

1970

30 YEARS OF ENVIRONMENTAL PROGRESS

2000

REMEMBER THE PAST



PROTECT THE FUTURE



1999 ANNUAL REPORT

U.S. Environmental Protection Agency

Pacific Southwest/Region 9

EPA-909-R-00-001

ARIZONA | CALIFORNIA | HAWAII | NEVADA | PACIFIC ISLANDS

CAROL M. BROWNER
EPA ADMINISTRATOR

EPA was born 30 years ago at a time when rivers caught fire and cities were hidden under dense clouds of smoke. We've made remarkable progress since then. But we can't rest on our success.

Our mission to protect the environment, and to protect public health, is a mission without end. New challenges loom over the horizon as surely as the new day.

We must continue our work to ensure that with each new dawn, the sun shines through clear skies and upon clean waters – and all our families enjoy the blessings of good health.

A handwritten signature in black ink, reading "Carol M. Browner". The signature is fluid and cursive, with the first letters of each name being capitalized and prominent.

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HEALTHY AIR AT LAST: *In one of 1999's major highlights, EPA approved a cooperative plan to reduce dust storms and the worst particulate air pollution in the U.S. at Owens Valley, CA (see page 8). At the signing ceremony, from the left: Ellen Hardebeck, Great Basin Air Pollution Control District; Ruth Galanter, Los Angeles City Council; Felicia Marcus, EPA's Regional Administrator for the Pacific Southwest; Sandra Jefferson-Yonge, Lone Pine-Paiute-Shoshone Tribe; David Freeman, Los Angeles Department of Water and Power; Larry Biland, EPA air staff.*

INTRODUCTION

1999 was a milestone year for the U.S. Environmental Protection Agency – in more ways than one. Of course, 1999 began our 30th year of protecting public health and the environment, and we and our partners in state, tribal and local government have

a lot to show for three decades of work: air pollution and toxic releases have decreased dramatically despite massive population and economic growth; more than half of the top-priority Superfund hazardous waste sites have remedies in place; and treatment systems have been installed on most sewage and industrial plants, yielding cleaner rivers, lakes and beaches.

1999 was also special because of major accomplishments across the Pacific Southwest. For example, EPA: had a banner year in enforcing environmental laws; facilitated a landmark agreement to clean up Southern California's smog; required better maintenance of

Maui sewer systems to halt sewage spills that contaminated streams and beaches; developed unique pollution prevention plans for watersheds along California's northern coast; joined with Nevada in cleaning up rocket fuel chemicals threatening Las Vegas and Southern California water supplies; cleaned up a host of Superfund sites; approved a plan to clean up Owens Valley, located in eastern California and site of the nation's worst particulate air pollution; carried out dozens of emergency clean-ups, such as extinguishing the massive Westley tire fire in the Central Valley; and targeted grants to help reduce childrens' exposure to lead, asbestos, pesticides, and asthma.

Yet as important as these tangible accomplishments are, what is more significant is the change in how we approach our work. While maintaining a strong regulatory and enforcement presence, we have dramatically enhanced our efforts to work with states, tribes, local governments and stakeholders from environmental, business, agricultural and other communities. We have done this within our traditional work in a number of ways: for example, by being more accessible and responsive to community concerns in our Superfund program; by using the legal requirement to set water quality standards in California's Bay-Delta as a focal point for CALFED, the massive engagement of government and public stakeholders that has continued since 1994; and by boosting outreach efforts in all our programs.

We have also done it through innovative and once unthinkable collaborations – such as the Grand Canyon Visibility Transport Commission, involving states, tribes, utilities and environmentalists, and Border XXI where we have replaced the binational federal-to-federal government approach on the U.S.-Mexico border with an historic agreement between both federal governments, ten state governments and over 20 tribes on the U.S. side of the border to work jointly to solve the pressing public health and environmental crises there.

With traditionally regulated entities, we have also engaged to solve problems together in more productive ways – such as our pollution prevention efforts like the MERIT Partnership in Southern California with metal platers, aerospace, refineries, even industrial laundries, or our efforts with auto shops, metal platers and wineries. Our agriculture initiative works with farmers to support more environmentally friendly farming. And for individuals, our own Hotline (415/744-1500 with an 800 number coming soon) and website

(www.epa.gov/region09) and support for similar efforts (like the US Recycling Hotline at 800/CLEANUP) puts consumer and environmental information into the hands of anyone concerned about their community.

Throughout this report, you'll see examples of how we've partnered to solve problems and, just as important, create new capacities to fight environmental and public health threats. Some partnerships are high-profile, like CALFED or Border XXI. Other ventures are less visible, like our efforts to help build up tribal environmental and environmental justice programs. Yet no matter what the partnership, you'll find they have several things in common: patience; dedication; cooperation; an openness to all communities, but especially those that have been neglected in the past, such as tribes and communities of color; and an eagerness to combine our efforts and knowledge with anyone who wants to protect the environment.

The toughest thing about doing this, our first annual progress report, is that there is not enough space to describe with any justice the work done by EPA in concert with others. And there is certainly too little space to describe the more complex challenges that lie ahead. Consider this report, then, in the spirit in which it is offered: as a series of examples of our enthusiasm, commitment, and energy and as an offer of partnership to those who would work with us to make this a better region for all.

Yours,



Felicia Marcus
Regional Administrator
EPA Pacific Southwest



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1947: Los Angeles Air Pollution Control District founded; nation's first air pollution control agency. **1954:** Heavy smog shuts down "blow-by" valve on new car engines to recycle crankcase gases. Cost per car: \$7. **1962:** Rachel Carson's bestselling book *Silent*

CLEAN AIR

Clearing the West's magnificent vistas

Since the advent of “smog” in Los Angeles in the 1940s, it’s been no secret that the Pacific Southwest is home to some of America’s most polluted air. But fortunately, the region has been anything but complacent in responding to this public health hazard. In fact, for more than 50 years, California has been a global trend-setter in developing programs which dramatically reduce air pollution without harming the state’s economy. Some would argue that cleaning the air actually helps businesses from Los Angeles to Phoenix maintain a quality of life which is critical to keeping the Pacific Southwest a superior place to live and work.

A new era for air

Normally, most city boosters like to be “number one. But Los Angeles was only too glad to relinquish its long-standing title as America’s smoggiest city to Houston, which in 1999 had the highest peak concentrations of smog.

This changing of the guard was symbolic of broader beneficial air quality trends over the last three decades across the Pacific Southwest – thanks to the Clean Air Act, strong working partnerships between EPA and state and local agencies like the California Air Resources Board, and tools like automobile smog checks, cleaner burning gasoline, and tough tailpipe standards.

Consider the results: In the region’s six most populous regions (South Coast, Bay Area, San Joaquin Valley,

San Diego, Sacramento and Phoenix), peak air pollution concentrations declined dramatically over the last 30 years: 99% for lead; 72% for sulfur dioxide, 66% for carbon monoxide and 42% for nitrogen dioxide. Ozone, the key ingredient of smog, was cut by 52% region-wide and even more in Southern California (70% on the South Coast and 66% in San Diego).

And there’s more: toxic air emissions from major sources (such as chrome plate finishers) have been reduced by as much as 90 percent; sulfur dioxide emissions from copper smelters along the Nevada and Arizona border are down by 94 percent; and smog alerts have been eliminated in the Los Angeles area (down from more than 100 a year in the 1970s). All of these results occurred despite enormous growth rates, when population grew nationally by 27 percent, the economy grew by 90 percent and vehicle miles travelled jumped by 111 percent.

Yet for all the cleaner skies, much more remains to be done. Metropolitan areas across the Pacific Southwest continue to face exploding populations, spreading cities and increased dependence on automobiles. Los Angeles still has a serious smog problem. California’s San Joaquin Valley, along with Las Vegas and Phoenix, continue to exceed federal standards for particulate matter – fine dust particles which can severely harm the lungs of children and the elderly.

In 1999, EPA worked at several levels to address these problems. Nationally, EPA worked to improve our air

protection technologies. In December, EPA Administrator Carol Browner joined President Clinton in announcing strong new standards for **controlling harmful tailpipe emissions**. For the first time, sports utility vehicles, light trucks and mini-vans will meet the same low tailpipe emissions required for passenger cars. In tandem, EPA proposed **new standards for cleaner gasoline**.

Because of these initiatives, here's what Americans *won't see* in coming years: 50 million tons of smog-causing pollution; 260,000

asthma attacks in children; 4,300 premature deaths and 173,000 respiratory-related illnesses.

Moving to the regional level, EPA and a host of unlikely partners made major progress on behalf of everyone who breathes. In **Southern California**, EPA facilitated the landmark settlement of a lawsuit brought by environmental groups against the regional air district, culminating in an aggressive and innovative plan to clean up Los Angeles' smog over the next decade. The settlement closes out 25 years of litigation associa-

ed with Southern California's smog problem and enables the region to focus on its pioneering work on air toxics and environmental justice.



Despite the Pacific Southwest's galloping growth over the last 30 years, air pollutants decreased dramatically across the region, from 52 percent for ozone to 99 percent for lead.



Further north of Los Angeles lies the **Owens Valley**. Despite its remote location and small population, the valley and its residents suffer the worst particulate air pollution in the United States, caused by severe dust storms. The dust is whipped up every winter by winds along the valley floor — once a huge lakebed which was exposed when Los Angeles diverted the mountain streams that replenished Owens Lake. Due to the dogged determination of the local air district, local tribes (including the Lone Pine-Paiute/Shoshone, Fort Independence and Bishop tribes), Los Angeles officials, and EPA staffers, an agreement was reached that will cover the lakebed with water, vegetation, sand fences, and possibly gravel — and end one of the gravest public health threats in the West.



A smog inversion layer blanketing downtown Los Angeles in 1956. Although LA still suffers from some of the nation's worst smog, air pollution has been cut by more than two-thirds since this photo was taken.

Outside of California, there was also good news. In **Phoenix**, EPA put in place an interim plan to reduce the dust from unpaved roads, vacant lots, and agricultural activities to protect public health. Meanwhile, state and local officials are developing long-range measures to control this “fugitive dust.”

And for those who love the **Grand Canyon**, 1999 was an exceptional year. Midway through the year, a scrubber system was finally installed on the coal-fired **Navajo Generating Station** near Page, Arizona. The result of a federal clear air plan, the \$420 million system will cut sulfur dioxide (SO₂) emissions at the plant by 90 percent and reduce the haze which frequently obscures views of the canyon.

Later in 1999, EPA assisted in settlement negotiations to clean up SO₂ emissions from the **Mohave Power Plant**, west of the canyon. EPA and the Department of Interior believe that the 85 percent reduction in these emissions will help bring the Grand Canyon back to its full visual glory.

These accomplishments are a great addition to the historic agreement of 1996, when the Grand Canyon Transport Visibility Commission – comprised of states, tribes and federal agencies like EPA and Interior – agreed to improve visibility at the canyon, working with public interest and business groups. The work continues through the **Western Regional Air**



Improvements in the Clean Air Act will help prevent more than 1.7 million asthma attacks by 2010.

Partnership, expanded to 10 states and 10 tribes working on a host of regional air issues.

Promising technologies

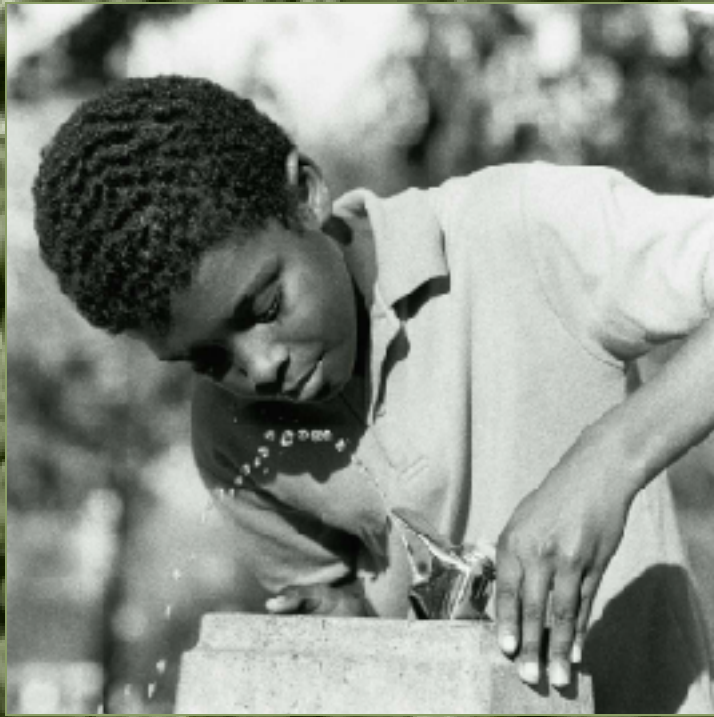
Beyond these “big fixes,” continues to help advance new technologies to help businesses and individuals achieve the millions of small fixes that will keep the air

clean, from promoting simple water-based (rather than chemical) solvents – which reduce hydrocarbon emissions – to proposing far cleaner diesel fuels. EPA has played a major role through our permitting and advisory efforts to facilitate the use of high tech combined-cycle electric generating equipment with advanced pollution controls at industrial facilities.

The equipment, which combines a gas turbine and waste heat boiler, reduces air pollution from 50 to 99 percent and cuts energy consumption by up to 30 percent, resulting in cleaner skies and big savings for the operators. In the Pacific Southwest alone, this equipment is being installed at more than 50 facilities.



Near the Grand Canyon, two coal-fired electricity generating plants are reducing their air emissions by 85 to 90 percent, helping to clear the haze above this national treasure.



includes California, Arizona, Nevada, Hawaii, Pacific Islands. 1971: Congress restricts lead-based paint in homes; bans lead paint local governments reach secondary treatment goal set by 1972 Clean Water Act. 1972: Congress passes Clean Water Act; protects

CLEAN WATER

Keeping our water swimmable and drinkable

The Clean Water Act, approved by Congress in 1972, has a simple goal: making waterways safe for fishing and swimming. But getting there hasn't been easy. In 1972, San Francisco's Bay and beaches were fouled by raw sewage after every rainfall. Phoenix's Salt River, normally dry most of the year, had constant flows of inadequately-treated sewage. Oahu waters near sewer outfalls were a far cry from paradise.

From the early 1970s through the 1980s, EPA grants financed up to 75% of the cost to upgrade sewage treatment facilities. By 1989, in the Pacific Southwest, EPA had invested over \$6 billion in these projects. Since then, EPA has made loans available through its State Revolving Fund, administered by the states.

The results have been dramatic. Pollution loading to San Francisco Bay has declined by 85% since the 1960s. The Reno-Sparks Treatment Plant cleaned up the Truckee River downstream from Reno, NV. Sewage outfalls no longer pollute Southern California beaches. Rivers and streams throughout Indian Country flow cleaner and drinking water sources are far better protected.

Yet big problems remain. Recent studies show that bacteria from polluted runoff entering storm drains and creeks is making surfers and

swimmers sick. Sediment and algae still clog many waterways, robbing oxygen that fish need to survive. Toxics like DDT and mercury persist for decades, reaching unsafe levels as they move up the food chain, and requiring fish consumption warnings to be posted at some public fishing piers.

Making beaches safe

Until last year, **Imperial Beach** south of San Diego was routinely contaminated with Tijuana's raw sewage. In 1998, the beach was closed on 161 days. But in 1999, beachgoers enjoyed an eight-month-long closure-free season for the first time in over 20 years, thanks to the new **International Wastewater Treatment Plant (IWTP)**, which reached full capacity at advanced primary treatment levels in early 1999. Construction was funded by EPA (\$230 million), California (\$16 million), and Mexico (\$9 million). EPA and the International Boundary Water Commission are now working to expand the facility to provide full secondary treatment.



At **Santa Monica Bay**, beach lovers in 1999 benefited from Los Angeles' completion of a decade-long series of improvements to the city's massive **Hyperion** sewage treatment plant. The upgrades, mandated by a 1986 legal settlement with EPA, reduced sewage sludge discharges to the bay by 90 percent – and fostered an historic partnership

between the city government and local environmental groups.

On the Hawaiian island of **Maui**, poor maintenance of sewage treatment facilities in the 1990's resulted in hundreds of sewage leaks onto land, streets and streams, in some cases contaminating beaches. In 1999, EPA and the State of Hawaii reached a settlement with Maui County ensuring better maintenance to prevent sewage spills. Maui also agreed to undertake a \$600,000 project to expand the use of treated wastewater for irrigation, thus extending the island's limited supply of fresh water. EPA settled a similar case with Oahu County in 1994.

Despite such improvements, bacterial pollution shut down Huntington Beach, CA for much of the summer. Closures like these are now usually the result of polluted runoff. As EPA and the states work to prevent polluted runoff, beachgoers can avoid con-

taminated areas by checking EPA's Beach Watch web page, www.epa.gov/ost/beaches. EPA has worked with Southern California environmental groups, the state, and local governments to achieve more frequent, consistent beach water sampling, and increased monitoring of ocean waters and marine life.

Controlling polluted runoff

Sources of polluted runoff include farms, logging and construction sites, roads and streets, yards and driveways. A ton of cow manure here, a gallon of crankcase oil there, it all adds up – especially with millions of cows and millions of cars. Such waste must be managed properly to keep it out of waterways.

California is the nation's biggest producer of dairy products, and the state's dairy cows generate about 30 million tons of manure annually – nearly a ton for every

person in the state. Manure can pollute streams and groundwater, killing fish and contaminating drinking water sources. EPA took enforcement actions against egregious polluters, but assisted dairy operators who want to do the right thing: EPA funded the University of California Extension's **pollution prevention training courses for dairy operators** (in ten locations around the state) and evaluations of 1,000 dairies for manure management problems. EPA also joined the **California Dairy Quality Partnership**, an effort by government and dairy operators to ensure safe foods and clean water.

Everybody's first need: safe drinking water

Preventing pollution – not only of water, but also air and land – is the best way to protect drinking water supplies. This includes proper management of hazardous and solid waste, and protection of wetlands and watersheds that filter out pollutants from runoff.

EPA's efforts to **ensure safe tap water** include: enforcing new underground fuel tank leak prevention rules; requiring polluters to clean up contaminated water sources and, in egregious cases, pay for clean replacement water; working with states, tribes, and water suppliers to prevent pollution from septic systems and clean up tainted water; requiring all public water systems to annually send customers a report disclosing any violations of federal drinking water standards; and providing loans to state and local



Increased monitoring of coastal waters helps protect surfers and swimmers from harmful bacteria.

Conservation Initiative, limiting coastal development. 1973: Congress passes Endangered Species Act. EPA begins enforcement
tion is reduced by 94%. 1974: Southern California scientists publish evidence that chlorofluorocarbons (CFCs) destroy earth's

governments for drinking water improvements. By early 2000, these loans totalled \$153 million in California, \$32 million in Arizona, \$27 million in Hawaii, and \$27 million in Nevada.

While nearly all public drinking water supplies have remained safe, the discovery of water sources tainted by the fuel additive **MTBE** and **perchlorate** (a component of solid rocket fuel) have sparked public concern. EPA is working to phase out MTBE because it has leaked from underground fuel storage tanks into groundwater, in some cases contaminating public water supplies. MTBE contamination forced **Santa Monica, CA** to shut down drinking water wells that supplied most of the city's water.

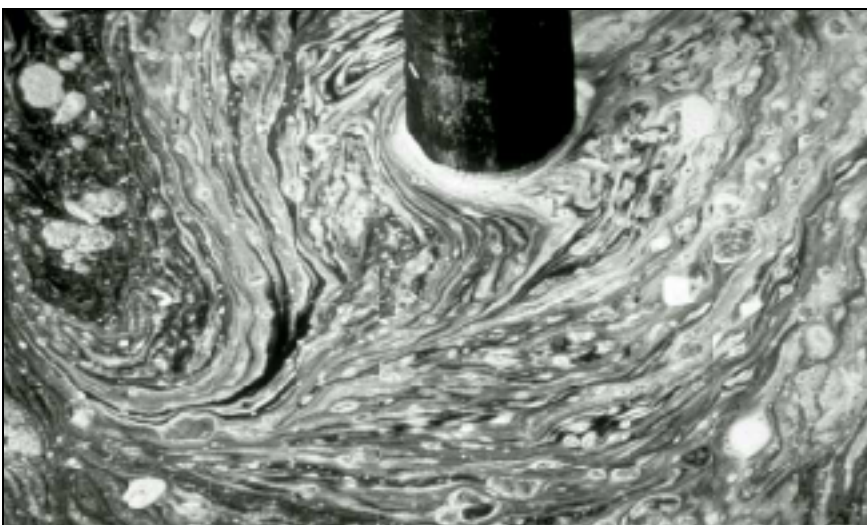


Billions of dollars in sewage treatment investments have cut water pollution throughout the Pacific Southwest — for example, by 85% in San Francisco Bay.



EPA and the Los Angeles Regional Water Quality Control Board are taking aggressive enforcement actions against the oil companies responsible

In 1997, the California Department of Health Services



Water protection is more complicated these days, as the sources of pollution from farms to highways to logging sites become more numerous, diverse, and spread-out.

developed a method of detecting extremely low levels of perchlorate in water. Traces of perchlorate were found in **Lake Mead**, source of Las Vegas' drinking water, though in such miniscule concentrations that the tap water remained safe. Some of the perchlorate was tracked to a Kerr-McGee Chemical Corp. facility in Henderson, NV. EPA worked with Nevada and Kerr-McGee to build a water treatment system on Las Vegas Wash which has, since November 1999, removed nearly all the perchlorate attributable to the chemical plant. EPA is cooperating with state agencies to track down other sources of perchlorate and develop treatment technologies.

Throughout 1999, EPA worked with the California Department of Health Services and the **Imperial Irrigation District** to provide clean drinking water to nearly 10,000 people who were getting their water from **irrigation**

canals and ditches, which are often contaminated with disease pathogens. People living along irrigation ditches in Arizona were also drinking ditch water. EPA, California and Arizona worked with the irrigation districts to pipe in clean drinking water or provide bottled water.

Tribal cooperation

61 Indian tribes in the Pacific Southwest are eligible to receive financial, technical, and legal assistance from EPA for tribal water programs, such as developing water quality standards and preventing polluted runoff. EPA worked closely with the **White Mountain Apache Tribe (AZ)**, which adopted standards in August 1999, making it the 14th Indian tribe in the nation to do so. The **Hoopa Valley Tribe (CA)** also has an EPA-approved water quality standards program, and several other tribes in the Pacific Southwest are developing such programs.



in urban air drop 99% over next 20 years. 1976: Congress passes hazardous waste law which mandates phase-out of toxic PCBs aerosol cans. Toxic waste at Love Canal, N. Y., makes national headlines. 1979: Three Mile Island nuclear power plant accident

CLEAN LAND

Removing waste and reclaiming the land

EPA has spent the past 30 years pursuing a dual track to clean up the wastes – toxic and otherwise – which have harmed our land and threatened our communities. We've employed aggressive approaches to cleaning up toxic sites created in years past, while also finding new and innovative ways to reduce the amount of waste we generate as a society.

Getting it done with Superfund

During the last 18 years, EPA's Superfund accomplishments are substantial. More than 675 of the nation's most serious uncontrolled or abandoned hazardous waste sites have been cleaned up and 85 more will be done by the end of 2000. Responsible parties have paid 70 percent of the cleanup costs, saving taxpayers billions of dollars. In the Pacific Southwest, EPA and our partners have begun or completed treatment construction at nearly three quarters of the 117 Superfund sites. All the cleanups are conducted with an eye on future redevelopment.

Waste sites that took decades to create generally require years to clean up. However, our **emergency response** program works with state, tribal and local partners to handle immediate hazards.

On September 27, 1999, a fire broke out at the **Westley Tire Pile** in the Central Valley. Flames engulfed entire hillsides – where an estimated 7 million discarded tires were piled up to 20 feet deep – sending plumes of dense black smoke into the sky. At the time, even the most optimistic projections estimat-

ed that the blaze would take months, or *years*, to extinguish. Yet firefighters hired by EPA put the fire out one month after it had started by dousing the flames with foam, moving unburned tires to a safe area and diverting melted tire oil through a drainage system.

EPA crews made quick work of other potential environmental disasters in 1999, including abandoned plating facilities in inner-city neighborhoods. At the **Francis Plating Facility** in West Oakland, field teams disposed of more than 200,000 gallons of caustic liquids and sludges that for years had been a local health and fire threat. EPA performed a similar removal at the **Syntrum Facility** in Gardena.

The Pacific Southwest's toxic legacies

EPA, state and local officials continue to address the myriad issues posed by **abandoned mines** throughout the region. In search of gold, silver or mercury, miners in the 19th and 20th centuries left behind a mess: there are an estimated 62,000 inactive or abandoned mines in Arizona, California and Nevada.

Last year, EPA and the state completed a \$3 million emergency cleanup of the **Gambonini Mercury Mine** in West Marin County. In less than a year, engineers had closed off the mine entrance and re-contoured a hillside that had been leaching hundreds of pounds of mercury into a nearby creek that drained into Tomales Bay. One local oyster harvester, reacting to the speedy response, said: "We've known it's been up

there, but as soon as the EPA got a hold of it, it went into hyper-space – something happened.

At the **Iron Mountain Mine** west of Redding, CA, EPA crews have treated more than 460 million gallons of acidic mine drainage, significantly reducing what had been the country's largest discharge of toxic metals to surface waters. Our ongoing work contin-

ues to protect important commercial fisheries, critical water supplies and the sensitive Bay Delta ecosystem. EPA is also cleaning up the **Carson River Mercury Site** in Nevada and many others. And we're still finding new sites. EPA is currently proposing for Superfund status the **Leviathan Mine** outside of Gardnerville, CA, where an entire mountain top was removed – a common practice a

old mines – unleashing acidic mine tailings into the Carson River watershed.

When the semiconductor industry exploded in **Silicon Valley** in the 1970s and '80s, waste handling and disposal practices weren't what they should have been, and, as a result, soil and groundwater throughout the South Bay were tainted with toxic byproducts from the computer industry. Silicon Valley has the highest concentration of Superfund sites anywhere in the country, with 28 hazardous waste sites within a 15-square mile radius. Yet 10 years after discovering these hot spots, under EPA and state direction, responsible parties cleaned up most of the soil contamination and began treating groundwater at all 28 sites. At the MEW Site in Mountain View, 2,000 people now work in a new high-tech office complex on property that just a decade ago was seen as too contaminated to develop.

When the budget axe fell on **military bases** in the 1990s, it fell hard in Northern California, leaving EPA, the state and the Department of Defense with 50,000 acres of polluted land to clean up and return to local communities. This meant addressing contaminated soil and groundwater at Fort Ord, Moffett Naval Air Station, Mare Island Naval Shipyard, Alameda Naval Air Station, the Presidio (in San Francisco) and many other installations.

Aggressive approaches and teamwork have translated into dozens



Modesto Bee

A massive tire fire in Westley fouled air in the Central Valley and the Bay Area, and called attention to the many environmental problems posed by discarded tires. EPA's quick response had the fire out a month after it started.

of successful cleanups and huge portions of land returned to productive use. Fort Ord houses the first college campus in the country – CSU Monterey Bay – to occupy a federal Superfund site. At the Presidio, a \$27 million environmental makeover of the former Crissy Field will create a 29-acre meadow, a shoreline promenade, an expanded beach and revitalized sand dunes. Also in San Francisco, at Hunter’s



Superfund has cleaned up more than half of the nation’s most serious toxic sites and made the polluters pay 70 percent of the cleanup costs, saving taxpayers billions of dollars.



Point Shipyard, EPA funded a project to train neighborhood youth to participate in the cleanup and transfer of former Navy property to the community.

Federal budget cutbacks also had a ripple effect on industries that supported the military. In the San Fernando Valley, EPA has been working for more than 10 years to remove solvents from groundwater – a drinking water source for the Los Angeles metropolitan area – after pollutants from defense and aerospace industries leached through soil. Treatment is



Emergency response crews from EPA’s Pacific Southwest Office are on call 24 hours a day to respond immediately to chemical spills, fires, explosions or accidents.

underway in two groundwater basins, and construction of a third treatment system was completed last year. A similar effort is underway in the San Gabriel Valley.

EPA continues to work with its partners to address other noteworthy sites, including:

- At the **Operating Industries Site** in Monterey Park, CA, EPA has worked closely with the neighboring community – 2,500 people live within 1,000 feet of the site – by testing indoor air in homes and continuing to involve residents in cleanup decisions. We have stabilized slopes to pre-

vent the landfill from falling on homes, installed ventilation systems in many homes, controlled leachate that was moving into the neighborhood, and nearly completed the landfill cover. EPA has negotiated settlements with more than 500 smaller parties to remove them from a more costly enforcement process, and part of the property is being prepared for reuse.

- EPA is remediating the **Casmalia Disposal Site** in Santa Barbara County, where more than 4.5 billion pounds of hazardous waste – including heavy metals, pesticides, cyanid and PCBs – were deposited. Cleanup crews have

Superfund Program cleans up first half of 17,000 drums of hazardous waste abandoned at General Disposal site, Santa Fe Springs, in San Jose, CA found in drinking water well 1,800 feet away; similar problems in 20-mile radius make Silicon Valley the nation’s

capped one of the site's six landfills and consolidated more than 70 surface treatment units into a few stormwater management plans. EPA is now finalizing an unprecedented settlement with over 500 parties that will provide more than \$30 million toward the cleanup.

- In 1990, the U.S. Army began operating the world's first permitted full-scale chemical weapons destruction facility on **Johnston Island**, 800 miles southwest of Hawaii. The Army

has safely destroyed – under close oversight by EPA – roughly 1,674 tons of chemical agents at the facility, representing about 5.5 percent of the total United States chemical agent stockpile. The job will be completed later in 2000.

- At the **Tucson Airport**, EPA crews have treated some 40 billion gallons of groundwater in removing more than 100,000 pounds of toxic compounds. Ten tons of toxic PCBs have also been removed from soils.

Getting a handle on leaking underground storage tanks

Under a national EPA requirement set 10 years earlier, all petroleum underground storage tank systems were required to meet corrosion, spill, and overflow protection standards by the end of 1998. Petroleum or hazardous substances from leaking underground storage tanks contaminate groundwater, the source of drinking water for nearly half of all Americans. EPA staff mounted a major effort to help tank owners meet the deadline, while working with state and local officials to ensure a strong enforcement program was in place for scofflaws. By the end of 1999, California had achieved a 99% compliance rate with the upgrade requirements, with an overall 87% rate across the region.

Last year, EPA staff worked with inspectors from the Navajo Nation Environmental Protection Agency and the Hopi Tribe Water Resources Division to investigate groundwater contamination from leaking underground storage tanks in **Tuba City, Arizona** gas stations. Federal and tribal officials developed a cleanup plan and fined the gas station owners for numerous violations.

In spite of our success in eliminating leaking tanks, those that remain can cause tremendous problems. Several western areas – including **Santa Monica** and **Lake Tahoe** – have lost large drinking water supplies after the gasoline additive MTBE leaked from underground storage tanks.



In Monterey Park outside of Los Angeles, EPA is remediating the massive, 190 acre Operating Industries Site, where 2,500 residents live within 1,000 feet of the former landfill.

EPA is working with state, tribal and local officials to find any existing tanks, and also to devise cleanup plans for groundwater already contaminated with MTBE and other compounds. We are also looking into reports of new, upgraded tanks failing to do the job many had hoped.

Making sure waste isn't an issue in the first place

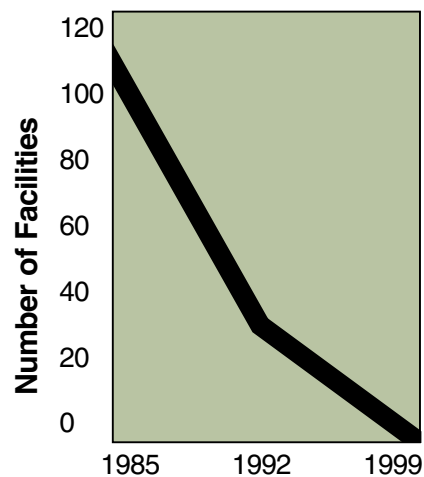
Thanks to innovative thinking, an emphasis on partnerships and extensive technical assistance, EPA has helped reduce waste output from both industry and households. Despite economic and population growth, hazardous waste from large quantity generators in the United States declined about seven percent per year between 1985 and 1997.

Aggressive enforcement and

improved regulations under EPA's Resource Conservation and Recovery Act contributed to a huge dropoff in the number of hazardous waste incinerators and treatment and storage facilities, while also greatly reducing the risk of catastrophic releases.

EPA's Pacific Southwest office also reaches out to specific business sectors – such as dry cleaners, auto repair shops, metal finishers, dairies and even wineries – to encourage pollution prevention practices. We have already enjoyed early returns: A project with 14 western metal finishers has eliminated 200,000 pounds of hazardous waste and 12.4 million gallons of wastewater since 1995.

In the home, people now compost and recycle roughly one pound



The number of hazardous waste disposal facilities in EPA's Pacific Southwest region have plummeted over the past 15 years due to improved regulations coupled with an aggressive technical assistance and outreach program.

per person per day more than they did in 1960. More than 8 million – or 70% – of California households have access to curbside collection of recyclables, compared to less than 200,000 – or just 2% – a decade ago.

In California, recycling has created 34,000 jobs and contributed \$1.6 billion to the economy, saved more than 600 million trees and conserved enough energy to power every home in California for 18 months.

Since 1995, EPA grants to western states have contributed to the creation or retention of about 8,000 jobs, \$465 million in capital investment to recycling businesses and to the processing of nearly 14 million tons of recycled materials.



Leaking underground storage tanks are the most common source of groundwater contamination in the United States. New requirements in 1998 required that all petroleum underground storage tanks meet comprehensive corrosion, spill, and overflow protection upgrades.



dent in U.S. 1986: Congress passes law requiring chemical facilities to annually report toxic releases and inventories. Chernobyl production. Department of Energy picks Yucca Mountain, NV for permanent nuclear waste disposal site. 1988: Shell Oil refinery

HEALTHY COMMUNITIES

Building community capacity for the future

EPA is typically known as a government regulator: setting standards for environmental protection and then enforcing them. But in addition to this important role, EPA devotes a large share of our budget to enabling the environmental protection work of state, tribal and local agencies and thousands of individuals, businesses and community groups.

This cooperative approach strives to achieve real community-based environmental protection, with local people taking the lead. Here are a few examples:

Enabling Indian tribes to protect their environment

Since 1986, EPA has been authorized to delegate implementation of federal environmental laws to tribes as it has historically done with states. Federal government agencies also have a responsibility to assist tribes and build meaningful government-to-government relations. For the past seven years, EPA has made it a top priority in the Pacific Southwest to fulfill these responsibilities.

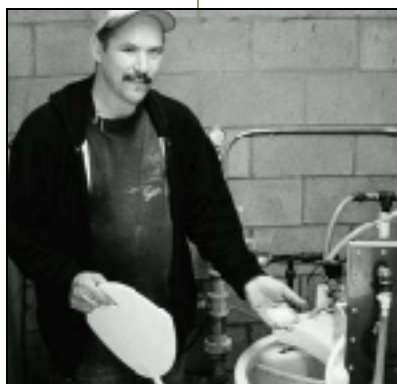
In the last five years, the number of tribes developing their own environ-

mental programs in the region has increased from 19 to 116, a 600 percent jump. With EPA technical and financial assistance, many tribes have completed surveys of reservation environments and are taking action to clean up pollution.

These activities have resulted in innovative projects such as: the **Pyramid Lake Paiute Tribe** working to save beautiful Pyramid Lake in Nevada; the **Navajo Nation** joining with Superfund to survey and begin cleanup of all the abandoned uranium sites across a territory the size of West Virginia; the **Hoopa Tribe** preparing water quality standards for the Trinity River; the **Washoe Tribe** working to list Leviathan Mine – one of the largest (and most toxic) abandoned mines in the West – as a Superfund site; the **Yurok** and other tribes capping open garbage pits; and the **Gila River Indian Community** working with EPA's emergency response team to stop a massive tire fire on the Gila River Reservation.

Following through for communities in need

One fundamental of healthy communities is to address the needs of



An environmental specialist at Campo Indian Reservation



Through its environmental program, the Pyramid Lake Paiute Tribe has worked to save beautiful Pyramid Lake in Nevada.

our most vulnerable populations. At EPA, we pay special attention to children, people of color, and low income communities, who often bear the greatest burden of environmental pollution.

We have identified five risks that are critical for **children**: asthma, lead, cancer, pesticides, and air toxics. To address pesticide risk, for example, we targeted two unregistered products – an insecticidal chalk and moth repellents – which pose particular risks to children. We also support several projects on pesticide use and exposure among children at risk in farm communities and along the U.S.-Mexico border. EPA is taking a similarly aggressive approach to lead exposure, which can stunt children's intellectual development. We tested almost 40,000 kids in Tijuana and have extensive outreach and training for families there, in San Diego and West Oakland. We have ambitious programs to address indoor air quality, asbestos, and pesticides in schools, and helped

fund a Children's Health Network website (www.cehn.org). In Los Angeles and on the border in Nogales, AZ we support unique education campaigns for Latino children, their teachers and parents on asthma prevention.

Another priority area for EPA is our work on behalf of communities of color. The **environmental justice (EJ) movement** has challenged us to be fair in our decision making and to prioritize issues of concern in poor communities (e.g. lead poisoning, subsistence fishing and asthma) and to engage them respectfully in decisions concerning their neighborhoods. Beyond extensive efforts in each of EPA's programs to respond to EJ issues, our Pacific Southwest office has assembled an EJ action team (and hotline at 415/744-1565) to give communities of color direct access to agency leaders and resources.

Beyond boosting access, we've boosted **enforcement efforts** to crack down on polluters in com-

munities of color. In 1999, for the first time ever and in collaboration with local and state agencies, EPA began carrying out an ambitious pilot regional enforcement strategy for historically underserved parts of Los Angeles.

EPA is also building the capacity of communities of color to conduct **environmental monitoring and outreach**. Through our EJ program, we've dispensed nearly 70 grants and witnessed amazing results, including: used oil recycling programs for two Indian communities in Arizona; an assessment of fish consumption levels and potential health risks among Laotians in Richmond, CA; an air monitoring program near a geothermal plant in the rural community of Pahoehoe, HI; and a grassroots environmental coalition straddling the border at Nogales (in Arizona and Mexico).

A community right to know

One of the most powerful tools EPA has employed in the last few years is getting information into the hands of people. Our community right-to-know program, known as the **Toxics Release Inventory (TRI)**, helps people learn about toxic releases to air, water, and land from industrial facilities in their neighborhoods. Just publicizing the amount of toxins that industries release to the environment creates an incentive for industry, the public, and government to work together to reduce harmful pollution. Since TRI began in 1989, reported toxic releases have plummeted in Arizona (by 75%), California (75%) and Hawaii (82%).

Another way EPA helps people get information is through **EMPACT (Environmental Monitoring for Public Access and Community Tracking)**. This grants program enables communities to secure monitoring equipment to test their own air, water and soil. By the end of 1999, EMPACT enabled: people living near oil refineries in Richmond, CA to sample their air for toxins; people in Las Vegas to develop a blueprint for an air monitoring system; retirement community residents of Green Valley, AZ to monitor their air after they complained about being able to taste and smell it; children to monitor UV radiation levels and learn “sunwise” ways to handle exposure to the sun; and people throughout the Pacific Southwest to check a website with real-time maps of smog in their area (www.epa.gov/airnow).

Catalyzing better community development

The last few years have seen “smart growth” movement sweep across America, whereby towns

and cities are working to reduce their environmental impacts and increase their livability by planning better communities and protecting open space. While EPA plays no direct role in these efforts, we provide resources to facilitate locally driven projects.

Through our **Sustainable Development Challenge Grant** program, we funded a series of collaborative projects, including: a sustainability plan for the Ewa and North Shore regions of Honolulu; new planning options for neighborhoods in Phoenix and Scottsdale, AZ; community gardening and greening in San Francisco, Los Angeles, and Nogales, AZ; rainforest restoration on the Hamakua Coast of Hawaii; “urban village” development to preserve farmland in California’s Central Valley; sustainable development for rural communities on the island of Maui; and rejuvenation plans for suburban downtowns in Southern California.

EPA has also helped communities by cleaning up and reinvesting in



EPA is paying special attention to the effects of pesticides on children.

abandoned areas through our **Brownfields Initiative** – a program created by President Clinton in 1995 to work with cities, tribes, and states to clean up and transform contaminated properties into new homes and businesses. In the Pacific Southwest alone, EPA has seeded 30 brownfields pilot projects with \$200,000 each and six projects with revolving loan funds.

The results of these investments have been impressive. For example, the City of Las Vegas was the first in the nation to use an EPA revolving fund loan and turn a brownfield (a decommissioned National Guard armory) into a community asset (including a small business incubator, cultural center and retail stores). Further west, the cities of Los Angeles and East Palo Alto, CA have been designated as brownfield “**showcase communities**,” in which EPA is coordinating with other federal agencies and supporting ambitious local plans to rejuvenate sizable old industrial parks. This effort is expected to result in 2,300 new jobs in LA and more than \$1 million a year in new tax revenues for East Palo Alto.



Through our Brownfield Initiative, EPA has helped fund the transformation of a neglected site in West Hollywood into what will be a vibrant commercial center.



address acid rain, air toxics, stratospheric ozone; passes law giving EPA lead role among federal agencies in environmental 40 miles of river above Shasta Lake. EPA Superfund Emergency Response Program cooperates with other agencies to create “air

HEALTHY ECOSYSTEMS

Protecting watersheds and biodiversity

EPA's Pacific Southwest region – California, Nevada, Arizona, Hawaii, tribal lands and numerous Pacific Islands – harbors thousands of species of fish, wildlife, and plants. The region's ecosystems range from desert mountains to tropical coral reefs. Beyond providing habitat, these ecosystems provide for human needs, such as clean water, fisheries, flood protection, and opportunities for recreation and scientific study. But they face a multitude of threats.

Over the past 150 years, intensive mining, water and agricultural development, and increasing human population and urbanization have degraded or reduced many of the region's ecosystems, along with their species. For example, California's original wetlands have declined to roughly 10% of their original area. Nevada's lakes and wetlands have also been severely reduced. In Arizona, riparian forests are threatened by excessive groundwater pumping. Tribal lands have been overgrazed and eroded. In Hawaii and the Pacific Islands, fragile coral reefs are damaged by polluted runoff and fill projects.

EPA efforts in 1999 to protect and restore ecosystems in the Pacific Southwest included:

CALFED Bay/Delta: The San Francisco Bay-Delta watershed includes the vast Sacramento/San Joaquin river system, providing water for over 20 million Californians, all Central Valley farms, and 120 species of fish and wildlife. EPA was a partner in negotiating the 1994 Bay-Delta Accord, which broke the gridlock over California water policy, and set the agenda for CALFED, the consortium of state and federal agencies working to resolve Bay-Delta water issues. In the past five years, CALFED funded \$250 million worth of ecological restoration projects, which comprise the nation's most complex restoration effort. Among the many projects underway: restoration of 42 miles of salmon and steelhead spawning habitat on Battle Creek (near Red Bluff), which involves removal of five low dams and construction of fish ladders on others.



Lake Tahoe

Lake Tahoe: Following the 1997 Tahoe Presidential Summit, EPA helped coordinate federal efforts to protect the lake's famed clarity. In 1999, we funded efforts by U.C. Davis, the U. S. Geological Survey, and the Tahoe Regional Planning Agency to develop monitoring methods and measure the effectiveness of various pollution control measures. These projects contributed to a comprehensive water-

shed assessment published in February 2000. The assessment will be used to set priorities for cost-effective actions, and to develop pollution reduction plans, including one already underway for Heavenly Valley Creek. EPA supported projects to restore native plants in eroded areas; and to map all drinking water wells and lake water intakes around Tahoe, so that development threats to drinking water can be avoided. EPA worked with the Washoe Tribe and the Lahontan Regional Water Quality Control Board on these efforts.

San Francisco Bay: A partnership of federal, state, and local agencies, environmental groups and the business community – organized by EPA and the Army Corps of Engineers – finalized a long-term strategy to reduce dumping of dredged mud in San Francisco Bay by more than 75 percent from 1990 levels. Dredging will continue, keeping

the Bay's shipping channels deep enough for large ocean-going cargo ships. But instead of dumping most of the mud in the shallow Bay, which can harm migrating fish, the new strategy will deposit more mud at a designated deep-ocean site beyond the Farallon Islands, and quadruple the volume re-used for wetland restoration, levee repair, and landfill cover. A pilot wetlands restoration using dredged mud, the Sonoma Baylands at the northwest corner of San Pablo Bay, is under way.

Vernal Pools: EPA won a precedent-setting \$1.5 million judgment, the largest-ever court-ordered penalty for unauthorized destruction of wetlands. A developer had destroyed seasonal vernal pool wetlands at Borden Ranch (near Sacramento, CA) by deep ripping, a plowing technique that uses bulldozers to tear apart the impermeable clay layer underlying the topsoil. Vernal

pool wetlands provide essential habitat for certain species of native wildflowers, endangered species of fairy shrimp, and migratory waterfowl.

Cosumnes River Watershed:

EPA funded an \$8 million loan from the California State Water Resources Control Board to The Nature Conservancy (TNC) to purchase the 12,362-acre Howard Ranch in Sacramento County, expanding TNC's Cosumnes River Preserve to 37,000 acres. The Preserve protects vernal pools, streams, riparian forests, flood plains and oaks along the Central Valley's last major undammed river. EPA also funded a \$1.5 million loan to the Sacramento Valley Open Space Conservancy to add 344 acres to the Sacramento Valley Open Space conservancy to add 344 acres to the Sacramento Vernal Pool Prairie Preserve, which will ultimately include 3,000 acres. These projects were the first to use EPA's State Revolving fund to acquire land for watershed protection.



An \$8 million loan from EPA helped expand the Cosumnes River Preserve in Sacramento County, CA, which protects rare wetlands and riparian forests.



As part of a major campaign to clean up the Ala Wai Canal in Honolulu, high school students stencil storm drains to keep pollutants out of the canal.

Ala Wai Watershed

Improvement (Oahu): EPA, state and local governments, and business and community groups are working to reduce water pollution in the Ala Wai Watershed, which includes Honolulu's most densely populated areas. The project will improve water quality by combining modern technology with the ancient Hawai'ian system of land division from the uplands to the sea – the ahupua'a. The Project will serve as a model for watershed improvement projects in Hawaii, as well as for incorporating Native Hawai'ian cultural and historical practices.

Reducing Polluted Runoff:

Runoff from urban areas, highways, farms, unpaved roads, and logging and construction sites can carry sediment, oil, grease, toxics, pesticides, pathogens and other pollutants into nearby waterways. In California's forested North Coast watersheds, sediment-laden runoff from unpaved roads and

logged areas smothers fragile salmon and trout eggs. In urban areas, garden fertilizers and pesticides, motor oil, and house pet waste washes into streets and then into streams, lakes, and the ocean. Under the Clinton Administration's Clean Water Action Plan, EPA is working with states to develop comprehensive plans to reduce polluted runoff. In 1999, EPA approved landmark plans submitted by Arizona and Nevada; California and Hawaii expect to submit plans in 2000. Once EPA approves a plan, the state or Pacific Island receives its share of \$18.6 million in funds allotted for reducing polluted runoff in the Pacific Southwest.

TMDLs: In 1999, EPA completed pollution reduction plans (officially known as TMDLs – Total Maximum Daily Loads) for the Noyo, Van Duzen, and South Fork Eel Rivers in California's North Coast. These plans, which are designed to restore coho

salmon and steelhead trout habitat, take into account all pollution sources in a watershed, including polluted runoff. The North Coast Regional Water Quality Control Board is putting the plans into effect through regulations and voluntary efforts, including reducing erosion from dirt roads and logging, and planting trees to shade streams, keeping them cool enough for salmon and trout.

In Southern California, EPA agreed to meet mandatory deadlines for a hundred more TMDLs for Los Angeles and Ventura County watersheds, including the Los Angeles River, Ventura River, Santa Clara River, Malibu Creek, and 25 beaches in Los Angeles and Ventura counties. The efforts will benefit beachgoers as well as endangered runs of southern steelhead trout. In settling a lawsuit, EPA guaranteed that these 100 plans will be completed. The Los Angeles Regional Water Quality Control Board will develop many of them. Additional plans are being developed for several Arizona streams to reduce mercury pollution, which can build up to toxic levels in the food chain, poisoning fish eaters such as eagles – and people.

Get Involved! To find out what's happening in your area, visit EPA's watershed web page, www.epa.gov/surf. There are maps of every watershed in the nation, accessible by typing in your zip code, city, county, school, or Indian tribe; plus contacts for over 5,500 local watershed protection groups.



that secondhand smoke is a serious risk to non-smokers. EPA begins major groundwater cleanup in the San Fernando Valley, mission. EPA launches Brownfields Initiative to clean up, redevelop abandoned inner-city properties. EPA signs Bay-Delta Accord,

HEALTHY PLANET

Crossing borders for environmental protection

As we move toward a global economy, we are constantly reminded that environmental threats are global problems, requiring solutions that span oceans and continents. In EPA's Pacific Southwest Office we confront these problems in many ways: through our ambitious work along the Mexican Border; our efforts in Pacific Islands such as Guam and American Samoa; and working with environmental officials worldwide to provide cleaner air, land and water.

Breaking new ground with our neighbors to the South

A unique part of the world is the 2,000 mile-long border region between the United States and Mexico. The most rapidly growing part of North America, the border's population has grown from 1 million in 1960 to over 11.5 million today. At the current growth rate, 25 million people will live in the region by 2020.

EPA is working with the Mexican Government and U.S. state, tribal and local officials through the **Border XXI Program** to increase cooperation between our countries in addressing this astounding growth and its enormous impacts on a fragile environment. Through Border XXI, EPA's Pacific

Southwest office has awarded tens of millions of dollars in grants and devoted countless hours of technical assistance to build sewage treatment plants, run air monitoring programs, manage solid and hazardous waste, and train environmental professionals.

The **Border XXI Air Work Group** recently completed its third year of monitoring, which showed harmful levels of ozone in Tijuana-Rosarito, and high levels of ozone, carbon monoxide, and particulate matter in Mexicali. Officials are now studying strategies to reduce air pollution that for years has threatened public health in these areas. Efforts are underway to reduce motor vehicle emissions in Ambos Nogales, where a recently completed air study identified automobiles as the greatest health risk. These projects –

and several others like them in border communities from Texas to Baja California – constitute the first-ever attempts at binational cooperation in combating air pollution along a shared U.S. border.

In December, EPA and Mexico's National Ecology Institute signed a major agreement committing both countries to share information on **existing and proposed waste sites** within 60 miles of the border. Never



Desert borderlands

before have residents of both nations had cross-border access to information about hazardous waste facilities – and the opportunity to affect future siting decisions.

We are also working to handle waste from the estimated 3,300 maquiladoras operating in Mexico – foreign-owned assembly plants that use raw materials from the United States to manufacture products for export. In 1999, Mexico reaffirmed its policy of returning hazardous waste from maquiladoras to the United States to ensure that hazardous wastes generated by these companies are managed appropriately.

On both sides of the border, more than four million residents will be served by **16 water projects** under way or already constructed through investments of more than \$400 million certified by the Border Environment Cooperation Commission. (See the *Clean Water* section for a description of a major project, the International Wastewater Treatment Plant.) Other ambitious sewage system upgrades are underway in Mexicali and Nogales.

A critical goal of all border activities is to bring all affected parties together to share information and ideas. The U.S. and Mexican governments achieved a major breakthrough last year by welcoming all border states and tribes as full partners in the Border XXI Program. EPA has also spearheaded efforts to include the public in these meetings.



In 1999, Mexican and U.S. officials worked together to monitor air emissions along the border and negotiated an unprecedented agreement to share information on current and future hazardous waste sites.

In 1997, EPA and Mexico's Secretary for the Environment created a comprehensive set of **environmental indicators** for the border that gauge the effectiveness of border programs and changes to the environment over time. The indicators, and related information, can be found at www.epa.gov/usmexicoborder. EPA also operates an outreach office in San Diego to provide a forum for community input and communication, and help build local capacity through community grants.

Spanning the Pacific to protect island habitat

The reach of EPA's Pacific Southwest Office extends farther west than most people realize. As territories of the U.S., Guam, the Commonwealth of the Northern Mariana Islands (Saipan) and American Samoa are subject to some U.S. environmental laws.

Other islands – the Republics of Palau and the Marshall Islands, and the Federated States of Micronesia – are independent nations to which we have treaty obligations.

EPA is working with local officials on **landfill closures in Guam and Saipan** that could significantly reduce public health threats and protect sensitive local ecosystems. For decades, Guamanians have brought garbage to the Ordot Dump, a huge, overflowing open landfill that catches fire regularly and endangers neighboring villages.

Roughly 120 miles to the north, Saipan residents have been dumping trash in the Puerto Rico Dump, which extends into a lagoon near a tourist center and national park. EPA staff are working with local officials on both islands to replace the old

dumps with municipal landfills to reduce future threats to land and water quality.

EPA is also working with the U.S. Army Corps of Engineers and the Commonwealth of Northern Mariana Islands Division of Environmental Quality to speed the cleanup of toxic polychlorinated biphenyl (PCB) contamination in Tanapag Village on Saipan, where local residents have expressed fear and frustration over delays in soil remediation.

The Republic of Palau is globally known for its marine resources, biodiversity and relatively pristine nature. On the island of Babeldaob, EPA, the Department of Interior, Army Corps of Engineers and the Republic of Palau are ensuring that construction of 53 miles of new paved road is done in an environmentally responsible manner. As mitigation for the project, the Republic of Palau has committed to establish two conservation areas encompassing 30,000 acres of mangrove, sea grass, patch coral, fringing reefs and upland habitats.

Pago Pago Harbor in American Samoa has seen dramatic improvements in water quality in the last decade, thanks to a partnership by EPA and the American Samoa EPA. The two agencies worked together to require the two harbor fish canning operations to relocate their discharge to the outer harbor, separate their waste streams and barge wastes to an ocean disposal site. The results

have been impressive: water quality standards are now regularly met, and new coral is returning to the harbor. The two EPAs are now focusing on why harbor sediments remain contaminated with heavy metals and other pollutants.

Expanding our reach to help other countries

In the same way we have worked with Mexico and the Pacific Islands, EPA has collaborated with dozens of environmental programs in other parts of the world. Since 1990, EPA has conducted more than 70 environmental projects worldwide on issues such as air quality, controlling hazardous waste and municipal trash and performing environmental assessments.

Our Pacific Southwest office continues to draw the most international visitors of any EPA regional office to share program knowledge and technical experience, and staff have been invited abroad to assist countries around the world who are developing environmental programs, including Central and Eastern Europe, Central and South America and Asia and the Pacific Rim.

From 1996 through 1999, at the request of the Philippine government, a team of scientists from EPA's Pacific Southwest office developed a groundbreaking watershed management plan for the Butuanon River on the island of Cebu that now serves as a model throughout Southeast Asia.



EPA is working with local officials from the Republic of Palau to American Samoa to preserve unique island ecosystems that are currently threatened by pollution.



1997: EPA brokers \$80 million deal to save Bolsa Chica, Southern California's largest remaining tidal marsh. EPA Administrator tank owners face deadline to upgrade tanks to prevent leaks. Superfund Emergency Response Program reports 420 emergency

FUTURE CHALLENGES

Environmental protection gets more complex

While this report documents major progress toward environmental protection during 1999, we think it's wise to end on a cautionary note: because EPA and other agencies have helped clean up many of the centralized sources of pollution, we're left with a wider array of problems for which there is no easy solution.

Most of these problems can be characterized as diffuse, persistent and pervasive. For example, when it comes to air pollution, the new enemy is rarely a single smokestack; it's air and dust pollution produced by millions of sources – from cars to vacant lots – spread throughout vast metropolitan areas. When the issue is toxics, the enemy is not just concentrated Superfund sites, but tenacious and multi-sourced poisons like mercury and dioxin. When the problem is water pollution, the concern is no longer a big sewage plant, but millions of storm drains or logging roads, which flush a bouillabaisse of pollutants into fragile rivers, lakes and estuaries.

Among the top problems EPA sees today and on the horizon in the Pacific Southwest are air toxics and the lung-damaging pollution of

diesel engines, non-point sources of water pollution, habitat and watershed destruction, tricky water contaminants like MTBE and perchlorate (which is a component of rocket fuel), cancer-causing chemicals like dioxins and other PBTs – persistent-bioaccumulative toxins – which can move up the food chain through fish, fowl and people, and the large volume of pesticides used to produce American food. Other challenges requiring study and science include endocrine disruptors and genetically altered food.

In addition to these relatively new problems, we have plenty of work yet to do in the “traditional environmental protection arena – especially along the U.S.-

Mexico border, on tribal lands and in low income communities. We are catching up with work that should have been done years ago and will require many more years of intensive effort. There are Superfund sites still to be reclaimed. We have only begun to prepare watershed recovery and pollution prevention plans – known as Total Maximum Daily Loads – although the Clean Water Act envisioned their implementation years ago. Wetlands are still disappearing, ecosystems are



Diesel fumes and air toxics pose a major public health challenge.

failing, and we are still striving with our partners to bring closure to a series of complex negotiations – such as CALFED, the process to help solve California's water wars.

The same concern – the feeling that we're playing catch-up – also applies to our enforcement work. Even though 1999 was a record enforcement year, we know we have only addressed the tip of the iceberg in enforcing environmental laws on the books. And even if all of these laws were enforced perfectly, we know that significant environmental and public health risks would remain since the law represents a nationally-set minimum level of protection, not necessarily the very best environmental outcome.

That's a key reason why EPA has set up more than a score of programs to help business and industry clean up their act and attain

superior outcomes – programs like Project XL, Waste WiSe, Energy Star Building, and Water Alliances for Voluntary Efficiency. It's the reason behind EPA grants to help California dairy operators control their waste streams before they ruin water supplies. It's the reason for EPA partnerships for pollution prevention, whether it's working with metal platers to cut their use of toxic solvents or supporting communities in their quest to design new developments that – because they require less driving and have fewer paved surfaces – generate less air pollution and polluted water run-off up front. And it's why we've launched a green energy program and transformed our Richmond, CA laboratory into the first federal government facility using 100% renewable energy.

Because as America confronts a new set of environmental chal-



Urban sprawl, traffic jams and increased vehicle miles travelled are creating new air quality and water runoff problems.

lenges – from the broad-scale threat of global warming to the pin-point toxicity of dioxin – EPA will need all the help and ingenuity it can get. Our resources – combined with those of our state, tribal and local partners – pale in comparison to these challenges.

Our pledge to the residents of the Pacific Southwest is that we will keep on building bridges, keep on looking for innovative solutions, and keep on achieving the results that have made our region a better place to live.

We've seen what a difference 30 years can make. By working smarter with new tools of technology and information sharing, and new partnerships – in addition to our traditional regulatory and enforcement tools – we can make an even greater difference for the environment in the next 30 years.

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EPA will need new partnerships to confront new challenges. One of our most innovative collaborations has been with metal platers, like Dan Durkiewicz of Phoenix, who have dramatically reduced the hazardous waste generated by their operations.

Pacific Southwest are down 75% from a decade earlier, according to EPA's Toxic Release Inventory. Superfund's 650th construction completion, at MEW site in Mountain View, CA, marks halfway point for cleanup of nation's roughly 1,300 Superfund sites.

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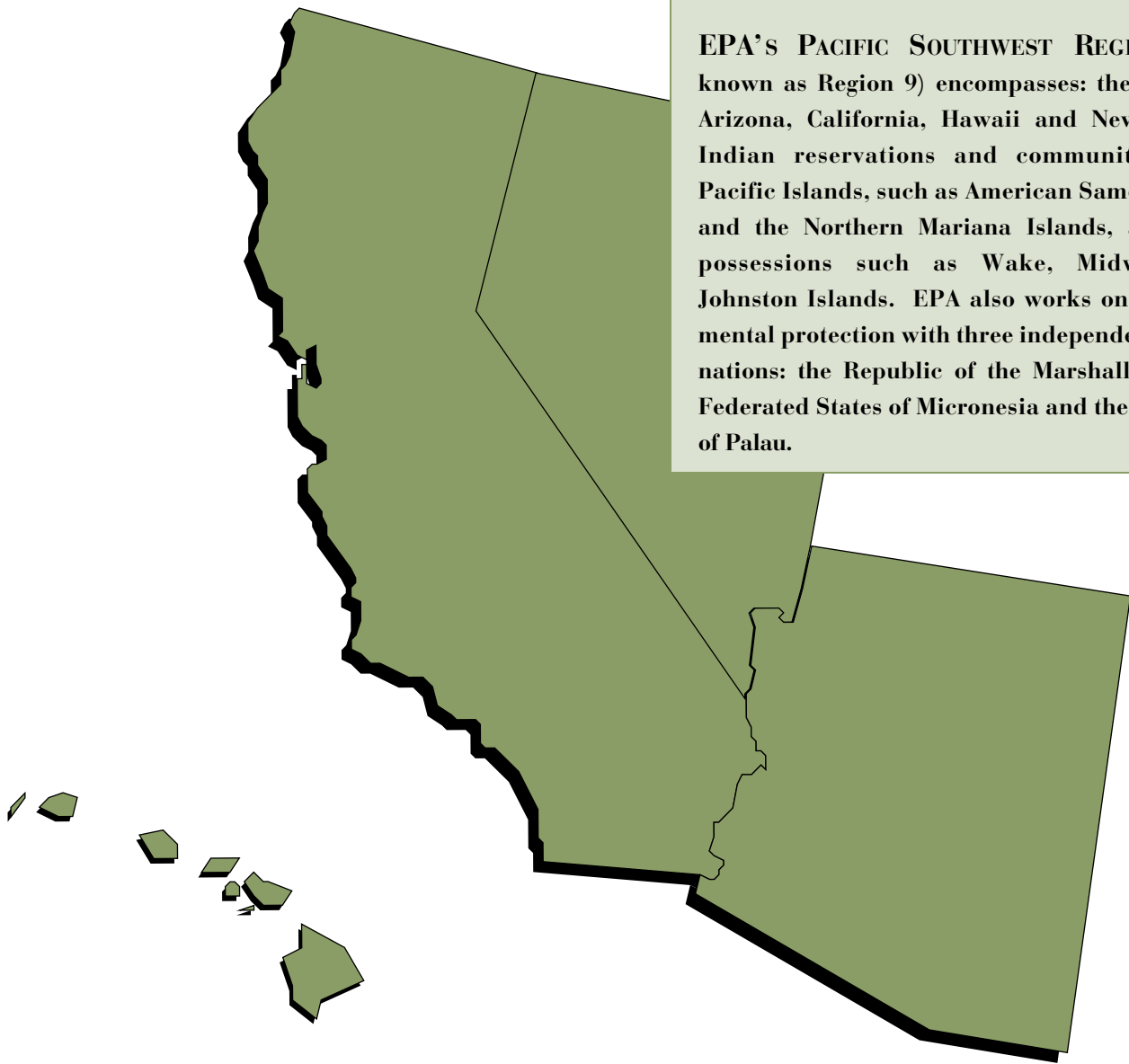
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EPA'S PACIFIC SOUTHWEST REGION (also known as Region 9) encompasses: the states of Arizona, California, Hawaii and Nevada; 145 Indian reservations and communities; and Pacific Islands, such as American Samoa, Guam and the Northern Mariana Islands, and U.S. possessions such as Wake, Midway and Johnston Islands. EPA also works on environmental protection with three independent island nations: the Republic of the Marshall Islands, Federated States of Micronesia and the Republic of Palau.



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