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Carbon Offsets Purchased

Cottonwood Dairy Farm, California



GNRA offset its transportation emissions by purchasing credits to fund anaerobic digesters. Digesters capture methane gas from farm manure to produce electricity, avoiding direct release of methane into the atmosphere.

South Kent Landfill, Michigan



To offset the park's waste and energy emissions, GNRA purchased credits to fund anaerobic digesters from South Kent Landfill. As organic waste decomposes, it releases methane gas. The digesters collect the gas and turn it into electricity that is delivered to the electrical grid.

Major Milestone

GNRA Achieves Carbon-Neutral Park Operations

GNRA has attained carbon-neutral park operations, reaching a major milestone set forth in the park's [Climate Change Action Plan](#). As of 2019, emissions from park operations are offset by purchasing carbon credits. Thus, the park currently contributes no net release of heat-trapping gases into the atmosphere.

Sustainability projects at Golden Gate have focused on reducing the amount of carbon dioxide (CO₂) and other heat-trapping gases generated from our park operations. When we burn fossil fuels for energy and transportation, we add more and more CO₂ into the atmosphere. This buildup acts like a blanket that traps heat around the world, disrupting the climate and ecosystems.

Major efforts undertaken by the park to reduce these emissions include using 100% renewable electricity and improving the efficiency of the park fleet with electric and hybrid vehicles.

However, the park still relies on natural gas, propane, and diesel for certain operations. In addition, organic materials

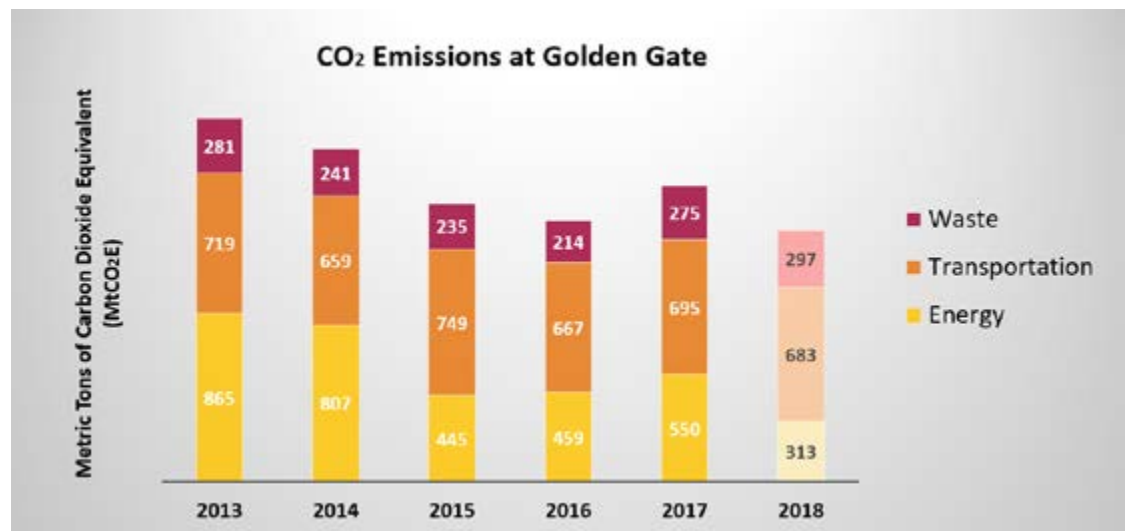
sent to landfills release methane, another heat-trapping gas.

The park will continue working to reduce CO₂ emissions and its contribution to climate change. As an interim measure, the park purchased carbon credits to offset its carbon emissions for the 2018 fiscal year. A grant from our non-profit partner, the Golden Gate National Parks Conservancy, funded these offsets.

What are Carbon Offsets?

Carbon offsets balance out emissions taking place somewhere else. They represent the act of reducing, avoiding, destroying or sequestering equivalent fossil fuel emissions in one place to compensate for carbon emissions elsewhere. Our carbon offsets provider, Terrapass, is certified by Green-e® Climate, an independent certification program for fossil fuel emissions reductions sold in the voluntary market.

To learn more about the GNRA's journey to achieve carbon-neutral park operations, visit www.nps.gov/goga/learn/nature/carbon-neutral-park.htm.



GNRA has been working to reduce its carbon footprint, mostly through generating and purchasing renewable electricity. Starting with 2018 emissions, the park has offset the remainder through the purchase of carbon credits.



In the Field

Energy Conservation in Historic Buildings

Specially-trained crews in the park's Facility Management Division have been weather-proofing and repairing windows in park buildings for the past several years to improve energy efficiency — part of GGNRA's goals to reduce the park's carbon footprint. The work includes cleaning, weather-stripping, and resetting the wood sashes and frames, as well as reglazing when needed. By repairing windows and insulating walls, airflow is reduced and buildings maintain regulated temperatures, thus using less energy to heat and cool.

Since most of the buildings in GGNRA are protected under historic preservation laws, features such as windows are considered part of the historic fabric and must be preserved to the greatest extent possible. Historic buildings are preserved to evoke the past and engage the public with the nation's cultural heritage. In addition, their preservation is inherently a sustainable practice.

Rehabilitation of the historic windows has taken place in multiple buildings in the Marin Headlands that are being renovated, including several to house park interns.

In most cases, insulation has also been added to the walls and attics.

Learn more about sustainability and historic buildings at www.nps.gov/tps/sustainability.htm



NPS crews repair windows on historic park buildings to help save energy.

Sustainability Outreach

Climate Change Communication Trainings

GGNRA teamed up over the last year to bring several climate change communication trainings to the park, in collaboration with the National Network for Ocean and Climate Change Interpretation (NNOCCI). NNOCCI is a national network of professionals who are skilled in communicating climate science to the American public in ways that stimulate a productive conversation that is interesting, welcoming and solutions-oriented.

GGNRA and Parks Conservancy staff joined educators and interpreters from learning centers such as The Marine Mammal Center, California Academy of Sciences, and the Center for Climate Protection for two different training opportunities. Through a 5-month Study Circle, ten teams from around the Bay Area gained in-depth knowledge that can be shared and implemented at their home institutions.

Several 1-day Beginners Workshops were also held in 2018, and more are planned for 2019 - 2020.

If you are interested in learning more about NNOCCI, contact Laura_Castellini@nps.gov or visit www.climateinterpreter.org/about/projects/NNOCCI.

Elements of Strategic Framing:

Start with a Value: This establishes why the issue matters and what's at stake.

Use Explanatory Metaphors: Metaphors can explain an abstract or misunderstood process by comparing it to a concrete, familiar domain.

Connect to Solutions: As early as possible, highlight collective, community-level actions that will have the greatest impact on reducing heat-trapping gasses.



Park Partners

Evolving Seed Collection

All living organisms evolve, generation by generation, to match their environments. It's a process that often spans thousands or even millions of years. But in light of how quickly the climate is currently changing, there may not be enough time for many species to adapt. The park is discussing "lending plants a hand" by picking seeds from individuals best adapted to future climate scenarios.

What is E-waste?

E-waste is an informal name for electronic products nearing the end of their "useful life." Computers, phones, televisions, VCRs, stereos, copiers, and associated cords and cables are common electronic products.



Seeds of Change: Challenges In Habitat Restoration

GGNRA supports four nurseries that grow plants for native plant restoration and preservation. In anticipation of a drier, hotter future due to climate change, the Golden Gate National Parks Conservancy (GGNPC)'s nursery program began researching new seed collection protocols that could promote plants that are better-adapted for these future conditions.

Following a 2018 seed collection report by an intern from Northwestern University, the Nursery Program partnered with UC Berkeley to explore new seed transfer protocols that consider future climate scenarios. These new protocols aim to bolster the success of seed propagation.

Earlier this year, student researchers and the NPS Principal Climate Change Scientist presented their findings to staff from the

National Park Service, the Presidio Trust, and GGNPC. This multi-partner event was a great success, identifying both progress made and solutions to come.



Park staff collect seeds to be grown in the Native Plant Nurseries for restoring native habitat.

In the Field

E-Waste Collections Divert Toxins from Landfills

GGNRA organized e-waste events this Earth Month to help staff properly dispose of electronic waste. E-waste often contains heavy metals such as lead, copper, and cadmium. If improperly disposed of, these heavy metals can impact human health and the environment.

According to the EPA, only 12.5% of e-waste is recycled in the U.S. The other 87.5% sit in landfills, and about 40% of the heavy metals in landfills are attributed to electronics that could have been recycled. E-waste pick-ups provide the opportunity to recycle both toxic and reusable components and keep them out of the waste stream.

The park held two e-waste events in support of the Earth Month Staff

Challenge. Employees brought their office and home electronics to locations at Fort Mason in San Francisco and Fort Cronkhite in Marin County. The Conservation Corps North Bay (CCNB) then collected the waste for recycling.



Park staff drop of E-waste for recycling by Conservation Corps North Bay



Sustainability Outreach

Park Staff Share Sustainability Solutions

In April, the GGNRA Green Team held an Earth Month Staff Challenge, encouraging all staff to engage in more sustainable practices at work. Participants proposed individual and team actions to make our parks more sustainable.

Several educational drop-in events enabled employees to share their sustainability-oriented project ideas in the categories of Energy, Transportation, and Waste. Everyone who participated was entered in a drawing for sustainable items such as reusable straws and produce bags. The Grand Prize winner, as well as the top proposals in Energy, Transportation, and Waste, also won a behind-the-scenes tour of the [sustainable features at Alcatraz](#).



Park Partner Highlight

5th Ocean Climate Summit

On April 18th, the Greater Farallones National Marine Sanctuary and the Greater Farallones Association hosted the 5th Ocean Climate Summit: Learning from the Past, Looking to the Future. 155 attendees gathered at Fort Mason to learn about coast and ocean protection in an age of rapid climate change. Scientists, coastal and marine resource managers, decision-makers, and educators all came together to discuss solutions to the impending issues.

The summit covered a wide range of topics, from ocean acidification to community involvement. The aim was to better protect the North-central California coast and ocean from the impacts of climate change over the next 10 years.

Learn more at: www.farallones.org/ocean-climate-summit-2019



Dr. Tessa Hill from the Bodega Marine Laboratory leads a discussion on the impacts of ocean acidification.

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