

TAKEING CARE OF EARTH MOTHER

NATURE AND THE ENVIRONMENT

Renewable energy projects are considered particularly appropriate on Indian Lands because they are generally environmentally benign and harmonize well with nature, consistent with Indian culture.

The Karuk philosophy that “technical knowledge in itself is insufficient to interpret the... complexity of natural systems,” is a philosophy that appeals to many tribes. Each seeks to bring their cultural processes into agreement with nature, and several have successfully used technology to create this harmony.

► Indian Pueblo Cultural Center Solar Carport, believed to be the largest PV array on Indian lands in the United States. (Photo courtesy Sandia National Laboratories)



▼ Lac Courte Oreilles Ojibwa Community College uses PV to assist in sampling for air pollutants. (Photos courtesy Lac Courte Oreilles Ojibwa Community College)



“MINING THE SKY”

The All Indian Pueblo Council, a consortium of the 19 pueblos of New Mexico, chose photovoltaics for a solar carport at the Indian Pueblo Cultural Center in Albuquerque, New Mexico. Citing David Melton of Diversified Systems Manufacturing, a Native American-owned and operated PV company, the installation “mines the sky.” The positive environmental impact of the carport is weighty. The installation:

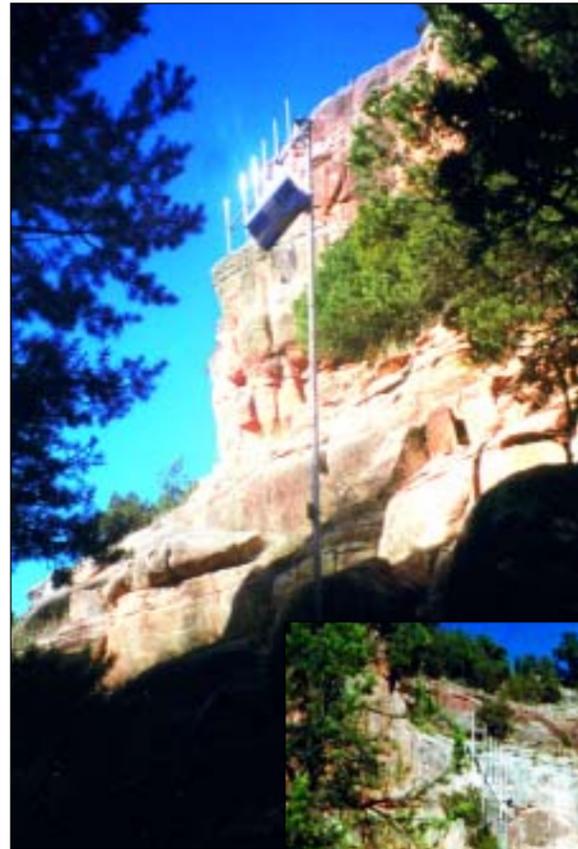
- Avoids mining 43 tons of coal annually
- Saves more than one million gallons of water annually (water that would have been necessary for a coal-fired or nuclear-powered plant)
- Reduces greenhouse gases by avoiding 27.06 tons annually of carbon dioxides, 201.69 pounds of nitrogen oxides, and 347.22 pounds of sulfur dioxides.
- Produces 25 megawatt/hours of clean electricity annually.

◀ A future facility on the campus of the Lac Courte Oreilles Ojibwa Community College, Hayward, Wisconsin, will model integrated renewable energy (including photovoltaics) and solar heating. Other parts of the college’s program will research ways to improve productivity, stability, and sustainability of the global environment. (Photo courtesy Lac Courte Oreilles Ojibwa Community College)

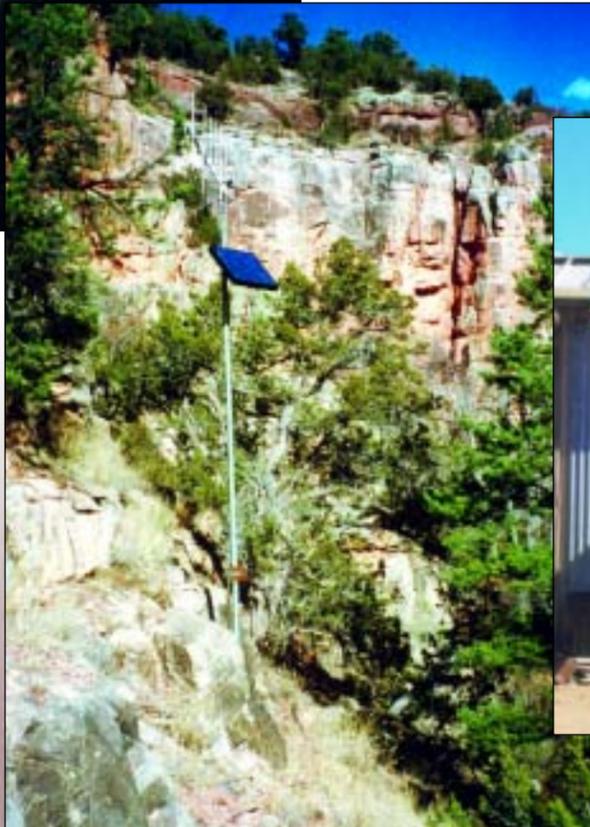


WETLANDS MANAGEMENT

Big Cypress Reservation lies deep in south central Florida, the largest of the five Seminole reservations in the state. Wetlands management and the environmental impacts of runoff associated with development are of paramount interest to the tribe. Using PV, the tribe can collect information about rainfall, water levels, and water samples for parameters such as phosphorous. The tribe also uses the data to monitor natural systems and the environmental impacts of cattle ranching and crop fertilization. *(Photo courtesy Big Cypress Reservation, Linda Billie at the sampling station, G. T. Benock, photographer) ▶*



An example of an ecologically-based paradigm for land management may be found on the expanse of the Zuni Reservation lands in western New Mexico. Numerous photovoltaic arrays dot the countryside at strategic locations to monitor the Zuni River watershed that drains off the Continental Divide. Not only does the project ensure the safety of people downstream, but it also helps prevent soil erosion, damage to precious dams, and assists with water conservation. Data on water conditions is collected around the clock and sent to the tribe's hydro project office. *(Photos courtesy Zuni Conservation Project)*



▲ The Zuni Pueblo, located in western New Mexico, uses solar electricity in numerous ways. They are in the process of using PV to pump water to a pond and create a waterfall for the benefit of more than a dozen injured eagles that can no longer live in the wild. Their eco-viary is a sanctuary for sacred bald eagles and golden eagles from all over the United States. The tribe estimates that installing PV to pump and circulate water will save more than 300 gallons weekly – water resources that would otherwise have been wasted. *(Photo courtesy Sandia National Laboratories)*

▼ Members of the Rosebud Lakota tribe know that solar power can play a role in conservation, in their case by substituting for some of the coal-fired electricity brought to the reservation. Individual tribal members design their own small (under 1000 W) systems, choose their components, build and maintain the systems, and then demonstrate to the remainder of the Rosebud Lakota Community how the system has helped take care of Mother Earth. *(Photo courtesy Center for Permaculture as Native Science)*

