LAKE PONTCHARTRAIN BASIN RESTORATION PROGRAM
COMPREHENSIVE CONSERVATION MANAGEMENT PLAN

APPENDIX E: MONITORING REPORT

DECEMBER 2025

PREPARED FOR: LAKE PONTCHARTRAIN BASIN RESTORATION PROGRAM

LAKE PONTCHARTRAIN BASIN RESTORATION PROGRAM

The purpose of the Lake Pontchartrain Basin Restoration Program is to restore the ecological health of the basin by developing and funding restoration projects and related scientific and public education projects to reduce the risk of pollution.

CITATION

Lake Pontchartrain Basin Restoration Program. (2025). Appendix E: Monitoring Report. (pp. 1-42).

ACKNOWLEDGMENTS

This document was developed in support of the Lake Pontchartrain Basin Restoration Program's Comprehensive Conservation Management Plan update. The document was prepared by members of the Theodore Roosevelt Conservation Partnership team.

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Additional contributions were made by Work Group members.

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LIST OF ABBREVIATIONS

Abbreviation	Definition
ALRI	American's Longleaf Restoration Initiative
BLM	Bureau of Land Management
BMP	Best Management Practice
BOD	Biochemical Oxygen Demand
BTEX	Benzene, Toluene, Ethylbenzene, and Xylene
C&E	Department of Conservation & Energy
CCMP	Comprehensive Conservation Management Plan
CITE	Communities Investigating Their Environment
CNCP	Coastwide Nutria Control Program
CPRA	Coastal Protection and Restoration Authority
CRCL	Coalition to Restore Coastal Louisiana
CRMS	Coastwide Reference Monitoring System
CSP	Conservation Stewardship Program
CyAN	Cyanobacteria Assessment Network
DHHS	Department of Health and Human Services
DO	Dissolved Oxygen
DOC	Dissolved Organic Carbon
DOI	U.S. Department of the Interior
DON	Dissolved Organic Nitrogen
DOP	Dissolved Organic Phosphorus
DOTD	Louisiana Department of Transportation and Development
DU	Ducks Unlimited
EDMS	electronic document management system
EQIP	Environmental Quality Incentives Program
ETAP	Escaped Trash Assessment Protocol
FPP	Forest Productivity Program
FLOW	Facilitating Learning in Our Watershed
GOAA	Gulf of America Alliance
GOHSEP	Governor’s Office of Homeland Security and Emergency Preparedness
GOMOD	Gulf Online Mapping Open Data Platform

Abbreviation	Definition
HAB	Harmful Algal Bloom
HPLC	High-Performance Liquid Chromatography
LDAF	Louisiana Department of Agriculture and Forestry
LDENR	Louisiana Department of Energy and Natural Resources
LDEQ	Louisiana Department of Environmental Quality
LDH	Louisiana Department of Health
LDWF	Louisiana Department of Wildlife and Fisheries
LEAU	Louisiana Environmental Assessment Utility
LSU	Louisiana State University
MRLC	Multi-Resolution Land Characteristics
NAWQA	National Water-Quality Assessment
NCCOS	National Centers for Coastal Ocean Science
NOAA	National Oceanic and Atmospheric Administration
NPP	Native Plants Program
NRCS	Natural Resources Conservation Service
NWIS	National Water Information System
NWQI	National Water Quality Initiative
OCD	Louisiana Office of Community Development
OSWC	Office of Soil and Water Conservation
OWL	Our Waterways of Louisiana
PC	Pontchartrain Conservancy
PFAS	Per- and Polyfluoroalkyl Substances
PON	Particulate Organic Nitrogen
POP	Particulate Organic Phosphorus
PRP	Lake Pontchartrain Basin Restoration Program
REF	Restore the Earth Foundation
SAV	Submerged Aquatic Vegetation
SGCN	Species of Greatest Conservation Need
STEM	Science, Technology, Engineering, and Mathematics
SWAMP	System-Wide Assessment and Monitoring Program
SWCD	Louisiana Soil and Water Conservation District
SWMM	Storm Water Management Model

Abbreviation	Definition
TKN	Total Kjeldahl Nitrogen
TMDL	Total Maximum Daily Load
TN	Total Nitrogen
TNC	The Nature Conservancy
TOC	Total Organic Carbon
TP	Total Phosphorus
TSS	Total Suspended Solids
TVS	Total Volatile Solids
TWI	The Water Institute
ULL	University of Louisiana at Lafayette
USM	University of Southern Mississippi
USEPA	U.S. Environmental Protection Agency
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
USFWS	U.S. Fish and Wildlife Service
UWFP	Urban Waters Federal Partnership
VOC	Volatile Organic Compounds
WET	Water Education for Today
WLFW	Working Lands for Wildlife
WQ	Water Quality

INTRODUCTION

The Pontchartrain Basin spans 5.5 million acres and includes a diverse range of landscapes, habitats, and water bodies that are critical to the environmental and economic vitality of southeastern Louisiana and parts of Mississippi. The Lake Pontchartrain Basin Restoration Program's (PRP) revised Comprehensive Conservation Management Plan (CCMP) focuses on three core goals: improving water quality, supporting the sustainability of important habitats, and educating and involving the public in water quality and habitat restoration efforts. These goals reflect the need to both restore and sustain the health of the basin while engaging local communities in long-term stewardship.

This Monitoring Report serves as a key component of the revised CCMP by presenting a summary of monitoring efforts relevant to the proposed water quality, habitat, and education and involvement work. To make these efforts more accessible, monitoring parameters are grouped into more encompassing foci that align with CCMP objectives and actions. These foci provide a streamlined way to navigate a complex set of information, linking each category to the monitoring programs and related data collection. By structuring the report in this way, the intent is to create a resource that highlights what monitoring is currently taking place across the basin and how those efforts connect to basin-wide management and restoration priorities.

CCMP GOALS, OBJECTIVES, AND ACTIONS

The goals, objectives, and actions for the CCMP are comprehensive enough to incorporate a range of potential project types and monitoring approaches. The Monitoring Report is designed to achieve two overarching aims. First, to provide encompassing monitoring foci to help connect and approach the goals, objectives, and actions from a monitoring perspective. Second, these monitoring foci are linked to current and past monitoring and data gathering efforts to connect knowledge, programs, and potential information partners with the goals of the CCMP.

CCMP Goals

The Monitoring Report is tailored to the specific priorities of the CCMP. These three themes each have a CCMP related goal:

Water Quality Theme Goal: Improve Pontchartrain Basin water quality through point and nonpoint pollutant source reduction to support ecological health.

Habitat Theme Goal: Promote sustainability of important land-based and aquatic habitat in the Pontchartrain Basin.

Education and Involvement Theme Goal: Increase awareness of current and future ecological health issues in the Pontchartrain Basin to encourage active participation in efforts to increase environmental sustainability.

CCMP Objectives

The CCMP objectives for each goal are listed below under the three high-level themes with abbreviations as a reference for their use in the monitoring summary table (Tables 1, 2, and 3).

Water Quality Theme Objectives

WQ1: Provide a technical basis for the formulation of water quality improvement actions through water quality monitoring, needs assessment, and research.
WQ2: Reduce adverse impacts of urban runoff; sewage; and agricultural, industrial, and commercial activities by improving stormwater management, promoting best management practices, and implementing restoration projects.

Habitat Theme Objectives

H1: Reduce loss of wetlands and restore the hydrologic exchanges that sustain them where possible.
H2: Promote sustainable aquatic habitats, including submerged aquatic vegetation, to support diverse native flora and fauna.
H3: Manage invasive species to reduce impacts to ecological health.
H4: Protect and restore habitat for species of greatest conservation need and threatened natural communities.

Education and Involvement Theme Objectives

E1: Educate the public on the effects of the changing ecological health of the basin to promote responsible stewardship.
E2: Identify and promote local efforts to improve the ecological health of the basin.
E3: Promote increased public participation in water quality improvement and habitat restoration projects.

CCMP Actions

The CCMP Action Plan chapter (Chapter 4) presents a set of actions organized under the three CCMP themes: water quality, habitat, and education and involvement. Each action includes its own performance measures, which can be evaluated as part of the actions themselves and are not intended to be individually reviewed as part of this monitoring report. The monitoring summary tables (Tables 1, 2, and 3) present how CCMP actions and the monitoring components may support a broader understanding of improvements in the PRP area. Direct reference to the actions serves as a high-level connection between monitoring foci and long-term restoration or engagement goals.

MONITORING FOCI

Monitoring Foci

As illustrated in Figure 1, the CCMP goals, objectives, and actions serve as the foundation for identifying appropriate monitoring foci. Each focus has at least one objective and action that is related to it, although in

many cases, a single focus may relate to multiple objectives and actions. Associated with each monitoring focus are specific monitoring parameters, which are the measurable components used to track environmental or programmatic conditions. For example, E. coli and fecal coliform concentrations might serve as parameters for a focus related to raw sewage contamination.

Following the identification of monitoring foci and parameters, the Monitoring Report identifies current relevant data collection efforts. Together, the monitoring foci and linked ongoing monitoring efforts enhance the ability to assess ecological health, refine future actions, and adapt restoration strategies across the Pontchartrain Basin.

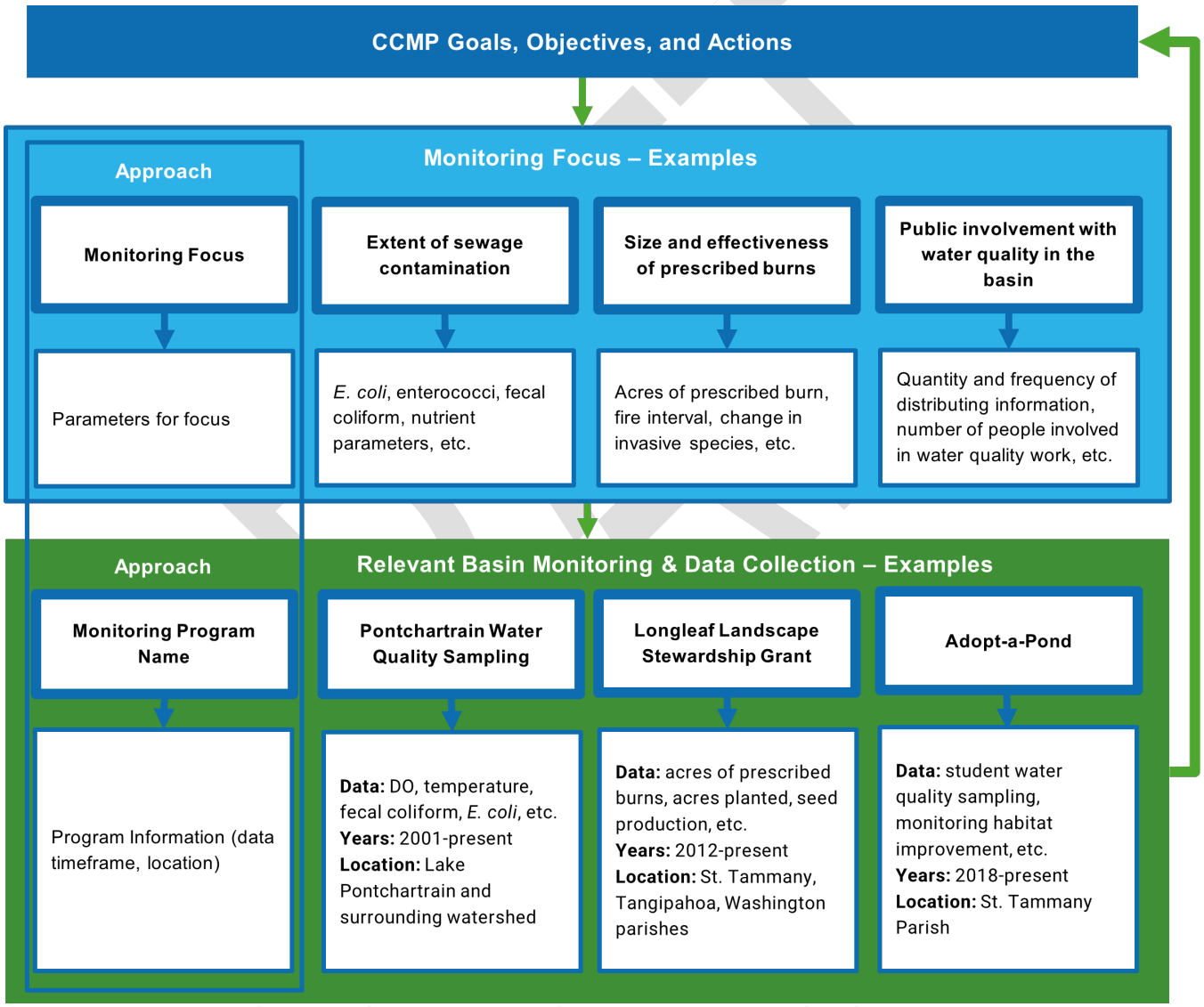

Figure 1. Diagram showing the connection between CCMP goals/objectives/actions, monitoring foci/parameters, and existing/recent monitoring programs.

Foci Summary Matrices

The core of the Monitoring Report is captured in the summary matrices of water quality (Table 1), habitat (Table 2), and education and involvement (Table 3). These tables translate the diagram illustrated in Figure 1

into a structured, detailed format. It connects each monitoring focus to potentially relevant CCMP objective(s) and action(s), identifying the specific parameters that can be tracked to understand the focus. These parameters are intended to be an inclusive though not exhaustive list of possible metrics. By laying out this information in a single, organized view, these matrices (Tables 1, 2, and 3) serve both as a planning tool and a reference guide. This summary helps stakeholders visualize where monitoring efforts are aligned with CCMP objectives and actions. Ultimately, each matrix is designed to integrate with the ongoing monitoring efforts discussed in the Data Collection section.

The education and involvement matrix (Table 3) is inherently different from the water quality and habitat tables. The parameters are focused on what is most effective to measure (e.g., number of materials, frequency of events, and quantity of people involved) rather than the more abstract objectives (e.g., level of awareness, level of education). To make these parameters more useful, it means there is a closer alignment with the action performance measures and the monitoring parameters for education and involvement.

Table 1. Summary matrix of water quality monitoring foci and parameters and connections to CCMP objectives and actions.

Note: Focus number: the first two letters describe the theme (WQ=Water Quality, H=Habitat, and E&I=Education and Involvement), M refers to monitoring focus, and the number is used to provide sequential ordering. CCMP Objective(s) definition: the combination of letters and number relate to the specific objectives of the CCMP. See the CCMP Objectives section for a full description of each objective.

FOCUS NUMBER	MONITORING FOCUS	CCMP OBJECTIVE(S)	POTENTIALLY RELATED CCMP ACTION(S)	MONITORING PARAMETER(S)
WQ-M1	Water quality in the basin	WQ1; WQ2; E1; E2; E3	1.1.12; 1.1.13; 1.1.14; 1.2.1; 1.2.5; 1.2.6; 1.2.12; 1.2.13; 1.2.16; 1.2.18; 1.2.20	Dissolved oxygen (DO); temperature; pH; salinity; turbidity; dissolved organic carbon (DOC); chlorophyll a; nutrients (dissolved and particulate forms of nitrogen and phosphorus); metals (arsenic [As], cadmium [Cd], chromium [Cr], copper [Cu], iron [Fe], lead [Pb], magnesium [Mg], mercury [Hg], nickel [Ni], selenium [Se], silver [Ag], zinc [Zn]); pesticides; industrial organics; hydrocarbons; fecal indicator bacteria; emerging contaminates; flow rates
WQ-M2	Area and degree of contamination in aquatic species from water quality contamination	WQ1; WQ2; H2	1.2.2; 3.2.7	Level of contamination in fish and shellfish tissue (e.g., mercury, organic contaminants); area of public engagement effect on fish contamination levels and consumption amounts
WQ-M3	Extent of sewage contamination	WQ1; WQ2; E1	1.1.1; 1.1.3; 1.1.6; 1.1.8; 1. 1.9; 1.1. 10; 1.1. 13; 1.2.4; 1 .2.7; 1.2.8; 1.2.15; 3.2. 10	*E. coli*; enterococci; fecal coliform; nutrient parameters; biological markers (e.g., bacteria, viruses); chemical tracers (e.g., pharmaceuticals, personal care products, metabolites like cotinine, caffeine, sucralose); pathogen testing; frequency of public engagement on septic maintenance and best practices; area of sewage contamination; extent of waterbody coverage
WQ-M4	Extent, duration, and/or impact of Harmful Algal Blooms (HABs)	WQ1; H2	1.2.3	Acres of water surface coverage; % of waterbody coverage; temporal duration of the bloom; HAB species cell counts (cells/mL); cyanotoxin concentration; chlorophyll a concentration; total volatile solids (TVS); red tide (dinoflagellate bloom) shellfish harvesting closures; swimming/recreation advisories

FOCUS NUMBER	MONITORING FOCUS	CCMP OBJECTIVE(S)	POTENTIALLY RELATED CCMP ACTION(S)	MONITORING PARAMETER(S)
WQ-M5	Concentration of water quality parameters in waterbodies near or downstream of water treatment facilities or stormwater outflows	WQ1; WQ2; E1	1.1.2; 1.1.5; 1.1.6; 1.1.8; 1.1.11; 1.2.10; 1.2.11	Nutrients (dissolved and particulate forms of nitrogen and phosphorus); fecal bacteria; biochemical oxygen demand (BOD); DOC; emerging contaminants (e.g., endocrine disrupting compounds [bisphenol A, phthalates, some PCBs, etc.], pharmaceuticals, personal care products); frequency of public engagement on best management practices
WQ-M6	Concentration of industrial contamination, pollution, and/or hazardous waste discharge/release	WQ1; WQ2	1.1.7; 1.1.11; 1.2.19	Heavy metals (Pb, Cr, Cu, Cr, Ni, Zn); oil/gas; polycyclic aromatic hydrocarbons (PAHs); polychlorinated biphenyls (PCBs); volatile organic compounds (VOCs), per- and polyfluoroalkyl substances (PFAS); benzene, toluene, ethylbenzene, and xylene (BTEX) compounds
WQ-M7	Concentration of turbidity, sediment, and nutrients in the system downstream of activities like new construction	WQ1; WQ2; E1	1.2.9; 1.2.11; 1.2.14; 1.2.17; 2.2.13	Turbidity; TSS; nutrients (dissolved and particulate forms of nitrogen and phosphorus); metals (As, Cd, Cr, Cu, Fe, Pb, Mg, Hg, Ni, Se, Ag, Zn); flow patterns; frequency of public engagement on best management practices
WQ-M8	Concentration of nutrients in waterbodies near or downstream of agricultural facilities	WQ1; WQ2; E1	1.1.11; 1.2.9; 1.2.11; 1.2.17; 2.2.16	Nutrients (dissolved and particulate forms of nitrogen and phosphorus); pathogen indicators; pesticides/herbicides; turbidity; TSS; DOC; frequency of public engagement on best management practices

FOCUS NUMBER	MONITORING FOCUS	CCMP OBJECTIVE(S)	POTENTIALLY RELATED CCMP ACTION(S)	MONITORING PARAMETER(S)
WQ-M9	Area and quantity of litter and marine debris	WQ1; H2; E1; E2; E3	1.2.13; 3.1.11	Items per 100 m shoreline; items per 100 m² underwater; floating debris density (items/km²); accumulation rate (items/100 m/day); composition by material and item type; proportion single-use plastics; microplastics concentration (particles/m³ water); Escaped Trash Assessment Protocol (ETAP) litter score at priority sites; outfall/device loads (kg or items per maintenance interval); wildlife entanglement/ingestion observations

Table 2. Summary matrix of habitat monitoring foci and parameters and connections to CCMP objectives and actions.

Note: Focus number: the first two letters describe the theme (WQ=Water Quality, H=Habitat, and E&I=Education and Involvement), M refers to monitoring focus, and the number is used to provide sequential ordering. CCMP Objective(s) definition: the combination of letters and number relate to the specific objectives of the CCMP. See the CCMP Objectives section for a full description of each objective.

FOCUS NUMBER	MONITORING FOCUS	CCMP OBJECTIVE(S)	POTENTIALLY RELATED CCMP ACTION(S)	MONITORING PARAMETER(S)
H-M1	Coastal habitat extent and type	H2	1.1.14; 2.1.1; 2.1.6; 2.1.7 2.1.9; 2.1.11; 2.1.13; 2.2.10	Extent of coastal forests (bottomland hardwood and baldcypress-tupelo gum swamp); fresh, intermediate, brackish, and saline marshes, barrier islands using remote sensing data
H-M2	Extent of submerged aquatic vegetation (SAV)	H2	2.1.5; 2.1.6; 2.1.9; 2.1.15; 2.3.7	Acres of SAV habitat; density and diversity of SAV species within a habitat area using transects; acres of conversion/loss of SAV habitats
H-M3	Extent of inland natural communities	H2	1.1.14; 2.1.9; 2.2.1; 2.2.3; 2.2.4; 2.2.5; 2.2.6; 2.2.8; 2.2.10; 2.2.13	Extent of cover for inland forests (including pine, hardwood, and swamp), flat plains, river meander belts, and scrub-shrub swamps using remote sensing data
H-M4	Extent of invasive species as impacted by public outreach and engagement efforts.	H3; E1; E2; E3	2.3.1; 2.3.2; 2.3.3; 2.3.4; 2.3.5; 2.3.6; 2.3.17	Rate of invasive species spread (acres/year, additional sites/year) before and after efforts to increase public awareness and education; number of people reached through invasive species outreach

FOCUS NUMBER	MONITORING FOCUS	CCMP OBJECTIVE(S)	POTENTIALLY RELATED CCMP ACTION(S)	MONITORING PARAMETER(S)
H-M5	Status of species of greatest concern	H4; E1; E2; E3	2.1.9; 2.2.4; 2.2.10	Species counts; relative abundance indices; density estimates; presence/absence surveys; acres of range extent; habitat extent and fragmentation; presence of invasive species impacting concern species; number of juveniles per adult; birth/hatch success rate; larval survival; disease prevalence; genetic diversity; incidental mortality
H-M6	Hydrologic connectivity and function	H1; H2; WQ2	2.1.3; 2.1.13; 2.1.14; 2.2.4; 2.2.5; 2.2.6; 2.2.7; 2.2.9	Water level variability; flow regimes; flow connection between key habitats overall and seasonally; residence time; tidal exchange; groundwater interaction/connectivity; sediment transport; nutrient concentration; DO; salinity level
H-M7	Scale of coastal habitat restoration	H1; H2; E1; E2; E3	1.1.14; 2.1.1; 2.1.5; 2.1.6; 2.1.7; 2.1.10; 2.1.11; 2.1.12; 2.1.13; 2.1.14; 2.1.15; 2.2.10	Area of new/restored coastal habitat coverage; coastal species distribution and abundance; effectiveness of restoration techniques and percent improvement from new techniques
H-M8	Scale of inland, riparian, stream, or floodplain habitat restoration and conservation	H1; H2; E1; E2; E3	1.1.5; 1.1.14; 1.2.12; 1.2.14; 2.1.10; 2.1.12; 2.1.15; 2.2.5; 2.2.7; 2.2.8; 2.2.9; 2.2.10; 2.2.11; 2.2.12; 2.2.13; 2.2.15; 2.2.16	Area of new/restored inland, riparian, stream and floodplain habitat; riparian, stream and floodplain functionality and species assessment; effectiveness of restoration techniques and percent improvement from new techniques
H-M9	Size and effectiveness of prescribed burns	H1; H2; H3; H4	2.1.2; 2.2.1; 2.2.2; 2.3.22	Acres of prescribed burn; fire interval; litter quantities (before and after burn); change in area of invasive species; change in area and diversity of native species
H-M10	Fish and shellfish diversity and abundance related to habitat changes	H2; H3; H4; WQ1	2.1.3; 2.1.4; 2.1.5; 2.1.6; 2.1.11; 2.1.13; 2.2.4	Catch per unit effort; biomass per unit effort; species richness, species evenness; recruitment levels; fish diversity; reproduction success; trends in fish population shifts; fish movement and connectivity between habitats; these parameters can be for a range of different species (e.g., fin fish, shrimp, crab, mollusk)

FOCUS NUMBER	MONITORING FOCUS	CCMP OBJECTIVE(S)	POTENTIALLY RELATED CCMP ACTION(S)	MONITORING PARAMETER(S)
H-M11	Bird diversity and abundance related to habitat changes	H2; H3; H4	2.1.6; 2.1.7; 2.1.8; 2.1.13	Species counts; relative abundance indices; density estimates; reproduction success; trends in bird population shifts; bird movement and connectivity between habitats
H-M12	Reptile diversity and abundance related to habitat changes	H2; H3; H4	2.1.7; 2.1.8; 2.1.13	Species richness; species composition; encounter rates (per effort along a transect); mark-recapture estimates; nest counts/nesting activity; egg or hatchling success; body condition indices; injury rates; evidence of disease/parasites; these parameters can be for a range of different species (e.g., alligator, turtle, snake, lizard)
H-M13	Oyster habitat extent and quality	H2; WQ1; WQ2	2.1.4	Acreage of oyster reef habitat; reef complexity; connectedness of reef patches; individual oysters per m^2; recruitment rate; mortality rate; age structure; fish community use; presence of key predators (e.g., oyster drills)
H-M14	Area and level of impact from invasive terrestrial plants	H3	2.3.8; 2.3.9; 2.3.19; 2.3.20; 2.3.21; 2.3.22; 2.3.23	Cogon grass/tallow coverage (% ground cover, aerial imagery); tallow stem density; tallow seedling recruitment rate; native plant species richness; % native plant cover in treated areas; rate of invasive re-invasion; soil seedbank composition; changes in hydrology; % alteration in physical habitat structure; based on the CCMP content, the focus would be on cogon grass and tallow, but it is applicable to other invasive terrestrial plants

FOCUS NUMBER	MONITORING FOCUS	CCMP OBJECTIVE(S)	POTENTIALLY RELATED CCMP ACTION(S)	MONITORING PARAMETER(S)
H-M15	Area and level of impact from invasive aquatic plants	H3; WQ1	2.3.7; 2.3.8; 2.3.24; 2.3.25	% cover of water hyacinth/giant salvinia on water surface (visual or remote sensing); invasive species biomass; spread rate; water flow obstruction; DO; changes in nutrient cycling; native SAV cover; phytoplankton biomass; macroinvertebrate community diversity; fish population changes; based on the CCMP content, the focus would be on water hyacinth and giant salvinia, but it is applicable to other invasive terrestrial plants
H-M16	Density and level of damage from invasive mammals	H3	2.3.16; 2.3.17; 2.3.18	Feral hog/nutria population estimates (camera traps, aerial surveys); soil disturbance area (% ground disturbed); vegetation cover/destruction; native ground-nesting bird success; other native animal community impacts; erosion levels especially waterbody bank stability; based on the CCMP content, the focus of this would be on feral hogs and nutria, but it is applicable to other invasive mammals
H-M17	Density and level of damage from invasive invertebrates	H3	2.3.10; 2.3.11; 2.3.12; 2.3.13	Apple snail density; apple snail egg mass counts; % change in overall population; changes in native snail and macroinvertebrate species; abundance of natural predators (e.g., redear sunfish); based on the CCMP content, the focus of this would be on apple snails, but it is applicable to other invasive invertebrates

FOCUS NUMBER	MONITORING FOCUS	CCMP OBJECTIVE(S)	POTENTIALLY RELATED CCMP ACTION(S)	MONITORING PARAMETER(S)
H-M18	Abundance and level of damage from invasive fish	H3; WQ1	2.3.14; 2.3.15	Carp abundance (catch per unit effort); population density; biomass of invasive fish; presences of multiple year classes (age structure); juvenile/larval surveys; native fish community composition; plankton community composition; acreage of occupied habitat; rate of spread over time; based on the CCMP content, the focus of this would be on Asian carp, but it is applicable to other invasive fish

Table 3. Summary matrix of education and involvement monitoring foci and parameters and connections to CCMP objectives and actions.

Note: Focus number: the first two letters describe the theme (WQ=Water Quality, H=Habitat, and E&I=Education and Involvement), M refers to monitoring focus, and the number is used to provide sequential ordering. CCMP Objective(s) definition: the combination of letters and number relate to the specific objectives of the CCMP. See the CCMP Objectives section for a full description of each objective.

FOCUS NUMBER	MONITORING FOCUS	CCMP OBJECTIVE(S)	POTENTIALLY RELATED CCMP ACTION(S)	MONITORING PARAMETER(S)
E&I-M1	Public involvement with the PRP	E1; E2	1.1.14; 3.1.1; 3.1.2; 3.1.3; 3.1.4; 3.1.5; 3.1.6; 3.1.7; 3.1.8; 3.1.9; 3.1.10; 3.2.1; 3.2.5; 3.2.6; 3.2.7; 3.2.14; 3.2.15; 3.2.16; 3.3.3; 3.3.13; 3.3.14; 3.3.15	Is PRP branding being used across communications/materials; number of PRP signs displayed; number of new PRP maps produced; number of co-sponsored events and/or events where materials are used; online engagement metrics (e.g., impressions, likes, shares, comments); number of PRP promotion materials distributed
E&I-M2	Public involvement with recreation opportunities in the basin	E3	2.1.11; 3.1.5; 3.1.9; 3.2.6; 3.3.2; 3.3.3; 3.3.4; 3.3.5; 3.3.6; 3.3.7; 3.3.8; 3.3.11; 3.3.12; 3.3.13	Number of events coordinated or sponsored promoting recreation in the basin; increase in recreation access (e.g., boat launches, fishing piers, bathroom facilities, pavilions); amount of physical/electronic distribution of recreational access point maps; number of recreation passes accessed; number of tourism guides distributed; number of birding guides distributed

FOCUS NUMBER	MONITORING FOCUS	CCMP OBJECTIVE(S)	POTENTIALLY RELATED CCMP ACTION(S)	MONITORING PARAMETER(S)
E&I-M3	Public involvement with water quality in the basin	E1; E2; E3; WQ1	1.1.14; 1.1.12; 1.2.2; 2.2.13; 3.1.9; 3.1.11; 3.2.2; 3.2.4; 3.2.6; 3.2.7; 3.2.8; 3.2.9; 3.2.10; 3.2.11; 3.2.12; 3.2.13; 3.3.1; 3.3.9; 3.3.10	Quantity and frequency of distributing water quality information to the public, this can include brochures/fliers, informational signs, websites, and digital means of distribution; number of people involved with water quality work, such as citizen science, WQ monitoring, public meetings, and governmental groups about issues and improvements to local water quality
E&I-M4	Public involvement with habitats in the basin	E1; E2; H2	1.1.14; 2.1.1; 2.1.9; 2.1.10; 2.2.1; 2.2.5; 2.2.10; 2.2.11; 2.2.12; 2.2.13; 2.2.14; 2.2.15; 3.1.5; 3.2.1; 3.2.5; 3.2.6; 3.2.14; 3.2.15; 3.2.16; 3.3.1; 3.3.7; 3.3.10; 3.3.11; 3.3.14; 3.3.15	Quantity and frequency of distributing habitat information to the public, this can include brochures/fliers, informational signs, websites, and social media posts; number of people involved with habitat work, such as volunteer planting, monitoring, public meetings, and governmental groups about issues and improvements to local habitats
E&I-M5	Public involvement with invasive species in the basin	E1; E2; H3	2.3.1; 2.3.2; 2.3.3; 2.3.4; 2.3.5; 2.3.6; 2.3.8; 2.3.12; 2.3.17; 3.3.1	Quantity and frequency of distributing invasive species information to the public, this can include brochures/fliers, informational signs, websites, and social media posts; number of people involved with invasive species work such as volunteer invasive removal, monitoring, public meetings, and governmental groups about issues and improvements to invasive species

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DATA COLLECTION

Rather than establishing a single centralized data collection and stewardship approach, this Monitoring Report points to the distributed model in which partner organizations complete data collection and analysis based on their unique capabilities and expertise. This approach promotes efficiency, leverages existing resources, and supports long-term data continuity across the Pontchartrain Basin. While this document is not intended to be an exhaustive catalog of all monitoring activities within the basin, it focuses on monitoring activities, data collection, and programs that directly support the goals of the revised CCMP.

Identifying existing data collection and monitoring programs operating within the basin helps establish a clear understanding of current and recent efforts. These include programs implemented by academic institutions, government agencies (including federal, state and local), non-profit organizations, and private partners. A range of existing monitoring programs and data collection efforts have been compiled and summarized in Table 4, 5, and 6 that follow. These efforts are organized by their relevance to three primary monitoring focus areas: water quality (26 programs), habitat (38 programs), and education and involvement (27 programs). For each program or dataset, the tables provide key details including the lead agency or managing entity, the related CCMP monitoring focus, the type of data collected, the sampling timeline, sampling frequency, geographic coverage, and a link to any publicly available information or results.

While many of these monitoring programs are active and ongoing, some have concluded or lack detailed information on the years of operation or sampling frequency. These have been included intentionally to provide a broader understanding of past efforts and to help identify potential data gaps or opportunities for renewed engagement. This approach is especially important for education and involvement-related data, where monitoring is generally less systematic and formalized compared to environmental parameters. By including both current and some historical data sources, this summary offers a more complete picture of the region's monitoring landscape.

187 **Table 4. Water quality monitoring and data in the Pontchartrain Basin relevant to the monitoring foci.[1]**

PROGRAM NAME	AGENCY/ ENTITY	RELEVANT MONITORING FOCUS NUMBER(S)	DATA/SAMPLING/ PROGRAM COMPONENTS	SAMPLING YEARS	SAMPLING FREQUENCY	LOCATION	WEBSITE LINK
Bayou Bienvenue Wetlands Triangle Assimilation Wetland	Sewerage & Water Board of New Orleans	WQ-M1; H-M8	Vegetation surveys; water quality testing; net primary productivity assessments	Starts in 2026/2027	Discrete: TBD	New Orleans	https://www.deq.louisiana.gov/assets/docs/Water/Integrated_Report/2024_Integrated_Report/24_IR1_Master_Text_3-28-2024.pdf
Beach Monitoring	LDH	WQ-M1; WQ-M3	Fecal coliform; enterococcus bacteria	2004-present	Discrete: weekly between May and October	Recreational beaches along Lake Pontchartrain	https://ldh.la.gov/bureau-of-sanitarian-services/beach-monitoring-program
Chinchuba/ East Tchefuncte Assimilation Wetland	City of Mandeville	WQ-M5; H-M8	Water level; metals (Mg, Pb, Cd, Cr, Cu, Zn, Fe, Ni, Ag, Se); nutrients (TKN, TP, NH_3N, NO_2, NO_3N, PO_4); BOD; TSS; pH; DO; salinity; temperature; accretion rate; nutrient loading rates; flora species diversity; aboveground vegetation	1989-present	Discrete	Mandeville	https://www.cityofmandeville.com/sites/default/files/fileattachments/ordinance/4590/res_24-02.pdf
Consider Litter	PC	WQ-M1; WQ-M9; E&I-M3; E&I-M4	Volunteer litter clean up; clean up data collected: site location, item/litter type, item/litter condition, quantity and weight of litter; educational elements, including curriculum integration	2023-present	Discrete	Basin wide	https://considerlitter.fieldscope.org/

[1] To reduce table space, full names of agencies/organizations abbreviated in the table can be found at in the acronym list at the start of the report

PROGRAM NAME	AGENCY/ ENTITY	RELEVANT MONITORING FOCUS NUMBER(S)	DATA/SAMPLING/ PROGRAM COMPONENTS	SAMPLING YEARS	SAMPLING FREQUENCY	LOCATION	WEBSITE LINK
Cyanobacteria Algal Bloom from Satellite in Lake Pontchartrain, LA	NOAA; NCCOS	WQ-M4	Satellite imagery of algal bloom extent and density	2019-present	Discrete: 1-2 times weekly	Lake Pontchartrain	https://coastalscience.noaa.gov/science-areas/habs/hab-monitoring-system/cyanobacteria-algal-bloom-from-satellite-in-lake-pontchartrain-la/
Cyanobacteria Assessment Network (CyAN)	EPA	WQ-M4	HAB satellite-derived status and forecasts	2015-present	Discrete: weekly	Basin wide	https://www.epa.gov/water-research/cyanobacteria-assessment-network-cyan
CyanoHAB Predictive Model and Forecasting System	TWI; USGS; USACE; LSU; ULL	WQ-M1; WQ-M4	Secchi disk depth; water temperature; salinity; DO; pH; TSS; TVS; NO_2; NO_3; NH_4; PO_4; TN; TP; TOC; DOC; PON; DON; POP; DOP; silicate; Chl a (fluorometer); phycocyanin; Chl a (HPLC); accessory algal pigments (HPLC); phytoplankton taxa (microscopy); phytoplankton absorption coefficient; surface water reflectance; hyperspectral reflectance of dominant phytoplankton taxa	2024-2026	Discrete: monthly	Lake Pontchartrain	https://www.usgs.gov/centers/wetland-and-aquatic-research-center/science/integrating-remote-sensing-and-numerical
Derelict Crab Trap Removal	LDWF	WQ-M1; WQ-M9; H-M10	Quantity of crab trap marine debris removed	2004-present	Discrete	Orleans and St. Tammany parishes	https://www.wlf.louisiana.gov/page/derelict-crab-trap-removal
Gulf Online Mapping Open Data Platform (GOMOD)	GOAA	WQ-M1	USEPA WQX stations; pH; chlorophyll-a; salinity; temperature	Varies by data; generally, in the 2000s-present	Discrete: daily, monthly, quarterly or event-based	Basin wide	https://experience.arcgis.com/experience/094c2d4e36d848698a5a42469856d92f

PROGRAM NAME	AGENCY/ ENTITY	RELEVANT MONITORING FOCUS NUMBER(S)	DATA/SAMPLING/ PROGRAM COMPONENTS	SAMPLING YEARS	SAMPLING FREQUENCY	LOCATION	WEBSITE LINK
How's My Waterway	USEPA; USGS; LDEQ	WQ-M1; WQ-M2; WQ-M6; H-M7; H-M8; H-M10; E&I-M3; E&I-M4	Water quality; swimming/boating conditions; eating fish; aquatic life; restoration and protection efforts; permitted discharge; impairments; drinking water condition	2007-present	Continuous; discrete	Basin wide	https://www.epa.gov/waterdata/hows-my-waterway
Louisiana Soil and Water Conservation District (SWCD)	LDAF; SWCD	WQ-M8; H-M6; H-M7; H-M8; E&I-M3; E&I-M4	BMPs; resource management plans; irrigation management; drainage management; wetland restoration; reforestation; workshops/seminars; youth engagement	Unknown	Discrete	Basin wide (within LA)	https://www.ldaf.la.gov/land/conservation/soil-and-water-conservation-districts
Louisiana Environmental Assessment Utility (LEAU) Database	LDEQ	WQ-M1; WQ-M3	Temperature; pH; conductance; DO; secchi disk; sample depth; enterococcus; metals (Hg, Cu); fecal coliform; turbidity; dissolved solids; chloride; sulfate; NH_3	1958-present (start year varies by site)	Discrete: monthly	Basin wide (within LA)	https://waterdata.deq.louisiana.gov/
Louisiana Watershed Initiative	OCD; CPRA; DOTD; USGS; GOHSEP; LDWF	WQ-M1; H-M6; E&I-M3	River and rain gauge network; project-specific flood mitigation (stormwater runoff and associated contamination/pollution); engagement with communities in Pontchartrain Basin	2016-present	Discrete: monthly, quarterly	Basin wide (watersheds 7, 8, 9)	https://watershed.la.gov/
Mississippi River/Gulf of America Hypoxia Task Force	EPA	WQ-M1	Nutrients (nitrogen and phosphorus)	2001-present	Discrete	Mississippi River and coastal portion of the basin	https://www.epa.gov/ms-htf
National Water Information System (NWIS)	USGS	WQ-M1; H-M6	Streamflow; temperature; DO; turbidity; pH; nutrients/metals; groundwater levels	2007-present	Continuous; discrete: monthly, quarterly, event-based	Basin wide	https://waterdata.usgs.gov/nwis

PROGRAM NAME	AGENCY/ ENTITY	RELEVANT MONITORING FOCUS NUMBER(S)	DATA/SAMPLING/ PROGRAM COMPONENTS	SAMPLING YEARS	SAMPLING FREQUENCY	LOCATION	WEBSITE LINK
National Water Quality Initiative (NWQI)	USDA (NRCS)	WQ-M1; WQ-M8	Agricultural BMP improvement monitoring; nutrients; pathogens	2012-2015	Discrete	Big Creek and East Fork Big Creek	https://www.nrcs.usda.gov/programs-initiatives/eqip-national-water-quality-initiative/national-water-quality-initiative-successes
National Water-Quality Assessment (NAWQA)	USGS	WQ-M1; H-M6; H-M10	Streamflow; water temperature; pH; DO; turbidity; major ions; nutrients (TN, NO_3, NO_2, NH_3, TP); sediments; metals; pesticides; VOCs; fish tissue; algae	1997-present	Discrete: high intensity 2–4-year phase followed by low intensity decadal revisit	Basin wide	https://www.usgs.gov/mission-areas/water-resources/science/national-water-quality-assessment-nawqa#overview
Nonpoint Source Program	EPA	WQ-M1; WQ-M3; WQ-M7; WQ-M8	Projects to address nonpoint source pollution with a focus on nutrient loading	1987-present	Discrete: event-based	Basin wide	https://www.epa.gov/nps
Nutrient Reduction and Management Strategy	LDEQ; CPRA; LDAF; C&E	WQ-M1; E&I-M3	Point and non-point source management; stakeholder engagement; decision support tools	2014-present	Discrete (5-year strategy update with annual tracking)	Basin wide (within LA)	https://deq.louisiana.gov/page/nutrient-management-strategy
Pontchartrain Water Quality Sampling	PC	WQ-M1; WQ-M3; E&I-M3	Water quality 13 sites (DO, temperature, salinity, fecal coliform, enterococcus, e. coli); pollution source tracking; trash; public water sampling	2001-present	Discrete: weekly	Lake Pontchartrain and surrounding watershed	https://scienceforourcoast.org/water-quality/water-quality-results
Poydras-Verret Assimilation Wetland	St. Bernard Parish	WQ-M1; H-M8	Nutrients; vegetation productivity; faunal assemblage	2003-present	Discrete: annually	St. Bernard	https://biotech.law.lsu.edu/blog/St-Bernard-Riverbend_Assim_Draft-Permit_SOB_2016Jan07.pdf

PROGRAM NAME	AGENCY/ ENTITY	RELEVANT MONITORING FOCUS NUMBER(S)	DATA/SAMPLING/ PROGRAM COMPONENTS	SAMPLING YEARS	SAMPLING FREQUENCY	LOCATION	WEBSITE LINK
South Slough Assimilation Wetland	City of Hammond	WQ-M1; H-M8	Water stage; metals (Mg, Pb, Cd, Cr, Cu, Zn, Fe, Ni, Ag, Se); nutrients (TKN, TP, NH_3N, NO_2-N, NO_3-N, PO_4); growth studies; accretion rate; species classification; % of whole cover; BOD; TSS; pH; DO	2006-present?	Discrete	Hammond	https://www.researchgate.net/publication/368599545_Interactions_among_science_environmental_policy_and_public_perception_in_a_Mississippi_River_Delta_assimilation_wetland
System-Wide Assessment and Monitoring Program (SWAMP)	TWI; CPRA	WQ-M1	Summary of data from many groups (e.g., CRMS, LDWF, LDEQ, USGS) also includes recommended additional monitoring beyond those already being collected	2016-2019/present	Continuous; discrete	Lower Pontchartrain Basin	https://thewaterinstitute.org/projects/system-wide-assessment-and-monitoring-program-swamp
Village Blue; New Canal Lighthouse	USEPA; USGS; PC; USACE	WQ-M1; WQ-M4; E&I-M3	Algae; chlorophyll; DO; pH; temp; specific conductance; salinity; turbidity; NO_3; environmental outreach program; hands on experiments	2020-2022	Continuous; discrete	New Orleans	https://www.epa.gov/water-research/village-blue
Water Quality and Phytoplankton Data	USGS	WQ-M1; WQ-M4	Specific conductance (salinity); pH; DO; oxygen percent saturation; major ions; nutrients; inorganic plus organic particulate carbon; TSS; chlorophyll a; algal toxins	2008-2020	Discrete: event-based	Lake Pontchartrain and the western Mississippi Sound	https://data.usgs.gov/datacatalog/data/USGS%3A5f5955ed82cefd9f2084001e
Water Quality Portal	USGS; USEPA	WQ-M1	Hundreds of constituents are reported, including organic compounds, salts, metals, nutrients, bacteria, etc. in addition to descriptive parameters (e.g., color, turbidity) (varies by site); water level and other gauge information	Varies by data; data started in the 1960's, portal in 2012	Discrete: daily, weekly	Basin wide	https://www.waterqualitydata.us/

188 **Table 5. Habitat monitoring and data in the Pontchartrain Basin relevant to the monitoring foci.[2]**

PROGRAM NAME	AGENCY/ ENTITY	RELEVANT MONITORING FOCUS NUMBER(S)	DATA/SAMPLING/ PROGRAM COMPONENTS	SAMPLING YEARS	SAMPLING FREQUENCY	LOCATION	WEBSITE LINK
Alligator Management Program	LDWF	H-M12	Alligator nest production; wild alligator harvest number, length, weight, sale value; farmed alligator harvest length, weight; farmed alligator egg number and hatch rate	1972-present	Discrete	Basin wide (within LA)	https://www.wlf.louisiana.gov/page/alligator-management
Aquatic Vegetation Control	LDWF	H-M15	Acres sprayed with herbicide/surfactant; release of giant salvinia weevils; biannual assessments of invasive infestation	2015-2018	Discrete: event-based	Lower Pontchartrain Basin	https://www.wlf.louisiana.gov/assets/Resources/Publications/Freshwater_Inland_Fish/Aquatic-Vegetation-Control-Plans/Lower_Ponchartrain_Sub-Basin_Aquatic_Vegetation_Control_Plan_2019.pdf
Asian carp in Louisiana	LSU AgCenter; LDWF	H-M18	Range of Asian carps	1976-?	Discrete	Basin wide (within LA)	https://fisheries.org/docs/books/54074P/17.pdf
Bayou Sauvage Urban National Wildlife Refuge	USFWS; USGS[3]	WQ-M1; H-M5; H-M6; H-M7; H-M8; H-M9; H-M10; H-M11; H-M12; H-M14; H-M15; H-M16; E&I-M4	Forest, marsh, and ridge restoration; vegetation surveys; water quality assessments; water management; wildlife surveys; prescribed fire; invasive species management; bird use surveys	1990-present	Continuous; discrete	East of New Orleans	https://www.fws.gov/refuge/bayou-sauvage-urban

[2] To reduce table space, full names of agencies/organizations abbreviated in the table can be found at in the acronym list at the start of the report

[3] More information can be found at the following URL: https://www.usgs.gov/centers/wetland-and-aquatic-research-center/science/investigation-hydrology-and-inundation-turtle

PROGRAM NAME	AGENCY/ ENTITY	RELEVANT MONITORING FOCUS NUMBER(S)	DATA/SAMPLING/ PROGRAM COMPONENTS	SAMPLING YEARS	SAMPLING FREQUENCY	LOCATION	WEBSITE LINK
Big Branch Marsh National Wildlife Refuge	USFWS; USGS[4]	H-M2; H-M5; H-M7; H-M8; H-M9; H-M10; H-M11; H-M12; E&I-M2; E&I-M4	Fire management; forest management; marsh restoration; shoreline fortification; SAV habitat; species tracking; event hosting; water quality (salinity); red-cockaded woodpecker habitat assessment; tree health surveys	1994-present	Discrete	St. Tammany Parish	https://www.fws.gov/refuge/big-branch-marsh
Big Mar Wetland Forest Restoration	REF; CRCL; PC; USDA (NRCS)	H-M7	Land area change; tree growth; ecosystem services	2005-2018?	Discrete: annually	Big Mar (Caernarvon outflow area)	https://restoretheearth.org/wp-content/uploads/2018/02/Caernarvon-Project-Sheet.pdf
Bogue Chitto National Wildlife Refuge	USFWS	WQ-M1; H-M5; H-M8; H-M9; H-M10; H-M11; H-M12; H-M14; H-M16; H-M18; E&I-M2; E&I-M4; E&I-M5	Monitor water levels and manage impoundments to support wading birds and other wildlife; prescribed fire; invasive species management; nest boxes; tracking populations of species such as the Gulf sturgeon, ringed sawback turtle, and swallow-tailed kite; volunteering opportunities; fishing rodeo	1980-present	Discrete	St. Tammany and Washington parishes	https://www.fws.gov/refuge/bogue-chitto
Bottom Land Hardwood Forest Mitigation Banks	USACE	H-M3; H-M6; H-M8; H-M14	Planting of native hardwood seedlings; invasive plant control; hydrologic restoration; success monitoring (tree survival, stem density, canopy cover)	2001-present	Discrete	St. John, Livingston and Tangipahoa parishes	https://ribits.ops.usace.army.mil/ords/f?p=107:158::::::

[4]More information can be found at the following URL: https://www.usgs.gov/centers/wetland-and-aquatic-research-center/science/salinity-flooding-and-urban-impacts-critical

PROGRAM NAME	AGENCY/ ENTITY	RELEVANT MONITORING FOCUS NUMBER(S)	DATA/SAMPLING/ PROGRAM COMPONENTS	SAMPLING YEARS	SAMPLING FREQUENCY	LOCATION	WEBSITE LINK
Breton National Wildlife Refuge	USFWS	H-M5; H-M11	Brown pelican nesting success and other bird populations	1904-present	Discrete	Chandeleur Islands	https://www.fws.gov/refuge/breton
Bucktown Living Shoreline	TNC; NFWF	H-M7; H-M10; E&I-M4	Vegetation assessments; microbiological sampling; faunal/biological habitat; learning pavilion	2000-present	Discrete	Mandeville	https://www.nature.org/en-us/what-we-do/our-priorities/protect-water-and-land/land-and-water-stories/bucktown-living-shoreline-louisiana/
Capital Soil and Water Conservation District	Capital [District 33] SWCD	H-M8	Conservation and groundwater management	?-present	Discrete	Livingston Parish	https://www.louisianalandcan.org/local-resources/Capital-SWCD/4360
Chandeleur Island Restoration Monitoring	NOAA; TWI; LDWF; USM; LSU; ULL	WQ-M1; H-M2; H-M7	Water level; wave metrics; temperature; DO; turbidity; seagrass habitat (area, density, diversity)	2023-present	Continuous; discrete	Chandeleur Islands	https://restoreactscienceprogram.noaa.gov/projects/seagrass-resilience-at-the-chandeleur-islands
Coastal and Estuarine Land Conservation Program	NOAA	H-M1; H-M3; H-M5	Purchase threatened coastal and estuarine lands or obtain conservation easements	2002-2017	Discrete	Lake Pontchartrain and surrounding watershed	https://coast.noaa.gov/czm/landconservation/
Coastwide Nutria Control Program (CNCP)	LDWF	H-M16; E&I-M5	Number of nutria removed/harvested; total number of damage sites; estimated damaged acres	2002-present	Discrete: annual harvest and damage assessment; program season runs Nov 20 - Mar 31	Lower Pontchartrain Basin	https://www.wlf.louisiana.gov/page/nutria

PROGRAM NAME	AGENCY/ ENTITY	RELEVANT MONITORING FOCUS NUMBER(S)	DATA/SAMPLING/ PROGRAM COMPONENTS	SAMPLING YEARS	SAMPLING FREQUENCY	LOCATION	WEBSITE LINK
Coastwide Reference Monitoring System (CRMS)	CPRA; USGS	WQ-M1; H-M1; H-M3; H-M6; H-M7; H-M8; E&I-M4	Land change (land:water ratio); vegetation (emergent/forested); soils (characteristics, accretion, elevation change); hydrology (porewater, surface water [salinity, temperature, water level])	1990-present	Continuous; discrete	Lower Pontchartrain Basin	https://www.lacoast.gov/crms/Home.aspx
Crescent Soil and Water Conservation District	Crescent [District 26] SWCD	H-M1; H-M16	Invasive species (hog) management; central wetland cypress tree monitoring	?-present	Discrete	St. Bernard Parish	https://www.louisianalandcan.org/local-resources/Crescent-SWCD/4362
EarthExplorer	USGS	H-M1; H-M3	Satellite imagery; aerial imagery; elevation and topobathy; land cover	1972-present	Discrete	Basin wide	https://earthexplorer.usgs.gov/
Feral Hogs	LDWF	H-M16; E&I-M5	Feral hog population size; feral hog harvesting; hog damage; disease tracking (pseudorabies, brucellosis, lepto)	?-present	Discrete	Basin wide (within LA)	https://www.wlf.louisiana.gov/page/feral-hogs
Fish Tracking	LDWF	H-M10	Fish tracking with acoustic telemetry	2016-?	Continuous	Lake Pontchartrain area	https://mississippiriverdelta.org/tracking-fish-with-acoustic-telemetry-implementation-of-an-exciting-technology-in-lake-pontchartrain/
Fisheries-Independent Monitoring Program	LDWF	WQ-M1; H-M10; H-M13	Abundance, distribution, diversity, and condition of finfish and shellfish populations; water quality data (salinity, water temperature, DO, turbidity, depth, pH)	1967-present	Discrete	Lower Pontchartrain Basin (CSA I North; CSA I South)	https://www.wlf.louisiana.gov/subhome/studying-fish-populations
Forest Productivity Program (FPP)	LDAF	H-M8; E&I-M4	Technical assistance for landowners; first year survival/stocking; acres treated by program	1997-present	Discrete	Basin wide (within LA)	https://www.ldaf.la.gov/land/forestry/forest-productivity-program

PROGRAM NAME	AGENCY/ ENTITY	RELEVANT MONITORING FOCUS NUMBER(S)	DATA/SAMPLING/ PROGRAM COMPONENTS	SAMPLING YEARS	SAMPLING FREQUENCY	LOCATION	WEBSITE LINK
Invasive Apple Snail Mitigation	LSU AgCenter	H-M17; E&I-M5	General area of apple snail presence mapping; methods of eradication (but no specific program)	Unknown	Discrete	Lower Pontchartrain Basin	https://www.lsuagcenter.com/articles/page1718814915423
LA Deepwater Horizon Oil Spill Projects	CPRA; LDEQ; LDNWF; C&E; DOI; NOAA; USEPA	WQ-M8; H-M7; H-M8; H-M11; H-M12; H-M13; E&I-M2	Marsh/ridge/habitat/barrier island restoration; oyster habitat; recreation sites; nutrient reduction	Unknown	Discrete: event-based	Basin wide (within LA)	https://la-dwh.com/restoration-projects/
LaBranche March Creation	USDA (NRCS)	H-M6; H-M7	Ongoing assessments of marsh elevation; vegetation establishment; hydrologic conditions	1994-present	Discrete	LaBranch Wetlands (south of Lake Pontchartrain)	https://www.nrcs.usda.gov/resources/guides-and-instructions/labranche-marsh-creation-project-media-tour-guides-instructions
Longleaf Landscape Stewardship Grant	NFWF	H-M3; H-M5; H-M8; H-M9; H-M11; H-M12; H-M14; E&I-M4; E&I-M5	Acres of prescribed burns; landowners engaged and behavior change; translocating red-cockaded woodpeckers and gopher tortoise; acres planted; acres of invasives treatment; improved-management acres; seed/seedling production; silvopasture acres; workshops/management plans	2012-present	Discrete	St. Tammany, Tangipahoa, and Washington parishes	https://www.nfwf.org/programs/longleaf-landscape-stewardship-fund
Louisiana Conservation Stewardship Program (CSP)	USDA (NRCS)	H-M8; E&I-M4	Conservation planning and documentation; conservation improvement monitoring; ongoing technical assistance	2008-present	Discrete	Basin wide (within LA)	https://www.nrcs.usda.gov/programs-initiatives/csp-conservation-stewardship-program/louisiana/louisiana-conservation

PROGRAM NAME	AGENCY/ ENTITY	RELEVANT MONITORING FOCUS NUMBER(S)	DATA/SAMPLING/ PROGRAM COMPONENTS	SAMPLING YEARS	SAMPLING FREQUENCY	LOCATION	WEBSITE LINK
Louisiana Environmental Quality Incentives Program (EQIP)	USDA (NRCS)	H-M8; E&I-M4	Technical assistance (resource assessments, practice design, and resource monitoring); acres benefited	1996-present	Discrete	Basin wide (within LA)	https://www.nrcs.usda.gov/programs-initiatives/eqip-environmental-quality-incentives/louisiana/louisiana-environmental
Louisiana Longleaf Pine Initiative	USDA (NRCS); ALRI	H-M3; H-M5; H-M8; H-M9; H-M11; H-M12	Acres of restored longleaf pine; sustainability of longleaf pine forests; improved habitat for at-risk wildlife species	2010-present	Discrete	Upper Pontchartrain Basin	https://www.nrcs.usda.gov/programs-initiatives/longleaf-pine-initiative/louisiana/louisiana-longleaf-pine-initiative-llpi
Master Plan Projects	CPRA	WQ-M1; H-M2; H-M6; H-M7; H-M11; H-M12; H-M13; E&I-M2	Marsh creation; hydrologic restoration; shoreline protection; SAV habitat; oyster habitat; recreation sites	2007-present	Discrete	Lower Pontchartrain Basin	https://cims.coastal.louisiana.gov/outreach/projects/OPL_Full_page.html
Monitoring a Bio-Engineered Living Shoreline	USFWS	WQ-M1; H-M7; H-M13	Living shoreline oyster monitoring	2017-2021	Discrete	Eloi Bay	https://www.fws.gov/sites/default/files/documents/CSS-139-2022%20Swam%20et%20al.%20final.pdf
National Land Cover Database	MRLC Consortium; USGS; BLM; NOAA; USFS	H-M1; H-M3	16 Land use/land cover types	1985-present	Discrete	Basin wide	https://www.mrlc.gov/data/legends/national-land-cover-database-class-legend-and-description
Oyster Map	LDWF	H-M13	Oyster leases; public seed grounds; clutch plants	?-present	Discrete	Coastal Louisiana	https://gis.wlf.la.gov/oystermap/map.html

PROGRAM NAME	AGENCY/ ENTITY	RELEVANT MONITORING FOCUS NUMBER(S)	DATA/SAMPLING/ PROGRAM COMPONENTS	SAMPLING YEARS	SAMPLING FREQUENCY	LOCATION	WEBSITE LINK
Pine Flatwoods/ Longleaf Pine Mitigation Banks	USACE	H-M3; H-M5; H-M8; H-M9; H-M14	Prescribed burns; invasive species control; brush control pine planting; supports rare plant and animal species; invasive species control; success monitoring (vegetation cover, survival rates, species composition)	2001-present	Discrete	Tangipahoa and St. Tammany parishes	https://ribits.ops.usace.army.mil/ords/f?p=107:158::::::
Plaquemines Soil and Water Conservation District	Plaquemines [District 42] SWCD	H-M1	Conservation planning and resource management across varied landscapes	1985-present	Discrete	Plaquemines Parish	https://www.louisianalandcan.org/local-resources/Plaquemines-SWCD/4384
State Management Plan for Invasive Species - Aquatic Nuisance Species Coordinator	LDWF; LA Sea Grant	H-M16; H-M17; H-M18; E&I-M5	Coordinating management actions; quantitative biological measures; quantitative social measures	2005-?	Discrete	Basin wide (within LA)	https://www.louisianalandcan.org/article/State-Management-Plan-for-Aquatic-Invasive-Species-in-Louisiana/1147
Tangipahoa-St. Helena Soil and Water Conservation District	Tangipahoa-St. Helena [District 32] SWCD	WQ-M8; H-M8;	Conservation planning; nutrient and pathogen runoff work	?-present	Discrete	Tangipahoa and St. Helena parishes	https://www.louisianalandcan.org/local-resources/TangipahoaSt-Helena-SWCD/4392
Wildlife Diversity Program	LDWF	H-M5	227 species of greatest conservation need (SGCN) identified in the basin; rare species and habitats with over 10,000 occurrence records	2001-present	Discrete	Basin wide (within LA)	https://www.wlf.louisiana.gov/page/wildlife-diversity

PROGRAM NAME	AGENCY/ ENTITY	RELEVANT MONITORING FOCUS NUMBER(S)	DATA/SAMPLING/ PROGRAM COMPONENTS	SAMPLING YEARS	SAMPLING FREQUENCY	LOCATION	WEBSITE LINK
Working Lands for Wildlife (WLFW)	USDA (NRCS)	H-M5	Gopher tortoise initiative; northern bobwhite pilot project	2010-present	Discrete	Upper Pontchartrain Basin	https://www.nrcs.usda.gov/programs-initiatives/working-lands-for-wildlife

189 **Table 6. Education and involvement programs and data in the Pontchartrain Basin relevant to the monitoring foci.[5]**

PROGRAM NAME	AGENCY/ ENTITY	RELEVANT MONITORING FOCUS NUMBER(S)	DATA/SAMPLING/ PROGRAM COMPONENTS	SAMPLING YEARS	SAMPLING FREQUENCY	LOCATION	WEBSITE LINK
Adopt-a-Pond	St. Tammany Parish; LSU AgCenter; LA Sea Grant	WQ-M1; H-M3; H-M8; E&I-M3; E&I-M4	Student sampling of WQ (pH, temperature, salinity, dissolved oxygen, turbidity, and excess nutrients) and monitoring of habitat improvement from tree planting; wildlife surveys; plant community surveys	2018-present	Discrete	St. Tammany Parish	https://repository.library.noaa.gov/view/noaa/36875
Bayou Bienvenue Wetland Triangle Restoration	CRCL	H-M1; E&I-M4	Educational signs about wetland restoration and coastal habitats	2008-present	N/A	Lower Ninth Ward of New Orleans	https://restorethebayou.org/
Bogue Chitto-Pearl River Soil and Water Conservation District	Bogue Chitto-Pearl River [District 7] SWCD	WQ-M1; E&I-M3; E&I-M4	Community engagement including river cleanup	?-present	Discrete	Washington Parish	https://www.facebook.com/p/Bogue-Chitto-Pearl-River-SWCD-100068927186580/

[5] To reduce table space, full names of agencies/organizations abbreviated in the table can be found at in the acronym list at the start of the report

PROGRAM NAME	AGENCY/ ENTITY	RELEVANT MONITORING FOCUS NUMBER(S)	DATA/SAMPLING/ PROGRAM COMPONENTS	SAMPLING YEARS	SAMPLING FREQUENCY	LOCATION	WEBSITE LINK
Bogue Chitto State Park	LA Office of State Parks	E&I-M2; E&I-M4	Interactive kids trail engaging children with a hands-on experience about animals and insects	2010-present	N/A	Washington Parish	https://www.lastateparks.com/parks-preserves/bogue-chitto-state-park
City of Covington Low Impact Development	City of Covington	WQ-M1; E&I-M4	Educational material about low impact development	2020-?	N/A	Covington	https://www.covla.com/wp-content/uploads/2020/10/Covington-Low-Impact-Development-Educational-materials9646.pdf
Coastal Change Oral Histories Project	LA Sea Grant	E&I-M4	Interviews, education, and outreach about cultural, environmental, and historical knowledge	Unknown	N/A	Holy Cross School in Orleans Parish	https://www.laseagrant.org/education/projects/oral-histories/
Coastal Roots	LA Sea Grant	H-M1; E&I-M4	Education, engagement, and outreach; lesson plans; # of participants, # of native trees/grasses	2000-present	Discrete	New Orleans area schools	https://www.lsu.edu/coastalroots/index.php
Communities Investigating Their Environment (CITE)	PC	WQ-M1; E&I-M3	Citizen science of local residents monitoring water quality and developing action plans	Unknown	Discrete	St. John the Baptist Parish	https://scienceforourcoast.org/cite
EnvironMentors	LA Sea Grant; LSU	E&I-M4	Science mentoring initiative that connects public high school students with passionate LSU undergraduate and graduate mentor.	1992-present	N/A	East Baton Rouge Parish	https://www.laseagrant.org/environmentors/
Facilitating Learning in Our Watershed (FLOW)	PC; NOAA; St. Bernard Parish School Board	WQ-M1; E&I-M3	Environmental education; STEM kits; watershed understanding; environmental awareness	2021-present	N/A	St. Bernard Parish	https://scienceforourcoast.org/flow

PROGRAM NAME	AGENCY/ ENTITY	RELEVANT MONITORING FOCUS NUMBER(S)	DATA/SAMPLING/ PROGRAM COMPONENTS	SAMPLING YEARS	SAMPLING FREQUENCY	LOCATION	WEBSITE LINK
Fairview-Riverside State Park	LA Office of State Parks	E&I-M2; E&I-M4	Guided nature trail walks	1965-present	N/A	St. Tammany Parish	https://www.lastateparks.com/parks-preserves/fairview-riverside-state-park
Feliciana Soil and Water Conservation District	Feliciana [District 1] SWCD	H-M1; H-M3; E&I-M4	Conservation planning and educational outreach promoting conservation awareness	1938-present	Discrete	East and West Feliciana parishes	https://www.louisianalandcan.org/local-resources/Feliciana-SWCD/4369
Fontainebleau State Park	LA Office of State Parks	E&I-M2; E&I-M4	Interpretive nature trail with signs about habitats	1938-present	N/A	St. Tammany Parish	https://www.lastateparks.com/parks-preserves/fontainebleau-state-park
Land Trust for Louisiana	Land Trust for Louisiana	H-M8; H-M9; H-M14; E&I-M4	Landowner outreach and engagement; project monitoring and reporting (e.g., planting, prescribed burns, invasive species control); community science volunteer data collection	2005-present	Discrete	St. Tammany, Tangipahoa, Orleans, and Washington parishes	https://landtrustforlouisiana.org/
Lessons on the Lake: An Educators Guide to the Pontchartrain Basin	USGS; PC	E&I-M3; E&I-M4	Educational material on the Pontchartrain Basin	1998-?	N/A	Basin wide	https://pubs.usgs.gov/of/1998/of98-805/lessons/index.htm
Marsh Maneuvers	LSU AgCenter; LA Sea Grant; LDWF	E&I-M3; E&I-M4	Education and engagement about the Louisiana coastal environment; # of participants; pre/post knowledge assessment test	1989-present	Discrete	Rockefeller Wildlife Refuge (students can be statewide including Pontchartrain Basin)	https://www.laseagrant.org/education/projects/marsh-maneuvers/

PROGRAM NAME	AGENCY/ ENTITY	RELEVANT MONITORING FOCUS NUMBER(S)	DATA/SAMPLING/ PROGRAM COMPONENTS	SAMPLING YEARS	SAMPLING FREQUENCY	LOCATION	WEBSITE LINK
Native Fish in the Classroom	LA Sea Grant; LDWF	E&I-M4	Education about fish and aquatic ecosystems	2005-present	N/A	Training is in Forest Hill, LA, but teachers can come from anywhere including Pontchartrain Basin	https://www.laseagrant.org/education/projects/native-fish/
Native Plants Program (NPP)	CRCL; USGS[6]	H-M7; E&I-M4	Engage volunteers with restoring coastal habitat; track # of volunteers and planting areas	2000-present	Discrete	Lower Pontchartrain Basin	https://www.crcl.org/native-plants/
Northshore River Watch	Northshore River Watch	WQ-M1; E&I-M3; E&I-M4	Regulatory monitoring and public-notice tracking (404/401, discharge and Scenic Rivers permits); volunteer-based water quality monitoring; education and advocacy training	2023-present	Discrete	St. Tammany, Tangipahoa, Washington, Livingston, and St. Helena parishes	https://www.nsriverwatch.org/

[6] More information can befound at the following URL: https://warcapps.usgs.gov/PlantID

PROGRAM NAME	AGENCY/ ENTITY	RELEVANT MONITORING FOCUS NUMBER(S)	DATA/SAMPLING/ PROGRAM COMPONENTS	SAMPLING YEARS	SAMPLING FREQUENCY	LOCATION	WEBSITE LINK
OWL (Our Waterways of Louisiana) Citizens Advisory Group for the Natalbany River; Yellow Water River; New & Blind Rivers	LDEQ	WQ-M1; H-M8; E&I-M3; E&I-M4	Citizen science; water quality education; restoration implementation; training on LDEQ's electronic document management system (EDMS); TMDL; nutrient reduction; water quality improvement	?-present	Discrete	Natalbany River, Yellow Water River, New and Blind rivers	(1) https://www.facebook.com/OurWatersofLANatalbanyRiver/; (2) https://www.facebook.com/p/Our-Waterways-of-Louisiana-OWL-Yellow-Water-River-100070320064592/; (3) https://www.facebook.com/people/Our-Waterways-of-Louisiana-New-River-and-Blind-River/61566908696111/
Pontchartrain Conservancy Environmental Education	PC	WQ-M1; E&I-M3	Range of environmental education programs	1989-present	N/A	Lake Pontchartrain and surrounding watershed	https://scienceforourcoast.org/education
Tangipahoa Parish Water Quality Taskforce on Innovative Pollution Reduction Practices	PC; LDEQ; USEPA; St. Tammany Parish DHHS; LSU AgCenter	WQ-M1; E&I-M3	Task force participation; water quality improvements identified; youth education	2017-2019	Discrete	Northshore of Lake Pontchartrain	https://www.lsuagcenter.com/profiles/lbenedict/articles/page1515532065491
The Louisiana Project WET (Water Education for Today)	LDAF OSWC; DU; TNC	WQ-M1; E&I-M3; E&I-M4	Water conservation; water quality, habitat, and agriculture education	1996-present	N/A	Basin wide (within LA)	https://www.louisianalandcan.org/local-resources/Project-WET-Foundation/12500

PROGRAM NAME	AGENCY/ ENTITY	RELEVANT MONITORING FOCUS NUMBER(S)	DATA/SAMPLING/ PROGRAM COMPONENTS	SAMPLING YEARS	SAMPLING FREQUENCY	LOCATION	WEBSITE LINK
Tickfaw State Park	LA Office of State Parks	E&I-M2; E&I-M4	Nature center; flood-cycle and associated habitat and wildlife/fisheries breeding education; interpretive nature trail	1999-present	N/A	Livingston Parish	https://www.lastateparks.com/parks-preserves/tickfaw-state-park
Urban Waters Federal Partnership (UWFP)	USEPA; USFS	WQ-M1; H-M6; H-M8; E&I-M3; E&I-M4	Environmental education; lakeshore restoration and ecological health improvement; water quality monitoring in urban waterways; Storm Water Management Model (SWMM) data collection and updates; cross jurisdictional watershed planning and coordination	2011-present	Discrete	New Orleans/Lake Pontchartrain Area	https://www.epa.gov/urbanwaterspartners/urban-waters-and-lake-pontchartrain-areanew-orleans-louisiana
Wetland Days	LA Sea Grant	E&I-M3; E&I-M4; E&I-M5	Public education and engagement about coastal habitats, invasive/native species, and water quality including interactive field trips for students	2010-present	N/A	Plaquemines, St. Bernard, Tangipahoa, and St. Tammany parishes	https://www.laseagrant.org/2023/grant-extends-wetland-days/
Youth Wetlands Program	LSU AgCenter; Louisiana 4-H; CPRA	H-M7; H-M14; H-M15; E&I-M4; E&I-M5	# of participants; pre- and post-tests are administered to assess student learning outcomes; number of vegetation plantings; invasive species removal	2013-present	Discrete	Basin wide (within LA)	https://www.lsuagcenter.com/topics/kids_teens/projects/ywp

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SUMMARY AND PATH FORWARD

There are 32 monitoring foci (9 water quality, 18 habitat, and 5 education and involvement) included in this Monitoring Report. These foci were linked to 91 data collection programs (26 water quality, 38 habitat, and 27 education and involvement). To remain relevant, periodic reviews and revisions to this Monitoring Report should be conducted.

Data Gaps

Information provided in this Monitoring Report enables a high-level comparison between the monitoring foci and the currently identified monitoring and data collection programs in the basin. For water quality, all nine monitoring foci (Table 1) are represented by at least one dataset or program listed in the data tables (Table 4, 5, and 6). The habitat section includes data (Table 4, 5, and 6) that corresponds to nearly all 18 monitoring foci (Table 2), with the exception of H-M4 (public impact on invasive species). Although no current dataset directly supports H-M4, it is linked to at least five actions identified in the CCMP (Table 2), indicating its importance for future data development. For education and involvement, four of the five monitoring foci (Table 3) are reflected in the data tables (Table 4, 5, and 6), with E&I-M1 (involvement with the PRP) being the only one not currently represented by a known dataset. However, this focus area is specific to the PRP and is supported by at least 20 actions (Table 3) in the CCMP, highlighting its relevance despite the lack of data programs in the basin.

It is important to note that monitoring foci inclusion in the data tables does not mean all parameters for each monitoring focus are fully captured. In many cases, the available data are spatially limited and/or focus on only a subset of relevant parameters. This assessment simply reflects whether monitoring foci are addressed somewhere in the basin, not uniformly or comprehensively across the entire region.

Partnerships

Collaboration is essential to the success of monitoring in the Pontchartrain Basin. A diverse group of agencies and partners plays an active role in monitoring. These include local governments, state and federal agencies, academic and research institutions, non-profit organizations, and community-based groups. These partners can provide insight on existing monitoring efforts, identify emerging issues, and help determine new focuses for data collection.

Partnerships with citizen science programs, K–12 schools, and universities can increase monitoring coverage, particularly in under-sampled areas, while also advancing public understanding of water quality and habitat issues. These collaborative approaches help cultivate a sense of stewardship in the region's residents and provide valuable data to inform management decisions. Weaving together institutional monitoring and grassroots engagement promotes a holistic and inclusive design for tracking and supporting the health of the Pontchartrain Basin.

Conclusion

Sustaining and/or modifying ongoing monitoring and implementing new monitoring across the Pontchartrain Basin will require a combination of current resources and proactive planning for the future. Presently, monitoring efforts are supported through a mix of federal, state, and local sources, including contributions from non-profit and academic partners. Establishment of additional partnerships and support through federal initiatives, state programs, philanthropic foundations, and innovative partnerships with private-sector organizations and community-based groups would enhance monitoring capacity.