

Resource Conservation





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Why Should You Care?

We all know the talk around climate change. We've seen how fires, hurricanes, winter storms and summer heat have increased in severity and seen the predictions around changing ecosystems, economic effects and health trends that affect us.

Help Save Nature, a conservation organization, said preserving the environment and conserving natural

resources is essential.

WHAT TO KNOW ABOUT WATER

We all need it for cooking, drinking, cleaning and a lot of industries, and cities are increasingly taking actions to conserve water, including graduated rates for water usage for residential customers and restricting irrigation during the summer. However, as droughts in the American West worsen, water security is at stake, which affects the entire country, as much of the country's produce is grown in this region.

Water is also a critical habitat, and aquatic plants and animals are in danger or already extinct as the waterways

have been depleted or polluted. This can sometimes present a Catch-22; the Hoover Dam on the Colorado River has resulted in ecofriendly hydro power but has permanently altered the ecosystem of the river south of the dam.

NATURAL GAS AND FOSSIL FUELS

Natural gas remains a common energy source for heating and cooking in many parts of the United States. Fossil fuels are particularly limited and there are not ways to replace those resources, so we need to reduce our usage and look for other fuels that can replace coal and oil. This includes moving away from gasoline- and diesel-fueled vehicles, coal-powered

industries and finding better ways to move products, especially food, around the United States — or, even better, make and sell products closer to home so they don't need to be transported as far.

FORESTS

Healthy forests provide clean air and water, economic benefits, recreation opportunities and are home to all kinds of animals. Deforestation, usually to make way for industry or development, has resulted in poor air quality, species becoming endangered or extinct, and an increased risk of forest fires. Governments and landowners need to make a concerted effort to protect forests.

Reduce, Reuse, Recycle

We've all heard the three Rs: reduce, reuse, recycle.

According to the Environmental Protection Agency, if Americans were more proactive about these three steps, we could save money (individually and in communities), reduce the amount of energy used, and conserve natural resources like fuel, water and extracted metals.

Practicing the three Rs can also reduce the waste we're sending to landfills.

REDUCING AND REUSING

The best way to keep waste down is reducing how much waste we produce in the first place. Making new products requires energy and materials, including raw materials that are mined or extracted from the ground, and then it must be transported. Where you can, make do with fewer new products.

Before you look for new purchases, though, see if you can buy used. This ranges from purchases as big as cars and furniture to smaller items like clothing, toys and books. Shop garage sales, second-hand stores, flea markets and online ads. You can also organize clothing swaps among friends or community groups.

According to the EPA, taking these two steps — which keeps the overall number of goods being produced, trans-



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ported and ending up in landfills — can keep pollution down and reduce energy use and greenhouse gas emissions as well as cost the consumer less.

When you do buy new, look for products with less packaging and for higher-quality products. Those products often cost more, but you won't be replacing them as

often. Learn how to repair clothes and other products to help things last as long as possible. Donate old items while they still have use in them.

RECYCLING

Recycling keeps items out of landfills and helps products like paper, metal and plastic to be turned into something

else, reducing the raw materials needed. That means fewer trees are cut down, less ore is extracted and fewer resources used to create plastic.

What you can recycle depends on where you live. Most places recycle paper, cardboard, most plastics (check to make sure certain plastics are allowed), tin and aluminum cans. Check to see

if glass can be recycled in your city; many cities do not, or have different rules, because glass can break in the bins and cause problems.

Make sure you're following the recycling company's rules: wash out materials, separate them if required and make sure you're not mixing in trash or materials that can't be recycled.

Electricity at Home

If you're looking to drastically reduce your energy bills or make small changes to be responsible in your use of resources, the Alliance to Save Energy offered ways to ensure you're keeping energy usage low, which helps the environment and your wallet.

First, be ready for changing seasons. You don't want to warm the neighborhood in the winter or cool it in the summer, so in addition to keeping doors and windows shut, make sure you're not unintentionally leaking air out. Install weatherstripping and caulk any areas that allow for seepage, which can save up to 20 percent on heating and cooling bills.

You can also install a programmable thermostat, which allows you to keep the house at a less comfortable temperature while no one is home but have it adjust automatically in time for your return. Also try adjusting the thermostat by a degree or two. In the summer, keep it set higher and use fans and open windows in the cooler morning hours as well as taking advantage of window coverings that keep the direct rays of the sun out. During the win-



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ter, throw on an extra sweater or put an extra blanket on your bed.

Consider upgrading your home. Switch to energy-efficient halogen light bulbs and LEDs to get the same amount of light at a fraction of the energy usage. When it's time to buy a new refrigerator, dishwasher or washer and dryer, look for

the Energy Star label (Energy Star is the government's symbol for an energy-efficient product) to reduce the amount of energy and water used. ASE estimates these appliances can help you reduce electricity bills by up to 30 percent. Use low-flow faucets and shower heads to reduce water use.

Clean or change your filters

regularly. A dirty filter in your furnace or air condition will slow air flow down and make the system work harder, which requires more energy that you pay for.

Pay attention to the little things. Individually, small changes don't make a huge difference, but when you add them all up, you'll conserve

resources and save money. Make sure lights are turned off when you're not in a room. Use cold water when washing clothes as much as you can, and don't leave the water running while you brush your teeth. Reduce your water heater temperature to 120 degrees and get insulation to retain the heat.

Outside the House

You want a nice yard, but you don't want to bust your budget or use a lot of resources to do it. Fortunately, nature provides a lot of resources to help you achieve that goal, including ways to water. The Center for EcoTechnology offers ways to keep your yard looking nice without using a lot of energy.

COMPOSTING

Thatch, sticks, dead leaves, grass clippings and other organic material can become a nutrient-rich addition to your garden. CET recommends three parts "brown" material (the dead material you find in your yard) to one part "green" (more recently alive materials like grass clippings). Even if you don't compost, leave the grass clippings in the yard when you're done. This quickly decomposes into the soil and becomes natural fertilizer, reducing the amount you need as well as the amount of the trash in landfills.

USING A MECHANICAL LAWNMOWER

Powered lawnmowers emit as much pollution in an hour as the average car does driving 200 miles, according to the Union of Concerned Scientists. Using a mechanical mower means you don't have to buy fuel, and it's also considered moderate-intensity aerobic exercise by the Centers for Disease Control and Prevention.

WATERING WISELY

Obviously, if it is raining outside, do not turn your sprinklers on; if you have automatic sprinklers, make sure to turn them off. But you can use the rain to your advantage even on sunny



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days. Install a downspout to transfer rainwater into rain barrels or buckets and use that to water your yard on other days. Water during the cooler hours of the early morning or late evening so you're not los-

ing water to evaporation in the heat of the day. If you have a larger yard and have irrigation installed, or are looking into it, look for a system to drips water onto the roots, which are more effective at getting

irrigation where it needs to be without wasting as much water.

SMART PLANTING

Adding trees to your yard? Planting them on the west of

your property can help offer shade to your yard and home, which can keep your house cooler. If you're looking at a garden, consider vegetables that require less water, like broccoli, cabbage and beans.

Solar Panels

If you live in an area with a decent number of sunny days, you've probably seen houses and businesses with a solar panel display to capture the sun's rays, which can be added to the electric grid in your community. These panels reduce your monthly electric bill and the amount of coal used to produce electricity.

According to Earth's Friends, the average residential solar panel system can reduce carbon monoxide by 200 tons every year.

WHY SOLAR PANELS?

Solar energy is the most abundant and cleanest renewable energy source you can use. Every hour the sun provides enough energy to power the world for a full year, but solar produces less than a fraction of 1 percent of the world's energy, largely because solar technology and infrastructure hasn't been adopted on a widespread basis. The United States is the second leading producer of renewable energy; China is No. 1.

HOW DO SOLAR PANELS WORK?

The panels on the roofs of buildings and parking garages and lots are made up of PV cells, which contain semiconductor materials; when sunlight hits the materials, electrons move through the cell and generate direct current electricity. Each panel has an inverter that converts DC electricity into alternating current electricity, which can be used to power your home.

Even with solar panels, your house is on the electrical grid. When the sun isn't out, you still draw power from the util-



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ity company. Any power generated through your solar panels that exceeds what you need goes into the grid, and the utility company pays you for that power through a process called net metering. Many utility companies will

give solar panel customers a reduced rate on the power they pull from the grid as well.

HOW MUCH DO PANELS COST?

A solar panel system may cost about \$20,000 to install,

which can be a deterrent for many people. However, you can get a 30 percent tax credit from the federal government, and many states offer their own tax incentives. Many companies also offer rebates; Earth's Friends estimates that

between incentives, rebates and solar energy credits, most consumers offset up to 90 percent of the initial cost.

You may also be able to lease equipment for no money down, but you are not eligible for tax incentives.

The Rise of Hybrid Cars

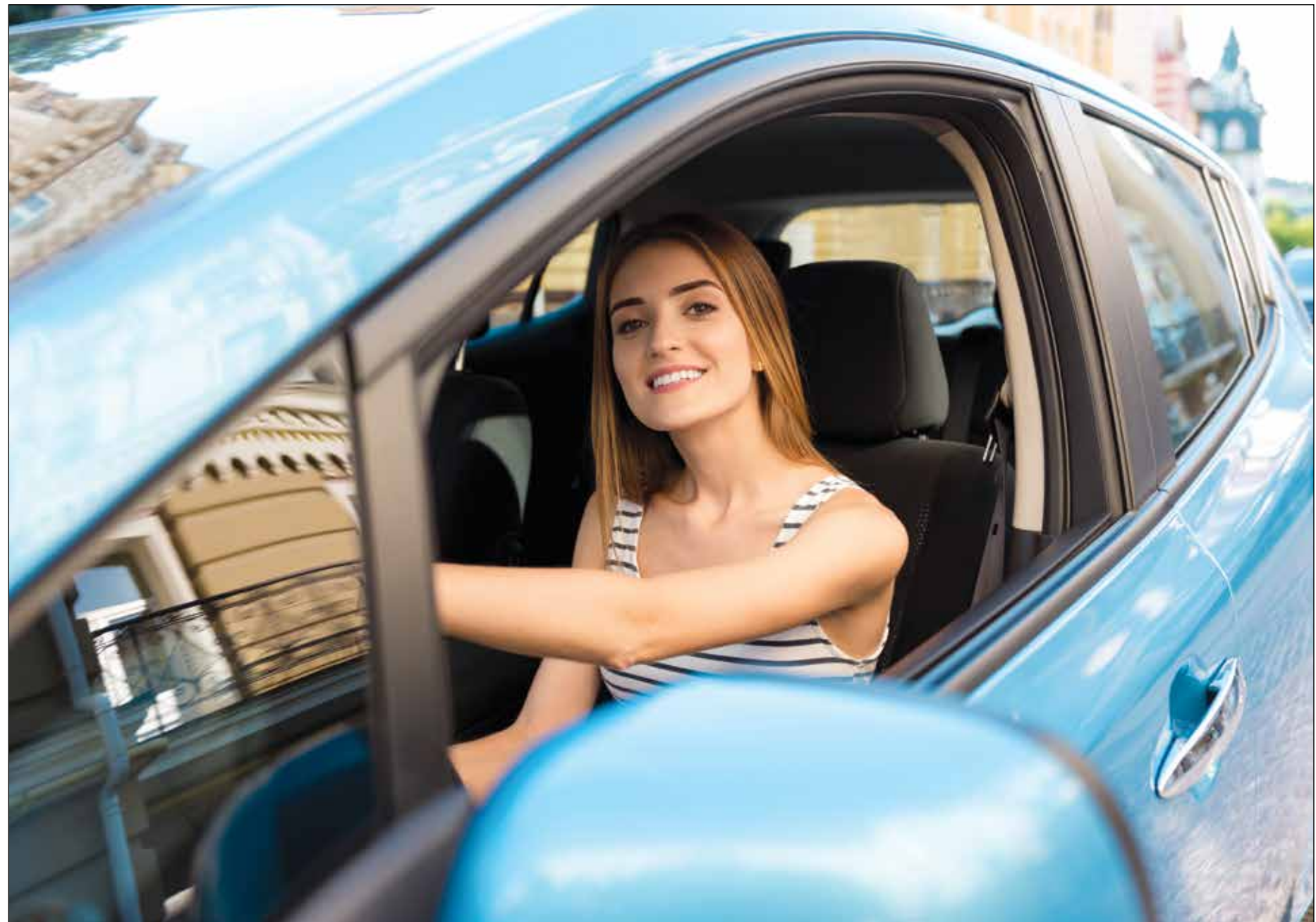
An increasingly large number of Americans, as they look to buy new cars, are looking at hybrid or fully electric vehicles.

According to Green America, a nonprofit organization that helps gather economic power to build momentum toward a green economy, the market has a variety of automobiles in almost as many price ranges that will help move car buyers to a more ecofriendly option.

HYBRID VS. ELECTRIC CARS

Hybrid cars have a battery that provides electricity to the gas-powered engine, which allows your vehicle to switch between using electricity and gas to fuel it. This allows for gas mileage that is 20 to 35 percent better than conventional cars. Hybrid cars are a good match of green and affordable. Most of them get at least 40 miles per gallon, and many only cost a few thousand dollars more than their gasoline-fueled counterpart. That may seem pricey when you're at the car lot, but remember you'll be spending less every time you gas up. Less gasoline usage also means less pollution in the air.

When you're looking at



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price, also consider other factors besides the cost of the car. Insurance companies often offer discounts; cities, states and the federal government may offer rebates; and hybrid cars typically have a higher resale value.

Electric cars run solely on electricity; the cars are plugged into a 120-volt outlet that most people already

have in their garage or carport. It's the same plug you need for the standard dryer. The cars require several hours to fully recharge; GM estimates its electric Chevy Volt requires eight hours to charge. As electric cars become more popular, auto companies, utilities and government offices are creating a network of charging stations

that will charge your car more quickly than a standard outlet. The automobile industry agreed in 2009 to use a standardized plug and charging port on all electric vehicles, so any vehicle can be charged at any outlet.

NOT READY FOR A NEW VEHICLE?

If you're not in the market

for a new car, you can still take action to reduce your gasoline usage.

Plan errands to have the most efficient route; carpool, use public transit or ride a bike to work; and keep your tires at the right pressure and your car in good condition to make sure you're getting the best gas mileage out of your vehicle.

Reduce Your Carbon Footprint

Governments and large corporations play a sizable role in conserving natural resources, but there are a number of things the average American can do to reduce their individual carbon footprint.

Nonprofit organization Carbon Offsets to Alleviate Poverty listed all sorts of changes each of us can make that can help protect nonrenewable resources. So, keep the following tips and ideas in mind.

ON THE ROAD

- Don't idle. If you're waiting in a drive-thru or in a traffic jam, turn the car off.
- Use cruise control whenever possible.
- If you only need lots of storage a few times a year, get a hitch-mounted cargo rack instead of buying a bigger vehicle. Avoid rooftop boxes, which increase aerodynamic drag and use more fuel.

ON A TRIP OR ON THE TOWN

- Plan longer vacations to avoid lots of flying back and forth between places. For weekend trips, keep them closer to home so you can drive.
- Use public transit instead of renting a car or using taxis, Uber or Lyft.
- Say no to straws, single-use water bottles and other disposable dishes. Take a reusable mug to coffee shops.

AT THE OFFICE

- Use Skype, FaceTime, phone calls and email whenever possible to avoid



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too much work travel.

- Keep a sweater on the back of your chair so you can avoid turning the heater on. Open a window or turn on a fan before turning on the air conditioner.
- Offer incentives for carpooling, reduced rates for public transit, and flex time to avoid employees coming in during rush hour. Or you can offer employees the option to work from home.

AT HOME

- Turn off lights, the heater, air conditioning and water when not in use.
- Buy local and organic food. COTAP says 13 percent of greenhouse gas emissions in the United States is from producing and transporting food. Many fertilizers also use fossil fuel.
- Reduce your meat and dairy intake. Raising food animals takes a lot of resources, and that's especially true of

cows. Find other ways to get protein and iron, such as eggs, beans and nuts (though almonds require significant water to raise, so pay attention to what you buy).

- Wash your car less frequently.
- If you live somewhere without much rain, consider moving to xeriscaping in your yard, which includes rocks, cacti and other features that require little to no water.