Michael Penn for the
New York Times

This morning's New York Times has this story by Cornelia Dean describing the changes global warming is bringing to Juneau, Alaska. While sea level is rising relative to coast lines in many parts of the world as ocean waters warm and expand, the opposite is happening in and around Juneau. As the region's glaciers recede, the land is rebounding from removal of that weight far faster than sea levels are rising. The land has risen about 10 feet relative to sea level over the past 200 years, and an additional three-foot rise is expected this century.

No doubt the global warming deniers will seize on this story as evidence that sea level rise is a fiction or exaggeration. That's completely the wrong reaction. It is well established that globally seas are rising, although there is still considerable uncertainty about how fast and how far sea level rise will go.

Two important lessons should be drawn from this story. The first is that sea level rise, like many of the effects of climate change, is relatively easy to predict at a global level, but much more complex locally. How rising seas will affect different areas depends not only on the temperature and amount of water in the oceans, but also on the landforms and their reaction to other changes, like the melting of glaciers. That means that adaptation is in some ways a more complicated task than limiting greenhouse gas emissions. Adaptation is necessarily a context-specific task, and understanding what needs to be done requires local study and planning. Perhaps the most important adaptation steps the federal government could take would be to mandate (or at least encourage) and provide funds for those efforts at a state and local level.

The second, which apparently escapes those who argue that the US should not limit its emissions because it will not suffer significant harm from global warming, is that rapid change in environmental conditions can be highly problematic even if it seems to go in a desirable direction. From the Times story:

> As the sea level falls relative to the land, water tables fall, too, and streams and wetlands dry out. Land is emerging from the water to replace the lost wetlands, shifting property boundaries and causing people to argue about who owns the acreage and how it should be used. And

> meltwater carries the sediment scoured long ago by the glaciers to the coast, where it clouds the water and silts up once-navigable channels.

Other examples of “good” change causing problems for human communities are not hard to find. In much of Alaska, warmer winter temperatures might sound very attractive to residents. But that warming melts permafrost, disrupting structures built on the assumption that permafrost was indeed permanent. Expansion of commercially-exploited fish to new habitats presents new harvesting opportunities. But when North Atlantic spring-spawning herring populations expanded, conflicts ensued among nations seeking to take advantage of those opportunities. (Berkeley Law and grad student Jennifer Jeffers has written a terrific paper, which recently won Ecology Law Quarterly’s Ellis J. Harmon Prize in Environmental Law and Policy, on the impacts of climate change on arctic fisheries management.)

The point is that people have come to rely, economically, emotionally, and institutionally, on environmental stability. Rapid change undermines our expectations and challenges our ability to respond. Change, especially rapid change, is disruptive and difficult even if the new equilibrium point (if there even is one) seems in the abstract more desirable.