

Help Create a
Sustainable Community



**A guide for
natural resource
stewardship
in the Inland Empire**

We need your help to steward natural resources and to invent new, sustainable ways to live, work, build communities, and prosper.

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Help Create Our Future

We all impact our communities and their future. Individuals, businesses, community leaders, developers, and planners play a role in creating a community that sustains natural resources.

In this booklet, we ask you to examine ways to help protect nature and create healthier and safer urban environments.

Here's how you can help:

Learn more.

Begin by expanding your understanding of the places in which we live and the methods to conserve them.



Take action.

Make lifestyle choices that reduce your personal “environmental impact”: conserve resources, reduce waste, and stop pollution. Become a responsible, *conscious* consumer of sustainable products.

Get involved.

- Take an active role in land-use and development decisions by participating in planning workshops, community meetings, and zoning hearings.
- Assist habitat and farmland conservation efforts by supporting your community's conservation organizations with your time, expertise, and money.
- Discuss the potential for healthier natural and urban habitats with government leaders, planning commissions and staff, even developers. Remind elected officials that you would like them to support sustainable growth and development. Vote for officials whose records show strong support for *quality of life* issues.
- Voice your concerns by sending letters to legislators. Some groups will notify you of urgent issues and needed action, via the internet. They will notify you of letter writing campaigns and petitions and will suggest ways to make your voice heard.

Be an advocate.

Share your knowledge with others, especially children.

To put it simply, “Sustainable” means that we use our resources so they last forever.

In years past, we have worked to *conserve* natural resources. Today, we are shifting that goal from conserving to *sustaining* resources. We must envision solutions that provide ongoing viability of resources, without depletion or degradation. Conservation is one tool to achieve that end. This change in focus shifts our thinking from managing *resources* to managing *ourselves*, the roles of humans in natural systems. Thinking in terms of sustainability helps us discover ways to *live within the earth’s means*.

How do we know when a community is sustainable?



Diana Ruiz

There is a balance between resources used and resources generated. When we use resources, for example, lumber from trees, we ensure that new trees are planted to replace those that were harvested.



Riverside-Corona Resource Conservation District

Resources are as clean at the end of use as at the beginning. For example, water that has been used in cities is cleaned at treatment facilities.

Why be concerned about sustaining resources?

Cycles of nature, such as the water cycle, operate in “ecologic systems”, or *ecosystems*. Ecosystems are places where communities of plants and animals, including people, interact with one another and with the natural resources of a region. It’s crucial that ecosystems operate effectively to cycle air, energy, and water in order to provide services that are fundamental to life.



Riverside-Corona Resource Conservation District

Ecosystems cycle air, energy, water, and nutrients.

Healthy, functioning ecosystems are indispensable because they:

- clean water and air;
- decompose waste and cycle nutrients;
- generate soils and renew their fertility;
- regulate disease carrying organisms;
- moderate weather extremes and contribute to climate stability.

There are no “human made” substitutes for these natural processes.

It’s hard to believe that human activities could so impact natural systems that they would fail to function properly. However, when natural cycles are interfered with, we can help restore them by re-engineering what humans have altered.

Ecosystems function, to a greater or lesser extent, in each of the three main land uses of southern

California: ***native habitats,
urban areas, and
agriculture.***

Native Habitats

The land that is maintained as native habitat is important for many reasons:

Environmental Value

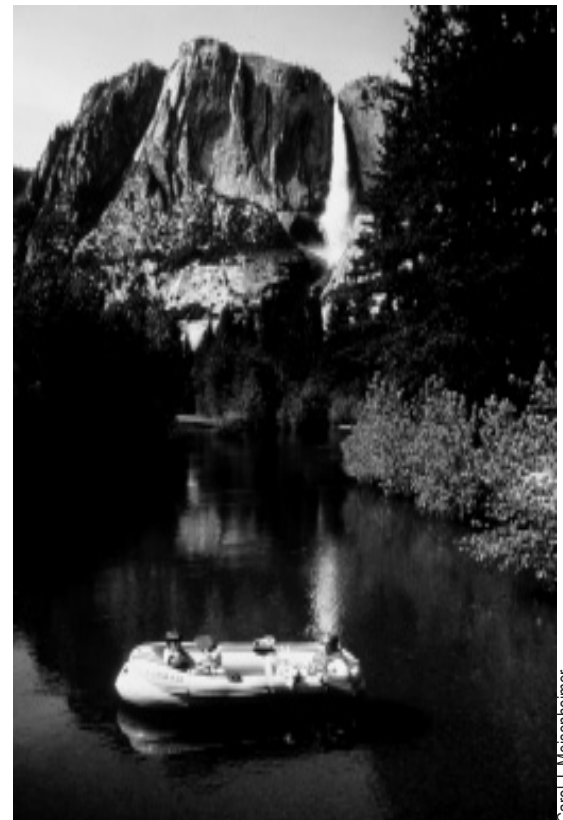
- Natural areas are homes, or habitat, for wildlife. Habitat provides wildlife water, food, shelter, nesting sites, and space to live. Native habitats support insects, birds, bats, and other animals that pollinate crops and control pest infestations.
- The variety of life supported in natural areas preserves genetic diversity, which helps maintain evolutionary processes and stores genes that are potentially beneficial to humans.
- Native landscapes effectively clean water and air. They reduce flooding and help control erosion.

Quality of Life

- Natural areas enhance the quality of life for people by providing opportunities for exercise, recreation, and solitude. Many psychologists believe that humans require contact with nature for emotional health and well-being.

Economic Benefits

- Natural areas are desirable amenities that can help define community identity. Studies have shown that natural areas enhance the economic value of residential properties.
- Tax-paying businesses are attracted to communities with high “quality of life”.
- Recreational activities support businesses, such as photography, outdoor equipment, fishing, and hunting supply industries.



Carol J. Meisenheimer



Raymond Coleman

Gulf Fritillary

Some species in western Riverside County are found nowhere else in the world.

Western Riverside County is rich in variety of plants and animals. Some plant species from our neighboring coast and deserts also overlap into Riverside area habitats. That variety of life is referred to as biological diversity, or *biodiversity*.

Animal and plant species are not distributed equally around the globe. In fact, California provides for some of the highest levels of biodiversity. Also, many local species are *endemic*, meaning they are found only here, and nowhere else in the world.

Biodiversity is studied at three levels: genetic diversity, species diversity, and ecosystem diversity. Genetic diversity occurs between species, but also within a species. For example, the same plant species may have populations that are very different in genetic composition from one area to another. Such genetic differences are often important to a plant's ability to survive and reproduce in a particular location.

Animals are dependent upon healthy plant communities. Let's look at four important local plant communities that are diminishing. Then we'll consider some things that can be done to help sustain them.



James Gallagher, Sea and Sage Audubon

Black-chinned hummingbird

Plant Communities

Coastal-Sage-Scrub



Natural Resources Conservation Service

The coastal-sage-scrub (CSS) plant community is unique to Mediterranean climates, the kind we have here in western Riverside County. We have hot, dry summers and mild, wet winters. Commonly, CSS shrubs are half-woody, aromatic, and 1-6 feet tall. Many have soft gray-green leaves and shallow root systems. Most CSS shrubs are adapted to prolonged summer-fall drought: they drop or curl their leaves and become dormant to survive dry conditions.



Scott Bauer, USDA Agricultural Research Service

Characteristic plant species of CSS include California sagebrush, California buckwheat, brittlebush, black sage, and white sage. The shrubs of Riverside area CSS (Riversidian sage-scrub) are often spaced out, providing an open canopy that allows interspersed growth of grasses, forbs, and succulents.

White-tail deer

Nearly one hundred plant and animal species associated with CSS are classified as rare, sensitive, threatened, or endangered including the Stephens kangaroo rat, the California gnatcatcher (a bird), the Cactus wren (a bird), the Orange-throated whiptail (a lizard), and the San Diego horned lizard.

Coastal-sage-scrub used to be the predominant vegetation type below 1000 feet elevation. The amount that has been lost in Riverside County is estimated to be close to 90%. Of the remaining habitat, more than half is considered degraded as a result of grazing, frequent fires, weed invasion, military activity, and off-road vehicle use.

Periodic fire is important to the regeneration of many CSS species and can help to maintain high levels of biodiversity. Fire at intervals of more than 20 years is necessary, but more frequent fire results in decreased shrub regeneration, increased invasion by non-native grasses, and a decrease in biodiversity. In addition, air pollution may contribute to the degradation of CSS by depositing abnormally high levels of nitrogen on the soil, which promotes the rapid growth of non-native grasses and other weed species.



Chris Brown, US Geologic Survey

Chaparral



Riverside-Corona Resource Conservation District

Chaparral is composed of hillside evergreen shrubs from 1-15 feet tall. Chaparral plants have adapted differently than most coastal-sage-scrub plants. Chaparral shrubs are deep-rooted with thick and waxy, or small, shiny leaves. Characteristic plant species include chamise, manzanita, sugarbush, scrub oak, California lilac, toyon, and sumac. Periodic fire is also necessary for the rejuvenation of many chaparral plants.

Mature stands of chaparral form dense, closed canopies. Selective clearing opens impenetrable stands of chaparral and helps prevent devastating wildfire. Pruning, grazing, and prescribed fire (controlled burns) are tools used to section dense stands of chaparral. Areas of mixed chaparral



Charles Webber, California Academy of Sciences

Toyon berries

(CSS interspersed with chaparral species) provide high quality habitat because they supply food and refuge to wildlife. Learn more about fuel reduction and fire-wise landscaping in *Living on the Edge: A Guide for Living at the Urban - Wildlands Interface*, available from the Riverside-Corona Resource Conservation District.

Riparian



Tom McCabe, USDA Natural Resources Conservation Service

Riparian is defined as “pertaining to the bank of a river”. The riparian plant community is found along any stream, waterway, or river. Common plants include cottonwood, sycamore, willow, poison oak, and mule fat. Riparian plants are generally more water-thirsty than those of the other southern California plant communities.

Riparian habitat runs through other plant communities, as water flows from higher elevations through tributaries to the Santa Ana River. The narrow corridor of a stream is a valuable resource in our dry southern California climate.

Streams that flow throughout the year are referred to as perennial and typically drain large acreages.



Gerald and Buff Corsi, California Academy of Sciences

Raccoons



Lynn Betts, USDA Natural Resources Conservation Service

Perennial streams bring drinking water to wildlife and support plant growth all year long. These waterways are normally thick with vegetation providing food, homes, and movement corridors for wildlife.

Scholars estimate that 95% of southern California’s riparian habitat has been developed or degraded. Many drainage ways have been narrowed and concrete-lined or piped and filled, rendering them useless to wildlife.

Riparian habitat includes the vegetation along a stream course.

Several threatened, endangered, or sensitive native species are dependent upon local riparian habitat, including the California red-legged frog, the Southwestern arroyo toad, the Southwestern pond turtle, the Least Bell’s vireo (a bird), and the Santa Ana sucker, (a fish).



Raymond Coleman

Tree frog

Sometimes it is hard to recognize streams in southern California. Some of our waterways appear dry during much of the year, although they may become raging torrents during the rainy season. All streams must be regarded with care. If you live in a watershed, and we all do, then

you impact water quality. Learn ways to prevent the pollution of waterways in the section: *Urban Areas, Prevent Pollution* or in the booklet *Stream Care: Every Person’s Guide for Healing Waterways*, available from the Riverside-Corona Resource Conservation District.



Bob Nichols, USDA Natural Resources Conservation Service

Reduce human impacts on water quality and wildlife habitat.

Oak-Woodlands



Natural Resources Conservation Service

Oak- woodlands are typically found on valley floors, foothills, fault-lines, and mesas. Oak dominated landscapes have understories of grasslands or coastal-sage-scrub with forbs, leaf litter, and woody debris. Oak-woodlands provide habitat for over 300 species of birds, amphibians, reptiles, and mammals.

Urban and agricultural developments have eliminated oaks from much of their former geographic ranges. Cattle grazing, introduced plant species, tree removal, increased urban runoff, and soil compaction around oak tree roots have contributed to degradation of oak-woodland systems.



James Gallagher, Sea and Sage Audubon

Acorn Woodpecker

What can be done to sustain native habitats?

We can ***preserve***,
restore, and reduce human impacts through
personal action and stewardship.

Preserve Habitat

Native landscapes have been fragmented and dramatically reduced in size. Clearly, the most pressing threat to habitat is conversion to other land uses. Local native habitat lands are also some of the most potentially valuable real estate properties in the United States. As we come to understand the relationship between land use, transportation, and the environment, we must seek new ways to grow. Herein lies the problem:

How do we provide homes and food for people, and at the same time, retain habitat for wildlife?



Coyote

Brian G. Prescott

Sustainable development.

Communities plan land use based on current resource data and scientific understanding.

Then, communities use land efficiently, directing urban development in ways that preserve important natural areas and prime farmlands.

This is where community support is essential. ***You can help.***

Municipalities are in the process of re-evaluating their growth plans. Current planning processes involve broad partnerships of landowners, government agencies, and conservationists. Riverside County is coordinating regional planning efforts to guide future land use decisions and to locate future transportation corridors. Large blocks of habitat with threatened and endangered species are prioritized in a Multi-Species Habitat Conservation Plan (MSHCP). Eventually, when adequate funding becomes available, we expect those prioritized native habitats will be purchased and preserved.

Everyone is encouraged to participate in planning and preservation efforts.

Some land conservation organizations work to acquire and preserve important properties. If you would like to help, join a **local** conservancy and volunteer, such as the Riverside Land Conservancy (RLC). If you own land that you would like to see preserved, consider creating a conservation easement or donating to a local land conservancy.

Planning Strategies

Prevent habitat fragmentation.

Isolation of habitat areas can be prevented by planning for corridors (connections) between pockets of habitat and between different types of habitat. Corridors provide wildlife room to roam for access to food, territory, and mating. A broad range of habitat is necessary for the dispersal (gene flow) of plants and animals. A decrease in dispersal can lead to excessive inbreeding, smaller populations, and lower genetic diversity. These factors lead to extinction of species.



Habitat fragmentation

Diana Ruiz

Prohibit construction in and near waterways.

Prevent the filling of tributaries, including dry washes and arroyos. Sustainable development prohibits encroachment on important native landscapes and dedicates land for adequate buffers, especially around waterways.

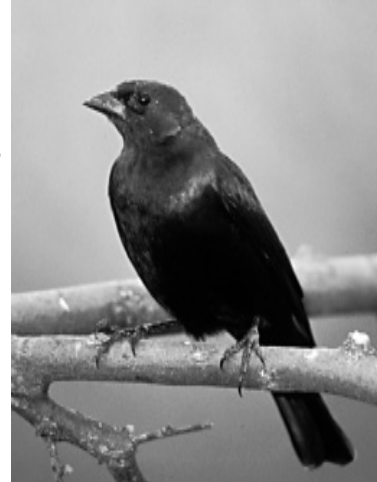
Prevent urban sprawl: dispersed, auto-oriented, low-density growth.

Communities can reduce demand for urban land by practicing sustainable development, *Smart Growth*, which directs development in ways that preserve native habitats and important farmlands. Learn more about Smart Growth and quality of life considerations in the *Urban Areas* section of this booklet.

Restore Habitat

Communities and landowners can repair degraded habitat. Potential improvements vary depending upon existing site conditions, but might include:

- removing exotic (non-native) plant and/or animal species and re-establishing natives;
- replacing fences that limit wildlife access and migration;
- closing unnecessary roadways and trails to control access and erosion;
- removing limited amounts of vegetation for habitat improvement or fire management, but also preventing unnecessary clearing and pruning, while leaving snags, dead limbs, and leaf litter in place;
- prohibiting grading, compaction, and trenching near oak root zones;
- directing irrigation runoff away from oak woodland, coastal-sage-scrub, or chaparral vegetation.



James Gallagher, Sea and Sage Audubon

The **Brown-headed cowbird** is being trapped and removed from waterways, because it is a nest parasite, it lays its eggs in the nests of native birds.

If you are interested in becoming involved with habitat restoration, contact your local Resource Conservation District (RCD) to learn about groups and projects in your community. Volunteer opportunities with the Riverside-Corona RCD include bluebird nest box monitoring, waterway clean-ups and plantings, stream water quality monitoring, and labeling storm drain inlets with the message *Only Rain in the Drain*.

The Riverside-Corona RCD with the Santa Ana Watershed Association of RCD's (SAWA) and *Team Arundo* remove invasive plant and animal species from tributaries to the Santa Ana River. If you own a waterway, contact the RCRCD for invasive species removal and treatment. If you are a landowner of a natural area and would like help assessing your habitat, contact your local RCD or the USDA Natural Resources Conservation Service for free assistance.

Attempts at creating new habitat to mitigate for habitat removal, are complicated, costly, and frequently unsuccessful.

Our best option is to preserve and restore the habitats we have.

Personal Action

Native habitats need community advocates to support habitat preservation, restoration, and land stewardship efforts. However, we can also help in simple ways, through our daily actions.

At your home and in your community, you can still have an impact on habitat:

- Eliminate the use of hazardous materials, such as pesticides and toxic cleaning materials. Use *least-toxic* pesticides and herbicides. When necessary, apply the correct amounts of fertilizers and pesticides at the most effective times, to prevent runoff into waterways and percolation into underground aquifers.
- Prevent waste of any kind from washing into storm drain inlets. Street drainage flows directly through storm drains to waterways.

When you visit natural areas watch wildlife from afar by staying out of streams and off stream banks, especially with horses and off-road vehicles. Whatever natural area you visit, tread lightly, “leave no trace”, and never bring your pet without a leash.

If you live near habitat:

- Eliminate light, noise, and activity that disturb wildlife, especially during breeding season.
- Prevent pets from roaming in habitat and interfering with natural systems.
- Dispose of trash in containers with sealed lids to prevent foraging by wildlife. Do not leave pet food outdoors where wild mammals might be drawn into your human habitat.



Lynn Betts, USDA Natural Resources Conservation Service

Watch wildlife from afar.

Learn more about preventing human impacts in the *Urban Areas* section and in the booklet *Living on the Edge: A Guide for Living at the Urban - Wildlands Interface*, available from the Riverside-Corona Resource Conservation District.

Urban Areas

Urban areas include the land we use for homes, businesses, and roads. In this section we use the term *urban* in general, to refer to *human* habitats, including suburban.

Many problems we face are largely due to the ways we have planned and built urban environments. Those problems include traffic congestion, loss of open space, and degraded air and water quality. We've used land inefficiently. We have paved over prime farmlands, built sprawled communities without providing effective mass transit, and destroyed important habitats, accelerating extinction rates.

In the past, many land use and management decisions were made based on immediate economic returns, without full regard for environmental and *quality of life* costs and considerations. Today, it is essential that we thoroughly evaluate the consequences of land use conversion. Some factors to consider include the efficient use of land and natural resources, costs to ecosystem services, community livability, and economic benefits. With more comprehensive evaluation and planning, we can make meaningful land use decisions and invent sustainable solutions.

As in native habitats, the natural cycles of air, water, nutrients, and energy flow through *urban ecosystems*. Urban structures often short-circuit natural cycles, interrupting nature's ability to function effectively. We can alter some components of urban environments to reduce negative impacts on natural processes.

To become sustainable, we must rethink the ways we:

plan,
build, and
manage urban areas.



Ron Pidot

Plan Land Use and Community Design

Sustainable land use is achieved through community planning that strategically directs urban development resulting in best use of natural resources and transportation efficiency. Sustainable community design preserves prime agricultural lands at the urban fringe and important native habitats. Sustainable design is more successful when municipalities collaborate on regional plans to create prosperous, livable regions as well as cities. *Smart Growth* is the term being used to describe sustainable land use. It's site specific, so components vary from place to place.

Communities that practice Smart Growth provide greater choice, in terms of transportation options and where it is safe and desirable to live.

In terms of transportation, Smart Growth communities are designed for people rather than for automobiles. Communities are pedestrian friendly, with safe transportation corridors for foot and bike traffic. Mass transit is easily accessible. Transportation efficiency reduces air pollution, creates healthier communities, and reduces depletion of non-renewable fossil fuels.

Smart Growth means using urban land more effectively and more completely. It combines housing, commercial, and retail uses, making it possible to work, attend school, and shop within walking distance to homes. New communities radiate from desirable urban centers. Older communities restore vitality to town centers, preserving historical features, infilling vacant lots, and redeveloping idle and underused facilities. Smart Growth design incorporates parks and greenways and safeguards environmentally sensitive areas, such as wetlands and waterways.



Ron Pidot

Create vital urban centers and preserve historic features.

Well-designed communities provide choice. The choice of a compact, but safe and pleasing urban or suburban environment is needed to help limit urban sprawl. Smart Growth fosters distinctive, attractive communities with a strong sense of place. High quality of life attracts business and industry, which improves local economies and provides jobs. Then, property values and tax revenues increase.

Build Sustainable Building Design and Construction

Although today we use building technologies that help *conserve* resources, such as insulation and glazed windows, current methods do not sustain natural resources.



Design buildings to capitalize on site conditions. This house was designed to harvest solar radiation and to use the earth as an insulator.

Methods to create high-performance, sustainable buildings:

Evaluate sites for their unique characteristics. Situate buildings to benefit from solar radiation and existing vegetation. Protect trees, plants, and topsoil during site work. Grade and develop building sites to retain and filter storm water.

Design durable structures that have the potential to be adapted for future reuse.

Design buildings for energy conservation and efficiency. Consider the climate in which structures will be built. Install high efficiency electrical lighting and heating/cooling. Incorporate the use of free natural light. Include *daylighting* techniques, such as skylights that reflect light down into a room and track the movement of the sun. Include the use of passive solar techniques to capture heat in a thermal mass, such as a concrete wall. *Green buildings* are less expensive to heat, cool, and light.

Build with renewable energy systems, such as solar photovoltaic (PV) roof panels or shingles that convert sunlight into electricity.

Design areas for recycling and ease of waste handling and disposal.

Choose durable and “environmentally friendly” products, materials, and appliances. “Green” building materials are environmentally less damaging than their alternatives. Definitions of what constitutes green materials vary but include certified wood, by-products such as straw bales (for insulation), locally produced or salvaged materials, products made from recycled materials, and materials derived from the earth, such as adobe. Avoid potential health hazards such as certain kinds of pressure-treated lumber and materials that generate pollutants.



Diana Ruiz

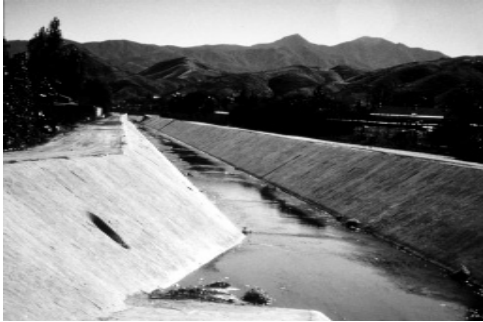
Straw bale insulation

Certified wood comes from sustainably managed forests. In a sustainable community, a tree is planted to replace every one that is harvested for construction.

If you are planning to purchase a new home, select a builder that incorporates some of the factors listed above.

Manage Urban Ecosystems

We can facilitate the cycling of water, nutrients, energy, and air in urban areas, not only by the way we build, but also in the way we manage urban ecosystems.



Diana Ruiz

Concrete lined channels and pipelines hasten runoff water from urban areas.

Techniques to better manage urban ecosystems: Reduce impervious surfaces and improve water detention and infiltration.

In urban areas, the natural water cycle is disrupted by storm drain systems and impervious surfaces like asphalt, rooftops, and concrete. These features cause increased amounts of storm water runoff to reach waterways. Unfiltered runoff rapidly flows from urban areas, laden with sediment, pollutants, and debris. As a result, less water percolates into the ground to recharge underground water basins.

- Water infiltration at home and business sites can be improved by constructing sunken yards, drainage swales, infiltration trenches, vegetated filter strips, and porous paving.
- Cities and water conservation agencies that route floodwaters into retention basins replenish underground aquifers and cycle water more effectively.

We can reduce the volume of runoff by converting impervious surfaces to permeable paving materials, such as gravel, which can be structurally supported by products like *Geo-web* or *Invisible Structures*.

Plant and manage urban forests.

Heat islands are created when vegetation is replaced by heat-absorbing surfaces such as roofs, walls, parking lots, and streets. Heat absorption can raise urban air temperatures 2-8 degrees Fahrenheit. Heat islands accelerate the formation of smog, increase energy demand for cooling, and increase health risks.

Using the ecosystem management approach, we can minimize heat gains by maintaining urban forests. Urban forests are simply trees planted in cities, along streets, around buildings, in parking lots, and in parks.



Diana Ruiz

In place of asphalt, gravel is contained in cells, *Invisible Structures*, made of recycled plastic.



Diana Ruiz

“The right tree was planted in the right place.” A shade tree cools cars and parking lots, reducing the *heat island* effect in urban areas.

Trees provide cooling shade, reduce noise and wind, trap pollutants, provide wildlife habitat, and are aesthetically pleasing. Drought tolerant trees are appropriate for use in the urban ecosystem as they minimize our need for imported water. As in native habitats, diversity is important in urban-ecosystems. Well-managed urban forests include trees of varying species and ages. In a sustainably managed urban forest, a street tree is harvested at the end of its life and milled into lumber.

Prevent erosion and sediment.

In urban areas, erosion processes are sometimes accelerated by human activities and altered landscapes. Erosion degrades water quality by contributing sediment and pollutants to runoff.

Altered landscapes can be treated with a variety of erosion control methods. Re-establishing plants will effectively hold soil. Other methods include mulches, retaining walls, terraces, drain lines, geo-textiles, woven mats, hydro-seeding, and tackifiers.



Riverside-Corona Resource Conservation District

Jute netting holds the soil in place until new plants become established. Plant roots will anchor the soil, while the tops of plants will intercept the force of pounding raindrops. When left on the soil surface, dead plant debris acts as a mulch.

Storm water pollution prevention plans are required for subdivision construction sites. These plans help ensure that sediment and attached pollutants do not enter waterways. Sediment control methods include silt fences, sand bags, straw bale barriers, sediment traps and basins.

Develop sustainable landscapes at public places, businesses, and homes.

Sustainable landscapes incorporate a variety of treatments, depending upon the use of the landscape. They work like natural systems, while accommodating the needs and activities of people. Landscapes become sustainable when we nurture soil, increase biodiversity, and reduce dependence on water. When plants are fertilized and watered properly, they are less susceptible to disease and pests, and fewer pest controls are needed.



Diana Ruiz

Eliminate unnecessary lawn areas, and plant a variety of drought tolerant plants.

Healthy soil is the foundation of sustainable landscapes. We can improve soil quality by substituting organic matter (dead plant and animal debris) or compost for chemical fertilizers. Organic matter is the storehouse for energy and nutrients used by plants, bacteria, fungi, and other soil organisms that transform and release nutrients. Compost is decomposed organic matter that has been generated from yard waste and food scraps.

Variety of plant species is important in landscapes, because it provides diverse habitat for a beneficial insects that help control pests. When we put the local variety of nature into a landscape, we create habitat for native birds, lizards, butterflies, and more. Often, sustainable urban landscapes produce foods for people, as well as for urban-adapted wildlife.

Learn more about managing water and soil in the *Urban Areas* section *Create a Sustainable Yard and Home*.

Collect and reuse water.

Since we live in an area of low rainfall, water conservation and reuse methods help reduce our dependence on expensive, imported water.

Like the early settlers of the West, we can harvest storm water from rooftops and paved surfaces, filter the runoff through vegetation, then collect it in cisterns for later use. Additionally, some communities encourage homeowners to water their landscapes with *gray water*, water that comes from washing machines, showers, and sinks.

Municipalities and farms often irrigate with reclaimed water, water that has been partially treated. If you irrigate large areas at your business, explore the availability of reclaimed water for your site.

Lifestyle Choices

The lifestyle choices we make impact the quality of our lives, of the environment, and of the world we create for future generations. We can make a difference by:

***making informed choices as consumers,
preventing waste and pollution, and
creating more sustainable yards, homes, and workplaces.***

You are probably doing many things already, such as recycling, adjusting your thermostat, and keeping your vehicle in good running condition. We applaud your commitment. Your cumulative efforts are helping to conserve farmlands, forests, wetlands, and oceans.



Although these might seem like small changes, the character of a society is the cumulative result of the countless small actions, day in and day out, of millions of people.

Duane Elgin
Author and Social Scientist

We act based on our values, but our choices are influenced by our affluence. Do you consider yourself affluent? In relation to much of the world, Americans are well off. We comprise about 5% of the world population, yet use 1/3 of the planet's resources. The average American produces twice as much waste as the average European.

Through advertising and the media, people are encouraged to want what they don't need. This strategy fuels markets, but resources are not infinite and cannot provide for unsustainable consumption.

For those who have enough for survival and comforts, quality of life means having *time* for what matters most: family, friends, meaningful work, leisure, healthy living, community, spirituality, learning, thinking, creating, enjoying beautiful wild places; whatever you value. Is our affluence, in some ways, distracting us from deeper, non-material sources of fulfillment? By simplifying the material side of life, we find time to cultivate happiness. The more *things* we have, the more it costs in terms of money, maintenance, space, and ultimately, our valuable time. If you feel trapped in a cycle of work-and-spend, consider this:

***Money not spent equals resources conserved, in terms of
both human work hours and natural resources.***

Use your Purchasing Power

We need your help to shift away from a *consumer culture*, our culture's current emphasis on over-consumption, and to adopt a more *conscious consumption*. Before purchasing a product, ask yourself, "Do I really need it?" Often, more is not better, when the costs to nature and quality of life are calculated. Secondly, we can make discriminating choices that curtail the use of environmentally degrading products and packaging.

- Choose durable, high quality, energy efficient products made from recycled or sustainable materials. Avoid products that are fabricated with persistent chemicals, such as vinyl, PVC's, CFC's. Seek out sources of earth-friendly, least-toxic products.
- Support good companies that produce well designed and made products and that use recycled or sustainable materials. Their products may warrant added costs. Contact companies that don't. Request improved products and reduced packaging.
- *Pre-cycle*: avoid or limit purchases that are wasteful of the earth's resources, such as disposables.
- Avoid products that use excessive packaging, and avoid packaging that does not decompose or that cannot be kept in the recycling loop, such as aerosol cans and polystyrene foam. Buy in bulk and reuse containers, including your own durable shopping bags.
- Support local enterprise, co-ops, and Community Supported Agriculture (CSA's). By purchasing locally produced products and food, we promote a local economy and reduce the need for energy-consuming shipping. Also, shop at stores that are known for their environmental practices.



Choose wisely!

Scott Bauer, USDA, Agricultural Research Services

In lieu of a scientific product analysis, here are some simple questions that will help you evaluate a product, based on information that may be apparent or on the label:

Is it safe? (Read the label.)

Is it from recycled or renewable materials?

Will it last?

Is it produced locally?

Is it produced in a sustainable manner?

(Organically grown, certified wood.)



StormWater/CleanWater Protection Program

Read labels.

Support legislation that requires *ecological labeling* of products, so that consumers can be informed and can choose to patronize companies that are environmentally responsible.

Other Methods

- Share, borrow, use the library, use the internet.
- Re-use: hold a yard-sale, buy second-hand, donate.
- Exchange services.
- Repair, rather than throw away.
- Invest in socially responsible enterprises. Entrust your funds to companies that support your values.
- Evaluate the foods that you routinely eat in terms of sustainability. Some types of seafood have been over-fished, while some types of meat production are considered resource-intensive.

The most effective and inexpensive way to care for natural resources is to PREVENT waste and pollution.

Prevent Waste

An ounce of prevention is worth a pound of cure.

For Water

In 35 states, groundwater is being pumped faster than it is being replenished. Here are some common sense, water conserving tips that also save money and energy:

- Water plants in the early morning or evening. Water deeply and only when needed.
- Re-adjust irrigation schedules for season and weather conditions. If you have an irrigation timer, learn how to adjust it. Turn off automatic systems when it's raining. Don't run sprinklers when the wind is blowing.
- Adjust irrigation systems to deposit water on the soil, not on concrete and pavement.
- Use mulch to reduce evaporation from the soil surface and to control weeds.
- Reduce the water you use for personal care by turning off the faucet when shaving and brushing teeth. Take shorter showers. Don't use the toilet as a trash can.
- Repair leaks.



June Davidek, USDA Natural Resources Conservation Service

Apply only what's needed.



Diana Ruiz

Spread mulch to conserve soil moisture and help shade out weeds. A newly planted, drought tolerant shrub is watered from the hose-line through a drip emitter.

For Energy

Private homes account for 20 % of energy consumption in the United States.

To save energy, follow these simple conservation methods:

- Temperature setting guidelines: In winter, set the thermostat to 68 degrees during the day and 55 at night. In summer, try 78 degrees or more. Water heaters work more efficiently between 120 and 140 degrees. Set your refrigerator at 37 degrees and freezer at 3 degrees. Check with a thermometer, if necessary.

- Open blinds, drapes, and shutters in winter to gain heat and light.
- Open windows during cool summer evenings. When possible, use fans instead of air conditioners.
- Use a microwave instead of an oven or toaster oven for defrosting and cooking.
- Wash full loads in clothes and dishwashers.
- Line-dry your clothes. In a dryer, don't over-dry clothes. Remove clothes immediately to reduce wrinkling and ironing. Dry full loads, but don't overload. Clean the lint filter before drying each load. Dry two or more loads in a row to take advantage of residual heat.
- Use appliances more efficiently. Vacuum dirty coils on the back or bottom front of your refrigerator at least twice a year. Check that oven gaskets and refrigerator door seals are tight. Test by placing a piece of paper half in and half out of the door. If you can pull the paper out easily, the latch may need adjustment or the seal may need replacing.
- Don't leave the oven or refrigerator door open any longer than absolutely necessary. Cover liquids and wrap foods stored in the refrigerator. Uncovered foods release moisture and make the compressor work harder. Avoid putting hot foods directly into the refrigerator or freezer.
- Use pool covers to reduce heat loss and water evaporation, minimizing chemical use and cleaning time.

For more information, contact your utility company, or checkout the book *136 Best Ways to Save on your Home Energy* by Sunset Books.

On the Road

Motor vehicles burn about one-third of all fossil fuel consumed in the U.S.

- Walk, bike, carpool and use public transportation.
- Combine trips, cut miles, and carpool.
- Stay off the road; telecommute, teleconference, video-conference, surf the Web.
- Watch your miles per gallon. If they are lower than they should be, find out why. Maintain an efficient car. Keep cars tuned-up. Keep tires properly inflated, and check them for wear. Reduce idling. Drive steadily and at a steady speed.



Don Soward

Reduce vehicular miles, and live healthier.

Prevent Pollution

For Air

Smog is a general term that describes a variety of air pollutants. Vehicles and other internal combustion engines that burn fossil fuels cause about 70% of local air pollution. Motorists in the L.A. basin drive more than 318 million motor miles every day!



Local smog has global impacts. The earth's atmosphere now contains about 30% more carbon dioxide (CO₂) than it did 100 years ago. This interference with the carbon cycle has been called the *greenhouse effect*; CO₂ and other gases trap heat and contribute to global warming. Scientists have discovered that the five warmest years since the fifteenth century were all in the 1990's. Additionally, warmer temperatures alter weather patterns. Higher temperatures increase evaporation. Since water that goes up, must come down, drought and flooding may result. Also, the rise of temperatures contributes to polar icecap meltdown, resulting in the rise of sea levels.

A second concern is the reduction of the protective ozone layer, which shields us from harmful solar radiation that causes skin cancer. Southern California is responsible for over one-twentieth of the world's ozone-depleting chemicals, mostly due to methylchloride from industrial processes and from air conditioning systems that leak CFC's.

Many techniques previously cited for energy conservation also reduce air pollution.

In addition:

- Purchase fuel efficient, low emission vehicles. Check the Air Quality Management District's *Guide to Cleaner Cars*.
- Do you have a smoking vehicle? Keep cars in good running condition to reduce air pollution and leaks. Use automotive products that are least toxic and free of CFC's. Don't top off your gas tank.
- Avoid using solvents and lighter fluids, unless you can find fluids that meet the Air Quality Management District's guidelines. In spite of the ban on CFC's, many aerosol sprays still contribute to air pollution and poor indoor air quality. Finish using the toxic substances that you already have, then purchase eco-friendly products.

For Water

Prevent water pollution by disposing of trash, waste, and debris properly, not in a gutter or storm drain. Trash, a major pollutant in storm water runoff, degrades water quality and habitat.

Learn about the proper disposal of household chemicals.

Read labels on products to see if they are hazardous. Paints, cleaning solvents, oil, grease, gasoline, antifreeze, brake fluid, and pesticides should never be dumped on the ground or into a storm drain inlet. If spilled, wipe-up chemicals rather than hosing them into the street. Dispose of some household wastes at **ABOP'S** (Waste facilities that accept **A**ntifreeze, **B**atteries, **O**il, and water based **P**aints). *Hazardous household wastes* (oil based paints, thinners, and toxic pollutants like pesticides) are accepted at periodic collection events. Thirdly, motor oil can be disposed of at any automotive repair shop that has a recycling station. Check with your local repair business or call the *StormWater/CleanWater Protection Program* phone line to request a list of recycling stations in your area. (Please see insert for phone listings.)

When it comes to cleaning water based paints, do it in the sink, not in the driveway, gutter, or yard.

Wash your car on the lawn using non-toxic soap. Detergents, from washing cars and driveways add nutrients to runoff water, causing excessive algae and plant growth in waterways. Don't wash driveways down with soaps and solvents; sweep.

Reduce the amount of hazardous materials you use in and around your home. Use non-toxic alternatives instead. For recipes of non-hazardous cleansers and polishes, refer to *A Guide for Proper Disposal of Household Hazardous Waste and the Use of Environmentally Friendly Products*, available from the Riverside-Corona Resource Conservation District.

When using pesticides and fertilizers, more is not better. Don't overdose the environment! Follow the directions. Consider weather conditions and timing of applications.



Help label storm drain inlets to inform your community.

Diana Ruiz

Create a Sustainable Yard and Home



Diana Ruiz

Compost bins: recycle yard waste and food scraps into compost, a nutrient rich fertilizer.

Develop high quality topsoil, plant a variety of species, and reduce water use.

Soil: When we build soil by adding compost and organic matter (plant debris), we increase soil biological activity and reduce reliance on purchased chemicals and the potential for error in their use.

By recycling yard waste and food scraps into compost, “brown gold”, we reduce landfill load while creating a nutrient rich, soil amendment.

Like farmers, homeowners can use cultural methods, or cultivation practices, such as:

- rotating garden crops to different areas each year;
- planting cover crops for erosion control and beneficial insect habitat;
- planting *green manure* crops that add nutrients to the soil; and
- *grass-cycling*, leaving lawn clippings on turf to decompose.

Diversity: Planting a variety of plant species reduces the need for pest control. Additionally, when urban landscapes incorporate plants from natural landscapes, they provide habitat for local wildlife that help control pests. When pest control is needed, use nontoxic methods, such as:

- removal of pests by hand;
- *companion plantings* of vegetation with odors that repel some insects; and
- beneficial insects like ladybugs, praying mantids, lacewings, and dragonflies.

If you must use a pesticide, use one with a *least-toxic* rating, such as insecticidal soaps, horticultural oils, pyrethrin-based insecticides, and insect growth regulators. Read labels “before you buy and before you apply”. Follow directions for use and disposal carefully.

Note: When using local native plants in landscaping, consider that most natives grow during our rainy season, fall through spring. With the exception of water-thirsty riparian types, most southern California native plants are dormant or slow-growing in the summer. This is the opposite for common landscape plants that grow slowly, or not at all during the winter, but require regular irrigation throughout the summer.

Water: Proper watering produces healthy plants that are less susceptible to disease and pests.

- Apply water with efficient, uniform irrigation systems. Dig into the soil. Look and feel for moisture throughout the root zone to determine length of time to run irrigation.
- Place plants with similar watering needs together, and install irrigation systems to apply appropriate water for each *hydro-zone* or plant grouping. Trees require deep irrigation and may need separate lines.
- Reduce water use by replacing unnecessary lawn areas with native or drought tolerant plants. For the places where you do need a lawn, such as play areas, plant low water-use turf varieties. Surface walkways, drives, and heavy use areas with permeable and recycled materials, like gravel or recycled concrete pieces. Use mulch on bare soils to reduce evaporation and runoff.



Diana Ruiz

Hydro-zone: group plants with similar water requirements.



Keith Weller, USDA Natural Resources Conservation Service

Landscape with plants that provide food, cover, and nesting sites. To enhance habitat, provide water and nest boxes for cavity nesting birds.

Retrofit a Yard

Consider using the methods in the section *Management of Urban Ecosystems*. Are there ways that you might trap storm water to increase water infiltration, use gray water for reuse in irrigation, or even grow food for yourself and for urban adapted wildlife, such as some birds, butterflies and lizards?

Whenever possible, preserve valuable existing vegetation, such as mature trees for shade and bird nesting sites.

Tree species selection is important. Plant “the right tree in the right place” to meet your space requirements, use objectives, and to minimize maintenance, water, and expense. Shade windows and south facing walls with deciduous trees. Deciduous trees lose their leaves in winter, allowing solar rays to reach and warm a house.

Retrofit a Home

When evaluating possibilities, consider the methods described in the section *Build: Sustainable Building Design and Construction*.

- If possible, modify your home's electrical system to harness solar energy. Photovoltaic panels or shingles collect and store solar energy in batteries. Contact your local electric utility company for assistance and possible rebates.
- Water and space heating account for more than 50% of household energy use. With architectural modifications, you may be able to improve natural lighting, airflow, and the collection of solar heat for indoor heating. Install skylights to utilize natural light. Consider installing solar hot water heating systems.
- Install a light colored "cool roof". Paint your house a light color. Light colors reflect heat.
- Install a whole-house fan. They work by pulling cool outside air into the house and drawing the warm household air out through vents. This type of ventilation is most effective at night and in the early morning.
- Upgrade to a modern, energy efficient furnace and air conditioner. Have air ducts tested for leakage, and seal any leaks.
- If you don't have one, install a programmable thermostat to help automatically regulate your home temperature for comfort control and energy savings.
- Weatherize. If needed, retrofit windows and doors, and add insulation. Higher "R" numbers provide greater insulating power. When installing insulation, target your attic, ceiling, walls, and air ducts. An attic accounts for 15 - 20% of the heat loss in a home and is usually the easiest and least expensive area of the house to insulate. Caulk and weather-strip windows and doors. Wrap your water heater tank in an insulating blanket if the water heater's energy factor is less than .58, unless the manufacturer has indicated otherwise. Insulate exterior, uncovered hot water pipes.
- Install low-flush toilets or water displacement devices. Install aerators on faucets and low-flow, water-saving showerheads that save 5 to 10% on water heating costs.
- Collect roof and pavement runoff into a cistern for later use as irrigation water.
- Install a pipe system to reuse *gray water*, water that has been used in washing.

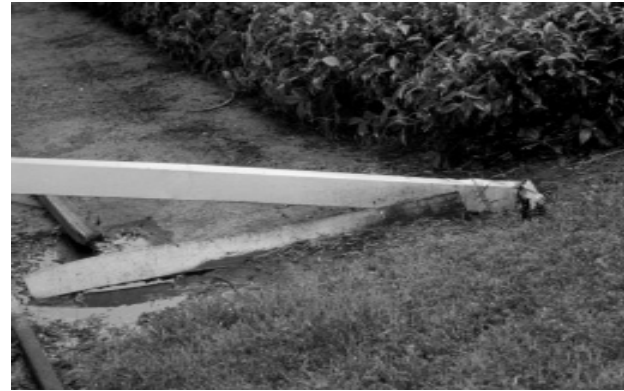


Install photovoltaic (PV) panels or shingles to collect solar energy.

Craig Miller Productions and DOE

Redirect downspouts from roofs onto vegetation, rather than onto impervious surfaces that drain into streets, gutters, and storm drains.

- Replace incandescent light bulbs with compact fluorescents, especially on the fixtures that you use most often.
- Block the sun before it reaches windows by planting trees and installing awnings. Drapes, shades, blinds, and window film help keep the sun out and keep temperatures down.
- Buy energy efficient products and appliances. Shop for the models with the highest energy efficiency ratings. Look for the ENERGY STAR® label.
- Purchase a refrigerator with automatic moisture control. Models with this feature have been engineered to prevent moisture accumulation on the cabinet exterior without the addition of a heater. This is not the same thing as an *anti-sweat* heater. Models with an anti-sweat heater will consume 5% to 10% more energy than models without this feature.
- Most homes are not designed to provide space to collect material for recycling. A simple way to encourage recycling is to place two trashcans together in each room, one for recyclables and one for other household wastes.



Diana Ruiz

Direct runoff from rooftops onto vegetated areas rather than into streets and storm drains.

When we prevent waste and pollution, the cost of municipal infrastructure projects, like landfills, power plants, and water treatment facilities are deferred.

Personal change and responsibility can be empowering!

Sustainable Business and Economic Systems

Explore sustainable solutions for your business and work place. Sustainable approaches are those that are least energy intensive, least toxic, and yet maintain productivity and profitability.

To sustain resources, we must ask industries to reinvent products making them non-polluting, durable, reusable, and/or created from recycled materials. New ways of thinking about products, processes, and operations are needed. Now we must evaluate whole systems, not just the parts.



Solar lighting

Ron Pidot

We face the immediate challenge and necessity to transform an industrial economy into one that is environmentally sustainable. Our economy depends on healthy and diverse ecosystems. It is essential that natural systems continually function to sustain life and resources, for humans as well as for other species. We derive trillions of dollars of services from living ecosystems.

Our industrial culture has been built on the fallacy that perpetual material growth is possible. Our economic system fosters consumption and waste of natural resources, rather than stewardship. We have a fossil fuel-based, throw-away system that operates on the premise that natural resources are infinite. The full costs of resource use and pollution are not built into the costs of products.

“...evidence that the economy is slowly self-destructing by destroying its natural support systems can be seen on every hand. The earth’s forests are shrinking, fisheries are collapsing, water tables are falling, soils are eroding, coral reefs are dying, atmospheric CO₂ concentrations are increasing, temperatures are rising, floods are becoming more destructive, and the rate of extinction of plant and animal species may be the greatest since the dinosaurs disappeared 65 million years ago.”

Lester Brown, Worldwatch Institute

A new economic model recognizes the value of natural capital: soils, aquifers, rivers, oceans, plant communities, and forests. It encourages local enterprise and the use of technology.

The new sustainable economy will:

- Be wind and solar/hydrogen powered, rather than based in fossil fuels; and
- Utilize a comprehensive reuse-recycle system, rather than a throw-away system.

Many of us are not in the kinds of employment positions that direct corporate change or redesign products, however there are some simple ways that we can help “green” workplaces:

- Save and reuse packaging materials for mail and shipping. Purchase cardboard packaging and paper goods that are not made from foam.
- Recycle and buy recycled. Be thrifty with paper. Copy on both sides. Use e-mail.
- Buy energy-efficient office equipment.
- Use *task lighting* at workstations rather than extensive overhead lighting.
- Install occupant sensors to turn off lighting, heating, and air conditioning when rooms are not occupied.
- Arrange for an energy audit with the local utility company. Ask about energy efficient building technologies, such as absorption chillers, light colored roofs, gas air conditioning, or photovoltaic panels to collect solar energy. Check with local utility companies about rebates for businesses.
- Arrange for an irrigation evaluation of landscaping. Contact your local resource conservation district.
- Bring your own mug. Pack a lunch in reusable containers. Avoid pre-packaged and fast-foods that use excessive packaging materials.
- Move close to where you work, or telecommute.



Retrofit businesses in innovative ways.

University of Southern Florida (NREL)

Agriculture

Agricultural land is essential; it is the land we use to produce the food and fiber we need to survive. Since the end of World War II, agriculture has changed dramatically in the United States. Mechanization, increased chemical use, and government policy have caused productivity to skyrocket. Farmers, using monoculture technology, have created incredibly efficient production systems. As a result, fewer farmers, with less labor, produce more. Unfortunately, these advanced methods require greater investments, or *inputs*, of energy, fertilizers, and pesticides.

What is Sustainable Agriculture?

Sustainable agriculture does not refer to a prescribed set of practices. Instead, it challenges us to think about the long-term effects and the dynamics of agricultural systems in balance with profit, community, and consumer need. As with the other land uses, we can use the ecosystem approach to understand sustainability in agriculture. In a sustainable *agro-ecosystem* farmers evaluate nutrient and energy cycling and resource interactions. Sustainable farmers develop efficient biological systems that are less toxic and less energy intensive, using fewer chemical fertilizers and pesticides. Making the transition to sustainable agriculture is a process. The transition often involves a series of small, realistic steps.

Principals of Sustainable Agro-ecosystems

- Protect and renew soil fertility.
- Use natural biological controls, like beneficial insects.
- Optimize the use of on-farm resources, reducing the need for nonrenewable resources and purchased inputs, such as fertilizers and pesticides.
- Minimize adverse impacts on health, safety, wildlife, water quality and other ecosystems.
- Provide an adequate and dependable farm income.



Natural Resources Conservation Service

Farmers use a variety of methods and crops to create sustainable agro-ecosystems.

Strategies are site specific. To determine production methods, a grower evaluates soil qualities, potential pests, previous crop history, topography, the availability of irrigation water, and local sources for fertilizers and pesticides. Crop species are chosen to suit the site, climate, and farmer's goals.

Tools and Methods of Sustainable Agriculture

Soil Management Techniques

In sustainable systems, the soil is viewed as a living medium that must be nurtured to ensure its long-term viability. Healthy soil, well managed for water and nutrients, produces healthy plants that are less susceptible to pests.

- Cover crops hold soil and nutrients in place. When mowed or left as a standing mulch, cover crops conserve soil moisture and increase water infiltration.
- Vegetation, mulch, crop residue, and methods to reduce runoff, control soil erosion.
- Soil compaction is avoided by reducing the amount and timing of tillage. By reducing tillage, farmers also reduce their need for fossil fuels.
- To improve soil fertility, organic fertilizers, compost and manure are substituted for chemical fertilizers. Organic matter increases diversity of soil microbial life. However, conditions in most California soils do not favor the build-up of organic matter. Farming operations that combine crops with livestock can use on-farm manure to increase soil fertility, a common practice until the mid 1900's.
- Irrigation water is a necessity for southern California agriculture, since our natural rainfall



Ron Nichols, USDA Natural Resources Conservation Service

Farmers use efficient irrigation systems to conserve water.

is inadequate to satisfy the needs of most crops. Much of the water we use to produce food is imported from water-rich areas through an extensive storage and transfer system. It's a very expensive process. We also pump water from underground aquifers. For these reasons, local growers manage irrigation water very efficiently. They often use drip and low volume irrigation systems and select drought-tolerant crop varieties.

On a global scale, underground water tables are falling in many places. According to author Sandra Postel, 480 million of the world's 6 billion people are being fed through the unsustainable use of water from over-pumped water basins.

Diversity

Farmers choose a variety of crops and methods to support the biological systems of a sustainable farm. Diversified farms are usually more economically and ecologically resilient. By growing a variety of crops, farmers spread economic risk and reduce the need for inputs of purchased pesticides and fertilizers. Crop rotation helps suppress weeds and pest infestations and inhibits the growth of soil pathogens. Cover crops, in orchards and vineyards, buffer against pests by hosting beneficial insects that prey on pest species.

Prime Farmland

An important component of sustainable communities is sustainable farmlands. People need fresh, healthy foods, and the most efficient way to produce food is to farm high quality, prime soils.



Diana Ruiz

The highest quality soil should remain as farmland.

Sustainable communities locate farmlands on their best soils, on the outskirts of urban areas to minimize product transportation and fossil fuel depletion. Sustainable agriculture rebuilds local food economies, shortening the distance food travels to the table. Currently, the average pound of food travels 1500 miles. Identical commodities pass each other in opposite directions, criss-crossing the globe due to current economic and political systems.

Locally, our highest quality soils for agricultural production are frequently the easiest, and least expensive to develop to urban uses. So to begin with, we are building over our best soil. Then, as farms move from deep, rich soils to marginal, lower quality soils, greater inputs are required to create productivity. Additionally, farming on sloping land requires greater expense for erosion control.



Natural Resources Conservation Service

In California, we are expected to lose 100,000 acres of farmland each year as our population increases 50% by the year 2025. Through sustainable planning, *Smart Growth* communities direct development to preserve prime farmlands for best use of natural resources.

If you are interested in preserving important farmlands, participate in local planning efforts, and support your local land conservancy.

Support Sustainable Agriculture

To support a system that sustainably produces food and fiber, all the participants play a role, not just farmers. Consumers, policy makers, laborers, and retailers can help strengthen sustainable agricultural systems.

As consumers, we can support a local economy. Buy directly from farmers through *Community Supported Agriculture* cooperatives (CSA's), U-pick fields, and farmer's markets.

As a member of a CSA you pay to cover farm operation costs and share in the harvest.

Community supported farms are not all *certified organic*, but they all strive to operate sustainably.



Natural Resources Conservation Service

Buy locally produced materials and foods.



Help Create a Sustainable Community

Historians tell us that the ancient civilizations of Mesopotamia, Central America, and the southwest United States were not able to sustain natural resources to survive. Were the declines of these early cultures due to their unawareness of human and ecosystem relationships?

Are we making the same mistakes: over harvesting fisheries, clear cutting forests, draining wetlands, paving over prime farmland, and burning fossil fuels that cause climate change? These problems are driven by population growth and consumerism.

According to many great minds, our world is functioning beyond its limits. In 1992, over 1600 senior scientists signed Warning to Humanity, which stated: *We must learn ways to meet our present needs without compromising the ability to provide for the needs of future generations, and without causing damage to near or distant environments.*

“human beings are on a collision course...
that may so alter the living world that it will be unable to sustain life in the manner
that we know.”

“ ...A great change in our stewardship of the earth and the life on it is required...”

***How can we maintain “quality of life” for ourselves and for our descendents?
How will we satisfy the needs of ever increasing numbers of people?***

We must rediscover our ancient abilities to live within the cycles of the natural world and apply them in a modern day context, using scientific advances and technology. We must evaluate our actions based on a whole-system viewpoint.

Many of our solutions are, and will be, highly complex. They will require restructured economic and political systems that discourage environmentally destructive products and activities.

Individually and collectively, we can impact the future of our world and our community by creating:

- a sustainable vision of the future;
- a widely held ethic of stewardship; and
- innovative solutions for sustainable use, development, and revitalization.

Learn more by using the resources and web pages referred to in the insert. Visit the ***LandUse Learning Center*** to learn ways to conserve native habitats, urban areas, and agricultural lands.

Take action through your vote, your purchasing power, and by the way you live. Share your concern with others. Donate your time, money, and expertise. Make your voice heard.

Help guide your community by becoming involved in sustainable planning and land stewardship efforts. Support *eco-system based* land management, pedestrian-friendly cities, and environmentally responsible businesses.

From a local to a global scale, your efforts will make a difference.



Keith Weiler, USDA Natural Resources Conservation Service

Help steward natural resources for a healthy, high quality community.

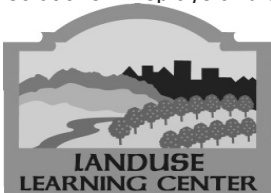
Please, help create a sustainable community.

Your example frames the future for our children and their children.



Mike Hall

This booklet is a companion to the video *Help Create a Sustainable Community* and to the **LandUse Learning Center (LLC)** a 3½ acre educational facility with the mission of empowering southern Californians to practice natural resource stewardship at home, at work, and in the community. As the Center develops, outdoor and indoor demonstrations will provide models to explain local resource issues and solutions. Displays and signs will interpret ways that we can sustain the natural resources of native habitats, urban areas, and agricultural lands. The demonstrations will serve as examples that community members can repeat at their own properties and businesses. Support-materials will include installation instructions, supplier listings, curriculum kits, and hard-to-find materials, such as some habitat plants and nest boxes.



The Riverside-Corona Resource Conservation District (RCRCD) is a small, government agency (a special district) responsible for conserving natural resources in portions of western Riverside and San Bernardino Counties. The RCRCD conducts educational, technical assistance, and on-the-land conservation programs. The LandUse Learning Center is an educational project of the RCRCD and numerous community partners. To become involved, please call us.



The LLC and the Conservation District office are located at the Resource Conservation Center (former Soil Salinity Lab) at 4500 Glenwood Drive near downtown Riverside, California (14th St. and Glenwood, at the base of Mt. Rubidoux). RCRCD phone: (909) 683-7691 Fax: (909) 683-3814.

The 9½ acre Resource Conservation Center serves as a location for information exchange and forums on resource issues. Other agencies with similar missions are also housed at the Center.

The RCRCD would like to thank the USDA Natural Resources Conservation Service for helping to fund the *Help Create a Sustainable Community* booklet, video, and CD production. The California Association of Resource Conservation Districts administered the grant. The RCRCD thanks its many partners for providing input and photographs. The booklet was compiled and written by Diana Ruiz with graphic design by Melissa Badalian. The booklet and productions are also available in Spanish. First printing 2002