APPEAL OF CALTRANS GAVIOTA CULVERT PROJECT TO THE CALIFORNIA COASTAL COMMISSION OCTOBER 2020

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APPEAL SUMMARY

The Caltrans Gaviota Culvert Project seeks to replace an existing failing culvert which transports stream flow and storm water runoff beneath Highway 101 at Canada del Barro. We ask that the CCC reject approval of this project as it is currently designed and require Caltrans to redesign it to accommodate the new information which has come to light during the review of the project by the County of Santa Barbara. This new information and its impact on the project design can be summarized as follows:

1. Recent studies of wildlife adjacent to the project site confirm that the project lies within an existing and historic wildlife corridor. By increasing the culvert size and making other minor design changes, this project can provide a safe wildlife crossing for large mammals to pass beneath Highway 101. We estimate the cost to make these modifications will be about a 20% increase to the overall project cost, or $1.5 million. This alternative was not considered by Caltrans.
2. The Coastal Act requires that harm to the environmentally sensitive habitat at the project location and on the adjoining lands of the Gaviota Coast be avoided to the maximum extent feasible. Based on the new information we provide below, this project and proposed mitigation, as currently designed, does not meet that standard.
3. Caltrans failed to identify an existing wetland on the project's north end and failed to note in their environmental review that Canada del Barro is a perennial stream; a relatively rare habitat for the Gaviota Coast. The culvert replacement project will result in the destruction of this wetland and channelization of perennial stream habitat. This will accordingly require more mitigation than that proposed by the current project.
4. The required off-site mitigation for this project is proposed to be done at Refugio Creek, many miles east of the project site. We ask that the mitigation be performed within land owned nearby by Caltrans along Gaviota Creek, the "most proximal" location for this mitigation, as is required by the Coastal Act.
5. The conversion of 5 acres of Gaviota State Park land from public recreational use to transportation use that the project necessitates was not a part of the project description and there was no consideration of this impact or whether it should be mitigated.

Black bear emerges from north end of Gaviota Culvert, having crossed under Highway 101 10-09-2020

COASTAL RANCHES CONSERVANCY

Coastal Ranches Conservancy is a 17-year-old non-profit organization. Our mission is "Supporting nature conservation, restoration, and education on the Gaviota Coast". We have been working to restore the Gaviota Creek watershed, which lies just west of the Gaviota Culvert Project site, for more than 7 years. Our website is here www.coastalranchesconservancy.org and our Gaviota Creek Watershed Restoration Plan is here https://coastalranchesconservancy.org/gaviota-creek-watershed/

APPEAL BACKGROUND

We first learned of this project in early 2019 during conversations with State Park and Caltrans personnel. At that time, we asked for additional project information. We alerted the Caltrans biologist working on the project that there appeared to be a wildlife corridor in that location and that the project should consider a design to accommodate wildlife. We received no response and it wasn't until we followed up with that person's supervisor that we were able to get the environmental documents. At that point the Caltrans' review of the project had been finalized so we did not get a chance to comment.

We challenged the project at the County Planning Commission, where it passed by a 3-1 vote and then later at the Board of Supervisors where the project was initially voted down by a 4-1 vote. Unfortunately, at the final hearing the Supervisors decided to switch their votes, without much explanation, and the project was approved unanimously. But the supervisors were clearly troubled by evidence we brought forward about the project as indicated by their initial 4-1 vote.

THE GAVIOTA COAST AND HIGHWAY 101

The Gaviota Coast is the largest remaining undeveloped coastline in Southern California and a world-recognized biodiversity hotspot. Highway 101 runs for 20 miles along the Gaviota Coast and has significant impacts on wildlife due to fragmentation of habitat and death or injury to wildlife attempting to cross the highway. We believe this highway causes the death of more wildlife on the Gaviota Coast than any other human factor. There are very few locations along this coastline where wildlife can safely cross under the 4 lanes of Highway 101. This portion of the Gaviota Coast has 12 coastal streams which are designated as ESH and pass beneath the highway in culverts. **None of these culverts were designed to accommodate fish and/or wildlife passage.** The impact of these poorly designed culverts on the Southern Steelhead is well known and millions of dollars have been spent locally to modify them to accommodate fish passage, notably at Tajiguas and Arroyo Hondo creeks. Another steelhead passage project is underway at Gaviota Creek and is expected to cost more than $12 million. But nothing has been done to accommodate wildlife passage.

A PATH FOR WILDLIFE

The difference between wildlife corridors and wildlife crossings can be confusing but it is an important distinction.

*A **wildlife corridor**, **habitat corridor**, or **green corridor**[1] is an area of habitat connecting wildlife populations separated by human activities or structures (such as roads, development, or logging). This allows an exchange of individuals between populations, which may help prevent the negative effects of inbreeding and reduced genetic diversity (via genetic drift) that often occur within isolated populations. Corridors may also help facilitate the re-establishment of populations that have been reduced or eliminated due to random events (such as fires or disease).*

This may potentially moderate some of the worst effects of habitat fragmentation,[2] wherein urbanization can split up habitat areas, causing animals to lose both their natural habitat and the ability to move between regions to use all of the resources they need to survive. Habitat fragmentation due to human development is an ever-increasing threat to biodiversity,[3] and habitat corridors are a possible mitigation. (Wikipedia)

***Wildlife crossings** are structures that allow animals to cross human-made barriers safely. Wildlife crossings may include underpass tunnels or **wildlife tunnels**,[1] viaducts, and overpasses or **green bridges**[2] (mainly for large or herd-type animals); amphibian tunnels; fish ladders; canopy bridge (especially for monkeys and squirrels), tunnels and culverts (for small mammals such as otters, hedgehogs, and badgers); and green roofs (for butterflies and birds).[3]*

Wildlife crossings are a practice in habitat conservation, allowing connections or reconnections between habitats, combating habitat fragmentation. They also assist in avoiding collisions between vehicles and animals, which in addition to killing or injuring wildlife may cause injury to humans and property damage. (Wikipedia)

There is increasing appreciation for the impacts of highway-crossing structures on the passage of large mammals and several projects are now underway in the state to construct wildlife crossings. A project at Liberty Canyon in Calabasas will provide a wildlife crossing over 8 lanes of Highway 101 at a cost of $87 million. This crossing is deemed essential to keep the mountain lion population in the Santa Monica mountains connected to inland populations so as to prevent in-breeding. A second crossing of Highway 17 near Santa Cruz now appears ready to go forward with over $12 million in funding secured. This crossing is also designed to reduce roadkill of mountain lions and other large mammals and to ensure connectivity between San Francisco Peninsula habitat and the Coast Range to the south.

According to a recently published study, *"With a shrinking supply of wilderness and growing recognition that top predators can have a profound influence on ecosystems, the persistence of large carnivores in human-dominated landscapes has emerged as one of the greatest conservation challenges of our time.*[1] We show several records of our local top predator, the mountain lion, killed on the roadway adjacent to this project. Currently, the California Department of Fish and Wildlife (CDFW) is conducting a review to see if the mountain lion population in Southern California and other areas should be listed as "endangered". One of the major contributors to the decline of the mountain lion population is the impact of highways in fragmenting their habitat and causing their death when attempting to cross the highway.

In additional to the obvious benefits of providing wildlife with a safe place to cross the highway, this is very much an issue for vehicle safety. Colliding with a deer or 100 lb. mountain lion at highway speeds can be fatal or injurious for the driver and often is. The annual nation-wide cost of deer-vehicle collisions is over $1 billion and the cost of a single fatal accident is typically $1 million or more. In the past few years there have been two fatalities caused by vehicles colliding with deer in Santa Barbara County.

ESHA PROTECTIONS UNDER THE LCP

The project site contains at least 4 types of environmentally sensitive habitat:

1. coastal wetland
2. purple needle grass grassland
3. sawtooth goldenbush scrub
4. red willow thicket.

[1] *The Ecology of Human-Carnivore Coexistence*, Lamb et al; PNAS July 2020

The project site also provides habitat for sensitive wildlife species and, as discussed below, functions as a wildlife corridor. The Coastal Act, the LCP, and the Gaviota Coast Plan set a very high standard for projects like this one that occur in environmentally sensitive habitat (ESH). See below from the Gaviota Coast Plan/LCP:

"The Coastal Act places a high priority on the protection of biological and natural resources. Strict limits are placed on development in ESH areas. The Coastal Act (Section 30107.5) defines Environmentally Sensitive Habitat Area as: "[A]ny area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments." Very limited types of development are allowed in ESH areas and then only where there is no feasible less environmentally damaging alternative and feasible mitigation measures have been adopted. In general, only land uses that are dependent on the habitat resources are allowable within ESH areas.

Numerous regulations protect important sensitive habitat and special status species within the Plan area. However, these resources remain vulnerable to public and private land development that is not well planned and sensitive to the surrounding environment. Consequently, impacts to important biological resources may include:

- *Degradation and loss or fragmentation of wildlife habitat and ESH areas;*
- *Loss of wetlands and stream health through pollution and sedimentation;*
- *Disturbance of valuable plant communities;*
- *Disruption of important wildlife corridors; and*
- *Degradation of watershed integrity.*

Caltrans failed to adequately investigate the project site to determine the full effects of the project on "Loss of wetlands" and "Disruption of wildlife corridors" as required by the LCP and CEQA. They also failed to notice that Canada del Barro appears to be a perennial or "blue line" stream, rare habitat for the Gaviota Coast. The literal translation of Canada del Barro is "muddy ravine" so the presence of wetlands here was recognized a long time ago.

Caltrans also should have conducted additional field surveys which would have made note of the extensive wildlife trails in the project area, a large number of deer bedding down on the project site, and the remains of deer killed by mountain lions in the near vicinity[2]. Caltrans should have installed camera traps[3] to see how these large mammals were using the site and whether the project would impact them. Had Caltrans conducted a proper investigation and followed their internal guidelines, we believe this would have resulted in the design of a new culvert that would accommodate the wildlife currently using the site and allow wildlife to safely cross beneath the highway.

[2] Evidence of three mountain lion kills were found within 100 yards of the project's north end

[3] Results of the camera trap study we conducted are described later in this document

A HIGHER STANDARD OF PROTECTION IS REQUIRED

A large portion of this project is taking place on land which is part of Gaviota State Park and is environmentally sensitive habitat. We believe this is another reason that this project must be carefully designed so as to minimize any impact on wildlife and their habitat.

Coastal Act section 30240 (incorporated into Santa Barbara County's LCP via CLUP Policy 1.1

(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.
(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.
A project that is in Environmentally Sensitive Habitat and on State Park land must meet a higher standard of protection, per the following.

Gaviota Coast Plan Policy NS-2*: Environmentally Sensitive Habitat (ESH) Protection.(COASTAL) Environmentally Sensitive Habitat (ESH) areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas. A resource dependent use is a use that is dependent on the ESH resource to function (e.g., nature study, habitat restoration, public trails, and low-impact campgrounds). Resource-dependent uses shall be sited and designed to avoid significant disruption of habitat values to ESH through measures including but not limited to: utilizing established disturbed areas where feasible, limiting grading by following natural contours, and minimizing removal of native vegetation to the maximum extent feasible. Non-resource dependent development, including fuel modification and agricultural uses, shall be sited and designed to avoid ESH and ESH buffer areas. If avoidance is infeasible and would preclude reasonable use of a parcel or is a public works project necessary to repair and maintain an existing public road or existing public utility, then the alternative that would result in the fewest or least significant impacts shall be selected and impacts shall be mitigated. Development in areas adjacent to ESH areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas*[4]

[4] Highlights are mine

NEW INFORMATION: A WILDLIFE CORRIDOR AT PROJECT SITE

New information about the presence and movement of wildlife at the project site and the amount of roadkill on the adjacent Highway 101 was brought forward by Coastal Ranches Conservancy in May of 2020, following research begun in 2019 and after the environmental review of the project was completed and certified in 2018. Disruption of wildlife corridors are required to be avoided on the Gaviota Coast, per the relevant policies in the Gaviota Coast Plan/LCP:

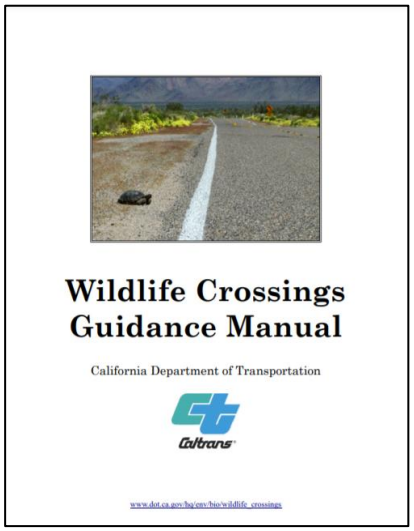
> *Policy NS-6: Wildlife Corridors. Development shall avoid to the maximum extent feasible and otherwise minimize disruption of identified wildlife travel corridors.*
>
> *Action NS-2: Wildlife Corridors. Landforms and natural features, between the watersheds and mountain and ocean habitats, that are potential wildlife movement areas for apex species and medium and large mammals should be identified in consultation with State and federal wildlife agencies, and/or through specialized scientific studies.*
>
> *Dev Std NS-1: Wildlife Corridors. (COASTAL) Where avoidance of wildlife corridors is infeasible, development, including fences, gates, roads, and lighting shall be sited and designed to not restrict wildlife movement. Fences and gates shall be wildlife-permeable, unless the fence or gate is associated with an approved agricultural use, is located within an approved development area, or where temporary fencing is required to keep wildlife away from habitat restoration areas*[5]

We present three kinds of evidence that the project site is in a wildlife corridor and an area of unusual wildlife movement.

1. Incidence of wildlife road kill
2. Game trails in the project vicinity
3. Photos taken by camera traps

THE CALTRANS WILDLIFE CROSSING GUIDANCE MANUAL

At present, Caltrans is not expressly required to incorporate wildlife passage features in their projects (as they must for fish passage) but they have internal guidelines to follow in this regard. These guidelines are found in the "Caltrans Wildlife Crossings Guidance Manual", found here:



https://roadecology.ucdavis.edu/files/content/projects/CA_Wildlife%20Crossings%20Guidance_Manual.pdf .

Here are some relevant passages from this manual:

What Are Wildlife Crossings & Why Do They Matter?

[5] Gaviota Coast Specific Plan; highlights are mine

Wildlife crossings are areas of concentrated animal movement intercepted by roadways. In most cases, effects are seen because animals are inadvertently hit by drivers as they attempt to cross the road surface, leading to mortality of animals ("road-kill") and safety concerns to the motoring public. In other cases, animals choose to avoid crossing, and the roads present barriers to animal movement, dividing a formerly single population into two or more isolated population segments, causing a range of negative effects. These effects may be less apparent, but are no less significant. Further, environmental regulations compel transportation professionals to reduce or eliminate effects on special status species and habitats. Wildlife crossing considerations are reflected in the California Comprehensive Wildlife Conservation Strategy (California Department of Fish & Game, 2006), which lists wildlife habitat fragmentation as one of the biggest threats to the state's wildlife and suggests as a solution that "Wildlife considerations need to be incorporated early in the transportation planning process".

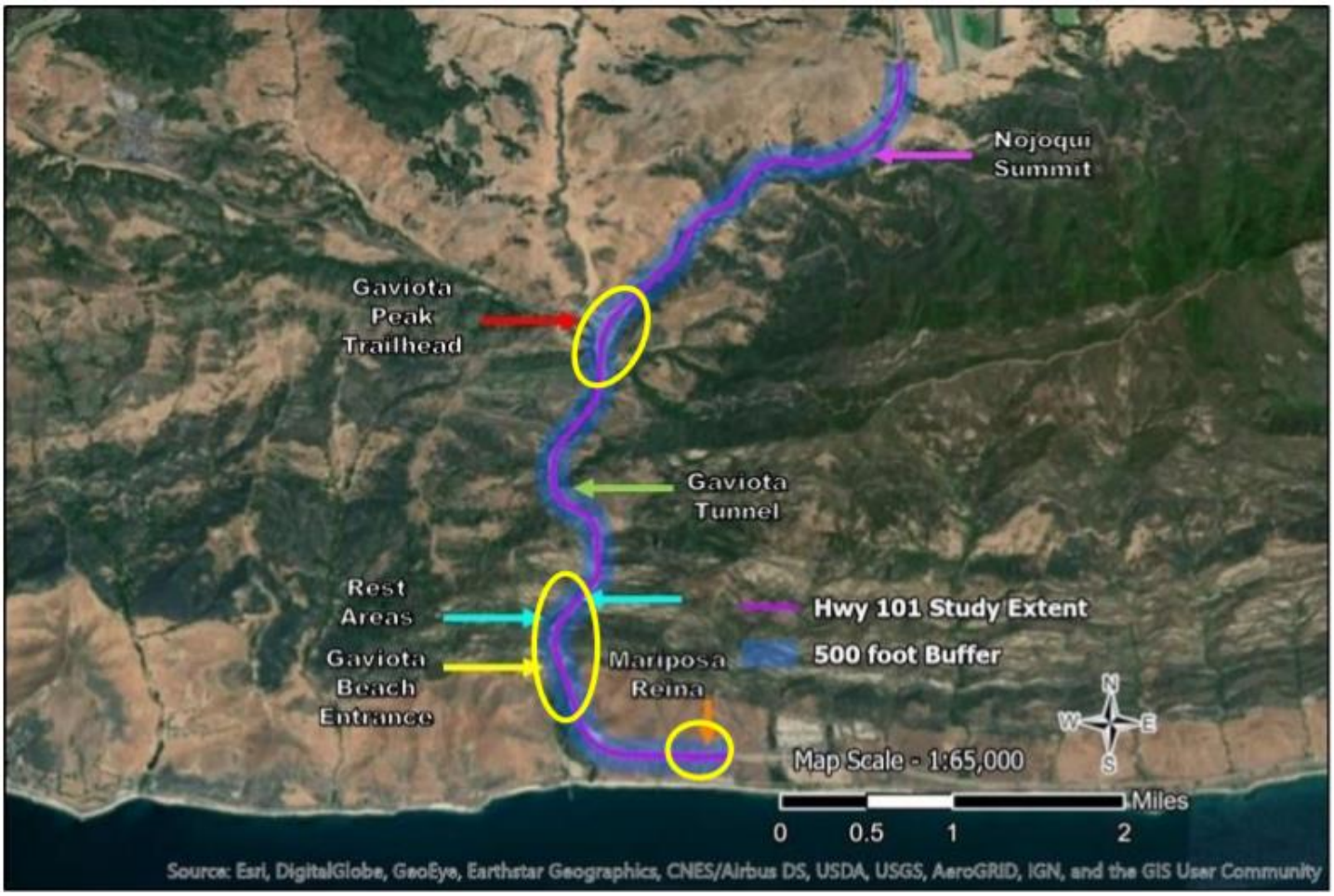
Regulatory Considerations

State and Federal regulations seek to protect wildlife and the habitats upon which it depends, and several of these regulations directly affect transportation professionals. For example, both the California Endangered Species Act (CESA) and Federal Endangered Species Act (ESA) require private and public organizations to limit harm to listed species and to consider and evaluate cumulative effects; creating barriers to movement or increasing mortality to listed species may be considered harm or add to existing effects, thus mandating avoidance, minimization, or compensation. Although these and similar regulations may not explicitly describe roads or wildlife crossing, the avoidance of harm is explicit in these and similar efforts to protect wildlife species and their habitats. Wildlife Habitat and Connectivity Habitat is defined as the part of the environment used by an organism and is essential for providing food, cover, and other requirements for survival. Agriculture, urbanization, and other human-caused effects subdivide habitats into habitat patches, and roads present barriers to many animals, impeding or preventing their movements among habitat patches. When considering wildlife movement, it is essential to consider the availability of habitat patches on both sides, and in some cases within the rights-of-way, of roadways and to attempt to reconnect habitat patches that may have been isolated by highway facilities. Considerations of cumulative effects may be especially relevant here, as effects due to transportation facilities may add to those due urbanization, agricultural development, and water management and directly affect special status species and/or their habitats.

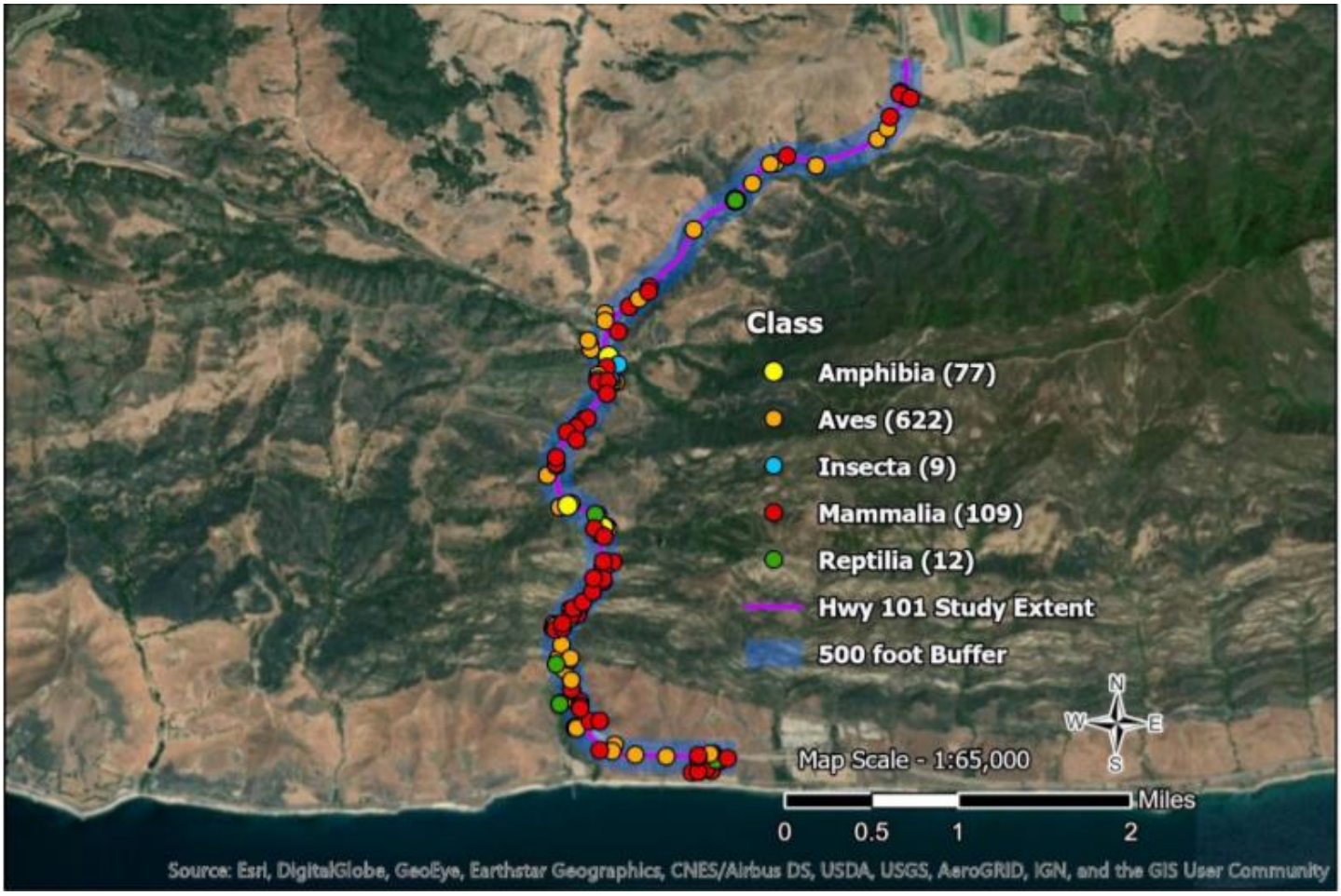
Construction of wildlife crossings and/or modification of existing culverts to accommodate wildlife is a difficult task. There are very limited funds available for this type of work and most funding currently goes to the larger projects. In addition, Caltrans claims that they cannot use any of their highway funds for a project such as this and yet their involvement is necessary right from the beginning of any project. It is not clear what statute or administrative rule this claim is based on. The same is true for fish passage. This is why it is so critical that Caltrans follow their internal guidelines and accept their role in providing these crucial wildlife crossings where appropriate.

ROADKILL In 2019, Coastal Ranches Conservancy published the "Gaviota Wildlife Corridor Project Report" on wildlife vehicle conflicts in the area. The report was prepared by Dr. Lisa Stratton and her team from the Cheadle Center for Biodiversity and Ecological Restoration (CCBER) at UCSB. This report drew upon data from a number of different sources that, while publicly available, had not been analyzed prior to this. This report can be viewed at

http://coastalranchesconservancy.org/wp-content/uploads/2020/05/ccber-wildlife-data-gaviota-final-report-12-17_rc.pdf or in the appendix. A map taken from that report (below) graphically displays the unusual amount of wildlife roadkill in this area.



Roadkill Hotspots Identified in CCBER Report



Roadkill Data from CCBER Report

We also consulted with the Road Ecology Center (REC) at UC Davis, source of some but not all of the data in the CCBER report, to see what their data showed for the area. From this consultation we learned that the REC Director, Dr. Fraser Shilling, considered this location to be within the top 15% of all roadkill "hotspots" within the State of California. Dr. Shilling's letter on this matter may be found in the appendix and in it he says,

"The location of the Gaviota Culvert Replacement project is near and within hotspots at the state scale, meaning that it has both high rates of collisions with large mammals and there is a statistically significant concentration of collisions with mammals at that point and nearby areas. This is shown in the map below (Figure 1), where the orange color on the highway indicates the hotspot for numbers of collisions. There were 15 reported road-killed mammals to the west of the culvert area and 36 to the east."

"The number of mammals killed by collisions in the immediate area of the culvert and the density per year (2-12) indicate both that there are immediate impacts to large mammals and risk to drivers through this area. The density of collisions with all mammals and with large mammals, 4 per mile per year are among the top 15% I have calculated in California. The number/density of all mammals (51/2 miles) in the immediate area of the culvert project and the number/density in the larger area also

indicate that there are current impacts to wildlife in this area because they are actually moving, or attempting to move back and forth across the highway."[6]

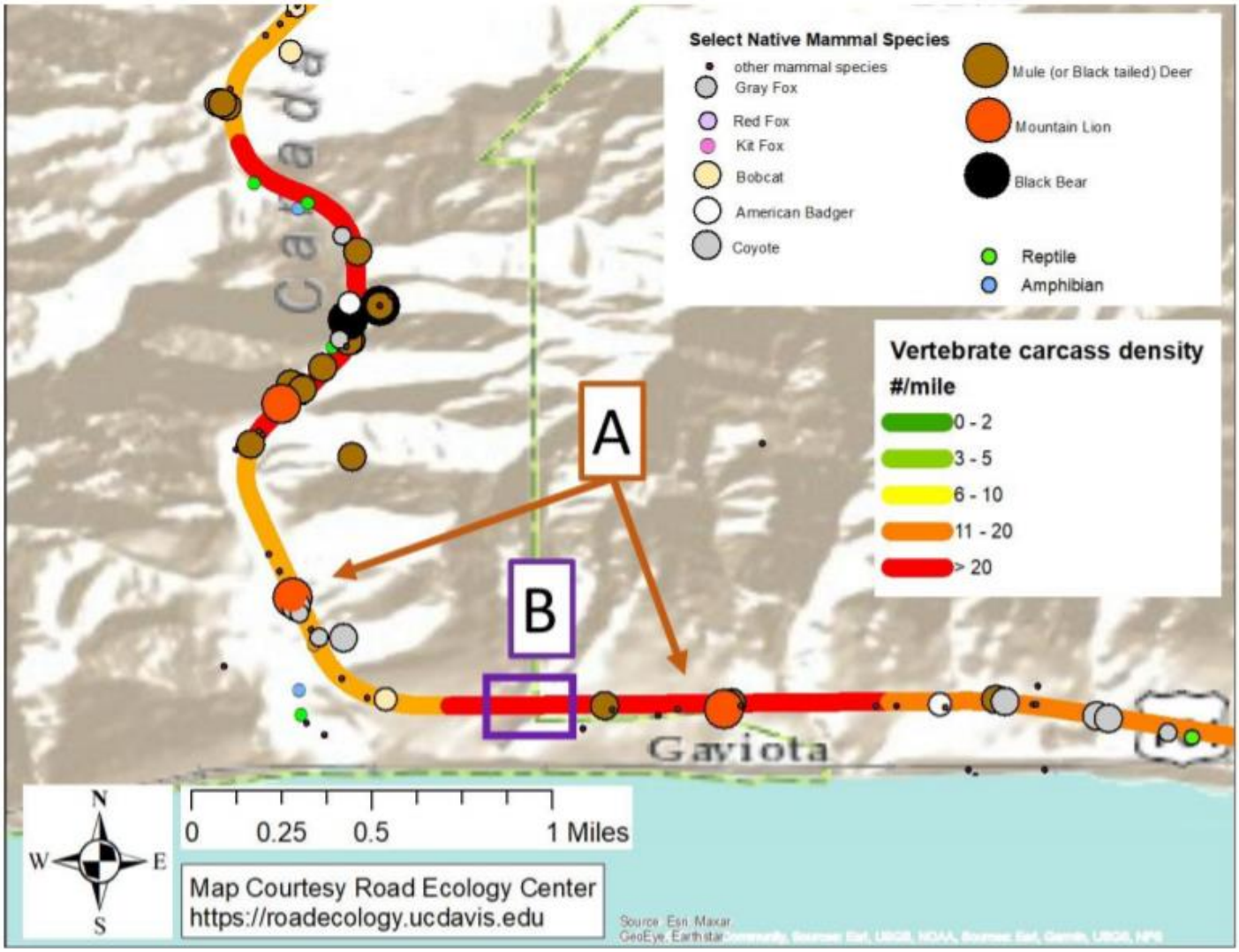
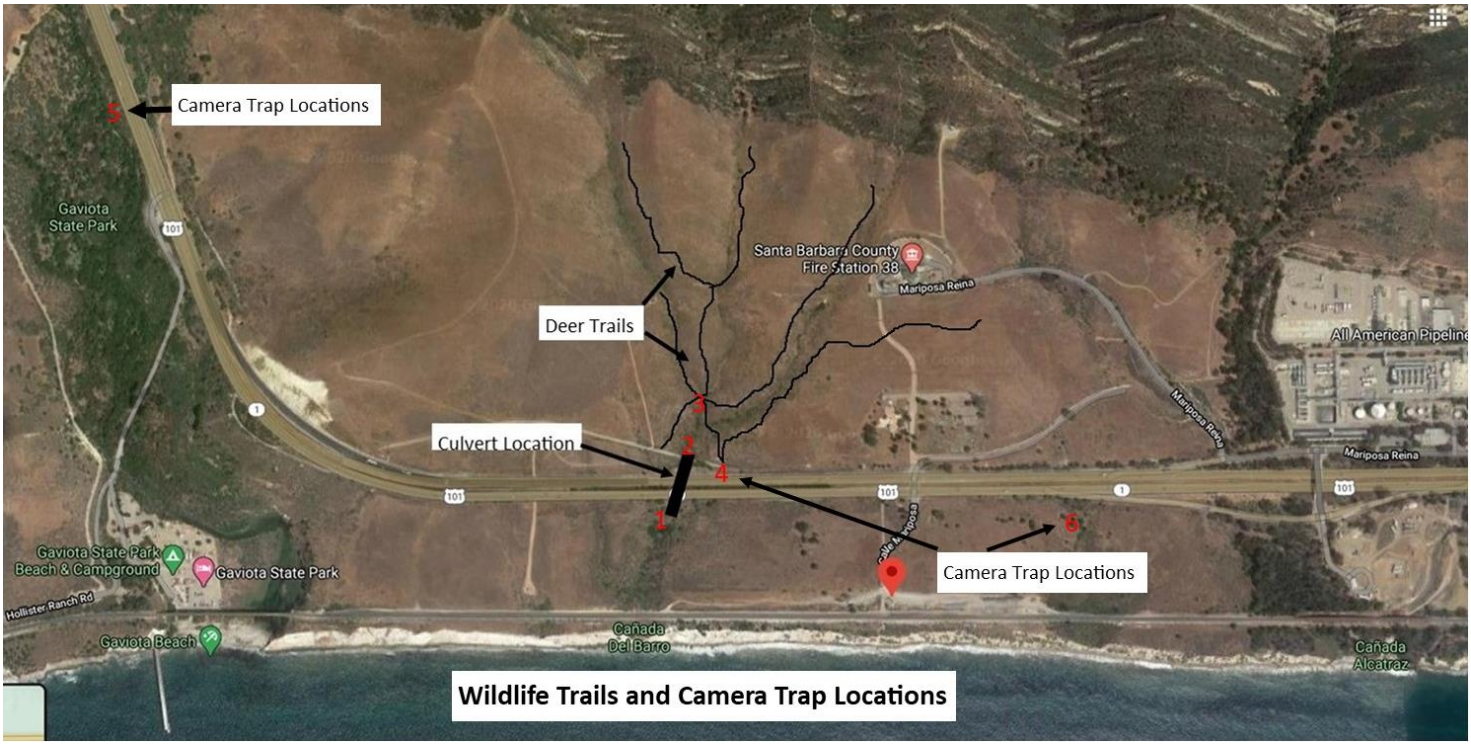


Figure 1. Locations of hotspots of wildlife-vehicle collisions (orange color), collisions with animals of different types and sizes (points) within the local vicinity (area indicated with arrows "A") and the exact location of the culver project (red box "B"). Data from the California Roadkill Observation System, California Highway Incidents Processing Systems, California Natural Diversity Database, and the USGS Biodiversity Information in Service of Our Nation database.

Dr. Shilling is one of the co-authors of the Caltrans Wildlife Crossing Guidance Manual and he is likely the leading scholar in the State on these matters. The above map was produced by him and may be found in the appendix as part of his letter.

[6] Letter dated 8-23-2020 from Dr. Fraser Shilling, Road Ecology Center, UC Davis; attached

WILDLIFE TRAILS We present here two images showing some of the extensive wildlife trails in the project's vicinity. No cattle have grazed here for many years so all trails are from wild animals. This image also shows where we placed camera traps to see what wildlife is using the trails. You will note that none of the trails lead directly to the culvert mouth and instead diverge to the east and west of the culvert. These diverging trails lead to the highway where some wildlife will attempt to cross, resulting in the high rates of roadkill we observe. During exploration of the wildlife trails we found evidence of 3 mountain lion kills of deer in very close proximity to the project site. This is very unusual in our experience.



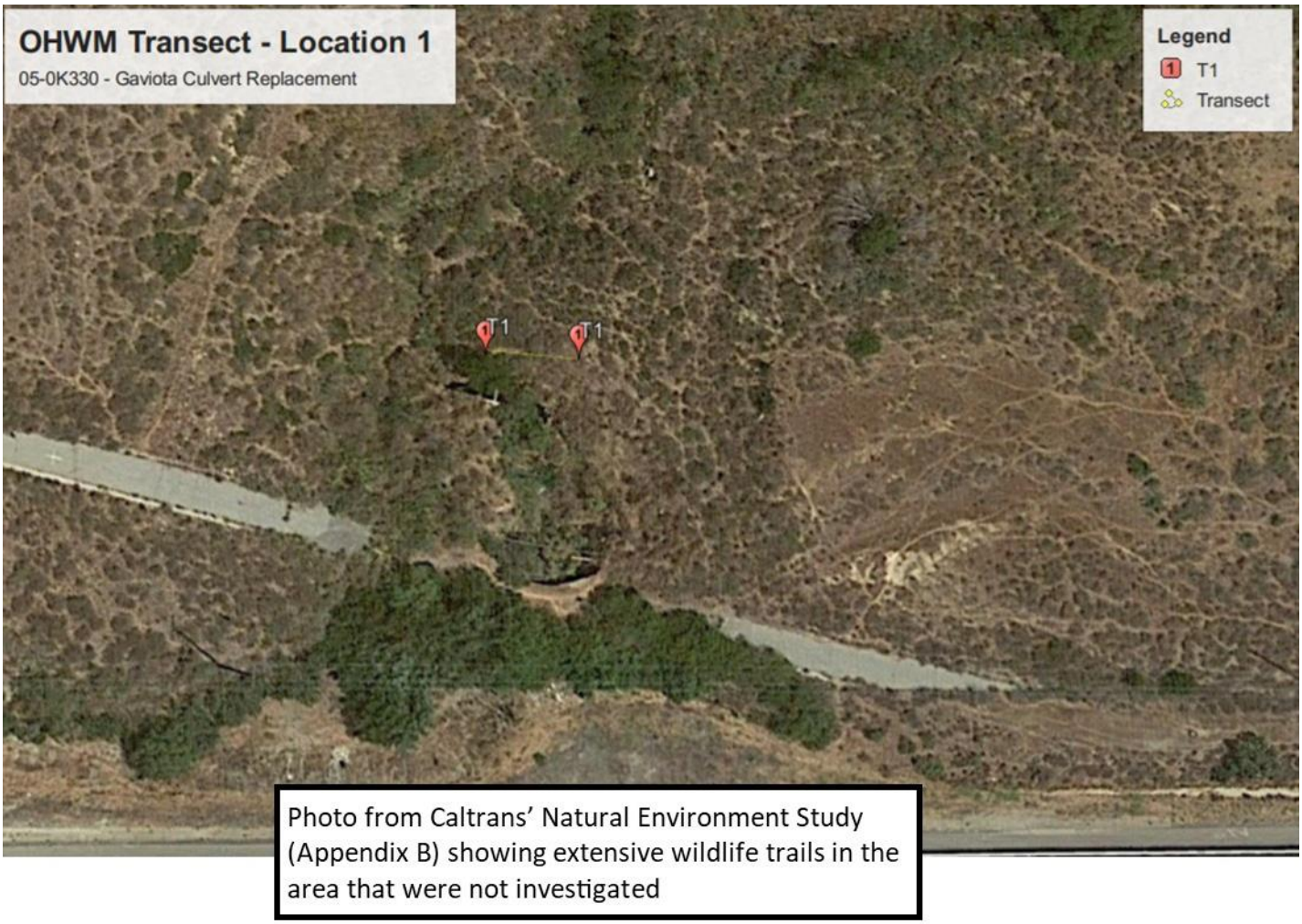


Photo from Caltrans' Natural Environment Study (Appendix B) showing extensive wildlife trails in the area that were not investigated

CAMERA TRAPS We have ample evidence from the roadkill data and wildlife trails that wildlife will attempt to cross the highway at this location. To confirm wildlife use we deployed 6 camera traps for 14 days; one at each of the existing Gaviota Culvert's mouths, one at a junction of several wildlife paths near the project site, one adjacent to the highway above the culvert, and two at the closest adjacent culverts. These locations are shown on the map above. The cameras show that the existing culvert, even though it is mostly filled in at one end with sediment, is currently being used by small mammals like skunks and even a large black bear to safely cross beneath the highway. No deer or mountain lions were observed using it however. These cameras also captured many images of deer and smaller mammals in the projects' immediate vicinity, providing additional confirmation that this specific location is important habitat and that the project lies within a wildlife corridor. Some of these photographs can be found in the appendix, sorted by location.

ADDITIONAL EVIDENCE In California's mild climate, large mammals do not make annual migrations as they might in colder climates. Instead they move around within their territories on a daily or weekly basis. It is well known that large mammals, like the deer, black bears, and mountain lions found here, will use coastal streams as corridors to travel between the chapparal of the mountain slopes and the coastal sage habitat found between the beach and the foot of the mountains. Our camera trap photos show this. Bear and mountain lions frequently will scavenge the sandy beach for marine mammals and shorebirds during the night. Deer will use the willows along these stream corridors to bed in during the heat of the day, coming out to feed in the early morning or

late evening. Moving up and down these stream corridors is a natural part of their day. The existing culvert is too small to allow the passage of deer, but it is being used by some species that are not deterred by small cave-like openings, like black bear and skunks. Still, it does block what would otherwise be a natural wildlife corridor for the high population of deer found at both ends of the culvert site. Wildlife certainly used this culvert more extensively in years past, before it partially filled with sediment and reduced the size of the passageway.

Our mapping of the wildlife trails, the photos taken by the camera traps we placed, the high rate of road kill on the adjacent highway, and basic scientific knowledge of the movements of large mammals across this landscape tell us that this project takes place within a wildlife corridor, one which was partially blocked by the construction of the original culvert that is now too small to accommodate deer and other large mammals.

We know that Caltrans' current policy is to take into account wildlife movements and design their projects accordingly. They should have done so in this instance.

FEASIBILITY: A CULVERT DESIGNED FOR WILDLIFE CROSSING

This project presents a unique opportunity to create a wildlife crossing under Highway 101 at a low additional cost. There are only a few locations to provide wildlife crossings in this area and our research indicates that this is the best one. The two adjacent culverts to the east and west cannot easily be enlarged due to the topography[7]. Based on our camera trap studies, neither of these adjacent culverts have the high concentration of wildlife or are in a wildlife corridor like we find at the Gaviota Culvert location. If the Gaviota Culvert is not re-designed to allow wildlife to use it, there will be no safe wildlife crossing on this stretch of coastline in the foreseeable future. This will result in the continued high and increasing rates of wildlife mortality and habitat fragmentation, degrading coastal ecosystems and processes.

A round culvert of a 10'-12' diameter will work nearly as well as a box culvert for large mammals but results in stream channelization.

Our research shows that for an approximately 20% increase in the total project cost (or $1.5 million added to the $7.4 million construction estimate provided by Caltrans)[8], this project can be modified so that it will provide a safe wildlife crossing beneath Highway 101. Only modest changes in this project's design are necessary for the Gaviota Culvert at Canada del Barro to accommodate the needs of large wildlife. Black bear, mountain lions, and mule deer all prefer a 10 to 12-foot-high

[7] See photos and site map of adjacent culverts in Appendix

[8] We were not allowed access to Caltrans' cost estimates for the project, so this estimate is very rough.

culvert with a flat floor of a minimum of 36” wide. For a culvert of this length (506 feet long) it is also essential that natural light be introduced at the mid-point. This can be done by constructing a “skylight” that opens into the highway median. The existing culvert has a similar feature, known as a drop-culvert, and both the nearest adjacent culverts also have a skylight opening to the median. To meet the needs of moving wildlife and protecting coastal ecosystems, the re-designed culvert should ideally be a 10’x12’ or larger box culvert with a natural floor so as to avoid channelization of this coastal stream. A box culvert can be installed with the same trench-less jacking method which this project will use. However, we have not been able to get a good estimate of the cost of using a box culvert compared to using a reinforced concrete pipe culvert. Dr. Shilling believes that a design using a round pipe that is 10’ or 12’ in diameter, with the skylight feature and a flat floor, while not ideal, will be acceptable to the larger game we are concerned about.[9] Dr. Shilling is co-author of wildlife crossing guidance for 4 states (CA, ID, SD, and VT), directs the California Roadkill Observation System (www.wildlifecrossing.net/california , the longest-running and largest system of its kind in the US and over the past 10 years has used camera traps to investigate wildlife movement at over 100 culverts and bridges under State highways, often in partnership with Caltrans. Since we began appealing this project, Caltrans has twice asked Dr. Shilling to provide roadkill/wildlife-vehicle collision data for this project area, which he has done.

Culvert with open floor; the best design for wildlife and to avoid channelization of the coastal stream.

We consulted with a structural engineer[10] at Jacobs Engineering, Matt Negrete. Mr. Negrete works on Caltrans projects and we asked for his help in developing the likely cost of making these changes to the project. He analyzed the cost data that Caltrans provides on their website[11] and found this:

[9] Email from Dr. Fraser Shilling
[10] Matt Negrete; Jacobs Engineering
[11] See https://sv08data.dot.ca.gov/contractcost/

Bid Item No.	Name	Qty (Linear Foot)	Adjusted Unit Cost ($/ft)	Contract	Year
031585	Jacked 72" Welded Steel Pipe	150	2010	05-0G0404	2016
019193, 038363	24" Reinforced Concrete Pipe (Jacked)	992	1115	Multiple	2010, 2019
039797	42" Jacked Welded Steel Pipe	150	1700	01-0E7204	2020
039122	36" Trenchless Welded Steel Pipe	330	1060	02-4G560	2020
033743	60" Alternative Trenchless Culvert	110	2060	02-4G2504	2017
035476	60" Permanent Casing (Trenchless)	130	2000	08-1F8304	2018
035827	48" Reinforced Concrete Pipe Trenchless Culvert Installation	180	1675	05-1F0804	2018

We also contacted several contractors[12] who do the trenchless jacking of culverts and would likely bid on this project. They told us that using a 10'-12' diameter pipe would be roughly 2 to 2.5 times the cost of the 72" culvert that is currently specified. They also told us that this would likely be approximately $2500-$3000 per lineal foot[13] and would not change anything in terms of the site development or the equipment they would employ to jack the pipe in and did not present any increased risk over the 72" culvert now proposed.[14] Therefore, the cost increase to go to a larger pipe diameter of 120" appears to be around $1 million, or 13% of the total estimated construction cost of $7.4 million. We did not have sufficient information to estimate the cost of the skylight/drop culvert to the median or of the cost of placing a roughened, flat concrete floor as would be essential in a round pipe to use it for wildlife passage. But it seems likely to us that the design changes necessary to accommodate large mammals would add less than 20% to the total project cost. A 20% increase would be $1.5 million for a total project cost of $8.9 million.

ALTERNATIVES TO CONSIDER

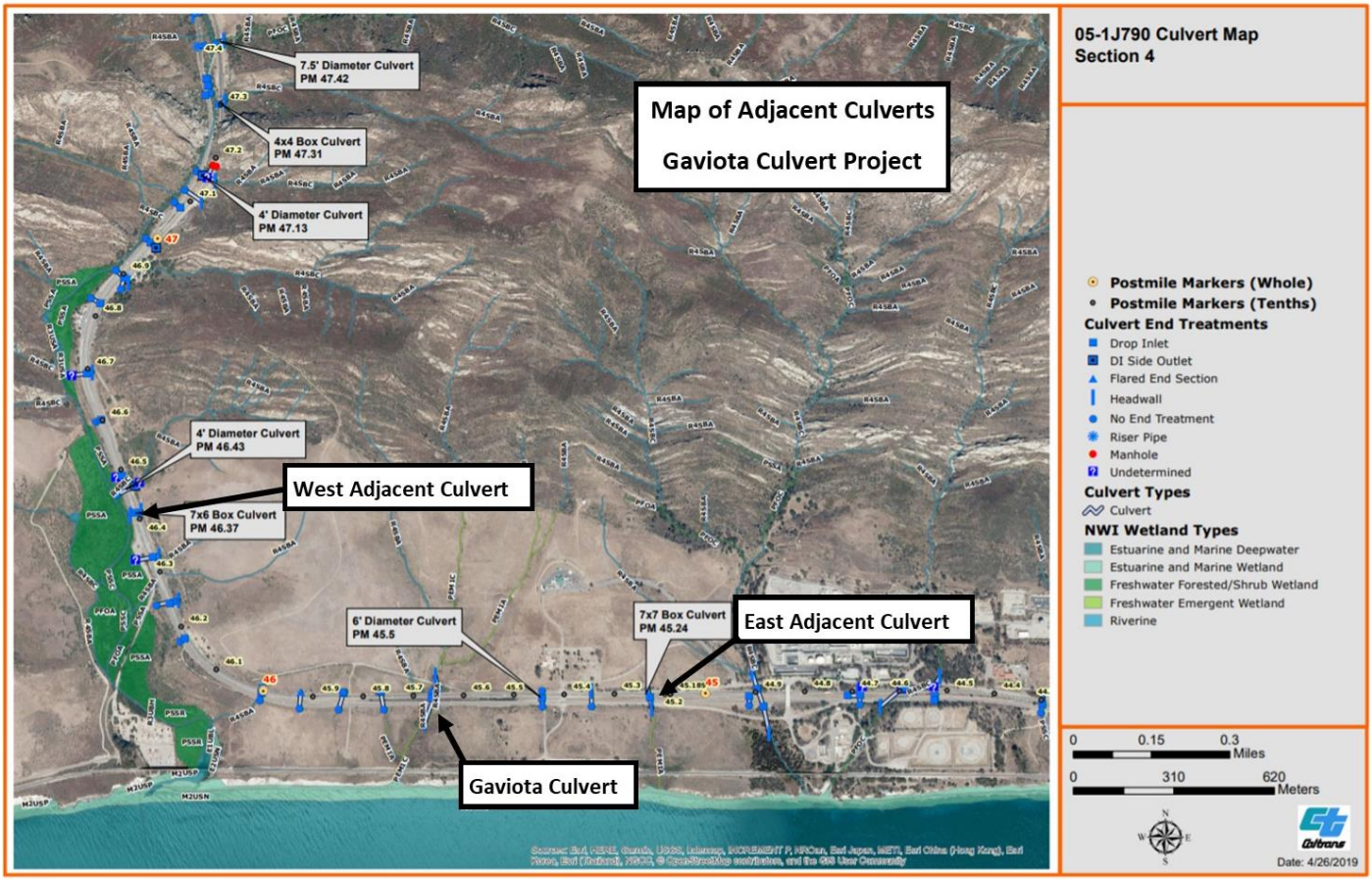
Coastal Ranches Conservancy has been addressing the issue of wildlife crossings at the west end of the Gaviota Coast for several years, initially as part of our Gaviota Creek Watershed Restoration project. The Gaviota Creek watershed begins just 1500 feet west of the Gaviota Culvert project. In this regard, we funded the Gaviota Wildlife Corridor Project Report done by Dr. Lisa Stratton at CCBER, found in the appendix. We also did a twice weekly road survey during 6 months in 2019, recording any road-killed animals in the five-mile-long stretch of Highway 101 from Mariposa Reina to the Nojoqui Summit. We also placed camera traps in several culverts in this stretch to monitor their use by wildlife. In 2019, we hired a consulting group[15] experienced in working with Caltrans to collect data and make recommendations to create new wildlife crossings in the study area. We allocated $25,000 of our funds (raised from private donors) to perform this study. Unfortunately, our consultant was unable to obtain the necessary encroachment permit from Caltrans to allow them to install wildlife camera traps in the Caltrans culverts. For 6 months Caltrans declined to issue the permit or explain the delay. Eventually, our consultant asked to be relieved of the contract as they were afraid that their relationship with Caltrans would be damaged if they continued to push for a permit. So we were unable to proceed with our plans.

For several years now, we have investigated many of the possible opportunities to create wildlife crossings in the vicinity. A new wildlife crossing could theoretically be built anywhere that conditions permit, but in general this is not the most practical approach due to funding limitations and the need

[12] John Iles of Pacific Boring was the most help. 559-864-9444. Info was also received from Nick Hayden of JJ Boring.
[13] The culvert is 506 feet long
[14] Caltrans estimates may differ from ours but we spoke directly to the subcontractor that would bid on this project
[15] Wildlife Pathways of Santa Cruz

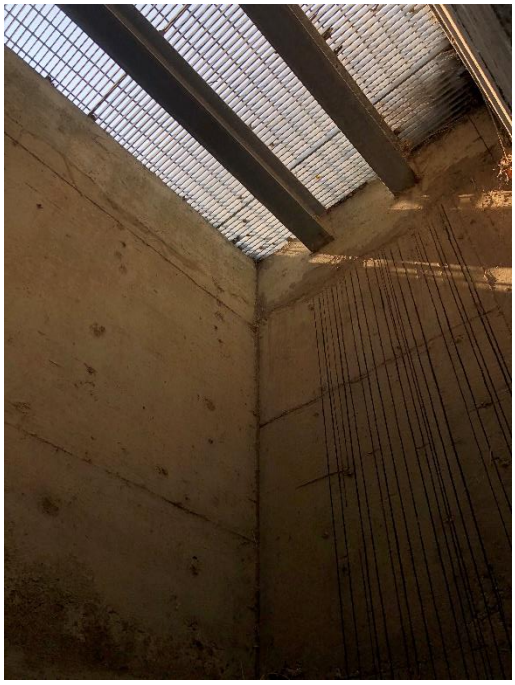
to have Caltrans commit to being involved. An approach that seeks to modify an existing culvert or undercrossing to accommodate wildlife is much more likely to succeed.

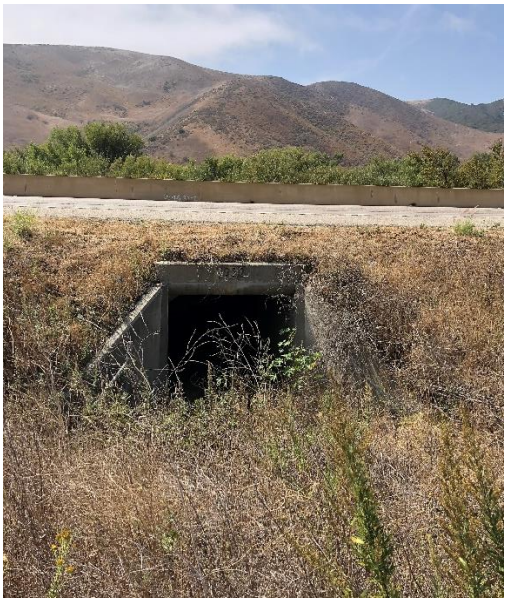
Below is a Caltrans map of the culverts in the project's vicinity. You will note there are two 7' tall box culverts nearby, one .7 miles to the east and one .5 miles to the west of the project. While neither is an ideal size, both are large enough and have skylights to the median which provides enough natural light that they could be used by large mammals like deer. However, after placing camera traps at both of these adjacent culverts for 14 days, no large mammals were found to be using either of them.



Eastern adjacent culvert showing skylight to median.

No large wildlife used this 7’ by 7’ culvert, although coyotes, skunks, and bobcats were common visitors.





Western Adjacent Culvert showing skylight to median. In the two weeks we had a camera trap here, no wildlife of any kind used this culvert

You can view some of the photos from our camera traps placed here in the appendix.

During the two-week duration of this camera trapping effort, neither of these two adjacent culverts were used by deer or other large mammals. We did see smaller mammals like coyote, fox, and bobcat use the eastern adjacent culvert to cross under the highway. No wildlife of any kind used the western adjacent culvert. There are no obvious wildlife trails or deer bedding habitat at either of the

alternative culvert sites, like there are at the Canada del Barro site. Neither is as good a place to create a wildlife crossing, compared to the situation at the Gaviota Culvert location.

Other than these two adjacent culverts, there are no additional culverts or other opportunities to create a wildlife crossing of Highway 101 for about 1.5 highway miles to the west, where there is another 7.5 ft tall box culvert which crosses under the northbound lanes only. We placed a camera at this location for several months in 2019 but did not see any wildlife of any kind use it at that time. The next possible wildlife crossing to the east is at Canada San Onofre, a sizable creek about 1.75 highway miles to the east. We have not yet had a chance to see whether wildlife are using the Canada San Onofre culvert as it was not in our study area.

Based on the information we have presented, we believe it is feasible and reasonable to modify the current design of the Gaviota Culvert Project to allow it to serve as a wildlife crossing under Highway 101 for large wildlife.

NEW INFORMATION: AN UNDISCLOSED WETLAND AT PROJECT SITE

We believe a wetland exists within the project site that was not disclosed in the project environmental assessment. An area on the north side of Highway 101 approximately 90-100 feet upstream of the existing culvert mouth appears to be a jurisdictional wetland as it meets the three criteria of hydric soils, obligate wetland vegetation, and wetland hydrology. It contains a thick growth of Cattails (*Typha* sp.) which occupies an approximately 30-40 ft length of stream bed. We also observed a second wetland plant, Wild Celery (*Apium* sp), growing beneath the cattails. During a visit at the end of September, 2020, we found both standing and flowing water among the cattails as well as further upstream. The project description documents[16] a small area of wetlands at the south side of the culvert project but no mention is made of this area on the north side. This wetland is just to the north of the survey points that are noted in the Caltrans Natural Environment Study and well within the project construction zone boundary.

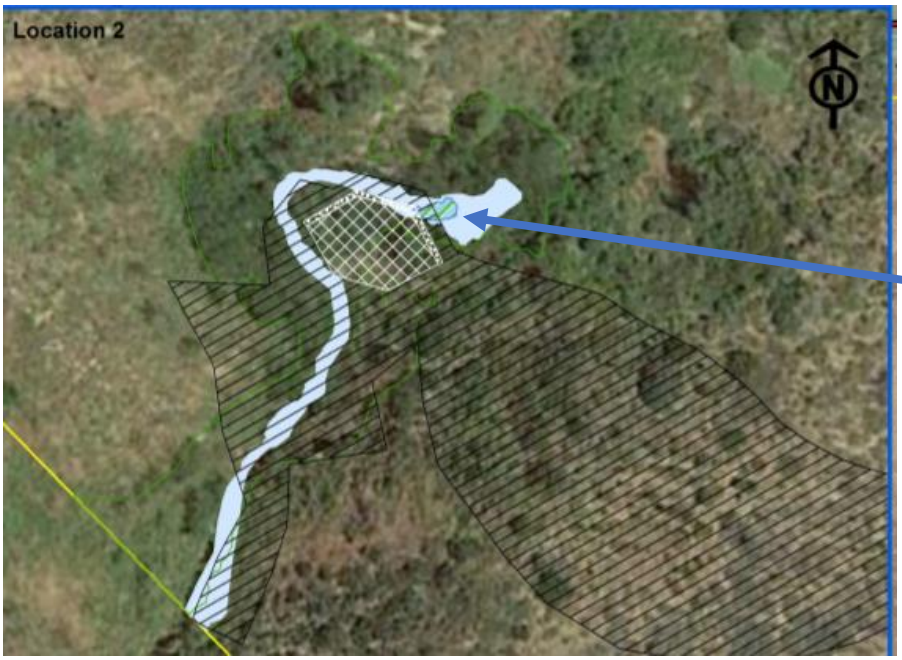
The north side of the project includes a previously undisclosed wetland in this location. Culvert project perimeter marked by hatched lines.

As we noted earlier, the name Canada del Barro means “muddy ravine” in Spanish. This indicates to us that it has been well known for hundreds of years that this is a perennial stream.

[16] See Caltrans Natural Environment Study May 2018

Large stand of cattails, located just upstream of northern culvert mouth, are a wetland indicator. Hydric soils and both standing and flowing water were also present. View is to the south west facing downstream.

Hydric soils and permanent surface water near cattail stand; two additional wetland indicators. Photo taken September 27, 2020



The project did identify a small area of wetland at the south end of the culvert, as shown in the blue-green patch in this view.

Also, the environmental documents all seem to have missed the fact that Canada del Barro contains an actively flowing stream, even at the end of the dry season.

"Cañada del Barro is an intermittent, ephemeral drainage that conveys runoff from the foothills of the Santa Ynez Mountains, to the Pacific Ocean. Cañada del Barro remains a dry creekbed, on both sides of SR-101, throughout most or all of the year."[17]

Because the watershed drains a portion of Gaviota Peak, which may have 40 inches or more of rainfall per year, the fact that there is flowing water in Canada del Barro at this time of year is not surprising. It is surprising that the Caltrans biologists did not make a record of this. Further investigation of this wetland is necessary before the project is allowed to proceed and its presence will likely require additional mitigation.

A solution that would reduce the channelization of this stream and accommodate wildlife would be to install a large arch or box culvert (minimum 10'x12') with an open bottom. A culvert of this type would do the least harm by allowing the natural stream bed to re-establish itself through the culvert and could still be installed using the trench-less jacking method, we are told. A culvert of this type would also accommodate wildlife, as we note above.

Policy NS-9:Natural Stream Channels.(COASTAL) Channelizations or other substantial alterations of streams shall be prohibited except for: 1) necessary water supply projects where no feasible alternative exists; 2) flood control projects for existing development where necessary for public safety and there is no other feasible alternative, or 3) development with the primary purpose of improving fish and wildlife habitat. Any channelization or stream alteration permitted for one of these three purposes shall minimize impacts to coastal resources, including ESH and the depletion of groundwater, and shall include maximum feasible mitigation measures to mitigate unavoidable impacts. Bioengineering alternatives shall be preferred for flood protection over "hard" solutions such as concrete or riprap channels.[18]

[17] From page 20 of the Caltrans Natural Environment Study
[18] Gaviota Coast Specific Plan; highlighting is mine

In addition, the Resources Code speaks clearly about channelization, below.
30236 Public Resources Code

Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (1) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the flood plain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat.[19]

NEW INFORMATION SUMMARY

We believe that Caltrans' failure to identify an extensive wetland at the north end of the culvert, their failure to notice that Canada del Barro is a perennial stream, and their failure to investigate the site for its use by wildlife are ample evidence that Caltrans did not adequately evaluate the project site and the project's potential impacts. Because of this, it cannot be reasonably determined that all of the impacts have been identified or mitigated to the extent possible in the proposed project. Therefore, we believe the project is not ready to go forward and needs to go back to Caltrans for additional study and redesign.

[19] California Public Resources Code

OFF-SITE MITIGATION AT THE MOST PROXIMAL LOCATION

Policy NS-11:Restoration.(COASTAL) In cases where adverse impacts to biological resources as a result of new development cannot be avoided and impacts have been minimized, restoration shall be required. A minimum replacement ratio of 3:1 shall be required to compensate for adverse impacts to native habitat areas or biological resources, except that mitigation for impacts to wetlands shall be a minimum 4:1 ratio. Where onsite restoration is infeasible, the most proximal and in-kind offsite restoration shall be required. Preservation in perpetuity for conservation and/or open space purposes of areas subject to restoration shall be required as a condition of the CDP and notice of such restriction shall be provided to property owners through a recorded deed restriction or Notice to Property Owner.[20]

The project's off-site mitigation is not being conducted in the most proximal location to the impacts of the project. Caltrans has deferred to the Gaviota State Park in declining to select a mitigation site on nearby State Park property. However, Caltrans owns and manages a large portion of Gaviota Creek. The Caltrans-owned portion of Gaviota Creek would be the closest and most impactful location to conduct the off-site mitigation. There are plenty of areas on the Caltrans property where the creek has problems with non-native invasive plants, roadside trash and debris from passing vehicles, and even habitat burned out from vehicle fires that needs restoration. We will be happy to help Caltrans select a project on Gaviota Creek that fits in with the other restoration activities on the creek, which we help oversee.

LOSS OF GAVIOTA STATE PARK LANDS

Although not included in the official project description or environmental analysis, it was revealed in previous hearings that Caltrans would need to acquire 5 acres of land from Gaviota State Park to construct this project. It was then revealed by the Gaviota Coast Conservancy that some of this property had a restrictive easement placed on it that would preclude its use for this purpose unless permission was granted by the easement holder. Currently Caltrans says that they will not be acquiring the property. At this time we don't have a good understanding about the overall situation and Caltrans is reluctant to say more, even though we have filed a PRA request.

It seems obvious to us that conversion of coastal lands from recreational use as a part of a State Park to a purely transportation use is an impact that must be considered and mitigated.

[20] Gaviota Coast Specific Plan; highlighting is mine

APPENDICES

1. “Gaviota Wildlife Corridor Project Report” Dr. Lisa Stratton, et al; CCBER, 2019

2. Letter from Dr. Fraser Shilling re: Roadkill Hot Spot at Project Location; August 2020

3. Camera Trap Photos from Project Site and Adjacent Locations

4. Additional Wildlife Crossing Culvert Examples

SELECTED CAMERA TRAP PHOTOS

LOCATION ONE

Deer at existing culverts' downstream end

Bobcat

LOCATION 2

Black bear emerging from north end of Gaviota Culvert, having safely traveled under Highway 101

LOCATION 3

Deer on wildlife trail

Coyote on wildlife trail

LOCATION 4

Coyote next to highway

Deer next to highway

LOCATION 6

Bobcat at east adjacent culvert

Bobcat emerging from east adjacent culvert after crossing beneath Highway 101

ADDITIONAL EXAMPLES OF WILDLIFE CROSSING CULVERTS

Box culvert similar to existing Gaviota Culvert

Open-arch culverts work very well as wildlife feel safer entering a large opening