

# WHOSE HERITAGE IT IS

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*Torrey Pines... can be likened to a museum that contains objects of priceless worth for it offers sanctuary and protection of these struggling survivors of a past age. But the sanctity of this refuge can only be preserved insofar as the people, whose heritage it is, zealously guard and maintain it in its primitive beauty.*

—Guy L. Fleming, 1942

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**S**an Diegans took a visionary stand in 1899 when they established a “free and public park” as a means of safeguarding the Torrey pine. Yet despite a century of expanding protection at the Reserve, the tree and the landscape it inhabits face a variety of challenges. It has become clear that ensuring the ecological well-being of Torrey Pines State Reserve is a complex responsibility. Much remains to be learned about managing this precious remnant of our natural heritage.

## *In the Absence of Fire*

Modern studies have shown that setting aside and protecting habitats is a beginning, but not an end, in the battle to conserve ecosystems and rare species. In nature, nothing is so constant as change; as a result, preservation efforts aimed at maintaining the status quo of a natural area often fail. At the Reserve, for example, decades of fire suppression have probably hindered pine regeneration and created a population in which old trees far outnumber saplings. Without occasional wildfires, the groves’ dense undergrowth and organic litter build up, which prevents pine seeds from reaching bare soil and germinating. Although test burns have increased the number of Torrey pine seedlings, the introduction of fire around living trees is controversial; controlled burns carry the risk of killing mature pines.



*The viability of the Reserve's natural communities is threatened by encroaching urbanization.*

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Plans to encourage Torrey pine regeneration with fire have been postponed until further studies are completed.

A number of other species in the Reserve's chaparral and coastal sage scrub communities are also revitalized by fire. Many annual wildflowers flourish following a burn and are often the first of a whole succession of plants that respond favorably to episodes of fire. In the prolonged absence of fire, some species might disappear altogether. Resource ecologists are now evaluating the use of prescribed burns for managing the chaparral and maintaining the Reserve's rich floral diversity.

In contrast to the Reserve, the number of young Torrey pines on Santa Rosa Island has dramatically increased within the past 100 years. However, sample cores from the island pines have revealed that they were rarely exposed to fire during that time. This population's high rate of regeneration may be attributed to a different form of disturbance: grazing by sheep and cattle. Sheep were introduced to the island in the 1880s and were later replaced by cattle early in the twentieth century. Ecologists for the National Park Service, which now administers Santa Rosa Island, surmise that grazing has served as something of a substitute for fire. The cattle control competitive grasses and herbs while leaving pine seedlings uneaten. Within

the next 20 years the island's livestock will be removed and in their absence the groves' native understory is expected to become reestablished. When this transition is complete, some researchers believe the pines' reproduction rate may gradually decrease.

### *Multiply and Divide*

Although the entire Reserve is managed to maintain the health of its ecosystems, the Torrey pine receives special attention because of its rarity and genetic limitations. The primary strategy for perpetuating the species has been to maximize its numbers within its native habitat. The "warehousing" of Torrey pine specimens and seeds in

various botanic gardens and herbariums provides added insurance against catastrophic loss should the natural populations disappear.

A problem facing resource managers is the lack of information about the ideal structure of Torrey pine populations. Some foresters feel that the Reserve's current number of trees is artificially high, perhaps as a result of tree planting earlier this century. Regeneration efforts have been designed to determine the best conditions for seedling establishment as well as the optimal density for the pines. Reforestation based simply on "more is better" may not be appropriate. If the trees became too numerous they would compete for limited water resources, especially during droughts. This could lead to stressed stands that are vulnerable to beetle infestations. If the pines are too closely packed, bark beetles could more quickly move from one tree to another.

The Torrey pine rarely naturalizes outside of its native habitat, but a well-documented exception is taking place at La Purísima Mission State Historical Park on the central California coast northwest of Santa Barbara. Here Torrey pines are thriving in what may be part of their historic range. Planted during reconstruction of the mission in the 1930s by the California Conservation Corps, they have successfully reproduced and spread to the surrounding hills. This natural propagation, however, is viewed as detrimental by some ecologists. They believe that the pines compete with species in the local chaparral community. Others regard the pines as nonnatives that should be removed to help preserve the historic flavor of La Purísima's early mission days.

## *Natural Communities at Risk*

At the Reserve, the rare conifer is not the only species at risk. Adverse influences generated by the growth of San Diego, currently the nation's sixth largest city, are mounting. Urban landscaping is a source of invasive exotic plants, some of which can easily out-compete the Reserve's indigenous species. Of Torrey Pines' nearly

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*Goldenbush and deerweed must compete with non-native iceplant at Los Peñasquitos Lagoon.*



400 plant species, one quarter are nonnative. Many botanists fear that, if left unchecked, the exotics could gradually transform the Reserve's distinctive plant communities. Accordingly, the removal of such imports as pampas grass, Russian thistle, and iceplant is an ongoing project, dependent on community volunteers. Encroaching roads and development raise concerns because they interrupt wildlife

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*Great-horned owls nest on the Reserve's steep canyon walls and depend on its open spaces for hunting.*



corridors that link the Reserve with remaining pockets of nearby open space. This urbanization limits the range for fauna, especially larger mammals that require extensive territory for feeding, hunting, and breeding.

One of the Reserve's most sensitive habitats, Los Peñasquitos Lagoon, is subject to a different array of problems. Upstream grading and the permanent alteration of the lagoon's 60,000-acre watershed have caused excessive siltation during winter runoff. Highway and railway roadbeds that were built across the wetlands hinder normal tidal flushing of the salt marsh; they also restrict the lagoon's outlet to a fixed narrow channel, which is seasonally blocked by drifting beach sand. Lacking ample runoff or high tides with strong surf, this vital link to the ocean has been reopened with heavy earth-moving equipment. Municipal sewer lines adjacent to the lagoon have frequently spilled and contaminated the salt marsh.

Dilemmas arise in balancing public access to Torrey Pines against the need to protect its fragile features. As the San Diego metropolitan area grows, more and more people are drawn to the Reserve for recreation. However, not everyone is respectful of this vulnerable environment. Some visitors trample across the landscape in pursuit of shortcuts to the beach while others pick wildflowers, collect pine cones, or spread litter. A popular canyon trail was closed because hikers repeatedly carved graffiti into its sandstone walls. Mountain bikes had to be banned from the Reserve after riders caused extensive damage both on and off trails. Off-road vehicles occasionally tear up mudflats and salt pans bordering the wetlands. The cook fires of transients who camp out illegally in the Reserve's dense chaparral are potential threats. Enforcing regulations that establish the fine line between use and abuse is one of the many tasks

charged to Reserve rangers.

Fortunately, many of the challenges facing the Reserve are closely monitored by the California Department of Parks and Recreation, the Torrey Pines Association, and various conservation organizations. In addition to the dedicated rangers who administer Torrey Pines, carefully trained members of the Torrey Pines Docent Society, believed to be the oldest docent society associated with a California State Park unit, staff the visitor center. These enthusiastic volunteers also lead interpretive walks and help educate the public about the Reserve's special character. Each year hundreds of school groups visit the Reserve. Numerous academic institutions conduct studies, workshops, and classes in natural history.



### *A Deserving Relict*

In 1883 Charles Parry expressed the hope that “wiser generations” would one day be thankful that he and his contemporaries saved the Torrey pine. Parry’s desire is being realized: tens of thousands of visitors come to the Reserve each year to view the enigmatic trees and enjoy their magnificent setting.

By moving to protect the Torrey pine and its habitat, we assumed an irrevocable responsibility for the species’ continued existence. Certainly this tenacious relict, rare and unique among the world’s flora, deserves our continued care and stewardship.

*Surveys show that old Torrey pines now outnumber young trees. Successful replacement of the aging population with new seedlings may well depend on current research and management policies.*

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