An Expanding Osprey Nesting Population on San Francisco Bay
Osprey (*Pandion haliaetus*)

- Large raptor: L = 22-25”, WS=58-72”, ~3.5 lb., Female > Male
- Diet almost exclusively live fish
- Highly specialized, e.g., wing anatomy, reversible outer toe, spicules on legs and feet, long curved talons, closeable nostrils
- Cosmopolitan – Breeds or winters on every continent except Antarctica
- Sentinel species for aquatic habitats – e.g., decline during DDT era, then recovery following ban on agricultural use
- Provides opportunity to engage public in observation of raptor breeding behavior
Osprey Global Range

Osprey Range in North America

from Birds of North America Online
Ospreys on San Francisco Bay

- **2600 BP-700 BP** — No evidence of Osprey remains identified in Emeryville Shellmound excavation (Jack Broughton, U. of Utah))

- **Late 18th-early 19th Century** — Formerly widespread over the whole length of California, but rare in Bay Area with the nearest nests on Russian River in Sonoma County (Grinnell & Miller 1944, Grinnell & Wythe 1927)

- **Mid-1960s** — Colony founded at Kent Lake in Marin County. By 1994, grew to 52 occupied nests, then declined (Jules Evens),
Ospreys on San Francisco Bay

• **1990** – First nest at Mare Island (Leong, Carter, Coburn)

• **1998 - 1999** – 1-2 nests in East Bay (Breeding Bird Atlases)

• **2003 - 2012** – Rapidly growing population at Mare Island with a few nests further south.

• **2012 - 2022** – Osprey nesting census (with Harv Wilson) Continued growth and expansion southward
NEST STATUS DEFINITIONS

**Occupied** – Osprey pair building or tending to a nest

**Active** – Eggs laid, incubation or nestlings present

**Successful** – At least one young fledged (assume if nestlings as old as ~45 days)
Increase in SF Bay Osprey Nests 2012-2022
Productivity of SF Bay Osprey Nests

(Number of Feldglings per Nest)

- **Active Nests**
- **Successful Nests**

*Population Likely Stable or Growing if greater than 0.8-1.15*
SF Bay Osprey Nests 2012-2022

317 Successful Nests
699 fledglings:
2.20 Fledged per Nest
Natural Osprey Nests
Point Potrero, Port of Richmond
Point Molate, Richmond

Foster City
THREATS TO INDIVIDUAL OSPREYS

- **Persecution** – Shooting, egg collectors, millinery. Less of a problem than in the past, although Atlantic Coast Osprey sometimes killed at aquaculture sites on their wintering grounds in Central, South America.

- **Entanglement** – Common hazard for aquatic bird species, especially piscivores. Abandoned fishing line and gear, plastic twine may be brought as nest material, or entangled while foraging.

- **Electrocution** – Numerous nests are on power poles: A nestling died in 2014 in a nest on utility pole at Mare Island.

THREATS TO OSPREY NESTS

- **Deterioration, Collapse** – Numerous nests are on old, derelict structures.

- **Shoreline Development** – Numerous nests on land slated for development.

- **Removal** – Nests may be removed from structures, equipment due to potential conflict with their use. Legal before eggs or young, but Ospreys are very persistent once they select a nest site.

- **Human Disturbance** – Photographers, other observers approaching, pointing, staring perceived as possible threat, may cause adults to flush from the nest, leaving eggs, nestlings vulnerable. Alarm calling to indicate Too Close – Back Off!
Successful Use Of Nest Platforms

Chevron, San Pablo Peninsula, Richmond
Point Molate, Richmond

March 5, 2014

March 12, 2014
Point Molate, Richmond

March 11, 2014

June 27, 2014
Crockett (PG&E)

June 11, 2013

Chevron Long Wharf, Point Richmond

March 19, 2014
Mare Island
(Island Energy)
Point San Pablo, Richmond (Chevron)

Mare Island (XKT Engineering)
Brickyard Cove, Richmond
(Shirley Doell and Richmond Yacht Club)
SHIFT IN OSPREY NEST SITES – 2022 vs. 2013

- **Light Structures**: 8 in 2013, 12 in 2022
- **Cranes**: 6 in 2013, 6 in 2022
- **Navigation Aids/Marine Structures**: 4 in 2013, 4 in 2022
- **Utility Poles**: 2 in 2013, 6 in 2022
- **Other Structures**: 2 in 2013, 2 in 2022
- **Tree**: 1 in 2013, 1 in 2022
- **Transmission Towers**: 1 in 2013, 1 in 2022
- **Artificial Nest Platforms**: 14 in 2013, 14 in 2022
Live Streaming Nestcam – Port of Richmond

SFBayOspreys.org
FISH DELIVERIES TO WHIRLEY CRANE NEST

2019
(723 Fish)

- Jacksmelt, 396
- Plainfin Midshipman, 55
- Striped Bass, 93
- Trout/Salmon, 149
- Striped Bass, 237
- Starry Flounder

2021
(760 Fish)

- Jacksmelt, 417
- Plainfin Midshipman
- Striped Bass
- Trout/Salmon, 1
- Surfperch sp.
- Halibut
- Bat Ray
Lightning (Variant Rainbow) Trout!
Black Crappie –
Only at San Pablo Reservoir!
WHERE DO SF BAY OPSREYS SPEND THE NON-BREEDING SEASON?

• Almost all leave by October, then begin to return in February

• Juveniles do not return until after their second winter

• A few, mostly or all males, remain in their nest territories, (at least in Richmond area)
Osprey Spring Migration Routes

PACIFIC FLYWAY

CENTRAL FLYWAY

ATLANTIC FLYWAY

From Martell, et al, 2014
Nesting & Winter Locations of Pacific Northwest Ospreys

From Elliot, et al, 2007
Band of Osprey Nestlings from the Whirley Crane Nest

(Teresa Ely, Ben Dudek, Anne Ardillo, Step Wilson)

June 16, 2017

May 16, 2019
Where to Report Band Sightings

- **USGS Bird Banding Laboratory** – [www.reportband.gov](http://www.reportband.gov)

- **Golden Gate Audubon** – ospreysciencedata@goldengateaudubon.org
“Of all the raptors, the Osprey is the one that can live most happily with modern man, if given a chance.”

Roger Tory Peterson