David J. Hayes explains why the time is ripe for the United States to become a global leader in striking a balance between economic development and conservation in the resource-rich and rapidly changing Arctic.
he federal, state, and tribal institutions responsible for managing change in the Alaskan Arctic are searching to find the right balance between promoting new economic opportunities and honoring Alaska’s deeply rooted conservation- and subsistence-based culture and values.

With sea ice melting at remarkable rates, lanes are opening up in the Arctic, inviting enterprising shippers to ply the no longer mythical Northwest Passage through Canada and Alaska or the Northern Route through the Russian Arctic. Business interests also are looking to get on the bandwagon as they seek to develop the Arctic’s prodigious oil and gas riches—as well as new mining and fishing opportunities. Major cruise lines and ecotourists are not far behind.

The same profound climactic changes that are opening up the Arctic to business interests are impacting the centuries-old balance between the Arctic’s Inupiat and Athabascan natives and the wildlife that they traditionally have relied on for food. Polar bears, walruses, and other species that depend on fast-disappearing sea ice are becoming more scarce, migration patterns for whales and caribou are changing, and long winters are yielding to fire-prone summers. Meanwhile, many small Alaska Native coastal villages that were long protected from erosion by sea ice are now losing ground—literally—with some villages like Kivalina and Shismaref facing an urgent need to relocate.

On the international stage, the eight Arctic nations that form the Arctic Council (the forum that brings together the nations that have lands in the Arctic region) are struggling to adapt to the new rush to the Arctic. The United States took over as chair of the Arctic Council in April for two years, and it has an opportunity to set the tone for how to manage these rapid and sometimes-conflicting developments in both Alaska and the international Arctic. Its success may hinge on whether it can bring its own house to order. Its best chance may be by adopting a science-based integrated Arctic management approach that coordinates the decisionmaking processes of the many federal and state government agencies involved in the Arctic, reaches out to all stakeholders, and pulls together the science relevant to planning and decisionmaking in the Arctic.

**Economic Trends in the Arctic**

Over the past 40 years, economic development in the Alaskan Arctic has revolved around oil. The discovery of world-class oil fields on state lands in the Prudhoe Bay region triggered construction of the Trans-Alaska Pipeline System (TAPS) in the 1970s and the subsequent and ongoing delivery of a major proportion of US oil production. Throughput in the TAPS pipeline has been on the decline since 1988 as North Slope fields have aged, leading to strong US interest in expanding drilling there and in offshore waters—and in building a natural gas pipeline that would bring the region’s huge and currently shut-in natural gas supplies to both Alaskan and foreign markets.

Other Arctic nations also have been eager to develop oil and gas supplies in the region, with Norway and Russia leading the way. There are major questions about the safety of these exploratory activities, particularly those that are being conducted in ice-impacted waters, where an oil spill could have catastrophic consequences.

The opening of sea lanes brings the possibility of new mining activities in the Arctic. Alaska’s Red Dog mine is one of the world’s largest zinc mines, despite the absence of a deep-water port or other support facilities in the region. Many international mining companies have their eyes on potential...
mineral development in Greenland, Russia, and Canada, among other Arctic nations.

At the same time, marine shipping activity is ramping up throughout the Arctic, coincident with the retreat of summer ice. Trips through the Bering Strait have doubled in the last 5 years, with more than 400 annual transits now the norm. But with no deep-water ports in the Alaskan or Canadian Arctic and virtually no near-shore capability to address a marine shipping accident, the US Coast Guard—which itself has no permanent station within 1,000 miles of the Arctic—is concerned that the Arctic nations are unprepared to handle the exploding maritime activity.

Arctic Communities Facing New Challenges

Climate change is the big story in the Arctic, which is among the fastest-warming regions on Earth. The mean annual temperature on Alaska’s North Slope increased by nearly 5 degrees over the past 60 years, with much of that rise occurring recently. Over the next 30 years, the US Arctic’s average annual air temperature is predicted to increase by an additional 4 degrees. The result, as discussed in a March 2013 report to the president, may be “a nearly ice-free Arctic Ocean before mid-century, and possibly before 2030.”

The loss of sea ice and warming oceans threaten the continuing viability of sea ice–dependent species and also potentially impact phytoplankton production—a building block of Arctic food chains.

Just as the climate is changing Arctic seascapes and landscapes, it also is impacting traditional ways of life for Alaska Natives. Of special concern are the as-yet unknowable impacts that climate change will have on food security. Many Alaska Natives rely on the abundance and availability of local wildlife for subsistence.

It is too early to know where and how climate change will disrupt subsistence hunting opportunities, but some early indications are disturbing. For example, bowhead whales, a traditional source of food for several Arctic villages, appear to be adopting migratory paths that swing them farther offshore, increasing the danger of whale hunts.

Development pressures also pose a threat to subsistence practices. The Gwich’in people, who have occupied the town of Arctic Village and its surrounding lands for thousands of years, have long objected to oil development on the coastal plain of the Arctic National Wildlife Refuge because it is the central calving area for the Porcupine caribou herd, one of their primary food sources. Many Alaska Natives have objected to proposals to build additional roads into potential mining areas for fear that they will disrupt wildlife patterns. As these examples illustrate, there often is close alignment among the many Arctic residents who rely on nature to provide their food security and the incomparable conservation values that the Arctic’s wild, largely intact natural ecosystems provide to the world.

Other communities and Native corporations in the Alaskan Arctic have been reaping economic benefits from oil development in the Prudhoe Bay region, prompting some Native voices and other residents to advocate for more oil and gas development in the region. Financial ties and dependencies are increasing. As a recent example, Shell Oil Company has entered into an arrangement that will enable certain Native corporations to participate financially in the offshore exploration activities it is conducting in the Chukchi Sea.

There is also hope that the development of new renewable energy infrastructure can play a big role for many of these communities, particularly for seaside towns that
have strong wind resources. Most remote communities in the Arctic rely entirely on diesel-fired generators for their energy. The fuel is dirty and expensive—costing $10 or more per gallon. The US Department of the Interior and the National Renewable Energy Laboratory have been teaming up with the Alaska Energy Authority and several nongovernmental organizations and companies to develop standardized, modular small-scale renewable energy system specifications that will bring down procurement and maintenance costs for new deployments. Known as the Remote Communities Renewable Energy Partnership, the effort holds the promise of bringing affordable renewable energy to off-the-grid villages in Alaska.

Moving toward an Integrated Arctic Management Approach
While there have been some bright spots, governmental institutions have had difficulty in responding in a thoughtful, coordinated manner to the heightened interest that many parties from all sides of the spectrum have in the rapidly changing Arctic. Within the federal government, 20 agencies play roles in the Arctic. Multiple state agencies also have jurisdictional interests, as do dozens of local, tribal, and native corporation entities. Project proposals are subject to a round robin of governmental reviews by agencies that typically focus on their narrow jurisdictional perspectives, frustrating project proponents and those concerned about how projects fit into the larger picture.

This conundrum came to a head in 2011 when Shell Oil Company complained that multiple federal agencies were not coordinating their reviews of its proposed offshore oil exploration activities. The president responded by setting up the Interagency Working Group on Coordination of Domestic Energy Development and Permitting in Alaska.

In its report to the president, the group pointed out the limitations of project-by-
project reviews in the Arctic and recommended adoption of a science-based, integrated Arctic management approach to decisionmaking. This would allow a broader view of how key decisions are made in the Arctic by soliciting input from residents, governmental officials, and other interested parties. And it would pull together relevant science so that good decisions can be made against a backdrop of a broader understanding of the area’s needs and sensitivities.

The White House adopted this approach in its May 2013 national strategy document for the Arctic. The national strategy explained:

*Natural resource management will be based on a comprehensive understanding of environmental and cultural sensitivities in the region, and address expectations for future infrastructure needs and other development-related trends. This endeavor can promote unity of effort and provide the basis for sensible infrastructure and other resource management decisions in the Arctic. We will emphasize science-informed decisionmaking and integration of economic, environmental, and cultural values. We will also advance coordination among federal departments and agencies and collaboration with partners engaged in Arctic stewardship activities.*

To date, the goals outlined in the national strategy have yet to be realized. The White House released an “implementation” document in January 2014 that described the work that many federal agencies have under way in the Arctic but did not attempt to prioritize or integrate related activities across agencies. This was followed earlier this year by the president’s issuance of an executive order that set up the Arctic Executive Steering Committee, consisting of 23 senior White House and department and agency officials, chaired by the president’s science advisor.
These are well-intentioned efforts, but they fall short of the type of steps needed to make integrated Arctic management a reality. Integrated Arctic management will not be successful as an abstract, science-focused exercise that various federal agencies working in the Arctic pursue via the sharing of information and some cursory coordination of agency activities. Instead, it requires an overarching understanding and evaluation of the major decisions that are being faced in the Arctic. These include development-related decisions, such as whether and where deepwater port(s), oil and gas, mining, or tourism-related infrastructure should be sited in the Alaskan Arctic. They also include conservation-related decisions, such as how to best maintain the Arctic’s high-functioning terrestrial and ocean-based natural systems that serve subsistence and conservation values.

Thus, the first question is, what are the major decisions that should or will be made over the medium to long term in the Alaskan Arctic, based on the hopes and aspirations of key stakeholders, particularly the region’s residents? And for each of those likely or potential decisions, what is the relevant economic analysis and scientific information (including traditional knowledge) that is needed to make a sound decision? Is that information being developed within an appropriate time frame?

For decisions involving the siting of new infrastructure or other potential development activities, information is also needed regarding where such infrastructure and related activities would be best situated, given environmental sensitivities, economic realities, and the interests of key parties.

This type of truly integrated Arctic management decisionmaking presents a major governance challenge for the United States. At the federal level, many agencies have slices of relevant authority and expertise. It is unclear who would make high-level decisions for the Arctic and how they would marshal relevant economic and scientific information. The challenge is compounded by the imperative to fully include state, local, and tribal governments in the decisionmaking process—and by the enormous financial resources required to build new icebreakers, ports, and other infrastructure that a melting Arctic surely will need.

Perhaps the newly created Arctic Executive Steering Committee will step up and take on this role. The timing is right. Initial indications are that the United States is on the right path in terms of the focal areas for its chairmanship of the Arctic Council: the impacts of climate change in the Arctic, stewardship of the Arctic Ocean, and improvement of the economic and living conditions for Arctic residents.

What remains unclear is whether the US government will be successful in getting its own Arctic house in order and become a model for how development and conservation decisions should be made in the fragile, wild, and rapidly changing Arctic.

FURTHER READING
World Economic Forum Global Agenda Council on the Arctic. 2014. Demystifying the Arctic.