

## GOAL 4

# HEALTHY COMMUNITIES AND ECOSYSTEMS

*Protect, sustain, or restore the health of people, communities, and ecosystems using integrated and comprehensive approaches and partnerships.* To protect, sustain, or restore the health of communities and ecosystems, EPA must bring together a variety of programs, tools, approaches, and resources; create strong partnerships with federal, state, tribal, and local government agencies; and enlist the support of many stakeholders. Because Goal 4 is unique in its cross-media, cross-Agency approach, building a cohesive, integrated strategy is critical for achieving results.

### OBJECTIVES

**Objective 4.1: Chemical Risks.** Prevent and reduce industrial chemical risks to humans, communities, and ecosystems.

**Sub-objective 4.1.1: Reduce Chemical Risks.** Through 2011, prevent and reduce chemical risks to humans, communities, and ecosystems.

#### Strategic Targets:

- X By 2009, identify priority concerns associated with 1,000 High Production Volume (HPV) chemicals.
- X By 2011, develop risk mitigation/management strategies for addressing priority concerns associated with High Production Volume chemicals.
- X Each year through 2011, ensure that new chemicals introduced into commerce after Pre-Manufacture Notifications (PMNs) Review do not pose unreasonable risks to workers, consumers, or the environment.
- X Each year through 2011, reduce relative risks to chronic human health associated with environmental releases of industrial chemicals in commerce by 3 percent from prior year levels, as measured by EPA's Risk Screening Environmental Indicators model.
- X Each year through 2011, establish short-term exposure limits (Acute Exposure Guideline Limits, AEGLs) for 24 additional chemicals.
- X By 2010, virtually eliminate childhood lead poisoning cases from approximately 310,000 cases in 1999/2002.

- X Through 2011, reduce the potential for risks from leaks and spills by ensuring the safe disposal annually of x,000 large capacitors and x,000 transformers containing polychlorinated biphenyls (PCBs).
- X By 2008, through work with international partners, eliminate the global use of lead in gasoline, impacting over XX people and XX countries.
- X By 2011, through work with international partners, up to 10 countries will have access to low sulfur fuel, impacting over XX people.
- X By 2011 reduce the intake of POPs contaminants by indigenous populations in the Arctic to xx/ug for PCBs, xx/ug for chlordane, and xx/ug for DDT. [placeholder text]

**Sub-objective 4.1.2: Reduce Risks at Facilities.** By 2011, reduce and control the risks posed by accidental and intentional releases of harmful substances by improving our nation's capability to prevent and prepare for these emergencies.

Strategic Targets:

- X By 2011, 30 percent of those facilities with hazardous chemical, including Risk Management Plan facilities, will have reduced their risk of a major chemical accident of a universe of approximately 15,000 facilities.
- X By 2011, 60 percent of local communities or Local Emergency Planning Committees (LEPCs) will have incorporated facilities risk information into their emergency preparedness and community right-to-know programs out of a universe of approximately 3,200 LEPCs.

**Objective: 4.2: Reduce Risk to Human Health and the Environment from Pesticide Use.**

Protect public health and the environment by ensuring pesticides and alternatives are safe and available for a healthy America by being an effective gateway to the market and an effective steward of pesticides already on the market. Gateway is the means through sound science, risk assessment, and risk management to ensure the availability of new, safe pesticide tools to benefit public health protection, the environment and provide economic efficiencies in production of food and other valuable outputs. Effective Stewardship of existing pesticides protects through applying today's sound science, risk assessment, risk management, field infrastructure for proper use, international considerations, and effective communications to mitigate risk.

**Sub-objective: 4.2.1 Protect Human Health from Pesticide Use.** By 2011, through our gateway and stewardship programs protect human health by implementation of our statutes and regulatory actions to ensure that pesticides continue to be safe and available when used in accordance with the label.

Strategic Targets:

- By 2011, protect human health by reducing the percentage of the general population with detectable levels of currently registered pesticides in their bodies using NHANES pesticide data. (Note: this language is still in draft form. Final language with targets and supporting information will be available mid-December).
- By 2011, reduce the occurrence of pesticide related illnesses and incidents in the pesticide occupational community (agricultural workers and pesticide applicators). (Note: metric under development).

**Sub-objective: 4.2.2 Protect the Environment from Pesticide Use.** By 2011, through our gateway and stewardship programs protect the environment by implementation of our statutes and regulatory actions to ensure that pesticides continue to be safe and available when used in accordance with the label.

Strategic Targets:

- By 2011, establish the baseline and reduce by XXX the contribution of pesticides to environmental impairments. (Note: this language is still in draft form. Final language with targets, supporting information and identification of data sources will be available mid-December).
- By 2011, protect the environment from unreasonable risk to non-target organisms by increasing by XX% the acreage of crops using reduced risk pesticides. (Note: this language is still in draft form. Final language with targets and supporting information will be available mid-December)
- By 2011, protect endangered and threatened species from pesticide exposure (Note: metric under development and being evaluated for programmatic and financial feasibility)

**Sub-objective: 4.2.3 Realize the Benefits from Pesticide Use.** By 2011, through our gateway and stewardship programs, ensure the public health and economic benefits of pesticide availability and use are achieved.

Strategic Targets:

- By 2011, ensure the public health and economic benefits of pest control are achieved by avoiding XXX amount of crop loss through ensuring effective pesticides are available to address emergency pest infestations. (Note: this language is still in draft form. Final language with targets and supporting information will be available mid-December).
- By 2011 decrease societal costs associated with structural damage and vector borne disease. (Note: this language is still in draft form. Final language with targets and supporting information will be available mid-December).

**Objective 4.3: Communities.** Sustain, clean up, and restore communities and the ecological systems that support them.

**Sub-objective 4.3.1: Sustain Community Health.** By 2011, 250 US Communities, working with EPA, will adopt and begin implementing environmental planning and management processes for sustaining local ecosystems and pursuing ecologically compatible development (2002 baseline of 0 communities). On the international front, EPA will work with selected trading partners to address potential sources of environmental degradation associated with trade-related development.

**Sub-objective 4.3.2: Improve Community Health.** By 2011, over 100 community partnerships in collaboration with EPA programs, such as Community Action for a Renewed Environment, will use meaningful public involvement to address disproportionate environmental impacts and/or prioritized risks through comprehensive, integrated planning, and environmental management and voluntary programs and provide quantitative data on human, public, or community health to EPA.

**Sub-objective 4.3.3: Restore Community Health through Collaborative Problem-Solving:** Make significant environmental improvements in communities with potential disproportionately high and adverse environmental and/or public health effects (“areas with potential environmental justice concerns”) and foster the ability of communities to address local environmental concerns with other stakeholders through collaborative problem-solving.

Strategic Targets:

- By 2013, increase by 100% the number of communities in areas with potential environmental justice concerns that have achieved measurable environmental and/or public health improvements through the use of collaborative problem-

solving strategies. In 2006, 30 communities used collaborative problem-solving strategies to improve their environmental and/or public health.

- By 2013, increase by 100% the tools available to communities for assessing their local environmental and/or public health concerns. In 2006, there were two tools publicly available.
- By 2013, as compared to the general population decrease sources of pollutants that may disproportionately effect the environmental health of communities with potential environmental justice concerns. This reduction will include, as appropriate, pollutant sources associated with the national environmental justice priorities.
- By 2013, increase by 1000% of EPA Staff that is aware of the tools and strategies available to address environmental justice concerns in areas with potential disproportionate environmental/public health concerns. In 2006, 700 EPA Staff were made aware of the available tools and strategies through environmental justice training.
- By 2015, improve drinking water quality and access to adequate sanitation by 50% in support of US Government commitments at the World Summit on Sustainable Development.

**Sub-objective 4.3.4: Assess and Clean Up Brownfields:** By 2011, working with our state and tribal partners, provide funding and technical assistance to assess XXX Brownfields properties, cleanup XXXX brownfields properties, and promote their productive reuse, leveraging XXXX jobs and \$XXX billion in cleanup/redevelopment funding.

**Sub-objective 4.3.5: Increase Wetlands.** By 2011, working with partners, achieve a net increase of 100,000 acres of wetlands per year with additional focus on biological and functional measures and assessment of wetland condition. (2004 Baseline: annual net wetland gain/loss to be determined in January 2006 based on new Fish and Wildlife Service Report)

**Strategic Target:**

- X Annually, with tracking beginning in 2007, in partnership with the U.S. Army Corps of Engineers and states and tribes, achieve no net loss of wetlands under Section 404 of the Clean Water Act regulatory program. (Baseline: new baseline to be determined in 2008)

**Sub-objective 4.3.6: Facilitate the Ecosystem-scale Protection and Restoration of Estuaries of National Significance Designated Under the National Estuary Program:**

By 2012, use both pollution prevention and restoration approaches to protect and improve the quality of estuary systems, as measured by the strategic target described below.

Strategic Target:

- X By 2011, working with partners, protect or restore an additional (i.e. measuring from 2007 forward) 250,000 acres of habitat within the study areas for the 28 estuaries that are part of the National Estuary Program. (2005 Baseline: 510,910 acres of habitat restored; cumulative from 2001)

**Objective 4.4: Restore and Protect Critical Ecosystems.** Protect, sustain, and restore the health of critical natural habitats and ecosystems.

**Sub-objective 4.4.1: Improve the Health of Great Lakes Ecosystem.** By 2011, prevent water pollution and protect aquatic systems so that the overall ecosystem health of the Great Lakes is improved by at least XX points on a 40 point scale. (2005 Baseline: Great Lakes rating of 21.9 on the 40-point scale where the rating uses select Great Lakes State of the Lakes Ecosystem indicators based on a 1 to 5 rating system for each indicator, where 1 is poor and 5 is good.)

Strategic Targets:

- X Through 2011, maintain or improve an average 5% decline for the long term trend in average concentrations of PCBs in whole lake trout and walleye samples. (Baseline: exponential decay of GL FMP dataset beginning with 1990.)
- X Through 2011, maintain or improve an average 7% decline for the long term trend in average concentrations of toxic chemicals (PCBs) in the air in the Great Lakes basin. (2004 Baseline: Exponential decrease of average concentrations using IADN data through 2000)
- X By 2010, restore and delist a cumulative total of at least 10 Areas of Concern within the Great Lakes basin (2005 Baseline: 0 areas of concern delisted as of 2005 of the XX total areas of concern).
- X By 2011, remediate XX million cubic yards of contaminated sediment in the Great Lakes. (2004 Baseline: 3.7 million cubic yards of contaminated sediments from the Great Lakes have been remediated from 1997 through 2004 of the XX tons needing remediation.)

**Sub-objective 4.4.2: Improve the Aquatic Health of the Chesapeake Bay.** By 2011, prevent water pollution and protect aquatic systems so that the overall aquatic system health of the Chesapeake Bay is improved as measured by the strategic targets described below.

Strategic Targets:

- X By 2011, XX% of the submerged aquatic vegetation goal for the Bay will be achieved. (2005 Baseline: XX% of submerged aquatic vegetation goal achieved)
- X By 2011, XX% of dissolved oxygen goal will be achieved. (2005 Baseline: XX % of dissolved oxygen goal achieved).

**Sub-objective 4.4.3: Improve the Health of the Gulf of Mexico.** By 2011, the overall health of coastal waters of the Gulf of Mexico will be improved by .2 on the “good/fair/poor” scale of the National Coastal Condition Report. (2004 Baseline: Gulf Coast rating of fair or 2.4 where the rating is based on a 5-point system where 1 is poor and 5 is good)

Strategic Target:

- X By 2011, 20% percent of impaired segments in the 13 priority coastal areas where water and habitat quality is restored to levels that meet state water quality standards. (1998 Baseline: 354 segments - 303(d))
- X By 2011, 20,000 acres of important coastal and marine habitats restored, enhanced, or protected. (2000 Baseline: Gulf of Mexico coastal wetland habitats - 3,769,370 acres; cumulative from 2000 baseline).
- X By 2015, reduce releases of nutrients throughout the Mississippi River Basin to reduce the size of the hypoxic zone in the Gulf of Mexico to less than 5,000 km<sup>2</sup>, as measured by the 5-year running average of the size of the zone. (Baseline: 1996-2000 running average size = 14,128 km<sup>2</sup>.)

**Sub-objective 4.4.4: Sustain and Restore U.S.-Mexico Border Ecosystems.** By 2011, sustain and restore US-Mexico Border ecosystems and enhance collaboration with communities through implementation of Border 2012, improving water infrastructure and providing improved water quality conditions, and working toward a binational policy on land cleanup, reuse, and revitalization of abandoned sites based on the strategic targets described below.

Strategic Targets:

- X By 2012, achieve a majority of currently exceeded water quality standards in impaired reaches or segments of significant, shared and transboundary surface waters. (2002 Baseline: XX of water quality impairments/sources identified for reaches or segments of significant shared and transboundary surface waters)
- X By 2012, reduce the threat of infectious diseases and acute respiratory illnesses from tire fires adversely affecting approximately 1.0 million local residents by removing and cleanup of two sites that contain abandoned waste tires in the U.S.-Mexico border region.
- X By 2012, reduce the threat of acute heavy metals poisoning and long term central nervous damage affecting approximately 700,000 local residents through the clean up of three abandoned hazardous waste sites.

**Sub-objective 4.4.5: Restore and Protect Long Island Sound** By 2011, working through the Long Island Sound Study Management Conference partnership, prevent water pollution, improve water quality, protect aquatic systems and restore the habitat of Long Island Sound as measured by the strategic targets described below.

**Strategic Targets:**

- X BY 2011, reduce point source nitrogen discharges to Long Island Sound by 10,892 tons from the 2004 baseline as measured by the Long Island Sound Nitrogen Total Maximum Daily Load. (Annual reduction target: 1,556 tons/year. 2004 Baseline: 28,100 tons/year)
- X By 2011, reduce the size of hypoxic area in Long Island Sound (i.e. the average maximum July-September <3mg/l DO) by 25%; reduce average duration of maximum hypoxic event by 25%. (2005 Baseline: 19-year averages as of December 2005: size: 203 sq/mi.; and duration: 58 days.)
- X By 2011, restore or protect 300 acres of coastal habitat, including tidal wetlands, dunes, riparian buffers, and freshwater wetlands from the 2005 baseline. (2005 Baseline: 562 acres restored and 150 acres protected.)
- X By 2011, increase the abundance and diversity of anadromous fish in Long Island Sound by reopening 50 miles of river and stream corridor to anadromous fish passage from the 2005 baseline through removal of dams and barriers or installation of by-pass structures such as fishways. (2005 Baseline: 81 river miles reopened.)

**Sub-objective 4.4.6: Restore and Protect the South Florida Ecosystem.** Protect and Maintain the South Florida Ecosystem, including the Everglades and coral reef ecosystems, as measured by the strategic targets described below.

Strategic Targets:

- X Annually, beginning in 2008, work with the U. S. Army Corps of Engineers and other partners to achieve “no net loss” of wetlands in South Florida under Section 404 of the Clean Water Act regulatory program. (2005 Baseline TBD in 2006)
- X By 2012, working with all stakeholders (federal, state, regional, and local), achieve “no net loss” of stony coral cover (mean percent stony coral cover) as in the Florida Keys National Marine Sanctuary (FKNMS) and in the coastal waters of Dade, Broward, and Palm Beach Counties, Florida. (Baseline to be determined in January 2005 using information collected and analyzed in FY 2005 by the long-term coral reef monitoring projects.)
- X Beginning in 2008, maintain the overall health and functionality of seagrass beds in the FKNMS as measured by the long-term seagrass monitoring project. The seagrass monitoring project samples for seagrass bed composition and abundance, productivity, and nutrient availability. (Baseline index of seagrass health to be determined using information collected and analyzed in FY 2005.)
- X Beginning in 2008, maintain the overall water quality of the nearshore and coastal waters of the FKNMS. (Baseline concentrations for inorganic nitrogen (nitrate, nitrite, and ammonium), soluble reactive phosphorus, water clarity (turbidity and light attenuation), and chlorophyll *a* to be determined using information collected and analyzed in FY 2005 as measured by the long-term water quality monitoring project.)
- X Beginning in 2008, maintain the water quality of the Everglades ecosystem as measured through water quality monitoring of total phosphorus by meeting the water quality criterion for total phosphorus. (Baseline is 1995 water quality.)

**Sub-objective 4.4.7: Restore and Protect Puget Sound Basin.** By 2011, improve water quality, air quality, and minimize the adverse impacts of rapid development in the Puget Sound Basin as measured by the strategic targets described below.

Strategic Targets:

- X By 2011, improve water quality as needed to lift harvest restrictions in 1,000 acres of shellfish bed growing areas impacted by degraded or declining water quality. (2005 Baseline: xxx acres of shellfish beds with harvest restrictions due to water quality impairments as of January 2006.)
- X By 2011, remediate 100 acres of prioritized contaminated sediments. (2005 Baseline: XXX acres of highly contaminated sediments requiring remediation as of January 2006)
- X By 2011, restore 3,500 acres of tidally and seasonally influenced estuarine wetlands. (2005 Baseline: acres restored starting as of January 2006)

**Sub-objective 4.4.8: Restore and Protect the Columbia River Basin:** By 2011, reduce toxics in the environment and in Columbia River fish that people eat, including addressing agricultural practices, targeted clean-ups, and reducing the impacts of rapid development, as measured by the strategic targets described below.

Strategic Targets:

- X By 2011, about 1,000 acres of farmland are converted to no-till agriculture resulting in XX% erosion reduction on acres converted to no-till by 2011. (2004 Baseline: XXX,000 acres of agricultural land suitable for conversion to no-till agriculture as of 2006)
- X By 2011 reduce the level of agricultural pesticides detected in water by 25% in 50% (four of the seven listed tributaries) of the WA and OR 303(d) listed Columbia River tributaries. (Baseline: Columbia River tributaries listed for pesticides on the 303(d) EPA approved OR and WA Integrated Reports; TBD xxx)
- X By 2011, clean up about 400 acres (5%) of highly contaminated sediments through removal, capping, containment or other response actions. (Baseline: 8,000 acres of highly contaminated sediments in the main-stem of the Columbia River as of 2006.)
- X By 2011 reduce bio-accumulative chemicals, identified in the EPA 2002 Fish Contaminant Survey, in fish tissue in 50% of the geographic areas of the Columbia River and tributaries where fish were sampled in the EPA 2002 Fish Contaminant Survey. (Baseline: Data on fish sampling from the EPA 2002 Fish Contaminant Survey)

**Objective 4.5: Enhance Science and Research.** Through 2011, provide a sound scientific foundation for EPA's goal of protecting, sustaining, and restoring the health of people, communities, and ecosystems by conducting leading-edge research and developing a better understanding and characterization of environmental outcomes under Goal 4.

**Sub-objective 4.5.1: Apply the Best Available Science.** Through 2011, identify and synthesize the best available scientific information, models, methods and analyses to support Agency guidance and policy decisions related to the health of people, communities, and ecosystems.

**Sub-objective 4.5.2: Conduct Relevant Research.** Through 2011, conduct research that contributes to the overall health of people, communities, and ecosystems. Focus research on pesticides, chemical and microbial toxicology; global change; and comprehensive, cross-cutting studies of human, community, and ecosystem health.

Strategic Targets

- X Risk assessors and risk managers use ORD's methods, models and data to use mechanistic (mode of action) information to reduce uncertainty in human health risk assessment; to characterize aggregate and cumulative risk in order to manage risk of humans exposed to multiple environmental stressors; to characterize and provide adequate protection for susceptible subpopulations; and to evaluate the effectiveness of public health outcomes.
  
- X EPA, state and local risk assessors use the state-of-the-science health hazard assessment information provided in the Integrated Risk Information System (IRIS) (and other priority health hazard assessments) on priority substances in their decisions and actions to protect human health from risks posed by environmental pollutants; use the risk assessment models, methods, and guidance provided to enhance, through the incorporation of contemporary scientific advances, the quality and objectivity of their assessments and decision-making on environmental health risks; and as mandated in the Clean Air Act, the ambient air criteria pollutants are reviewed and AQCDs revised to reflect the best available scientific information on identifiable effects on public health and the environment from exposure to the pollutant, and this information is used by the EPA Office of Air and Radiation in their review and promulgation of the National Ambient Air Quality Standards (NAAQSs) to protect public health with an adequate margin of safety.
  
- X ORD research results in the: reduction in uncertainty regarding the effects, exposure, assessment, and management of endocrine disruptors so that EPA has a

sound scientific foundation for environmental decision-making and determination of the extent of the impact of endocrine disruptors on humans, wildlife, and the environment to better inform the federal and scientific communities; and OPPTS uses endocrine disruptor screening and testing assays developed by ORD to create validated methods that evaluate the potential for chemicals to cause endocrine-mediated effects in order to reduce or prevent risks to humans and wildlife from exposure to endocrine disrupting chemicals.

- X EPA and OPPTS use ORD's methods, models and data as the scientific foundation for: prioritization of testing requirements and enhanced interpretation of exposure, hazard identification and dose-response information; probabilistic risk assessments to protect natural populations of birds, fish and other wildlife; preventing or reducing risks of human environments within communities, homes, workplaces; and evaluating novel or newly discovered potential hazards.
- X State, regional, and national decision makers and decision makers in EPA regional and program offices will use scientific information, models and decision tools from EPA's research and assessment program to assess place-based impacts of global change; to evaluate and implement adaptation policies that protect air quality from the impacts of global change; and to protect the human health, aquatic ecosystems, water quality, and economy of the United States by adapting to global change.
- X States and tribes use a common monitoring design and appropriate indicators, developed by ORD, to determine the status and trends of ecological resources and the effectiveness of national programs and policies; to determine the cause of ecological degradation in order to achieve outcomes associated with protection and restoration of their valued ecological resources; to forecast the ecological impacts of proposed environmental actions in order to achieve outcomes associated with protection and restoration of their valued ecological resources; and apply improved tools and methods, developed by ORD, to protect and restore ecological condition and services in order to achieve outcomes associated with their valued ecological resources.
- X Risk assessors and regulators will use improved methods and tools to better understand and describe the linkages of the source to outcome paradigm; use advanced hazard characterization tools to prioritize and screen chemicals for toxicological evaluation, and use new and improved methods and models based on the latest science for enhanced dose-response assessment and quantitative risk assessment.