



December 5, 2014

**Comments sent via email and overnight mail**

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Re: The City of Benicia's Draft Environmental Impact Report for the Valero Benicia Crude by Rail Project

Dear Ms. Million,

On behalf of the Center for Biological Diversity, Communities for a Better Environment, and Natural Resources Defense Council, we submit the following comments on the City of Benicia's Draft Environmental Impact Report (DEIR) for the Valero Benicia Crude by Rail Project (Project). The Project, if approved, would allow the Valero refinery to receive up to 70,000 barrels per day of crude oil by train, which equates to a potential for 1.07 billion gallons of crude oil imported by train each year.

These comments supplement prior comment letters by detailing the significant deficiencies in the DEIR's assessment of impacts to Biological Resources in Section 4.2. Specifically the DEIR (1) fails to adequately analyze and mitigate impacts to biological resources at the Project area; (2) fails to adequately analyze and mitigate impacts along the rail lines serving the Project; (3) fails to properly analyze the cumulative impacts of increased crude oil shipments on biological resources; and (4) fails to adequately evaluate impacts related to climate change.

Because this Project would result in significant impacts to biological resources, the City cannot certify the DEIR before adopting all feasible mitigation measures. At present, the DEIR fails to identify and analyze mitigation measures that would reduce the Project's impacts. However, there are numerous mitigation measures and alternatives that would reduce the impacts of the Project. These measures must be analyzed in the DEIR, so that the full range of options are publicly disclosed and considered by decision-makers.

## **I. The DEIR Fails To Adequately Analyze and Mitigate Impacts to Biological Resources in the Project Area.**

The Project will increase rail traffic activity significantly at the Project site (also called Project study area or Project area) by up to 730 oil trains each year, each carrying up to 50 tank cars,<sup>1</sup> with the potential of 1.07 billion gallons of crude oil per year imported to the Project area. The increased rail traffic and heightened probability of an oil spill from these oil trains pose significant risks to numerous special-status species occurring at the Project area. The DEIR fails to fully disclose and analyze the significant impacts to special-status species at the Project area, and fails to propose sufficient mitigation for these impacts.

### **A. The DEIR incorrectly categorizes numerous special-status species as “absent” from the Project area, and thereby avoids analyzing and mitigating impacts to these species.**

The DEIR improperly classifies numerous special-status species as “absent” from the Project study area, and thereby avoids analyzing impacts from the Project on these species. The DEIR states that the Project study area includes the Sulphur Springs Creek riparian area and the adjacent Project construction footprint. DEIR at 4.2-1. The DEIR acknowledges that Sulphur Springs Creek riparian area provides suitable habitat for numerous special-status species:

Sulphur Springs Creek and its associated riparian corridor and in-stream marshes provide potentially suitable habitat for the following special-status species: California red-legged frog, western pond turtle, tri-colored blackbird, yellow-headed blackbird, Suisun song sparrow, Samuel’s song sparrow, grasshopper sparrow, loggerhead shrike, yellow breasted chat, San Francisco common yellowthroat, and short-eared owl. DEIR at 4.2-27.

The DEIR also discusses the potential for the federally and/or state listed California black rail, California clapper rail, and salt marsh harvest mouse to occur in the Sulphur Springs Creek riparian area, but then arbitrarily dismisses their presence in the Project area without citing any evidence showing their absence or conducting any surveys:

Though brackish and salt marshes at the mouth of Sulphur Springs Creek provide habitat occupied by California black rail, California clapper rail, and salt marsh harvest mouse (CDFW, 2013a), only California black rail has the potential to occur in freshwater marshes of upstream Sulphur Springs Creek; this would be unlikely due to the small patch sizes of creek marshes and the industrial surroundings. DEIR at 4.2-28.

This is especially troubling given that one of the twelve Salt Marsh Harvest Mouse Conservation Areas in the Suisun Marsh is directly adjacent to the Project area. *See* Figure 1. Furthermore, the salt marsh harvest mouse, California clapper rail, and California black rail are State Fully Protected Species which means that no take or permits for take are allowed.<sup>2</sup>

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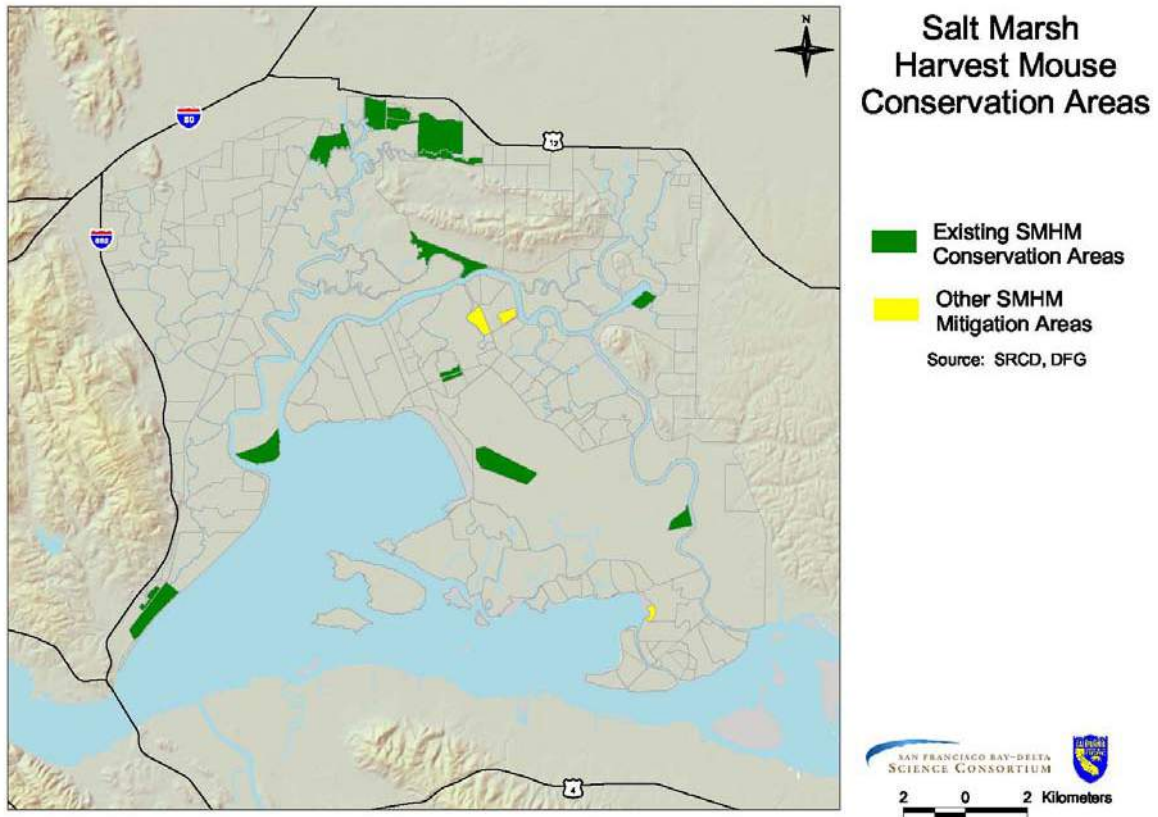
<sup>1</sup> The Project would allow Valero to accept up to 100 tank cars of crude oil a day in two 50-car trains. DEIR at 3-1.

<sup>2</sup> [http://www.dfg.ca.gov/wildlife/nongame/t\\_e\\_spp/fully\\_pro.html](http://www.dfg.ca.gov/wildlife/nongame/t_e_spp/fully_pro.html)

The DEIR fails to consider special-status fish that have the potential to occur in the Sulphur Springs Creek riparian area, even though the federally and/or state listed delta smelt, Central Valley steelhead, and longfin smelt use the Suisun Marsh and its network of sloughs for feeding, rearing, and/or migration as juveniles or adults. DEIR at Table 4.2-1.

Figure 1. Twelve Salt Marsh Harvest Mouse Conservation Areas in Suisun Marsh.

Source: <http://www.dfg.ca.gov/delta/suisunmarsh/atlas/images/smhm%20cons%20areas.jpg>



The DEIR also fails to consider special-status plants occurring in the Project area. Table 4.2-1 of “Special Status Species Considered for the Proposed Project” irrationally excludes plant species because they were judged to not experience secondary disturbance-related impacts: “Statements regarding the potential for species to occur in Sulphur Springs Creek (a component of the Project Study Area) do not extend to plants because they would not experience secondary disturbance-related impacts (e.g., noise, visual) from the project.” DEIR at 4.2-5. However, plants at Sulphur Springs Creek are vulnerable to oil spills, erosion, sediment loading, chemical runoff, and other impacts from the Project, as acknowledged by the DEIR (DEIR at 4.8-15), and these impacts must be analyzed and mitigated.

In sum, despite the potential presence of numerous special-status species in the Project area, Table 4.2-1 erroneously lists all special-status species as absent from the Project Study Area, with the sole exception of the California red-legged frog which is listed as “unlikely.” The DEIR concludes without basis that the only “special-status species potentially occurring in the Sulphur Springs Creek riparian corridor are California red-legged frog (*Rana draytonii*), western pond turtle (*Actinemys marmorata*), and nesting birds.” DEIR at 4.2-19.

The Project applicant did not conduct any field surveys for special-status species in the Project area. Without USFWS protocol-level surveys for special-status species, the DEIR must assume they are present and treat any potential habitat as occupied habitat, and impacts to these species must be fully analyzed and mitigated.

**B. The DEIR fails to analyze and mitigate foreseeable impacts on special-status species in the Project area.**

Under CEQA Guidelines, a project would cause significant adverse impacts to biological resources if it would “have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species.” The DEIR’s cursory and incomplete three-paragraph analysis of the potential impacts of Project activities on special-status species (DEIR at 4.2-27-28) has several fatal flaws:

(1) As detailed above, the DEIR only considers a subset of the special-status species that may occur in the Project area, and thus its analysis is incomplete.

(2) The DEIR completely fails to analyze the potential for an oil spill from the ~730 crude oil trains arriving each year at the Project area to reach and harm the Sulphur Springs Creek riparian corridor and adjacent Suisun Marsh. DEIR at 4.2-27-28. The Sulphur Springs Creek riparian corridor is immediately adjacent to the northeast Project boundary, separated only by chain-link fencing. DEIR at 4.2-19. Due to the proximity of sensitive wetland habitat and special-status species, the impacts of an oil spill in the Project area could be significant. However, the DEIR irrationally fails to analyze the impacts from a spill in the Project area or require mitigation measures to prevent a worst-case scenario oil spill from reaching sensitive wetlands. For example, the DEIR fails to require mitigation plans, procedures, and contractual arrangements to enable a rapid response to an oil spill in sensitive habitats, such as contracts to bring personnel to the site to contain an oil spill in wetland habitat, bird rescue personnel and rehabilitators immediately after onset of a spill event, and personnel to conduct clean-up in sensitive habitat in consultation with the California Department of Fish and Wildlife, National Marine Fisheries Service, and U.S. Fish and Wildlife Service.

(3) The DEIR fails to analyze and mitigate many construction-related and operational impacts at the Project area to special-status species. DEIR at 4.2-27-28. The DEIR must analyze and mitigate the full range of impacts to special-status species imposed by construction and increased rail activity due to Project operation, including increased noise pollution, night lighting, collisions with trains, barriers to movement, disturbance from human presence, spread of invasive species from imported soils, and storm-water runoff containing pollutants from oil and other chemicals used at the facility. In its incomplete analysis, the DEIR irrationally concludes that the Project is only likely to affect nesting birds, indirectly, and only through construction-related activities. DEIR at 4.2-28. Even for nesting birds, the DEIR completely evades evaluating whether operational effects could disrupt nesting birds or feeding migratory waterfowl by presuming that these species are “tolerant” without providing any scientific evidence, monitoring, or analysis to verify that no harm is occurring: “[d]uring operation, the noise, vibrations, visual disturbance, and increased human activity associated with the Project

become part of the ambient environment, so any birds that subsequently nest nearby are presumed to be tolerant of the disturbance." DEIR at 4.2-28. The DEIR must properly evaluate and mitigate the full range of construction-related and operational impacts to special-status species in the Project area.

## **II. The DEIR Fails To Properly Analyze and Mitigate Off-Site Impacts to Biological Resources Outside of the Immediate Project Area.**

The DEIR's analysis of Project impacts to Biological Resources outside the Project area suffers from numerous fatal flaws: (1) the DEIR arbitrarily limits the scope of its off-site biological resources impacts analysis to the ~18 miles of rail line running through the Suisun Marsh; (2) the DEIR improperly limits its rail accident risk analysis to the ~18 miles of track passing through the Suisun Marsh and significantly underestimates the spill risk; (3) the DEIR fails to disclose the significance of low-probability, high-consequence oil spill events or mitigate oil spill impacts; and (4) the DEIR fails to analyze and mitigate impacts from increased rail activity along the rail lines serving the Project.

### **A. The DEIR irrationally and improperly limits the geographic scope of its off-site biological resources impacts analysis.**

Despite the fact that the Project will vastly increase rail activity to and from the refinery across California and other states, the DEIR irrationally and improperly fails to analyze the Project's off-site impacts to biological resources beyond the ~18 mile stretch of rail line running through the Suisun Marsh. The DEIR's restriction of the geographic scope is arbitrary and violates CEQA.

CEQA requires an EIR to discuss the significant impacts that the proposed project will have in the relevant geographic area. Guidelines § 15126.2(a). Agencies must "provide a reasonable explanation for the geographic limitation used," Guidelines § 15130(b)(1)(B)(3), and the geographic scope "cannot be so narrowly defined that it necessarily eliminates a portion of the affected environmental setting," *Bakersfield Citizens for Local Control v. City of Bakersfield*, 124 Cal. App. 4th 1184, 1216 (2004).

The DEIR acknowledges that impacts from the Project could extend to areas outside of the Suisun Marsh along the railroad track used to transport crude oil: "potential indirect impacts of accidental releases related to this proposed new transport on the [Suisun] Marsh ... also may apply to other sensitive areas anywhere along the railroad tracks used to transport crude feedstocks." DEIR at 4.2-31. However, the DEIR fails to explain why it has limited the geographic scope to Suisun Marsh, and inexplicably fails to evaluate impacts along the rail lines that will be used by the Project.

Because only a handful of rail lines would serve the Project, the analysis of the potential impacts to special-status species along these lines is eminently feasible. Within California and many western states, for example, very few branches of Union Pacific and BNSF rail lines lead to Roseville. *See* Figures 2 and 3.

Figure 2. Union Pacific Railroad Crude-By-Rail Routes.  
 Source: <http://www.up.com/customers/chemical/crude/index.htm>

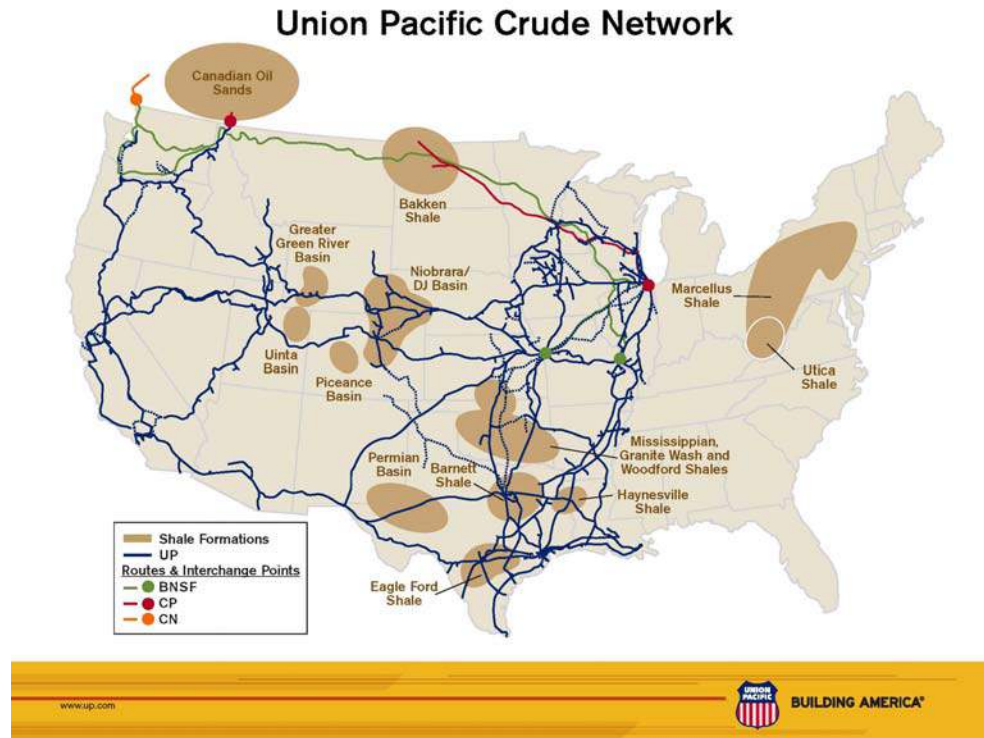
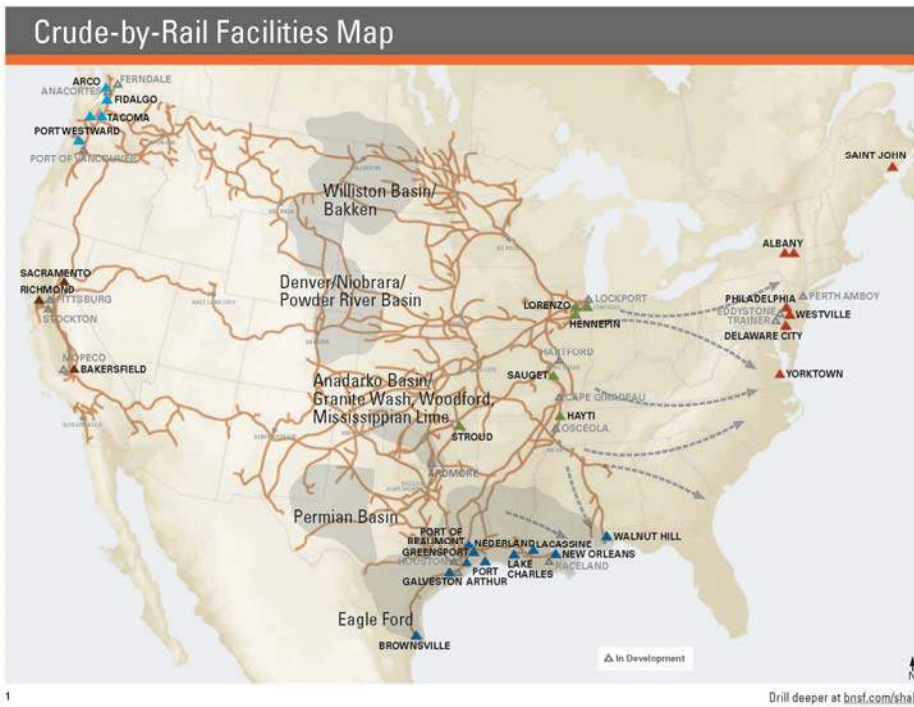


Figure 3. BNSF Crude-By-Rail Routes.  
 Source: <http://www.bnsf.com/customers/oil-gas/>



The narrow geographic scope of the biological resources impacts analysis is a serious deficiency, particularly because significant train-related harms to species from oil and chemical spills, train collisions, noise pollution, and barriers to movement have been scientifically documented as detailed below, and these harms will worsen with increased rail activity.

The DEIR should include a full discussion of the impacts of the Project's rail activity on biological resources, including the full range of potential impacts from increased rail activity, the origin and route of train trips, the species and habitats that will be impacted along the train routes, and mitigation measures. The DEIR's failure to address these important topics violates CEQA.

**B. The crude-by-rail routes for UPRR pass through occupied habitat for many special-status species.**

Union Pacific Railroad (UPRR) rail lines cut through critical habitat for many threatened and endangered species along the mainline rail network. In California alone, UPRR track with UPRR ownership rights pass directly through critical habitat for 25 federally protected species, including terrestrial and aquatic animals and plants. *See* Table 1 and Figure 4. The Project would enable the rail transport and processing of Bakken and Canadian tar sands crude oil to the refinery. As shown by the maps of UPRR and BNSF crude-by-rail routes (i.e., Figures 2 and 3), the rail lines transporting crude oil from the Bakken shale deposit on the North Dakota-Montana border would pass through occupied habitat for many threatened and endangered species, such as the grizzly bear in the Northern Continental Divide Ecosystem (NCDE) in northwest Montana. The DEIR's failure to disclose and analyze these impacts to special-status species and sensitive habitats along the rail lines violates CEQA.

**C. The DEIR improperly limits its off-site oil spill risk analysis to 18 miles of track passing through the Suisun Marsh and significantly underestimates the risk of an accident resulting in an oil spill.**

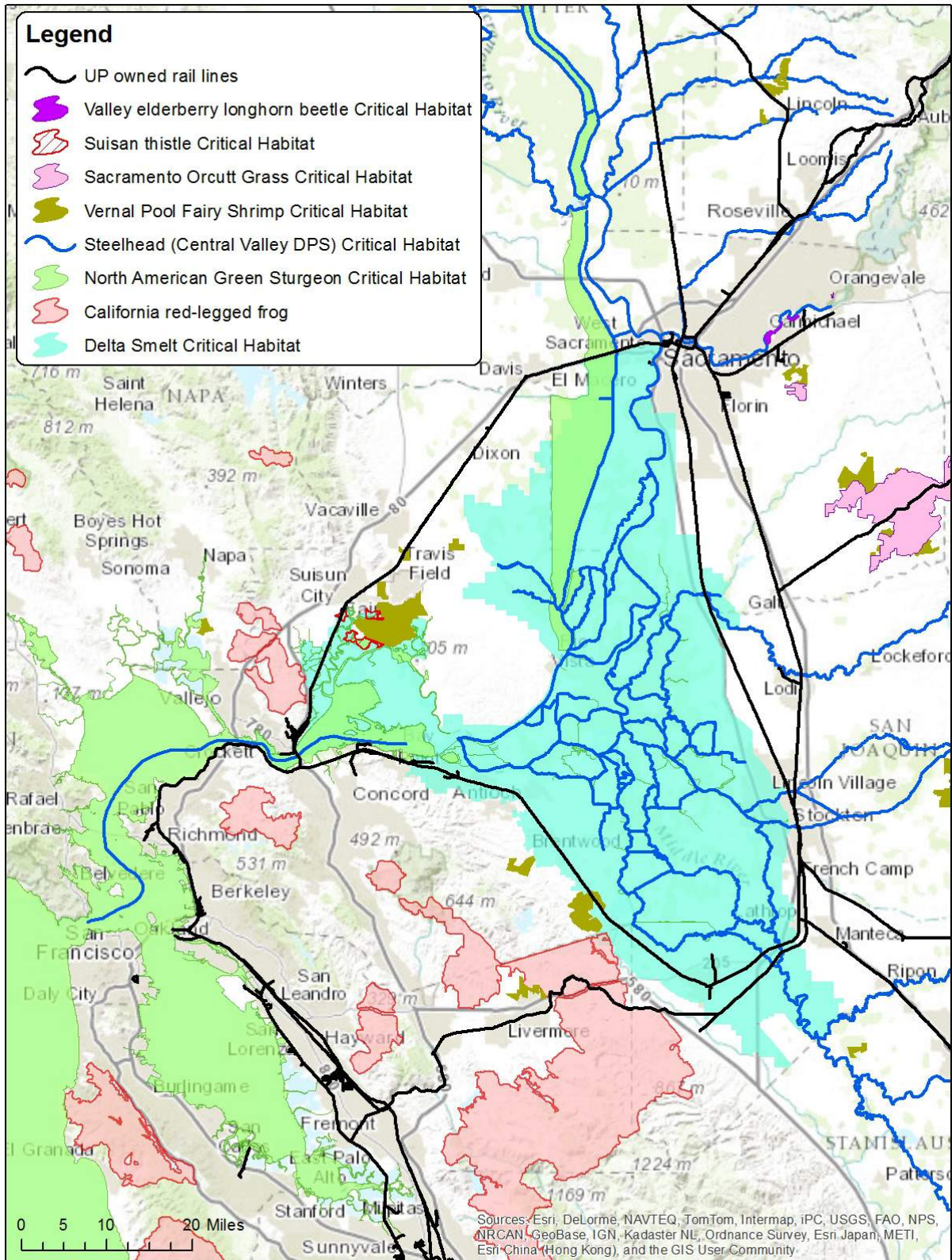
The DEIR improperly narrows the scope of its oil spill risk analysis to an ~18 mile stretch of rail line passing through Suisun Marsh, although it admits that "a spill could occur anywhere along the line." DEIR at 4.2-33. The DEIR should have evaluated the probability of an oil spill on the mainline track outside of Suisun Marsh, which would have yielded a significantly greater risk of oil spill resulting from the Project due to the larger number of rail miles traveled. By improperly limiting the scope of the analysis, the DEIR significantly underestimates the probability of an oil spill resulting from the Project. The DEIR's restriction of its oil spill risk analysis to Suisun Marsh is arbitrary and violates CEQA.

Table 1. UPRR track with UPRR ownership rights passes directly through critical habitat for 25 federally protected species in California.

<b>Common Name</b>	<b>Scientific Name</b>	<b>Federal Listing Status</b>
Sacramento Orcutt grass	<i>Orcuttia viscida</i>	Endangered
Desert tortoise	<i>Gopherus agassizii</i>	Threatened
Bay checkerspot butterfly	<i>Euphydryas editha bayensis</i>	Threatened
Suisun thistle	<i>Cirsium hydrophilum var. hydrophilum</i>	Endangered
Arroyo toad	<i>Anaxyrus californicus</i>	Endangered
Contra Costa goldfields	<i>Lasthenia conjugens</i>	Endangered
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	Threatened
Vernal pool tadpole shrimp	<i>Lepidurus packardi</i>	Endangered
La Graciosa thistle	<i>Cirsium loncholepis</i>	Endangered
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	Threatened
California tiger Salamander (Santa Barbara County DPS)	<i>Ambystoma californiense</i>	Endangered
Marbled murrelet	<i>Brachyramphus marmoratus</i>	Threatened
California tiger Salamander (Central California DPS)	<i>Ambystoma californiense</i>	Threatened
Delta smelt	<i>Hypomesus transpacificus</i>	Threatened
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	Endangered
California red-legged frog	<i>Rana draytonii</i>	Threatened
Coastal California gnatcatcher	<i>Polioptila californica californica</i>	Threatened
Coachella Valley milk-vetch	<i>Astragalus lentiginosus var. coachellae</i>	Endangered
Santa Ana sucker	<i>Catostomus santaanae</i>	Threatened
Least Bell's vireo	<i>Vireo bellii pusillus</i>	Endangered
Ventura Marsh Milk-vetch	<i>Astragalus pycnostachyus var. lanosissimus</i>	Endangered
Gaviota Tarplant	<i>Deinandra increscens ssp. villosa</i>	Endangered
Tidewater goby	<i>Eucyclogobius newberryi</i>	Endangered
North American green sturgeon (southern DPS)	<i>Acipenser medirostris</i>	Threatened
San Bernardino Merriam's kangaroo rat	<i>Dipodomys merriami parvus</i>	Endangered



Figure 4. Critical habitat for threatened and endangered species bisected by UPRR track with ownership rights in the San Francisco Bay Area in California.



#### **D. The DEIR fails to disclose the significance of low-probability, high-consequence oil spill events resulting from the Project or mitigate oil spill impacts.**

The DEIR acknowledges that the consequences of an oil spill in Suisun Marsh could be “significant.” DEIR at 4.2-33. However, the DEIR dismisses those consequences by arguing that the likelihood of a severe event occurring is low, and irrationally concludes that the impacts from a train accident that involves a relatively large amount of oil spilled from one or more tank cars is less than significant. DEIR at 4.2-33. This analysis errs in several fundamental ways. First, as detailed in the 15 September NRDC et al. letter, the DEIR’s hazards analysis for the risk of oil spills suffers from numerous deficiencies which underestimate the risk of accidents. Second, even using the Barken report’s flawed estimate, the risk of an oil spill that releases greater than 100 gallons along the portion of the route traversing the Suisun wetland area (0.381% per year) equates to an 11% probability over a 30-year period which is a significant risk. Third, because the significance of an accident depends both on its probability of occurring and its magnitude, high-magnitude-low-probability risks like large oil spills are significant impacts under CEQA, and must be mitigated. Guidelines § 15143 (“The significant effects should be discussed with emphasis in proportion to their severity and probability of occurrence.”).

Oil spills have well-documented lethal and sublethal impacts on species, including immediate and long-term effects (Bhattacharyya et al. 2003, Holdway 2002), that must be considered in the DEIR. Petroleum oil is a complex mixture of hundreds of different compounds, mostly hydrocarbons, with different levels of toxicity to wildlife. Polycyclic aromatic hydrocarbons (PAHs) are among the most toxic oil components and have been documented to cause significant impacts on wildlife. Direct impacts to wildlife from exposure to oil include behavioral alteration, suppressed growth, induced or inhibited enzyme systems and other molecular effects, physiological responses, reduced immunity to disease and parasites, histopathological lesions and other cellular effects, tainted flesh, and chronic mortality (Holdway 2002). Oil can also exert indirect effects on wildlife through reduction of key prey species (Peterson et al. 2003).

The persistence of toxic subsurface oil leading to chronic exposure, even at sublethal levels, can impact wildlife species and ecosystems for decades (Bhattacharyya et al. 2003, Peterson et al. 2003). Exposure to crude oil in rivers and streams has been linked to long-term population effects in freshwater fish (Krahn et al. 1986), river otters (Duffy et al. 1993, Bowyer et al. 1995), and other freshwater species (Harrel 1985). For example, pink salmon embryos exposed to oil under conditions similar to those observed after the *Exxon Valdez* spill exhibited delayed effects of reduced growth and significantly lower marine survival (Heintz et al. 2000). Crude oil from the *Exxon Valdez* spill is thought to have caused the elevated mortality of pink salmon eggs in oiled streams for at least four years after the spill (Peterson et al. 2003).

One recent example of the significant impacts of low-probability, high-consequence oil spill events occurred in Suisun Marsh in 2004 when a Kinder Morgan pipeline spilled approximately 123,774 gallons of diesel fuel into Suisun marsh, adjacent to the Union Pacific rail line that would carry crude to the refinery if this project is approved.<sup>3</sup> The Natural Resource Damage Assessment for the spill documents injury and/or death of numerous birds, small

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<sup>3</sup> <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=22852&inline=true>

mammals, reptiles, fish, aquatic and terrestrial invertebrates, and marsh plants, including deaths of the federally and state-listed salt marsh harvest mouse. The most-heavily impacted areas included a 9.25-acre area reduced to a plowed field with a projected recovery time of 10-years from restoration, and a 68.54-acre area that was 80% injured with a 4-year recovery timeline.

**E. The DEIR fails to adequately analyze off-site impacts from increased rail activity along the rail lines serving the Project.**

Although the Project will vastly increase rail activity by up to four train trips per day (i.e., two trains coming and the same trains leaving), equating to up to 1460 trips per year (DEIR at 4.2-31), the DEIR fails to sufficiently analyze the range of off-site impacts from increased rail traffic to wildlife species along the rail lines serving the Project. The DEIR arbitrarily limits its off-site impacts analysis to oil spills and noise pollution along the rail line running through Suisun Marsh, and incorrectly determines that these impacts are not significant.

**1. The DEIR's analysis of noise pollution in Suisun Marsh incorrectly concludes that impacts are "less than significant."**

The DEIR acknowledges that noise pollution from increased rail traffic could affect a range of special-status species including California black rail, California clapper rail, burrowing owl, Suisun shrew, and salt marsh harvest mouse. DEIR at 4.2-31-32. It determines that "if all four trains were added during nighttime hours when presently only about 7 trains run, the percentage increase of train cars running during nighttime hours would be closer to 60%." DEIR at 4.2-32. This is a significant increase in noise pollution. However, the DEIR speculates that wildlife species "are expected to soon habituate to the increased noise," without providing any scientific evidence that increased noise pollution will not impact special-status species. The DEIR dispels any significant risks to special-status on the basis of generalized and conclusory statements unsupported by factual information that are specifically prohibited under CEQA.<sup>4</sup> This arbitrary analysis and lack of mitigation violate CEQA.

**2. The DEIR fails to analyze and mitigate the impacts of increased rail traffic on the rail lines serving the Project.**

Scientific studies have documented that train activity negatively affects wildlife through (1) mortality from collisions with trains, (2) disturbance from noise and artificial light causing stress and behavioral changes, (3) impeding natural movements, thereby restricting the animal's range, making habitat less accessible, and potentially leading to population fragmentation and isolation, and (4) pollution of the physical, chemical, and biological environment, for example through the emissions of contaminants like heavy metals, which can degrade habitat suitability in a much wider zone than the width of the railroad itself (Jackson 1999). Each of these impacts

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<sup>4</sup> See *Berkeley Keep Jets Over the Bay Com. v. Board of Port Cmrs.* (2001) 91 Cal. App. 4th 1344, 1371 (striking down an EIR "for failing to support its many conclusory statements by scientific or objective data"); *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal. App. 4th 645, 659 ("[D]ecision makers and general public should not be forced to . . . ferret out the fundamental baseline assumptions that are being used for purposes of the environmental analysis.").

would be worsened by the significantly increased rail traffic resulting from the Project, and the DEIR must analyze and mitigate the full range of impacts.

#### **a. Mortality from train collisions**

Mortality resulting from animal-train collisions has been documented for a wide range of species, including moose (Andreassen et al. 2005, Gundersen and Andreassen 1998, Gundersen et al. 1998), grizzly bears (Benn and Herrero 2002, Waller and Servheen 2005, Pissot 2007, USFWS 2013), black bears (Pace et al. 2000, Van Why and Chamberlain 2003), wolverines (Krebs et al. 2004), wolves (Mörner et al. 2005), deer (AP 2014, Kusta et al. 2011, Kusta et al. 2014), pronghorn (AP 2011), tortoises (Iosif 2012), amphibians (Budzik and Budzik 2014), and birds (Spencer 1965). The frequency of train trips was determined to be the most significant factor in the number of deer-train collisions across study sites (Kusta et al. 2014). Railroad fatalities can have detrimental impacts on animal populations. For example, train-moose fatalities in the lower Susitna Valley, Alaska, were a primary contributor to population reductions (Modafferi 1991).

Illustrating the impacts of train collisions to special-status species, the BNSF railway in northwestern Montana has long been responsible for killing threatened grizzly bears from the Northern Continental Divide Ecosystem (NCDE) population. According to recent data, 50 grizzly bears from the NCDE population were documented as killed by train collisions between 1984 and 2013 (USFWS 2014). In 2014 at least two grizzly bears from this threatened population were killed by train collisions (Daily Inter Lake 2014). Although BNSF has taken some steps to clean up grain spills attracting bears, grizzly bears continue to be killed along this section of railroad, which has been attributed in large part to the high volume of rail traffic on this line (Waller and Servheen 2005). As a result, the average number of grizzly bear deaths from train collisions has not declined over time (USFWS 2014).

#### **b. Noise pollution**

Noise from rail activity has been found to cause adverse impacts to species. Chronic noise pollution from road, rail, and other anthropogenic activity is an issue of increasing concern (Morley et al. 2014). Birds are particularly vulnerable to noise because it can mask their vocal communication, with consequent effects on their health and survival. Schroeder et al (2012) documented reduced reproductive fitness in birds exposed to chronic noise from generators. Intermittent noise, the expected pattern along a rail line, may also cause stronger effects and decrease the ability of birds to habituate to noise (Blickley et al. 2012). While some birds may utilize vocal adjustments in response to chronic noise pollution, those adjustments are likely to have direct and indirect fitness costs (Read et al. 2014).

#### **c. Barriers to movement**

Railways can act as barriers to movement that can result in population fragmentation and isolation. Increased train traffic can increase the impact of the barrier. For example, studies indicate that railways act as a barrier to movement for the federally threatened grizzly bear population in the Northern Continental Divide Ecosystem (NCDE) in northwest Montana

(Waller and Servheen 2005, Kendall et al. 2009). Kendall et al. (2009) found evidence for population fragmentation across the western side of the BNSF rail line and Hwy. 2 corridor between Glacier National Park and National Forest lands. Population differentiation across the corridor indicated that reduced genetic interchange was occurring. Waller and Servheen (2005) similarly found that train traffic posed a significant movement challenge for bears. Furthermore, their research indicated that the high rail traffic volume was particularly problematic for bear mortalities:

While grizzly bears appeared to make behavioral adjustments to temporal patterns of highway traffic volume, they were faced with a different situation along the railroad. During hours of low highway traffic, when grizzly bears were choosing to cross US-2, railroad traffic was high. Trains were more frequent, longer, and faster at night than during daylight hours. Furthermore, rail traffic was greater during fall when bears were in hyperphagia. This situation arose for a number of reasons. First, most track maintenance work was accomplished during daylight hours; thus, freight traffic was often curtailed during the day to allow track work to proceed. Second, arrival times for freight trains depended partially on their departure time. Freight trains loaded on the Pacific coast (approx 800 km to the west) during the day left in the evening and arrived in our study area at night the next day, 24–36 hr later. The result was that grizzly bears had to contend with high railroad traffic when highway traffic was lowest. We observed greater grizzly bear mortality caused by trains than that caused by cars on the highway. (Waller and Servheen 2005: 997).

Railroads have also been shown to inhibit movement of bumblebees (Bhattacharya et al. 2003) and pronghorn (Ockenfels et al. 1997). Fenced railroads in Arizona posed movement barriers that isolated pronghorn into different populations and shaped home ranges, resulting in population fragmentation (Ockenfels et al. 1997).

### **III. The DEIR Fails to Properly Analyze the Cumulative Impacts of Increased Crude Oil Shipments on Biological Resources.**

The DEIR's cumulative impacts analysis for biological resources (DEIR at 5-15-16) is wholly inadequate. The DEIR lists numerous current and proposed projects that will increase crude oil transport in the San Francisco Bay area by railcar and ship in Table 5-1. However, the DEIR concludes without basis that the cumulative impacts from noise pollution, light pollution, and oil spills from these projects will be less than significant. For example, the DEIR acknowledges that these projects will lead to "a regionwide increase in all types of vessel traffic (frequency and/or duration of ships, railcars, etc.), along with an increased number of conveyance pipelines planned under regional projects... which would increase the overall likelihood of a spill in the region." However, the DEIR concludes that cumulative impacts would be less than significant because the probability of a spill would be small: "a spill would only occur under circumstances of an upset or accident, and the probability of occurrence of any single event is small; the probability of two or more events occurring at the same time (from the Project and another cumulative project) is even smaller." DEIR at 5-16. As detailed above, the significance of an accident depends both on its probability of occurring and its magnitude, so that

high magnitude-low probability risks like large oil spills are significant impacts under CEQA (CEQA Guidelines § 15143). The additional risk posed by the Project is clearly cumulatively significant in light of the other existing and proposed crude-by-rail projects in the region which may use the same rail lines as the project. Therefore, the DEIR must disclose this risk as significant and adopt mitigation measure to reduce the risk.

#### **IV. The DEIR Inadequately Evaluates Impacts Related To Climate Change.**

The DEIR fails to assess the potential impacts of climate change on the Project, particularly from sea level rise and storm surge, which could undermine the railroad tracks along the Suisun Marsh. As admitted by the DEIR, flooding can cause train derailment, leading to possible fires or spills. However, the DEIR fails to assess whether the railroad lines carrying crude-by-rail for the Project would be affected by rising water levels and increased risk of floods.

#### **V. Conclusion**

The DEIR has failed to adequately disclose, analyze, and mitigate numerous significant impacts to biological resources. These fatal flaws must be corrected before this project may lawfully be approved.

We are submitting copies of the cited studies with these comments. Please contact Shaye Wolf at (415) 632-5301 if you have any questions about these comments.

Sincerely,



Shaye Wolf, Ph.D.  
Climate Science Director  
Center for Biological Diversity



Kassie Siegel  
Director, Climate Law Institute  
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