Initiatives for Environmental Protection

Environmental conservation often requires innovative ideas. These concepts help lessen the burden on natural resources while creating opportunities for sustainable economic development.

EPA authorities have successfully managed gross pollution problems using command and control media-specific, risk-based approaches. For example, river water quality has improved, and exposure to many air pollutants has decreased nationwide (U.S. EPA 2012).

However, these solutions are ill-suited for today's wicked environmental challenges.

1. Clean Air Act

The Clean Air Act (CAA) gives the Environmental Protection Agency (EPA) the authority and responsibility to regulate and reduce air pollutants. It requires the EPA to set national ambient air quality standards for criteria pollutants such as carbon monoxide, lead, ground-level ozone, nitrogen oxides, particulate matter, and sulfur dioxide.

It also requires EPA to review these standards periodically and to update them as scientific knowledge and technologies advance. For primary sources, it also requires the EPA to set technology-based emissions standards called maximum achievable control technologies (MACT) that need the most significant possible reduction in pollution from a source category.

Throughout the United States, the Act has significantly reduced harmful chemicals in the air that can harm human health. Reducing these pollutants has decreased respiratory diseases such as asthma, bronchitis, and chronic obstructive pulmonary disease (COPD). It has also prevented the loss of 17 million workdays due to breathing-related illnesses. It has kept children healthier and helped to keep them in school, which has boosted worker productivity. It has also helped to slow the warming of our planet by reducing CO2 and other greenhouse gas emissions from fossil fuels. Its benefits have been estimated to exceed costs by more than 30 to 1. However, the Act is currently under attack by those seeking to weaken EPA's authority and by fossil fuel companies.

2. Clean Water Act

After a series of fires in Ohio's polluted Cuyahoga River, public outrage drove Congress to update the federal Water Pollution Control Act in 1972 and create the Clean Water Act. The law helped reduce industrial pollution and established a permit system to regulate pollutants discharged into rivers, lakes, and streams. It also maintained existing requirements to set water-quality standards for all contaminants in surface waters. It made it unlawful for any person to discharge any pollutant from a point source into navigable waters unless a National Pollutant Discharge Elimination System (NPDES) permit was obtained under its provisions.

The law also funded the construction of sewage treatment plants under its

construction grants program. It recognized the need for planning to address critical problems posed by nonpoint-source pollution, which occurs when pollutants are spread by wind and runoff from fields, roads, and cities. The law has been amended several times over the years.

One of the most important developments was a 2015 Supreme Court decision that expanded the reach of the CWA to cover smaller streams, wetlands, and headwaters -- meaning that even if a lake or river doesn't have a direct connection to a more extensive body of water, it could be protected under the CWA, Perch-Ahern said. However, the current administration has challenged the Supreme Court's ruling and is trying to rescind the EPA's 2015 regulations.

3. Endangered Species Act

The Endangered Species Act (ESA) helps species recover from habitat loss and climate change threats. It has saved iconic birds, mammals, and plants like bald eagles, black-footed ferrets, California condors, and gray whales from extinction. The law requires federal agencies to develop and carry out plans to save endangered or threatened animals, fish, plants, and their habitats. It also makes harming, killing, or capturing listed species illegal. People who break the law face fines and prison time. It also allows citizens to sue the government.

The U.S. Fish and Wildlife Service (FWS) and National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service are responsible for implementing the ESA, including identifying species for listing. Generally, a species is considered for listing if it's in danger of becoming extinct or if its existence is substantially threatened by factors such as overutilization, competition, predation, natural disasters, disease, or habitat degradation.

Critics of the law argue that listing a species takes far too long, and the current system doesn't allow for enough transparency or public input. They say the law has been used as a political tool to bolster animal rights, environmentalists, and anti-hunting groups, while landowners and businesses feel it stifles economic growth.

4. Marine Protection Act

The Marine Protection Act, also known as the MMPA, was enacted in 1972 in response to public concern that some marine mammals, like seals and dolphins, were in danger of depletion or extinction. At the time, many seals were hunted for their fur, and thousands of dolphins died annually as incidental catch in tuna nets.

The MMPA prohibited the "harassment" of marine mammals, defined as any attempt to injure or disturb a marine mammal in its natural environment during activities like migration, mating, breeding, feeding, or sheltering. It also established a moratorium on taking any marine mammal and banned the importation of any animal products that were taken during this period.

MMPA established regulations based on an ecosystem-oriented approach to management. The law shifts the burden of proof from managers to individuals who wish to take marine mammals to demonstrate that the action will not adversely impact the marine mammal or its habitat. The MMPA also requires the establishment of a system of optimum sustainable populations.

One thousand nine hundred ninety-four amendments to the MMPA emphasized using

scientific analysis to track the success and failure of the law's implementation. In addition, industrial actions that can unintentionally affect marine mammals, such as ghost fishing (commercial nets kill marine mammals like whales that drift in proximity to the industry's target fish), require permits.

5. Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) is the federal law that sets drinking water standards and oversees states, localities, and water suppliers that implement these standards. Its primary means are health-related and include maximum contaminant levels (MCLs) for a list of inorganic chemicals, radionuclides, and microbiological contaminants. It also requires enforceable monitoring requirements and public reporting of results for these contaminants. The Act applies to community water systems and transient and non-transient non-community water systems that regularly serve at least 25 people.

The Act has strict cost-benefit requirements, including detailed risk assessments and the best available peer-reviewed science. It also includes action levels for lead and strong controls on microbial contamination, disinfection byproducts, and other contaminants that can pose risks to human health or affect drinking water quality. It also encourages attaining secondary standards that address appearance and odor issues.

Since the 1996 Amendments to SDWA, the EPA has not set a new unregulated contaminant standard using the new authority in the Act. This is due to the enormous hurdles that the industry can raise in challenging a proposed EPA rule. These include the requirement to create a Contaminant Candidate List (CCL) every five years that will identify chemicals that EPA might regulate in drinking water and the potential for the industry-friendly Office of Management and Budget to kill a new rule before it even sees the light of day.

6. Toxic Substances Control Act

Thousands of chemicals enter the marketplace yearly with unknown toxic or dangerous properties. The Toxic Substances Control Act of 1976 (TSCA) mandates that all new chemicals be tested and regulated before commercial production. The Environmental Protection Agency controls TSCA, although most states have chemical laws and policies, such as California's famous Proposition 65.

The TSCA amendments 2016 gave the EPA new requirements and authorities to control unsafe chemicals. However, EPA's methods for evaluating the evidence to inform policy decisions have not kept up with scientific advances on how chemicals affect people's health and well-being. For example, EPA does not incorporate the concept of cumulative exposure in its risk assessment for many chemicals, even though research shows that many toxic effects occur from background and repeated exposures to multiple pollutants and factors such as preexisting disease, intrinsic factors like genetics, and susceptible life stages like pregnancy or childhood.

EPA's TSCA authority covers the manufacture, processing, distribution in commerce, and disposal of chemical substances and mixtures. Six specific chemical substances receive special attention under TSCA: polychlorinated biphenyls (PCBs), asbestos, chlorofluorocarbons, radon, lead, and mercury. EPA can take action against chemicals that present an unreasonable threat to public health or the environment by

developing and implementing a rule.

7. National Environmental Policy Act

In the late 1960s, it had become clear that America's progress over the previous century had come at a price for the natural environment. Environmental degradation caused by unsustainable agriculture, deforestation, and burning fossil fuels resulted in toxic air, plastic pollution, destruction of natural habitats, mass extinction of wildlife, and global climate disruption.

In response, Congress and President Nixon enacted the National Environmental Policy Act (NEPA) to promote efforts that prevent or eliminate damage to the natural environment. NEPA established a comprehensive process that Federal agencies must follow and created the Council on Environmental Quality (CEQ) in the President's Executive Office to enforce its provisions.

NEPA requires agencies to consider the environmental impact of proposed significant Federal actions that significantly affect the quality of human life. This includes building airports, roads and highways, military complexes, parks and lands, transmission lines and broadband deployment, and traditional and renewable energy projects.

NEPA's requirement to assess environmental impacts early and throughout a project is critical to environmental protection. It allows stakeholders to participate in decisions that affect them and enables better project design, construction, and management that will reduce harm while contributing to ecological, social, and economic well-being.

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