

*“One of the penalties of an ecological education is that one lives alone in a world of wounds. Much of the damage inflicted on land is quite invisible to laymen. An ecologist must either harden his shell and make believe that the consequences of science are none of his business, or he must be the doctor who sees the marks of death in a community that believes itself well and does not want to be told*

## *Keepers of the Pines*

David A. Bainbridge

A large thriving Kumeyaay village was once located in Sorrento canyon. Thatched huts provided comfort in both winter and summer for hundreds of people. The families here managed the land intensively and cared for the many oaks and Torrey Pines. They planted many of them, as well as oaks, palms and mesquite. They used regular controlled burns to kill the weeds and pests under the trees and would be appalled to see their condition today.

The families at the village called Istaguay made a good living from the land and sea. Acorns, pine nuts, seeds, berries, fruits, medicine, and fibers from more than 90 plant species were utilized. A large seeded grass was planted and harvested much like wheat. Edible bulbs, greens and other vegetables were eaten. Shellfish of many kinds were collected. Small fish were probably caught using nets and albacore, sheephead, mackerel, barracuda, rockfish, bass, and yellowtail were likely caught with hook and line or harpoons in and around the kelp beds just beyond the surf zone and further out to sea. Marine mammals were hunted along the shore or caught with harpoons using seagoing boats, either reed or wooden boats. Deer from the woodlands of Sorrento Valley and Los Peñasquitos and Lopez Canyons and plentiful antelope from the mesas were a welcome change from the small mammals, reptiles, and birds taken by young hunters and women near the village.



As you ride the train or drive up 805 or 5 remember the Kumeyaay village you are passing over. Istaguay was here for more than 1,300 years. Earlier use around the lagoon goes back to 9,000 years or more. Will San Diego do as well?

## *Bring back the native managers*

Torrey Pines State Reserve is a perfect example of the impacts caused by removing native people and their land management practices. This still beautiful coastal reserve is located between La Jolla and Del Mar. Once it was a healthy Torrey Pine tree orchard planted and managed by the Kumeyaay. Seeds were also carried long ago to Santa Rosa Island.

This rare pine has become more endangered and the ecosystem of the park has become sick for lack of attention and loss of Kumeyaay management. Improved understanding of native management practices and ecosystem responses have made it clear that they depended on these trees and the trees depended on them. More recently, as the connection between native people and land management has become more clear, native communities are being asked to help restore “natural areas.” Torrey Pines State Natural Reserve is a perfect candidate for this type of restoration work.

People first arrived in the Torrey pines area about 11,000 years ago. They probably wandered through this area, but primarily hunted small game, fished and gathered wild foods. The Kumeyaay arrived or developed a stronger presence about 1,500 years ago. The two divisions of the Kumeyaay, the Ipai and the Tipai, were gatherers and seasonal hunters who utilized a large area, from the coast to the mountains and as far east as the Salton Sink. Within these areas they managed the land in many ways, including seed collection and planting, pruning, transplanting, widespread use of fire to manage ecosystems, water management and erosion control.

They planted desired plants in areas for harvesting and along slopes for erosion control. They regularly used controlled burns to manage areas, cleaning up old and dead plants, fertilizing and reseeding the areas. Controlled burns had to be carefully timed for maximum benefits, too many burns in a row could suppress the edible flower bulbs they liked so much.

The Kumeyaay had to be intimately familiar with their favorite plants for survival. They had to know when to burn, how often to burn, where to plant, how to transplant, and what plants they could use for subsistence and which were best for medicinal or technical purposes.

The Kumeyaay relied on the pine nuts from the Torrey pine<sup>1</sup> as a food (author's note: this is one of the best tasting pine nuts and the nuts are large) and as social welcoming gifts, and the nuts played a positive role in interrelations between villages. The Torrey pines were managed carefully by a band of Kumeyaay called the Istaguay (pines are there) to improve the overall health and productivity of the trees.

Controlled burns, pruning, harvesting, and planting were the primary activities. A forest of healthy trees created food for the people and a pleasant and healthy ecosystem for humans and many other creatures.

about 1910  
SDHC



After more than a thousand years of management the Torrey Pine was "officially" discovered in 1850 by Dr. Charles Christopher Perry, a botanist with the U.S. Mexico Boundary Survey. He sent specimens and description to a friend, Dr. John Torrey. He published it in 1859. Thanks to the efforts of many people, including Ellen Browning Scripps and Guy Fleming the Torrey Pines Reserve was created in 1921.

Unfortunately the area had already been severely degraded by grazing, firewood gathering, recreation and vandalism and the forest continued to degrade with lack of annual maintenance and the development of roads and houses near the park and watershed. The "hands off" management used for many years was perhaps the primary cause of deterioration, as the area no longer had the controlled burns and maintenance by the Kumeyaay, who were removed about 1900.

<sup>1</sup> It may be best to think of the two species as selected cultivars, brought to the area thousands of years ago by coastal travelers.

Delfina Cuero, a remarkable Kumeyaay woman, remembered harvesting Torrey pine nuts and maintaining the land in the area when she was a little girl. At the time they were still allowed in the area. Years later she returned to Torrey Pines and was appalled to see the weeds, underbrush, dried pine needles and broken branches that had built up. She had never seen such things as a child. After seeing so much fuel around the pines she was afraid a fire would destroy the trees because it would burn very hot. She said that the burning every year would never allow enough fuel to accumulate to damage the trees when a fire burned through the groves.



The buildup of brush also cut the trees off from critical water from the dripping needles of the trees when it is foggy (especially important in summer) and condensation drips in winter. When the brush builds up, as it has in most of the park, little water makes it to the ground and then even less past the roots of the brush to the Torrey Pines. The effective rainfall for the pines may drop from 6 or 7 inches to 2 or 3. This makes it easier for diseases and pests as the trees are very stressed.

The removal of the native people in this area (and most areas of the U.S.) led to deterioration of the

lands they once inhabited as management ended and development began.

The tall brush makes pines much more vulnerable to fire. An arson fire in 1972 killed 93 mature trees, but recovery was fairly good. In 1978 a controlled fire killed 36 trees, but some sprouting occurred. A fire in the Torrey pines reserve a few years ago, probably started by lighting, burned part of the park. The intense fire killed everything, and while invasive species and brush have returned few trees sprouted. A couple of prescribed burns in the 1980's seemed to help promote seeding, but also killed a number of mature trees. Returning the area to an almost bare forest floor would take regular cutting - since regular burning would be too difficult.

The state park system faces many challenges in managing lands, from lack of resources to mandates for “natural” management of landscapes created by Native land managers. The park rules and budgets make protection of ecosystem diversity and ecosystem health difficult. In 1997 a wildlife management plan for Torrey Pines State Reserve was prepared, a careful study of the area and the environment (including inhabitants) was completed and recommendations were made. Unfortunately the plan has not yet been fully implemented.

Roads, commercial buildings, houses and the railroad in the area have caused serious habitat loss and degradation. This has caused widespread species loss. The roads and railroad also create isolated areas in the park and surrounding areas with limited connectivity.

The Torrey pine plays an important role in the survival of the coastal ecosystems in the reserve. The trees and their pine needle carpets help reduce erosion, create habitat, capture moisture through fog

drip and provides food for animals. The pines also protect the watershed below by limiting erosion and increasing water absorption and adding water to the ecosystem by fog drip.

The Kumeyaay's environmental management strategy optimized the survival and health of the trees and surrounding areas, and when their influence was removed a steady decline in the productivity and health of the area began.

The best approach for restoring the Torrey Pines State Natural Reserve for the benefit of the park ecosystem, park visitors, adjacent areas, habitat and plant and animal species is to bring the Kumeyaay back into the management process. Learning from them we can better understand the land and how to manage it. Their knowledge was tested and proven over thousands of years. It can be used to ensure the survival of the beautiful Torrey pines.

Much of the brush and damage from 100 years of non-management may have to be cut out and removed, exotic weeds will have to be controlled and new trees will need to be planted with supplemental irrigation. But then an annual clearing or burning celebration could be reestablished with the Kumeyaay. Then, and only then, will the Torrey pines be safe.

## *Further reading*

- Anderson, Kat. 1993. Native Californians as Ancient and Contemporary Cultivators. Pp. 151-174. In Thomas C. Blackburn and Kat Anderson, eds. *Before The Wilderness*. Ballena Press, CA.
- Bainbridge, David. 2007. *A Guide to Desert and Dryland Restoration*. Island Press.
- Farris, Glenn. 1993. The Quest for Pine Nuts in Northern California. Pp. 229-240. *Before The Wilderness*. In

Thomas C. Blackburn and Kat Anderson, eds. *Before The Wilderness*. Ballena Press, CA.

Nabhan, Gary Paul. 1998. When the spring of animals dreams runs dry. Pp. 166-183. In *Cultures of Habitat: On Nature, Culture and Story*. Counterpoint Press, Washington, DC.

Shipek, Florence. 1993. Kumeyaay Plant Husbandry: Fire, Water, and Erosion Control Systems. Pp 379- 388. In Thomas C. Blackburn and Kat Anderson, eds. *Before The Wilderness*. Ballena Press, CA.

Shipek, Florence. 1991. *Delfina Cuero: Autobiography*. Ballena Press, CA. Page 27, 85.

Shipek, Florence. 1989. An example of intensive plant husbandry: the Kumeyaay of southern California. Pp. 159-170. In David R. Harris and Gordon C. Hillman. *Foraging and Farming: The Evolution of Plant Exploitation*. Unwin Hyman, London.

Schulman, Judy 2001. <http://www.torreypine.org/tphumhis.htm>. Torrey Pines State Reserve Human History.



Dr. Florence Shipek was a friend and scholar of the Kumeyaay for almost 50 years. Her research provided keen insight into the intensive resource management practiced by the Kumeyaay. I was lucky to meet and learn from her at U.C. Riverside.

### *David A. Bainbridge*

Grew up in the West, spending his formative years in the dry lands east of the North Cascades. He completed his BA in Earth Sciences at UC San Diego and MS in Ecology at UC Davis. He has worked with a range of clients, including National Parks, BLM, US Forest Service, State Parks, OHV Recreation Areas, the California Department of Transportation and the Department of Defense. He was a certified archeology field surveyor for California Dept. of Forestry timber harvest plan reviews. More info at [http://works.bepress.com/david\\_a\\_bainbridge/](http://works.bepress.com/david_a_bainbridge/)