In light of Native American Heritage Day last Friday, we should also be thinking about the future of the tribes in the era of climate change. Tribes face serious challenges from climate change, but also some potential opportunities.

In terms of climate impacts, many tribes are at high risk. Tribes are especially vulnerable to climate change because they were displaced from their original homes onto lands that were often marginal to begin with and are becoming more challenging due to climate impacts. The energy transition offers tribes some important opportunities, but also some special challenges.

According to a 2021 study, tribes were generally moved to lands that are more exposed to heat and have less water than their historical homelands. Given heat increases due to climate change, and the tendency of climate change to make arid lands even drier, the relocations often put the tribes at climate change ground zero. Tribes are also vulnerable in other ways, with higher unemployment, a 25% poverty rate, and life expectancies a shocking nine years less other Americans. Thus, climate change will worsen the already precarious situation of many tribes.

Efforts to adapt to climate change are already on tribal agendas. Up in western Washington State, the Swinomosh have been focused on the issue since 2007. Clams and salmon are important resources for the tribe. They are taking steps to provide cooler spawning areas for salmon. They are also attempting to restore the population of native Olympia oysters. There are now an estimated fifty tribal climate action plans, and organizations such as the Geological Survey are partnering with tribes to understand local climate impacts.

In general, the energy transition should favor tribes. They generally weren't located to areas with oil and gas resources, so they haven't benefited much from the fossil fuel industry. Renewable energy is much more available. The Navajos, the Seminoles., and others are producing solar energy, while windfarms are targeted by the Sioux. Many other projects are listed by DOE's Office of Indian Energy Policy and Programs.

The federal government is supporting tribal efforts. DOE has funded tribal renewable energy projects for nearly thirty years. The Inflation Reduction Act will ramp up these efforts. The IRA provides a total of $720 million for tribes, including $235 million for climate adaptation, and $225 million for home efficiency and electrification. There is also funding for renewable energy, including $75 million for a Tribal Energy Loan Guarantee Program. Tribes are eligible for funding along with

state and city governments under other provisions such as the $2.8 billion in environmental justice block grants.

Tribes are also concerned, however, about ways that they may be stuck with the burdens of the energy transition. One worry is the quest for domestic sources of rare earths used for renewable energy and battery storage. An example is a huge gold mine in Idaho that would also produce antimony but might also threat fish that the Nez Perce rely on. Elsewhere there are disputes over copper mines and lithium extraction. Project proponents say they will have limited environmental footprint and will provide benefits to local communities. But the issue is clearly fraught, and tribes have little historical reason to be trusting. There is reason to hope that the energy transition will be win for Native Americans, but making that happen will take a lot of hard work.