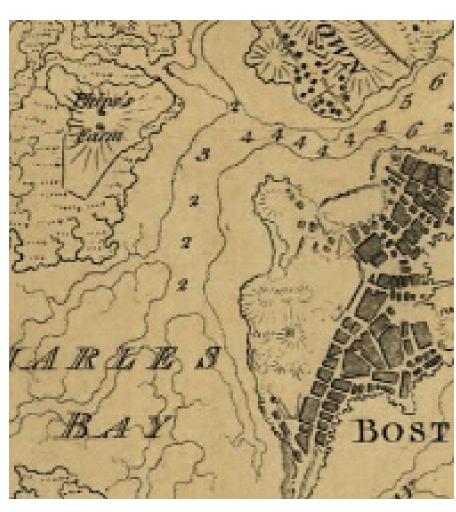
# **Charles River Floating Wetlands**

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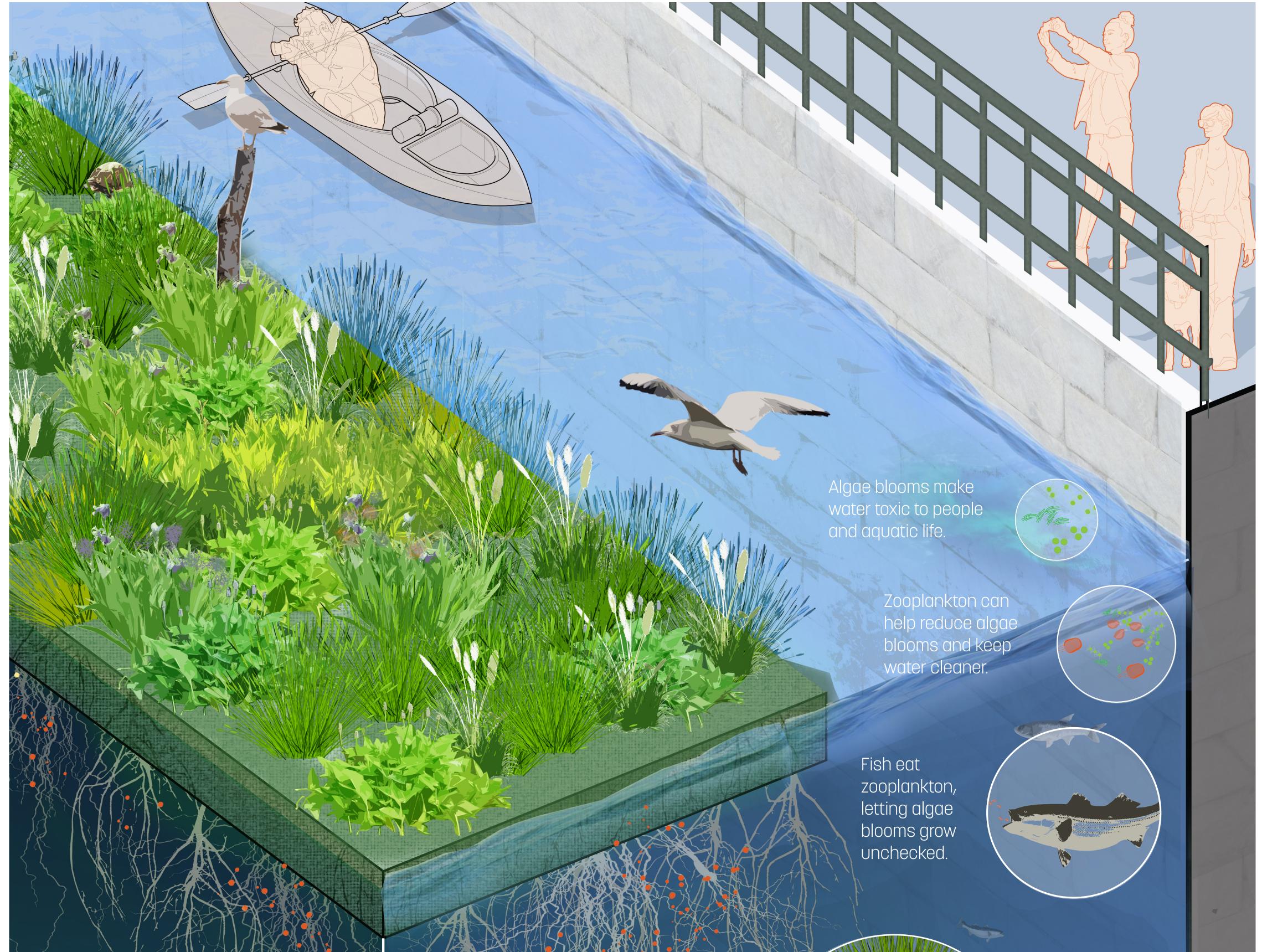


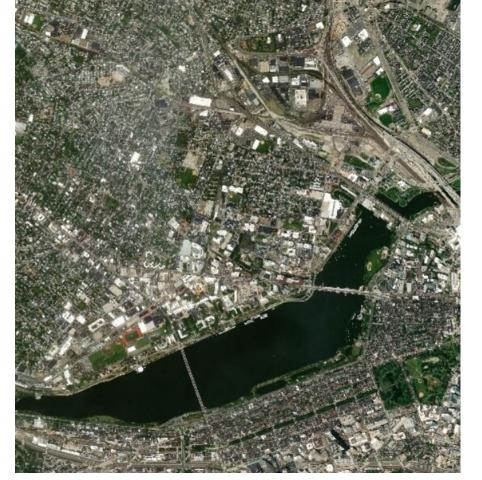


#### History

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

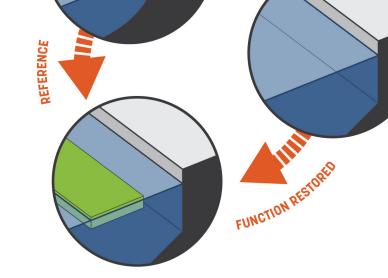
Today, the Charles' lower basin is a typical urban waterbody. Dams maintain a near-constant water level and hardscape covers much of the watershed. Wetlands and littoral vegetation are largely absent.

### 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

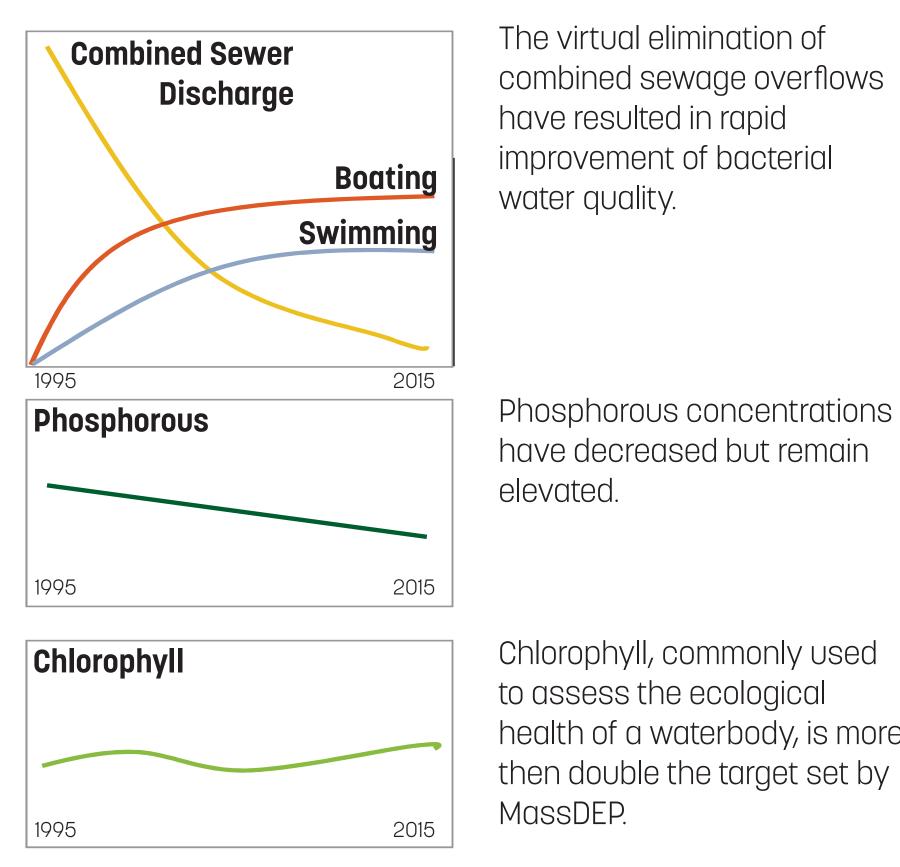


refuge from predation. This process can locally increase zooplankton populations to aid in the control of algal blooms and help restore ecological balance.

The missing link: Floating wetlands provide habitat for zooplankton

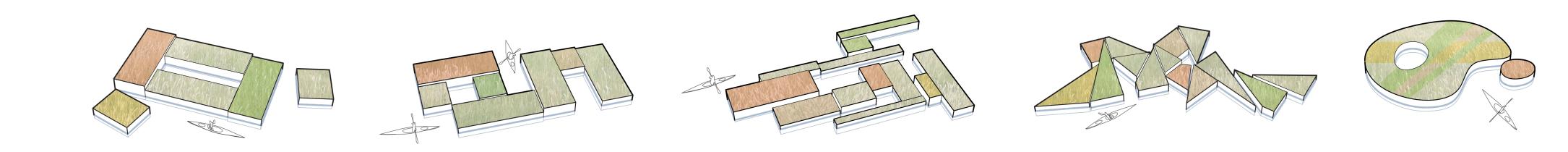
Zooplankton need habitat such as wetlands to breed and hide from fish.

## WATER QUALITY



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

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





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

018	2019		2020		2021		2022	
FALL Team pla	ans Floating	SPRING:	Volunteers install	THROUG	<b>GH FALL</b> FW is in	LOOKII	NG AHEAD: Three years of dat	С

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 FW. Educational signage Sasaki Foundation Design and engagement events award, and meets with take place with local stakeholders and permitting groups and schools. agencies.

place for 3 years, allowing for data collection. It is moved to a winter location for preservation.

will quantify the impact of FW on zooplankton size, concentration and diversity. This data can evaluate the feasibility of controlling algal blooms through enhanced herbivory (e.g., more and bigger zooplankton eat more algae!).



**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.

JUNE Charles River

JAN/FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC			
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 acut	
			Cocoli in partnership with
FLOWERS IN BLOOM VEGETATIVE COVER			Sasaki cocolli

