OCEAN FRIENDLY GARDENS

Getting Started With Ocean Friendly Gardens

Quick tips to make your yard or garden more ocean friendly — so we can all protect and enjoy the oceans, waves, and beaches we love.

SURFRIDER FOUNDATION

What is an Ocean Friendly Garden?

The Surfrider Foundation's Ocean Friendly Gardens program uses nature-based solutions to soak up stormwater and support resilient coasts and communities.

Because much of our environment has been paved over or built on, rainwater is flushed quickly through gutters, streets, and storm drains into local waterways and, ultimately, the ocean.

Stormwater and urban runoff wash lawn chemicals, trash, road dust, oil, sewage overflows, and more down into our local watersheds, carrying a toxic cocktail of pollutants to the beaches where we surf, swim, and enjoy the water. Ocean Friendly Gardens (OFGs) can help slow, disperse, and soak up the flow of rainwater and runoff before it reaches storm drains and our local waterways.

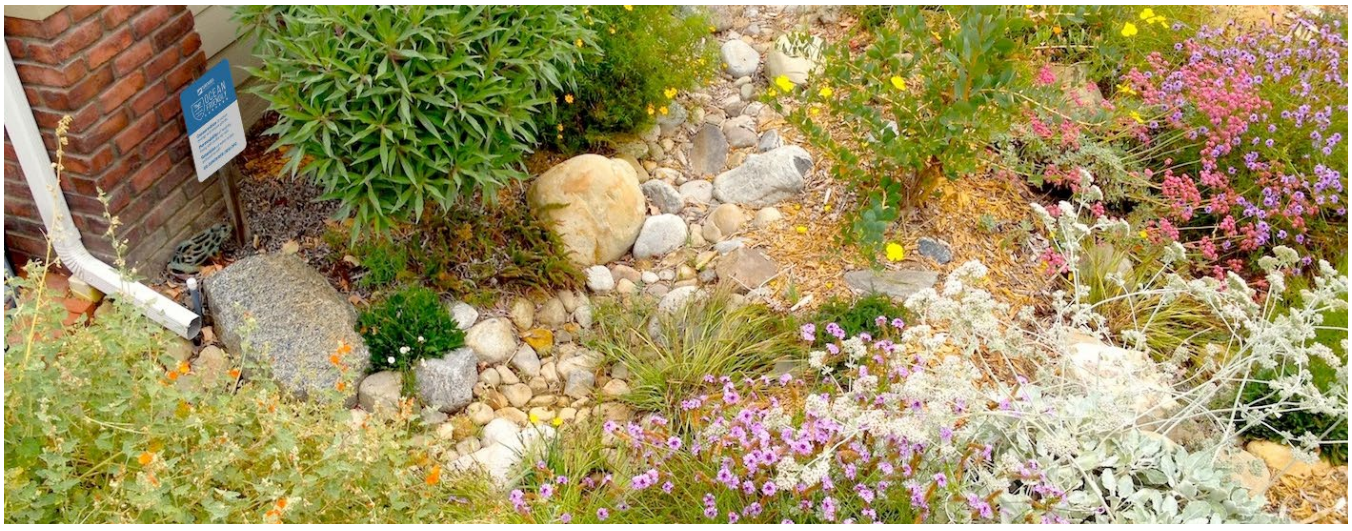
An established OFG functions as a resilient mini-watershed, naturally reducing pollution and protecting clean water. Native plants within an OFG create wildlife habitat and support critically needed biodiversity within our urban and suburban areas.

An established Ocean Friendly Garden functions as a resilient mini-watershed, naturally reducing pollution and protecting clean water.

OFGs also support climate resiliency by sequestering carbon in healthy soils, reducing emissions from gas-powered maintenance tools, and offsetting urban heat island effects.

You don't have to tear out your whole lawn or become a gardening expert to make a positive impact downstream, and sometimes, the best way to start is by doing less. Opting out of certain conventional landscaping practices can save you time and money while making space for future nature-based solutions to thrive in your yard.

Keep reading to discover easy and inexpensive ways to start making your yard or garden more ocean-friendly. Together, we can all take meaningful action to protect the ocean, waves, and beaches we love. Even if you live inland, your OFG can help protect clean water downstream and at the coast.



Tips To Make Your Garden or Yard More Ocean Friendly

1. Use compost instead of chemical fertilizers.

Chemical fertilizers promise healthy, robust, green plants and lawns. Fertilizer companies have convinced Americans to spread more than 840 million tons of these chemicals onto our yards each year (source USGS), the weight of 65,000 full-grown elephants. This is big business for the fertilizer industry, but comes at a devastating environmental cost to our waterways and coasts.

Chemical fertilizers are swept into our waterways by rain and percolate down into sensitive aquifers, ultimately ending up downstream in lakes, rivers, and the ocean. This nutrient pollution overloads our delicate aquatic ecosystems with nitrogen and phosphorus, fueling harmful algal blooms, causing fish kills, and depleting the water of oxygen.

The industrial processes used to make fertilizer create dangerous radioactive waste that endangers our waterways, an issue that Surfrider has recently rallied against in Florida. The production of chemical fertilizers also creates between three to ten tons of CO2 emissions for every ton of fertilizer produced (source).

The average yard does not need tons of added fertilizers and nutrients, but if you are going to add amendments, compost is a much better alternative. The nutrients in compost are released much slower to their surroundings, reducing nutrient pollution while supporting your plants long term. Compost

You can make your own compost at home, turning your food scraps into healthy soil and food for your plants.

has been shown to keep lawns just as healthy as chemical alternatives while adding additional soil health benefits that chemical products don't (source).

You can even make your own compost (or worm bin) at home, turning your food scraps into healthy soil and food for your plants. Food scraps and yard trimmings make up 33% of our total waste sent to landfills and produce 20 times more methane in landfill conditions than when they are composted. For every 2 pounds of food waste composted, the equivalent of over 1 pound of CO2 pollution is prevented.

Many cities and community composting groups also offer high-quality compost that you can pick up with your own container, often for free or at a lower cost than in stores.

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2. Plant a native plant or spread wildflower seeds.

Have a plant in your yard that you've been looking to replace? An empty spot that could use some life and color?

Planting a native plant can help protect clean water, boost biodiversity, and store carbon for climate resilience. The deep root systems of native plants create airy, sponge-like soil that can soak up more water, nutrients, and pollution than turf grass or ornamental plants. Even one full-grown tree can prevent 1,600 gallons of runoff during a storm event, slowing the flow of water with its canopy and soaking up runoff with a robust root system (source). Traditional grass lawns have very shallow roots that can't soak up as much water or nutrients and they can cause your soil to become compacted over time.

Native plants are also inherently well adapted to your local soil and climate, so they don't need added fertilizers or extra water to thrive. Native plants are incredibly important for local ecosystems to function properly. Often, birds, pollinators, and other wildlife rely on just a few species of their favorite native plants to survive.

If the thought of planting something is a little intimidating (or you don't have much time to spare outside), simply spreading native wildflower seeds is rewarding and impactful, too! Popular picks like coneflowers, swamp milkweed, or California poppies have deep roots that go over a foot down into the ground, ready to soak up much more runoff than a grass lawn or bare soil.

Native plants are important for local ecosystems to function properly as birds, pollinators, and other wildlife rely on them to survive.

CAUTION! Not all “Wildflower” seed mixes are created equal!

Seed packets at many national chain stores will often label themselves as “wildflower,” “butterfly garden,” or “pollinator friendly,” regardless of what seeds are inside. Always check that the seeds are native to your region.

How to Check Your Seed Packet

Is it specific to your state? Does it say “native to” your specific region?

Seed packets will often list regions or “zones” that the plants can survive in instead of their region of native origin or what types of ecosystems they support.

Are the scientific or Latin names of the plants listed on the back?

You don’t need to be able to read the scientific names, but a packet with the Latin names listed can be a sign of a reputable seed seller. Latin names work like barcodes that can distinguish plants with similar common names like “milkweed” or “daisies.” For instance, there are 115 milkweed species native to North America. *Asclepias incarnata* (swamp milkweed) is native to most of the U.S., whereas *Asclepias fascicularis* (narrowleaf milkweed) is only native to the West Coast.

No invasive plants in the mix? Don’t plant a pest!

Avoid plants like cornflowers (Centaurea *species*), African daisies (*Gazania species*), and chrysanthemum, or crown daisy (*Glebionis coronaria*). These flowers can quickly escape from your yard and disrupt local ecosystems.

Native plants in California (top) and Eastern Long Island (middle/bottom).

3. Opt for electric or hand tools.

Gas-powered mowers, blowers, and other yard tools are loud, emit air pollution for you and your neighbors to breathe, and are a pain to refuel. Americans spill 17 million gallons of fuel every year just refilling mowers, blowers, and other yard tools (source). That's more than the Exxon Valdez oil spill! This pollution gets washed into waterways and ultimately to our beaches, where we swim and surf.

Over 30 million tons of CO2 are emitted annually by gas-powered lawn and garden tools in the U.S., equal to the carbon pollution produced by 6.6 million cars or the entire city of Los Angeles in 2021 (source). These smaller, outdated engine technologies do not have to meet the same air quality standards as cars and heavy machinery, resulting in toxic air particle pollution and carcinogens like benzene and formaldehyde (source).

Luckily, we have alternatives to gas-powered mowers, blowers, and other landscaping tools. Electric tools are quiet, lightweight, and hassle-free to recharge — providing all of the power you need without using fossil fuels. Hand tools are another low-tech option and are often the simplest way to tackle small tasks like pruning and weeding.

If you already have a gas-powered mower or hire a gardener who uses one, you can reduce your pollution by mowing less often. Opt for twice a month instead of weekly mowing, or skip mowing altogether when your lawn is in the off-season and not growing much.

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4. Skip spraying pesticides.

Pesticides are poisons and are often sprayed in hopes of removing just one weed or pesky bug. But once sprayed into the environment, we can't control where these toxic chemicals end up or who comes into contact with them. Pesticides have real risks to the health of humans, our pets, pollinators, and our waterways.

Homeowners use up to 10 times more chemical pesticides per acre than farmers apply to their crops. Americans apply 80 million pounds of pesticides to their lawns every year (source) and these chemicals don't stay put where we spray them. Pesticides have been detected at unsafe levels for aquatic wildlife in 83% of streams in urban areas, ultimately affecting marine invertebrates and the fish and wildlife that feed on them (source). Pesticides have also been documented in the open ocean and even in remote marine regions like the Arctic (source).

Instead of chemical weed killers, opt for hand weeding, sheet mulching, or trimming back weeds before they go to seed. Applying boiling water or spraying with household vinegar are other alternatives for weeds growing in pavement cracks. For mosquitos, use bacteria-based controls like "mosquito bits" or "mosquito dunks." Slugs can be caught with beer traps or picked by hand.

There are many alternatives to toxic pesticides, and in many cases, it just requires a little research and creativity. Native plants can also help naturally control pests in your garden by providing habitat for predator insects, birds, and lizards that eat mosquitos, flies, aphids, and other pesky critters.

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An alternative to using pesticides, sheet mulching is a gardening technique that uses layers of cardboard, leaves, and other organic materials to build soil and suppress weeds.

5. Don't water the sidewalk!

Grass lawns cover 40 million acres in the U.S., making it the largest irrigated crop in the country (source). Between 30-60% of the water used in our homes is used outdoors on lawns and gardens, and as much as half of that is wasted with inefficient irrigation (source EPA).

If you have sprinklers, make sure they are only watering your yard! Sprinklers that spray onto pavement waste water and money. The resulting runoff strains our freshwater resources and flushes pollutants into local waterways and down to the beach.

It's easy to swap out inefficient spray sprinkler heads with efficient rotator sprinklers that come in a range of designs to keep the water focused on your plants. Rain sensors can help you avoid watering your lawn during the rain, or you can just turn your system off manually during the rainy season.

Watering by hand is the most efficient way to apply water where it is needed, but resist the urge to spray down your driveway! Sweeping helps conserve clean water and prevents any pollution on your driveway from flowing into local waterways.

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Ocean Friendly Garden Criteria

Now that you know the basics to get started, you can continue to take action to transform your entire yard or outdoor space into an Ocean Friendly Garden by meeting all of the Surfrider Foundation's OFG criteria. You can continue with an incremental approach on your own, plan a work day with friends, or hire a professional to complete an overhaul of your yard.

Once all criteria are met, you can be an ambassador for the Ocean Friendly Gardens program by displaying an OFG sign or registering your yard on our OFG map. Simply reach out to Kathryn Dressendorfer, Surfrider's OFG Coordinator, at kdressendorfer@surfrider.org with any questions.

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Plants:

Support Wildlife and Resilient Habitat

- Native plants cover at least 50% of the garden or yard
- Turf grass is kept to a minimum in appropriate climates and maintained sustainably
- All plants are climate-appropriate (rainfall keeps them healthy when established) or edible
- No invasive plants

Healthy, Living Soil:

Sponge Up Water and Filter Pollutants

- No use of pesticides, herbicides, or fungicides
- No commercial fertilizers. Compost, worm castings, or homemade organic solutions are applied, if fertilizer is needed
- No landscape fabric (weed cloth) or artificial turf
- Natural mulch is used as needed around plants to conserve water, rebuild soil health, and suppress weeds

Redirect and Soak Up Rain:

Prevent Runoff and Stormwater Pollution

- Rainwater from the roof is directed to landscaping, a permeable area, or into rain barrels and cisterns that overflow onto permeable areas
- Existing walkways and patios direct rainwater runoff to landscaping where possible
- Pavers with gaps or permeable materials are used for new hardscapes
- Simple contours such as bio-swales, dry creeks, and basins are used to maximize rainwater retention and prevent runoff

Water and Irrigation:

Conserve Water and Avoid Wasteful Runoff

- Hand watering or high-efficiency irrigation system (drip, rotator sprinkler)
- Automatic irrigation controller (if present) has a rain sensor or shut-off device

Rainwater Retention

Nature-Based Solutions for Reducing Stormwater Runoff and Pollution

Stormwater runoff is a huge source of pollution — but it doesn't have to be. The roofs on our houses and buildings displace a lot of water that would otherwise land on the soil below. For every inch of rainfall, over a half gallon of water flows off every square foot of roof. For example, even the roof of a small, 10' by 10' shed would create 62 gallons of runoff in a one-inch rainstorm!

The roofs on our houses and buildings displace a lot of water that would otherwise land on the soil below.

Rainwater retention features used by the Ocean Friendly Gardens program can help guide this rain into contours in the ground to slow down and spread out the flow of water, helping retain the rain long enough so it can sink into the soil. This turns a problem into a solution by improving drainage in your yard, reducing flooding, and buffering our communities against extreme storms. Instead of becoming runoff that pollutes our beaches and coastal waterways, these features can be used to hydrate your plants and replenish local groundwater and aquifers.

Plants are crucial to the functioning of these nature-based solutions, soaking up extra water, pollutants, and nutrients that impact our waterways downstream. Their root systems create healthy, spongy, non-compacted soil that can easily absorb large amounts of water. Using plants native to your region will provide the most robust root systems, the best climate adaptation, and the best drought tolerance while also boosting pollinator biodiversity and reducing the need for harmful chemical fertilizers.

Instead of becoming runoff that pollutes our beaches and coastal waterways (left), rainwater retention features used by the Ocean Friendly Gardens program (right) can be used to hydrate your plants and replenish local groundwater and aquifers.

1. Rain Gardens

A rain garden is a basin-shaped contour in your yard that can retain rainwater and let it soak in. Similar to a bowl or a small crater, this low spot in the landscape prevents water from running off into the street. Rain gardens can be sized to fit big or small yards and can help manage large volumes of water flowing from a roof gutter downspout or running off of a hard surface like a parking lot or sidewalk.

It's best to place a rain garden at least five to 10 feet away from the foundation of a building so it does not cause any drainage issues. Most downspouts dump water right next to the side of a house or building, and will need to be guided with sloped soil, a pipe, splash block, or downspout diverter to drain into the rain garden instead.

Rain gardens are typically shallow (six to eight inches deep) with gentle curves and sloped edges. They are tilted or sloped away from a house or building, with an overflow outlet on the lowest side. An overflow is to direct extra water in case the rain garden fills up. The overflow can be directed to another nature-based feature or into a traditional drainage system. The soil excavated to create a rain garden can be used to make berms around the edge of the rain garden basin or small hills around your yard to plant on.

The best way to lay out plants in a rain garden is to group them by "hydrozone," or how much water they can tolerate. Plants at the lowest point should be able to tolerate the most water and typically are species found in wetlands or seasonally wet areas. These resilient plants can handle both flooding and dry conditions. Plants on higher ground, further from the bottom of the slope, do not need to be as tolerant of extreme wet and dry conditions. Most native plants and groundcovers that are available locally should work fine.

The best way to lay out plants in a rain garden is to group them by "hydrozone," or how much water they can tolerate. Plants at the lowest point should be able to tolerate the most water.

2. Bioswales

A bioswale is a linear trench or creek-shaped low spot in a yard or landscape that is planted with living plants and roots. These features are typically long and skinny in shape and can have decorative rocks, mulch, sand, or plants in the lowest point. The soil removed from the center of the swale can be used to form berms along the edges, adding dimension and water storage capacity to the swale. Similar to a rain garden, a bioswale should have an overflow spill area where overflow water is directed.

Plants in a bioswale should also be grouped by hydrozone, or how much water they can tolerate. Plants at the bottom of the bioswale should be resilient species that can handle both flooding and dry conditions. Plants further from the bottom of the slope do not need to be as tolerant of extreme wet and dry conditions, giving you plenty of options to experiment with.

Usually if a swale is filled with rocks it is called a “dry creek.” Rocks can be beneficial to slowing down and dispersing the energy of water, but can also quickly make a project pretty expensive. Filling the whole swale with rocks is not necessary for it to function well, and the rocks can be substituted for much cheaper options such as mulch, sand, gravel, or more plants.

Filling a swale with rocks, mulch, sand, gravel, or more plants helps to slow down and disperse the energy of water.

3. Buffer Gardens

A buffer garden is a patch of native plants that are strategically positioned to filter runoff before it enters a body of water or storm drain system. These are also called “vegetative filter strips” and can be used to reduce erosion and prevent sediment and nutrients from polluting sensitive water bodies.

If your front yard is sloped toward the street, you can add a buffer garden at the bottom edge that borders the road or sidewalk. Densely planting native plants in a buffer zone will slow down and capture runoff from your roof and lawn, allowing more rain to be absorbed on your property. While the plant roots below ground will soak up water, the plant material above ground also acts as a natural barrier to slow the flow of water and trap sediments. Buffer gardens help to keep sediment and runoff from flowing into our storm drains and local waterways.

If you are lucky enough to live next to the beach or a waterbody, buffer gardens on the edge of your property can directly protect your neighboring waterway while also preventing erosion. The deep root systems of densely planted native plants reinforce and support these sensitive transition zones between water and land, enabling sediment to build up and not wash away as easily during storms.

Volunteers with the Space Coast Chapter install a buffer garden in Melbourne, FL. Zaperzon

Other Water Harvesting Strategies

In addition to nature based solutions, we can also ultilize some creative engineering to divert stormwater pollution from our waterways. We can capture rainwater before it becomes runoff, keep more gently used graywater out of sewer systems and septic tanks, and retrofit gray infrastructure to create more permeable spaces. These solutions conserve and store valuable fresh water in areas that are impacted by drought conditions and help mitigate flooding and nutrient pollution in wetter climates.

A tank placed under gutter downspout collects rain water.

1. Rain Barrels and Cisterns

Rain barrels can be a good option for smaller yards or paved patios where water can't easily be directed into the soil. Rain barrels are barrel-shaped containers that collect rain running off of a roof via a gutter downspout. They typically hold about 50 gallons of water and are available in all kinds of designs and colors to match your yard. Repurposed food-grade containers used to transport olive oil, pickles, or other bulk foods are a safe and economical option. Galvanized steel barrels are another option for a plastic-free system, but require a bigger upfront investment.

Most roofs will generate a lot more runoff than 50 gallons of water in a rainstorm, so it is important to have an overflow hose attached and directed toward vegetation. Ideally, the overflow hose can direct overflow into other nature-based rainwater features, like dry creek beds or rain gardens in your yard.

Cisterns are larger than rain barrels. They hold more water and are great if you have the space. Cisterns and rain tanks can typically hold hundreds of gallons of water, maximizing rainwater storage for use on dry days. Slimline rain tanks can fit in narrow spaces, like the side of a house, and can be connected together for even more capacity. Cisterns can even be fitted with irrigation systems and timers to water fruit trees, vegetable gardens, or flower beds during dry weather.

Any rainwater you collect from your roof will carry some amount of pollution with it and is not filtered or treated for bacteria, so this water is not safe to drink. First flush diverters and simple screens can help keep leaves, dirt, and debris out of your barrel or cistern.

Rain barrels can be a good option for smaller yards or paved patios where water can't easily be directed into the soil.

2. Graywater Systems

Often called “laundry-to-landscape,” graywater can repurpose water from laundry or shower systems to water your yard or garden. Graywater from laundry (a mix of water, detergent, and whatever is cleaned or removed from your clothes) is usually pumped into your septic system or the city sewer. A graywater system can redirect and recycle this water to irrigate your landscape instead. Learn more about different types of graywater systems here.

There are many factors to consider when using graywater in your garden, such as special plant-safe laundry soaps and what plants are compatible with higher salts. These conversions can be complicated for the average homeowner and will likely need the help of a plumber and a greywater expert. But once set up, these systems can be an easy way to supplement plants with higher water needs like fruit trees or veggie gardens, while also reducing the amount of drinking water used to irrigate your plants.

Graywater systems can also be directed to flow into nature-based solutions like rain gardens, bioswales, and buffer gardens to hydrate them during the dry season.

3. Curb Cuts and Cores

Moving out of your yard and into your neighborhood, curb cuts and curb cores are an exciting way to retrofit parkways, parking lots, and tree pits to redirect runoff and stormwater into the soil. This helps reduce polluted runoff and conserve water needed by plants and trees.

A curb cut (square or angled) or a curb core (round hole) is a small gap removed from a curb to allow water from the street or parking lot to soak into a parkway basin, bioswale, or other rainwater retention feature alongside the street. These can be a great way to direct much-needed water to street trees, which in turn help filter polluted runoff carrying oil, brake dust, heavy metals, and other pollutants from cars and trucks.

Unfortunately, these deceptively simple alterations require permits, code enforcement, and other red tape that can be difficult to navigate. Curb cuts are a great improvement for you to ask your local city or municipality to add to your neighborhood. Experienced contractors could also handle the project design, permits, and operate the heavy machinery needed to get the job done.

Left: Recycled water is used for irrigation. Right: Curb cut example.

Let's Grow Together

Healthy watersheds are essential to protecting the health of our ocean, waves, and beaches. We can all do our part to reduce pollution from our yards and create more Ocean Friendly Gardens. Learn more about this program on Surfrider's website. Don't have a yard or garden of your own, or looking to expand your impact to the community? You can volunteer with your local Surfrider chapter to create and steward more Ocean Friendly Gardens, and you can always or support our mission by becoming a member.