WHAT IS DESIGN NOW?

Our era of ecological resilience and ecocide requires much more holistic and inclusive thinking about social, civic space. **Kate Orff** is a co-director of the Center for Resilient Cities at Columbia University Graduate School of Architecture, Planning and Preservation in New York, and founder of landscape and urban design practice SCAPE. Here she outlines the studio's proposal for Alameda Creek, which removes the defensive infrastructures currently restraining the natural forces of the San Francisco Bay Area with the aim of reconnecting its urban and rural ecologies.

Alameda Creek,
San Francisco Bay Area,
California,
c 1960

While SCAPE's proposal is unable to return the Creek to its past state, the project proposes a reintroduction of sustainable sediment flows, ecological connectivity, and public access, addressing future climate risk.

UNMAKING THE LANDSCAPE

Kate Orff

1960

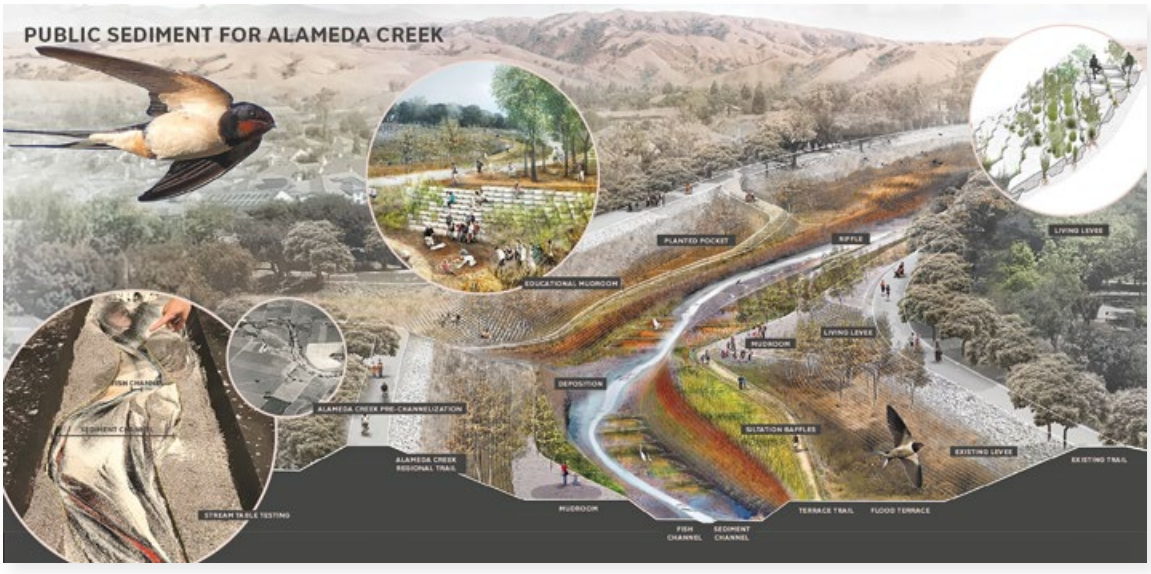
What does it mean to be a landscape architect today, at a moment when the globe is rapidly warming, as the market economy is hitting its zenith, and, at least in the context of the US, civic society is unravelling? Landscape architects are trained to make shapes, to sketch plans, to detail and construct outdoor spaces, but what else do we need to be doing? SCAPE's practice aims to test and expand the agency of the designer.

SCAPE embraces convening, advancing dialogue, and stewardship as deeply creative acts that combine grace and vision, grit and gravitas. Design for the next century is deeply rooted in social life and designing conversations, fostering interaction and encouraging interdependence. Moving forward, in light of increasing climate shocks and stressors, designing the social must be paired with new forms of architectural expression such as un-making, un-doing, subtracting, reversing, decarbonising, tearing out, ripping up, replanting, softening and connecting.

This concept of un-making is evident in SCAPE's Public Sediment for Alameda Creek project in the San Francisco Bay Area of California. The American landscape is dominated by large-scale defensive infrastructure projects that block, channel, divert, dam, harden and channellise rivers and water bodies, from the massive and mighty Mississippi to backyard creeks. What is clear is that these two centuries of 'flood control' and water infrastructure have an unintended legacy of encouraging unsafe development on flood plains, severing fish from spawning grounds, and starving bays of sediment flow. For example, in the nearby Sacramento-San Joaquin delta, the once massively abundant smelt fish is near extinction.[1] In the 2018 species abundance index it was measured as zero. In February 2019, Alameda Creek Alliance volunteers identified exactly one adult steelhead trout in lower Alameda Creek. It was placed in a modest fish tank and driven upstream to its spawning grounds in a van.

In environmental contexts, as with social life, it is seemingly easy to break a fragile system, and it takes a huge amount of regulatory and policy work, convening and collaboration (and driving fish tanks) to reset an integrated dynamic system that rebuilds itself over time. The SCAPE team's Public Sediment project aims to do just that. Like bays and wetlands across the US, the San Francisco Bay Area's tidal ecosystems – its marshes and mudflats – are at risk of subsidence and drowning due to low sediment supply and sea-level rise. Neighbourhoods in the region would lose the protective benefit of adjacent marshlands, and the remaining bathymetry would be inundated until it became flat, open water, leading to a decline in biodiverse intertidal marine life. A large tributary that once fed the Baylands with sediment, Alameda Creek had been transformed from a meander to a shallow and straight concretised canal, cut off from its historical marshes. The project shifts the orientation for sea-level rise adaptation from edge to upstream, redesigning sediment flows to sustain tidal ecosystems and rebuild the protective wetland cushion. The proposal represents a paradigm shift in how we plan for climate change. Rather than hardening the edge, we need to unmake it. This enables a recalibration of our relationship with sediment and water resources, and an investment in living systems that will grow over time to adapt to sea-level rise.

The Public Sediment project was created with extensive input from community stakeholders for the Resilient by Design: Bay Area Challenge initiative launched in September 2017, and has since continued with pilot funding from the National Coastal Resilience Fund. The challenge was a year-long initiative which aimed to address sea-level rise and climate change impacts throughout the area, partially funded by the Rockefeller Foundation and modelled after the Rebuild By Design challenge in New York City. Public Sediment for Alameda Creek is a plan to reconnect the creek with the bay, to provide a sustainable supply of sediment to baylands for sea-level rise adaptation, reconnect migratory fish with their historical spawning grounds, and introduce a network of community spaces that reclaim the Creek as a place for people.

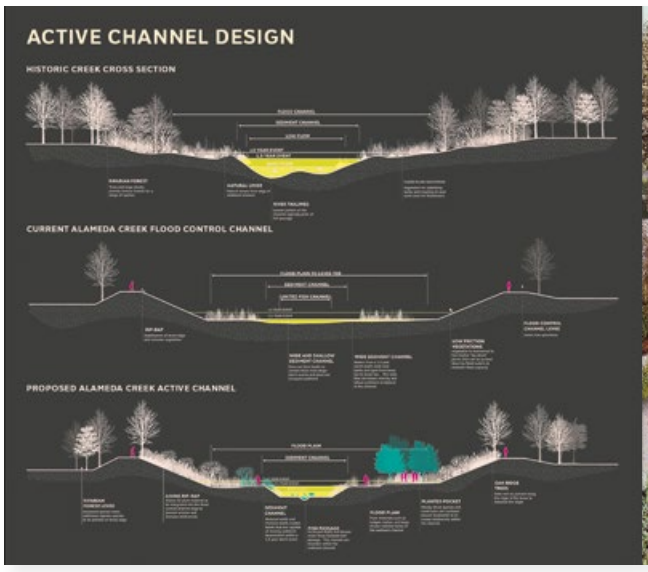


SCAPE,
Public Sediment
for Alameda Creek,
San Francisco Bay Area,
California,
2018

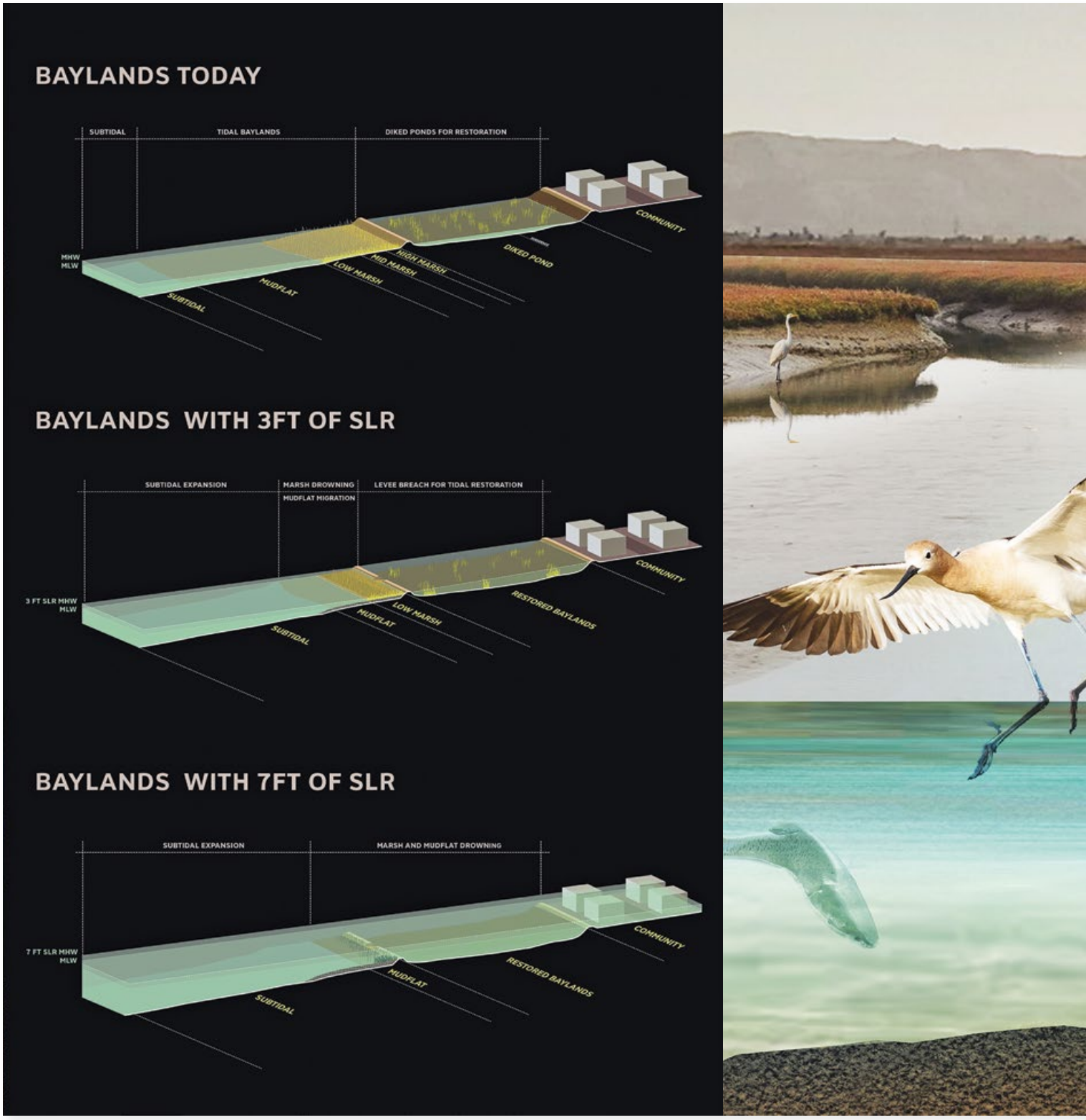
The planning study was built on prior scientific research on subsidence and the loss of tidal wetland ecosystems in the Bay Area, largely due to sea-level rise and sediment supply.

The project proposes the integration of physical and social systems along a revitalised creek to foster more functional and sustainable transportation of sediment, an approach that addresses sea-level rise and encourages public engagement while also providing a habitat for anadromous fish.

The Public Sediment team visualised ongoing scientific research on potential ecological changes in bayland systems over time, focusing on regional-scale losses in sediment supply, fish habitat, and the potential for ecological resilience.



Unmaking years of unsustainable channel design was a main aspect of the Public Sediment proposal. Alameda Creek was once a meandering water body spreading sediment-rich floodwater across a broad floodplain. Following repeat flooding in the mid-1900s, the Creek was channellised for flood protection, leading to ecological decline and disconnection from the water's edge.



Ecocide and the loss of the earth's biodiversity, in all its immense texture, colour, scale and intensity, is an aesthetic and moral question that dwarfs our more internal conversations about architecture

Public Sediment addresses the challenge of sediment scarcity along the vulnerable urban edges of Fremont, Union City and Newark, the vulnerabilities of which will only increase with projected sea-level rise. Beyond the Creek's path, the team's proposal also stretches through tidal zones into the Bay.

Adaptive Design in a Global Context

The Center for Resilient Cities and Landscapes at the Columbia University Graduate School of Architecture, Planning and Preservation (GSAPP) has explored these issues in global cities including Amman, Kolkata, Rio de Janeiro and CanTho, among others – places requiring a new, design-driven approach to climate risk. Landscape design now requires new forms of collaboration, and the fostering of political, institutional and creative networks that expand the agency and influence of landscape change. In the Public Sediment project in California, SCAPE teamed up with the Dredge Research Collaborative (DRC), a loose consortium of individuals mostly based in academia in different regions of the US who have studied the larger systems of dredge and the legal and policy landscape, particularly with the US Army Corps of Engineers and state-level regulators. The DRC recognises that these systems have a much larger and more systemic impact on the physical terrain than any site-bounded landscape intervention. SCAPE's goal with the Alameda Creek project, now funded in California's state budget,[2] is to design to influence policy, not just place.

At a global scale, the Center for Resilient Cities and Landscapes marshals the university's design and science expertise to help communities and ecosystems adapt to the pressures of urbanisation, inequality and climate uncertainty. The Center works with public, nonprofit and academic partners to deliver practical and forward-thinking technical assistance that advances project implementation through interdisciplinary research, risk visualisation, project design scenarios and facilitated convenings. It also integrates resilience thinking into design education and academic programming, in particular the Urban Design studio, bringing real-world challenges into the classroom to train future design leaders. These broader academic exchanges can help build joint capacity to design, position and fund transformational initiatives.

This combination of radically unbuilding aspects of the formed landscape, from concretised streambeds to steel bulkheads, levees and seawalls, and collaborating to formulate science, policy and design coalitions to put in place more flexible and adaptable ecological and social methods of addressing climate-changed landscape, are the hallmarks of SCAPE's work. Ecocide and the loss of the earth's biodiversity, in all its immense texture, colour, scale and intensity, is an aesthetic and moral question that dwarfs our more internal conversations about architecture. The act of unmaking the errors of the past, of gathering, and of recognising each other and the earth as worthy of deep care is one of the most profound design challenges before us. AD

Notes

1. See Dan Bacher, 'On Extinction's Edge: Fall Fish Survey Finds Zero Delta Smelt', CounterPunch, 5 February 2019: www.counterpunch.org/2019/02/05/on-extinctions-edge-fall-fish-survey-finds-zero-delta-smelt/.
2. See Senator Bob Wieckowski, 'Wieckowski Highlights Alameda Creek Restoration, Sabercat Trail Funding in State Budget', 28 June 2019: https://sd10.senate.ca.gov/news/2019-06-28-wieckowski-highlights-alameda-creek-restoration-sabercat-trail-funding-state-budget.