data (ranging from basin scale to local scale) and the temporal resolution of the data (ranging from sampled once to sampled annually). Table 6 summarizes the data needs identified using the data wall. Additional workshop discussion items related to data needs follow this table. Data summary worksheets filled out by workshop participants can be found in Attachment B.

The second way that data was discussed was by having participants return to their lake groups. Participants were asked to consider three questions:

1. Do you have data to fill the identified data gaps?
2. What data do you need to complete your proposed project?
3. What data do you need to identify and prioritize future projects?

The answers to these questions are summarized in Tables 7 and 8.

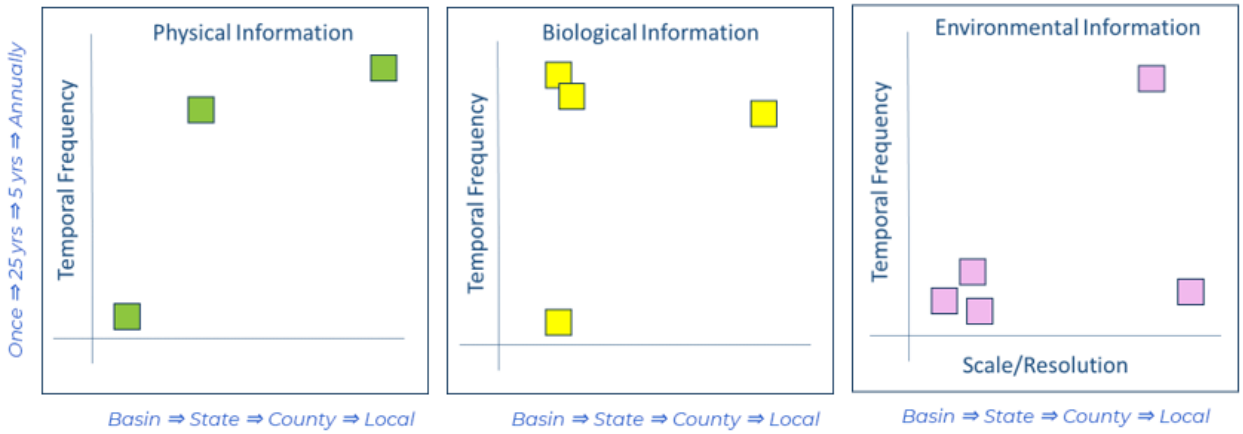

Figure 22. Conceptual Schematic of the Data Wall

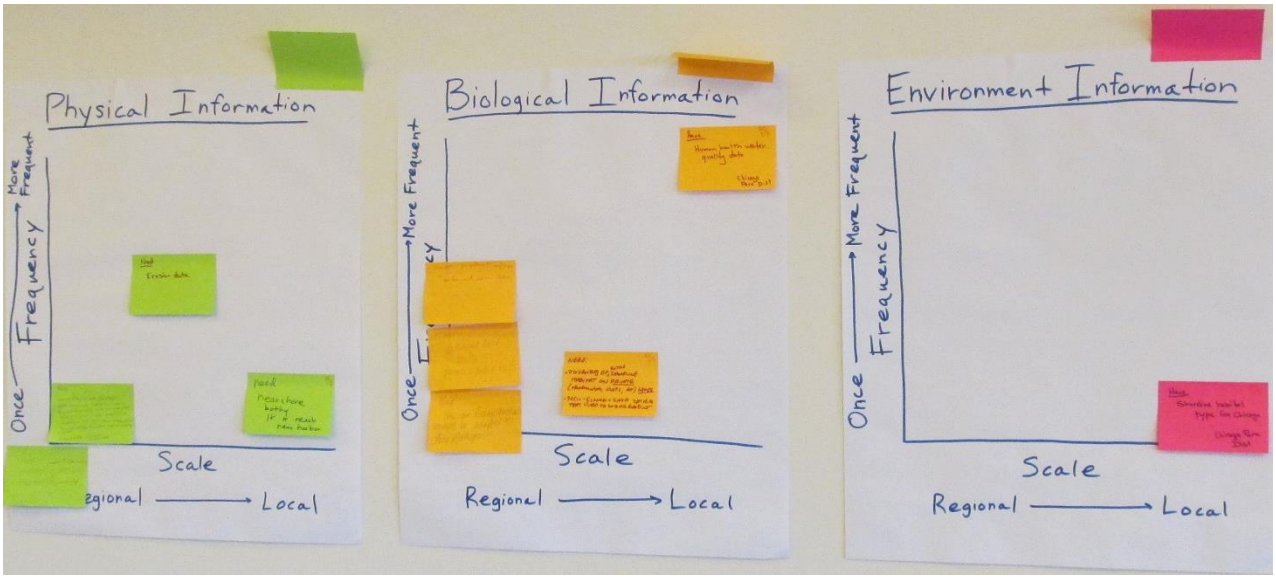

Figure 23. Data Wall for Physical and Biological Data Sets

Table 6. Summary of Datasets Included on the Data Wall

Data Type	Have or Need	Description	Temporal Scale	Spatial Scale	Contact or Notes
Physical	NEED	erosion data	~5-10 yrs	County	
	NEED	Inventory and assessment (age/function) of shoreline treatments (and ownership)	Once	Regional	
	HAVE	Federal EPA/IL EPA/IN DEM data on parcels that have received brownfield grants, no further action letters, RCRA, underground storage, active/closed landfills--with layers from USGS environment financial redevelopment incentives, land use/zoning in a GIS tool	Once	Regional	Sarah Coulter Calumet Collaborative
Biological	NEED	Socioeconomic data drivers that lead to engagement	Once	County	
	NEED	Inventory of entire shoreline habitat on private lands (homeowners, corporations, etc.)	Once	County	
	NEED	Nearshore pre-settlement conditions and how does current condition function	Once	Regional	
	NEED	Sediment load study for private and public lands	Once	Regional	
	NEED	How can living shoreline concepts be adapted to Lake Michigan	Once	Regional	
	HAVE	Shoreline habitat type for Chicago	Once	Local	Chicago Park District
	HAVE	Shoreline habitat type for Chicago	Once	Local	Chicago Park District
Environmental	HAVE	Human health water quality data	Annual	Local	No contact info provided

Table 7. Summary of Data Sets Available to Fill Data Gaps

Region	Data Set	Contact
North	Plants of concern	Gietel Keifer, Chicago Botanic Garden
	Strategic Subwatershed Identification Process for Illinois Lake Michigan Ravines (SSIP)—includes habitat quality/extent identification, and identifies erosion potential	Alliance for the Great Lakes & Lake County Storm Water Management
	Helicopter time domain electromagnetic method (HTEM). This data will provide nearshore substrate depth and distribution-sand, gravel, clay	Prairie Research Inst & Illinois Geologic Survey & IL DNR Coastal Management (D. Tecic)
	Illinois Natural Heritage Database	Tara Kieninger
	Lake County Green Infrastructure Model Strategy (GIMS)	Lake County Forest Preserve District
	E-Bird Lists	Conservation Bird Network
	Frog calling survey	
	Illinois butterfly survey	
	Bird studies Canada and amphibians	Kathy Jones
	Bird monitoring/important bird areas (potential)	Stephanie Beilke (stephani.beilke@audubon.org)
Central	Turbidity and chlorophyll-a for Chicago River	Tom Minarik & Jennifer Wasik Metropolitan Water Reclamation District
	Substrate composition/nearshore substrate mapping	Sarah Creque, et al, in Journal of Great Lakes Research Scot Peterson

South	No dataset listed	

Table 8. Summary of Data Needs by Region

Region	Need Type	What	Where	Why	Resolution	Availability
North	Project	Results of the Illinois Beach State Park and Lake County FP project	Illinois Beach State Park area	• Do we fully understand downstream project impacts and projects that have been implemented in other areas (regionally, nationally, and globally)? • What species do these projects support? • What are the long-term maintenance implications? • Living shorelines are a new concept that looks promising	No information provided	NOAA Restoration Center has a story map that summarizes living shoreline projects funded by the Restoration Center (Cassie Lovall)
	Prioritization	Water quality and biological (fish/bugs) on a more frequent basis	From north of Chicago to Wisconsin border	Existing data is not of sufficient density to ID relationship between biology and water quality	Temporal: Annual Spatial: Local	None mentioned by other participants
Central	Project	No project-level needs identified				
	Prioritization	Need data to identify aquatic and lakefront areas that warrant protection • Potential spawning sites for various fish species • Identification of fish nursery areas	Central region of Illinois coast	Would like to develop an early detection, rapid response data program like the one in Indiana	No information provided	None mentioned by other participants

Region	Need Type	What	Where	Why	Resolution	Availability
		• Wooded/brushy terrestrial areas for migratory bird resting sites • Species composition • Vegetation surveys				
South	Project	Water level monitoring data to assess whether the wetlands water levels are tied to Lake Michigan or if they are independent of the lake	Calumet region wetlands defined by the scope of the project	Will help with predictive modeling and long-term operations and maintenance	Temporal: Annual Spatial: Local	None mentioned by other participants
	Project	Annual LiDAR data for project areas that looks at interspersion of open water, extent of invasives, and emergent tracts	Calumet region wetlands defined by the scope of the project	Help to understand the potential for hemi marsh vegetation and prioritize areas of monitoring	Temporal: ~Annual Spatial: Basin	None mentioned by other participants
	Prioritization	Fish habitat assessment & habitat availability	Within 1 mile of the shoreline for all of IL	DNR may do riverine population communities, but not collecting much quality assessment data Will inform where to prioritize projects	Temporal: Annual Spatial: County/Local	None mentioned by other participants
	Prioritization	• Location of regionally important migratory bird habitats (layer for native shrub cover) • Native shrub cover layer	Illinois portion of Lake Michigan Basin, Chicago River, and	• Help prioritize migratory bird habitat restoration. • The shrub layer would help understand where bird food sources are.	Temporal: ~5 yrs Spatial: Basin	None mentioned by other participants

Region	Need Type	What	Where	Why	Resolution	Availability
			Calumet River			

3 Workshop Summary

3.1 Workshop Findings

3.1.1 Common Principles

Workshop participants identified four common principles that underlie many successful habitat restoration projects:

1. They involve collaborative planning and stakeholder engagement that occurs early and often to make sure all voices are heard.
2. They require funding that is reliable so that planning for the future can occur. These funds should also be flexible enough to adapt to emerging project needs.
3. They use sound science and a data driven decision making process so that the effects of the restoration process can be quantified. And,
4. They are sustainable into the future and take into account a wide variety of environmental conditions.

3.1.2 Common Goals

The top common goal identified by workshop participants are summarized in Table 9. It should be noted that while workshop attendees were able to come to consensus around common goals, they also recognized that, in many cases, the current data is insufficient to quantitatively assess these goals. The types of baseline data that workshop attendees would like to collect are outlined in section 2.5.

Table 9. Summary of Top Goals for Each Region Identified by Workshop Participants

Lake	Goal
North	Stabilize and enhance a to-be-determined percentage of coastal and riparian habitat for long-term resiliency by 2030
Central	Increase in-water and coastal habitats on Chicago/Evanston lakefront through sustainable onshore and nearshore practices (by a “to-be-determined” percentage)
South	Increase or modify the hydrologic connectivity of inland marshes with Lake Michigan to benefit breeding wetland birds and fish spawning, and native plant communities

3.1.3 Identification of Workshop Priorities

The results from the habitat restoration project prioritization process are summarized in Table 10. For further details about the projects in the table, see section 2.2. For details on the inclusion of the Rogers Park Project, see section 2.2. For further information about projects that were not ranked, please see Attachment A.

Table 10. Summary of Ranked Habitat Restoration Priorities Developed by Workshop Participants

Region	Map #	Project	Further Details	Final Rank
North	2+3	Living shoreline pilot projects	We want to study which living shoreline best management practices are most sustainable. This project would utilize sediment transport models proposed at Map location #1 and studies of on-the-ground projects to identify key, strategic locations for living shoreline pilot projects along the northern shoreline. Further details about the sediment modeling project can be found in Table 5.	1st
South	1+3	Thorn Creek floodplain and habitat restoration	This project involves dam removal and reconnecting the floodplain by connecting two wetlands at Indian Ridge Marsh and the Calumet River/Lake. • Cook County owned dam that is a known fish barrier • Sits in a large valley that could be converted into a wetland • Currently marsh birds are trying to use it but the current habitat isn't great	2nd
Central	1	Diversey Harbor Turf-to-Wetland Project	• This project would restore 15 acres of habitat that is flooded 80% of the time • Benefits multiple target species • Turnkey: this project is ready to go (ILCMP comment: "this project is currently moving forward with funding in 2020")	3rd
	2	Rogers Park lakefront protection and habitat creation	There is a hardscape building going into the lake. The project will increase elevation onshore, and be coupled with innovative offshore protections, including nearshore fish habitat. • Replace emergency erosion controls with innovative infrastructure that could create	4th

			habitat while protecting the lakefront and emergent vegetation. • Offshore protections to dissipate wave energy could create fish habitat • Good pilot site for creating fish habitat in the intertidal zone. S • Well supported by community. Many people want to preserve the lakefront. • We need a bit of engineering and modeling to support this. • Middle of the road in terms of readiness	

3.1.4 Data Needs

See section 2.5 for a tabular summary of data needs.

3.2 Next Steps

At the end of the workshop, Mike Molnar, from CSO, briefly discussed the next steps involved in this process:

- Information organization: we will sort through all the great information and develop a report that is to be shared with the coastal program
- Data gap filling: select data gaps identified during this workshop and others will be addressed for a limited portion of the shoreline from April 2020 through March 2021
- NOAA will be able to fund some engineering and design work for a subset of projects.
- Federal partners with funding available will convene during the spring to discuss the project priorities identified in the state-specific workshop and their potential fit with various funding streams.
- Continue the conversation – today has been a great conversation starter. We encourage you to continue the discussion among yourselves and partners.

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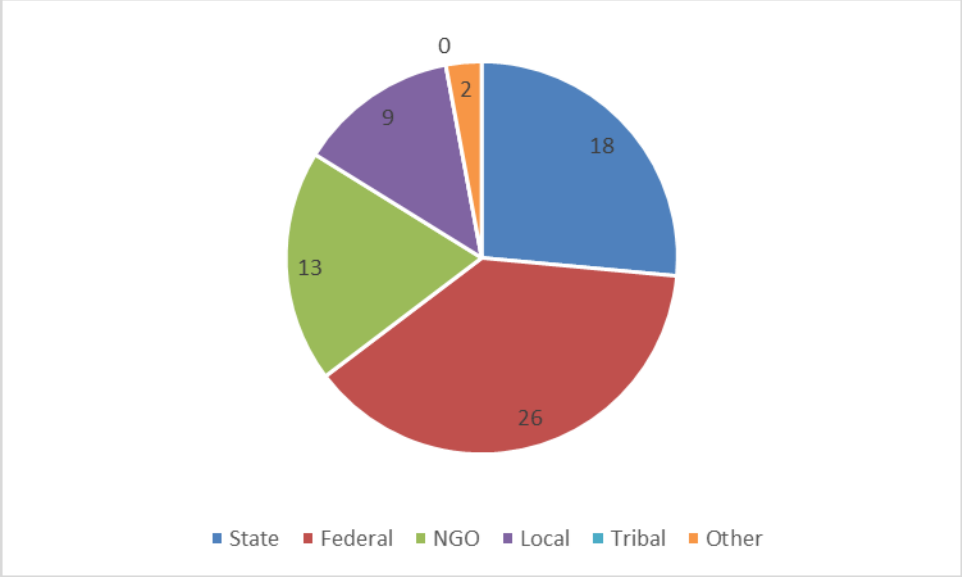
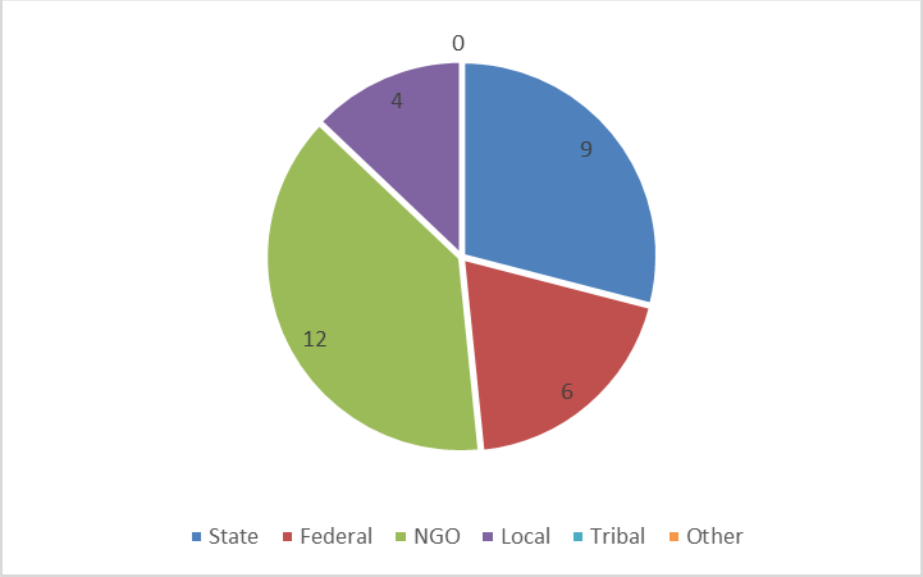
5 Workshop Attendee Summary

Breakdown of workshop invitees:



Breakdown of workshop participants:



The table below summarizes workshop participants and their contact information:

Last	First	Affiliation	Notes
Anderson	Jim	Lake County Forest Preserves	
Braun	Katie	University of Illinois, Illinois State Geological Survey	
Bucaro	David	US Army Corps of Engineers	
Coulter	Sarah	Calumet Collaborative	
Eskew	Cody	Illinois Department of Natural Resources, Coastal Management Program	
Freer	Matt	Chicago Park District	
Quail	John	Friends of the Chicago River	John Quail attending
Grill	Rebecca	Park District of Highland Park	
Grush	Jeremy	LimnoTech	
Holy	Pam	Chiwaukee Prairie Preservation Foundation	
Kreiling	Kim	Department of Natural Resources, Coastal Management Program	
London	Ryan	Lake Forest Open Lands	
Lovall	Cassie	NOAA	
Mariscol	Refugio	Audubon Great Lakes	
Masters	Linda	Openlands	
McClain	Kaitlyn	US Army Corps of Engineers	
Molnar	Mike	Coastal States Organization	
Monks	Andrew	Loyola University	
O'Leary	Charles	Forest Preserve District of Cook County	
Olinger	Diana	NOAA	
Padilla	Julie	LimnoTech	
Peterson	Scot	University of Illinois, Illinois Natural History Survey	
Potthoff	Johnna	US Army Corps of Engineers	
Prusila	Michael	Lake County Stormwater Mgmt. Commission	
Redman	Rebecca	Department of Natural Resources, Lake Michigan Fisheries Program	
Redmer	Michael	Fish and Wildlife Service	
Ricketts	Liz	Park District of Highland Park	
Santucci	Victor	Department of Natural Resources, Lake Michigan Fisheries Program	
Sebetto	Casey	Department of Natural Resources, Coastal Management Program	
Semel	Brad	Department of Natural Resources	
Sentell	John	Lake Forest Open Lands	
Smith	Tom		

Last	First	Affiliation	Notes
Suarez	Daniel	Audubon Great Lakes	
Willink	Philip	Endangered Species Protection Board	
Wilson	Don	Audubon, Illinois Beach State Park	

6 Glossary

Benthos: biotic organisms that are found at the bottom of water bodies.

Ecoregion: A major ecosystem that has a unique geography and receives consistent sunlight and moisture.

Hydrogeoforms: Underwater geologic structures. Hydrogeoforms include features such as underwater reefs, plains, and ridges.

Relative exposure index (REI): The relative exposure index is the effective fetch of a waterbody scaled by mean wind speed. The effective fetch is the length of a waterbody where the wind blows in a consistent direction. Together, fetch and wind speed determine wave size and energy. Ultimately, areas with lower relative exposure index provide better fish habitat.

Trophic structure/function (trophic str/func): Describes the relationship between different organisms within the food web of an ecosystem.

Attachment A

Project Summary Worksheets

C

Priority Project and Location Worksheet

Project number: 1 - Diversey Harbor

NUMBER THIS PROJECT ACCORDING TO DIRECTIONS PROVIDED DURING THE WORKSHOP. THEN WRITE THE SAME PROJECT NUMBER ON A STICKY DOT AND ATTACH THE STICKY DOT TO THE LOCATION ON THE MAP THAT CORRESPONDS TO THIS PROJECT.

1. Which goal statement does this this project *primarily* address? ~~#2~~ Central #1

2. Which goal statements does this project *support*? _____

3. The project category (circle one):
   Protection Enhancement (Restoration (reestablishment)) (Rehabilitation)

4. The proposed action (invasive species removal, wetland restoration, shoreline stabilization, fish barrier removal):
   Convert turf to wetland / bioswale
   ~15 Acres

5. The desired change that the project intends to accomplish (improve/restore/reduce):
   Reduce flooding

6. Targeted species that benefits from actions:
   Bird habitat, pollinator species habitat

7. Spatial extent/acreage: ~15 Acres

8. Current/past condition of the site:
   Flooding frequently - 80+% of time
   No habitat value

9. Social, political and physical context of the project:
   Community + Aldermanic support for project

10. Potential partners:
    IDNR Coastal, Park District (Chicago owns), Alderman

11. Unmet data needs:
    hydrological data assessment (do-able)
    pre- and post- monitoring: hydrology + species

12. Readiness (1=ready!; 5=concept stage): (1) 2 3 4 5

C

Priority Project and Location Worksheet

Project number: 2 - Juneway Beach Area - Rogers Park

NUMBER THIS PROJECT ACCORDING TO DIRECTIONS PROVIDED DURING THE WORKSHOP. THEN WRITE THE SAME PROJECT NUMBER ON A STICKY DOT AND ATTACH THE STICKY DOT TO THE LOCATION ON THE MAP THAT CORRESPONDS TO THIS PROJECT.

1. Which goal statement does this this project *primarily* address? Central #1

2. Which goal statements does this project *support*?

3. The project category (circle one):
   (Protection) Enhancement (Restoration (reestablishment)) Rehabilitation

4. The proposed action (invasive species removal, wetland restoration, shoreline stabilization, fish barrier removal):
   Increase elevation onshore, coupled with innovative offshore protections (energy dissapating) including near shore fish habitat

5. The desired change that the project intends to accomplish (improve/restore/reduce):
   Reduce erosion while increasing aquatic habitat

6. Targeted species that benefits from actions:
   yellow perch, native aquatic plants, cisco, birds, dune species, bass, pike, walleye, etc!

7. Spatial extent/acreage: TBD

8. Current/past condition of the site:
   Severly erosion, crumbling hard scape
   Current emergency erosion controls

9. Social, political and physical context of the project:
   Support from community for anything to protect infrastructure

10. Potential partners:
    IDNR Coastal, DNR Fisheries, ACOE, Am. Fisheries Society
    Alderman, Chicago Park Dist.

11. Unmet data needs:
    Erosion metrics, hydrological modeling

12. Readiness (1=ready!; 5=concept stage): 1 (2) (3) 4 5

C

Priority Project and Location Worksheet

Project number: 3 - Lincoln Park / Uptown

NUMBER THIS PROJECT ACCORDING TO DIRECTIONS PROVIDED DURING THE WORKSHOP. THEN WRITE THE SAME PROJECT NUMBER ON A STICKY DOT AND ATTACH THE STICKY DOT TO THE LOCATION ON THE MAP THAT CORRESPONDS TO THIS PROJECT.

1. Which goal statement does this this project *primarily* address? _____

2. Which goal statements does this project *support*? _____

3. The project category (circle one):
   Protection Enhancement Restoration (reestablishment) (Rehabilitation)

4. The proposed action (invasive species removal, wetland restoration, shoreline stabilization, fish barrier removal):
   * Migratory bird Sanctuary btwn. Marine + Lakeshore Drive

5. The desired change that the project intends to accomplish (improve/restore/reduce):
   Create habitat for mig. birds + pollinators

6. Targeted species that benefits from actions:

7. Spatial extent/acreage: ~10 acres

8. Current/past condition of the site:
   TURF

9. Social, political and physical context of the project:
   support from coalition of residents + environmental, human health orgs. - 20+ orgs

10. Potential partners:
    Uptown Coastal Initiative (Coalition), Chicago Park District, IDNR Coastal,

11. Unmet data needs:
    Pre- + post- assessment

12. Readiness (1=ready!; 5=concept stage): 1 (2) 3 4 5

C

Priority Project and Location Worksheet

Project number: 4 - Lakefront Near La Rabida Hospital

NUMBER THIS PROJECT ACCORDING TO DIRECTIONS PROVIDED DURING THE WORKSHOP. THEN WRITE THE SAME PROJECT NUMBER ON A STICKY DOT AND ATTACH THE STICKY DOT TO THE LOCATION ON THE MAP THAT CORRESPONDS TO THIS PROJECT.

1. Which goal statement does this this project *primarily* address? _____

2. Which goal statements does this project *support*? _____

3. The project category (circle one):
   Protection Enhancement Restoration (reestablishment) (Rehabilitation)

4. The proposed action (invasive species removal, wetland restoration, shoreline stabilization, fish barrier removal):
   Plan for offshore wave dissapation utilizing existing onshore rubble, and establish dune/ swale along shore, including fish hook breakwater.

5. The desired change that the project intends to accomplish (improve/restore/reduce):
   Protect infrastructure, increase/create habitat for fish, birds, re-establish dune habitat

6. Targeted species that benefits from actions:
   fish, water fowl
   ↓perch, cisco, etc (GLRI Action Species)

7. Spatial extent/acreage: TBD ($!) (how much Lake?)

8. Current/past condition of the site:
   Rubble / Concrete Shoreline

9. Social, political and physical context of the project:
   TBD

10. Potential partners:
    ACOE, IDNR FISH, IDNR COASTAL, Chicago Park District, IDOT, La Rabida

11. Unmet data needs:
    Engineering design

12. Readiness (1=ready!; 5=concept stage): 1 2 3 4 (5)

C

Priority Project and Location Worksheet

Project number: 5 - Artificial Reef off Jackson

NUMBER THIS PROJECT ACCORDING TO DIRECTIONS PROVIDED DURING THE WORKSHOP. THEN WRITE THE SAME PROJECT NUMBER ON A STICKY DOT AND ATTACH THE STICKY DOT TO THE LOCATION ON THE MAP THAT CORRESPONDS TO THIS PROJECT.

1. Which goal statement does this this project *primarily* address? _____

2. Which goal statements does this project *support*? _____

3. The project category (circle one):
   Protection (Enhancement) Restoration (reestablishment) Rehabilitation

4. The proposed action (invasive species removal, wetland restoration, shoreline stabilization, fish barrier removal):
   Enhancing Artificial reef

5. The desired change that the project intends to accomplish (improve/restore/reduce):
   Enhance to provide more habitat / fish spawning

6. Targeted species that benefits from actions:
   Fish

7. Spatial extent/acreage: 500 - 1000 ft.

8. Current/past condition of the site:
   Built in pattern that could be enhanced w/ natural materials

9. Social, political and physical context of the project:
   N/A

10. Potential partners:
    DNR fisheries, ACOE, INHS

11. Unmet data needs:
    ~~N/A~~ TBD
    Engineering

12. Readiness (1=ready!; 5=concept stage): 1 2 3 (4) 5

NORTH

Priority Project and Location Worksheet

Project number: 1: model sediment transport

NUMBER THIS PROJECT ACCORDING TO DIRECTIONS PROVIDED DURING THE WORKSHOP. THEN WRITE THE SAME PROJECT NUMBER ON A STICKY DOT AND ATTACH THE STICKY DOT TO THE LOCATION ON THE MAP THAT CORRESPONDS TO THIS PROJECT.

1. Which goal statement does this this project *primarily* address? ~~STATE~~ SHORELINE STABILIZATION & HABITAT ENHANCEMENT

2. Which goal statements does this project *support*? #1

3. The project category (circle one):
   Protection Enhancement Restoration (reestablishment) THRU PILOTS Rehabilitation

4. The proposed action (invasive species removal, wetland restoration, shoreline stabilization, fish barrier removal):
   1) MODELS / EXAMINES ~~THE~~ ENTIRE NORTH ~~SHORELINE~~ COASTLINE AS INTEGRATED HABITAT / MASTER PLAN
   2) IDENTIFY ~~INVASIVE~~ (STUDY) ON-THE-GROUND PILOT PROJECTS (SUCH AS BEING DEMONSTRATED AT ILLINOIS BEACH)
   3) RE-EXAMINE / ALIGN ACTIVITIES ~~OF~~ IN A PRO-ACTIVE MANNER (PERMITTING, PLANNING, INFRASTRUCTURE REPAIR)
   4) SEEK TO FACILITATE PUBLIC / PRIVATE PARTNERSHIP
   DEVELOP A ~~PLAN~~ MASTER PLAN
   OUT OF THAT STUDY ...

5. The desired change that the project intends to accomplish (improve/restore/reduce):
   1) MORE RESILIENT ~~HABITAT~~ HABITAT FOR FISH & BIRDS BY STABILIZA
   2) MORE HOLISTIC APPROACH TO REGIONAL ISSUE
   3) ADDRESS THE UNCERTAINTY OF A CHANGING CLIMATE

6. Targeted species that benefits from actions:
   - FISH (SMALLER & LARGER)
   - MIGRATING BIRDS / SHORELINE / WATERFOWL
   - SUPPORTING CRITICAL PLANT SPECIES

7. Spatial extent/acreage: FROM ILL BEACH STATE PARK ~~TO~~ SOUTH TO BUILT INFRASTRUCTURE OF L. FOREST / HIGHLAND PARK

8. Current/past condition of the site:
   VARIED

9. Social, political and physical context of the project:
   - REQUIRES IMMENSE COORDINATION

10. Potential partners:
    USACE, IDNR, MUNICIPALITIES, LAKE FOREST OPEN LANDS, INDR, Openlands

11. Unmet data needs:
    ~~THIS~~ WILL GATHER AND CONSOLIDATE DATA NEEDED ~~TO~~ FOR IMPACT

12. Readiness (1=ready!; 5=concept stage): (1) 2 3 4 5

#3 project combined w/ #2 (this sheet) NORTH

Priority Project and Location Worksheet

Project number: 2: Living shorelines @ McCormick to Highland Park

NUMBER THIS PROJECT ACCORDING TO DIRECTIONS PROVIDED DURING THE WORKSHOP. THEN WRITE THE SAME PROJECT NUMBER ON A STICKY DOT AND ATTACH THE STICKY DOT TO THE LOCATION ON THE MAP THAT CORRESPONDS TO THIS PROJECT. "pilot projects"

1. Which goal statement does this this project *primarily* address? N1

2. Which goal statements does this project *support*? N1 + N2

3. The project category (circle one):
   Protection (circled) Enhancement (circled) Restoration (reestablishment) Rehabilitation (circled)

4. The proposed action (invasive species removal, wetland restoration, shoreline stabilization, fish barrier removal):
   Taking the outcomes from project #1, we will identify key strategic locations for 'living shoreline pilot projects'.

5. The desired change that the project intends to accomplish (improve/restore/reduce):
   Comprehensive collaborative effort to protect, enhance + rehabilitate the coastal zone into a resilient regional asset. By sustainably facilitating coastal processes i.e. wave energy.

6. Targeted species that benefits from actions:
   Bat fish species, dune species, shoreline birds, bluff RTE species

7. Spatial extent/acreage: 3 miles

8. Current/past condition of the site:
   mix of high quality natural area that is highly impacted by erosion.

9. Social, political and physical context of the project:
   Public space, Gov't, NGOs, Military, Private property. L.M. Watershed Lake Forest, Ft. Sheridan, Highwood, Highland Park

10. Potential partners:
    LFOLA, city of Lake Forest .. Highland Park, Highwood, Openlands, LCFPD, Lake County SMC

11. Unmet data needs:
    Model of interface between litoral transport + current shoreline treatments. Impact of Climate (wave, ice,

12. Readiness (1=ready!; 5=concept stage): 1 2 (3) 4 5

NORTH

Priority Project and Location Worksheet

Project number: 4: Hosan Park

NUMBER THIS PROJECT ACCORDING TO DIRECTIONS PROVIDED DURING THE WORKSHOP. THEN WRITE THE SAME PROJECT NUMBER ON A STICKY DOT AND ATTACH THE STICKY DOT TO THE LOCATION ON THE MAP THAT CORRESPONDS TO THIS PROJECT.

1. Which goal statement does this this project *primarily* address? Living shoreline protection
2. Which goal statements does this project *support*? " " "
3. The project ~~category~~ (circle one):
   (Protection) Enhancement Restoration (reestablishment) Rehabilitation
4. The proposed action (invasive species removal, wetland restoration, shoreline stabilization, fish barrier removal):
   Off shore reef/revetment to reduce wave energy
5. The desired change that the project intends to accomplish (improve/restore/reduce):
   Reduce rate of erosion
6. Targeted species that benefits from actions:
   migratory birds, ducks
7. Spatial extent/acreage: 22.7 acres
8. Current/past condition of the site:
   High quality natural areas. Panne wetlands
9. Social, political and physical context of the project:
   City of Zion - Zion Park District
10. Potential partners:
    TNC, Park District, IDNR
11. Unmet data needs:
    modelling sand movement
12. Readiness (1=ready!; 5=concept stage): 1 (2) 3 4 5

NORTH

Priority Project and Location Worksheet

Project number: 5: Waukegan Beach

NUMBER THIS PROJECT ACCORDING TO DIRECTIONS PROVIDED DURING THE WORKSHOP. THEN WRITE THE SAME PROJECT NUMBER ON A STICKY DOT AND ATTACH THE STICKY DOT TO THE LOCATION ON THE MAP THAT CORRESPONDS TO THIS PROJECT.

1. Which goal statement does this this project *primarily* address? Shoreline stabilization/Restoration

2. Which goal statements does this project *support*? _____

3. The project category (circle one):
   Protection Enhancement Restoration (reestablishment) Rehabilitation

4. The proposed action (invasive species removal, wetland restoration, shoreline stabilization, fish barrier removal):
   Dune + wetland restoration

5. The desired change that the project intends to accomplish (improve/restore/reduce):
   Reestablish + restoration of pre-settlement habitat (birds + dunes plants)

6. Targeted species that benefits from actions:
   Piping plover, Common tern, other breeding and migratory birds. 11 endangered/threatened plant species

7. Spatial extent/acreage: 47 acres

8. Current/past condition of the site:
   Unmanaged open space (current), past industrial site

9. Social, political and physical context of the project:
   Waukegan Beach is a popular recreational site for area resident, important breeding + stopover site for birds

10. Potential partners:
    IDNR, Waukegan Harbor Citizens Advisory Group, Audubon Great Lakes, Lake County Audubon, City of Waukegan, Chicago Botanic Garden

11. Unmet data needs:
    Funding

12. Readiness (1=ready!; 5=concept stage): 1 2 3 4 5

NORTH

Priority Project and Location Worksheet

Project number: 6: Rosewood Beach

NUMBER THIS PROJECT ACCORDING TO DIRECTIONS PROVIDED DURING THE WORKSHOP. THEN WRITE THE SAME PROJECT NUMBER ON A STICKY DOT AND ATTACH THE STICKY DOT TO THE LOCATION ON THE MAP THAT CORRESPONDS TO THIS PROJECT.

1. Which goal statement does this this project *primarily* address? Shoreline stabilization
2. Which goal statements does this project *support*? Shoreline Stabilization
3. The project category (circle one):
   Protection (Enhancement) Restoration (reestablishment) Rehabilitation
4. The proposed action (invasive species removal, wetland restoration, shoreline stabilization, fish barrier removal):
   Shoreline stabilization
5. The desired change that the project intends to accomplish (improve/restore/reduce):
   reduce erosion of sand
6. Targeted species that benefits from actions:
   reducing sediment loading - nearshore fisheries
7. Spatial extent/acreage: > 1 acre
8. Current/past condition of the site:
   restored beach but w. public access swimming. Impacted by high lake levels
9. Social, political and physical context of the project:
   public swimming beach + educational center for community
10. Potential partners:
11. Unmet data needs:
    Information on potential green/living shoreline solutions
12. Readiness (1=ready!; 5=concept stage): 1 2 3 4 (5)

NORTH

Priority Project and Location Worksheet

Project number: 7 Kellogg Creek Protection of Shoreline Connectivity AND/OR

NUMBER THIS PROJECT ACCORDING TO DIRECTIONS PROVIDED DURING THE WORKSHOP. THEN WRITE THE SAME PROJECT NUMBER ON A STICKY DOT AND ATTACH THE STICKY DOT TO THE LOCATION ON THE MAP THAT CORRESPONDS TO THIS PROJECT.

1. Which goal statement does this this project *primarily* address? 1

2. Which goal statements does this project *support*? 1 & 2

3. The project category (circle one):
   Protection | Enhancement | Restoration (reestablishment) | Rehabilitation

4. The proposed action (invasive species removal, wetland restoration, shoreline stabilization, fish barrier removal):
   Protect & mouth of Kellogg Creek and/or allow drainage of creek (connectivity to Lake Michigan)

5. The desired change that the project intends to accomplish (improve/restore/reduce):
   Reduce flooding; improve connectivity improve shoreline stabilization

6. Targeted species that benefits from actions:
   Suckers, Yellow Perch, Lake Sturgeon, Waterfowl and native plantings

7. Spatial extent/acreage: North Unit of IBSP

8. Current/past condition of the site:
   channelized creek w/ extensive bank erosion & flooding @ Camp Logan

9. Social, political and physical context of the project:
   Social - impacts public/visitors to IBSP as well as facilities of INHS/LMBS
   Physical - connectivity to LM & improve shoreline stabilization

10. Potential partners:
    ACE, IDNR, INHS (monitoring), others?

11. Unmet data needs:
    best management/mitigation features still undecided possibly a pilot underway w/ ACE also connected to work needed @ Hosah Park $

12. Readiness (1=ready!; 5=concept stage): 1 2 3 4 5

1) Stabilize & enhance X% of coastal & riparian habitat for long-term resiliency by 2030

2) Improve connectivity to optimize aquatic & terrestrial habitats.

NORTH

Priority Project and Location Worksheet

Project number: 7: Kellogg Creek / Drainage or Protection of Shoreline

NUMBER THIS PROJECT ACCORDING TO DIRECTIONS PROVIDED DURING THE WORKSHOP. THEN WRITE THE SAME PROJECT NUMBER ON A STICKY DOT AND ATTACH THE STICKY DOT TO THE LOCATION ON THE MAP THAT CORRESPONDS TO THIS PROJECT.

1. Which goal statement does this this project *primarily* address? [redacted] 1

2. Which goal statements does this project *support*? 1 & 2

3. The project category (circle one):
   Protection (Enhancement) (Restoration (reestablishment)) Rehabilitation

4. The proposed action (invasive species removal, wetland restoration, shoreline stabilization, fish barrier removal):
   connect mouth of Kellog creek to Lake Michigan & improve drainage of runoff or create drainage system/catchment for west of RR tracks @ North Unit

5. The desired change that the project intends to accomplish (improve/restore/reduce):
   improve connectivity,

6. Targeted species that benefits from actions:
   Suckers, yellow perch, killifish, waterfowl

7. Spatial extent/acreage: North Unit Illinois Beach State Park

8. Current/past condition of the site:
   Flooding

9. Social, political and physical context of the project:

10. Potential partners:

11. Unmet data needs:

12. Readiness (1=ready!; 5=concept stage): 1 2 3 4 5

Stabilize & enhance X % of coastal & riparian habitat for long-term resiliency by 2030

5

Priority Project and Location Worksheet

Project number: 1) Thorn Creek

NUMBER THIS PROJECT ACCORDING TO DIRECTIONS PROVIDED DURING THE WORKSHOP. THEN WRITE THE SAME PROJECT NUMBER ON A STICKY DOT AND ATTACH THE STICKY DOT TO THE LOCATION ON THE MAP THAT CORRESPONDS TO THIS PROJECT.

1. Which goal statement does this this project *primarily* address? ~~Increase~~ or modify hydraulic connectivity of Thorn creek nature preserve to Little Calumet River
2. Which goal statements does this project *support*? fish/bird
3. The project category (circle one):
   Protection | (Enhancement) | (Restoration (reestablishment)) | Rehabilitation
4. The proposed action (invasive species removal, wetland restoration, shoreline stabilization, fish barrier removal):
   Remove dam, wetland connection + working w/ creek to raise beds so water overflows or remove vegetation - need to study to figure out best option
5. The desired change that the project intends to accomplish (improve/restore/reduce):
   migratory bird habitat, marsh birds., darter population which is an indicator species for connected waters.
6. Targeted species that benefits from actions:
   stop over and breeding habitat, darters population
7. Spatial extent/acreage: removing dam would result in a connecting open stretch, acreage need to study
8. Current/past condition of the site:
   there as dam, potential PCB
9. Social, political and physical context of the project:
   dam removal have potential to be controversial
10. Potential partners:
    USACE, Forest Preserve Cook County, Governor State University
11. Unmet data needs:
    everything we wrote needs study, SW contaminant, with proj condition assessment
12. Readiness (1=ready!; 5=concept stage): 1 2 (3) 4 5

5

Priority Project and Location Worksheet

Project number: 2) Plum Creek

NUMBER THIS PROJECT ACCORDING TO DIRECTIONS PROVIDED DURING THE WORKSHOP. THEN WRITE THE SAME PROJECT NUMBER ON A STICKY DOT AND ATTACH THE STICKY DOT TO THE LOCATION ON THE MAP THAT CORRESPONDS TO THIS PROJECT.

1. Which goal statement does this this project *primarily* address? increase or modify the hydraulic connectivity ~~Plum Creek~~ wetlands surround Plum Creek
2. Which goal statements does this project *support*? fish/birds
3. The project category (circle one):
   Protection (Enhancement) (Restoration (reestablishment)) Rehabilitation
4. The proposed action (invasive species removal, wetland restoration, shoreline stabilization, fish barrier removal): veg / invasive removal, more study to assess whether earthwork is needed
5. The desired change that the project intends to accomplish (improve/restore/reduce): enhance or expanded floodplain migratory bird fish habitat starter
6. Targeted species that benefits from actions: wetland birds, ~~mig~~ migratory eastern massasaga (snake).
7. Spatial extent/acreage: See #1
8. Current/past condition of the site:
9. Social, political and physical context of the project: Thorn Creek minus the dam removal
10. Potential partners:
11. Unmet data needs:
12. Readiness (1=ready!; 5=concept stage): 1 2 3 4 5

5

Priority Project and Location Worksheet

Project number: 3 Sweet Woods

NUMBER THIS PROJECT ACCORDING TO DIRECTIONS PROVIDED DURING THE WORKSHOP. THEN WRITE THE SAME PROJECT NUMBER ON A STICKY DOT AND ATTACH THE STICKY DOT TO THE LOCATION ON THE MAP THAT CORRESPONDS TO THIS PROJECT.

1. Which goal statement does this this project *primarily* address? _____

2. Which goal statements does this project *support*? _____

3. The project category (circle one):
   Protection Enhancement Restoration (reestablishment) Rehabilitation

4. The proposed action (invasive species removal, wetland restoration, shoreline stabilization, fish barrier removal):
   _____
   _____

5. The desired change that the project intends to accomplish (improve/restore/reduce):
   _____
   _____

6. Targeted species that benefits from actions:
   _____
   _____

7. Spatial extent/acreage: _____

8. Current/past condition of the site:
   _____
   _____

9. Social, political and physical context of the project:
   _____
   _____

10. Potential partners:
    _____
    _____

11. Unmet data needs:
    _____
    _____

12. Readiness (1=ready!; 5=concept stage): 1 2 3 4 5

Same as Thorn Creek but w/o the dam removal

open river
25 ~~line~~ miles ~~of~~
~~fish passage~~ ~~open~~
~~creat~~ connected
and hundreds of
acreages wetlands improved

Priority Project and Location Worksheet

(4) (5) 5

Project number: Indian Ridge South / Sepa Station / Hegewisch Marsh

NUMBER THIS PROJECT ACCORDING TO DIRECTIONS PROVIDED DURING THE WORKSHOP. THEN WRITE THE SAME PROJECT NUMBER ON A STICKY DOT AND ATTACH THE STICKY DOT TO THE LOCATION ON THE MAP THAT CORRESPONDS TO THIS PROJECT.

1. Which goal statement does this this project *primarily* address? S1
2. Which goal statements does this project *support*? S1
3. The project category (circle one):
   Protection Enhancement Restoration (reestablishment) Rehabilitation
4. The proposed action (invasive species removal, wetland restoration, shoreline stabilization, fish barrier removal):
   manipulate / lower water levels to stimulate native vegetation & prevent invasive species, regrade hard shorelines to introduce more gradual sloping to water
   eliminate carp
5. The desired change that the project intends to accomplish (improve/restore/reduce):
   mimic natural water fluctuations ~~promote~~ to create hemi marsh habitat
6. Targeted species that benefits from actions:
   Secretive marsh birds, water fowl, fish species
7. Spatial extent/acreage: 60 / 40
8. Current/past condition of the site:
   former AOC, past cardoto/ neglected unmanaged of impounded water
   in transition some work started (1 year) dominated by phragmites
9. Social, political and physical context of the project:
   CPD working to carve out spaces for passive recreation community wants more Park/BBQ areas
10. Potential partners:
    MWRD, CPD, Audubon, TWI, SETF, IL DNR
11. Unmet data needs:
    water quality, Bird counts, real time water level data
12. Readiness (1=ready!; 5=concept stage): (1) 2 3 4 5

S

Priority Project and Location Worksheet

Project number: 6) Burnham Prairie Preserve (Nature)

NUMBER THIS PROJECT ACCORDING TO DIRECTIONS PROVIDED DURING THE WORKSHOP. THEN WRITE THE SAME PROJECT NUMBER ON A STICKY DOT AND ATTACH THE STICKY DOT TO THE LOCATION ON THE MAP THAT CORRESPONDS TO THIS PROJECT.

1. Which goal statement does this this project *primarily* address? increase/modify hydraulic connectivity of marsh within Nature Preserve

2. Which goal statements does this project *support*? migratory birds, secretive marshbirds

3. The project category (circle one):
   Protection Enhancement (Restoration (reestablishment)) Rehabilitation

4. The proposed action (invasive species removal, wetland restoration, shoreline stabilization, fish barrier removal): installation of a water control structure at the site

5. The desired change that the project intends to accomplish (improve/restore/reduce): flood control
   Marsh sits against a berm to ~~tie~~ Cal River – put a water control structure to help regulate water

6. Targeted species that benefits from actions: ~~Marsh is critical to~~ Most diverse site for marsh birds in Cal Region studied by Audobon

7. Spatial extent/acreage: would connect ~~8~~ 25 acres of marsh

8. Current/past condition of the site:
   Marsh currently just fills w/ water and doesn't have a way out b/c of flood control berm (see flip side)

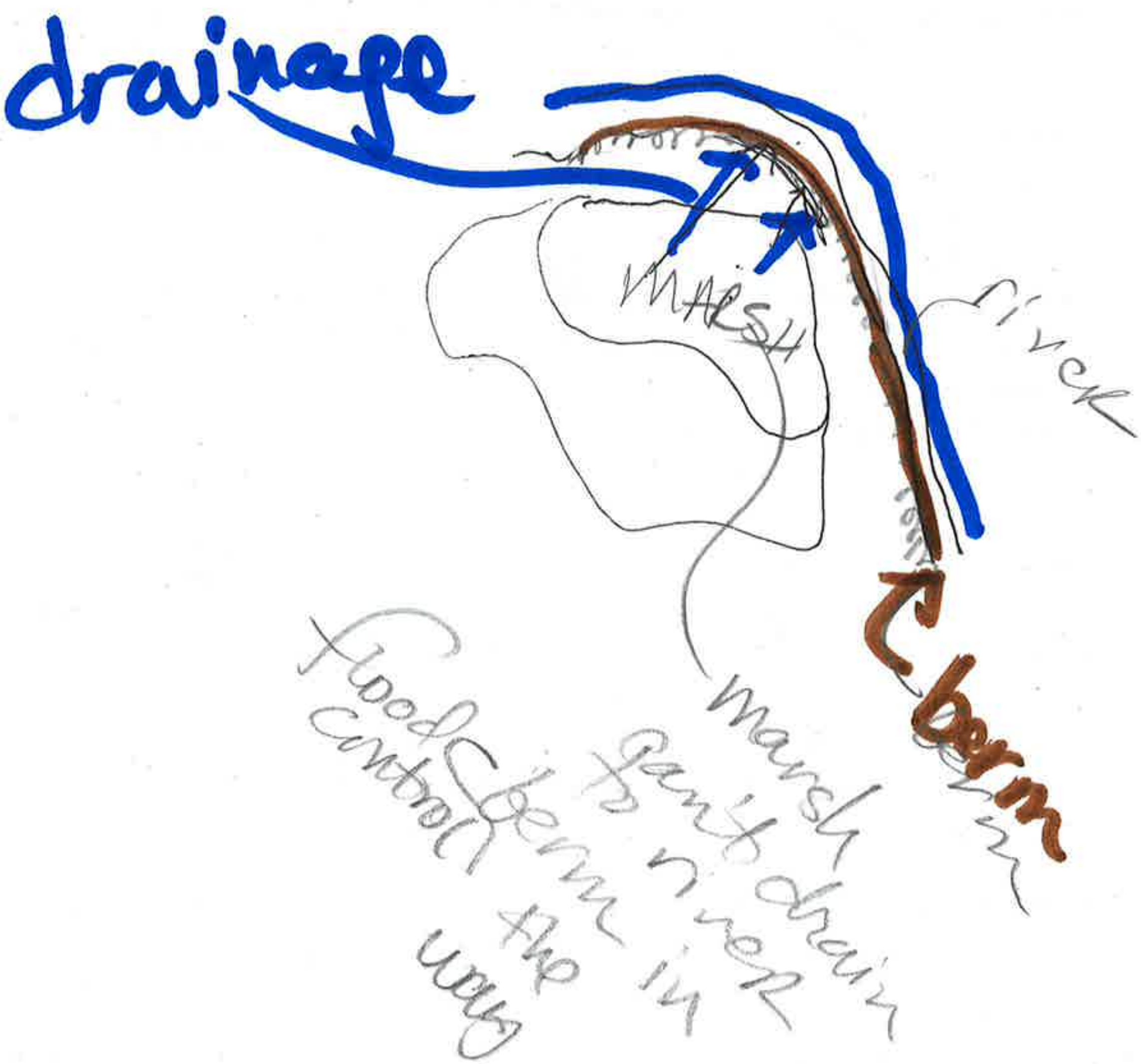
9. Social, political and physical context of the project:
   relatively inaccessible

10. Potential partners: USACE, Audobon, the Nature Conservancy, Nature Preserve Comm

11. Unmet data needs: Design to get structure

12. Readiness (1=ready!; 5=concept stage): 1 (2) 3 4 5
    ↳ have done a lot of work w/ USACE already

2


drainage
MARSH
river
berm
berm
marsh can't drain to river
flood control
berm in the way

Attachment B

Data Summary Worksheets

Data Needs for Projects and Planning Worksheet

Group: Central

DO YOU HAVE DATA TO FILL OUR DATA GAPS?

1. Data description:
① Turbidity + Chlorophyll-a (Chicago River), maybe other env. data
-Other Environmental habitat data can be found through Municipalities (Jardin Water Plant, etc)
② Substrate composition

2. Location:
① (MWRD) METROPOLITAN WATER RECLAMATION DISTRICT
② IL Natural History Survey. In Journal of Great Lakes Research, Sarah Creque et. al. (Nearshore substrate mapping)

3. Contact:
① Tom Minarik, biologist & Jennifer Wasik
② Scot Peterson

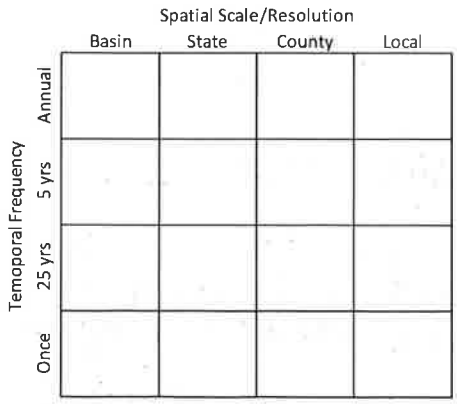
WHAT DATA DO YOU NEED TO COMPLETE YOUR PROPOSED PROJECT?

4. Data description:

5. Location:

6. Why is this data important:

7. Estimate of temporal frequency and scale ("X" the box that matches your preferred spatial and temporal scale):



8. Additional Notes:

WHAT DATA DO YOU NEED TO IDENTIFY AND PRIORITIZE FUTURE PROJECTS?

9. Data description:
Species Composition, Vegetation Surveys

10. Location:
(EDR) Early Detection, Rapid Response data - may move to IL, doesn't exist yet

11. Why is this data important:

12. Estimate of temporal frequency and scale ("X" the box that matches your preferred spatial and temporal scale):

Temoporal Frequency	Spatial Scale/Resolution: Basin	State	County	Local
Annual				
5 yrs				
25 yrs				
Once				

13. Additional Notes:

Data to identify aquatic + lakefront areas that warrant protection.
- Potential spawning sites for various fish species
- Connected wetlands + Areas of Submersed Aquatic Vegetation acting as fish nursery Areas
- Riparian corridor habitat
- Wooded/marshy terrestrial areas for migratory bird resting sites

N

Data Needs for Projects and Planning Worksheet

Group: LIVING SHORELINE

DO YOU HAVE DATA TO FILL OUR DATA GAPS?

1. Data description:

2. Location:

3. Contact:

WHAT DATA DO YOU NEED TO COMPLETE YOUR PROPOSED PROJECT?

4. Data description:
RESULTS OF ILL BEACH S.P. AND LAKE COUNTY F.P. PROJECT
DO WE FULLY UNDERSTAND ~~THE~~ DOWN STREAM PROJECTS IMPACTS
PROJECTS THAT HAVE BEEN IMPLEMENTED IN OTHER AREAS

5. Location: REGIONAL NATIONAL GLOBAL + application for Lake michigan
WHAT SPECIES WOULD THESE PROJECTS SUPPORT
WHAT ARE THE LONG TERM MAINTENANCE IMPLICATIONS

6. Why is this data important:
THIS IS A NEW CONCEPT THAT LOOKS PROMISING

7. Estimate of temporal frequency and scale ("X" the box that matches your preferred spatial and temporal scale):

Temoporal Frequency	Spatial Scale/Resolution: Basin	State	County	Local
Annual				
5 yrs				
25 yrs				
Once				

8. Additional Notes:

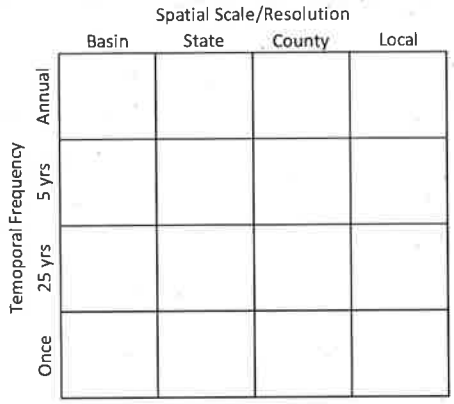
WHAT DATA DO YOU NEED TO IDENTIFY AND PRIORITIZE FUTURE PROJECTS?

9. Data description:

10. Location:

11. Why is this data important:

12. Estimate of temporal frequency and scale ("X" the box that matches your preferred spatial and temporal scale):



13. Additional Notes:

Data Needs for Projects and Planning Worksheet

Group: Illinois North

DO YOU HAVE DATA TO FILL OUR DATA GAPS?

1. Data description:
RTE species monitoring (floristic) - Plants of Concern
Strategic Sub Watershed Implementation plan (SSIP) - Ravine assessment
HTEM - Sediment Survey ↳ updated in 2018
2. Location:
(1) Plants of concern - Chicago Botanic Garden - Gekl Kiefer
(2) SSIP - Alliance for the Great Lakes - also Lake County Storm Water Mgmt.
(3) HTEM - Prairie Research Institute - Illinois Geologic Survey
3. Contact: ↳ + IDNR Coastal Mgmt. zone - D. Tecic

WHAT DATA DO YOU NEED TO COMPLETE YOUR PROPOSED PROJECT?

4. Data description:

5. Location:

6. Why is this data important:

7. Estimate of temporal frequency and scale ("X" the box that matches your preferred spatial and temporal scale):

Temporal Frequency	Basin	State	County	Local
Annual				
5 yrs				
25 yrs				
Once				

(4) Natural Heritage Database [Tara.Kieninger@illinois.gov]
(5) Lake County Green Infrastructure Model Strategy (GIMS)
↳ Lake County Forest Preserve District
(6) Conservation Bird Network "E-Bird" list
(7) Coasts - Steve Brown ↳ IL State Geologic Survey
+ Dave Tecic IDNR Coastal Mgt. Zone

More biological: • Frog calling survey
• Illinois Butterfly Survey
• Bird studies Canada + amphibians
↳ Kathy Jones

8. Additional Notes:

WHAT DATA DO YOU NEED TO IDENTIFY AND PRIORITIZE FUTURE PROJECTS?

9. Data description:

10. Location:

11. Why is this data important:

12. Estimate of temporal frequency and scale ("X" the box that matches your preferred spatial and temporal scale):

Temoporal Frequency	Spatial Scale/Resolution: Basin	State	County	Local
Annual				
5 yrs				
25 yrs				
Once				

13. Additional Notes:

Data Needs for Projects and Planning Worksheet

Group: BIOLOGICAL & ENVIRONMENTAL

SEE BACK →

DO YOU HAVE DATA TO FILL OUR DATA GAPS?

1. Data description:

2. Location:

3. Contact:

WHAT DATA DO YOU NEED TO COMPLETE YOUR PROPOSED PROJECT?

4. Data description:

5. Location:

6. Why is this data important:

7. Estimate of temporal frequency and scale ("X" the box that matches your preferred spatial and temporal scale):

Temporal Frequency	Basin	State	County	Local
Annual				
5 yrs				
25 yrs				
Once				

Spatial Scale/Resolution

8. Additional Notes:

WHAT DATA DO YOU NEED TO IDENTIFY AND PRIORITIZE FUTURE PROJECTS?

9. Data description:
WATER QUALITY & BIOLOGICAL (FISH/BUGS) ON A MORE FREQUENT BASIS

10. Location:
STREAMS & RAVINES NORTH OF CHICAGO TO WISCONSIN

11. Why is this data important:
EXISTING DATA IS NOT OF SUFFICIENT DENSITY TO ID RELATIONSHIPS BETWEEN BIOLOGY AND WATER QUALITY

12. Estimate of temporal frequency and scale ("X" the box that matches your preferred spatial and temporal scale):

Temporal Frequency	Basin	State	County	Local
Annual				X
5 yrs				
25 yrs				
Once				

Spatial Scale/Resolution

13. Additional Notes:

Data Needs for Projects and Planning Worksheet

Group: _____

DO YOU HAVE DATA TO FILL OUR DATA GAPS?

1. Data description:
Bird monitoring, important bird areas (potential)

2. Location:
Great Lakes Region

3. Contact:
Stephanie Beilke - stephanie.beilke@audubon.org

WHAT DATA DO YOU NEED TO COMPLETE YOUR PROPOSED PROJECT?

4. Data description:

5. Location:

6. Why is this data important:

7. Estimate of temporal frequency and scale ("X" the box that matches your preferred spatial and temporal scale):

Temporal Frequency	Basin	State	County	Local
Annual				
5 yrs				
25 yrs				
Once				

Spatial Scale/Resolution

8. Additional Notes:

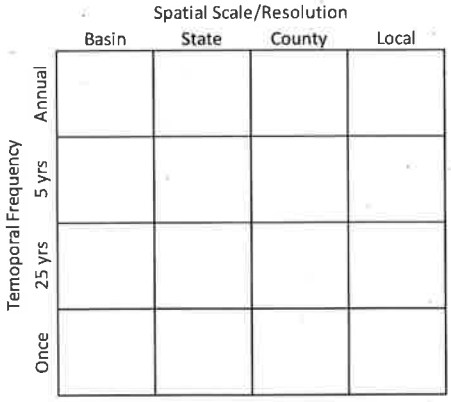
WHAT DATA DO YOU NEED TO IDENTIFY AND PRIORITIZE FUTURE PROJECTS?

9. Data description:

10. Location:

11. Why is this data important:

12. Estimate of temporal frequency and scale ("X" the box that matches your preferred spatial and temporal scale):



13. Additional Notes:

Data Needs for Projects and Planning Worksheet

Group: South Group

DO YOU HAVE DATA TO FILL OUR DATA GAPS?

1. Data description:

2. Location:

3. Contact:

WHAT DATA DO YOU NEED TO COMPLETE YOUR PROPOSED PROJECT?

4. Data description: Calumet Region, wetlands within area ~~desc~~ contained in the scope of this project

5. Location: ~~understanding~~ monitoring of the waterlevels in these wetlands

6. Why is this data important: to assess whether their waterlevels are ~~based on~~ tied to Lake Michigan water level or independent

7. Estimate of temporal frequency and scale ("X" the box that matches your preferred spatial and temporal scale):

Temporal Frequency	Basin	State	County	Local
Annual	X			
5 yrs				
25 yrs				
Once				

will help with predictive modeling and long-standing O & M.

8. Additional Notes:

WHAT DATA DO YOU NEED TO IDENTIFY AND PRIORITIZE FUTURE PROJECTS?

9. Data description:

10. Location:

11. Why is this data important:

12. Estimate of temporal frequency and scale ("X" the box that matches your preferred spatial and temporal scale):

Temoporal Frequency	Spatial Scale/Resolution: Basin	State	County	Local
Annual				
5 yrs				
25 yrs				
Once				

13. Additional Notes:

Data Needs for Projects and Planning Worksheet

Group: South

DO YOU HAVE DATA TO FILL OUR DATA GAPS?

1. Data description:

2. Location:

3. Contact:

WHAT DATA DO YOU NEED TO COMPLETE YOUR PROPOSED PROJECT?

4. Data description: annual aidak data of ~~proje~~ project areas that looks at interspersion of open water, ~~HA~~ invasives & emergent tracks project area

5. Location: size of

6. Why is this data important: to emergent vegetation helps understand potential for hemi marsh vegetation, prioritize areas of monitoring.

7. Estimate of temporal frequency and scale ("X" the box that matches your preferred spatial and temporal scale):

Temporal Frequency \ Spatial Scale/Resolution	Basin	State	County	Local
Annual	X			
5 yrs				
25 yrs				
Once				

8. Additional Notes:

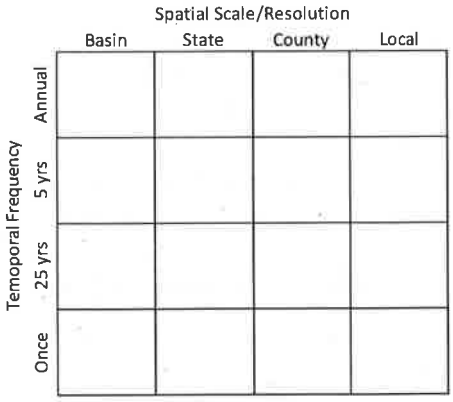
WHAT DATA DO YOU NEED TO IDENTIFY AND PRIORITIZE FUTURE PROJECTS?

9. Data description:

10. Location:

11. Why is this data important:

12. Estimate of temporal frequency and scale ("X" the box that matches your preferred spatial and temporal scale):



13. Additional Notes:

Data Needs for Projects and Planning Worksheet

Group: South

DO YOU HAVE DATA TO FILL OUR DATA GAPS?

1. Data description:

2. Location:

3. Contact:

WHAT DATA DO YOU NEED TO COMPLETE YOUR PROPOSED PROJECT?

4. Data description:
Native Shrub cover

5. Location:
whole area

6. Why is this data important:
prioritize where to work. Understand where plants are, when they are available for food supply for migratory birds

7. Estimate of temporal frequency and scale ("X" the box that matches your preferred spatial and temporal scale):

Temporal Frequency	Basin	State	County	Local
Annual	X	X	X	X
5 yrs				
25 yrs				
Once				

Spatial Scale/Resolution

8. Additional Notes:

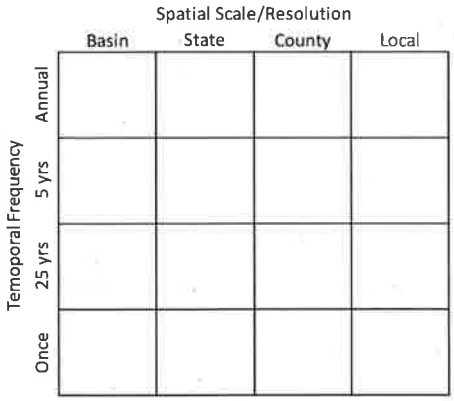
WHAT DATA DO YOU NEED TO IDENTIFY AND PRIORITIZE FUTURE PROJECTS?

9. Data description:

10. Location:

11. Why is this data important:

12. Estimate of temporal frequency and scale ("X" the box that matches your preferred spatial and temporal scale):



13. Additional Notes:

Data Needs for Projects and Planning Worksheet

Group: South Group

~~*DO YOU HAVE DATA TO FILL OUR DATA GAPS?*~~

1. Data description:

2. Location:

3. Contact:

* *WHAT DATA DO YOU NEED TO COMPLETE YOUR PROPOSED PROJECT?*

4. Data description: Location of regionally important ~~Locations where~~ migratory and birds habitats layer for native shrub cover

5. Location: whole area for ~~[illegible]~~ Lake Michigan Basin and Chicago River/Cal River

6. Why is this data important: helps prioritize migratory habitat restoration

7. Estimate of temporal frequency and scale ("X" the box that matches your preferred spatial and temporal scale):

Spatial Scale/Resolution

Temporal Frequency	Basin	State	County	Local
Annual				
5 yrs	X			
25 yrs				
Once				

8. Additional Notes:

WHAT DATA DO YOU NEED TO IDENTIFY AND PRIORITIZE FUTURE PROJECTS?

9. Data description:

10. Location:

11. Why is this data important:

12. Estimate of temporal frequency and scale ("X" the box that matches your preferred spatial and temporal scale):

Temoporal Frequency	Spatial Scale/Resolution: Basin	State	County	Local
Annual				
5 yrs				
25 yrs				
Once				

13. Additional Notes:

Data Needs for Projects and Planning Worksheet

Group: South

DO YOU HAVE DATA TO FILL OUR DATA GAPS?

1. Data description:

2. Location:

3. Contact:

WHAT DATA DO YOU NEED TO COMPLETE YOUR PROPOSED PROJECT?

4. Data description: habitat
fish habitat assessment availability. DNR may do riverine population communities but not collecting much quality assessment data

5. Location:
within 1 mile shore for entire region

6. Why is this data important:
inform where to prioritize projects

7. Estimate of temporal frequency and scale ("X" the box that matches your preferred spatial and temporal scale):

Temporal Frequency \ Spatial Scale/Resolution	Basin	State	County	Local
Annual			X	X
5 yrs				
25 yrs				
Once				

8. Additional Notes:

WHAT DATA DO YOU NEED TO IDENTIFY AND PRIORITIZE FUTURE PROJECTS?

9. Data description:

10. Location:

11. Why is this data important:

12. Estimate of temporal frequency and scale ("X" the box that matches your preferred spatial and temporal scale):

Temoporal Frequency	Spatial Scale/Resolution: Basin	State	County	Local
Annual				
5 yrs				
25 yrs				
Once				

13. Additional Notes: