From:	Jacob Patterson
To:	O"Connor, Diane; Lemos, June
Cc:	Smith, John; Spaur, David; sarah mccormick; Albin-Smith, Tess
Subject:	Raw Water Line MND Questions and Comments
Date:	Thursday, May 19, 2022 11:25:25 AM

[June, please include this email as a public comment for item 7A even though it is not a typical public comment because it is primarily directed to the relevant staff rather than being written as a persuasive comment for the City Council.]

Diane & Company,

I just reviewed the agenda packet for Monday's meeting and have a few preview questions that I would like to ask you to consider prior to the actual public hearing. My hope is that these questions will help you prepare for the meeting on Monday and you might address these limited concerns in your staff presentation. As I said to you during the public review period, I think this is the best environmental document I have reviewed prepared by or on behalf of the City of Fort Bragg. I tend to strive for perfection and even be a little nitpicky so me not finding a lot to be concerned with in the draft MND is noteworthy. I appreciate the thorough work, which is part of why I didn't submit written comments during the formal review and comment period. (The other part is that since my quick read-through didn't raise any red flags, I didn't do my usual more thorough second review of the MND.)

My questions and concerns actually relate to the comment letter received from CDFW, which I just read this morning for the first time. Specifically, I would like the City Council and public to understand how their comments were addressed through any changes to the MND. The staff report is very brief and didn't address their comments but I found Appendix F at the end of the MND with a table of the City's written responses to the two comment letters. I am not sure anyone other than Tess will notice that critical component at the end of the MND so I think it makes sense to highlight it. In addition, the City Council may want to actually make some changes that are more in line with what CDFW recommends because the City's written responses are a little dismissive, IMO, and basically state that we are already doing something so we don't need to do anything more to specifically address CDFW's specific comments. I believe that is not an adequate response and undermines the purpose of responsible agency review and comments. In particular, were there any modifications to the mitigation measures and analysis to address any of their specific concerns? If so, what were they? The responses in Appendix F seem to suggest that we mostly left everything as is and didn't make substantive changes to anything. That is explicitly stated in the "conclusion" after the table, which is concerning to me. I have to object to the City not even making minor adjustments in the MND to address CDFW's particular concerns. I believe that is an error, which could be considered an abuse of discretion. Most draft documents aren't perfect and the purpose of a review and comment period is to identify issues that justify revisions. Instead, CDFW's letter is basically dismissed without even really responding to the substance of the particular concerns. In my opinion, the City's responses appear to be an attempt to deflect from the actual concern and address a superficially related but different topic so they aren't actually responses to the comment as written by CDFW--the Caltrans response is directly in point-and adequate, IMO.

In most cases, CDFW is calling for more specificity in the draft mitigation measures and the City has not made any such changes. Moreover, the City's responses to individual topics/comments do not actually address the alleged inadequacies in how the existing draft

mitigation measures are written. A better (and legally-compliant) approach would be to revise the mitigation measures to explicitly include CDFW's points. For example, CDFW Comment #5 states that some portions of the proposed mitigation measures are not actually adequate or appropriate for Mendocino Cypress so the proper response would be to add that particular language to BIO-7 and BIO-8 (i.e., that pygmy Mendocino Cypress are not to be transplanted or that even if they are transplanted, additional/alternative mitigation methods for Mendocino Cypress is required for any pygmy Mendocino Cypress that is removed). An appropriate alternative mitigation appears to be the off-site mitigation bank of restoration and protection of Sholar's bog and the surrounding property discussed below.

CDFW's comment letter mentions Sholar's (aka Summer's Lane) Bog as an off-site mitigation option and I see that bog mentioned in BIO-8 and in the MMRP, albeit in a non-committal way that I don't actually think counts as a mitigation measure just an aspirational statement that isn't enforceable. Was that language in BIO-8 already in the MND to their comments or was it added to address their comment? The response is unclear. I think that portion of BIO-8 needs to be more specific and be binding and enforceable or it is effectively meaningless. Considering something and looking for partners doesn't accomplish anything nor does it provide any actual mitigation if it isn't pursued. It should be revised to literally require the City to perform specific off-site mitigation measures on its own (or with whatever partners it might be able to locate in the future) but something concrete has to be required now or BIO-8 becomes an illusory mitigation measure that doesn't address this particular concern. Since we can only impose mitigation measures that are necessary to actually address a real projected impact that would be significant without implementing the particular mitigation measure(s), a potential but non-binding future effort is not adequate and this impact area would need to be identified as remaining potentially significant. What that means is that this would need to be an EIR not an MND or we need a concrete and enforceable mitigation measure that we have analyzed within the revised MND to demonstrate precisely how it will be expected to reduce the identified impact area to less than significant. We don't have that now based on CDFW's comment letter and based on my read of the MND concerning this particular impact area. To summarize, the City's "conclusion" in Appendix F is not supported by any meaningful analysis in the table of responses to individual comments within CDFW's letter or in the conclusion itself. I think Appendix F and the MND itself require some targeted revisions to address CDFW's specific concerns.

My focus is on the mitigation measures because those are the only part of the MND that have a practical effect on the project and our local environment going forward. The way I read the City's responses, we didn't really address their concerns with additional analysis or modified mitigation measures, which just seems like we are effectively ignoring the points they raise. That doesn't seem sufficient, IMO, and I would have liked to see concrete revisions that at least try to address the issues CDFW highlighted rather than just referring back to the existing MND as if they didn't notice the content the first time. For example, in CDFW comment #1, they ask for more analysis of the project's impacts concerning the loss of Mendocino Cypress trees, which I interpret to mean they want us to better analyze the effectiveness of the mitigation measures at reducing the impacts to less than significant but we are simply restating what the document already says rather than providing that additional analysis. I think that is an error and the issue is in vagueness and ambiguity in the wording of the mitigation measure paired with a lack of an actual threshold of significance in this impact area. The analysis in the MND is incomplete and not detailed enough, which is CDFW's concern, because the MND doesn't establish a threshold of significance for what level of loss of Mendocino Cypress habitat or what level of disturbance would be considered significant and then it doesn't

specifically evaluate how the proposed mitigation measures will reduce those impacts to a level that is less than significant. Instead, we just calculate replanting ratios without establishing how those replanting ratios help with the losses that will occur because of the project. It is implied or just assumed that those replacement ratios will satisfy whatever unwritten and undisclosed standard should apply to this study impact area, in part because that is what we did for a similar project in the past. The CEQa document probably wasn't adequate in the past for the Summer's Lane reservoir project if it didn't include more detailed analysis and an explicit threshold of significance so we can't just rely on carrying a past approach forward to this project without explaining how the required analysis was accomplished and doing comparable and complementary analysis in this MND for this project.

Moving on to a few topics not addressed by CDFW or Caltrans, you (Diane) likely have the best understanding of anyone on what this project entails so you are probably the best person to work on minor modifications of the wording to any of the mitigation measures. Of course, if the City changes the mitigation measures, you might need to recirculate the MND for an additional 20-day period. (Of course, that depends on how conservative of an interpretation of the legal/procedural requirements one takes; I personally think the City can make minor adjustments to clarify the language in an existing mitigation measure and not necessarily have to recirculate the MND but I also think it is important enough to get them as buttoned down as is possible to avoid project-related implementation issues concerning the contractors who may just ignore the requirements or take a very lax interpretation so it might be worth it to revise and recirculate if the City Attorney advises that is the appropriate procedure.) For example, the draft MND doesn't define "newer" versus "older" equipment in NOI-1 so that mitigation measure doesn't really have any meaning to me and I am not sure it will do anything to address the identified noise impacts. I am confident the contractors will likely use whatever equipment they have regardless of its relative age--relative to what?. Using a relative term without setting measurable criteria for implementation/enforcement is ill-advised and results in what I like to call an "illusory mitigation measure" because it just looks like one but doesn't have any meaningful substance. Can we add a model year requirement for equipment or something that actually informs the contractors what age equipment they will have to use or can we at least make that requirement subject to oversight by you or the City's project manager and include some level of discretionary authority for enforcement purposes? It is never advisable to delegate enforcement or monitoring to the contractors themselves because I can attest that those "restrictions" often don't end up being self-enforced and thus mitigation measures like this one are further "illusory" because they end up having no practical benefit.

In fact, my main concern about this MND is that it doesn't consistently meet the requirement of fully evaluating the effectiveness of the mitigation measures at reducing the impacts to less than significant. (Not just for the areas identified by CDFW but for other measures and related impac areas as well.) We are required to do so and I didn't see sufficient analysis of exactly how these mitigation measures can be expected to reduce the potentially significant impacts to less than significant. There are also a few areas where the MND doesn't incorporate actual thresholds of significance, which is a common problem, although that doesn't apply to the "Noise" impacts.

I also noticed that some of the biological mitigation measures are limited to certain project segments, like BIO-9. I think that is an error in particular concerning the presence of many of these same species within Phase II, which is not included in BIO-9 even though there is an unnamed creek and pond within Phase II, albeit smaller than those found in Hare Creek or Covington Creek. (Perhaps I am not interpreting BIO-9's intent correctly, which might only

apply to salmonids, not broader wildlife like the amphibians.) I have extensive personal experience in that area of Phase II because it runs behind my family's property on Lyta Way and there are a lot of protected species in that area as well. For example, Pacific Giant Salamanders are all over the project area and live in redwood duff along the forest floor, including along the overgrown road bed where the pipe segments are going to be installed. That area might have been disturbed in the past but it doesn't mean the old road bed within the project's work area doesn't provide wildlife habitat or even examples of protected plants because it has experienced significant plant growth and the return of wildlife to previously-distrubed areas. I have documented numerous instances of Giant Pacific Salamanders near the drainage ditches and creek in the Phase II area so BIO-9 might need to be extended to include the Phase II project segment, not just Hare Creek and Covington Creek in another phase of the project. BIO-1, which applies to the whole project, is listed in BIO-9 but it is less specific and less protective than BIO-9. BIO-1 is limited to "aquatic habitats" but some of the protected amphibians don't just live within the aquatic areas but also nest in redwood duff. Pacific Giant Salamanders in particular are all over Phase II of the project area and are very easy to kill if they are crushed whilst tramping through the woods. (Our family dogs have even killed a few on walks through our property and the adjacent property where the project work will proceed so I know how easy it is to harm these protected animals.) I would like BIO-1 to include preconstruction surveys of all the project area in Phase II, not just the aquatic habitat areas that are primarily outside the easements and overgrown road bed. To summarize, even if BIO-9 is appropriately limited to Hare creek and Covington creek, BIO-1 should be revised to require the preconstruction surveys in all areas not just aquatic habitats.

BIO-1 also mentions the "Project Biologist" who is to be notified when any amphibians are discovered during the project. I believe BIO-1 should be revised to also require active monitoring of all project activities directly by the Project Biologist. In fact, the Project Biologist could even be a temporary City employee for the duration of this project or an independent contractor as long as they remain independent from the any of the contractors performing the constriction work. This is such a sensitive project and work area that the Project Biologist should be required to serve as an on-site construction monitor for the duration of the project to ensure compliance with these restrictions, not just when notified by the project contractor who has a strong incentive to not actually enforce the stop work upon discovery requirement in BIO-1. Without that kind of oversight, BIO-1 and the other related mitigation emasures are likely to not actually be effective in preventing the harms they are intended to prevent or reduce. The Project Biologist should be employed or contracted directly by the City and not through the project contractor to ensure a lack of bias or conflict as well. Ideally, BIO-1 should be revised to incorporate those additional details/requirements. "Project Biologist" is capitalized as if it is a defined term but it isn't defined or described except for within BIO-1 without any explanation other than that they will perform certain tasks. The requirement for a Project Biologist and the extent of their monitoring and compliance issues should be expanded within BIO-1 (and other relevant mitigation measures) to ensure that these impacts and restrictions are actually implemented.

Regards,

--Jacob

From: Jacob Patterson
To: O"Connor, Diane; Lemos, June
Cc: Smith, John; Spaur, David; sarah mccormick; Albin-Smith, Tess
Subject: Re: Raw Water Line MND Questions and Comments
Date: Thursday, May 19, 2022 12:09:38 PM

I wrote too soon. Regarding mitigation measure NOI-1, the MND doesn't really analyze or explain how any aspect of the proposed mitigation measure can be expected to reduce the projected significant impacts (noise exposure exceeding the relevant thresholds) to less than significant. I also think the analysis leaves off a critical component because it only calculates the noise exposure for the residential structures but the noise regulations for the City and County also include exposure to outside noise on different types of property, which also appear to exceed the applicable thresholds of significance concerning outside rather than just indoor noise exposure. What about residential users on their own property using/occupying the woods in the gully behind the portions of their property where their residential structures are located? Exposure to noise thresholds that exceed the outdoor exposure of residents is important and many of the residents take regular hikes through their own woods right next to this project work area and some even camp in tents on occasion in these same woods within the noise exposure radius shown on Figure 4-15. The noise impact area appears to remain potentially significant because the MND doesn't include any actual analysis concerning how the proposed mitigation measures would be expected to reduce the noise exposure to less than significant (i.e., below the applicable noise exposure thresholds for indoor or outdoor residential uses). The Noise section of the MND requires revision to actually demonstrate how the projected significant noise exposure is actually reduced. Until then, the conclusion that is is reduced to less than significant with mitigation incorporated is not justified and presents a reversible error, IMO.

On Thu, May 19, 2022 at 11:24 AM Jacob Patterson <jacob.patterson.esq@gmail.com> wrote:

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Appendix F at the end of the MND with a table of the City's written responses to the two comment letters. I am not sure anyone other than Tess will notice that critical component at the end of the MND so I think it makes sense to highlight it. In addition, the City Council may want to actually make some changes that are more in line with what CDFW recommends because the City's written responses are a little dismissive, IMO, and basically state that we are already doing something so we don't need to do anything more to specifically address CDFW's specific comments. I believe that is not an adequate response and undermines the purpose of responsible agency review and comments. In particular, were there any modifications to the mitigation measures and analysis to address any of their specific concerns? If so, what were they? The responses in Appendix F seem to suggest that we mostly left everything as is and didn't make substantive changes to anything. That is explicitly stated in the "conclusion" after the table, which is concerning to me. I have to object to the City not even making minor adjustments in the MND to address CDFW's particular concerns. I believe that is an error, which could be considered an abuse of discretion. Most draft documents aren't perfect and the purpose of a review and comment period is to identify issues that justify revisions. Instead, CDFW's letter is basically dismissed without even really responding to the substance of the particular concerns. In my opinion, the City's responses appear to be an attempt to deflect from the actual concern and address a superficially related but different topic so they aren't actually responses to the comment as written by CDFW--the Caltrans response is directly in point-and adequate, IMO.

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Regards,

--Jacob

ITEM 7A

Public Comment for Raw Water Line Project MND

Photo of Pacific Giant Salamander found throughout Phase II

CaliforniaHerps.com

A Guide to the Amphibians and Reptiles of California

Coastal Giant Salamander - *Dicamptodon tenebrosus*

(Baird and Girard, 1852)

Click on a picture for a larger view

Description | Taxonomy | Original Description | Scientific Name | Alternate Names | Similar Herps | References | Conservation Status

Search this web site

Range in California: Red

Dot-locality Range Map

Report Your Herp Observations

Adults

Small adult, Humboldt County

Small adult, Humboldt County

Small adult, Humboldt County

Pale unmarked underside of small adult, Humboldt County

Small adult, Humboldt County

Small adult, coastal redwoods, Del Norte County

Small adult, coastal redwoods, Del Norte County

Adult, coastal redwoods, Del Norte County © Alan Barron

Adult, 5,300 ft., eastern Del Norte County © Alan Barron

Adult, coastal redwoods, Del Norte County © Alan Barron

Adult, found approximately 150 meters from a creek in Humboldt County © Alyssa Semerdjian

Large adult, Humboldt County © Patrick Briggs

Adult *in situ*, Humboldt County © Spencer Riffle

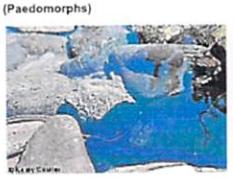
Adult *in situ*, Humboldt County © Spencer Riffle

Adult *in situ*, Humboldt County © Spencer Riffle

Adult, Humboldt County © Marcus Rehrman

Neotenic Adults (Paedomorphs)

Neotenic adult in a Trinity County creek © Kirsty Coulter



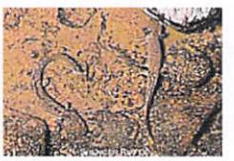
Upper right is the same neotenic Trinity County adult seen in the pictures to the left along with an Oregon Gartersnake on the left of the picture. © Kirsty Coulter

Large neotenic adult in water, 5000 ft., Trinity Mountains, Siskiyou County

Large neotenic adult, Mendocino County. (Note the dark claw-like growths on the back toes.) © Molly Rinaldi

Large captive neotenic adult in an aquarium

Paedomorph in a high-elevation lake in Trinity County © Spencer Riffle



Paedomorphs in a high-elevation lake in Trinity County © Spencer Riffle

Aquatic Larvae

Large larva in water, Del Norte County

Very small larva in water, Del Norte County

Large larva in creek, Del Norte County

Aquatic larva temporarily out of water to show size, Humboldt County

Larva removed from water temporarily for photograph on land, Del Norte County

Larva in a muddy seep in Mendocino County © Evan Mehta

Larva, Humboldt County © Evan Mehta

Larva in water, Humboldt County © Spencer Riffle

Eggs

These pictures show a recently-decapitated female Coastal Giant Salamander in Mendocino County. You can see her unlaid eggs spilling out of the wound. After they are produced and before they are laid, the eggs fill up the salamander's body cavity.

Feeding

Adult eating a Banana Slug in Humboldt County © Grayson B. Sandy

Large larva in water, Del Norte County after regurgitating a worm it had eaten

Adult eating a banana slug, Humboldt County © Spencer Riffle

Predators

Oregon Gartersnake, *Thamnophis atratus hydrophilus*, eating a neotenic Coastal Giant Salamander in Trinity County. © Ben Witzke

These two Coastal Giant Salamanders were found locked in combat beside a coastal creek in Humboldt County in mid July in what is probably an attempt by the large salamander to eat the smaller salamander. The smaller salamander bites onto the large salamander's leg while the large salamder bites onto the smaller salamander's body. © Alyssa Semerdjian

Habitat

Habitat, Del Norte County

Habitat, Del Norte County

Habitat, Humboldt County

Habitat, Humboldt County

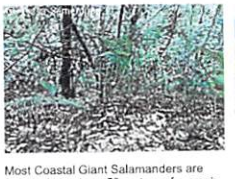
Habitat, Humboldt County

Habitat, 5,000 ft., Trinity Mountains, Siskiyou County

Habitat closeup, 5,000 ft., Trinity Mountains, Siskiyou County

Habitat, Del Norte County

Habitat, Mendocino County



Most Coastal Giant Salamanders are found within about 50 meters of a creek, but sometimes they wander farther from water. One was found wandering in daylight at this location approximately 150 meters above a creek in Humboldt County.© Alyssa Semerdjian

Habitat, Trinity County © Kirsty Coulter

Short Videos

Coastal Giant Salamander larvae shown walking and swimming in shallow water and on streamside stones.

You can see the gills working on this tiny larva shown underwater in a small aquarium.

Description

Size

Adults are 2 1/2 to 6 4/5 inches long (6.25 - 17 cm) from snout to vent, and up to 13 inches (34 cm) in total length.
Neotenic larvae may grow to almost 14 inches (35 cm.)

This is the largest terrestrial salamander in North America.
(Hellbenders are much larger, but they spend most of their adult lives living in water.)

Appearance

The body is large and robust with a massive head and stout limbs.
The tail is flattened from side to side.
Transformed adults have 12 - 13 indistinct costal grooves.

Larvae are stream-type with tail fins that extend forward only to the hind limbs.
There is often heavy black mottling.
Gills are short, bushy, and dull red.

Color and Pattern

The ground color of the body is dark brown to near black overlaid with light brown spotting or fine-grained marbling that gives the salamander a camouflaged appearance.
Very old animals may lose their pattern except on the head.
The venter is white to light gray, sometimes dark.

Comparison With California Giant Salamander

Dicamptodon ensatus, California Giant Salamander, is very similar in appearance to *D. tenebrosus*.

As far as I can determine, the only field mark that is useful to tell one species from the other is the presence of marbling on the chin and throat of *D. ensatus*, which is absent on *D. tenebrosus*, and possibly the underside, which is whitish on *D. ensatus* and gray to tan on *D. tenebrosus*.

According to Stebbins & McGinnis 2012, both species are similar in body length but *D. tenebrosus* has a
smaller head, shorter limbs, fewer teeth in the uper jaw, a darker body color both dorsally and ventrally, and the marbling pattern tends to be finer.

Stebbins, 2003, says that the "dark marbling and flecking usually does not extend onto underside of throat and limbs" and that there are "dark flecks and blotches on throat and underside of legs" of D. ensatus and that "Marbling on chin notable in southern part of range."

Fellers and Kuchta in *Amphibians of the Pacific Northwest*, 2005 state it this way:
On *D. ensatus*:
"Marbling or blotching on lower jaw often extends onto the chin, throat and underside of the forelimbs and pectoral girdle."
On *D. tenebrosus*:
"Adult Coastal Giant Salamanders do not have marbling that extends beyond the lower jaw onto the chin or throat.

Life History and Behavior

A member of family Dicamptodontidae - Giant Salamanders, and the genus *Dicamptodon* - Pacific Giant Salamanders, whose members are large in size with heavy, stocky bodies.

Dicamptodon have two distinct life phases:
- Larvae are born in the water where they swim using an enlarged tail fin and breathe with filamentous external gills.
- Aquatic larvae transform into four-legged salamanders that live on the ground and breathe air with lungs.

Neotenic adults (paedomorphs) which retain their gills and continue to live in water are found in many populations.
These gilled adults may outnumber transformed individuals.

Activity

This salamander is nocturnal, but also active in daylight during wet conditions.
Adults are typically found within 50 meters of streams.
Terrestrial adults often remain in underground retreats, emerging to forage on the forest floor on rainy nights and during daylight in wet periods in winter.
They are sometimes seen walking on forest trails in daylight and on paved roads near streams on rainy nights, especially during the first heavy Fall rains in November and December. Adults are also found under rocks in streams and under objects on the ground that retain moisture such as rocks, logs, and artificial cover objects.
Post-metamorphs sometimes return to streams when terrestrial conditions become hot and dry.

Defense

Large adults are capable of delivering a painful bite.
Other defenses include arching the body and lashing the tail and excreting noxious skin secretions.

Diet and Feeding

Giant salamanders will consume anything that they can overpower and fit in their mouth, including a variety of invertebrates such as sowbugs, pillbugs, worms, and slugs, and small vertebrates such as small rodents, lizards, small snakes, and salamanders, including other Giant salamanders (and Northwestern Salamanders - *Ambystoma gracile*, which produce an alkaloid toxin - Rombough, Herpetological Review 48(1), 2017).
Eggs or embryos have been found in large larvae and terrestrial adult giant salamanders.

Giant salamanders are sit-and-wait predators. When prey comes near they lunge quickly to grab the prey with their mouth and crush it with their jaws.

Aquatic larvae feed on small aquatic invertebrates including insects and larvae, mollusks, and crayfish, and small fish hatchlings.

Reproduction

Reproduction is aquatic. Fertilization is internal.
Females reach sexual maturity in 5 to 6 years.
Mating occurs mostly in spring, usually in May, but later in the hear at high elevations. Breeding may also occur in the Fall.
Terrestrial males and females move from their terrestrial hiding places to a stream in which to breed..

According to Nussbaum et al, 1983, observations of *Dicamptodon* in captivity and in the field suggests that courtship takes place in "hidden water-filled nest chambers beneath logs and stones or in crevices. Males deposit up to 16 spermatophores.... Females pick up one to a few of the sperm caps with their cloacas and deposit their entire clutch of 135 to 200 eggs (larger females deposit more eggs) in the nest chamber. The eggs are attached singly, side-by-side, usually on the roof of the nest chamber."
Only a few nest sites have been observed in the wild.
The female stays with the eggs to guard them until they hatch, usually in November and December, or in 6 to 7 months, during which time she does not eat.
A female probably does not breed more than once every two or more years because of the long time she spends with her eggs.
"The function of maternal care is not fully understood, but prevention of egg cannibalism seems to be one function." Eggs or embryos have been found in large larvae and terrestrial adult giant salamanders which indicates that they are a theat to a nest site.

Larvae and Young

Larvae hatch in water and transform to a terrestrial form in probably about 18 - 24 months after hatching, depending on environmental conditions and the size and permanence of the stream.
Larvae live on their yolk for 3-4 months after hatching then they feed on invertebrate prey and small amphibian larvae.
Some larvae may overwinter and transform in their third year.
Young larvae are found in still water near the shoreline, often under small rocks and leaf litter.
Older larvae are found in the main stream channel.
Larvae are more abundant than transformed adults.
Larvae can be found exposed in the water at the edge of a stream at night by shining a light at the water.
Recently metamorphosed juveniles move out of streams to the surrounding habitat during wet periods.

Habitat

Occurs in wet forests in or near clear, cold streams and rivers, mountain lakes, and ponds. Takes shelter under rocks, logs, in logs, and in burrows and root channels.
Population densities are highest in creeks with many large stones. Larvae frequent clear cold streams, creeks, and lakes and can be found under rocks and leaf litter in slowly moving water near the banks or exposed in the water at night.

Geographical Range

Occurs in California from Mendocino County near Point Arena, north along the coast and into the north coast mountain ranges as far east as Shasta Reservoir, Shasta County, and McCloud, Siskiyou County, and north to the Oregon border.
From there it ranges north west of the Cascade mountains (and east of the crest in a few locations) into extreme southwestern British Columbia, but is absent from the Olympic Peninsula in Washington.

Approximate Range of *Dicamptodon tenebrosus* - Coastal Giant Salamander

Elevational Range

Occurs from sea level to near 7,000 ft. but mostly below 3,100 ft.

Notes on Taxonomy

In 1989 the species *Dicamptodon ensatus*, was split into 3 species when evidence showed that *Dicamptodon* from Sonoma County south were genetically distinct from those to the north and from *Dicamptodon* in Idaho and Montana.
The northern species became *Dicamptodon tenebrosus*.
The southern species became *Dicamptodon ensatus* - California Giant Salamander.
The eastern species became *Dicamptodon aterrimus* - Idaho Giant Salamander.
The fourth species of *Dicamptodon*, *Dicamptodon copei* - Cope's Giant Salamander, was not changed.

Alternate and Previous Names (Synonyms)

Dicamptodon tenebrosus - Pacific Giant Salamander (Stebbins 2003, 2012)
Dicamptodon ensatus - Pacific Giant Salamander (Bishop 1943, Stebbins 1954, 1966, 1985)
Dicamptodon ensatus - Marbled Salamander (Storer 1925)
Ambystoma ensatum (Dunn 1920)
Ambystoma tenebrosum (Stejneger and Barbour 1917)
Ambystoma ensatum - Marbled Salamander - Oregon Salamander (*Chondrotus tenebrosus; Amblystoma tenebrosum; Dicamptodon ensatus; Xiphnura tenebrosa; Chondrotus lugubris*) (Grinnell and Camp 1917)
Triton ensatum (Van Denburgh 1916)
Dicamptodon ensatus (Strauch 1870)
Xiphonura tenebrosa (Girard 1858)
Amblystoma tenebrosum (Cope 1867)
Triton ensatus (Eschscholtz 1833)

Conservation Issues (Conservation Status)

The historical distribution of this slamander has probably not declined, though there certainly has been some localized extirpation from urbanization and some fragmentation within the range mostly due to forestry practices. Studies indicate a long-term decline in populations after logging of old-growth forests. *D. ensatus* is far more abundant in unsilted streams than in streams that have become silted due to logging or other alteration of the land above the stream. Creek sedimentation eliminates access to cover under rocks in the streambed which is critical habitat.

Taxonomy

Family	Dicamptodontidae	Giant Salamanders	Tihen, 1958
Genus	*Dicamptodon*	Pacific Giant Salamanders	Strauch, 1870
Species	*tenebrosus*	Coastal Giant Salamander	(Baird and Girard, 1852)

Original Description

Baird and Girard, 1852 - Proc. Acad. Nat. Sci. Philadelphia, Vol. 6, p. 174

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Meaning of the Scientific Name

Dicamptodon: Greek - two curved, bent teeth, referring to doubly curved teeth.
ensatus: Latin - dark, gloomy, possibly referring to color or habitat.

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Related California Salamanders

California Giant Salamander - *Dicamptodon ensatus*

More Information and References

California Department of Fish and Wildlife

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Conservation Status

The following conservation status listings for this animal are taken from the October 2021 California "Special Animals List" and the October 2021 "State and Federally Listed Endangered and Threatened Animals of California" list, both of which are produced by multiple agencies and available here: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals. You can check the link to see if there are more recent lists.

If no status is listed here, the animal is not included on either list. This most likely indicates that there are no serious conservation concerns for the animal. To find out more about an animal's status you can go to the NatureServe and IUCN websites to check their rankings.

This salamander is not included on the Special Animals List, meaning there are no significant conservation concerns for it in California according to the California Department of Fish and Game.

Organization	Status Listing	Notes
NatureServe Global Ranking		
NatureServe State Ranking		
U.S. Endangered Species Act (ESA)	None	
California Endangered Species Act (CESA)	None	
California Department of Fish and Wildlife	None	
Bureau of Land Management	None	
USDA Forest Service	None	
IUCN		