

# CALTRANS ENVIRONMENTAL INTO THE FUTURE



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## WHO IS WESLEY STROUD?

- I am a Caltrans Supervising Environmental Planner in the Caltrans District 2 North Region Office.
- I grew up in Red Bluff and am married and with two children, ages ten and eight.
- I graduated with a Bachelor's in Environmental Science from Humboldt State University.
- I have been a Biologist my entire life and professionally started working for the California Department of Fish and Wildlife when I was 18. I have worked for the state ever since.
- My passions are traveling, habitat restoration and connectivity, hunting, fishing, and spending time with my family.



## TODAY'S TOPICS

- Wildlife Connectivity Projects
- Caltrans CEQA and Permit Driven Mitigation (current and the dream).
- Identification of Top 7 Wildlife Crossing Priorities (Caltrans District 2 specific)
- Identification of Top 13 Deer Crossing Priorities (California Specific)



# CALTRANS CALIFORNIA ENVIRONMENTAL QUALITY ACT AND PERMIT DRIVEN MITIGATION (CURRENT AND THE DREAM)

## WHAT IS IT?



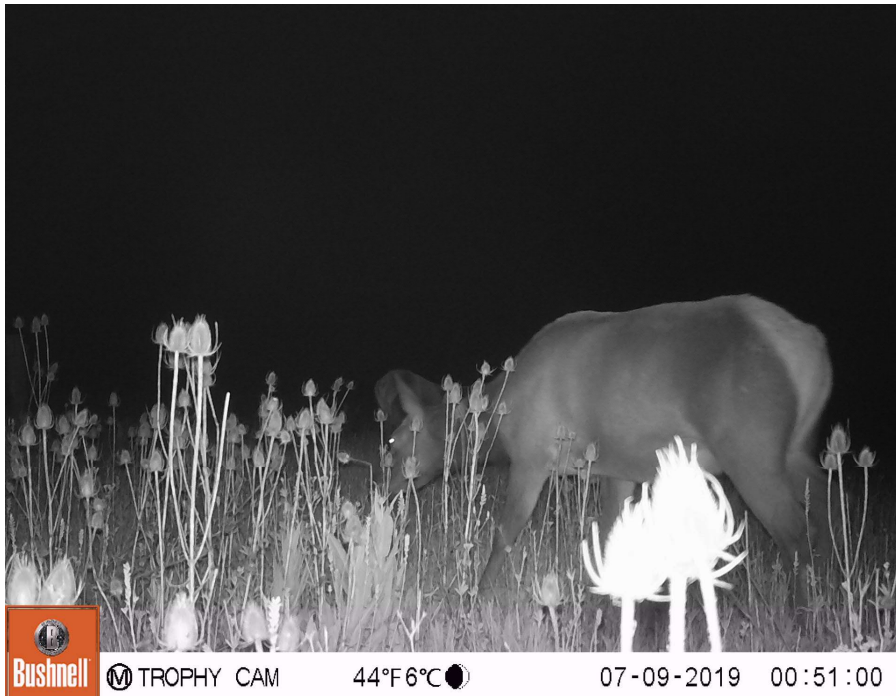
## THE DREAM:

- Collaborative approach regionally (private/public partnerships)
- Ecological Lift vs. project-by-project view of mitigation
- Out of kind mitigation
- Investment in connectivity





# ECOLOGICAL LIFT VS. PROJECT-BY-PROJECT VIEW OF MITIGATION



# H-BAM (HUM-255-6.0/7.6)





# OTHER MITIGATION HIGHLIGHTS



WHITE DEER LAKE MITIGATION AREA

MITIGATION SITE FOR DEADHORSE  
SUMMIT CURVE CORRECTION – STEVENS  
PASS ROAD AT TROUT CREEK  
CAMPGROUND/SHASTA TRINITY  
NATIONAL FOREST



TROUT CREEK MITIGATION AREA

MITIGATION SITE FOR CAYTON CREEK  
BRIDGE REPLACEMENT – MEDICINE LAKE  
ROAD/SHASTA TRINITY NATIONAL  
FOREST.

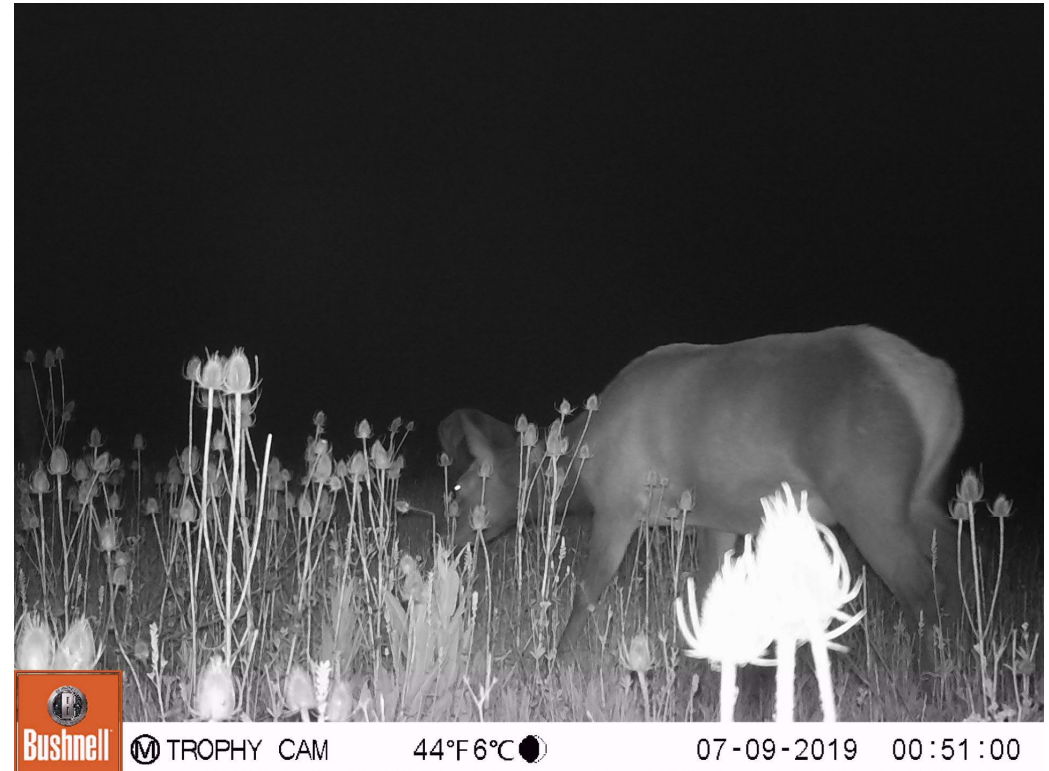




# WILDLIFE (TERRESTRIAL) CROSSINGS

## WHAT'S GOING ON?

- U.S. 101 WCB/WTI GRANT AND CROSSING PROPOSAL
- STATE ROUTE 89 DISTRICT 3 WORK AND CONNECTIVITY TEAM
- U.S. 395 BORDERTOWN WILDLIFE FENCING AND JUMPOUTS
- STATE ROUTE 139 CONNECTIVITY TEAM
- U.S. 97 WCB GRANT AND CROSSING PROPOSAL



# WILDLIFE CROSSING SUCCESS



WATER GULCH (SHA-299-PM 4.0)  
WATER GULCH - BOBCAT



TRAIL GULCH (SHA-299-PM 4.0)  
TRAIL GULCH - BLACK BEAR





# SIERRA 89 WILDLIFE CROSSING CONSTRUCTION

SIERRA-89-PM 0.8 & PM 1.4





# SIERRA 89 WILDLIFE CROSSING SUCCESS

SIERRA-89-PM 0.8 & PM 1.4



# TOP 13 DEER CROSSING PRIORITIES STATEWIDE

Large Mammal-Vehicle Collision Hot Spot Analyses

Prioritize Crash and Carcass Hot Spots

Table 15: The ranking of the hot spots based on a statewide analysis for deer-vehicle crashes in the entire State of California.

Hot spot ID#	Dis-trict	County	Nearby town	Highway	Human safety		Biological conservation			Economics		Total	
					Deer crashes (n)	Score	Essential Habitat Connectivity	Critical Habitat USFWS	Score	Deer crashes (\$/mi/yr)	Score	Score	Rank
1	1	Del Norte	Crescent City	US Hwy 101	10	5.08	Yes	No	16.67	\$33,085.00	10.95	10.90	4
2	1	Humboldt	Orick	US Hwy 101	10	5.08	Yes	Yes	33.33	\$22,056.67	7.30	15.24	1
3	2	Siskiyou	Yreka	I-5	5	2.54	No	No	0.00	\$33,085.00	10.95	4.50	10
4	2	Siskiyou	Mt. Shasta	I-5	10	5.08	No	No	0.00	\$22,056.67	7.30	4.13	11
5	2	Tehama	Red Bluff	I-5	10	5.08	Yes	No	16.67	\$22,056.67	7.30	9.68	5
6	2	Lassen	Susanville	US Hwy 395	44	22.34	No	No	0.00	\$11,198.00	3.71	8.68	6
7	3	El Dorado	Placerville	US Hwy 50	8	4.06	No	No	0.00	\$17,645.33	5.84	3.30	13
8	4	Santa Clara	Los Altos Hills	I-280	10	5.08	No	No	0.00	\$33,085.00	10.95	5.34	8
9	5	San Luis Obispo	Templeton	US Hwy 101	19	9.64	No	No	0.00	\$25,144.60	8.33	5.99	7
10	6	Madera	Oakhurst	Hwy 41	13	6.60	No	No	0.00	\$21,505.25	7.12	4.57	9
11	9	Mono	Bridgeport	US Hwy 395	29	14.72	Yes	No	16.67	\$19,189.30	6.35	12.58	2
12	9	Mono	Mammoth Lakes	US Hwy 395	20	10.15	Yes	No	16.67	\$22,056.67	7.30	11.37	3
13	10	Mariposa	Mariposa	Hwy 49	9	4.57	No	No	0.00	\$19,851.00	6.57	3.71	12

Large Mammal-Vehicle Collision Hot Spot Analyses Identify Crash and Carcass Hot Spots

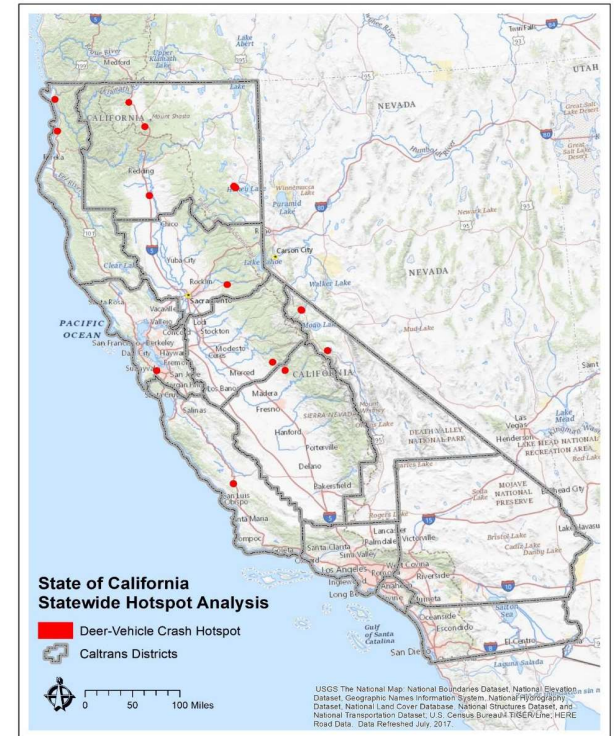


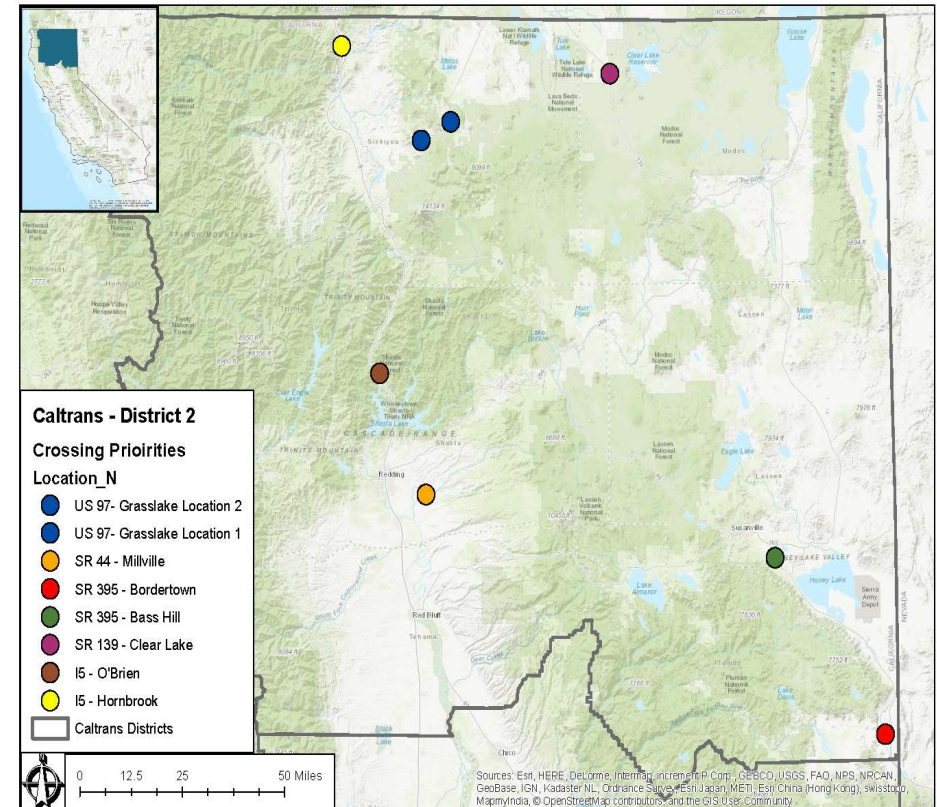
Figure 9: The “worst” hot spots based on a statewide analysis for deer-vehicle crashes in the entire state of California.





# TOP 7 WILDLIFE CROSSING PRIORITIES IN DISTRICT 2

Priority Ranking	State Route	County	Near	Notes
1	97	Siskiyou	Grass Lake	Two locations: one location on USFS land and other location on private property. Highest priority due to heavy elk crossing.
2	395	Lassen/ Sierra	Bordertown	Includes BLM and CDFW land; Suzy/Sara/SR 89 team to help D2
3	139	Siskiyou	Clear Lake	Interstate herd; important to CDFW and traveling public
4	395	Lassen	Bass Hill Wildlife Area	On CDFW land
5	I-5	Siskiyou	Hornbrook	On Fruit Growers land
6	I-5	Shasta	O'Brien	Possible mitigation for North Redding 6-Lane
7	44	Shasta	Millville	Could fix STAA on SR 44





# U.S. 97 WILDLIFE CONSERVATION BOARD AND WESTERN TRANSPORTATION INSTITUTE GRANTS AND WILDLIFE CROSSING PROPOSAL (SIS-97-PM 20.0/40.0)





# FIBER-REINFORCED POLYMER

FIBER-REINFORCED POLYMERS (FRP'S) ARE A COMPOSITE MATERIAL OF STRUCTURAL FIBERS SET IN A MOLD OF THERMOSET RESIN. THE RESINS DO NOT GET SOFT AT ELEVATED TEMPERATURES SO THEY RESTRAIN THE FIBERS AGAINST BUCKLING AND ALLOW THE TRANSFER OF SHEAR STRESS BETWEEN THEM.



# BENEFITS OF FRP STRUCTURES

- HIGH STRENGTH TO WEIGHT RATIO.
- LIGHT WEIGHT MATERIAL REDUCES TRANSPORTATION AND CONSTRUCTION COSTS.
- SERVICE LIFE OF 100 YEARS.
- LITTLE TO NO MAINTENANCE REQUIRED.
- EXTREMELY RESISTANT TO CORROSION AND ROT.
- DOES NOT ABSORB WATER.
- DEPENDING ON THE TYPE OF RESIN AND FIBERS SELECTED, FRP MATERIALS CAN BE:
  - FIRE, ULTRA-VIOLET RAY, AND IMPACT RESISTANT
  - ELECTROMAGNETICALLY TRANSPARENT
  - HAVE LOW THERMAL CONDUCTIVITY
  - PROVIDE NO ELECTRICAL CONDUCTIVITY
  - BIO-BASED OR USE RECYCLED PLASTIC







# (RE)CONNECTING WILD

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RESTORING SAFE PASSAGE

