



Public Works Agency

*Watershed
Protection District
Operations and
Maintenance
Division*



“Utilizing Raptors to Control Rodents on a Levee – VCWPD’s Pilot Program”

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What is that strange looking pole?

Unusual looking poles have started to appear next to flood control levees in Ventura County.

This is part of the Watershed Protection District's Integrated Pest Management (IPM) Program.

South Branch Arroyo
Conejo, Thousand Oaks





Integrated Pest Management

What is it?

- IPM combines traditional and innovative methods for rodent control and weed management while minimizing environmental impact.
- VCWPD has eliminated the use of second generation anticoagulant rodenticides.
- VCWPD has restricted first generation anticoagulant use to only critical dams and levees (20% of the flood control system).
- WPD has been researching new alternatives to anticoagulants for critical dams and levees.





Integrated Pest Management

Why do we need IPM?

- About 5 earthen dams and levees fail yearly in the U.S. because of rodent burrow damage.
- One pocket gopher or ground squirrel can excavate up to 15 tons of soil per year.
- VCWPD earthen dams and levees are highly susceptible to rodent burrow damage.



*California
Ground Squirrel*



Integrated Pest Management

Raptor Rodent Control Pilot Program

- Experience at Santa Barbara County has shown that owls and Hawks can reduce the rodent populations on levees and minimize the use of rodenticides.
- WPD has implemented a pilot program for installation of raptor perches and nesting facilities at Revolon Slough in Oxnard.
- New facilities designed to attract Barn owls, Red-tailed hawks, and other raptors have been installed.





Ventura County Raptors

Public Works Agency



Cooper's Hawk



Red-shouldered Hawk



Red-tailed Hawk



Great Horned Owl



Barn Owl



White-tailed Kite



Northern Harrier

These raptors will eat ground squirrels and gophers.



Pilot Study Goals

Study Goal 1

Determine if raptors can replace traditional diphacinone rodenticides for rodent control on critical levees and dams.

Study Goal 2

Determine if successful raptor program can be expanded to all county facilities.

Study Goal 3

Calculate the cost impact a successful raptor program will have on the O&M budget.

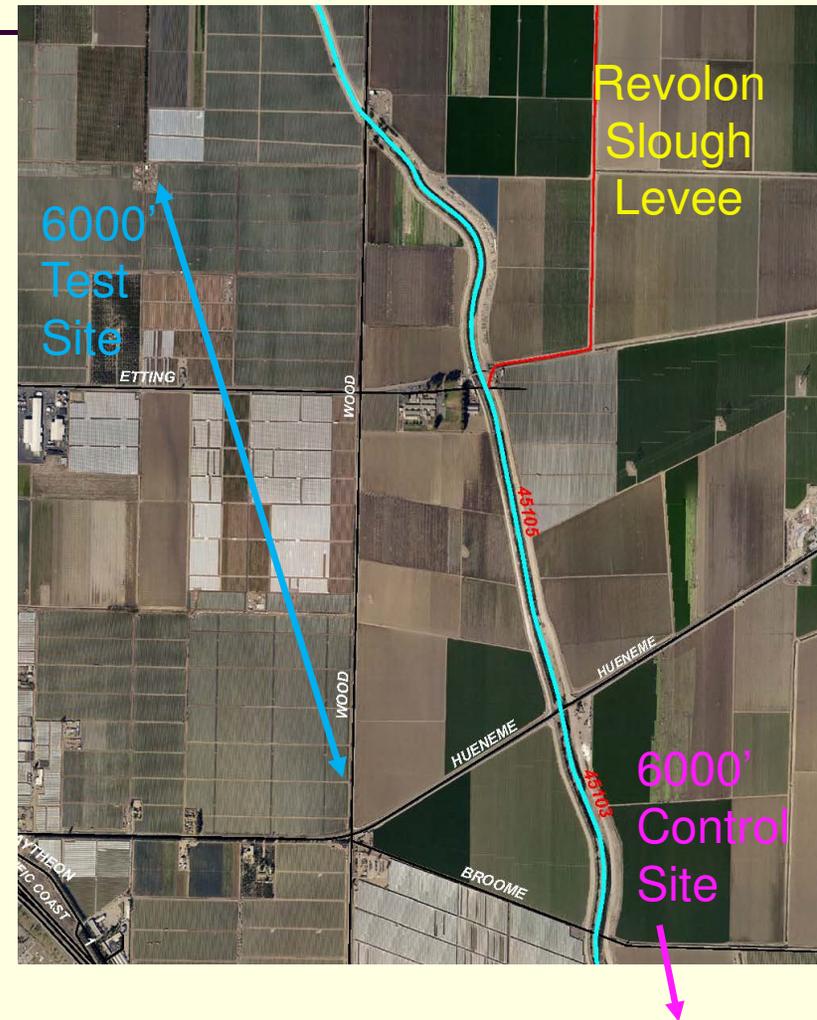




Pilot Study Procedures

Select Test Site Areas

- Similar 6,000' reaches of the Revolon Slough in Oxnard have been selected as Control and Test Sites.
- Rodent control at the Test Site will be exclusively by raptors.
- The Control Site will be maintained as normal with rodenticide.

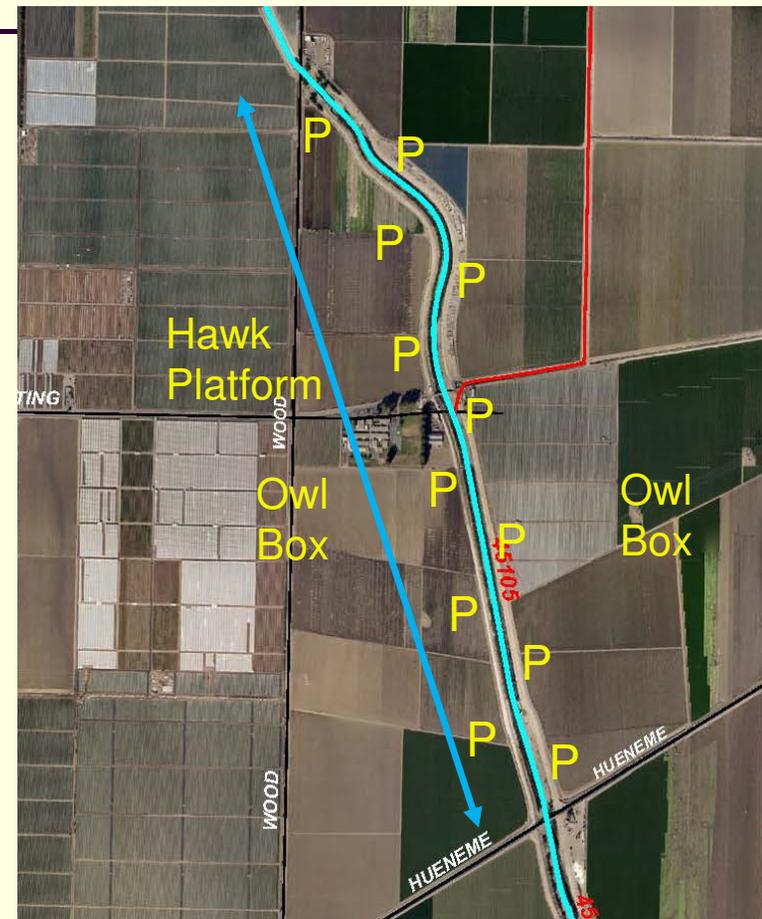




Pilot Study Procedures

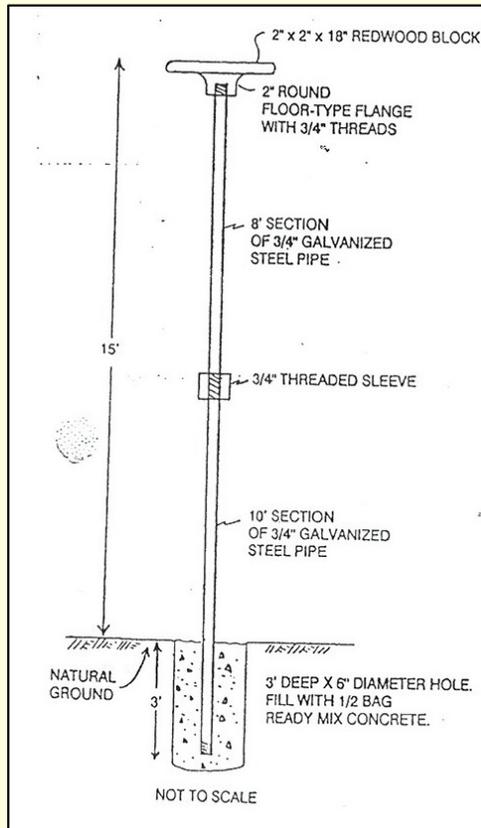
Install Raptor Facilities

- Raptor perches are placed in an alternating pattern at 500' foot intervals, along both banks of the test areas.
- Barn Owl boxes and Red Tail Hawk platforms are placed at 500' offsets to the levee on adjacent parcels.





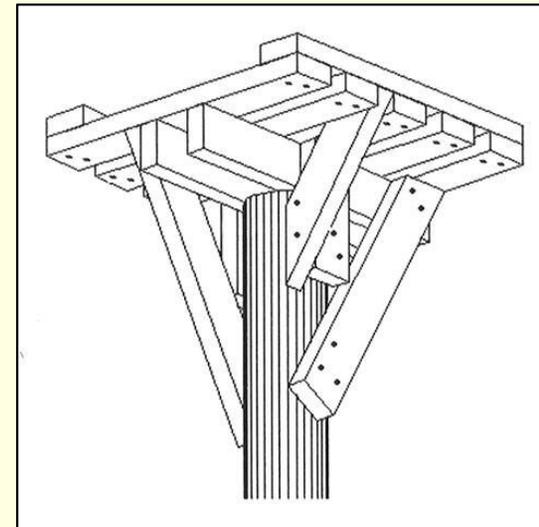
Raptor Facility Details



Raptor Perch



Barn Owl Box



Hawk Nesting Platform



Pilot Study Procedures

Establish Baseline Conditions

- A baseline is established by surveying and identifying any rodent activity and burrows in the designated control and test areas.
- All burrows in control and test areas are backfilled with grout to establish a rodent-free test site.
- Grout consists of a water, bentonite, and cement mixture pumped into the burrows at low pressure.





Pilot Study Monitoring

- Raptor facilities are monitored every other week to record bird species using the perches, boxes, and platforms.
- Test and control areas are monitored every other week to record if rodent populations are reestablishing and fill any new rodent burrows.





What about the Herons...



and
Egrets?

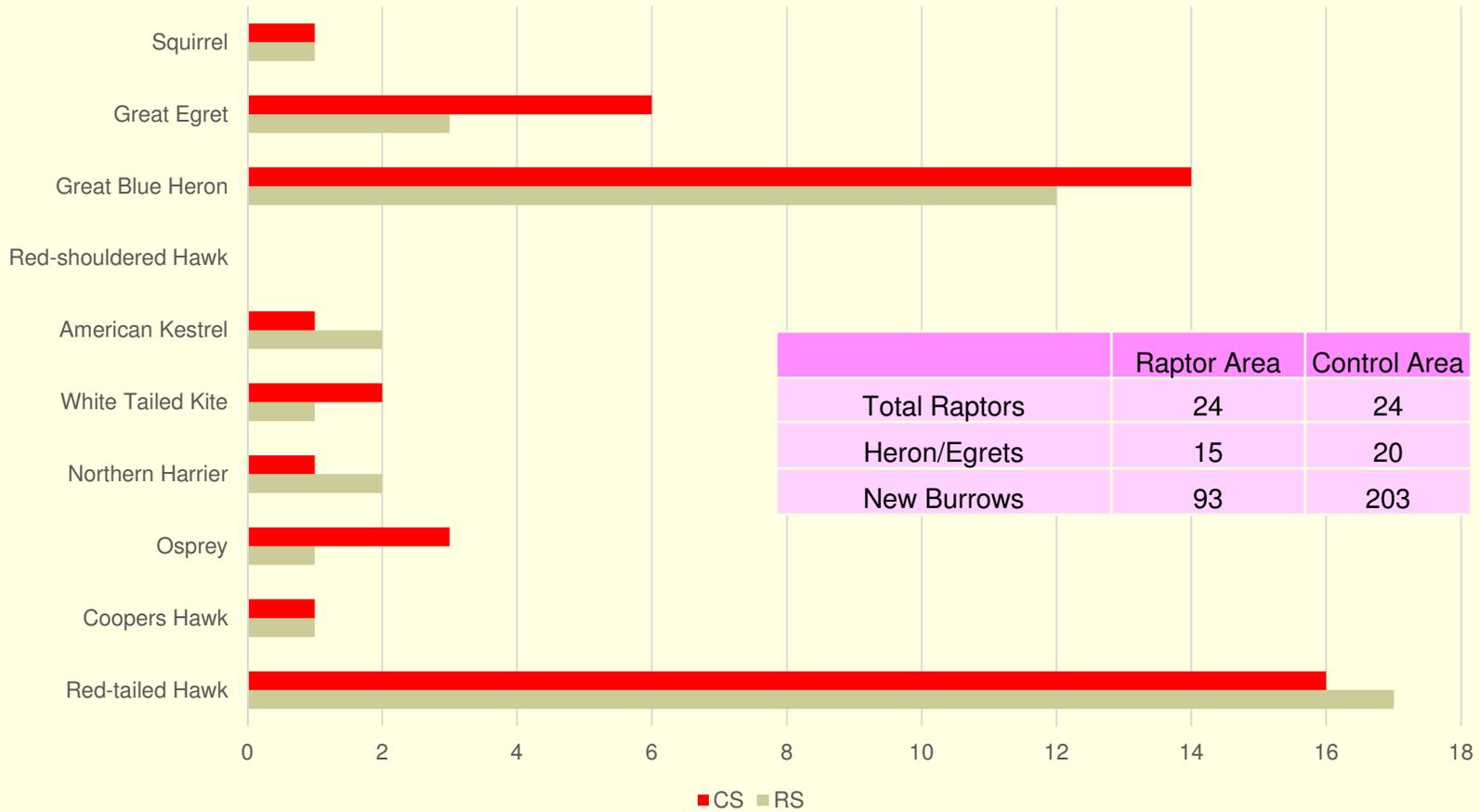




Preliminary Observations After 20 Weeks

10 Inspections of Raptor and Control Areas

RAPTOR STUDY - PRELIMINARY OBSERVATIONS





Preliminary Observations After 20 Weeks

- Red-tailed hawks are the most common raptor in the Oxnard plain.
- Raptors are using our perches.
- Herons and Egrets are common in our channels and may be as effective as raptors.
- Ground squirrel's like berries more than oats.
- Squirrel activity closely follows the neighboring agricultural activity.





Study Complications

- Sound Cannons may drive off the raptors.
- Least Bell's Vireos are now populating our Raptor Study area.
- Only berries are planted adjacent to our "Control Area".





Other County Sites with Raptor Upgrades

- Las Lajas Dam – perches
- Stewart Dam, Ojai – owl box
- Santa Rosa Park – owl boxes
- South Branch Arroyo Conejo – 5 perches





We Won an Award!

S T A T E O F C A L I F O R N I A



CERTIFICATE OF RECOGNITION

Environmental Sustainability Award

PRESENTED TO:

Ventura County Watershed Protection District

IN HONOR OF:

Your exceptional commitment to the environment as demonstrated by your owl box and raptor perch pilot program. Through this effort, you have the potential to reduce the rodent populations on levees and dams without using rodenticides. This will in turn help save the local wildlife population which is endangered through secondary poisoning. The State of California thanks and commends you for your outstanding service to the environment and to the people of the 27th State Senate District.

April 28, 2016

Fran Parley

SENATOR FRAN PAWLEY
Twenty-Seventh Senate District



For More Information

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The public is welcome to participate in the weekly inspections!