



CALIFORNIA LAND RECYCLING CONFERENCE

Imagine | Innovate | Implement
September 29 – October 1, 2026 | Foster City

Last Minute Showstoppers

-
| Navigating Surprise Environmental Issues
| at the Eleventh Hour
| _ _ _ _ _



OFFICE OF BROWNFIELDS

Department of Toxic Substances Control | Creating the Sustainable Communities Initiative



CENTER FOR CREATIVE
LAND RECYCLING
REUSE. REPAIR. REBUILD.

SPEAKERS



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Resources for Community
Development



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LAST MINUTE SHOWSTOPPERS

Navigating Surprise Environmental Issues at the
Eleventh Hour

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Florence Hsueh | RESOURCES for COMMUNITY DEVELOPMENT



The Setup



DTSC

Department of Toxic
Substances Control - Lead
Oversight Agency



ECRG

DTSC Equitable Communities
Revitalization Grant –
Targeted at underserved
communities



CLRRA

California Land Reuse and
Revitalization Act Agreement
– DTSC voluntarily clean-up
agreement for blighted
properties



Soil
Remediation



Earthwork
Grade



Vapor Barrier
Install



Reports



Affordable
Housing

Beyond Due Diligence: The Geophysical Survey

Geophysical Survey

- Ground Penetrating Radar (GPR)
- Magnetometer

What it (can) find:

- Natural geologic features
- Historical artifacts
- Utility lines
- Underground storage tanks (USTs)

TIP #1

Don't just clear borings - always do a full geophysical sweep from property line to property line.



The “Call No One Wants”

We thought we had read the
site like a book.

The “Call No One Wants”



We thought we had read the site like a book.

And the site took that personally.

When You Find a Tank

The DAD System

(Patent pending.)

D

A

D



When You Find a Tank

The DAD System

(Patent pending.)

Don't mess with the tank

A

D



When You Find a Tank

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Don't mess with the tank

A
Hope for the best, prepare
for the worst

D



When You Find a Tank

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Don't mess with the tank

Abandon hope
~~Hope for the best,~~ prepare
for the worst

D



When You Find a Tank

The DAD System

(Patent pending.)

D on't mess with the tank

A bandon hope, pre-notify the regs
~~Hope for the best, prepare~~
~~for the worst~~

D



Hope Is Not A Strategy, Plan Accordingly



Owner

- Build the “when, not if” mindset throughout the team.
- Carry a healthy contingency allowance for unforeseen conditions.
- Understand tank-removal permitting timelines.
- Ensure contracts clearly define discovery-response responsibilities.



General Contractor

- Identify alternate work areas periodically.
- Establish a stop-work boundary procedure.
- Ensure crews know not to disturb tanks or associated items.
- Know who to call before making decisions in the field.
- Treat unknown features as potentially hazardous until evaluated.



Earthwork Operators

- Stop and notify immediately upon encountering unusual metal structures.
- Recognize common signs of buried tanks and piping.
- Slow down in suspect areas.
- Avoid pulling, puncturing, or damaging tanks.
- Only expose discovered tanks under the oversight of an environmental professional



Environmental Consultant

- Have sample containers and PPE onsite.
- Have regulator and tank removal contacts readily available.
- Be prepared to collect waste characterization samples.

CUPA

Certified Unified Program Agency

- CUPAs are local agencies designated by CalEPA to administer and enforce several hazardous materials regulatory programs at the local level
- CUPAs are typically the agency responsible for:
 - UST permits
 - UST inspections
 - Tank closures
 - Tank removals
 - Release reporting and initial response activities
- Most CUPAs are housed within: Environmental Health Departments, Public Health Departments, Fire Departments

When You Find a Tank

The DAD System

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Don't mess with the tank

Abandon hope, pre-notify the regs

D

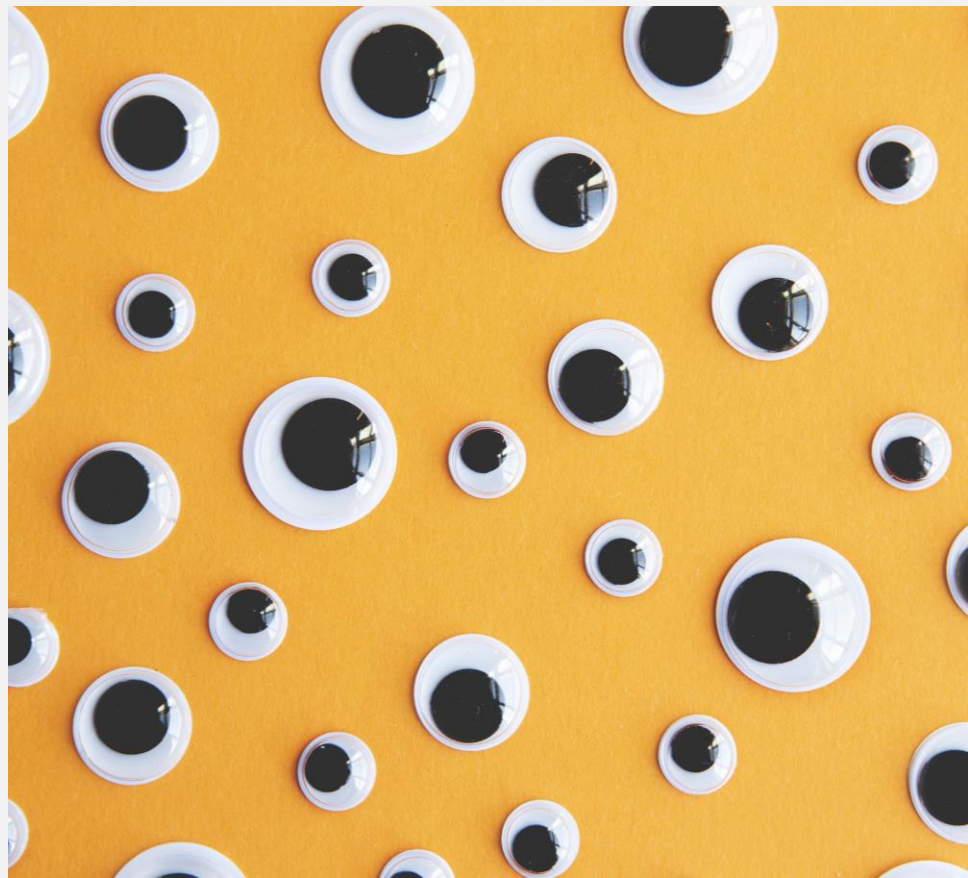


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The “Call No One Wants”

Plot Twist!

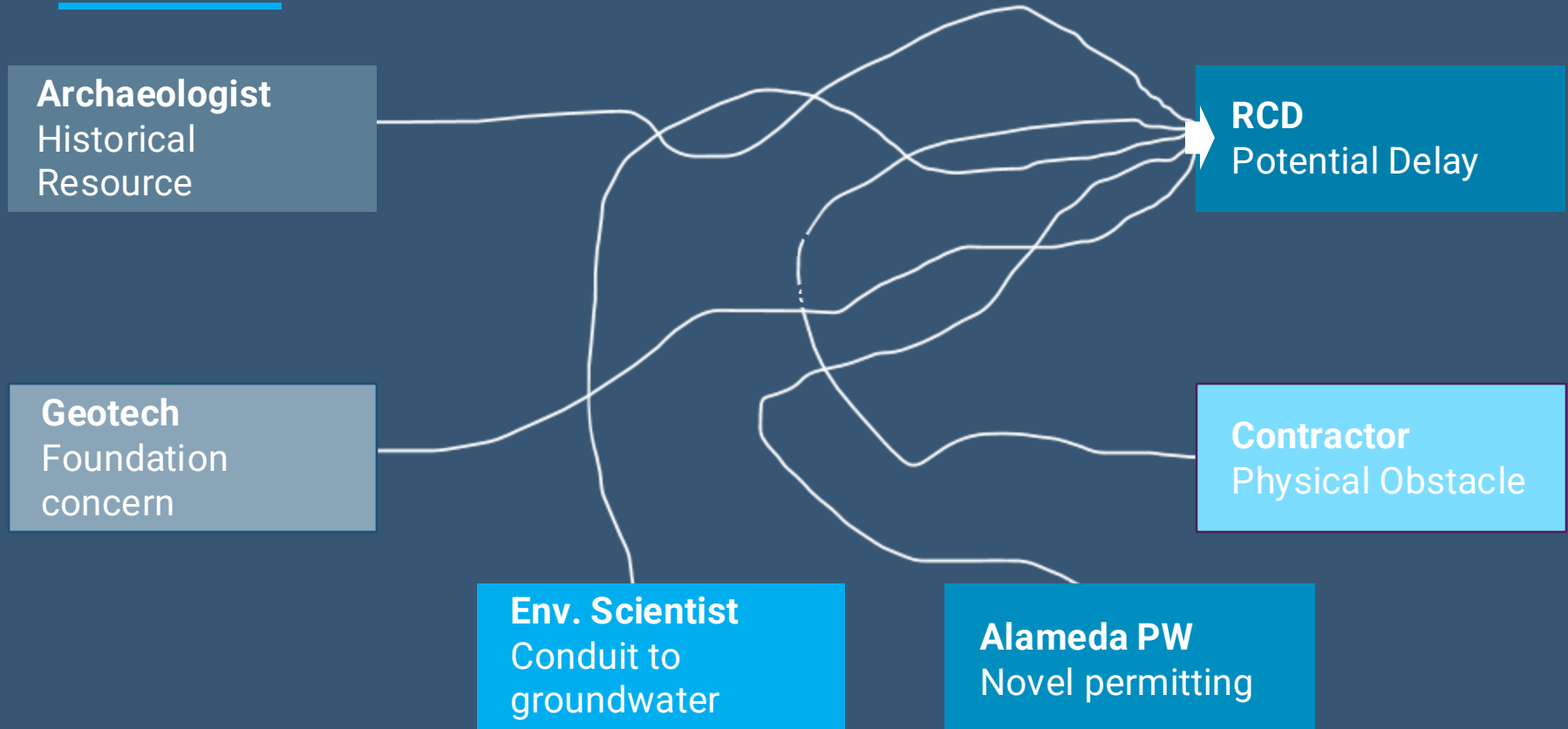
The “Call No One Wants”



Plot Twist!

**There's a wishing
well?!**

One Well, Five Problems



One Well, Five Problems

Archaeologist
Historical
Resource

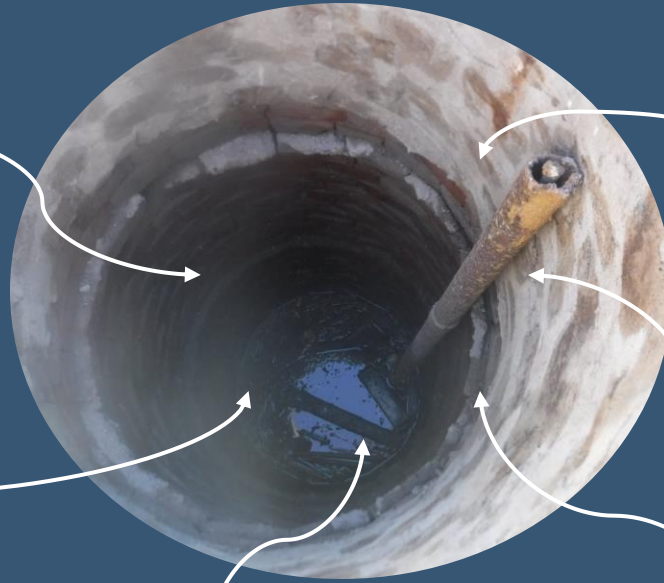
RCD
Potential Delay

Geotech
Foundation
concern

Contractor
Physical Obstacle

Env. Scientist
Conduit to
groundwater

Alameda PW
Novel permitting



What We Were Missing

~~INFORMATION~~

- ✗ Reports
- ✗ Emails
- ✗ Technical opinions
- ✗ Recommendations

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PERSPECTIVE

- ✓ Honest and open communication
- ✓ Seeing through each other's lenses
- ✓ Physically present, not distracted
- ✓ The full problem — not five pieces

Adaptation Requires Communication.

Sometimes the fastest way to solve a problem is the oldest way:

Get physically in front of the problem.

Get physically in front of your team.

Talk about it.

**More Unanticipated Cultural Resource
Finds During Construction? Absolutely!**

The Records Said One Thing. The Ground Said Another.

THE RESEARCH

Historical aerial
photographs

Sanborn fire insurance
maps

Archival and records
search



THE SHOVEL HITS

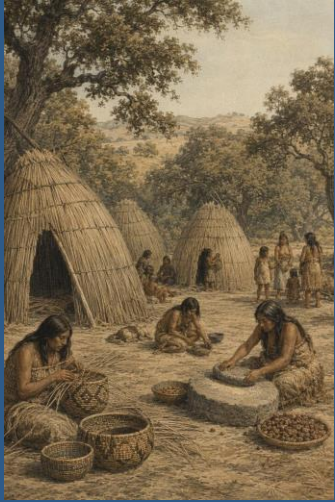
An undocumented well
appears

Buried features and
artifacts surface

Decisions needed in hours,
not weeks

Finishing the study does not end the potential for discovery.

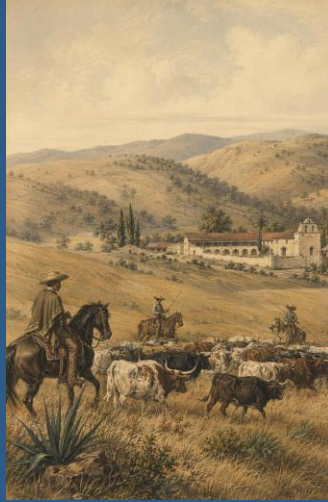
California History



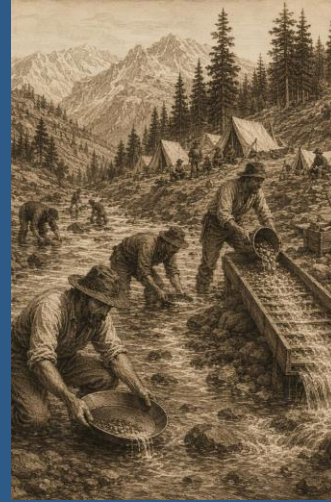
**Indigenous
History**



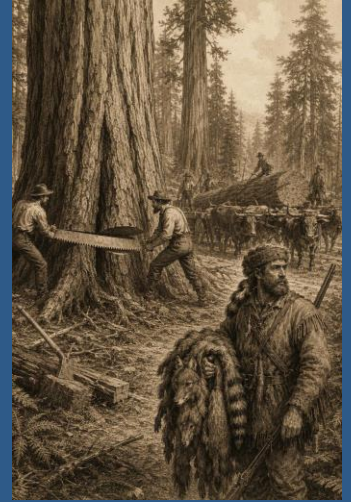
**Spanish
Missions**



**Mexican
Ranchos**



Gold Rush



**Trappers &
Logging**

Surprise! Bone Fragments

The Right Move: Slow Down Before You Assume

1. Slow down and stop work in the area
2. Protect and secure the location
3. Have someone qualified in osteology examine the material



STOP • SECURE • VERIFY

If Human Remains Are Suspected

01

Establish exclusion zone

A work exclusion zone prevents further disturbance of the remains

02

Notify the coroner

County coroner is notified once human remains are identified

03

Coroner review

Coroner determines whether remains are of Native American origin

04

If not Native American

Coroner confirms approximate age and whether it is a modern crime scene

05

If Native American

NAHC is notified and identifies a Most Likely Descendant to consult on next steps

Another Surprise! Obsidian Knife

1

Work was halted in the vicinity of the find to avoid further disturbance – archaeological and Native American monitors examine



2

Archaeological and Native American monitors examined the find in place – determined to be an isolate



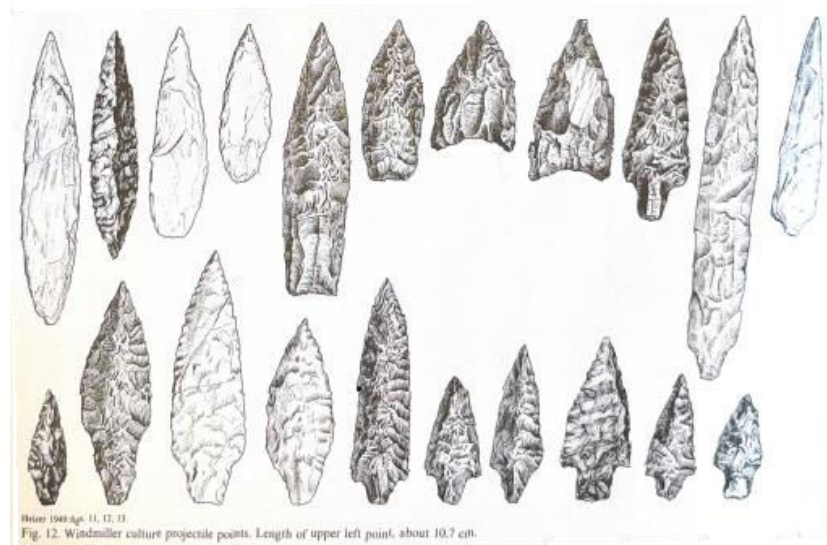
3

Reference project mitigation – required to follow the consulting Tribe's protocol



4

The Tribe took possession of the knife

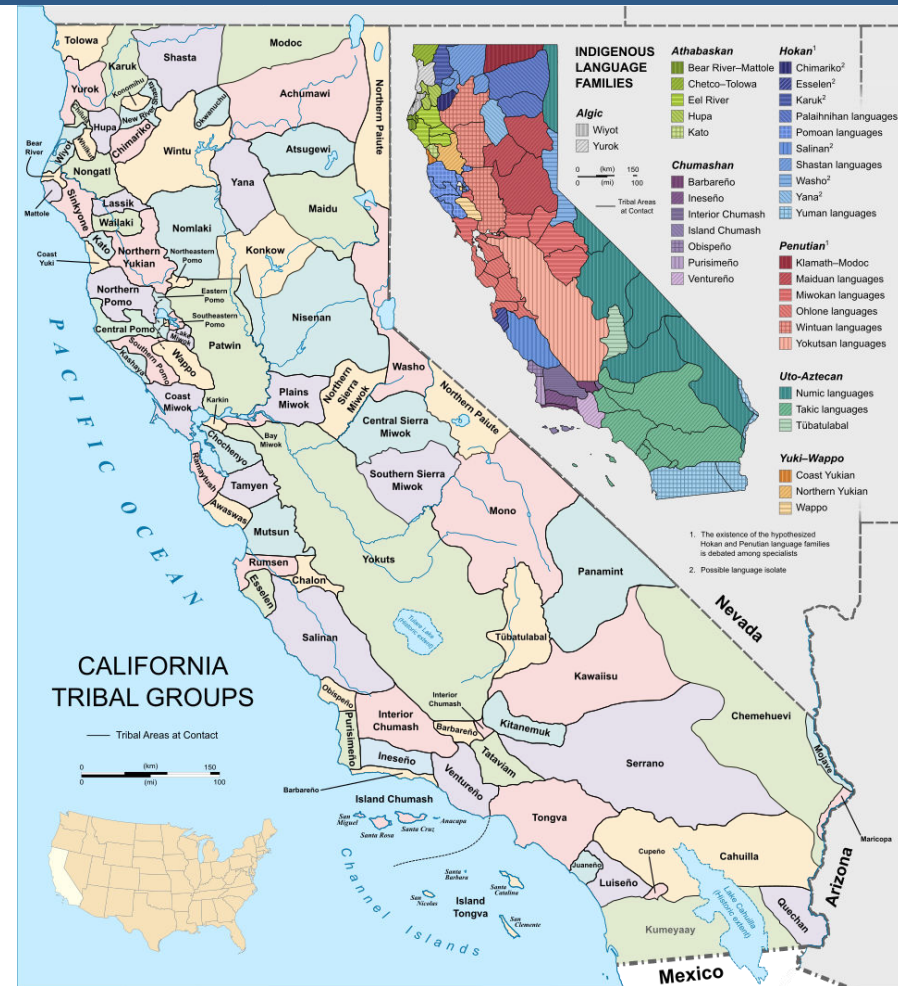


Boies 1949:figs. 11, 12, 13.
Fig. 12. Windmiller culture projectile points. Length of upper left point, about 10.7 cm.

Source: Wallace, William J. 1978. Post-Pleistocene Archeology, 9000-2000 B.C. in Handbook of North American Indians.

Tribal Coordination

- If conditions of approval or mitigation measures don't say who to contact and when, coordinate with agency staff
- Tribal sovereignty is an important consideration — don't get in the way of government-to-government consultation
- California is incredibly diverse; a project may sit within the traditional territory of multiple tribes



What Could Have Gone Wrong

Everything went smoothly here — the direct result of clear cross-discipline communication and a team that understood the applicable conditions of approval, mitigation measures, and regulations.

Work not halted

Finds ignored or destroyed before documentation or proper treatment. While this well was not significant, many are — they often hold important information about former occupants.

Bones mishandled or over-escalated

Human remains carry detailed regulations. Calling the coroner unnecessarily strains resources away from where they're needed.

Artifact dismissed too quickly

The obsidian knife could have been part of a larger site or a significant ceremonial or burial good.

Unlike a storage tank, cultural resources are not clear cut — each is unique, carries the perspectives of descendant communities, and must be treated with respect.

What Made This Work: Prepare, Communicate, Respond

A large, conical pile of brown, textured soil or sediment dominates the background. The pile is composed of clumps and loose earth. The sky above is a uniform, overcast grey. The foreground is a flat, sandy area with some scattered clumps of soil.

**Following protocols after
unanticipated discoveries**

Communication with the field team

Initial investigations and protocol preparation

Why Does This Matter?

When protocols are clear, the right people are involved, and communication is fast, teams can protect archaeological information, respect tribal concerns, and still keep construction moving.

Protect the record

Archaeological information stays intact and documented.

Respect tribal concerns

The Tribe is at the table as soon as a discovery is made.

Keep construction moving

Clear protocols and fast decisions avoid unnecessary delays.

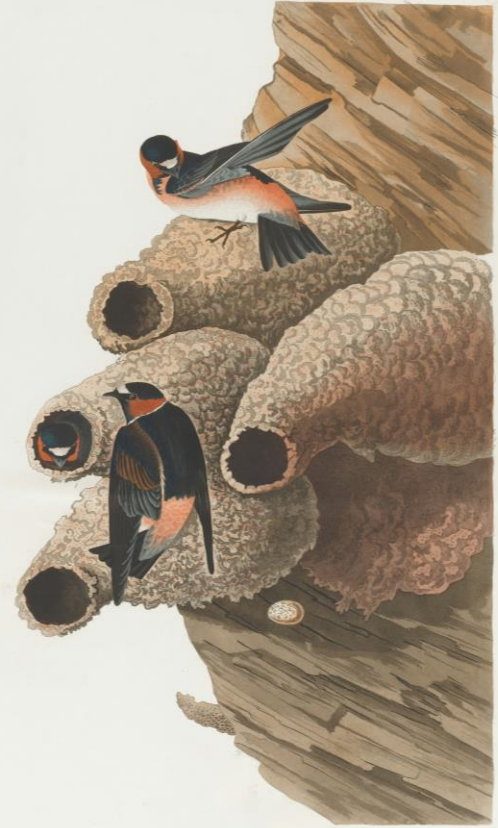
Discoveries teach us how our predecessors adapted before us and protect a treasured heritage.

Once they are destroyed, that knowledge is lost forever.

Biological Resources Case Study

Outwitting a cliff swallow colony.

When biological resources refuse to follow the
schedule



Background: Nesting Birds

The Protections

- California Fish and Game Code (CFGC)
- Migratory Bird Treaty Act (MBTA)
- Other project permits

Where birds nest:

- Ground, trees, vegetation, and cliffs
- Buildings, equipment, utility towers, and bridges
- Inside pipes and culverts

REMEMBER

Nesting bird season is typically February-August but can vary by species and based on climate.



Regulatory Protection for Birds

What the law protects

- Most native birds are protected by the federal MBTA
- All nesting birds are protected under CFGC §§ 3503, 3503.5, and 3513
- Both prohibit "take" - injuring birds or destroying nests, eggs, or young
- A nest is active once it contains eggs or nestlings



Santa Maria Levee Replacement

What we knew going in:

- Flood control upgrades in Santa Barbara Co.
- June construction start
- Box culvert previously used by cliff swallows



The Constraint

- Active nests protected by CFGC and MBTA
- Avoidance buffers could delay work



Cliff Swallow Nest Construction

Why The Window to Act Was Narrow



Due Diligence

Why Active Nests Change Everything

- Preconstruction surveys required before work in nesting season
- Active nests are avoided with a no-work buffer set by the biologist or agencies
- Inactive nest starts can be removed
- Once active, a nest cannot be disturbed until the young have fledged



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Photo by [Ben Mullins](#) on [Unsplash](#)

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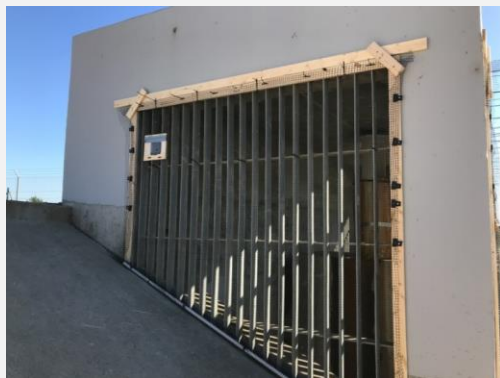


Photo by [Ben Mullins](#) on [Unsplash](#)

The Plan: Custom Exclusion System

Designed feature by feature:

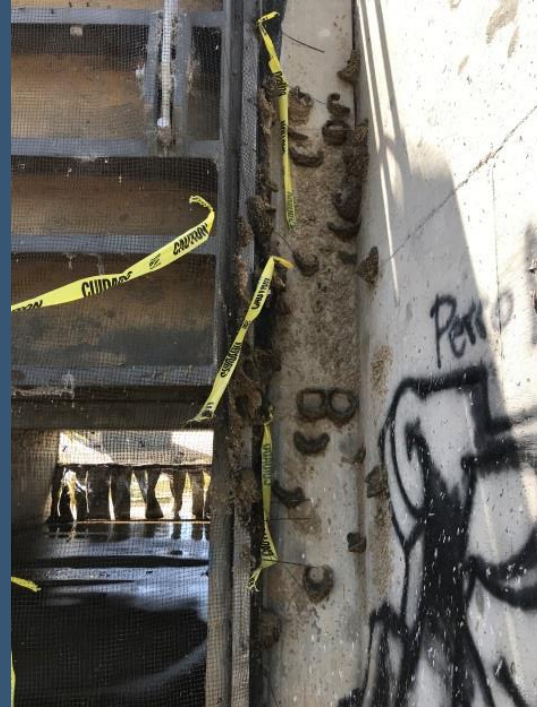
- Box culvert: 1/4-inch netting, two-part breakaway panel, PVC-weighted edge
- Blow-off structure: battens, plastic anchors, PVC weighting, loose flagging
- Round metal culvert: hardware cloth with yellow flagging below



DESIGN DETAILS

One-way exit door and breakaway panels: birds out, drainage preserved, no entrapment.

The Discovery: The Plan Worked on Paper, Until the Birds Arrived



The Discovery: The Plan Worked on Paper, Until the Birds Arrived



The Reframe

~~EXCLUSION~~

- ✗ Netting and barriers
- ✗ Repair, repeat, repair
- ✗ Remove inactive nest starts
- ✗ Fights the colony's instinct

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ALTERNATIVE HABITAT

- ✓ Modified roll-off container
- ✓ Sited outside the work area
- ✓ Colony exploring within days
- ✓ Asks where they can go

The Roll-Off Container Solution

An unconventional solution:

- Large roll-off container installed and modified as nesting habitat
- Placed outside the construction area
- Colony began exploring within days

The Response

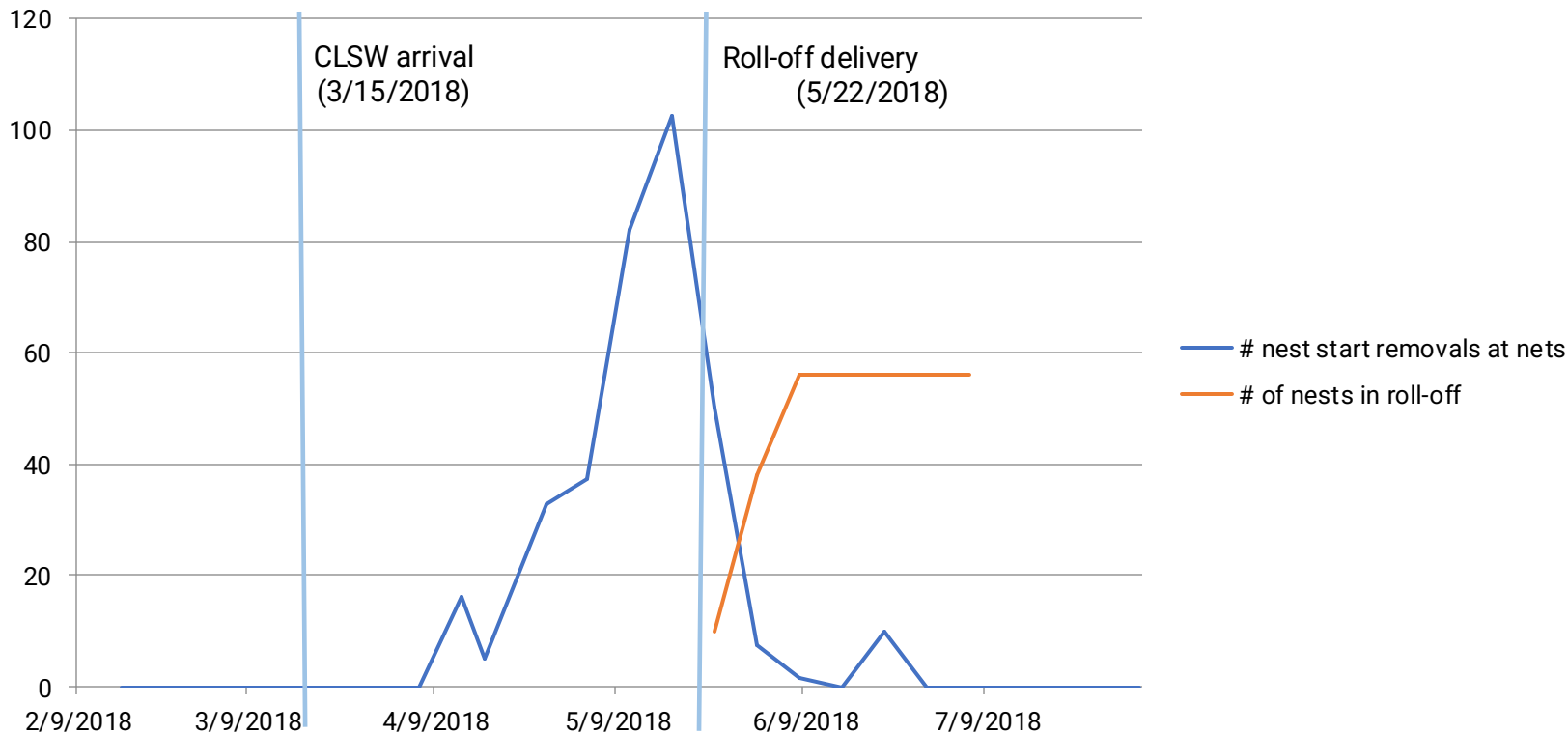
- Nesting started shortly after
- Immediate and dramatic uptake

ADAPTIVE MANAGEMENT

If you cannot keep birds out, give them
a better place to go.



Nest Start Removals vs. Established Nests in Roll-off



The Outcome: On Schedule

50+ Nests Established in the Roll-off

- Alternative nesting site was successful
- Zero schedule delay

What it cost the client:

- Increased monitoring frequency
- Adaptive management and netting repairs
- Building the alternative nesting structure

TIP #3

Budget contingency for adaptive management - there is no line item for inventing a Plan B mid-season.



Be Flexible - Adapt Like Nature.

Due diligence reduces risk. It never eliminates it.

Unexpected challenges require adaptations – like the swallows adapted to our deterrents!

Adaptation doesn't equal doubling down. It means being open to alternatives.



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THANK YOU!

IMAGINE, INNOVATE, IMPLEMENT
THE FUTURE OF LAND RECYCLING



We appreciate your feedback, follow this QR code
to submit an evaluation form on Whova.

**Join the conversation, use #CALRC2026 to share
your photos, insights and highlights!**



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