Our Global Commons For Sale?
The global commons has traditionally been defined as "those parts of the planet that fall outside national jurisdictions." Identified as such are the oceans, the atmosphere, outer space, and Antarctica. These areas are owned by no single nation and have been viewed as "the common heritage of humankind." That is, they are available for use by anyone as long as that use does not adversely affect the potential use by others. But no one has the responsibility or authority to police the actions of others. Thus, global commons face the management problems that commons face at all levels, from local to national to regional: Because they belong to no single nation, they run the risk of not being protected by any nation. The risk of ruining the commons runs high if no one is concerned about the long-term sustainability of the commons.

Over the years the definition of what qualifies as part of the global commons
has been expanded. Resources considered to be of interest or value to the welfare of the community of nations have been included among the traditional set of global commons. This would include, for example, the tropical rain forests. In addition, the traditional global commons have also been modified. For example, the oceans as a global commons in its strict sense does not include the waters that extend 200 miles from the shores of coastal countries. Under the Law of the Sea Treaty, these regions have become exclusive economic zones (EEZs) of the various individual coastal states. The global commons of the oceans now is restricted to those regions that fall outside those EEZs, the high seas. The same applies to the atmosphere. Although we speak of the atmosphere as a global commons, a country in theory can claim the airspace above it. In practice, however, airspace can be nationalized only to the height a particular country is capable of defending.

It is important, therefore, to keep in mind that the notion of global commons is a dynamic one, subject to change. As increasing numbers of people become aware of how interdependent countries have become through trade and aid, and of how ecosystems and other natural processes do not respect international borders, an increasing number of "things" will become labeled as global commons. Human activities previously labeled as national will become globalized. For example, an energy policy of the former Soviet Union was considered a domestic matter. Yet, the Chernobyl accident has globalized the issue of the type of nuclear facilities that countries might be discouraged or encouraged to construct in the future.

Thus, some commons can be viewed as truly global, while others can be seen as a regional or local commons in which there is worldwide interest. The former group includes the global atmosphere, global climate, stratospheric ozone, ocean-level rise, and the high seas. The latter group (in my view) would include Antarctica, the ozone hole, national parks, meadows, rivers, bodies of water such as lakes and seas, transboundary watersheds and air sheds, coastal zones, tropical rain forests, underground aquifers, and so forth.

The 'Other' Global Commons

Tropical rain forests. As the notion of global commons evolved, other commons were identified. One of the most visible has been tropical rain forests. On the face of it, a country that has such forests is politically unencumbered from cutting them down to meet whatever development objective it deems necessary. However, although tropical rain forests are located in equatorial regions, many countries and organizations in temperate regions are concerned about the fate of these forests, for a variety of reasons.

First, standing rain forests play a key role in global warming, in the sense that they sequester carbon for long periods. When cut down and burned or left to decay, the forests not only no longer pull carbon dioxide from the air but, on burning, emit it into the atmosphere. Several experts suggest that tropical deforestation contributes perhaps 20 percent to global warming.

Second, the chopping down of the rain forests has had an adverse impact on biodiversity. Third, many scientists believe that a wealth of the yet-to-be-identified biological species in the tropical rain
forest may have value for the production of pharmaceuticals.

**Time as a global commons.** In the late 1980s former Norwegian Prime Minister Gro Brundtland led the World Commission on Environment and Development (WCED) to produce a report on the requirements for “our common future.” The basis for the common future was the call for sustainable development, the use of resources in such a way as to guarantee their availability for future generations. So, to the list of commons defined in geographical terms, the WCED added a commons that was defined in functional terms—the future. The same could be said for the past—to what extent is world heritage and history a common property resource?

In November 1972 the United Nations recognized the need to protect the world’s heritage and developed the World Heritage Convention (WHC). The convention is designed to set up a mechanism to protect cultural and natural sites throughout the world that are considered important to humanity and, therefore, require protection by the world community.

Today there are 469 officially designated world heritage sites (326 cultural ones, 97 natural, and 17 a mix of the two). The WHC notes that “the heritage is our legacy from the past, what we live with today, and what we must pass on to future generations.” One could argue that these sites are a form of common property resource.

Summarizing the emerging view of what constitutes a commons, an Aspen Institute report of its 1990 conference on “The Global Commons” noted that we cannot look at space, air, oceans and an icy continent as separate commons areas... They are part of that larger commons, and you cannot deal with that commons except by dealing with the human activity which impinges upon them, and which takes place largely not within the commons, but in national sovereign states.

Clearly, the notion of a global commons captures an essential truth about the obligatory interdependence of all people and nations dwelling on the earth. As such, it is compelling and draws us naturally toward broadening the meaning to include such areas as time and cultural heritage. In that broadening, however, there may well be a loss of clarity as to the fundamental issues embodied by the notion.

**Air and Water**

In trying to understand the fundamental issues, therefore, it has seemed
useful to focus on the simple, original shared global resources: air and water. Circulating freely around the planet independent of national sovereignty, air and water themselves form a global commons.

Here, The World & I invites its readers to take an in-depth, multifaceted look at these precious and autonomous fluids, and at the important issues in which they play a central role.

Within the global commons—based on air and water as universal sinks for wastes and simultaneously as common resources—crises such as pollution, depletition of fisheries, and climate change have arisen. “The Global Challenge,” also by Glantz, presents an overview of the main crises in the global commons.

H. Sterling Burnett of the National Center for Policy Analysis in Dallas, in “The Developed versus the Developing,” examines the issues that arise as different governments try to cooperate in solving conflicts over the international commons despite differences in their environmental priorities and ability to deal with environmental problems.

In “Boundaries of Interest,” Stanley Trachtenberg of Wesleyan University in Connecticut suggests that international commerce and a sense of territoriality attached to the environment itself may prove to be essential to protecting the global environment.

“Keys to Global Climate,” by Neville Nicholls of the Bureau of Meteorology Research Centre in Melbourne, Australia, provides a clear introduction to climate-determining interactions of air and water, and to the climate changes that may be caused by human actions.

Looking at the world outside ourselves, we have thus examined rather thoroughly air and water as common resources. But lest our examination be incomplete we also look at their deeper impacts.

In “Reading the Sea and Sky,” Linda Bradley Salamon of George Washington University invites us to share in the commons of human emotion, as the agony and triumph of life are played out against the backdrop of sea and sky in literature ranging from Melville’s Moby-Dick to Saint-Exupéry’s rhapsodies on flight.

The issues of the global commons are urgent and difficult matters requiring much greater study, education, dialogue, and cooperation than has been achieved heretofore. With this Special Section, The World & I makes its contribution to the process.

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The Global Challenge

MICHAEL H. GLANTZ

Circulating freely around the planet, the atmosphere and oceans are shared resources whose resiliency is being tested by ever-growing human demands.

The atmosphere and the oceans are fluids that encircle the globe. Their movements can be described in physical and mathematical terms, or even by some popular adages: “what goes up, must come down” and “what goes around, comes around.”

The atmosphere and oceans are two of Earth’s truly global commons. In cycles that vary from days to centuries to millions of years, air and water circulate interactively around the globe irrespective of national boundaries and territorial claims.

With regard to the first adage, pollutants emitted into the atmosphere must come down somewhere on Earth’s surface—unless, like the chlorofluorocarbons (CFCs), they can escape into the stratosphere until they are broken down by the Sun’s rays. Depending on the form of the pollutant (gaseous or particulate), its size, or the height at which it has been ejected into the atmosphere, it can stay airborne for short or long periods. So, pollutants expelled into the air in one country and on one continent may make their way to other countries and continents. The same can be said of the various pollutants that are cast into the ocean. “What goes around, comes around” clearly applies to the global commons.

As human demands on the atmosphere and oceans escalate, the pressures on the commons are clearly increasing. Defining the boundaries between acceptable human impacts and crisis impacts is a demanding and rather subjective task.

The Atmosphere

The atmosphere is owned by no nation, but in a sense it belongs to all nations. Several types of human activity interact with geophysical processes to affect the atmosphere in ways that engender crisis situations. The most obvious example of local effects is urban air pollution resulting from automobile emissions, home heating and cooling, and industrial processes. The Denver “brown
cloud" is a case in point, as is the extreme pollution in Mexico City. Such pollution can occur within one political jurisdiction or across state, provincial, or international borders. Air pollution is one of those problems to which almost everyone in the urban area contributes.

Acid rain is an example of pollution of a regional atmospheric commons. Industrial processes release pollutants, which can then interact with the atmosphere and be washed out by rainfall. Acid rain has caused the health of forest ecosystems to deteriorate in such locations as the northeastern part of North America, central Europe, and Scandinavia. The trajectories of airborne industrial pollutants moving from highly industrialized areas across these regions have been studied. The data tend to support the contention that while acid rain is a regional commons problem, it is also a problem of global interest.

A nation can put any chemical effluents it deems necessary for its well-being into its own airspace. But then the atmosphere's fluid motion can move those effluents across international borders. The purpose of the tall smokestack, for example, was to put effluents higher into the air, so they would be carried away and dispersed farther from their source. The tall stacks, in essence, turned local air pollution problems into regional ones. In many instances, they converted national pollution into an international problem.

The air we share: Flying into Mexico City during daylight hours is like descending into an opaque soup, which is actually a mix of gases from vehicles, furnaces, and power plants.
Climate as a Global Commons

There is a difference between the atmosphere as a commons and the climate as a commons. Various societies have emitted a wide range of chemicals into the atmosphere, with little understanding of their potential effects on climate. For example, are industrial processes that produce large amounts of carbon dioxide (which contributes to atmospheric warming) or sulfur dioxide (which contributes to atmospheric cooling and acid rain) altering global climate? There seems to be a growing consensus among scientists that these alterations manifest themselves as regional changes in the frequencies, intensities, and even the locations of extreme events such as droughts and floods.

Not all pollutants emitted to the air have an impact on the global climate system. But scientists have long known that some gases can affect global climate patterns by interacting with sunlight or the heat radiated from Earth's surface. Emission of such gases, especially CO₂, can result from human activities such as the burning of fossil fuels, tropical deforestation, and food production processes. The amount of CO₂ in the atmosphere has increased considerably since the mid-1700s and is likely to double the preindustrial level by the year 2050. Carbon dioxide is a highly effective greenhouse gas. Other greenhouse gases emitted to the atmosphere as a result of human activities include CFCs (used as refrigerants, foam-blowing agents, and cleansers for electronic components), nitrous oxide (used in fertilizers), and methane (emitted during rice production). Of these trace gases, the CFCs are produced by industrial processes alone; the others are produced by both industrial and natural processes.

The increase in greenhouse gases during the past two centuries has resulted primarily from industrial processes in which fossil fuels are burned. Thus, a large proportion of the greenhouse gases produced by human activity has resulted from economic development in the industrialized countries (a fact that developing countries are not reluctant to mention when discussing the global warming issue).

National leaders around the globe are concerned about the issue of climate change. Mandatory international limits on the emissions of greenhouse gases could substantially affect their own energy policies. Today, there are scientific and diplomatic efforts to better understand and deal with the prospects of global atmospheric warming and its possible

Bound Together by Air and Water

- “What goes up must come down” describes the fate of most pollutants ejected into the atmosphere. Taller smokestacks were used to assure that the pollutants did not come down “in my backyard.”
- Fish stocks that naturally straddle the boundary between a country’s protected zone and the open seas are a global resource requiring international protection measures.
- Sea level in all parts of the world would quickly rise some 8 meters (26 feet) if the vast West Antarctic ice sheet broke away and slid into the sea.
- Scientific controversy still surrounds the notion that human activities can produce enough greenhouse gases to warm the global atmosphere.
impacts on society. Many countries have, for a variety of motives, agreed that there are reasons to limit greenhouse gas emissions worldwide. National representatives of the Conference of Parties meet each year to address this concern. In the meantime, few countries, if any, want to forgo economic development to avoid a global environmental problem that is still surrounded by scientific uncertainty.

The Oceans

The oceans represent another truly global commons. Most governments have accepted this as fact by supporting the Law of the Sea Treaty, which notes that the seas, which cover almost 70 percent of Earth's surface, are "the common heritage of mankind." In the early 1940s, Athelstan Spilhaus made a projection map that clearly shows that the world's oceans are really subcomponents of one global ocean.

There are at least three commons-related issues concerning the oceans: pollution, fisheries, and sea level. Problems and possible crises have been identified in each area.

The oceans are the ultimate sink for pollutants. Whether they come from the land or the atmosphere, they are likely to end up in the oceans. But no one really owns the oceans, and coastal countries supervise only bits and pieces of the planet's coastal waters. This becomes a truly global commons problem, as currents carry pollutants from the waters of one country into the waters of others. While there are many rules and regulations governing pollution of the oceans, enforcement is quite difficult. Outside a country's
200-mile exclusive economic zone are the high seas, which are under the jurisdiction of no single country.

In many parts of the world, fisheries represent a common property resource. The oceans provide many countries with protein for domestic food consumption or export. Obtaining the same amount of protein from the land would require that an enormous additional amount of the land’s surface be put into agricultural production. Whether under the jurisdiction of one country, several countries, or no country at all, fish populations have often been exploited with incomplete understanding of the causes of variability in their numbers. As a result, most fish stocks that have been commercially sought after have collapsed under the combined pressures of natural variability in the physical environment, population dynamics, and fish catches. This is clearly a serious problem; many perceive it to be a crisis.

For example, an area in the Bering Sea known as the “Donut Hole” had, until recently, also been suffering from overexploitation of pollack stocks. In the midst of the Bering Sea, outside the coastal zones and jurisdictions of the United States and Russia, there is an open-access area that is subject to laws related to the high seas, a truly global commons. Fishermen from Japan and other countries were overexploiting the pollack in this area. But these stocks were part of the same population that also lived in the protected coastal waters of the United States and Russia. In other words, the pollack population was a straddling stock—it straddled the border between the controlled coastal waters and the high seas.

To protect pollack throughout the sea by limiting its exploitation, the two coastal states took responsibility for protecting the commons (namely, the Donut Hole) without having to nationalize it. They did so by threatening to close the Bering Sea to “outsiders,” if the outsiders were unable to control their own exploitation of the commonly shared pollack stock. There are several other examples of the overexploitation of straddling stocks, such as the recent collapse of the cod fish-
In many parts of the world, fisheries represent a common property resource.
	ery along the Georges Bank in the North Atlantic.

Another commons-related issue is the sea level rise that could result from global warming of the atmosphere. Whereas global warming, if it were to occur, could change rainfall and temperature patterns in yet-unknown ways both locally and regionally, sea level rise will occur everywhere, endangering low-lying coastal areas worldwide. Compounding the problem is the fact that the sea is also an attractor of human populations. For example, about 60 percent of the U.S. population lives within a hundred miles of the coast.

This would truly be a global commons problem because all coastal areas and adjoining estuaries would suffer from the consequences of global warming. Concern about sea level rise is highest among the world’s small island states, many of which (e.g., the Maldives) are at risk of becoming submerged even with a modest increase in sea level. In sum, there are no winners among coastal states if sea level rises.

Antarctica always appears on the list of global commons. Although it is outside the jurisdiction of any country, some people have questioned its clas-

4 Our one-ocean world: The oceans are but one body of water, as highlighted by the World Ocean Map developed more than 50 years ago by oceanographer Athelstan Spilhaus.
Overexploited fish stocks:
Unregulated exploitation by fishermen has brought many fisheries to the brink of collapse.

Changes are mostly incremental: low-grade, slow-onset, long-term, but gradually accumulating. They can be referred to as "creeping environmental problems." Daily changes in the environment are not noticed, and today's environment is not much different from yesterday's; nor will it differ very much from tomorrow's. In 5 or 10 years, however, those incremental changes can mount into a major environmental crisis [see "Creeping Environmental Problems," THE WORLD & I, June 1994, p. 218].

Just about every environmental change featuring human involvement is of the creeping kind. Examples include air pollution, acid rain, global warming, ozone depletion, tropical deforestation, water pollution, and nuclear waste accumulation. For many such changes, the threshold of irreversible damage is difficult to identify until it has been crossed. It seems that we can recognize the threshold only by the consequences that become manifest after we have crossed it. With regard to increasing amounts of atmospheric carbon dioxide, what is the critical threshold beyond which major changes in the global climate system might be expected? Although scientists regularly refer to a doubling of CO2 from preindustrial levels, the truth of the matter is that a doubling really has little scientific significance except that it has been selected as some sort of marker or milestone.

Policymakers in industrialized and developing countries alike lack a good process for dealing with creeping environmental changes. As a result, they often
delay action on such changes in favor of dealing with issues that seem more pressing. Creeping environmental problems tend to be put on the back burner; that is, they are ignored until they have emerged as full-blown crises. The ways that individuals and societies deal with slow-onset, incremental adverse changes in the environment are at the root of coping effectively with deterioration and destruction of local to global commons.

Societal concerns about human impacts on commonly owned or commonly exploited resources have been recorded for at least 2,500 years. Aristotle, for example, observed “that which is common to the greatest number has the least care bestowed upon it.” How to manage a common property resource, whether it is a piece of land, a fish population, a body of water, the atmosphere, or outer space, will likely confound decisionmakers well into the future.

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