

Golden Gate National Recreation Area Sustainability Newsletter

Brought to you by the GGNRA Environmental and Safety Programs Office

National Park Service
U. S. Department of Interior



Volume 5 / Summer
2018



Solar panels at Alcatraz



Wind Turbine at
Crissy Field Center



Solar panels at Crissy
Field Center

GREENHOUSE GASES

When we burn fossil fuels for energy, we add greenhouse gases such as carbon dioxide into the atmosphere.

This buildup acts like a blanket that traps heat around the world, disrupting the climate and ecosystems.



Major Milestone

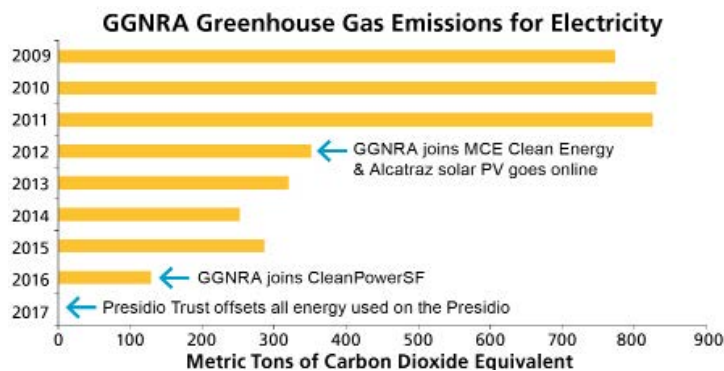
GGNRA Achieves 100% Clean Energy

Golden Gate National Recreation Area (GGNRA) uses 100% renewable electricity as of 2017, thanks to a combination of initiatives in various regions of the park.

- Park operations in San Francisco are supported by the SuperGreen program through CleanPowerSF, which provides renewable energy from wind and solar.
- In Marin, electricity is purchased from MCE Clean Energy, which supplies

renewable energy from wind, solar and geothermal sources.

- The Presidio Trust purchases renewable energy credits to compensate for its footprint, including NPS-occupied buildings.
- Electricity on Alcatraz comes from a combination of solar photovoltaics and diesel generators. Carbon offsets are purchased to compensate for the diesel usage.



For more information, visit:
www.nps.gov/goga/learn/management/renewable-energy.htm

This Just In

2017 Greenhouse Gas Emissions Inventory is Complete

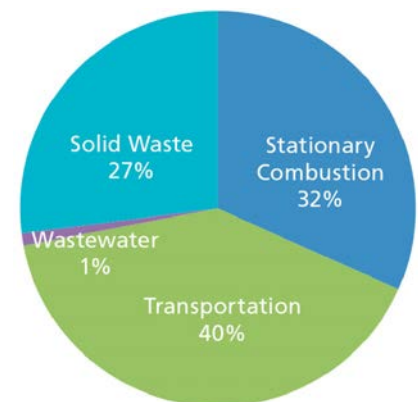
As part of GGNRA's Climate Change Action Plan, the park updates its annual Greenhouse Gas (GHG) Emissions inventory using the Climate Leadership In Parks (CLIP) tool.

CLIP tool data includes emissions from:

- Stationary Combustion (heating using propane and natural gas)
- Municipal Solid Waste Disposal
- Transportation
- Wastewater Treatment
- Purchased Electricity

Knowing the sources of our GHG emissions and understanding reduction trends is crucial for adopting the appropriate solutions to become a carbon neutral park by 2020.

2017 GGNRA Greenhouse Gas Emissions by Sector - Park Operations



GGNRA produces no GHG emissions from purchased electricity. The park will continue taking steps to decrease our footprint from transportation, solid waste and stationary combustion.



Featured Project

Water Filling Stations Aim to Reduce Single-Use Plastics

In May 2018, nineteen water bottle filling stations were installed across GGNRA. One of the park's goals is to reduce plastic water bottle consumption and to encourage visitors to bring reusable bottles. Most of the stations are located outdoors, accessible to visitors on the go, and some are installed indoors such as in the Marin Headlands Visitor Center.

Plastics contribute significantly to ocean pollution and require extensive amounts of oil, energy and water to produce and recycle. By discouraging single-use items and reducing litter that winds up in public parks or the San Francisco Bay, GGNRA demonstrates leadership in both waste reduction and resource conservation.



Water filling stations at Muir Woods, Crissy Field and Fort Mason

In the Field

Kiosk Panels at Stinson Beach Inform the Public About Ocean Acidification



The National Park Service takes seriously its responsibility to address and educate the public about issues resulting from the burning of fossil fuels. In October, a new kiosk panel that describes ocean acidification was installed in Stinson Beach funded by the Cosco Busan Oil Spill Settlement.

When humans burn fossil fuels for energy, carbon dioxide is released to the atmosphere. The ocean absorbs much of this carbon dioxide, which reacts with water to form a weak acid, preventing marine creatures from building and maintaining the shells and

skeletons that they need to survive. This "osteoporosis of the sea" affects not only marine life but also the humans that depend on them.

The panel at Stinson Beach explains that both individuals and entire communities can take actions such as switching to locally sourced renewable energy, purchasing climate-friendly food, and supporting low-energy transportation to reduce the burning of fossil fuels. Although humans are part of the ocean acidification problem, we can be the solution as well.



Water Conservation

New Aerators Save Water in San Francisco & Marin Headlands

NPS tackles large-scale projects every 5 to 10 years to reduce water usage, but smaller tasks such as faucet aerator replacement are carried out in the meantime. In June 2018, new water-conserving aerators were installed in 12 NPS-occupied buildings throughout GGNRA.

An aerator is a plumbing device attached to the tip of a faucet that regulates water flow. Some of the old aerators allowed water to flow at 2 gallons per minute (GPM) while the new, efficient ones have 0.5 GPM flow rates.

Water and energy use are strongly interlinked. In addition to saving water, projects such as these help save energy that would have otherwise been used to treat and transport the water.



NPS staff replaces aerator

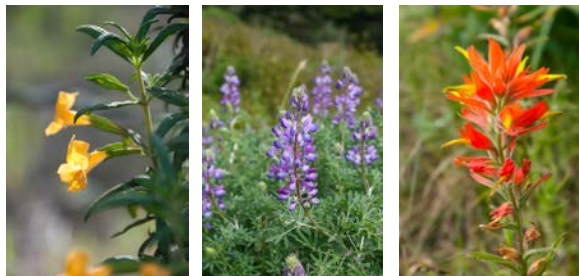
Native Plants at Crissy Field Reduce Irrigation

California is a drought prone state and GGNRA is finding every opportunity to decrease its water footprint. The grounds crew at Crissy Field has taken up the challenge by planting native plants that are drought-tolerant.

Native vegetation has already been planted near Fort Point, along the northeastern section of Crissy Field, and at East Beach and will be planted

on the berms that run parallel to the Promenade at West Bluff. These new plants require some watering during their first few years, but once they are established they no longer need irrigation.

In the meantime, the grounds crew is replacing all irrigation heads with more efficient ones. 70% have already been replaced!



Native plants settling in at Fort Point

AERATORS



NATIVE PLANTS

Native plants are species that have evolved and occur naturally in a particular region, ecosystem or habitat. California natives require less water because they have evolved to thrive in the naturally dry climate.

For more information: <https://www.cnps.org/gardening/why-natives>



**Golden Gate National
Recreation Area**

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Special thanks to:

NPS Media Office
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Education and Outreach

Earth Month Staff Challenge Highlights Sustainable Practices by GGNRA Employees

This April, NPS collaborated with the Golden Gate National Parks Conservancy on the Earth Month Staff Challenge, creating meaningful and long-lasting sustainability improvements in our home and workplaces.

Each week, GGNRA's Green Team introduced a new theme:

- Reduce Your Footprint
- Close the Loop
- Be Water Wise
- Continue the Conversation

Employees were challenged to record personal activities related to each theme, whether it was a basic action such as turning off the lights or a large-scale lifestyle change like stopping

single-use purchases. The staff shared with one another how they biked to work, installed Energy Star rated appliances, ate locally and organically, attended composting classes, and participated in a multitude of other eco-friendly practices.

We also asked employees to submit suggestions for making GGNRA greener and their recommendations were fantastic. Watch out for next year's challenge!



Education and Outreach

2018 Bi-Annual Sustainability Summit

The GGNRA Green Team, Golden Gate National Parks Conservancy and the Presidio Trust hosted the third bi-annual Sustainability Summit in April 2018. The event featured sustainability projects taking place within and around the Bay Area.



This year's summit was an all-day event with 17 presenters comprised not only of NPS staff and partners but also leaders from other organizations such as the Lawrence Livermore National Laboratory, Fresno Chaffee Zoo and Arup.

After an introduction from Superintendent Laura Joss, keynote speaker and Senior Financial Fellow of Project Drawdown Kevin Bayuk launched the Summit by presenting an overview of the top 100 solutions to reverse global warming. This set the tone for the following presentations regarding local climate change and sustainability programs.