

Inland Pollution Response



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Staff Environmental Scientist

Overview

- DFG and OSPR Authorities for spill response
- What are “deleterious” substances
- Describe DFG Responders and Resources
- Storm Water Pollution case study
- How DFG coordinates with Water Boards staffs

DFG Mission

The Mission of the Department of Fish and Game is to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public.

Events Leading to the Creation of OSPR

T/V AMERICAN TRADER

Huntington Beach, CA –
February 1990



aground on Bligh Reef

T/V EXXON VALDEZ

Prince William Sound

Alaska

March 24, 1989



The Lempert-Keene-Seastrand Oil Spill Prevention and Response Act

- This Act created the Office of Spill Prevention and Response within the Department of Fish and Game on January 1, 1991
- The Administrator for OSPR, currently Steve Eddinger, is a chief deputy director of the Department of Fish and Game.
- The Administrator is appointed by the Governor.

OSPR Mission

A pelican with a long, pointed beak and a yellow patch on its head is shown in flight over a dark blue ocean. The bird's wings are spread wide, and its tail feathers are visible. The background is a deep blue, slightly textured surface representing the water.

To provide the **best achievable protection** of California's natural resources by **preventing, preparing** for, and **responding** to spills of oil and other deleterious materials and through **restoring** and enhancing affected resources.



FISH AND GAME CODE SECTION 5650

- (a) Except as provided in subdivision (b), it is unlawful to deposit in, permit to pass into, or place where it can pass into the waters of this state any of the following:
 - (1) Any petroleum, acid, coal or oil tar, lampblack, aniline, asphalt, bitumen, or residuary product of petroleum, or carbonaceous material or substance.
 - (2) Any refuse, liquid or solid, from any refinery, gas house, tannery, distillery, chemical works, mill, or factory of any kind.
 - (3) Any sawdust, shavings, slabs, or edgings.
 - (4) Any factory refuse, lime, or slag.
 - (5) Any cocculus indicus.
 - (6) **Any substance or material deleterious to fish, plant life, mammals, or bird life.**

- (b) This section does not apply to a discharge or a release that is expressly authorized pursuant to , and in compliance with, the terms and conditions of a waste discharge requirement pursuant to Section 13263 of the Water Code or a waiver issued pursuant to subdivision (a) of Section 13269 of the Water Code issued by the State Water Resources Control Board or a regional water quality control board after a public hearing, or that is expressly authorized pursuant to, and in compliance with, the terms conditions of a federal permit for which the State Water Resources Control Board or a regional water quality control board has, after a public hearing, issued a water quality certification pursuant to Section 13160 of the Water Code. This section does not confer additional authority on the State Water Resources Control Board, a regional water quality control board, or any other entity. (c) It shall be an affirmative defense to a violation of this section if the defendant proves, by a preponderance of the evidence, all of the following: (1) The defendant complied with all applicable state and federal laws and regulations requiring that the discharge or release be reported to a government agency. (2) The substance or material did not enter the waters of the state or a storm drain that discharges into the waters of the state. (3) The defendant took reasonable and appropriate measures to effectively mitigate the discharge or release in a timely manner. (d) The affirmative defense in subdivision (c) does not apply and may not be raised in an action for civil penalties or injunctive relief pursuant to Section 5650.1. (e) The affirmative defense in subdivision (c) does not apply and may not be raised by any defendant who has on two prior occasions in the preceding five years, in any combination within the same county in which the case is prosecuted, either pleaded nolo contendere, been convicted of a violation of this section, or suffered a judgment for a violation of this section or Section 5650.1. This subdivision shall apply only to cases filed on or after January 1, 1997. (f) The affirmative defense in subdivision (c) does not apply and may not be raised by the defendant in any case in which a district attorney, city attorney, or Attorney General alleges, and the court finds, that the defendant acted willfully.

Fish & Game Code - Pollution

What is a “*deleterious*”
substance or material??

“For the purposes of FGC §5650, subdivision (f), a substance or material is deleterious if, because of its nature or quantity, it has a harmful effect on fish, plant life or bird life when it is deposited in the waters of the State of California.”

People v Guntert (1981) 126 Cal.App.3d Supp. 1, 8

Fish & Game Code - Pollution

- “Deleterious” can be generally thought of as a substance which adversely affects an organism’s ability to:
 - Breathe
 - Feed
 - Grow
 - Reproduce, or
 - Avoid predation or disease.

Fish & Game Code - Pollution

- Proof of Actual Injury is Not Required

Proof of “...permanent annihilation or displacement of fish or wildlife...” is not a requirement to finding that a substance is deleterious.

– *People v Guntert* (1981) 126 Cal.App.3d Supp. 1, 7

Fish & Game Code - Pollution

Fish & Game Code § 5651 Chronic

- A “continuing and chronic condition of pollution” shall be reported to the appropriate RWQCB.
- DFG shall cooperate with the RWQCB in obtaining correction or abatement.

Fish & Game Code - Pollution

Fish & Game Code §5652

- *Misdemeanor.* Prohibits placement of materials such as cans, bottles, rubbish, litter, waste, debris, car parts, or animal viscera or carcass,
 - within 150 feet of high-water mark or where it may pass into state waters.
 - Prohibits placement of a vehicle along a stream bank for erosion control.

Streambed Alteration Agreements (DFG Code 1602)

- An entity must have an agreement with the DFG to “substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream or lake...”

DFG Codes 12015-12017

The Polluter Pays

- 12015 – Use of state funds for cleanup (if responsible party does not act)
- 12016 – provides for civil liability for damages to fish, plant, bird, or animal life or their habitat and for cost of cleanup.
- 12017 – directs deposits for cost recovery and NRDA to Fish and Wildlife Pollution Account. (also DFG 2014)

FGC / LKS Pollution Penalties

Criminal Penalties

5650 Substance / Any State Water:

Oil or factory refuse: Up to \$2,000 and/or 1 year Jail. FGC 12002(b)

All other 5650 substances: Up to \$1,000 and/or 6 months Jail. FGC 12002(a)

Plus \$10 per gal or lb of material discharged, if convicted.
Recovery Offset. FGC 12011

FGC / LKS Pollution Penalties

Civil Penalties

Any State Waters – Any 5650 Substance

- Up to \$25,000. [FGC 5650.1]
 - **Strict Liability.**

Oil in Non-marine waters - 42+ gal

- Up to \$50,000. [GC 8670.66(a)]
 - **Negligent or intentional.**

Marine Oil Spills

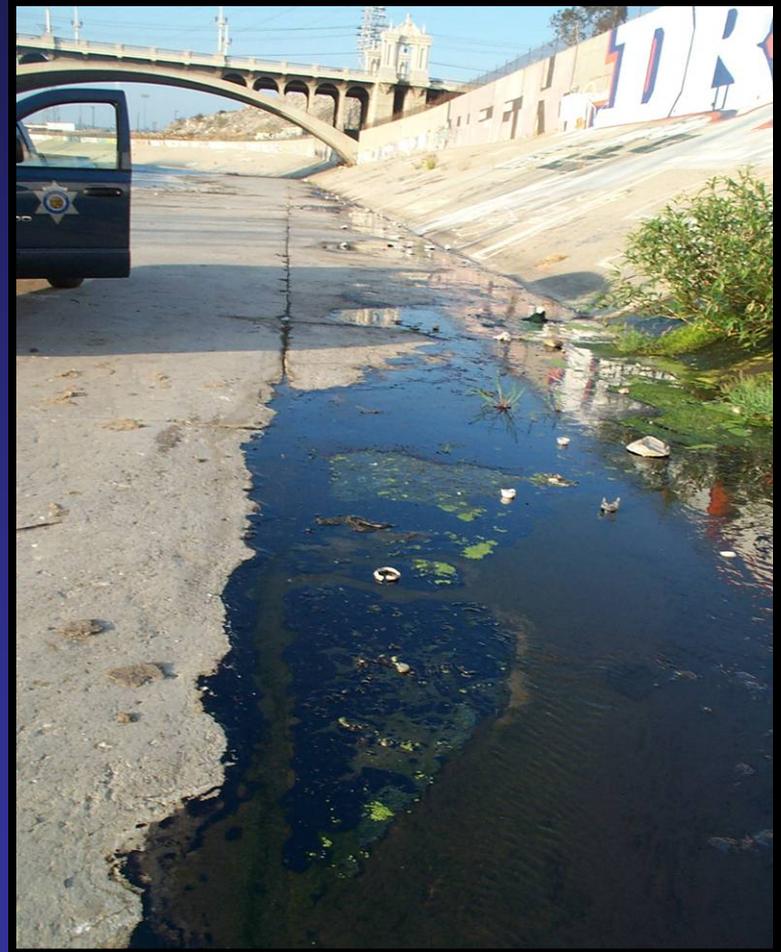
- Min \$25,000 up to \$500,000. [GC 8670.66(a)]
 - **Negligent or intentional.**
 - **Failure to cleanup and abate.**

Up to \$250,000 for
miscellaneous violations [GC
8670.66(b)]

Eg. Failure to report a spill.

Background: DFG's Unique Abilities

- State Peace Officer
- Unique Search Authority
- Specialized Training



Background: DFG's Unique Abilities

- Water Quality Scientists
- Laboratory Assets
- Restoration Experts



Field Response Team



**Environmental
Scientist**



Warden



**Oil Spill
Prevention
Specialist**

Incident Command System

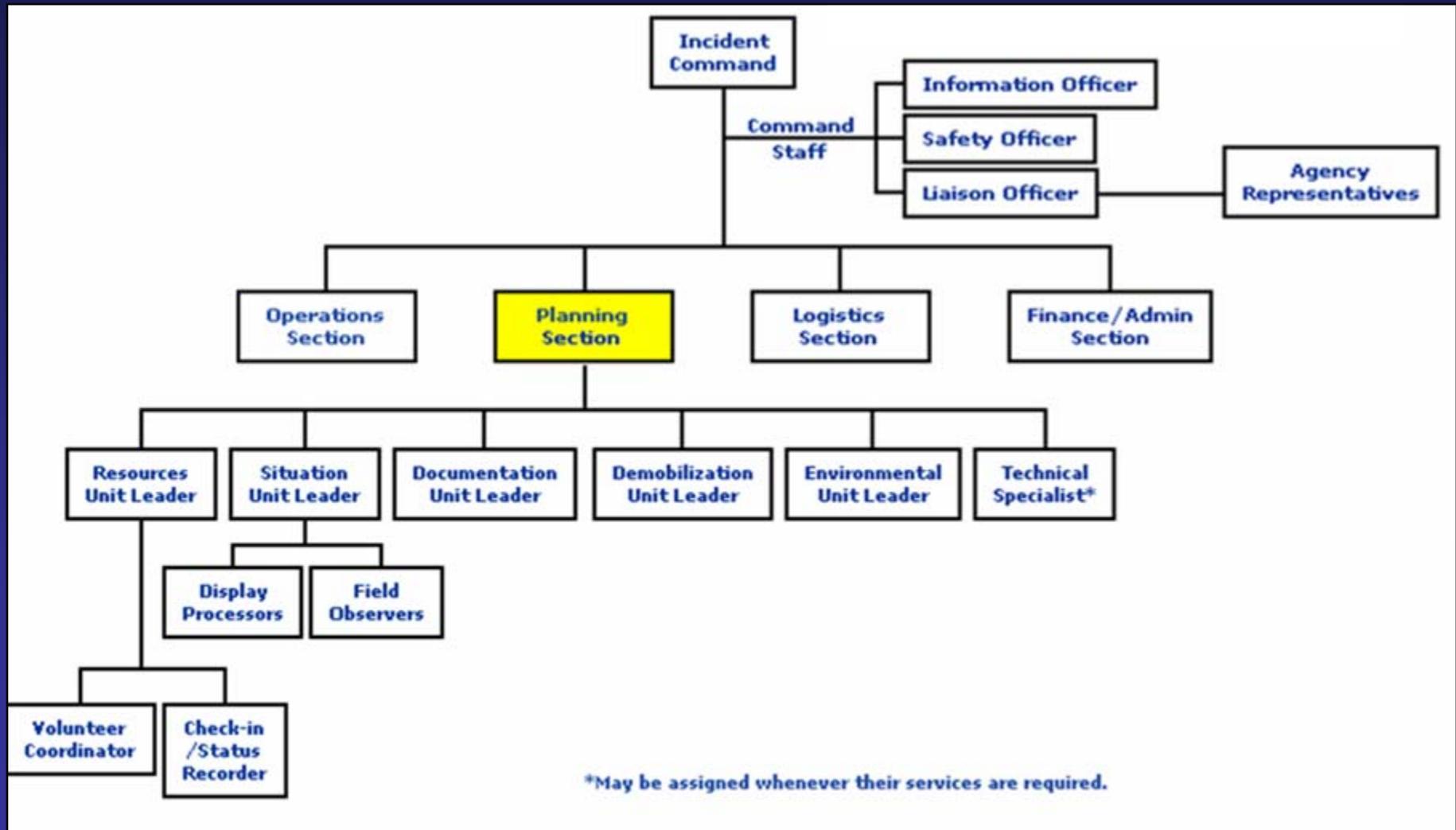


Jacob Luckenbach
Lead Vessel in the San Mateo Mystery Ship

The text is part of a larger document or poster displayed in the background, detailing the investigation into the San Mateo mystery ship.

1231

Incident Command System



Wardens

Primary Roles and Responsibilities:

- Incident Commander (ICS)
- State On-Scene Coordinator (UCS)

Specialized Roles and Responsibilities:

- Investigator
- Site Security
- Peace Officer

Oil Spill Prevention Specialists

Primary Roles and Responsibilities:

- Site Safety Officer (ICS/UCS)
- Liaison with Industry Operations Staff

Specialized Roles and Responsibilities:

- Site Characterization
- Release Quantification
- Human/Mechanical Failure Cause Analysis



Environmental Scientists

Primary Roles and Responsibilities:

- Environmental Planning
- Coordinate Wildlife Operations

Specialized Roles and Responsibilities:

- Identification of Resources at Risk
- Resource Protection Priorities
- Resource Injury Assessment



Scientific Support During a Response



Environmental Unit Lead in UC
SCAT (Shoreline Cleanup
Assessment Team)

Resources at Risk

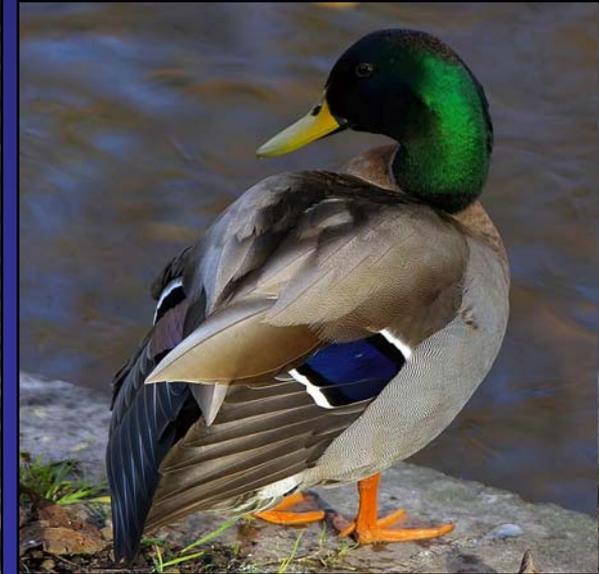
Sampling

Laboratory Analysis

Biosignificance reports

Injury quantification

Resources at Risk



(c) George Jameson

Wildlife Recovery

Oiled Wildlife Care Network



Natural Resource Damages



Restoration

Natural Resource Damage Assessment

Overall Goal of NRDA :

Returning injured natural resources and services to baseline and compensating for interim losses of such natural resources and services through the restoration, rehabilitation, replacement or acquisition of equivalent natural resources and/or services.

Laboratories



- Petroleum Chemistry Lab
- Water Pollution Control Lab

- Aquatic Toxicology Lab
- Pesticides Investigation Lab
- Wildlife Investigation Lab



Water Pollution Control Laboratory

- Located in Gold River
- Types of analysis
 - Organic (volatiles and semivolatiles)
 - Inorganic
 - Pesticides
 - Bioaccumulation
- Water, solids, tissues



Paracelcus: The dose makes the poison

Toxicity depends on type and concentration of material:

Polyaromatic Hydrocarbons (PAH)

Benzene, Toluene, Ethylbenzene, Xylene (BTEX)

Ammonia, sediment, etc



Water Quality Standards

- Often more stringent for aquatic life than human health
- Example, chlorine:
drinking water = 4 ppm,
aquatic life <0.02 ppm





Common pollutants:

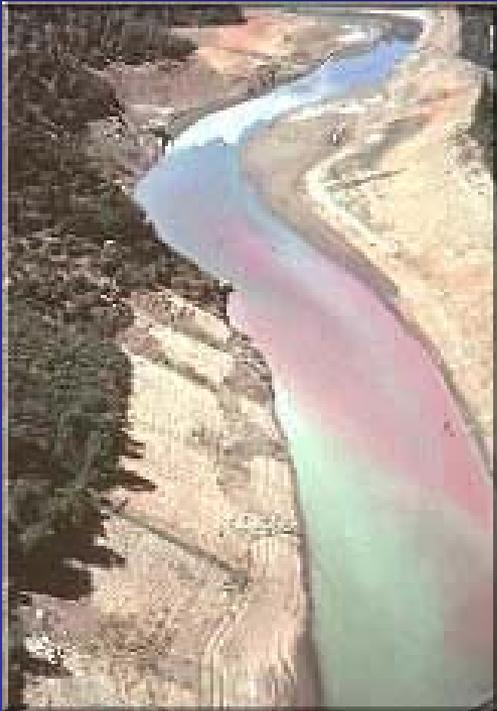
Oil/Petroleum

Chemicals

Sediment

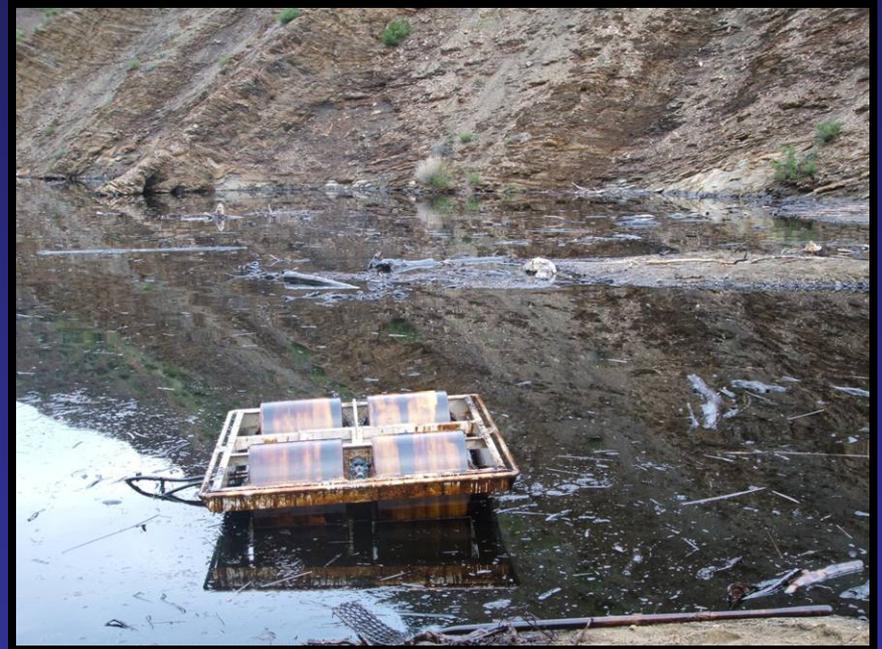
Cow poop (manure)

Cement - Concrete



SPRR - 1991, Sacramento River near Dunsmire

Pipelines: Los Angeles County Crude Oil Spill



Tanker Trucks: Mono County Oil Spill and Fire



Animal Waste: San Joaquin Valley and Beyond – Dairy Pollution



Problems with manure and animal waste

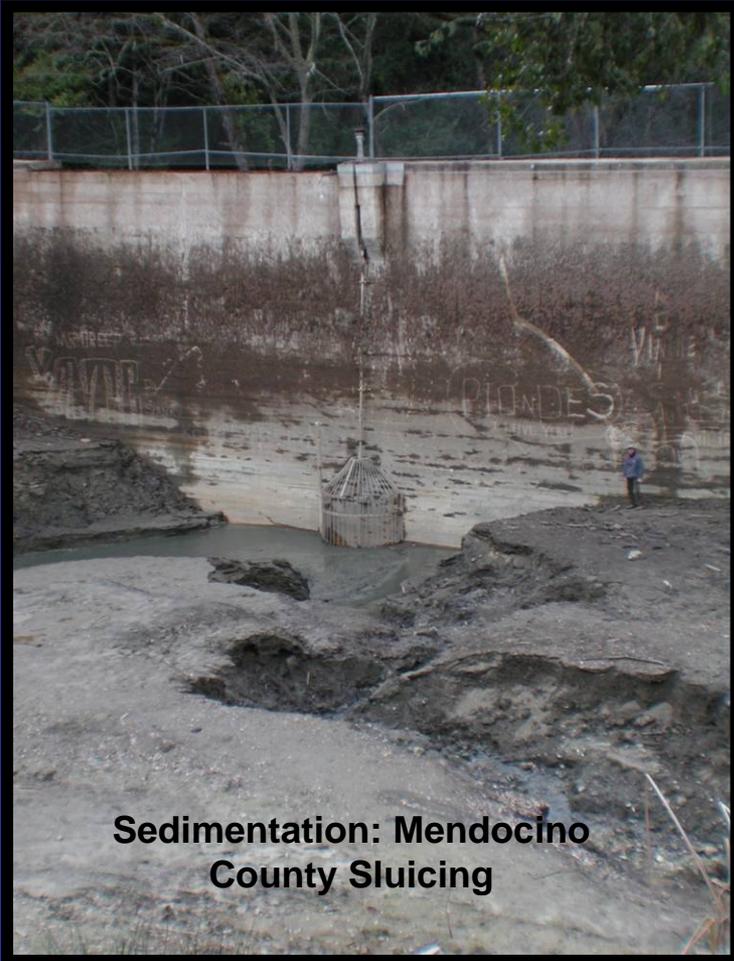
- Ammonia-acutely toxic to aquatic life
- BOD: compromises oxygen dynamics in water by added organic nutrients
- Algae blooms, eutrophication, succession
- Public health issues:
 - fecal coliform, *e coli*



Dairy Waste Task Force

Deleterious Impacts of Sediment Discharges

- Settleable solids = smothering
- Suspended solids = choking
- Turbidity = Compromises ability to feed and shelter; organisms seek refugia
- Particle size = filling in spawning gravels



**Sedimentation: Mendocino
County Sluicing**

Lower Kern River







Method for cleanup determined by habitat, conditions, location, logistics.

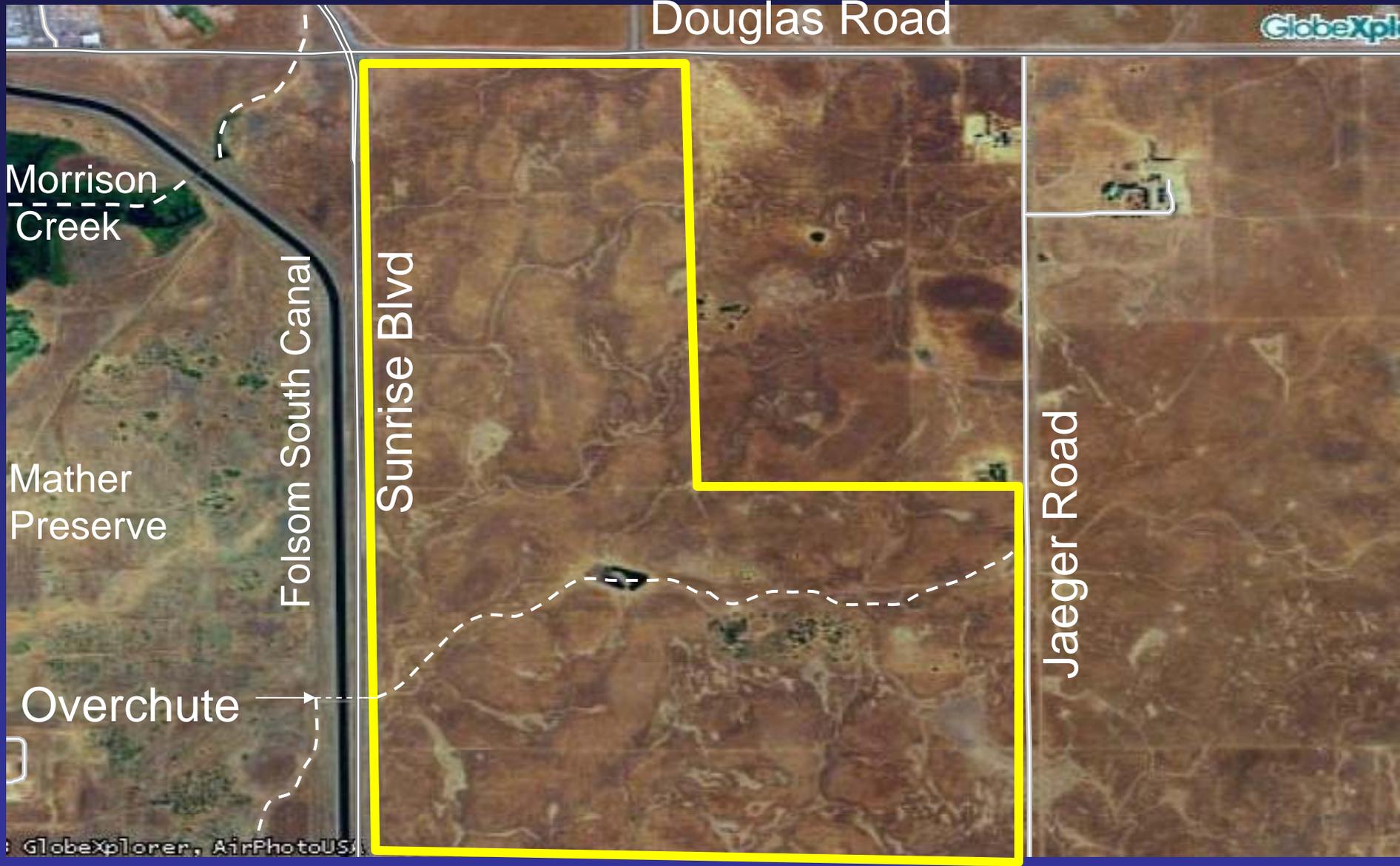
Cleanup can cause more impacts

Restoration is essential

**AKT Development Corporation &
Sunridge Development L.L.C.**

**Construction Stormwater
and Flocculant Discharges
Winter-Spring 2002-2003**

527 acre site in Rancho Cordova



Attributes of the Tributary to Morrison Creek

- Ephemeral Stream also characterized as a swale in vernal pool habitat.
- Resources at Risk: Vernal pool plants, wildlife, aquatic life.
 - Including endangered/sensitive species: tiger salamander, VPTS, Fairy shrimp
- Managed by Sacramento County, formerly Mather AFB

MAR 15 2003



The tributary to Morrison Creek supports a variety of “fish” and wildlife resources important to the State of California.

DFG Code 45. "Fish" means wild fish, mollusks, crustaceans, invertebrates, or amphibians, including any part, spawn, or ova thereof.

Vernal Pool Tadpole Shrimp

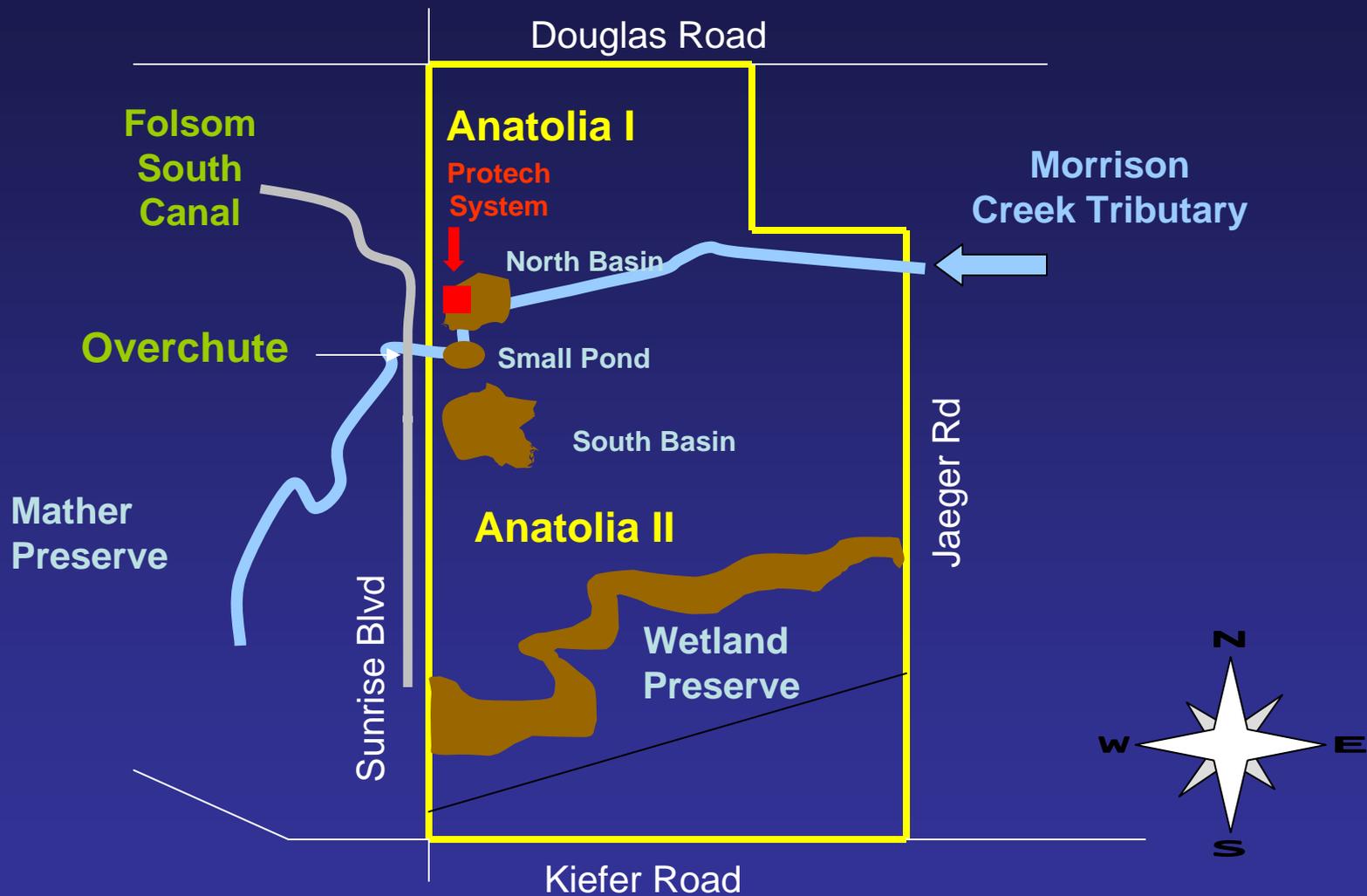
Endangered Species



- “Living fossils”; they have changed little in appearance in millions of years
- Species’ distribution has been greatly reduced from historical times due to destruction and degradation of its vernal pool habitat.
- Vernal pool habitats in the Central Valley now represent only about 25 percent of their former area, habitats are considerably more fragmented and isolated.



Identification of an endangered species brings additional considerations for cleanup and monitoring (ie permits, MOUs, coordination with FWS)



Erosion Control

- Mulch
- Temporary Seeding
- Soil Stabilizers
- Fiber Blankets



20 Dec 2002



20 Dec 2002



Colloidal clays suspended in north pond
Gullies on unprotected slopes

20 Dec 2002



20 Dec 2002



20 Dec 2002



20 Dec 2002



20 Dec 2002



ProTech System



11 March 2003

KlarAid PC1192™

LC50 for waterflea (*Ceriodaphnia dubia*) = 0.34mg/L

Dosage rate for system = 60 mg/L

176 times the level toxic to 50% of exposed *C. dubia*

Gills of aquatic life are negatively charged
Cationic Polymer is positively charged
ASPHYXIATION effect

- Use of a highly toxic compound with no method to analyze if it is entering the receiving water.





11 March 2003



11 March 2003





11 March 2003

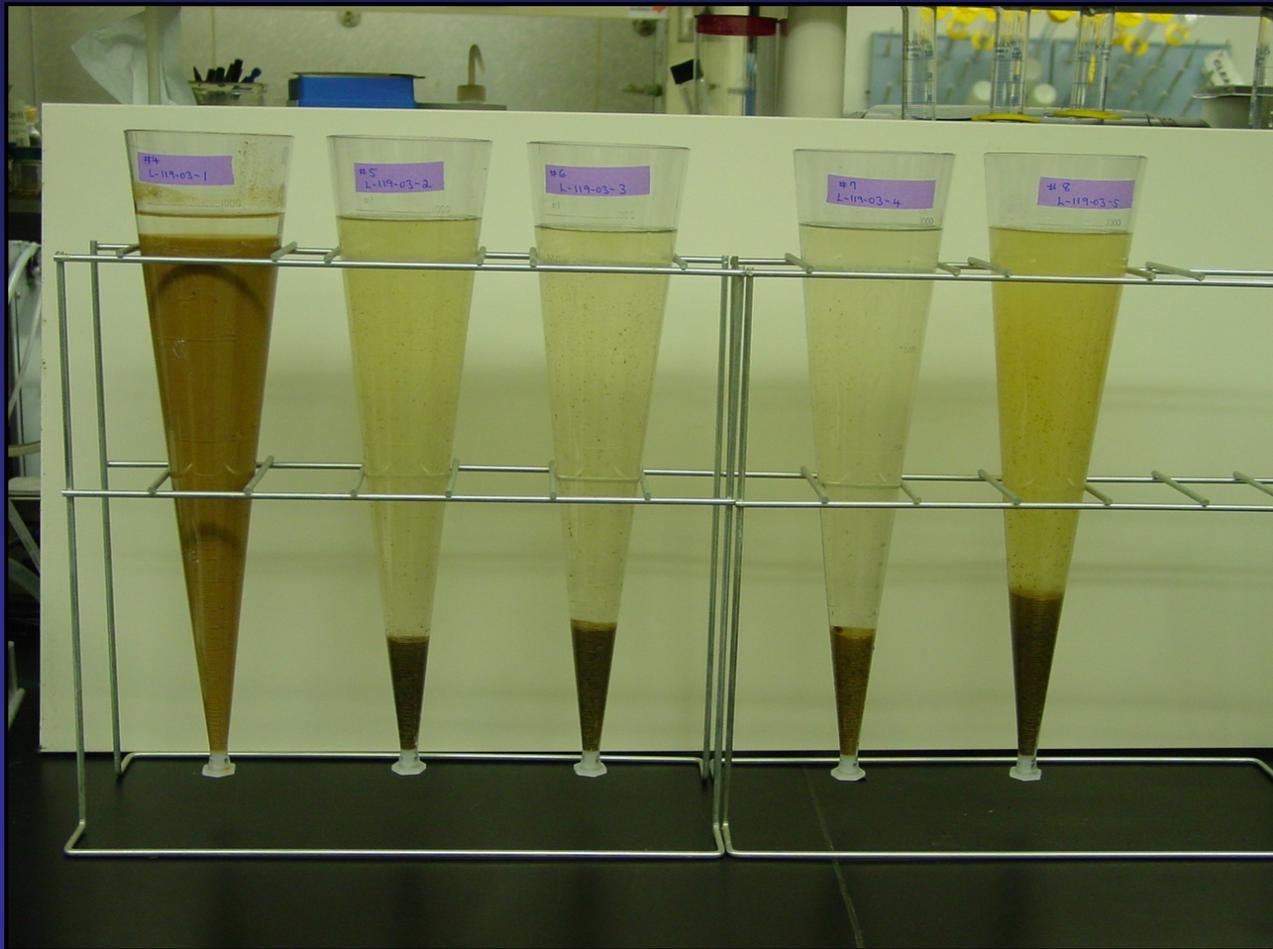


11 March 2003

Settleable Solids



Settleable Solids Analysis





DF&G Bench Test: May 14, 2003: North Basin Water vs. Mixtures and Upstream



Pro Tech



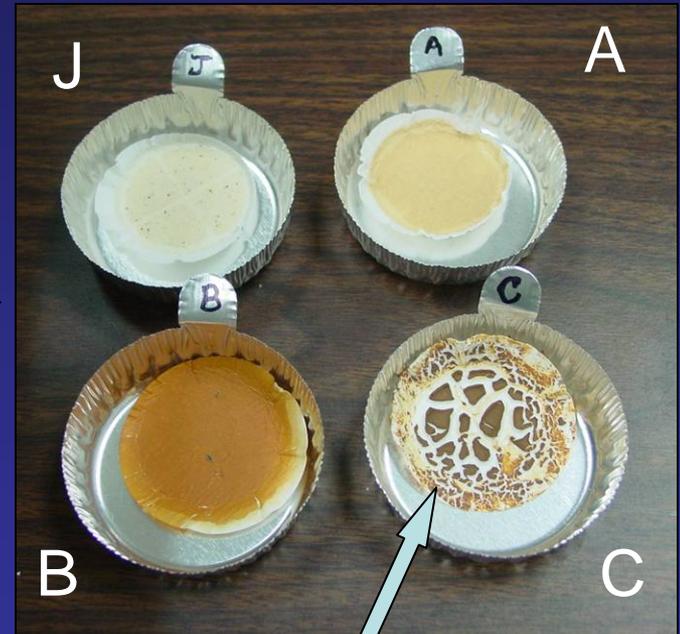
Dried Flocculant Characteristics

J= Jagger Rd.
A= Basin water
B= Basin + chitosan
C= Basin + Polymer



Filtered
Flocculent

drying



Filtered and
Dried Flocculent



Overflow

14 April 2003



14 April 2003

The Discharge flowing into the Mather Preserve.



14 April 2003

Turbidity

Upstream Condition

14 April 2003



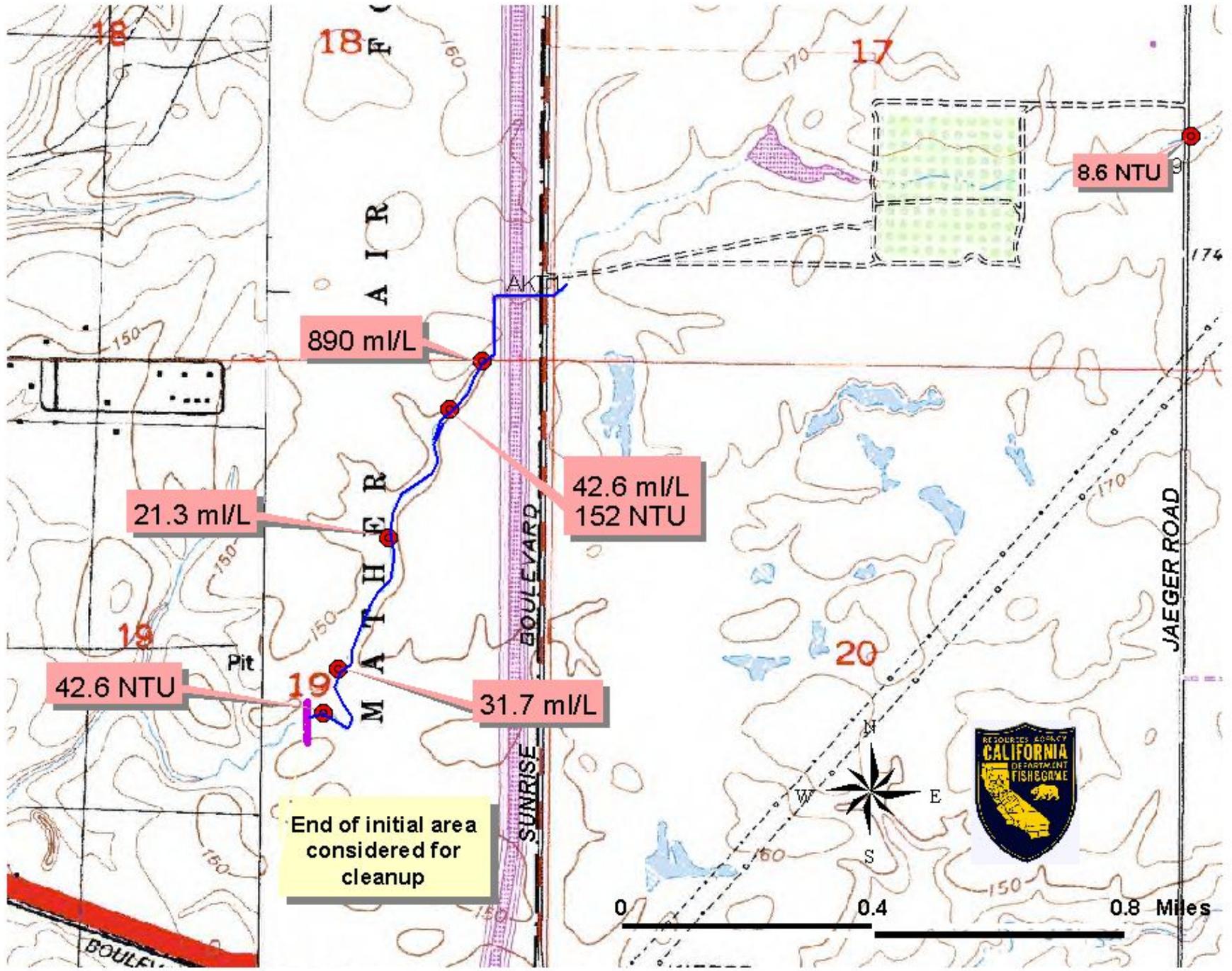
8.6 NTU



152 NTU

Downstream Condition

Basin Plan 10.3 NTU



Total Suspended Sediment

- Moderate habitat degradation

- Indications of major physiological stress;
long-term reduction in feeding success;
poor condition.



Cleanup possibilities



**Photos by ACOE staff
25 July 2003**

Stream Assessment and Monitoring

- RP agreed to water quality and biological monitoring recommended by DFG
- Downstream habitat (Mather Preserve) appeared healthier, but bioassessment showed more degradation



Natural Resource Damage Assessment



or Bucks for Bugs



Water Board Staff Assisting with Bioassessment



Environmental Impacts

- DFG concluded that the discharges were deleterious materials and negatively impacted aquatic life
- DFG Code 5650 violation
- USF&WS – streambed vegetation consistent with vernal pool habitat

Post-Incident Activities

- DFG Supported Water Board's enforcement action toward ACL
- Lengthy depositions (unusual questions)
- Confounding habitat assessment
 - FWS staff involvement
- No additional cleanup of floc

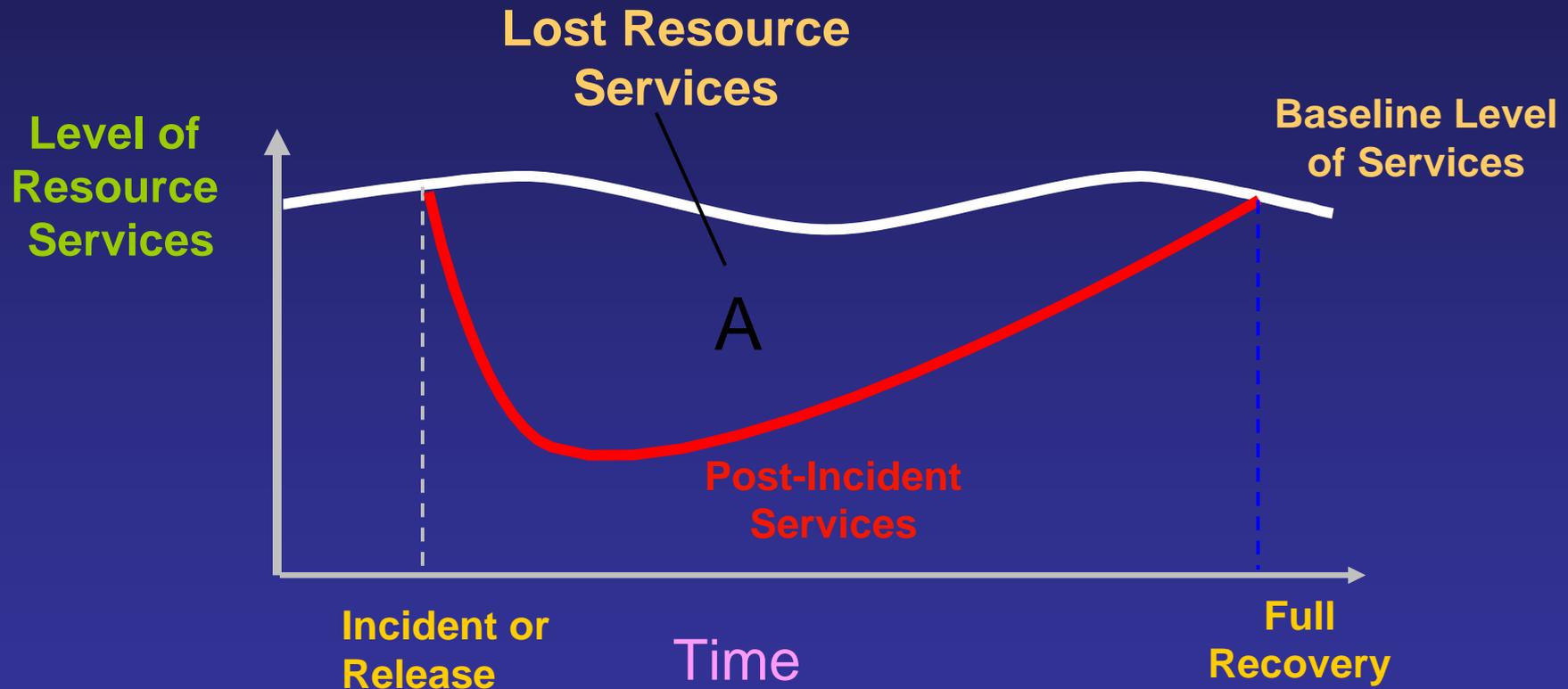
Proposed ACL

Prepared for testimony to RWB

- Failed to provide an adequate and effective combination of Erosion and Sediment controls
 - Failed to install BMPs using BAT/BCT
 - Failure to implement an adequate Storm Water Pollution Prevention Plan
 - Failed to prevent discharge of pollutants to waters of the State
 - Failed to Clean Up Downstream
-
- RWB decided to refer case to AG



Temporary Loss of Services After Release or Spill



Settlement Agreement - \$591K

Press Release

California Water News



FOR IMMEDIATE RELEASE
December 16, 2004
WD 04-012

Contact: Frances L. Mc Chesney
(916) 341-5174
Dana J. Michaels (DFG)
(916) 427-9948

WATER POLLUTION CASE AGAINST SACRAMENTO DEVELOPER SETTLED BY REGIONAL WATER BOARD AND DEPARTMENT OF FISH AND GAME

SACRAMENTO – The Central Valley Regional Water Quality Control Board and the Department of Fish and Game have reached a \$591,000 settlement resolving water quality pollution problems allegedly caused by Angelo Tsakopoulos' AKT Development Corporation. Tsakopoulos, a Sacramento-area developer, settled the case after a two-year investigation by the state.

The alleged violations stemmed from the construction of the Arroyo Development, which is part of the Sunrise Douglas Community Plan in Rancho Cordova. The settlement resolves the state's allegations that AKT Development Corporation cleared and graded the 527-acre construction site without properly controlling erosion caused by stormwater runoff. The state alleged that water quality violations had occurred during the winter of 2002 through the spring of 2004. The alleged violations included discharges of turbid stormwater, sediment and a chemical flocculant that was designed to treat the stormwater to tributaries of Morrison Creek, and the spraying of turbid water into a nearby pool reservoir.

The settlement calls for AKT to pay \$300,000 to the Sacramento Valley Conservancy, \$73,000 to an environmental fund administered by the Department of Fish and Game, and \$218,000 to the Regional Water Board, Department of Fish and Game, and the Attorney General's Office, which represented the state agencies.

The Sacramento Valley Conservancy is a non-profit private land trust dedicated to the preservation of open space. The Conservancy will use \$225,000 of the \$300,000 to develop a management plan and public education at the Iron Creek Hills preserve, and will use the remaining \$75,000 to help acquire additional lands in the Sacramento region for environmental preservation.

"Californians want clean water. This settlement underscores the importance of water quality and our action on our water program, and we hope that others involved in the construction industry will continue to improve their efforts to protect our waterways," said Bob Schneider, Chair of the Central Valley Regional Water Board.

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State Water Resources Control Board
WWW.CALSWRB.COM TEL: 916-227-2300 FAX: 916-227-2304

- \$300,000 to the Sacramento Valley Conservancy
- \$73,000 to an environmental fund administered by DFG
- \$218,000 to RWB, DFG, and the AG's Office

Summary

- Agencies' staffs should coordinate early for effective responses
- Need quantification by sampling and measuring flows, other conditions
- Compensation to the environment and restoration of impacted habitats is our trustee responsibility
- Contact OES to reach DFG dispatch



Dispatch

During normal business hours:

**Cathy and Adrian
OSPR Communications
(916) 341-6957**



For further information contact:

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