SteelheadCreek: Condition, Clean-up and Prognosis

Roland Brady, Ph.D., P.G.
Emeritus Professor of Geology

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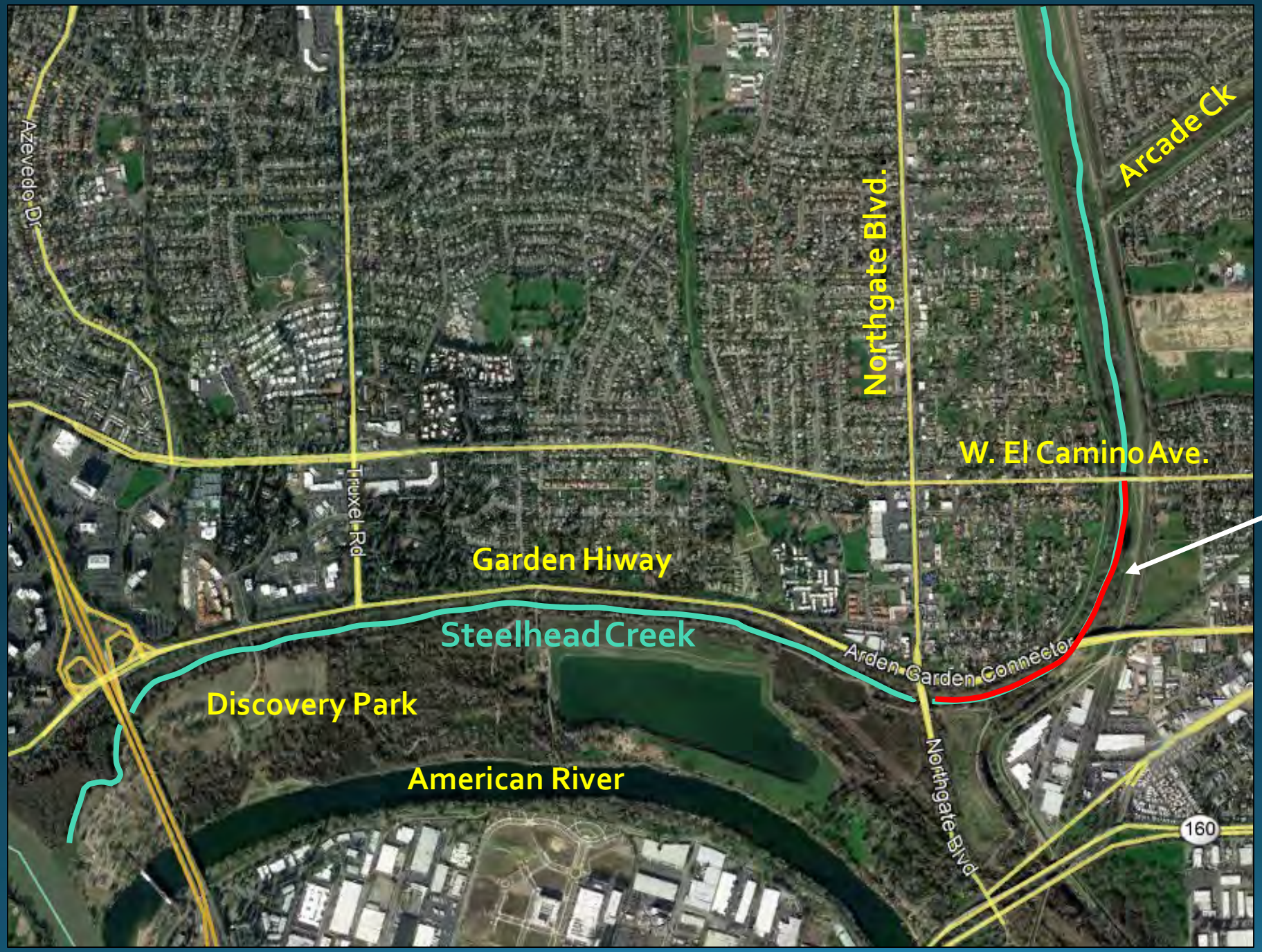
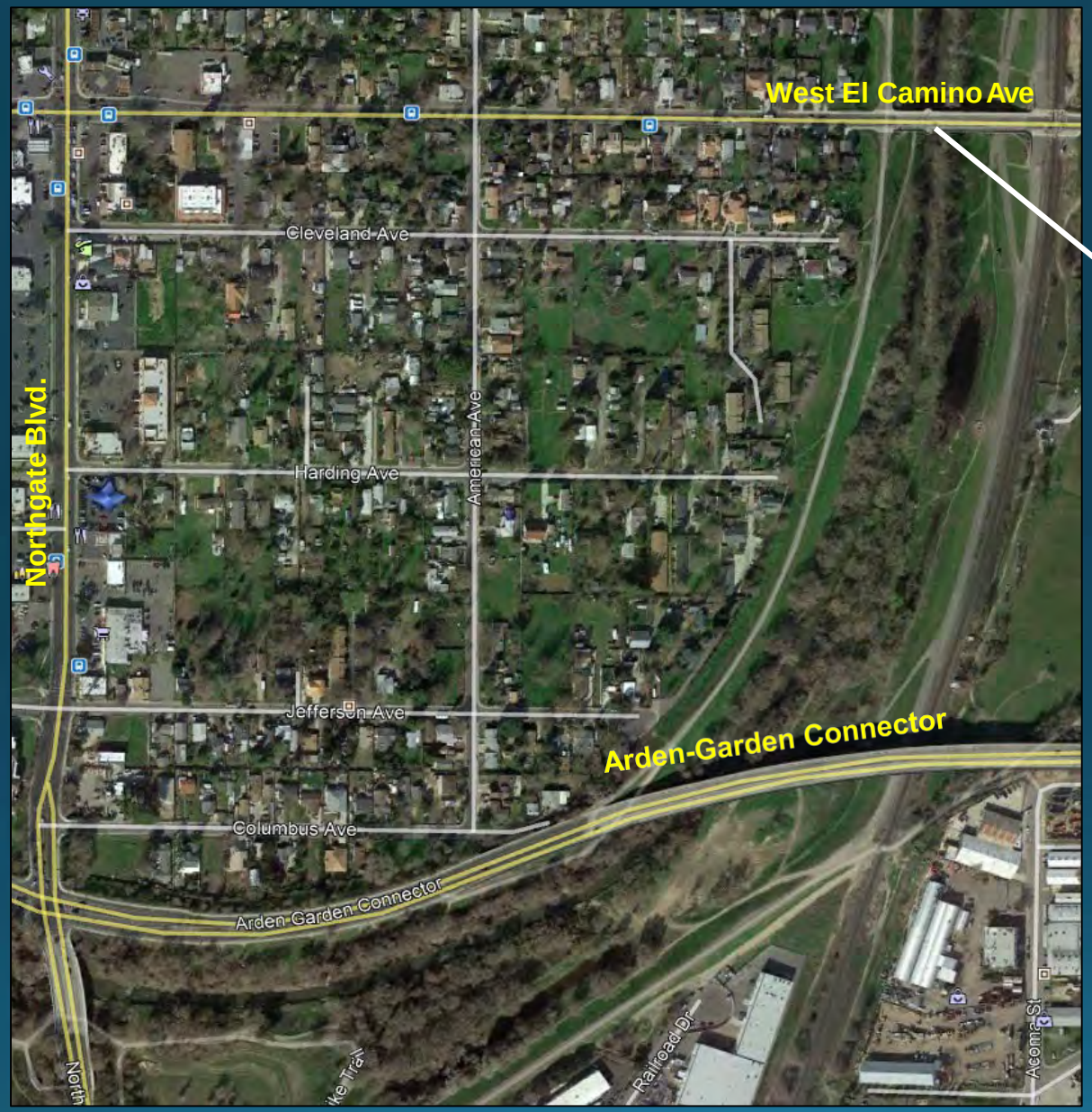


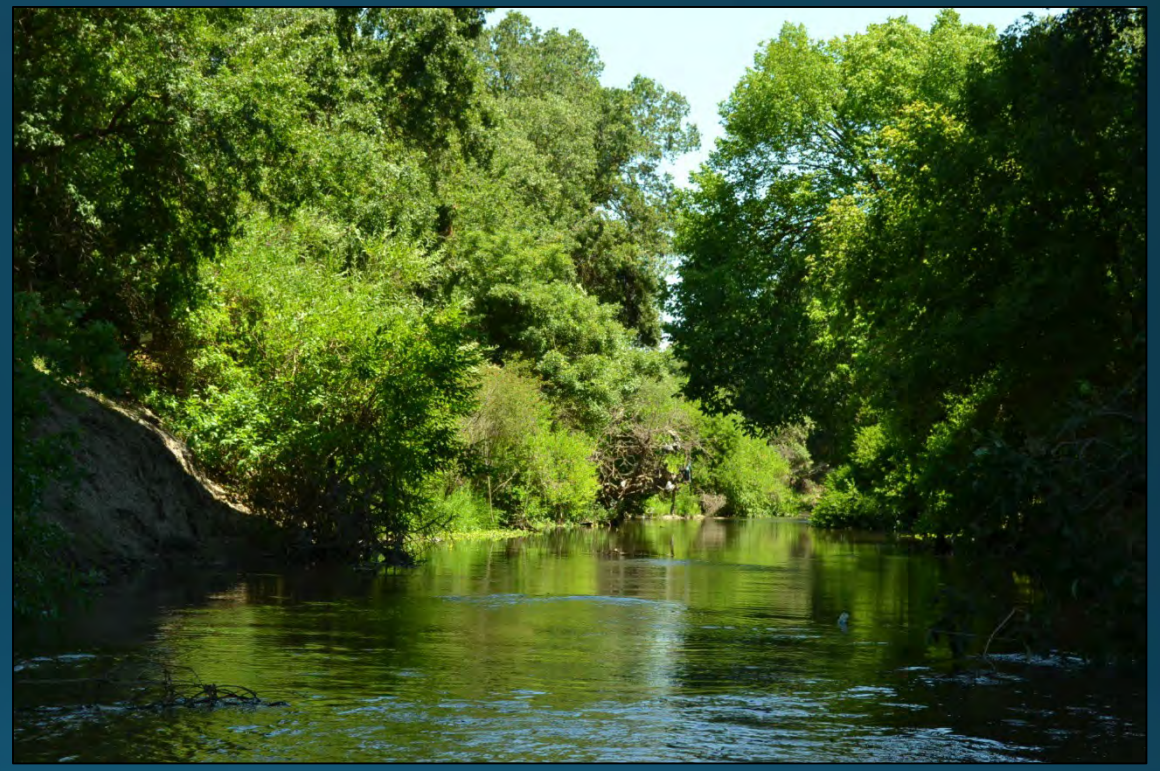
"Parkway Reach"

“Parkway Reach” Steelhead Creek



American River Parkway ends here.

CONDITION:



Important riparian habitat. Refuge for fish, birds, salamanders, frogs, snakes, otters, beavers, raccoons, and……..

Central Valley Steelhead and Central Valley spring run Chinook Salmon.*

- Majority of California's steelhead populations listed under federal Endangered Species Act (ESA).

With dwindling populations and passage issues, undammed watersheds are more important than ever.

*http://calfish.ucdavis.edu/location/?ds=694&reportnumber=1276&catcol=4690&categorysearch=%27Upper%20Steelhead%20Creek%27)

Numerous homeless camps. Have a large and damaging footprint.

Numerous pernicious impacts:

- Removal of understory vegetation by trampling. Recovery difficult.
- Digging and destabilizing banks. Exacerbates erosion > fine sediment in channel esp. during high flows.

- Ecological segmentation of riparian corridor esp. at night: people, dogs, smoke, smells. Disruptive to wildlife.

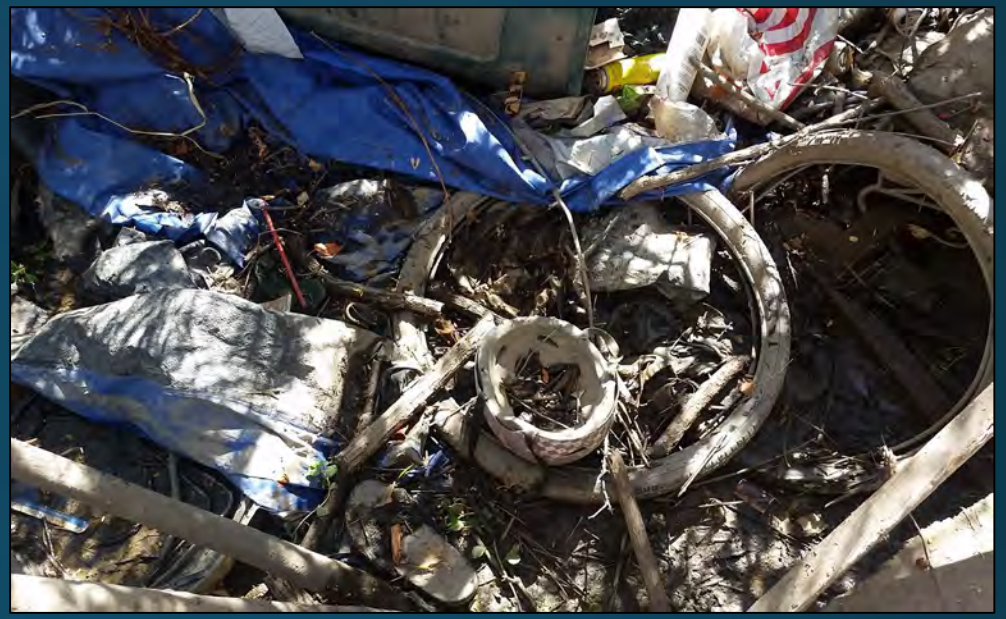
But most evident are tons of debris…

..including hazardous waste…

…that line the banks....

…and wash into the creek when the waters rise…

…forming a hellish stew.



WHAT WE’VE BEEN DOING ABOUT IT:

- Organized 2 cleanups with American River Parkway Foundation including homeless volunteers. Parks provided equipment and dumpsters.

On Oct. 13, between the Northgate and El Camino bridges, we removed over **23,000 lbs** of trash!

Thanks, Parks crew!!

- Received a minigrant from Sacramento Area Creeks Council to:

1) Develop protocol to measure and assess the debris.

(Existing protocols do not effectively address the conditions or questions needed.)

2)Develop a collaborative relationship with homeless campers to clean up and reduce the amount of debris discarded.

PROTOCOL QUESTIONS:

- What kinds of debris are present?
- How much is toxic?
- Where did it come from? Camping vs. dumping?
- How much is there?
- How much of the channel bottom does it cover?
- What is its effect on wildlife and habitat?
- Can it be cleaned up? If so, how?

The first attempt:

All this debris

came from this one small area!

The Protocol:

- Lay out 15’ x 20’ area (300 sq ft).
- Assign “**VIF**” = **V**isual **I**mpairment **F**actor (How much junk can be seen under water from the bank?)
  0 = none to **5** = “significant”.
- Remove debris and count each piece.
- Sort into classes (plastic, textile, metal, etc.).
- Bag and measure volume each class.
- Weigh each class.
- Photo document. Tabulate data.

Example, Site 8:

1) Lay out 15-ft x 20-ft quad. = 300 sq ft

2) Observe 2 tires, 2 shopping carts, 1 sleeping bag. **VIF= 4**

3) Remove and count debris, measure volume and weigh by category.

Item	Note	Number	Vol (cu ft) (Hts @ 20" diam)	Wt (lbs)
Textiles:		**66**	**7.5**	**195**
Blanket, sleeping bag, quilt, pillow		6		
Mattress, pad		12		
Clothing (large-coat, shirt, pants)		8	13	69
Clothing (small-underwear, hat, sock, glove)		0	12	58
Tent or fragment of		2	16	68
Carpet remnant		3		
Storage or travel bag		28		
Misc. (shoes)		7		
Plastic:		**148**	**5.8**	**54**
Tarp (larger than 1' x 1')		3		
Bag		40		
Fragment (smaller than 1' x 1')		81		
Plastic container (large > 1 qt)		1	20	34
Plastic container (small < 1 qt)		2	12	20
Fishing line		4		
Styrofoam		17		
Misc.				
Rubber:		**41**	**57.1**	**722**
Truck tire	@ 5.8 cu ft and 90 lbs/tire	0		
Automobile tire	@ 2.0 cu ft and 22 lbs/tire	27	54.0	594
Foam mat fragment	2 each at 24x24x3	3	2.0	125
Bicycle tire		3		
Hose		4	6	3
Misc.		4		
Metal:		**26**	**36.1**	**298**
Shopping cart	@ 15 cu ft and 60 lbs	2	30.0	120
Bicycle frame	@ 1.5 cu ft and 12 lbs	0		
Automotive parts		1		
Bicycle part		3		
Container		10	16	48
Cooking items		0		72
Wire, pipe, and tubing		9		
Car seat inc cushion	24x29x8	1	3.2	58.0
Misc.				
Electronics and Electrical:		**3**	**0.3**	**2.5**
Car stereo, radio		3	0.3	
Paper, Wood and Cardboard:		**10**	**1.6**	**12**
Magazines		4	9	
Boards, plywood		6		
Glass and Ceramic:		**75**	**2.5**	**44**
Container		43	10	
Fragments	Stopped counting, too many	32	4	44
Hazardous materials:		**1**		
Automobile oil filter with oil		1		

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Hose		4	6	3
Misc.		4		

370 items including 26 tires,
2 shopping carts, a car seat.
What's shown + 11 bags.

1327 lbs, 111 cu ft of debris

- *1.2 items / sq ft*
- *0.4 cu ft/ sq ft*
- *4.4 lbs/ sq ft*
- *>70% bottom covered = 210 sq ft*.

Co-conspirator
CrystalTobias

Sites range 60% to 90% of channel bottom covered by buried debris.

DEBRIS IN THE CHANNEL:

Hazardous waste:

- Batteries, insecticides, paints, pharmaceuticals, detergents, compressed gasses, fuels and lubricants, human feces.

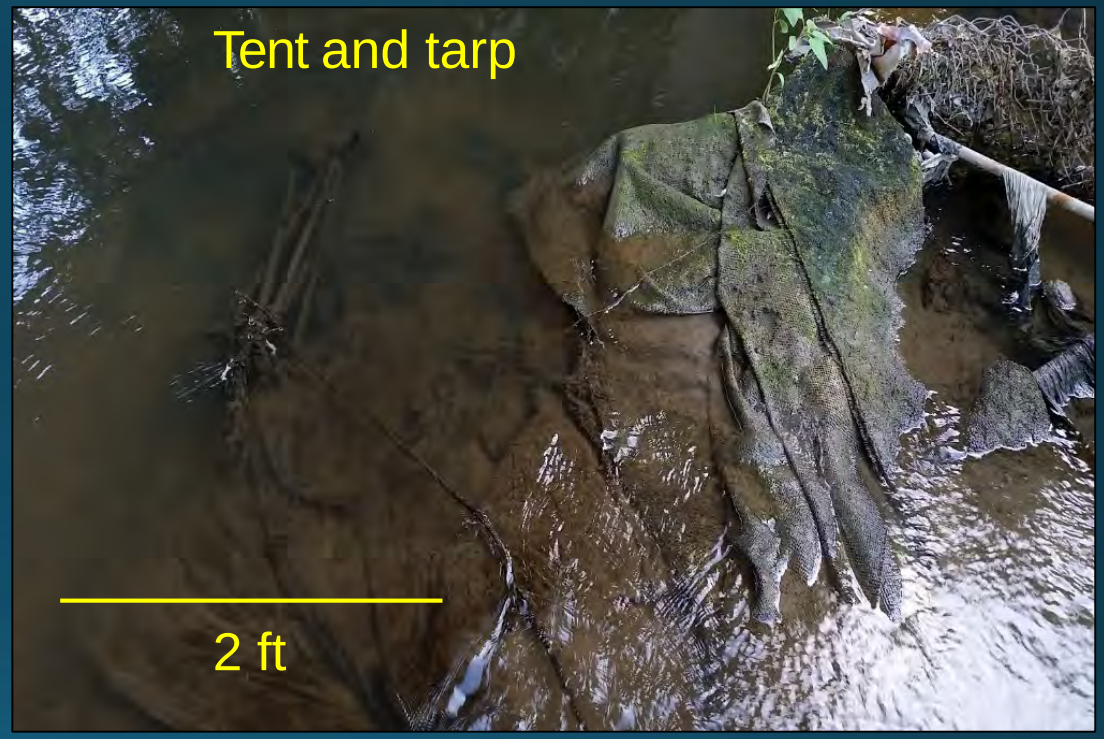
Plastics:

- Decompose to small (“nano”) particles and filaments (“worms”) – ingested.
- Entanglements (e.g. fishing line).

Effects of these are fairly well documented.

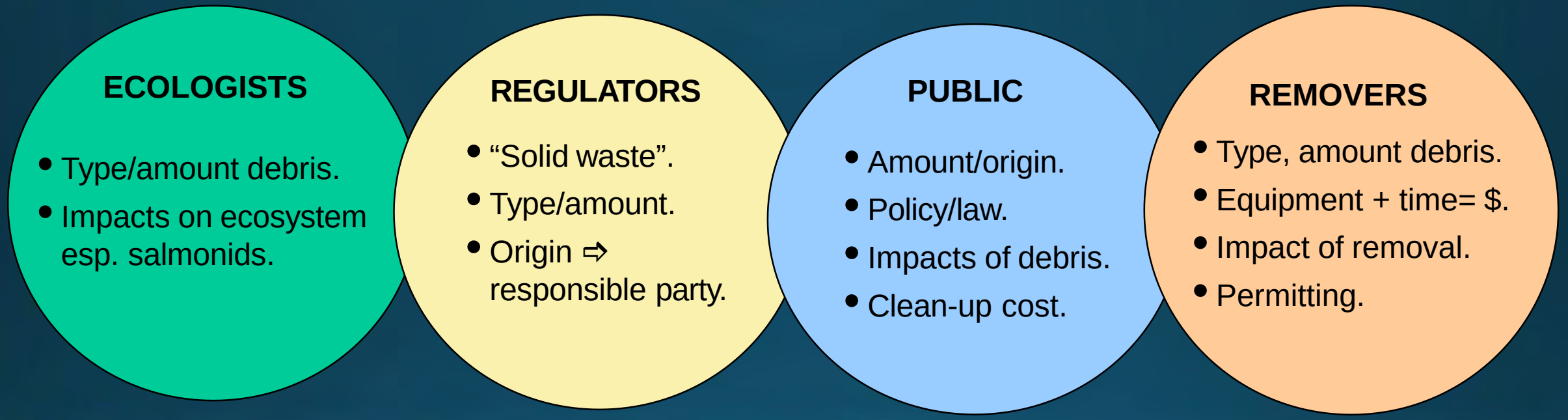
But also we are finding that solid waste is more damaging:

- Debris “armors” the channel bottom.
- Armor forms impenetrable barrier to burrowing and rooting.
- Armor prevents cleansing of substrate during high flows.

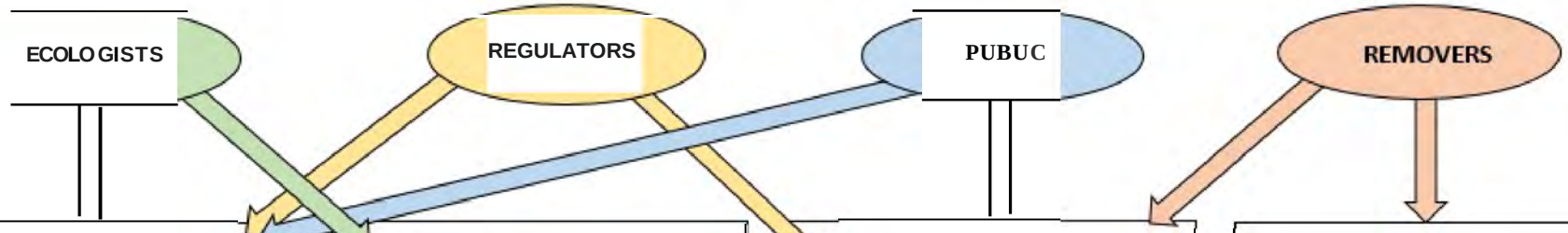


- Armor separates stream flow from water in substrate creating anoxic “dead zone” where neither plant nor animal can survive.

So, who cares?



“Amount” = weight and/or volume. E.g. weight of plastic tarps vs. volume of tarps.



Quantity & Type of Debris:

© Precise & easy to understand.

© Quantitative.

© Counts hazardous waste by surrogate (oil carri)..

® Time consuming.

® Hard to compare reaches (tires vs. shopping carts.

Area of Channel Covered:

© Closest measure of ecological "problem".

© Quantitative.

© Easy to compare reaches.

§ Semi-precise due to irregular debris shape (tire)..

§ Fairly easy to measure.

® Doesn't include hazardous waste.

Volume of Debris:

© Easy to measure.

© Quantitative.

© Fairly precise for compressible items

© Easy to compare readiles.

® Doesn't directly relate to ecological "area" problem.

® Textiles have low volume but large negative impact on area covered..

® Volume of "open" items (shopping cart).

Weight of Debris;

© Easy to measure.

© Quantitative., precise.

© Consistent with metric used by Parks.

© Easy to compare reaches..

§ Includes weight of water..

® Heavy items (tires) have less effect on ctl amel bottom than light items (tent).

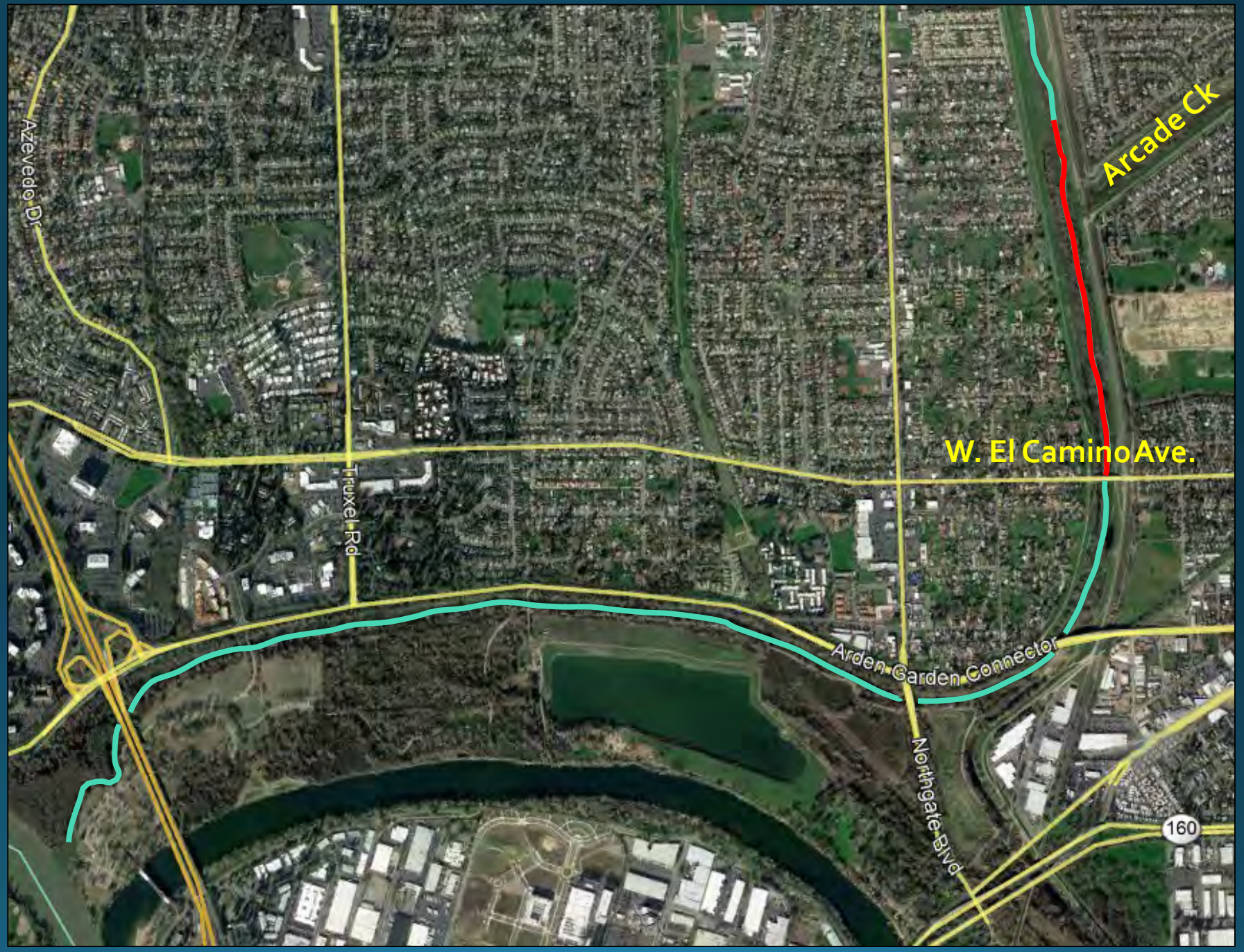
® Doesn't show hazardous waste.

- Teamed up with homeless people camping outside the Parkway clean up debris. Provided bags, gloves, tools; food gift cards.
- RD1000 agreed to remove bagged trash.

Thanks Jeremy, Jessica and Rudy!

Thanks RD1000!

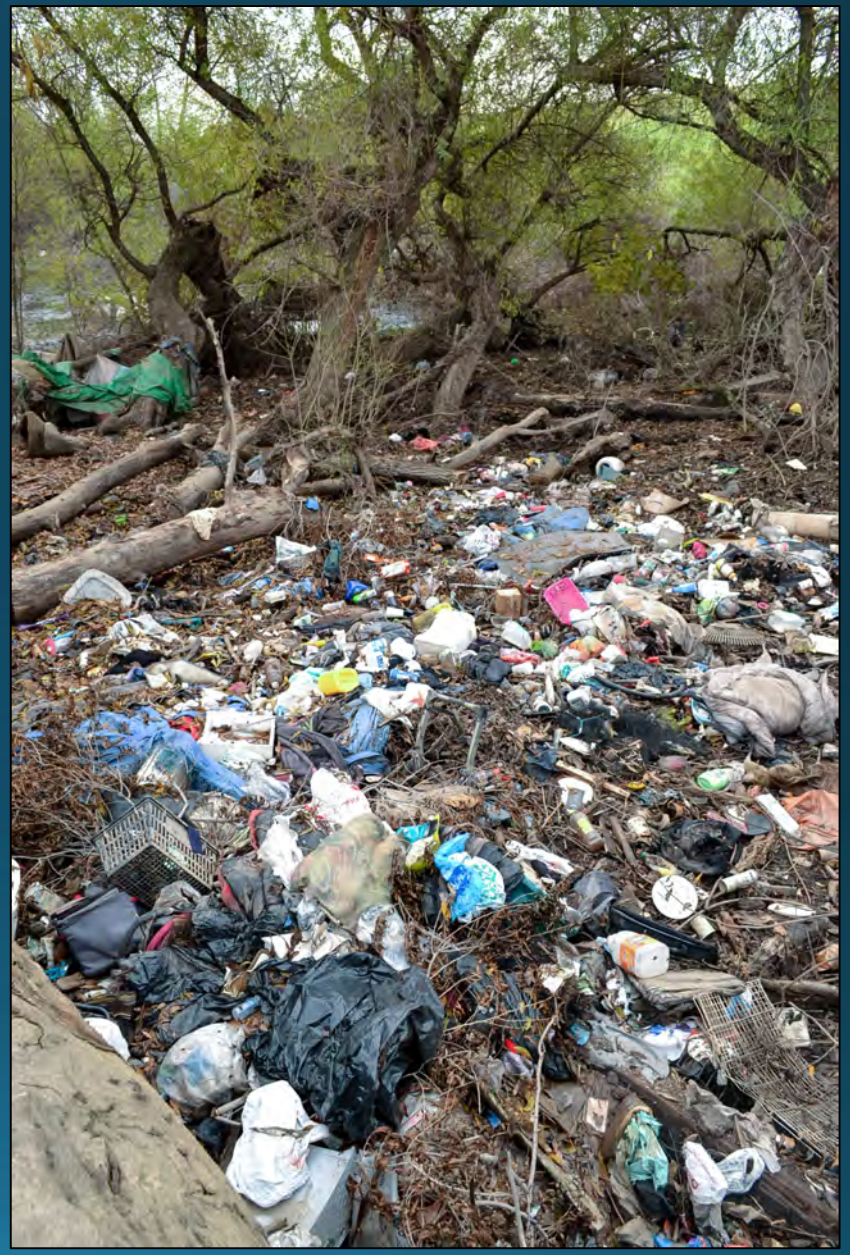
The most problematic area is upstream of the W. El Camino bridge, outside of the Parkway.



This area is much worse than the Parkway because:

- “Illegal camping” has not been enforced so homeless consider it “less hassle” than the Parkway.
- Multiple agencies: Who is the “responsible party”? City? County? RD1000? ARFCD?
- Has not been cleaned in over 5 years.

House boat made from pallets and empty propane canisters.



Wrote 15 letters and gave presentations to local, county, state, and federal agencies to act because….

What is going on is ILLEGAL!

CALIFORNIA PENAL CODE Sec. 374.7(a):
"…prohibits dumping of any waste matter in a body of water or upon a bank, beach or shore within 150 feet of water".

CALIFORNIA FISH AND GAME CODE Sec. 5650:
"….it is unlawful to deposit, dispose of or permit the dumping of solids, liquids or carcasses into state waters".

WATERS OF THE UNITED STATES- covered by Clean Water Act CWA (1972):

Section 404 Clean Water Act (2015 Clean Water Rule) "..to restore and maintain the chemical, physical, and biological integrity of the Nation's waters…." section 101(a).

Supreme Court consistently agreed CWA protects chemical, physical, and biological integrity of upstream waters, that play a crucial role in controlling sediment, filtering pollutants, reducing flooding, providing habitat for fish and other aquatic wildlife, and many other vital chemical, physical, and biological processes.

Finally, based on findings of debris survey, CVRWCB intervened:

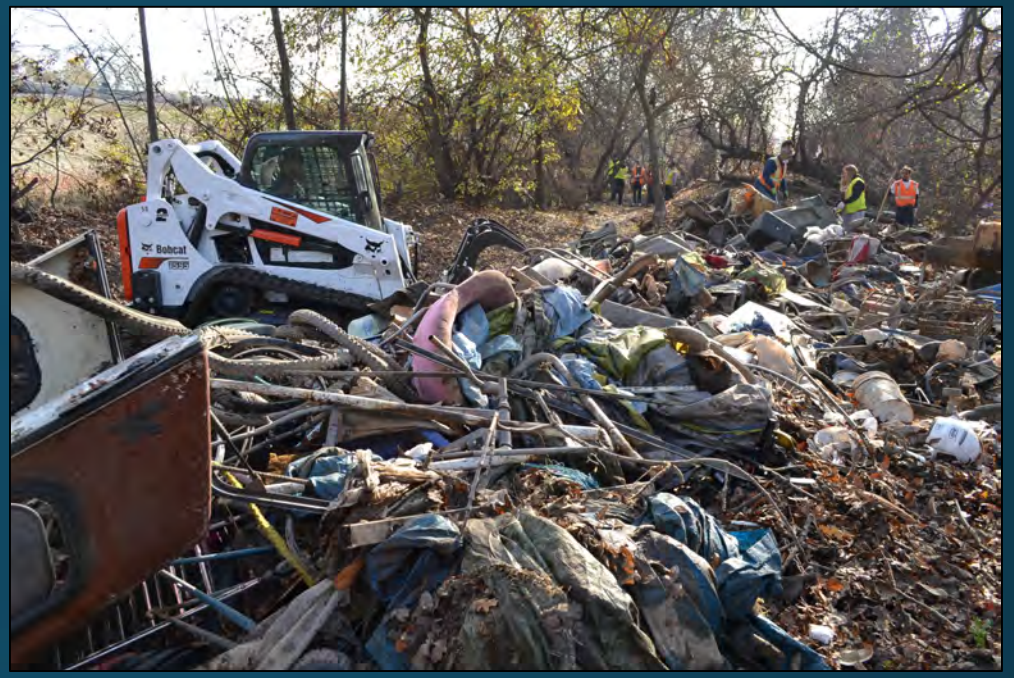
- Held meetings with CDF&W, RD1000, City, County, ARFCD.

- Initiated cleanup Dec. 10-13:

  - RD1000 and ARFCD provided heavy equipment and operators.

  - Manual labor from County sheriff's work crews.

Largest coordinated cleanup in County history.


Bobcat


DEERE
75C
UA9V98
PAPE


DEERE


RA5A97
259D
CAT
310SK


DEERE

Converting this….

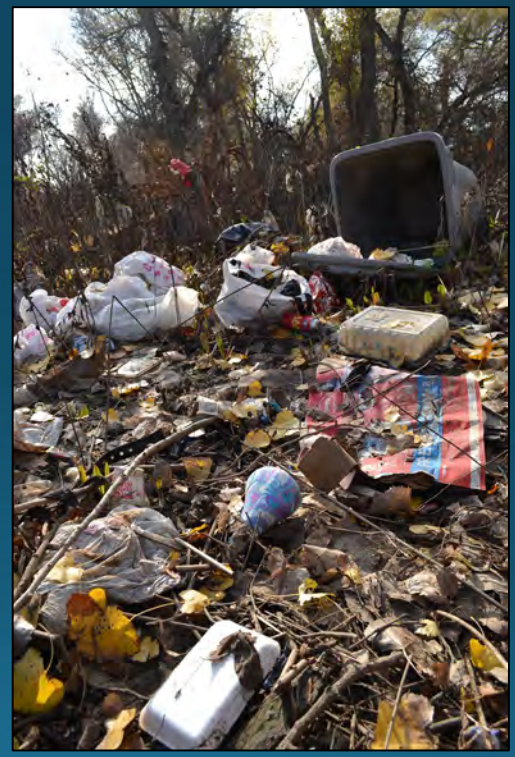
To this.

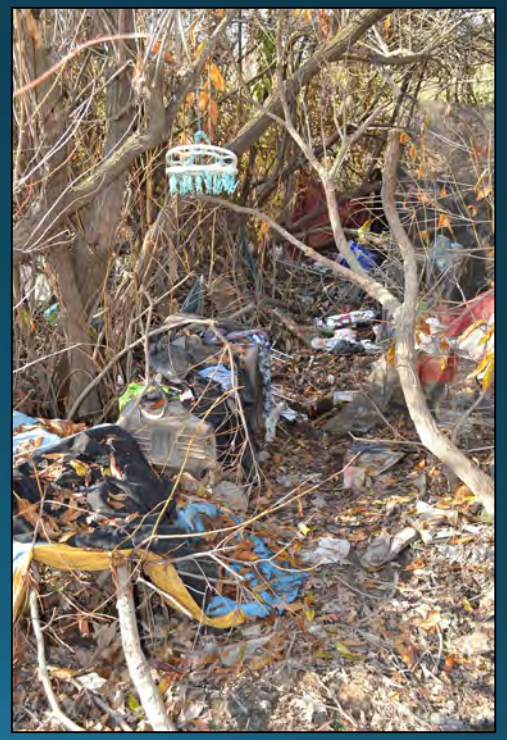
RD 1000 hauled 45,160 lbs!

ARFCD hauled 49,840 lbs!

But many tons remain….estimate 40% of debris removed.

Large areas upstream not touched.





And there are no plans (yet) to clean the channel.

WHAT'S NEXT?

- 9th circuit court decision – Martin vs. City of Boise What can be done to control camping?
- Interagency task group – "responsible parties".
- CDF&W & CVRWCB interested in "restoring" creek.
- Reclassify as Nature Preserve? (E.g. Arcade Ck)
- Protect floodplain > civic amenity. Environmental Justice issue?

- Continue debris study upstream of W. El Camino.
- DWR floodSAFE grant: “…enhance ecosystems”.
- Volunteer cleanups inc. SACC Creek Week April 13th.
- Work collaboratively with agencies, community to develop long-term, integrated management plan.
- Discussions with PRIDE industries to include jobs for homeless people to clean up.

ACKNOWLEDGEMENTS:

The following have made important contributions toward preserving the habitat of Steelhead Creek. Continued progress depends on this collaboration.

- **Central Valley Regional Water Control Board**, especially Richard Muhl and Adam Laputz – coordinated the upstream cleanup.
- **Sacramento Area Creeks Council** – Funded the debris study that "initiated action by Water Board".
- **City and County of Sacramento**; rangers and sheriffs; work crews – participated in the upstream cleanup.
- **RD 1000, American River Flood Control District** – provided crews and equipment for the "upstream" cleanup.
- **California Department of Fish and Wildlife** – helped coordinate the upstream cleanup.

- **Crystal Tobias** – intrepid partner on cleanups and survey.
- **Jessica Cervantes, Jeremy Bates and Daniella Nieto** – homeless volunteers who participated in cleanups and helped educate other campers to protect the watershed.
- **American River Parkway Foundation**, especially Justino Santana – helped organize the Oct. 13th and 20th cleanups.
- **Sacramento County Parks Operations Crews** especially Ron Nelson – provide equipment and doggedly clean up the Parkway on an ongoing basis.
- **Sacramento County Park Rangers** – undertake the thankless job enforcing much-needed environmental regulations in the Parkway.

Let’s restore Steelhead Creek!

The decisions and actions we make today will affect this land for generations. We can, and should, do better.