

## Unexpectedly anthropogenic and ‘natural’ ecosystems in urban contexts: New York City oysters and Abu Dhabi mangroves

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Cities are often associated with the obliteration of natural landscapes and yet anthropogenic and natural elements can coexist and intertwine in very unexpected ways. These issues open interesting new collaborative spaces for researchers working in very different geographical contexts and require innovative multi-disciplinary and interdisciplinary approaches. Oyster re-introduction and monitoring in the Hudson River and mangrove proliferation in Abu Dhabi are two such examples.

In 1984, the waters from Hudson Falls to the Battery of southern Manhattan were designated as a Superfund site by the US Environmental Protection Agency. Hudson River Park’s River Project continuously monitors local water conditions to understand the estuary ecosystem and communicate its health to park users. As part of this, Hudson River Park leads an ongoing oyster monitoring program. Their project aims to gain a greater understanding of how pile fields, which are the wooden structural remains of former shipping piers, can be repurposed as habitat for oyster restoration and recruitment. Oysters in the study are suspended from piles in mesh structures called oyster wraps. While oysters are ‘natural’, their re-introduction as a means of remediation is entirely anthropogenic.

The slipperiness of denotatively ‘natural’ versus built or planned ecosystems is highlighted by new research in the Arabian Gulf. City energy production, desalination, and channelization have altered water salinity and temperature conditions in ways that unexpectedly produced conditions in which mangroves proliferate. While a major mangrove park was planned and planted, which in this case frames the mangroves similarly to the Hudson River oysters as a way to remediate the waterway, mangroves are beginning to emerge on their own in entirely unplanned and unplanted ways.

We use these cases as an opportunity to query the conditions that converge to promote how ‘nature’ grows and how green space augmentation - particularly in heavily urbanized areas - can occur in ways that we do not know to look for in advance. This adds complexity and texture to the question of how to establish the baselines of ecosystems in heavily urbanized contexts.

