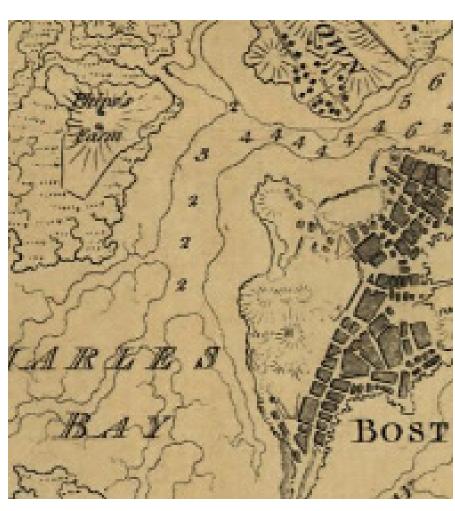
Charles River Floating Wetlands

Laura Jasinski, Vanessa Nason, Max Rome, Pennie Taylor

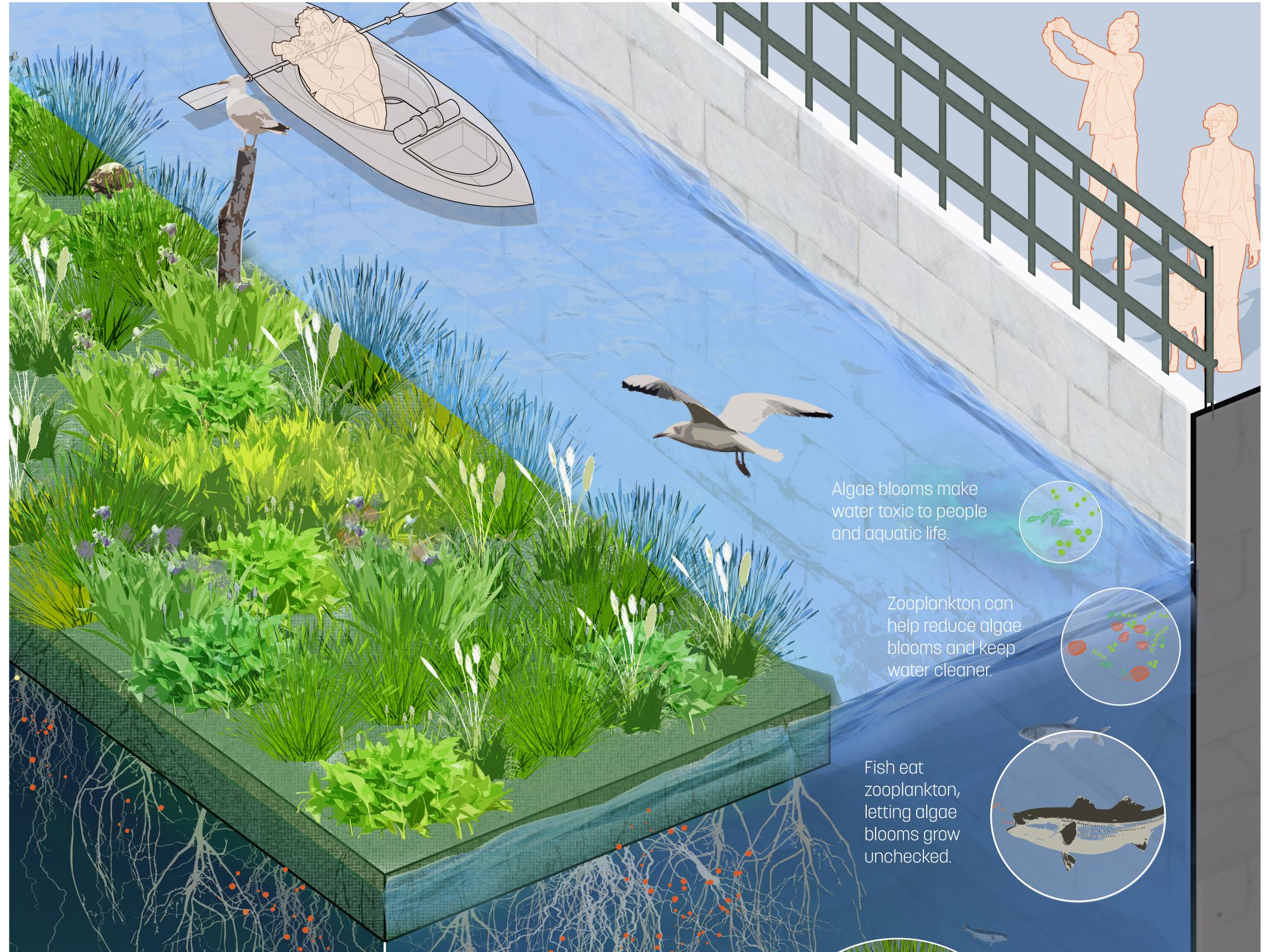


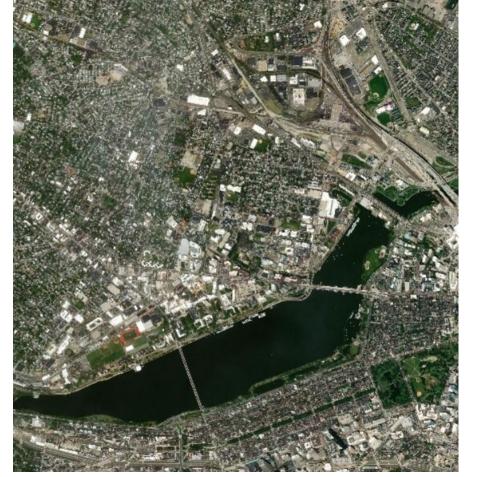


History

Before urban development, the Charles River was a free-flowing tidal estuary. A complex habitat of wetlands and mud-flats surrounded the main channel and supported a diversity of species including shellfish, migratory birds, and anadromous fish.

FLOATING WETLANDS CONCEPT





Urban Condition

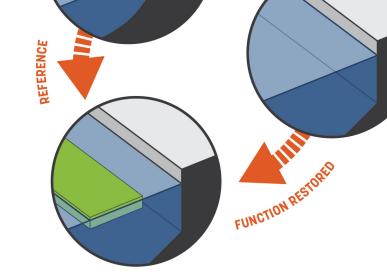
Today, the Charles' lower basin is a typical urban waterbody. Dams maintain a near-constant water level and hardscape covers much of the watershed. Wetlands and littoral vegetation are largely absent.

Challenges

Nutrients, carried by rainwater running off the city streets, act as fertilizers fueling the growth of algae. Ecological feedback loops exacerbated by the lack of wetland vegetation result in frequent algal blooms and depleted zooplankton populations.

Intervention

Floating wetland roots reintroduce plant habitat, providing zooplankton

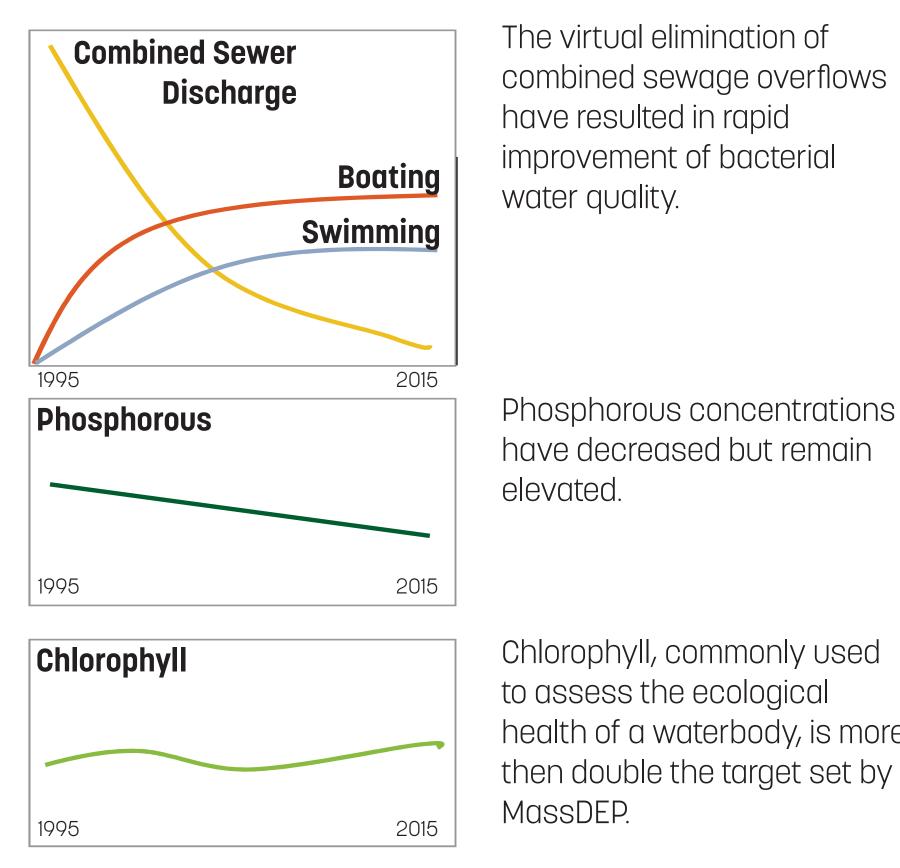


refuge from predation. This process can locally increase zooplankton populations to aid in the control of algal blooms and help restore ecological balance.

The missing link: Floating wetlands provide habitat for zooplankton

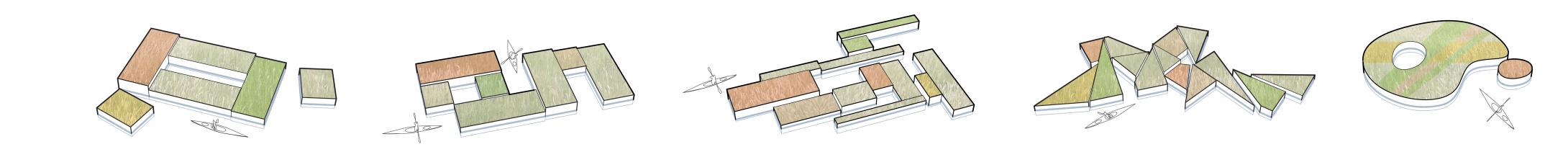
Zooplankton need habitat such as wetlands to breed and hide from fish.

WATER QUALITY



The virtual elimination of combined sewage overflows have resulted in rapid improvement of bacterial water quality.

MULTIPLE CONFIGURATIONS of wetlands are possble building from 600sf **SCENARIOS** of material in rectangular blocks or custom organic shapes





JUNE Charles River

2019

WINTER Various designs take shape to address a range of installation timelines, from a streamlined permitting process to more complex implementations.

2020		2021		2022
SPRING: Volunteers install	THROU	GH FALL FW is in	LOOKII	NG AHEAD: Three years of data

Conservancy and Northeastern University Chlorophyll, commonly used collaborate on daily testing to assess the ecological of E.coli and cyanobacteria health of a waterbody, is more at North Point Park then double the target set by MassDEP.

Wetland (FW), receives Sasaki Foundation Design award, and meets with stakeholders and permitting agencies.

FALL Team plans Floating

FW. Educational signage and engagement events take place with local groups and schools. for preservation.

will quantify the impact of FW on place for 3 years, allowing for data collection. It is zooplankton size, concentration and diversity. This data can evaluate the moved to a winter location feasibility of controlling algal blooms through enhanced herbivory (e.g., more and bigger zooplankton eat more algae!).

PLANTING STRATEGY

GOALS for plant selection include (a) maximizing roots for habitat, (b) creating a visually captivating design, and (c) selecting varieties appropriate for the growing conditions.

JAN/FEB MAR APR MAY JUN JUL AUG SEP OCT NOV E			
Ascorus americanus Sweetflag			
Asclepias incarnata Swamp Milkweed			
Aster puniceus Swamp Aster			
Calla palustris Water Arum			
Caltha palustris Marsh Marigold			
Carex Iurida Lurid Sedge			
Decodon verticillatus Water Willow			
Eupatorium maculatum Joe-Pye Weed	Ascorus americanus Asclepias incarnata Aster puniceus	Calla palustris Caltha palustris Carex Iurida	Decodon verticillatus Eupatorium maculatum Hibiscus moschuetos
Hibiscus moschuetos Crimsoneyed Rosemallow			
Iris versicolor Blue Flag Iris			
Juncus effusus Soft Rush ······			
Lobelia cardinalis Cardinal Flower			
Pontederia cordata Pickeral Weed			
Sagittaria latifolia Broadleaf Arrowhead			
Schoenoplectus acutus Hard-stem Bulrush			
Schoenoplectus tabernaemontani Soft-stem Bulrush			
Verbena hastata Blue Vervain			
Vernonia noveboracensis New York Ironweed	Iris versicolor Juncus effusus Lobelia cardinalis	Pontederia cordata Sagittaria latifolia Schoenoplectus acu	
			Cocole in partnership with
FLOWERS IN BLOOM VEGETATIVE COVER			Sasaki cocolli

