You cannot escape the responsibility
of tomorrow by evading it today.
— Abraham Lincoln

1 CHANGING THE WORLD ONE CHILD AT A TIME

Too many people in our society, the word *environment* is a four-lettered word. Just mention the word in some crowds and you'll likely be dismissed as a "bleeding heart liberal" or a "tree hugger."

Those inclined to ridicule you and your desire to protect the environment do so, in large part, because they view environmental protection efforts as subversive to human progress. Those on the extreme right, in fact, hold the mistaken notion that environmental protection undermines the economy that puts food on our tables and shelter over our heads and big screen TVs in our living rooms.

The anti-environmental faction sees environmental protection not only as an impediment to economic progress but as a threat to our way of life. Moreover, some critics of environmentalism view it as a form of elitism. Environmentalists, they say, pursue a narrow agenda designed to save pretty places for backpackers and bird watchers. Protecting the environment puts hard-working men and women out of work. They lose their jobs and their families suffer deeply because of the environmental protection efforts of elitists. The backbone of the economy, the labor force, they contend, endures hardship while economically valuable land and its resources are set aside to protect our playgrounds.

It's too bad our schools and the media haven't tried to correct this dangerous misconception. If they had mounted a successful campaign to educate people on the true underlying value of the environment, detractors might be able to see

that by actively opposing environmental protection, they are, figuratively speaking, shooting themselves and their children — and their children's children — in the feet. They might realize that their environmental ignorance and resultant disdain for environmental protection that translates into environmentally contemptuous policies may benefit them in the very short term, but will foreclose on their own future and the future of subsequent generations, ultimately making it harder and harder for people to live a decent life and make a decent living.

All ignorance toboggans into know and trudges up to ignorance again: but winter's not forever, even snow melts; and if spring should spoil the game, what then?

— e.e. cummings

Robert Goodland, an ecological economist, writes that the "environment is the source of all our resources and the sink for all our waste." That is to say, everything around us comes from the environment. Every bit of food we eat, every piece of clothing we wear, and every drop of water we drink comes from the Earth and its once-rich ecosystems. Even synthetics such as plastics and nylon come from the environment — in this case, from chemicals extracted from crude oil, which was geologically manufactured from the remains of ancient marine algae. Moreover, the light shining from incandescent light bulbs in the living rooms of many households comes from coal, fabricated in the Earth's thick crust from ancient plants. These plants trapped solar energy several hundred million years ago in the Carboniferous era, then were deposited along swamps where they were buried by sediment. Over time, heat and pressure transformed the plant matter into coal. When we burn this black, carbon-rich fuel, we release the ancient solar energy. The energy liberated at power plants lights our homes and powers our computers and runs our washing machines.

Forests, fields, rivers, and oceans are the source of the resources that make our lives possible. They are also the source of most money in the human economy. Today and every day, our lives and our economy are dependent on a sound environment.

Too bad detractors don't get that point.

As a parent, you can make sure your children don't grow up ignorant of this essential fact.

Ecosystems, as you'll see in Chapter 3, also supply us with many free services — like clean air and protection against flooding and insect control. These benefits are free to us, until we destroy them. Then we either suffer or spend

millions trying to replicate what nature once offered gratis.

There's another point that's important to realize. The environment serves as a repository for all of our waste — not just garbage, but sewage and a wide assortment of toxic pollutants from factories, power plants, homes, and cars. The soil, the water, and the air are a dumping ground for human wastes. Unfortunately, the soil is also the source of our food and fiber. Waterways provide the water we drink and bathe and swim in. The atmosphere provides the air we breathe.

Forests, fields, rivers, and oceans are the source of the resources that make our lives possible. They are the source of most money in the human economy, too. Today and every day, our lives and our economy are dependent on a sound environment.

Polluting the common resources we need for survival is clearly not one of our better ideas. It's a bit suicidal. However, all species do it. Pollution is inevitable. But we humans produce so much waste that it often exceeds the ability of the ecosystems we live in to assimilate or dilute the wastes to harmless levels. It's too bad detractors don't understand the pollution we produce has dangerous backlashes, for example, the violent weather and flooding we're experiencing very likely resulting from global warming due to the excessive production of greenhouse gases from cars, factories, homes, jets, and so on. (At this writing, in the summer of 2004, the United States is about to be clobbered by its fourth major hurricane of the season.) Again, this is a fact you can help your children realize. We pollute and destroy natural systems at our own peril.

So, not only are we dependent on the environment to supply our resources and get rid of our wastes, we're treating it with disregard for possible repercussions. Herman Daly once wrote that "most nations are treating the Earth as if it were a corporation in liquidation." We are rapidly selling off its assets to the highest bidders. Are these claims exaggerated?

ECOTRENDS: ARE WE ON A SUSTAINABLE COURSE?

In over 30 years of studying environmental issues and tracking environmental trends, I've seen significant progress in many areas. In the United States, for example, recycling has increased dramatically. Nationwide, 31 percent of our waste is now recycled. Soil conservation efforts are paying off too. Soil erosion has dropped dramatically thanks to historic legislation that has taken highly erodible land out of production. Nationwide, Americans have become more

efficient in their use of resources such as water and energy. Factories produce less hazardous waste and huge tracts of wilderness have been set aside for protection.

Unfortunately, there are many signs that paint a troubling picture. In a nationwide study I performed a few years ago, for example, I found that trends in such areas as carbon dioxide emissions, population growth, energy consumption per capita, industrial energy production, transportation, destruction of farmland, and loss of wildlife habitat showed significant movement away from sustainability. On balance, the negative trends offset the positive ones by a 3 to 1 ratio. All in all, the trends suggest quite strongly that we're living and conducting business on the planet in an unsustainable fashion.

To get an idea of how significant our impacts are, consider the impact of human activity on just one day, a technique my colleague David Orr, an Oberlin College environmental studies professor, likes to use to give his audiences a realistic view of what's happening to the planet — and us.

A study of environmental trends suggests quite strongly that we're on an unsustainable course.

On a typical day on planet Earth, says Orr, we destroy 140 to 180 square miles (363 to 466 square kilometers) of tropical rainforest. That's a two-mile wide, 70-mile long (3.2 kilometer wide, 112 kilometer long) swath of land, cleared of its diverse and colorful biological garment to provide timber and to make room for mines, roadways, farms, and new towns. To date, over three million square miles (7.7 million square kilometers) of tropical rainforest have been lost to development. That's an area half the size of the United States.

On a typical day, the world's nations pump more than 15 million tons (13.5 million metric tons) of carbon dioxide into the atmosphere, largely from the combustion of fossil fuels, gasoline, coal, oil, and natural gas. For well over 100 years, scientists have known that carbon dioxide is a greenhouse gas. That is, it traps heat radiating from the Earth's surface somewhat like the glass in a greenhouse. Scientists have known that a little bit of carbon dioxide is good for us; in fact, it's required to create temperatures hospitable to life on Earth. If carbon dioxide were missing from the Earth's atmosphere, our planet would be 50°F (27.5°C) cooler than it is today. Very few, if any, life forms could exist in the frozen wasteland.

While small quantities of carbon dioxide are good for us, too much can cause serious overheating. The heat excess carbon dioxide traps is kept from escaping into the vast expanse of outer space. Abundant evidence suggests that

the accumulation of carbon dioxide and other greenhouse gases is now causing the Earth's surface temperature to spiral upward like that of a patient with an uncontrollable fever.

While many readers know that the world has suffered from perpetual hot spells in the past couple of decades, few realize how significant it is. At this writing in 2004, 17 of the hottest years in 100 have occurred since 1980. While heat spells are not uncommon, having so many swelteringly hot years in a row is extremely unlikely. It is statistically quite improbable. Recent studies show that the 1990s and 2000s represent the hottest period on Earth in the past 2000 years.

Global warming is not just making the Earth's surface hotter, it is dramatically altering the climate, influencing rainfall patterns that result in costly floods. While some areas are wetter, others suffer searing and devastating droughts. Forest fires are breaking out with great regularity, even in tropical climates. Who knows what this is costing us in lives lost each year? In the summer of 2003, France suffered 20,000 deaths, mostly among the elderly, in a summertime hot spell. In Colorado, where I live, the US Forest Service posted a fire warning in January! Who knows what this wacky weather is costing our society, but the price tag is surely in the tens of billions of dollars each year.

On a single day, Orr tells us, scientists estimate that the planet loses approximately 100 species. Most of the losses occur as rainforests topple, as coral reefs die — largely due to warming seas but also due to pollution and sediment — and as wetlands are cleared to make room for humans. While species do become extinct naturally, modern extinction is occurring at a greatly accelerated pace. In fact, we're losing species approximately 30 times faster than through natural extinction. Moreover, the face of extinction has changed. During natural extinction, many species disappeared, but they were typically replaced by evolutionary offshoots, new species that emerged from the old. In modern extinction, species are wiped out completely, without a trace — that is, without a new lineage. Modern extinction is forever. John Ryan of the Worldwatch Institute summed up the situation best: "Difficult as it is to accept, mass extinction has already begun, and we are irrevocably committed to many additional losses."

On a typical day, 70 million tons (63 million metric tons) of topsoil are lost from the world's farmlands. To put this into perspective, that rate of erosion results in a loss of 24 billion tons (21.6 billion metric tons) per year. Over a decade, that's 240 billion tons (216 billion metric tons) — equivalent to approximately one half of the topsoil on US farms.

While we systematically tear apart the Earth's rich biological tapestry, let our soils wash away, and pollute the air, water, and land, the human population — which depends on the Earth and its declining ecosystems — continues its

inexorable expansion. On a typical day, nearly 250,000 — one-quarter of a million — people are added to the planet's population. That's a quarter of a million new residents, each needing food, water, shelter, and clothing — all derived from the environment — to survive.

And tomorrow, it all starts over again.

CHANGING THE WORLD ONE CHILD AT A TIME

I saw a bumper sticker the other day on a Toyota Prius, one of the new energy-efficient, clean-burning hybrid cars. It read, "I don't know where we're going, but what's this hand basket I'm in?"

The idea that crises have both negative and positive aspects is captured in a word the Chinese have for crisis, wei-chi. The first part of the word means "beware, danger." The second part, however, has a very different implication. It means "opportunity for change."
— Peter Russell, The Global Brain.

Surely, if you study the trends seriously for any length of time it is difficult to avoid the feeling that we humans are heading straight over a cliff.

Nonetheless, many think that trend need not be our destiny.

We have a chance to heed the signs, to make mid-course corrections.

The changes must begin with each of us. We adults can't wait for generations of children to clean up the mess. The longer we dally and the further we drift off our once-sustainable course, the more difficult it will be for our children to repair the damage and restore the Earth.

We must begin now.

It is also imperative that parents, teachers, and others train our children now to work with us and to eventually take over for us. It is imperative that we help create kids with ideals, values, and a serious commitment to live environmentally sustainable lifestyles. That's what this book is about. It's a guide for parents who want to help out by leaving behind a living legacy — children — who *will* make a difference.

Generations of environmentally responsible children are needed to make the changes in our lives and our economy. Inevitably, some of our children will become leaders. Some of them will grow up to replace today's environmental leaders. Some will lead influential environmental organizations that help shape thinking, policy, and action in profound ways here and abroad. Others may play equally important roles as teachers in public schools or colleges and universities.

Others may become writers or news reporters. Still others may become influential scientists or even eminent politicians who lead the charge. This book has some advice for parents, teachers, and others to encourage our youth to follow an environmental career path.

We can't wait for generations of children to clean up the mess. The longer we dally and the further we drift off our once-sustainable course, the more difficult it will be for our children to repair the damage and restore the Earth. We must begin now.

But not all children need take an active role in education, writing, and governance. Not everyone needs to become an activist. Indeed, the vast majority of our offspring will not aspire to such heights. It makes no difference. Far more important than a few good leaders are generations of good planetary citizens; that is, kids who become adults who use energy and other resources efficiently, and who recycle and buy recycled products. We need children who, when they grow up, opt to build solar homes or install solar electric panels on their energy-efficient homes made of straw bales and other environmentally friendly materials. We need children who will eventually grow their own food or buy organic produce from local farms, and who will compost kitchen and garden waste and use natural fertilizers and pesticides in the garden and yard. We need citizens who support the restoration of the Earth's endangered ecosystems and who, as adults, take responsibly their right to have children.

Moreover, we need doctors, lawyers, accountants, and business people who run environmentally sound businesses. We need copy shop owners and grocery store managers who ensure that their operations are carried out in an environmentally sustainable fashion. We need manufacturers who produce products in environmentally sound ways. You, as a parent, can help ensure this solid base of support for a sustainable society.

I hope the ideas in this book help.

I'm also hoping that this book will help parents teach their children to adopt environmentally responsible lifestyles now — refraining from the highly consumptive buying habits of their peers, turning off lights, helping with the family's recycling, using energy and water sparingly, biking or walking to school or to friends' houses rather than insisting on a ride from mom or dad.

While there are several books on raising children who care about and take action on social issues — kids who work to promote peace and eradicate poverty, homelessness, and hunger — I, also, will spend a little time on the subject. I do so because creating a sustainable world requires more than simply living

within the means of the planet. It means creating a just and peaceful global society where basic needs are met and where people live free from harm and are able to participate in their governance. Without these, there is no chance of achieving environmental goals. In countries torn by civil strife, as a rule, the environment will suffer. Sustainability has no chance of flourishing.

Not all children will need coaxing and teaching from mom and dad. Some are naturally empathic, that is, naturally inclined to feel a connection to the natural world. Several people I interviewed for this book indicated they felt an early affinity for wild places and the species that inhabit them. Such children may become the catalysts of changes within our families. This book is dedicated to one such child, Chance Ruder, who lives in San Antonio, Texas. His story is told in Chapter 8.

If you have such a child, my advice is to get out of his or her way. Be supportive and learn as much as you can from them. Although their reasoning may not always be sound, their hearts are in the right place. Following their hearts can lead you along a path of transformation that has profound effects on you and the rest of your family.

AVOIDING GLOOM AND DOOM

In Sweden, thousands of residents have rallied around sustainable development and have made many important strides in using energy efficiently, converting to renewable energy sources, building with environmentally friendly materials, conserving water, and preventing pollution. In fact, entire cities and towns have made a concerted shift toward sustainable lifestyles and a sustainable economy. They are called ecomunicipalities and are described in the book *The Natural Step for Communities*, by Sarah James and Torbjörn Lahti.

Although Sweden and many other European nations are far ahead of the United States when it comes to environmentally friendly attitudes, lifestyles, and businesses, the key to success in creating change rested, in large part, on educational efforts, particularly efforts to explain the impacts humans were having on the environment and how unsustainable our lives really were. Success with your children may also hinge on similar lessons. That is to say, you may need to present dramatic evidence of the need before you can expect children to accept the idea that we all need to live more environmentally sustainable lifestyles. You can do so, for instance, by describing the trends mentioned earlier in this chapter.

However, it is important, indeed essential, not to let your children become mired in gloom and doom. Such feelings may lead to a sense of despair and helplessness. Children may feel as if there is no hope. Hopelessness, in turn, may lead to disempowerment and, ultimately, to inaction. Inaction, of course, will get

us nowhere, and the only ones who will gain are the doctors who prescribe and the pharmaceutical companies that manufacture antidepressants — and, oh yes, the forces that stand in the way of sustainability.

KIDS WHO ARE MAKING A DIFFERENCE
STUDENTS HEAT SCHOOL WITH ROTTING GARBAGE

Science students in Maryland Heights, Missouri, launched an ambitious program that could start a trend in the United States and abroad. Their project: to capture methane, a combustible gas released from rotting garbage in a nearby landfill, to heat their school.

Today, thanks to the efforts of a handful of students and a local businessperson, all 117 classrooms and two gymnasiums at Pattonville High are heated by methane from rotting garbage. Pattonville High is believed to be the first school in the United States heated by waste gas.

The methane, piped to the school by a 3600-foot (1100-meter) pipeline from the 85-acre (35-hectare) landfill, is burned in the furnace in place of natural gas. Thus, it not only puts waste to good use, it helps reduce their dependence on a finite fossil fuel. (The school is not entirely heated by methane. Some natural gas is needed for the cafeteria and other operations, but the use is minimal.)

What makes this all the more exciting is that the landfill operators used to burn off the waste gas. Even more exciting is that this project, which cost $175,000, saves the school $40,000 a year in heating bills. The savings paid the capital costs in fewer than five years. The principal of the school, Tom Byrnes, said, "The methane gas is there. It's a matter of burning it off or using it productively."

The US Environmental Protection Agency (EPA) estimates that 750 landfills in the United States could be tapped to generate gas. If only half of them were tapped, it would cut the emissions of thousands of tons of carbon dioxide each year. According to the EPA, this would be equivalent to removing 12 million cars from the road. Obviously, landfill waste gas is not the only answer to creating a sustainable future, but it can help.

New regulations require that landfills with more than 2.75 tons (2.5 metric tons) of trash be tested for gaseous emissions. If emissions exceed a certain level, the new Clean Air Act amendments require the

operator to install a system to collect and burn off the gas, to prevent possible explosions caused when the gas reaches certain levels. If methane can be put to good use, say proponents, it should be.

Adapted with permission from Daniel D. Chiras, *Environmental Science: Creating a Sustainable Future*, 6th ed., Jones and Bartlett, 2001.

AVOIDING THE PARADOX OF INCONSEQUENCE

While we are on the topic, years ago I "discovered" an unusual psychological trap that parents and educators must be aware of. I dubbed it the "paradox of inconsequence" in one of my very first environmental books, *Beyond the Fray: Reshaping America's Environmental Movement*.

The paradox of inconsequence unfolds like this: As we go about our daily lives, many of us realize that there are serious environmental problems. However, for most of us, our role in creating the problems seems insignificant. We reason that we're just one of around 300 million Americans or nearly 6.5 billion world citizens. Therefore, what we do is insignificant, of infinitesimal proportion. "Why fret about our actions?" we ask. "It makes no difference." Freed from responsibility by the inconsequence of our own action, we drive gas-guzzling cars, fail to recycle, leave lights on, let the hose run longer than we should, buy the latest electronics, and consume as if there were no end in sight. "Why not? What difference does it really make? We're just one of millions."

Ironically, this logic creates many of the world's environmental and resource problems. That is to say, millions of people all thinking their part is insignificant — and then acting accordingly — are largely responsible for many of the modern environmental problems. It is one key reason why countries like the United States are on an unsustainable course. Our seemingly insignificant contributions, however, do add up. They create problems of epic proportions: millions of tons of carbon dioxide dumped into our atmosphere each day and millions of tons of hazardous waste from factories that produce the long list of consumer goods, and so on and so on.

Each snowflake in an avalanche pleads not guilty.
— Stanislaus Lee

Writer Stanislaus Lee put it best when he said, "Each snowflake in an avalanche pleads not guilty."

But the ironies don't end here.

The sense of inconsequence that creates our problems also keeps us from solving them.

How so?

Quite simply: The logic that spawns our problems keeps many people from changing. "Why bother?" they ask, "My contribution to solving the problem is so insignificant. If I turn out my lights or use water efficiently or drive the speed limit or use public transport, my sacrifice won't amount to a drop in the ocean."

So why act?

Why do anything?

And so it goes: The logic that creates massive environmental problems and our sense of inconsequence, also keep us from solving them. Instead we rely on governments and business to solve them for us. We expect new laws or regulations to change behavior and new technologies to rescue us.

Although government and business can help, we can't rely on them to solve our problems. In fact, because of short-term thinking both entities may work at cross purposes, engaging in activities that force us further off a sustainable path. Surely, if we're going to successfully steer back onto a sustainable course, we need their help, but we need to address pressing issues from the bottom up, too. And guess who's on the bottom?

We are.

And our children are.

And their children, and so on.

Generations of responsible citizens can change the world.

You and your children can be a part of the transformation, a positive force for the betterment of society.

THE IMPORTANCE OF POSITIVE EXAMPLES

To avoid gloom and doom and the crippling paradox of inconsequence, our children need to see and feel and be a part of positive solutions. While a hike through a clear-cut or a visit to the city dump can help them realize the enormity of our problems, it's just as important, maybe even more important, to take them on a tour of a recycling center so they can see for themselves the tens of thousands of tons of recycled cans, bottles and newspapers on their way back into the production cycle. Take them on a tour of a sustainably harvested forest or visit a sustainable farm or two. Take them to stores like Boulder, Colorado's Planetary Solutions, which sells environmentally friendly building materials, to see the options. Take them to tour homes built by green builders. Take them to alternative wastewater treatment plants that clean up sewage

using aquatic plants and capture the wastes for reuse. Encourage schools to tour wind farms. Tour the National Renewable Energy Laboratory in Golden, Colorado.

Create positive experiential connections, not just theoretical associations.

Be a positive example, too. Recycle, install energy-efficient lights, and grow your own food or participate in community-supported agriculture. Add up the savings to help your children see that their small part really counts. You can track your changes by joining or forming an EcoTeam. Discussed in more detail in Chapter 7, EcoTeams are groups of neighbors or friends who get together once a month for a period of six months. During each of their monthly meetings, EcoTeam members focus on one area, such as household waste, energy, water, or transportation. Using a workbook published by Global Action Plan, the nonprofit organization that created this program, neighbors discuss ways to cut back on waste and energy use, and each family comes up with its own plan. The actions are tallied and converted into real savings in resource use, pollution, and, of course, money.

Another option, discussed in Chapter 6, is to log on to the Center for a New American Dream's website, <www.newdream.com>. Here, you can set up your own personal workspace where you keep track of changes you and your family are making. The online calculator tallies the environmental impact of your actions. The Center also keeps a running total of all of the impacts of changes made by those who've logged on to their site. You can get a copy of their book, *More Fun Less Stuff: Starter Kit* to guide you through the process. It also contains worksheets that allow you to keep track of your changes and the impacts of these changes.

You might want to get a copy of Phillip Hoose's book, *It's Our World, Too! Stories of Young People Who Are Making a Difference*. It's full of stories that may inspire your young ones.

One of the important points made in Marie Sherlock's *Living Simply with Children* is to be upbeat about the choices you make. As Sherlock observes, "When we take action that says we believe individuals can make a difference, our kids absorb that message and are empowered by it." Many of the people I interviewed for this book expressed a similar sentiment. Louis Hornyak, whose frugal parents came from Hungary, noted that they once "recycled the wood and nails from an entire demolished house and then used them to build fences and other structures. They never threw anything away! Never."

MODELS OF SUSTAINABILITY: GLOBAL WARMING AND WHAT ONE COMPANY IS DOING TO ADDRESS THIS ISSUE

Each day the Earth is bathed in sunlight. Approximately one-third of the sunlight striking the Earth and its atmosphere is reflected back into space. The rest is absorbed by the air, water, land, and plants. Sunlight absorbed by surfaces is converted into heat. This heat is slowly radiated back into outer space.

Scientists have long known that certain chemicals in the atmosphere such as carbon dioxide and water vapor can upset this process. Carbon dioxide molecules, for example, absorb heat and reflect it back to Earth. It and other pollutants act like the glass in a greenhouse. The phenomenon is therefore called the greenhouse effect.

The greenhouse effect helps maintain the Earth's surface temperature. Without it, the Earth would be at least 50°F (10°C) cooler than it is today. Most life forms could not exist, including humans.

Unfortunately, many greenhouse gases are produced from human activities. When we drive our cars or heat our homes or use electricity supplied by a power plant to light our homes or power our TVs, we are producing carbon dioxide that is heating up the Earth.

Greenhouse gases typically come from natural sources, too, but human sources are the greatest concern. That's because emissions from natural sources have remained fairly constant over the past 100 years while emissions from human sources have increased dramatically. Carbon dioxide emissions, for instance, have climbed over 30 percent in the past 100 years largely as a result of the combustion of fossil fuels — coal, oil, natural gas, and gasoline. They have also increased as a result of deforestation, clearing forests to make room for farms, cities, towns, and roads, and to provide wood and wood products. Why? Plants, like trees, take up carbon dioxide from the atmosphere and convert it into plant matter. As trees are stripped from the land, the Earth's capacity to absorb carbon dioxide decreases. Atmospheric levels increase.

Many scientists believe that the increase in greenhouse gases is responsible for rising global temperatures, known as global warming, which we have witnessed since 1960. Numerous scientific studies suggest that the increase in the Earth's temperature is affecting the planet. It may be changing rainfall patterns and may be responsible for an

increase in severe storms. In other words, it could be affecting global climate. Consequently, most scientists prefer the term global climate change over global warming.

Rising global temperature also affects natural ecosystems, agriculture, sea levels, insurance rates, and our economy. Further increases, which are likely to occur if we don't take actions, could result in a dramatic increase in global temperature and even more dramatic and costly changes in our climate. Scientists predict that sea levels will increase 20 inches (50 centimeters) from 1990 to 2100. The rise in sea levels would result from melting of glaciers and the land-based Antarctic ice pack and an expansion of the seas resulting from warmer temperatures.

Rising sea levels would threaten coastal cities throughout the world. Today, over half the world's population lives in coastal cities and towns. In fact, over 40 of the largest cities in the world are in coastal regions. Even a modest increase in sea levels would flood coastal wetlands, low-lying farm fields, wildlife habitat, and cities. The rise in sea levels would also worsen the damage from storms.

Less developed nations would also suffer enormously if the oceans rise. Low-lying island nations, many of them tropical resort places, already losing land to rising seas could be entirely submerged.

Shifting rainfall patterns and drought could cause devastating losses to farmers and reduce our food supply. They could also result in more devastating forest fires. These changes could also have devastating effects on wildlife and could cause the spread of diseases that currently affect people only in warm, tropical climates.

Progressive companies throughout the world are taking steps to help protect us against global warming. One leader in this effort is Applied Energy Services (AES) of Arlington, Virginia, a power company that burns coal to make electricity. In 1988 it announced plans to help finance the planting of 50 million trees in Guatemala to offset carbon dioxide emissions of fossil fuel power plants it planned to build. AES also wanted the project to improve the economic conditions of communities currently affected by deforestation and preserve endangered plant and animal species.

AES has also taken steps to offset pollution from a coal-fired power plant on Oahu, Hawaii, that came online in 1992. Instead of planting trees, though, AES helped to protect a forest in Paraguay from destruction. AES agreed to donate up to $2 million for the purchase and preservation of the 143,000-acre (58,000-hectare) Mbaracayu forest.

Located in eastern Paraguay, the Mbaracayu is one of South America's few remaining tracts of dense, humid sub-tropical forest. The area is vital to the survival of many species. It includes 19 distinct plant communities, at least 300 bird species, and threatened and endangered animals including tapirs, jaguars, giant armadillos, peccaries, the rare bush dog, king vultures, and macaws. The forest is the traditional hunting and gathering area for the Ache tribe. AES is partner in this project with the Nature Conservancy and a Paraguayan group that promotes sustainable development. AES has continued its carbon-offset programs with power plants in Oklahoma and Florida.

Individuals and businesses throughout the world can help reduce global carbon dioxide levels by planting trees, recycling, walking, bicycling, or riding a bus to school or work instead of using the car, by building smaller, more energy-efficient homes; by insulating existing homes, by using energy-and water-efficient appliances or doing some things by hand (for example, mixing by hand rather than using an electric mixer, or drying clothes on a line rather than using a dryer). When the time comes to buy appliances, choose the most energy-efficient ones available. New energy-efficient refrigerators, the leading user of electricity in our homes, can cut electrical demand from 1200 kilowatt-hours per year to 240. Using renewable energy can also dramatically reduce carbon dioxide.

THE WORLD OUTSIDE YOUR HOME

As I researched this book, I surveyed dozens of people who live environmentally friendly lifestyles, many of whom serve the cause in their professional lives. In my survey, I asked this group of dedicated individuals to describe the factors that influenced their life choices. While parents were influential in the majority of the individuals (70 to 80 percent) I queried, I was pleasantly surprised to discover that high school and college teachers also helped to shape young people's values and commitment.

Teachers can play a supportive role in some instances, or may be the prime influence in others. Interestingly, teachers were among the top three influences in shaping lives of environmental compassion and commitment — on a par with parents and slightly more important than experiences in the out-of-doors. One person I interviewed when working on this book was Jim Schley, a Vermont writer, editor, artist, and sustainable living practitioner. Jim was for-

tunate enough to be one of the late Donella Meadows's students at Dartmouth. Donella was an eloquent and thought-provoking teacher who led the world in shaping our understanding of limits to growth. Through her teachings, she also inspired many students to adopt careers and lives dedicated to environmental protection.

Doug Seiter, who lives in Denver, Colorado, and works for the Department of Energy's green building program says, "There was perhaps no greater influence on my connection with nature than my third grade teacher, Miss Leeka. She is the one who connected me with a variety of classroom 'pets' in the form of spiders, snakes, and a collection of fossils and inanimate objects from the natural world." Miss Leeka and a number of influences such as camping trips with his family and important books have inspired Doug to adopt a lifestyle and a career dedicated to caring for the Earth. What is more, his legacy is being passed on to his children. "We have two children, both of whom were raised in an environment of awareness of environmental responsibility," says Doug. "They both share the values, if not our passion, for environmental responsibility. One of our daughters has shown great interest in pursuing a career in environmental building."

The lesson in all of this is that you're not alone. Environmentally conscious teachers, scout leaders, ministers, friends, and a host of other individuals your children will interact with can have a positive influence. Some, they'll meet randomly; others they'll seek out or attract, almost magically. You can help steer your kids toward them, for example, by suggesting they enroll in environmental science in high school and college or by suggesting that they join the school's ecology club. If your child is in Boy Scouts, you might suggest they do the environmental science or natural resource conservation merit badges.

PLANET CARE: THE ULTIMATE FORM OF SELF-CARE

What we do to the planet, we do to ourselves. When we pollute the air, we pollute our own air supply. When we defile the water, we jeopardize our water supply and our own health. When we drive a species to extinction, we diminish the beauty and diversity we enjoy. You get the idea.

Planet care is the ultimate form of self-care. What we do for the planet — the acts of kindness that reduce pollution, species extinction, and resource depletion, and the improvements we make in restoring ecosystems — we also do for ourselves. Some people view these acts as sacrifice, that is, giving up the things they like or depend on.

I like to encourage individuals to think differently about environmental protection. Instead of thinking about sacrifices you need to make, that is, giving *up* things, it is important to think about our actions as giving *to*. Rather

than give up, we are giving to ourselves, to future generations, and the millions of species that share this planet with us, creating a cleaner, healthier, richer world. We're not detracting from our lives, we're making them richer. We're better people for it. We live conscientiously and responsibly, in some cases, so that others may live well, too.

Planet care is the ultimate form of self-care.

You might like to have this conversation with your kids. It will help shape their philosophy early in life.

With this information in mind, we now turn our attention to a critical part in raising children who care for the Earth, fostering love. As Charles Dickens once wrote, "Love is the truest wisdom."

FAMILY ACTIVITIES

Below is a list of possible activities for children of various ages. You will very likely need to tailor some of these activities to your children, simplifying them for younger children, for instance.

1. Log on to <www.airhead.org> and look up their emissions calculator. Work with your family to determine your environmental impact.
2. Obtain a copy of the *EcoTeam Workbook* or *More Fun Less Stuff* and study it with your child. Determine if you would like to follow the recommendations.
3. Log on to the website of the Center for a New American Dream, <www.newdream.com>. Set up your own personal workspace where you track changes you and your family are making — and the reductions in your impact.
4. Read the "Kids Who Are Making a Difference" piece in this chapter aloud to your children. Be sure your spouse joins in. Discuss the project and other projects they could start at school or in the community.
5. Read the "Models of Sustainability" piece in this chapter aloud to your family and discuss it. Be sure they understand global warming and global climate change. Make a list of its impacts. Make a list of things your family could do to reduce their contribution to global climate change.
6. While on a trip or after dinner, make a list of all the ways the environment benefits you and your family.