

Reclaiming Urban Nature

Environmental Action in the 21st century



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Peregrine Falcon, NYC
Richard Newstead for
Nature Conservancy, 2018

Photo © Richard Newstead

Environmental Action in the New Millennium

“Nature in and near cities is crucial not just for maintaining biodiversity, but for ensuring human wellbeing, which depends on the benefits that nature provides.” (Nature Conservancy, 2018)

Diverse Movements for Urban Nature:

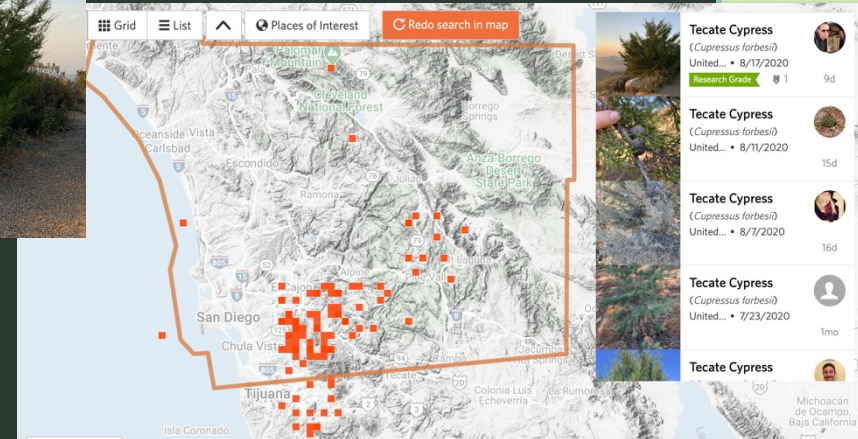
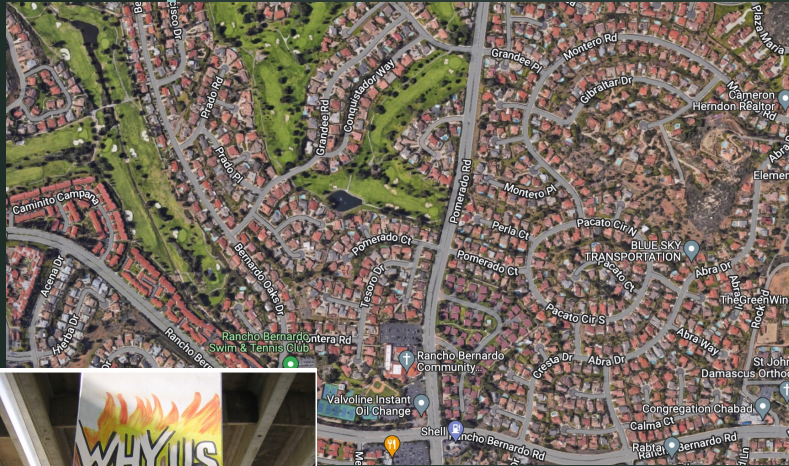
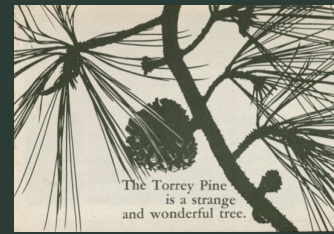
- Nature Based Solutions
- Urban ‘Greening’ - ‘Greenprinting’
- Climate Action - Sustainability Planning
- Smart Growth
- Urban Resilience
- Environmental Justice – Climate Justice
- Equitable Access to Nature
- Children in Nature
- Urban Ecology and Habitat Conservation

Focus on **re-connecting cities and human populations as part of ‘nature’** – with a dual emphasis on preserving **urban nature for wildlife** AND improving the **quality of human life** through nature.



Theodore Geisel (“Dr. Seuss”), 1972

San Diego: Sprawl City, Border Town, "Biodiversity Hotspot"





Nature Based Solutions: “Ecosystem Services” and Urban Resilience

- Recognition that life on earth relies on natural ecosystems and processes.
 - Quantification of the ‘services’ that ecosystems provide to human societies.
 - Emphasis on ‘designing with nature’ - natural solutions as most cost effective and sustainable
- **Role of Urban Ecosystems - Greenspaces:**
 - Filter and Replenish Clean Air
 - Sequester Carbon
 - Filter Water and allow absorption and groundwater replenishment
 - ‘Urban Cooling – Heat Island Effect
 - Preserve biodiversity
 - Enhance public health
 - Provide “Resilience” in the face of climate change
 - Buffer flooding and storm surges



Green Infrastructure – the challenge of Stormwater

- Protection and Restoration of wetlands, floodplains and riparian areas –

- Masterplan for LA River, San Diego River Park

- Development of ‘Green Infrastructure’

- Rethinking storm sewers and pavements
- Bio-swales for stormwater retention
- Rain Gardens

- *“Nature-based solutions have the potential to provide multiple benefits to urban communities. The biggest opportunity lies in improving the quality of life of people in cities while also improving ecosystem function.”*

- The Nature Conservancy: Build Healthy Cities



Green Stormwater Infrastructure. Detroit, MI. © Michael David-Lorne Jordan



OPINION // OUTLOOK

Raun: Mother Nature knows best for managing floods

By Dr. Loren Raun and Deborah January-Bevers | March 10, 2018 | Updated: March 12, 2018 2:27 p.m.

Houston Chronicle, Op-Ed, 2018



Stormwater Bioswale. Seattle, WA. © Paul Joseph Brown



Urban “Greening:”

Enhancing urban nature and improving urban quality of life:

- “Urban Forestry” - Street trees
- Roof gardens and Green Roofs
- Community Gardens
- Vacant Lot Restoration
- Habitat corridors
- Railway conversions
 - NY – ‘Highline,’ Atlanta ‘Beltway,’
 - Philadelphia ‘Reading Viaduct’
- Bird friendly buildings
- “Naturescaping” /Backyard habitat certification

Urban Greening: *“the incorporation of green-scaped pedestrian and bicycle trail systems, urban street canopy, green alleys, drought tolerant and native species landscaping and landscape restoration, green roofing, community gardens, natural infrastructure and stormwater features into public open spaces.”*

CA Strategic Growth Council. Affordable Housing and Sustainable Communities program.

Climate Action and Planning for Sustainability



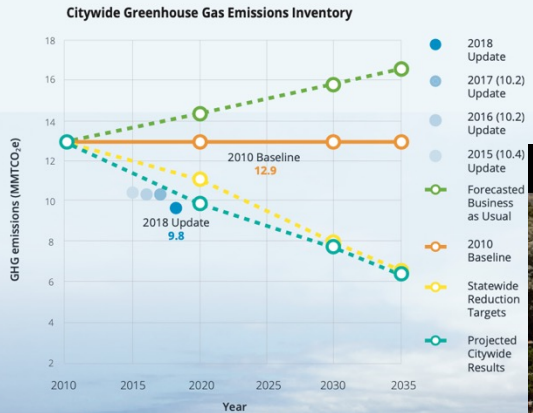
- Climate Action – Mass Transit and Multi-Modal Transportation
 - Transit Oriented Development , reduce VMT
 - **SD: Climate Action Campaign**
 - <https://www.climateactioncampaign.org>



Tracking Greenhouse Gas (GHG) Reductions

The total GHG emissions from San Diego in 2018 were approximately 9.8 million metric tons CO₂e (MMT CO₂e).
 Overall changes in emissions were primarily driven by two sectors: natural gas and water use. In 2018, natural gas emissions decreased by 12%. Less rain in 2017 and 2018 meant the City imported more water, which led to a 19% increase in emissions in the water category.

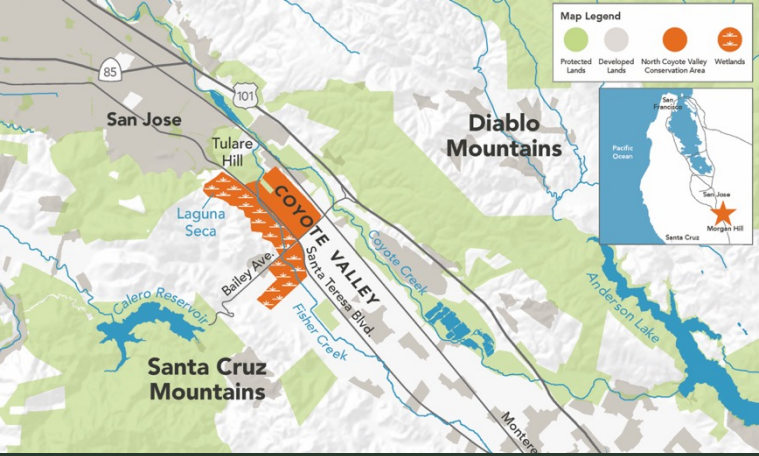
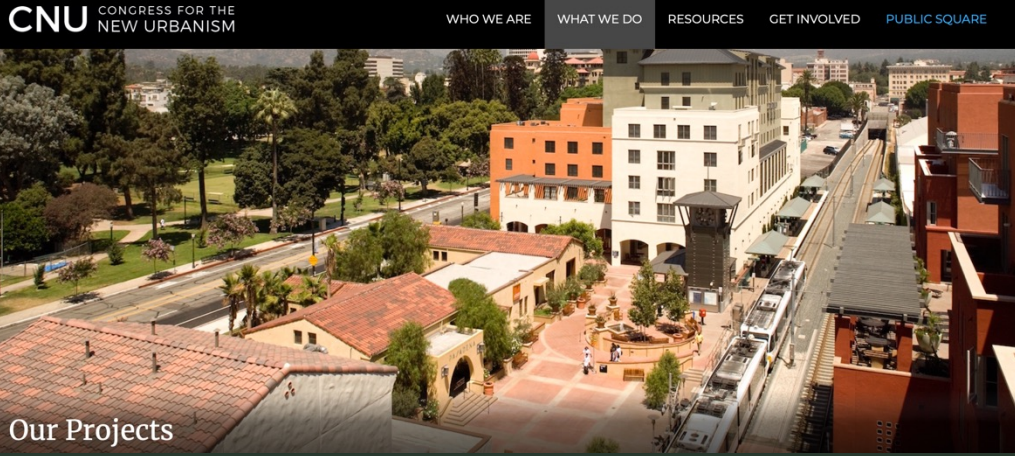
24%
 GHG emissions since 2010



- Smart Growth – Land Use Planning and Development
 - E.g., ‘Urban Footprint’ – Coyote Valley
 - Energy Efficiency – Green Building Standards

“LEED certified buildings are proven to save money, improve efficiency, lower carbon emissions and create healthier places for people” US Green Building Council

- Climate Justice – Focus on ‘Frontline’ Communities



Environmental Justice



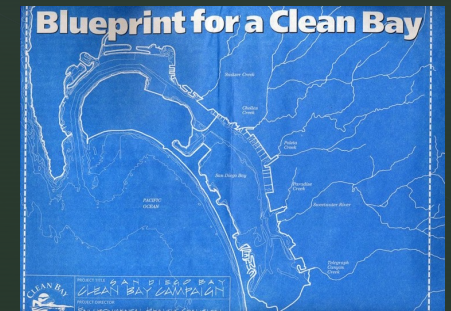
CHOLLAS CREEK WATERSHED PROTECTION - 1992 CALENDAR -



DETAIL FROM PAINTING BY ARTIST VICTOR OCHOA

A PROJECT OF THE ENVIRONMENTAL HEALTH COALITION

Environmental Health Coalition: founded in 1981 in response to illegal dumping of toxic wastes in Southcrest and Barrio Logan, became a leading Environmental Justice organization in California.



Greening with Justice: Community Equity and Engagement



Installing mulch on pollinator gardens, Atlanta, GA. @AshleyWellsWilliams



Woodlawn High School students design vacant lot, Birmingham, AL. © Francesca Gross/The Nature Conservancy

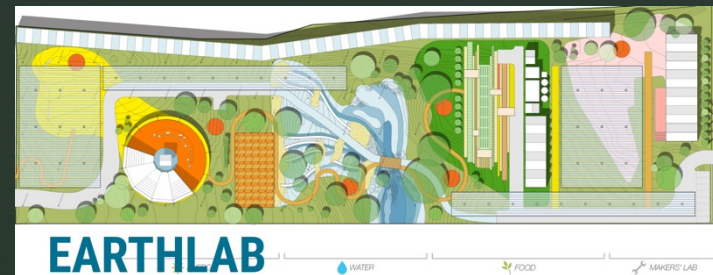


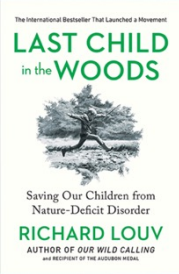
JOIN THE BUYERS CLUB
Weekly produce pick up on the SDSU campus



Community-wide planting event, Louisville, KY. © Devan King/The Nature Conservancy

- Community Planning – local community organizations take the lead
- School and University Groups – Integrated Curriculum: bioswale in Phila designed with Env Science class
- Community Gardens, fresh food – eg, **Brightside**
- Support for urban agriculture in conjunction with affordable housing construction
- Volunteer work projects – vacant lot restoration as ‘model landscapes’ for study
- San Diego – **Environmental Health Coalition, Groundworks, Chollas Creek Coalition**





Children in Nature: Connecting with the Outdoors

CITIES CONNECTING CHILDREN TO NATURE



- **Richard Louv:** *Last Child in the Woods: Saving Our Children From Nature-Deficit Disorder.* (2005)
- **Children and Nature Network** (2006)
 - Green schoolyards, Outdoor education, #Nature for All
- **San Diego Canyonlands** – <https://www.sdcanyonlands.org>
 - City Heights Canyon Enhancement and Loop Trail (2009-2017)
- **Groundwork San Diego** - Chollas Creek Restoration, Earthlab.
 - <https://groundworksandiego.org>
- **Friends of Rose Canyon** – 'Sense of Wonder' Project
- International Union for the Conservation of Nature (IUCN), resolution that children have a human right to experience the natural world. "the Child's Right to Connect with Nature and to a Healthy Environment," 2012



LA River, San Gabriel Mtns



Connecting Communities with Nature

- 10 Minute Walk.org
- LA – Nature for All,
- Amigos de los Rios, Emerald Necklace, Transit to Trails
- Bike and pedestrian Infrastructure
- Chicago: Burnham Wildlife Corridor – Community Engagement, Restoration and Stewardship
- San Diego River Park Foundation

City Heights Canyons Loop Trail



■ <https://sandigoriver.org>



HOME OUR VISION OUR WORK GET INVOLVED NEWS

CONNECT · CREATE · CONSERVE



Nature and Public Health

- **Children and Nature Network -**

- 100+ studies documenting the health benefits of exposure to nature, from anxiety and stress reduction, to improvements in ADHD, lower blood pressure, positive mental health benefits

- **Louisville Green Heart project – ‘A Clinical Trial for Nature’**

- Measuring impacts of urban forestry on air quality in “Coronary Valley” – among the nation’s worst air quality. Focus on frontline communities in South Louisville – “Rubbertown”

- **Park Rx programs –**

- Collaboration between parks and healthcare providers to encourage and welcome nature referrals for health benefits. Eg. Golden Gate National Parks Conservancy

“You don’t need to be an environmentalist to advocate for a cost-effective solution that could keep your kid’s asthma in check.”

“Journey to the Coronary Valley: Louisville’s Green Heart Project Tests Nature’s Role as a Prescription for Urban Health” (2017)



Bison – Rocky Mtn
Arsenal NWR, Denver



Laguna Seca, Coyote Valley,
San Jose, CA



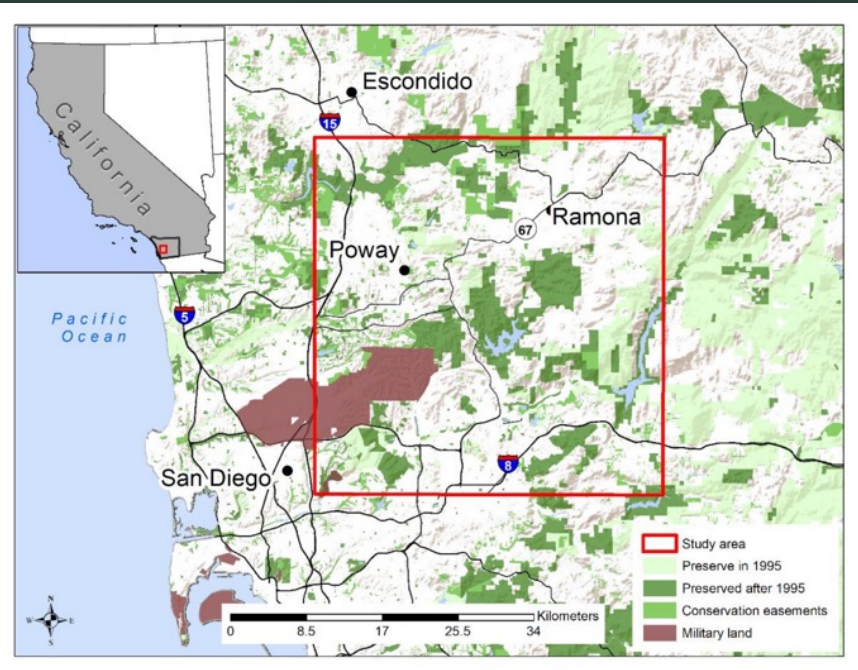
Key Goal #1

24% in protected/preserved land by 2040

Gulf-Houston RCP – Cypress Bayou

Urban Nature: Protecting Biodiversity and Connecting with the Outdoors

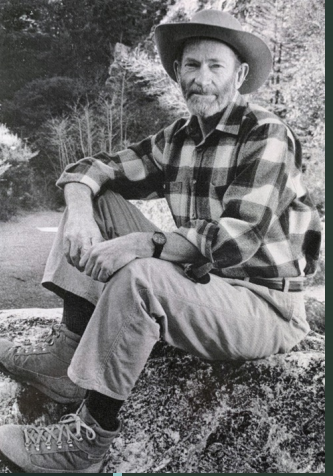
- Land conservation public and private
- New parks and greenspaces for habitat, wildlife, and people.
 - **San Diego River Park**; Phoenix Rio Salado (Rio Reimagined); LA River Revitalization
 - Chicago Wilderness, Lake Erie-Allegheny Partnership for Biodiversity
- Re-Wilding. **“ReWilding Mission Bay”** – SD Audubon
- **Re-Oaking California**, California Native Plant Society
- **Resilient Silicon Valley** - Landscape Resilience Framework - SFEI
- Habitat Conservation Plans
 - San Diego, Tuscon, Austin, Houston
SD: **MSCP**; Austin Balcones Canyonlands Preserve; Phoenix Sonoran Preserve, Gulf-Houston Regional Conservation Plan
- Small scale urban greening: Vacant Lot Restoration – Urban Orchards, Community Gardens, “Pocket Prairies”
- “Backyard Biodiversity”
- **San Diego County Biodiversity Landscaping Ordinance, 2022**



Habitat Conservation Planning

- Endangered Species Act, 1973
- San Bruno Mountain, Habitat Conservation Plan, 1982
- Natural Community Conservation Planning Act, 1993
- Multiple Species Conservation Program, (San Diego) 1997

SD passed the first metro scale habitat conservation plan in the US, 1997
 150,000 acres set aside to prevent extinction of 85 target species in exchange development on the rest.



Michael Soulé's work on San Diego was key to the new field of Conservation Biology, 1970s-80s.



© Gary Nafis

Urban Conservation

“**Urban conservation** is the active management of the natural resources and systems of a city to preserve, maintain and restore their functions; deliver a wide array of benefits to protect biodiversity; and enhance the well-being of city residents, while ideally prioritizing the needs of under-resourced and frontline communities .”

Nature Conservancy/Center for Whole Communities, *Field Guide to Conservation in Cities in North America*, 2017.



- “**Nature-based solutions** have the potential to provide multiple benefits to urban communities. The biggest opportunity lies in improving the quality of life of people in cities while also improving ecosystem function.”

- The Nature Conservancy: Build Healthy Cities

Resilient Silicon Valley

Science and stories for ecosystem health

A project of the San Francisco Estuary Institute's
Resilient Landscapes Program

