



# Sensitive Species of the Santa Ana Watershed

## Osprey (*Pandion haliaetus*)



The osprey is commonly known as the Fish Hawk and has a world-wide distribution.

The osprey is one of North America's best-studied raptors. Because it feeds primarily on live fish, it is used as an indicator of toxins in bodies of water. For example, in the 1950-1970's several populations on the east coast declined. Studies showed proof of the negative impacts of long-term use of pesticides which led to the discontinuation of these pesticides and the recovery of the osprey (Poole et al 2002). Osprey are distinguished by long, narrow wings, a dark chocolate-brown back and upper wing coverts,

a mostly white breast and belly, and white crown and forehead. It has a wide dark line through the eye and a yellow iris (Poole et al 2002). The female shows darker streaking on the breast than found on the male. Ospreys have a dark patch at the bend in the wing (at the wrist) that can be seen from underneath.

### Habitat

Ospreys occupy diverse habitats and are found on every continent except Antarctica. They can be found along ocean shore lines, marshes, riparian woodlands, wetlands, and inland lakes, wherever there is a large body of water that sustains a population of fish. They forage in rivers, lakes, and reservoirs. They use rocky pinnacles and large trees and snags in open forests for cover and nesting (MSHCP 2003).

### Food

Live fish comprise up to 99% of the osprey's diet. Ospreys hunt 30 to 100 feet above the water, gliding, sailing, or hovering over a location with fish (Bent 1961). When the prey has been located, the osprey partially closes its wings and dives toward the water surface. At the last second, the osprey brings its talons forward, extended in front of the body and slams into the water. The osprey then rises up with its prey. In some cases the osprey attacks a fish too large for it to lift and if it is unable to release its grip, it may then be dragged under the water and drowned (Bent 1961). On rare occasions the osprey will take other sources of food such as small mammals or other birds. Ospreys have been observed rarely eating young ducks, snakes, and frogs (Bent 1961).

### Breeding

The osprey breeds from March to September. They breed in North America from Northern California to Canada and along the east coast down through Florida and into Mexico. In Northern California, they nest in dead tree tops of pines near inland lakes or even miles away from water. Nests can be in trees 75 to 112 feet high (Bent 1961). Although there has been no documentation of osprey breeding within the Santa Ana watershed, osprey could potentially nest in areas such as the Prado basin and other nearby bodies of water with appropriately sized trees and snags. A breeding attempt was documented in the Prado Basin during the spring of 1998 when a pair was observed nest building on the west side of Prado Basin. One of the pair brought 'sizeable' twigs to the top of an electrical pole that was partially submerged in water due to the high rains of the year. The partially-built nest was abandoned by the next week (J. Pike, pers.comm.) A pair of ospreys nested successfully in 2006 on a tower erected for them in Upper Newport Bay just south of what is currently considered the watershed boundary (pers. comm. Dick Newell).

## **Status and Distribution**

Currently the federal status of the osprey is as a priority species in the Partners in Flight program and it is listed as sensitive in the San Bernardino National Forest. In California, it is a Species of Special Concern and is listed as sensitive by the California Department of Forestry and Fire Prevention (MSHCP 2003). It has been documented west of the San Jacinto Mountains and at the Salton Sea and migrates through the San Geronio Pass and Cochella Valley (Zeiner et al. 1990, Miller and Stebbins 1964). Observations of the osprey in the Santa Ana watershed by SAWA and Orange County Water District biologists have been made in the Prado Basin, along the Santa Ana River near Yorba Regional Park and Featherly Park, and along Santiago Canyon.

## **Threats**

A continuing threat to the osprey is the use of pesticides that find their way into streams, lakes, marshes and oceans and then into the fish that live in those waters. Pesticide concentrations build up in ospreys if they eat contaminated fish. Although pesticides in water usually do not directly cause mortality in juveniles and adult birds, reproduction can be affected. The weakening of the shell as a result of DDT pollution leads to reduced gas exchange through the egg shell which can damage the embryo, or even egg shell collapse (Poole et al. 2002). In other parts of their range, ospreys are also threatened by competition for food from eagles. Often, eagles will rob the osprey of their food by putting on a full aerial attack (Bent 1961). In North America, eagles, great-horned owls, and also raccoons, will prey on osprey nestlings (Poole et al. 2002).

## **Research and Management Needs**

State management guidelines require buffer zones of up to 200 m radius from trees that have an occupied nest. There are also restricted guidelines for logging or other activities which could include construction (MSHCP 2003). Ultimately the reduction in human activities around birds during the breeding season yields greater breeding success. Study of the causes for the absence of breeding in the watershed is warranted and selective placement of nesting towers, like the one in Upper Newport Bay, is under consideration. If you sight this bird please contact us.

## **SAWA Contact**

Talula Wiater works as a field biologist for the Orange County Water District and the Santa Ana Watershed Association (SAWA). She can be contacted at 951-273-7989.

## **Photo Credit**

Jim Pike

## **References**

- Bent, A.C. 1961. Life histories of North American Birds of Prey. Dover Publications, Inc., New York.
- Miller, A.H. and R.C. Stebbins. 1964. The lives of desert animals in Joshua Tree National Monument. University of California Press, Berkeley. 452 pp.
- Poole, A.F, R.O. Bierregaard, and M.S. Martell. 2002. Osprey (*Pandion haliaetus*). In The Birds of North America, No. 683 (A. Poole and F. Gill, eds.) The Birds of North America, Inc., Philadelphia, PA>
- Western Riverside County Multi-Species Habitat Conservation Plan – Osprey. 2003. <http://ecoregion.ucr.edu/full.asp?spnum=76>.
- Zeiner, D.C., W.F. Laudenslayer, K.E. Mayer and M. White eds. 1990. California's Wildlife: Volume II-Birds. California Department of Fish and Game. Sacramento, California. 762 pp.