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777 Sonoma Ave., Room 325
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August 29, 2010

Re: Stanford Habitat Conservation Plan and Draft Environmental Impact Statement
Revised and Sent August 30, 2010

BSD is a coalition of thousands of supporters and advocates and dozens of non-profit groups and businesses that share a common interest in supporting actions to evaluate and consider removal of Stanford University's Searsville Diversion Dam in a manner that is beneficial to protecting creekside communities and watershed health. Determining the future of Searsville Dam is a complex issue with many questions that need to be addressed, but several things are clear. Firstly, Searsville Dam has had and continues to have an enormous impact on the health and safety of the entire San Francisquito Creek watershed, surrounding communities, and the San Francisco Bay. Secondly, decisions, and even indecision, at Searsville Dam impacts us all and requires committed stakeholder collaboration and agreement from impacted communities surrounding Stanford. Thirdly, the science is clear that restoring free-flowing streams by removing antiquated dams is feasible, provides enormous benefits to the surrounding ecosystem, and is being carried out in ways to improve flood protection, reduce safety liability, improve water supplies, and save the owners money. Increasingly, owners of non-essential dams are choosing dam removal as their preferred options and enjoying abundant funding opportunities and regulatory support and collaboration. Finally, Stanford University has an amazing opportunity with to work collaboratively with surrounding communities to become leaders in community planning, land stewardship, ecosystem restoration, sustainable water use, and the science of watershed-scale ecosystem restoration and protection at a revived Jasper Ridge Biological Preserve. Many folks at Stanford are excited about such prospects already and our coalitions wants to make clear that we truly do look forward to working collaboratively with the University and others on this unique opportunity.

We support the implementation of well-crafted, comprehensive, and committed Habitat Conservation Plans (HCP). Such an HCP can be a very useful long-term planning tool

with benefits to endangered species protection and effective landowner stewardship. We cannot, however, support the Proposed Alternative presented in this HCP or the DEIS as written, due to the significant lack of quantifiable data, inadequate analysis, significant errors, and critical omission of key factors (such as the presence of the Searsville Diversion Dam) severely limiting Covered Species and inadequate mitigation measures to ensure long-term persisting protection of these species in the face of climate change prediction within the course of this proposed 50-year HCP. We believe, as supported by data within this letter and the attached opinions of our biological and legal experts, that the separation and omission of the Searsville Diversion Dam from proposed and covered actions at the attached Searsville Water Diversion are not appropriate or legal and that the lack of detail and analysis of the proposed dredging operation, water diversion operations, and lack of adequately determined and required bypass flows and fish passage at Searsville Diversion Dam (as required by NMFS and implemented at the other two Stanford water diversion facilities in the watershed) render the HCP biologically inadequate and the DEIS legally inadequate.

The HCP states: “If the HCP is successful, the Covered Species populations at Stanford will increase, and, as the Covered Species become more abundant, they will inhabit more areas at Stanford” (p.49). While we agree with this statement, it also points to fatal flaws in the HCP and is doomed to not be successful for steelhead and likely other Covered Species. We do not believe that the proposed HCP will result in considerable habitat improvement to significantly increase populations, and with predicted climate change is expected to result in a decrease in aquatic habitat size for Covered Species, as described in this letter. In addition, and as shown in the HCP, the proposed alternative would lead to significant ongoing mortality. While proposed (but not adequately described) habitat improvements to currently occupied steelhead habitat could provide some benefits, the proposed HCP and DEIS specifically excludes requirements for steelhead passage at Searsville Dam and so steelhead would not be able to “inhabit more areas at Stanford” than they already do, thus compromising the success of the HCP, as described in the above statement. In addition, as shown in this letter, there is overwhelming evidence that presently occupied habitat conditions for steelhead, western pond turtle, red-legged frog, and potentially San Francisco Garter Snake and California tiger salamander will decline over the next 50 years in Corte Madera Creek and San Francisquito Creek downstream of the Searsville Diversion Dam due to significant negative impacts from the entire Searsville Diversion Dam Facility. It is abundantly clear from the scientific literature, data cited here, language in Stanford’s own HCP, and language in the federal agencies DEIS, that that the combined effects of continued operation at the Searsville Diversion Dam Facility will jeopardize the continued survival and future persistence of the Covered Species.

The DEIS is severely lacking in collected data and analysis of salmonid resources within San Francisquito Creek and the region. We recommend that the Agencies contact Beyond Searsville Dam and the Center for Ecosystem Management and Restoration to access extensive data and files related to salmonids in the watershed and region. Other concerns, corrections, and comments are provided following the primary section outlining the reasons why the Searsville Diversion Dam must be included in both the HCP and DEIS

as an integral part of the covered Searsville Diversion Dam Facility, Searsville Water Diversion, Reservoir, proposed dredging and assessed in the DEIS for the past, present, and future Cumulative Effect analysis and proposed mitigation strategy. For these reasons we request that the DEIS be withdrawn, revised (with major revisions to the proposed HCP), and re-released rather than finalized from its current form.

A unique opportunity, with agency support and outside funding available, exists with the potential removal of Searsville Dam that would upgrade and improve Stanford's water supply and storage system alongside major restoration at Jasper Ridge, reduced environmental regulations and enforcement, and reduced safety liability concerns. Our coalition and dozens of other groups, alongside with resource agencies, would like to collaborate with Stanford and other stakeholders on investigating such options that would be mutually beneficial to watershed stakeholders, ecosystem health, Covered Species protection, public safety, and reliable water supply.

In describing the collaborative efforts needed for the San Francisquito Creek watershed Lund and Gullard (2003) describe it well. "Preserving the health and beauty of the last free flowing creek in the area as well as its vertebrate and invertebrate inhabitants while preventing such devastating floods as those of 1955 and 1998 is the task of five city governments, two counties, and a couple dozen other agencies, all of whom will be affected by the ultimate decisions. How the issue is resolved will be a test of our ability to work together, and of our wisdom." As noted below, and cited by top scientists at Stanford University, all decisions, or indecision, at the Searsville Diversion Dam and Reservoir impacts the entire watershed and region far beyond Stanford's borders. We are ready to work together with Stanford, NMFS, USFWS, and other watershed stakeholders in a well-defined, collaborative manner to address the complex issues surrounding the Searsville Diversion Dam Facility and find a solution, based on the best available information, for the benefit of surrounding community safety, ecosystem health, and Stanford University.

Respectfully Submitted,

A handwritten signature in black ink that reads "Matt Stoecker". The signature is written in a cursive, flowing style.

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COMMENTS ON THE SEARSVILLE DIVERSION DAM FACILITY

The Stanford HCP attempts to separate the presence of the Searsville Diversion Dam, as well as omit analysis of its negative environmental impacts, from other Covered Activities related to the overall Searsville Diversion Dam Facility (diversion dam, water diversion, reservoir, downstream releases, and proposed dredging). As shown in this letter the Searsville Diversion Dam is an essential and connected component of the Searsville Diversion Dam Facility and cannot be separated from the attached water diversion, resulting reservoir, and proposed diversion, downstream release measures, and new dredging. As described below, these actions cause, and would continue to cause, a multitude of enormous direct and indirect impacts that affect Covered Species, the entire San Francisquito Creek watershed, surrounding community safety, and San Francisco Bay. As described below, and supported by scientific literature and expert biological and legal documents attached here, the HCP fails to adequately address the many biological, legal, and safety impacts of the Searsville Diversion Dam Facility. The DEIS fails to adequately analyze these, and other, impacts or require adequate mitigation measures. The result is a biologically inadequate HCP and legally inadequate DEIS that, if approved, would jeopardize the survival of Covered Species and the safety of the region. The DEIS must be withdrawn, rewritten with adequate analysis, and re-released with an adequate public comment period.

The Searsville Diversion Dam Facility is not adequately addressed in the DEIS

The DEIS states (2-6) that: “Other than ongoing operation and maintenance, no Covered Activities are proposed for Searsville Dam.” The HCP states: “Likewise, the presence of the dam is not a Covered Activity” (p.95). We do not believe this first statement to be accurate. Searsville Dam is a water diversion dam and the HCP includes coverage of the water diversion rates described and not quantified downstream releases controlled by a combination of the Searsville Diversion Dam configuration itself and the attached water diversion. In addition, the new, massive, proposed dredging operation is not part of ongoing maintenance and should not be covered as such and we believe requires additional and separate permits from the Army Corps, DFG, and others. Dredging is being proposed due to impacts caused by the presence of the Searsville Diversion Dam and dredging operations are dependent on, and impacted by, the dam and spillway configuration and connected water diversion. Dredging is also shown in this letter, and as cited by Stanford experts and consultants, to have additional and significant impacts to Covered Species and downstream Critical Habitat that is not part of current operation and maintenance. We believe it is illegal to include operations and maintenance of the dam and reservoir, new dredging, water diversion rates and inadequate downstream releases over Searsville Diversion Dam, without including the presence of the dam and fully assessing the impacts of the dam.

Despite the above request that the Searsville Diversion Dam not be analyzed as a Covered Activity, the HCP acknowledges the negative impacts of the dam as a migration barrier to steelhead passage. The HCP states: “As Stanford continues to evaluate

alternatives for the long-term management of Searsville Dam and Reservoir, the feasibility for providing steelhead access to historic habitat in Corte Madera and Sausal creeks will be studied” (p.59). The HCP then states: “However, as part of the HCP, Stanford will perform the Searsville Dam Measure described below” (p.95).

“Stanford will commit to study the technical feasibility of fish passage alternatives at Searsville Dam within 10 years of approval of the HCP. Stanford will allocate \$100,000 to conduct the feasibility study in conjunction with any Stanford, local agency, state agency, or federal agency proposed project to modify Searsville Dam or independently if no such dam modification project is proposed within the 10-year time frame. The results reached in the technical feasibility study will be incorporated into any proposed future dam modification project. Cost, environmental impacts, and other factors will also be considered in the decision whether or not to include fish passage facilities in any future dam modification project.”

The inadequately described “feasibility study” does not require any action to mitigate impacts from the dam, but rather mere consideration in the next ten years, at which point Stanford could say it was not feasible do to any number of reasons. The measure describes no watershed stakeholder collaboration (as recommended in NMFS 2008 Biological Opinion, HCP Appendix A), is massively under funded to conduct a comprehensive and detailed study of this type, does not include mention of dam removal alternatives as requested by multiple public comment letters for the HCP scoping process (included in this letter), has an unacceptable time frame of ten years, and does not contain any commitment to adequately determine or implement bypass flows or timely and effective fish passage project implementation. This weak, no action measure is unacceptable. In addition, it is our understanding that Searsville Diversion Dam is currently in violation of at least two CDFG Codes requiring fish passage and adequate bypass flows for downstream resources, neither of which are occurring, as well as other violations (see attached letter from Shute, Mihaly, Weinberger LLP). We request that NMFS and USFWS coordinate with CDFG and other regulatory agencies noted in the above letter and include considerations, legal requirements, and appropriate mitigation requirements in the DEIS that ensure timely compliance of the Searsville Diversion Dam Facility with other federal, state, regional, and local codes and laws.

The HCP (p.59) states: “Stanford does not currently plan to modify Searsville Dam and is only requesting incidental take authorization for the routine maintenance and operation of the dam, which does not include any major repairs or modifications to the dam.” Ongoing operation and maintenance of the Searsville Diversion Dam Facility (including water diversion and inadequate downstream releases over the dam’s spillway) is causing take of steelhead below the dam, and significantly altering downstream habitat for Covered Species, as supported by extensive data cited later in this letter. Dredging of the reservoir to year 2000 capacity is new, ongoing, and major modification to the overall Searsville Diversion Dam Facility that will cause additional alteration of the reservoir’s water quality and downstream releases and surface flow and requires thorough analysis in the DEIS. The HCP provides scant data, or even commits to a type of dredging operation,

and the DEIS fails to assess in any meaningful way the impacts of dredging. Dredging impacts are discussed in more detail later in this letter.

Searsville Dam must be assessed as part of the Searsville Diversion Dam Facility

The HCP (p.49) identifies that the “Searsville Dam diversion” and Searsville Reservoir are an integral parts of Stanford’s “... “Lake” water system”. The HCP seeks coverage of this “Lake” water system and the Searsville Diversion Dam must be included as an essential part of that system and adequately assessed in the HCP.

Stanford archives show that the Stanford Board of Trustees discussed “cleaning out said reservoir (Searsville) by the blow-out pipe or pipes now or hereafter in said dam...” (Regnery 1991 p.122). Regnery (1991) also quotes Waterways (1982) to state: “Two heavy cast iron pipes emerge from the base of Searsville dam”, that one of the pipes “now served solely as Searsville Lake “blowoff”- a way of draining the lake into San Francisquito Creek”, and that the second pipe contains a venturi meter that “measures water flow out of the lake (Searville Reservoir)” (p.130). In 1924, Regnery (1991) reports that “a three-level outlet at the dam was installed in order to draw off surface water” (p.137). These statements shows the direct connection between the dam, the water diversion pipes that pass inside the dam, downstream bypass flow potential, and measurement devices essential to the water diversion operations, which are included for coverage in the proposed HCP. The presence of Searsville Dam cannot be divorced from the Searsville Diversion infrastructure. The statement also shows the direct connection between the dam and operations and management of the reservoir in addressing the sediment trapped within, and blowoff capabilities. The HCP omits and the DEIS fails to include and adequately assess impacts of Searsville Dam, the essential component of the entire the entire Searsville Diversion Dam Facility.

NEPA requires inclusion of Searsville Dam in the DEIS Cumulative Effects analysis

With respect to the omission of detailed analysis of Searsville Dam, the HCP and DEIS fail to “analyze the potential environmental effects related to the issuance of a Section 10 incidental take permit consistent with NEPA requirements. The NEPA analysis will address the direct, indirect, and cumulative effects” (HCP p. 6). Cumulative effects are defined as the “impact on the environment that results from the incremental impacts of the action when added to the past, present, and reasonably foreseeable future actions” (DEIS 5-58). In addition, to our assertion that Searsville Dam must be fully assessed in the HCP and DEIS due to it’s integral role as part of the Searsville Diversion Dam water diversion being addressed in these documents, the above statement requires that the DEIS analyzes the dam as part of the cumulative effect analysis as a “past, present, and future action”.

Regulatory leadership is needed to address the Searsville Diversion Dam

The HCP (p. 4) states: “Some of Stanford’s facilities and day-to-day operations, such as Searsville Dam which was built in 1892, have changed very little since Stanford opened

its doors. Other facilities and day-to-day activities have evolved or been expanded over time to reflect new technology, respond to environmental concerns, or accommodate an expanding population.” This statement both acknowledges that Searsville Dam is antiquated, over-century-old technology that has not been addressed to respond to environmental concerns and that other facilities, such as both of Stanford’s other instream water diversions, have evolved to reflect new technology and endangered species protection. Unfortunately the HCP fails to commitment too and the DEIS fails to require that this major limiting factor to Covered Species, Critical Habitat, and watershed function is adequately addressed.

The SHEP supports requiring bypass flows and fish passage at Searsville Diversion Dam Figure 4-9, on page 4-71 of the DEIS, clearly shows the “Searsville Diversion” as one of the three “Diversion” facilities of the “Lake” Water System, along with the Los Trancos Diversion Dam and the San Francisquito Pumping Stations. The DEIS states that there is “a non-potable water system made up of water diversions from Los Trancos Creek, San Francisquito Creek, and Searsville Reservoir”. This statement acknowledges that, like the Felt Lake Diversion Dam on Los Trancos Creek and the San Francisquito Creek Pump Station on San Francisquito Creek, the Searsville Diversion Dam is the integral part of the “Searsville Reservoir” diversion on Corte Madera Creek.

The HCP (p.50) describes how Stanford’s Steelhead Habitat Enhancement Project (SHEP) modified Stanford’s Los Trancos Diversion Dam and how the “new protocols will substantially increase flows through the (newly constructed) fish ladder, which will enhance conditions for steelhead migration and spawning. These enhancements also will accommodate the upstream and downstream movement of juvenile steelhead.” The DEIS describes how implementation of the SHEP improves fish passage and bypass flows at other Stanford in-stream diversion facilities “to protect the stream and aquatic habitat downstream of the water diversion facilities” (4-9). At the other, San Francisquito Creek Pumping Station, the SHEP included “structural modifications and operational changes to this diversion facility”, which will “enhance steelhead habitat and downstream passage”. The HCP (p.94) later states: “The bypass flow rates approved in the SHEP Biological Opinion will be implemented.” As required in the mentioned SHEP, Stanford did modifying fish barriers and bypass flows at diversion facilities.

Acknowledging that Stanford’s other water diversion, Searsville Diversion Dam, was also impacting listed steelhead migration and downstream bypass flows in listed Critical Habitat, the 2008 Biological Opinion for the SHEP, written by NMFS, states: “The CORPS should work collaboratively with Stanford, the San Francisquito Watershed Council, NMFS and other interested parties in the San Francisquito watershed to restore fish passage at Searsville Dam on San Francisquito Creek” (HCP Appendix A).

The DEIS states: “Any project or activities in Zones 1 or 2 that require a Federal permit or involve Federal funding must request incidental take authorization through the Section 7 consultation process. It is anticipated that only a small percentage of Stanford’s activities that would result in take have a Federal nexus, mostly relating to obtaining Corps permits (eg., creek bank maintenance work, sediment removal, and levee and berm

repair). Use of the Section 7 process, therefore, may apply to any activities that affect streams, creeks, and other jurisdictional waters, such as wetlands” (4-9). The footnote cited in the above states, “An example of a project with a federal nexus is the Steelhead Habitat Enhancement Project (SHEP). The habitat enhancement activities required a permit from the US Army Corps of Engineers, and because these activities and current diversion affect steelhead, the Corps consulted with NMFS under Section 7 of the ESA. The permit issued by the Corps incorporates a Biological Opinion prepared by NMFS that authorizes the incidental take of steelhead provided certain operational and minimization measures are implemented” (4-9 footnote).

With the extensive previous completion of the SHEP and recommendations from NMFS to provide fish passage at the Searsville Diversion Dam, Stanford’s HCP should have committed too implementing, and the NMFS’ own DEIS should have required its own recommendation above to require that Stanford participate in a collaborative stakeholder process to investigate fish passage alternatives, including dam removal, in a timely manner, with a detailed timeline and established requirements for fish passage, and independently and quickly established bypass flows at the Searsville Diversion Dam, both of which take into consideration climate change projections (discussed later in this letter). The HCP and DEIS fail to show meaningful data related to analysis of diversion rates and unspecified downstream bypass flows at the Searsville Diversion Dam Facility. To our knowledge, no detailed studies have been conducted to determine impacts or answer critical biological questions about the impacts of described diversion rate, downstream releases, impacts on downstream habitat, impacts to Covered Species, alterations to habitat quality, critical migration parameters, surface flow duration and extent, dewatering, and other critical impacts. As cited above, “sediment removal” requires a CORPS permit and this includes the proposed dredging in the HCP. The DEIS even states above that “current diversion affect steelhead” and required that “operational and minimization measures are implemented” in order to get authorization for incidental take of steelhead. Like Stanford’s Los Trancos Diversion Dam, the Searsville Diversion Dam is a “current diversion”, that is “affecting steelhead” and whose operation and water diversion is requesting incidental take of steelhead so must implement “operational and minimization measures”. The DEIS fails to assess or require effective fish passage or bypass flows at the Searsville Diversion Dam Facility. Failure to include such analysis and requirements, such as were made at Stanford’s other water diversion facilities, is unacceptable biologically and legally, and must be integral to any proposed HCP and DEIS.

Unfortunately, in describing “Potential Effects of the Water Diversions on the Covered Species” including the “Searsville Diversion”, the HCP makes the following false and strangely mixed message: “Stanford’s diversion facilities were modernized during the 1990s and again in 2009 to protect steelhead. Physical and operational changes were made at these times. The physical changes to the facilities included the installation of fish screens and ladders. These physical changes and changes in the operation of Stanford’s water diversions have significantly reduced the effects of the water diversions on the Covered Species” (p.55). Stanford has three “diversion facilities” in the San Francisco Creek watershed and the largest is their cited “Searsville Diversion”. The Searsville

Diversion facility (which includes the dam just as the Los Trancos Diversion includes that dam) has never been modernized (despite being the oldest) to protect steelhead. There are no fish screens or ladders at Searsville Dam and there have been no operational changes, such as establishing bypass flows, to reduce the effects of this water diversion facility on steelhead or other Covered Species. The continued operation of the Searsville Diversion Dam as described in this HCP and DEIS would result in the direct take of steelhead and other species. Interestingly, the above statement acknowledges the negative “effects” of their “water diversions”, but does not consider the Searsville Diversion or need to similarly “modernize” and “protect steelhead”.

The HCP incorrectly goes on to state that the long-term effects of the SHEP and the implemented fish passage modifications and dedicated downstream by-pass flows “are beneficial to steelhead and designated Critical Habitat by largely eliminating the impacts of Stanford’s water diversions on stream flows that are important to steelhead” (HCP p. 56). While the SHEP has benefited steelhead and Critical Habitat downstream of the Los Trancos and San Francisquito Diversion facilities, the SHEP did not provide these benefits to Searsville Diversion (as implied), whose operations directly impact the vast majority of Critical Habitat for steelhead on Stanford lands, from downstream of the Searsville Diversion Dam on lower Corte Madera Creek along the entire mainstem of San Francisquito Creek. Unfortunately, as shown conclusively in this letter, operations at the Searsville Diversion Dam negatively impact all listed steelhead that migrate to the Bay and back to the San Francisquito Creek watershed.

The Santa Clara Valley Water District’s HCP includes diversion dam

As described in the DEIS (5-60), the Santa Clara Valley Water District is developing a Three Creeks Habitat Conservation Plan that rightly acknowledges the negative impacts of their dams and reservoirs on steelhead and is proposing to “improve streamflow and stream temperatures below District reservoirs on steelhead and salmon streams.” Page 5-61 of the DEIS also states that “Water releases from SCVWD reservoirs would be modified to increase stream flows when it would benefit the covered fish species.” Stanford’s HCP and the DEIS do not propose any calculated improvements to streamflow or water temperature below Searsville Diversion Dam and Reservoir or even analyze effects on Covered Species and downstream Critical Habitat. This lack of commitment to addressing the negative impacts of Searsville Dam and Reservoir are unacceptable and continue to put steelhead and other listed species and their habitat at risk.

The HCP’s proposed water diversion and lack of bypass flows is totally inadequate

The HCP (p.55) states: “For purposes of this HCP; between October 1 and April 30 of each year, Stanford will not divert water to the standpipe if the surface elevation of the Searsville Reservoir drops to more than 1 foot below the spillway. In addition, diversions to the standpipe during this period will not exceed 300 acre-feet. The maximum instantaneous rate of diversion to the standpipe shall not exceed 3 cfs and the total annual diversion amounts will be consistent with historic diversion rates evaluated over decades not year to year), and will not exceed 600 acre-feet.” This is clearly a proposed water diversion agreement that includes the Searsville Diversion Dam (and its above reference spillway), the attached diversion infrastructure, and the reservoir. There is no supporting

logic for the HCP or DEIS to not include the presence or analysis of Searsville Dam, while requesting coverage of the water diversion facility connected to the dam and operations that rely on, and list, the dam's spillway as part of the water diversion controls. The described water diversion agreement does not provide enough detail or supporting data to allow for even a basic analysis of impacts to downstream habitat, surface flows, water quality, Covered Species, migration, dewatering, and many other critical factors. Providing the Historic Diversion Rates Table (over decades and not year to year) is not satisfactory to assess important information about the historic diversion rates and duration in relation to specific historic flows at the dam. Detailed diversion rates for each year in operation, monthly averages, and daily records for the last several years should be provided and analyzed by experienced NMFS hydrologists and in relation to downstream flows over the Searsville Diversion Dam spillway. The HCP and DEIS should present extensive and historic diversion data sets, describe and detailed studies conducted to assess Covered Species impacts of the proposed diversion agreement, and the DEIS must complete a thorough analysis of expected impacts to downstream Covered Species and Critical Habitat.

Dams and Reservoirs Negatively Impact Steelhead and other Listed Species

The Searsville Diversion Dam Facility causes the “take” of Covered Species

As the data referenced in this letter overwhelmingly shows, the Searsville Diversion Dam Facility, including the dam, reservoir, and other features, such as the proposed dredging, water diversion, and inadequate downstream releases of water, cause numerous forms of “take” to Covered Species, including steelhead, red-legged frog, aquatic garter, western pond turtle (candidate), and possibly tiger salamander. As described in the DEIS, “Take” of species includes “harm” which is further defined by the ESA as an “act which actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including, breeding, spawning, rearing, migrating, feeding, or sheltering” (2-3). The DEIS fails to acknowledge many of these forms of take in the proposed HCP, adequately assess these impacts, or effectively mitigate their effect.

Stanford's consultants (NHC 2001) report the drastic effects of dams on Critical Habitat and Covered Species to include; interrupting “the longitudinal continuity of habitat and migration paths for organisms, and alter the flux of water, sediment, organic debris, and nutrients in rivers, in many cases changing seasonal and long-term flow patterns”, in addition to, creating “major discontinuities in fish migration paths, which fish ladders can at best only partially rectify (because even if adult passage is possible, juveniles may be unable to safely pass downstream). Reservoirs interrupt riparian corridors... Dams also alter nutrient flux through rivers, trapping nutrients and transforming organic material in reservoirs. Probably the best-documented effects, however, are effects of dams on sediment supply and flow regime in downstream reaches” (p.8).

The HCP correctly states: “Dams and other migration barriers, water diversions, removal of riparian vegetation, decreased water quantity and quality, and the presence of non-native fish all affect the quality of habitat in steelhead spawning streams” (p.35). The

Searsville Diversion Dam, Water Diversion, and Reservoir have cumulatively caused and dramatically impact all of these critical limiting factors mentioned above, yet the HCP and DEIS fail to assess these impacts that are proposed for coverage in the HCP, or propose detailed actions to mitigate them.

The ongoing operation, maintenance, and presence of the Searsville Diversion Dam, connected water diversion, and reservoir, is currently, and would continue to alter downstream flows, water quality, sediment transport, woody debris transport, habitat quality (including habitat for rearing, spawning, feeding, and shelter), directly injure steelhead jumping against the concrete dam, allow for the breeding and dispersal of predatory non-native species, and impair essential behavioral patterns, breeding, and migration.

Searsville Diversion Dam is the major migration barrier to covered species

Importance of adequate migration

The HCP (p.11) states: “Steelhead require relatively cool and clean flowing water, and creeks that permit barrier-free passage.” Table 1-1 on page 12 also states that steelhead need “unimpeded upstream and downstream dispersal routes.”

Despite these accurate statements, the HCP fails to assess or mitigate the negative impacts of the impassable Searsville Diversion Dam or propose modifying or remove any impassable migration barriers that would open up new, historically accessible, habitat to steelhead. In addition, the “cool and clean flowing water” required occurs upstream of the impassable Searsville Dam, while the Covered Activities within this HCP of the reservoir and water diversion and overflow measures, are negatively impacting water temperatures, water quality, and surface flows downstream where steelhead and other Covered Species occur on Stanford land. The HCP and DEIS also fail to analyze, or even discuss, negative impacts to migration downstream of the dam caused by the Covered Activities of the Searsville Diversion’s water diversion, lack of adequately established downstream bypass flows, or hydrologic alterations caused by the proposed dredging operations. As shown in the DEIS the effects of climate change will further exacerbate these downstream conditions and make adequate migration to cool, perennial flowing streams above the impassable dam all the more critical for survival. The HCP and DEIS fail to acknowledge the cumulative effects of the past, present, and future impacts of the Searsville Diversion Dam and implementation of the HCP would further jeopardize the survival of Covered Species on Stanford lands.

Searsville Dam is a major migration barriers limiting factor for Covered Species

As described in the DEIS, “barriers to movement” are one of the main “factors affecting steelhead survival” (4-30). In discussing potentially limiting factors to steelhead, the HCP (p.35) lists “the general paucity of suitable spawning sites” for steelhead. Suitable spawning reaches in the San Francisquito Creek watershed generally occur in the upper reaches of San Francisquito Creek and in headwater tributaries, most of which occur upstream of Stanford property (Bear Creek sub-basin and the inaccessible Corte Madera Creek sub-basin upstream of Searsville Dam).

Searsville Dam was identified by the San Francisquito Watershed Council and Steelhead Task Force as the largest migration barrier blocking the most spawning and rearing habitat in the entire watershed. An estimated 18 miles of historically accessible spawning and rearing habitat occur upstream of the dam. The conservative mileage estimate of the quantity of historic steelhead habitat upstream Searsville Dam was made using knowledge of existing barriers and surveyed reaches (SFWC 2002), tracing streams using Google Earth mileage tracking tools, and proceeding to known upstream natural migration limits or estimated upstream limits using DFG upstream migration limit protocols based on sustained stream gradient limitations. The actual quantity is expected to be larger due to exclusion of smaller tributaries and greater stream sinuosity, both historically and than the relatively straight-line mileage tool used in Google Earth.

The DEIS (4-26) and HCP (p.25) incorrectly states: “Searsville Dam is a barrier to fish migration in the system, and isolates about 3 to 5 miles of suitable spawning habitat from migrating adults.” This statement shows a lack of knowledge about the watershed, lack of research, speculation with no supporting data or studies, and questionable communication with Stanford scientists that have worked with the Steelhead Task Force for over a decade to identify migration barriers throughout the watershed. The HCP does not identify any referenced document or study, identifying where the extremely low 3-5 mile number came from, but the HCP and DEIS need to quantify, if possible this estimate, and DEIS must correct this inaccuracy. The DEIS repeats this incorrect statement without its own analysis. As noted, approximately 18 miles of historic spawning and rearing habitat occurs upstream of the dam with at least 2.5 of those stream miles currently submerged and buried underneath Searsville Dam, Reservoir, and sediment deposits. Most of this historically accessible habitat is perennial and native rainbow trout, descendants of the historic sea-run steelhead population above the dam, persist in at least seven tributary stream.

The 2006 Jones and Stokes report cited in the DEIS (4-30) listed the following key finding related to factors limiting steelhead in San Francisquito Creek: “Searsville Dam is a complete barrier to adult migration and cuts off approximately one-third of the upper watershed to steelhead access.” Searsville Dam blocks all life stages of steelhead from the largest tributary in the watershed (Corte Madera Creek). The HCP (p.59) states: “Searsville Dam does not provide for the upstream or downstream passage of fish. Steelhead have been isolated from their historical spawning and rearing habitat in Corte Madera and Sausal creeks since the dam was constructed in 1892.”

Smith and Harden (2001) note that Searsville Dam “dam blocks steelhead from accessing the watershed’s largest tributary (Corte Madera Creek) and a large percentage of spawning and rearing habitat in the watershed. Due to the high quantity and adequate quality of spawning and rearing habitat upstream of the dam, fish passage upstream of Searsville Dam should be investigated. The height of the dam and limited amount of flow makes a fish ladder alternative highly unfeasible” (p.65).

Freyberg and Cohen (2001) add that, “Searsville Dam, of course, is a barrier to steelhead

migration” and “it is likely that some steelhead did use upstream reaches as well. Thus, there is interest in removing Searsville Dam in order to restore steelhead” (Freyberg and Cohen 2001, p. 27).

The occurrence of a long-term and self-sustainable wild rainbow trout population above the dam attests to the adequate spawning and rearing habitat conditions upstream of the dam. In addition, adult steelhead have been observed jumping against the concrete dam in recent times and observed blocked below the dam historically. See the steelhead population section of this report. This direct take of steelhead at the Searsville Diversion Dam must be included in the detailed analysis of the entire Searsville Diversion Dam Facility in the DEIS. The DEIS must analyze, with supporting data, how the Searsville Diversion Dam Facility, Reservoir, and continued operation play a primary role in limiting steelhead migration and survival in the watershed.

Searsville Dam negatively impacts habitat and migration for Covered Species

The HCP (p.40) states: “Habitat loss and fragmentation are the main threats to western pond turtle”, that “development in the riparian zone is a significant problem”, that “human-altered landscapes in areas within several hundred yards of a creek occupied by pond turtles will likely adversely affect turtle survival”, and that “introduced predators” (including non-native fishes and bullfrogs) “prey on eggs, hatchlings, and juveniles.” In addition, the HCP states “Alteration of hydrologic regimes by dams may also threaten western pond turtles (Reese and Welsh 1998)”.

The current distribution is identified in the HCP and “from Searsville Dam to the downstream edge of Stanford’s boundary.” This distribution and above quoted issues with fragmentation and development in the riparian zone suggest that Searsville Dam may be a major factor limiting turtle migration upstream of the dam and past the reservoirs. In addition, western pond turtles identified in the HCP upstream of the dam over the last 20 year, but not observed recently may be fragmented from the population below the dam. In addition, the dam and reservoir submerged and buried historic wetland ponds and habitat and replaced those areas with a “human-altered landscape” and artificial reservoir full of non-native predatory species that prey on western ponds turtles. The remaining, current population of western ponds turtles therefore occurs below Searsville Dam and Reservoir, where non-native species are allowed to proliferate and disperse downstream where they can compete with and prey on listed turtles. The dam and reservoir are also altering habitat conditions downstream where the turtles occur and where climate projections combined with continued dam operations indicate surface flows and habitat size is expected to decrease. It is apparent that the highly altered dam and reservoir are “main threats” to western pond turtle survival.

The HCP (p.45) states that “loss of habitat and the subsequent isolation of formerly interacting populations are the most problematic factors on the San Francisco Peninsula.” It appears that the Garter Snake may benefit from improved migratory access along the stream as the HCOP identifies it as potential habitat. The HCP and DEIS acknowledge similar threats to red-legged frogs and Searsville Diversion Dam and it’s operations are also causing similar negative impacts to red-legged frogs with respect to alteration of habitat, water quality, migration, and spread of non-native predatory species.

The DEIS and HCP acknowledge recent use of habitat upstream of Searsville Dam by several Covered Species and adequate habitat for future occurrence. The dam is a major migration barrier to red-legged frogs, western pond turtles, and garter snakes attempting to migrate upstream and may be a primary factor limiting occurrence upstream in recent years and preventing population expansion. These Covered Species may also be migrating downstream over the dam and can be killed or injured in the fall down the 65-foot concrete block face of the dam along with the native rainbow trout. The HCP and DEIS fail to discuss the impacts of the Searsville Diversion Dam Facility on migration of these Covered Species, adequacy of the screening on the Searsville Diversion intake piping, migration over the spillway and down the face of the dam, and migration limitations caused by water quality alterations and non-native predators in the artificial habitat of Searsville Reservoir. The analysis must also include the physical constraints and risks to these Covered Species on being able to migrate over or around the Searsville Diversion Dam, including leaving the aquatic environment and attempted migration upstream around the steep terrestrial environment.

Presentation summaries for the SF Bay Steelhead Symposium (2001), reinforce the biological importance of ensuring adequate migration for steelhead and benefits from removing Searsville Dam. Mr. Dennis McEwan, from the California Department of Fish and Game, states that steelhead “recovery must focus on re-establishing linkages within populations by restoring access to upper watershed reaches.” Dr. Jerry Smith, Fisheries Biologist with San Jose State University, states: “Removal of Searsville Dam would create more potential habitat in the upper, reasonably-wet watershed.”

The Searsville Diversion Dam Facility and operations alter surface flows

Low and dry flow conditions negatively impact Covered Species

The HCP (p.35) states: “Perhaps the primary limiting factor for steelhead in this portion of their range is the low amount of water present in the system during the annual dry season and during periods of drought” and that during “most year, fairly extensive portions of the system dry out.” Low water conditions, and the absence of surface flow, is a limiting factor that is exacerbated by water diversions and withdrawals and migration barriers, such as Searsville Dam, that prevent steelhead from being able to access perennial headwater streams where adequate summer flows occur. Most of the reaches that dry out in the San Francisquito Creek watershed are mainstem reaches downstream of diversions and some isolated reaches of small, ephemeral tributaries to the larger perennial creeks.

The Searsville Diversion Dam Facility alters stream flow

Stanford consultants Balance Hydrologics (1996) showed (Table B-1) through field studies conducted in 1995 and 1996 that the Searsville Diversion Dam Facility and its associated Reservoir, trapped sediment accumulation, and constructed causeway are impacting surface flows on Corte Madera Creek. The data shows that the sediment accumulation and constructed causeway dam on Corte Madera Creek, which extends

from the reservoir upstream, has altered surface flows and appears to be causing surface flows on Corte Madera Creek to go subsurface. Sediment aggradation at the creek inlets to reservoirs is known to cause surface flows to go subsurface underneath the reservoir trapped deposits. Table B-1 shows that surface flows were always observed at the two survey locations on Corte Madera Creek upstream of Searsville Reservoir during all times (August, November, December, January), but that no surface flows were recorded for Corte Madera Creek at the reservoir-impacted causeway dam during November and December (no recording for August, but also presumed to have no flows at that drier time). Surface flows upstream of the causeway, where reservoir-induced sediment accumulation also occurs, were also absent on November 29, 1995. On the same day surface flows were reported in Corte Madera Creek at the next upstream and nearby site as well as several miles upstream at the Westridge Bridge. This data clearly shows that perennial flows in Corte Madera Creek disappear in the drier months as the creek encounters sediment deposition caused by the Searsville Diversion Dam and Reservoir. Stanford's HCP does not provide adequate flow data to assess changes caused by the Searsville Diversion Dam and Reservoir to surface flows and impacts to Covered Species. The DEIS does no analysis of impacts from the Searsville Diversion Dam Facility on creek inflows or even the proposed water diversion and downstream flow measures over the Searsville Diversion dam's regulating spillway (which was inappropriately requested to be omitted from analysis).

Searsville Diversion Dam significantly alters migration conditions downstream

The 2006 Jones and Stokes report cited in the DEIS (4-30) listed the following key finding related to factors limiting steelhead: "Partial barriers to downstream migration also exist and are often exacerbated by low or non-existent flows." The DEIS must assess how the operations and proposed water withdrawals at the Searsville Diversion Dam alter downstream hydrology and impact steelhead migration at downstream anthropogenic barriers and natural "critical riffles". This assessment must consider that downstream flows are reduced in volume and duration due to proposed water diversions lack of adequately determined bypass flows, evaporation from the reservoir, absence of flows after the reservoir drops below the spillway, and lack of releases during reservoir filling with initial rainy season flows. All of these factors reduce adequate flow conditions and duration of flows for immigrating and outmigrating steelhead to be able to migrate past downstream partial barriers and undefined (in both the HCP and DEIS) critical riffles on San Francisquito Creek.

Proposed water diversion and downstream release measures stop downstream flows

The DEIS (5-10) and HCP acknowledge that there are "periods where there is no overflow at Searsville Dam." As shown below, stream flows upstream of Searsville Dam and Reservoir persist in Corte Madera Creek during periods where Searsville Dam prevents downstream overflow at the spillway. The DEIS must assess the interruption of surface flows above and below the Searsville Diversion Dam and Reservoir and impacts to Covered Species.

Stanford's other "water diversions" were required to provide adequate bypass flows

The DEIS states: “With regards to the “Lake” water system, the water diversions at Los Trancos and San Francisquito creeks are already subject to steelhead by-pass flow operations required by the CDFG and NMFS, and the HCP would incorporate these operational protocols.” Similarly, for Stanford’s third “water diversion” at the “Searsville Diversion”, The HCP should have proposed (but did not) and NMFS’ DEIS should have required (but did not) steelhead bypass flows as required by CDFG and NMFS at both other water diversions directly impacting listed Critical Habitat and threatened steelhead.

The Searsville Diversion measure proposed in the HCP is totally inadequate

Despite Stanford requesting that the presence of the Searsville Diversion Dam not be included or analyzed in the HCP and DEIS, the HCP proposes coverage for the water diversion attached to, and reliant upon, the Searsville Diversion Dam. Proposed operational measures for water diversion at Searsville Dam are described in the HCP as follows; “For purposes of this HCP, between October 1 and April 30 of each years, Stanford will not divert water to the standpipe if the surface elevation of Searsville Reservoir drops to more than 1 foot below the spillway.” This makes no sense. Firstly, the statement proves the direct relationship and connectivity of the proposed water diversion and the “presence of Searsville Dam”. Secondly, this would allow for water diversion down to and below the dam’s spillway causing a lack of regulated surface flows to downstream Critical Habitat and listed species. Finally, there is no analysis of this reduction in water on downstream Covered Species or requirements for adequately determined bypass flows for listed species, habitat, and adequate migration. This comes only one year after extensive studies and agreements to adequately modify and provide bypass flows and fish passage at their other two water diversions on Los Trancos and San Francisquito Creeks with NMFS. It is unbelievable and terribly disturbing that after years of negotiations and studies between Stanford and NMFS, that resulted in implementing bypass flows and fish passage improvements at Stanford’s other water diversions, and celebrating these accomplishments, that Stanford has proposed and the federal agencies are set to allow the dismissal of ensuring similar actions are taken at Stanford’s remaining water diversion facility with even greater negative impacts to steelhead and other Covered Species.

The HCP incorrectly claims “no affect” from Searsville Diversion on Covered Species

The HCP (p.56) states: “Manipulation of water levels caused by the diversions (at Searsville Diversion Dam) will not affect western pond turtles, red-legged frogs, or garter snakes found downstream of the dam because the diversion amount is small relative to the natural creek flow.” The HCP fails to substantiate with quantitative data how this definitive statement of no affect can be made. It is clear that the dam and reservoir alter downstream water quality, quantity, surface flow duration, and other alterations of the downstream hydrology and habitat. There is no analysis of the proposed water diversion and downstream overflows in the HCP or DEIS to adequately determine impacts on downstream habitat, combined with projected climate, on Covered Species.

The HCP incorrectly states “insubstantial” effect of the Searsville Diversion on steelhead

The HCP (p.56) states: “Potential downstream effects to steelhead due to water diversions could possibly occur during the period when there is water overflowing the

(Searsville) dam. These potential effects, possible fluctuating water levels and flow rates, are insubstantial due to the large amount of water flowing in the creek (mean cfs per month for San Francisquito Creek as measured at the USGS gage located near the intersection of Junipero Serra Boulevard and Alpine Road during the rainy season of December through April ranges from 27cfs to 78 cfs).” This is not even close to an adequate assessment of data or impacts, and does not support a claim of “insubstantial” effects to steelhead. The most significant negative impacts from proposed water diversions and inadequate downstream releases would be during the lower flow periods at the margin of adult and smolt migration, and as the proposed diversion lowers the reservoir elevation below the dam’s spillway, extending the duration and amount of low flow water and exacerbating dewater conditions. The DEIS fails to assess these negative impacts of the proposed water diversion and downstream flows directly influenced by the presence and operation of Searsville Dam and its spillway configuration.

The HCP does acknowledge negative “effects” of the Searsville Diversion

The HCP (p.56) does acknowledge “potential downstream effects” of the Searsville Dam diversion, but then dismisses them as “insubstantial” with no adequate analysis and tries to draw from a totally inadequate comparison of mean and monthly winter flows at a gaging station many miles downstream and after the other two significant tributaries in the watershed have already joined the mainstem of San Francisquito Creek. This information tells us nothing about the Searsville Diversion Dam’s impacts on critical and limiting late-spring, summer and fall flows and nothing about impacts to lower Corte Madera Creek immediately downstream of the diversion dam, San Francisquito Creek from below the Corte Madera Creek confluence downstream, water quality, surface flow duration during summer months, low suspended sediment releases from the reservoir, migration at critical riffles, and assessment of impacts to outmigration of smolts (including those from the Bear and Los Trancos Creek tributaries that are impacted by flows and the negative “effects” below Searsville Dam and lower Corte Madera Creek. As described in the DEIS (5-60), the Santa Clara Valley Water District is developing a Three Creeks Habitat Conservation Plan that rightly acknowledges the negative impacts of their dams and reservoirs on steelhead and is proposing to “improve streamflow and stream temperatures below District reservoirs on steelhead and salmon streams.” The HCP must provide and the DEIS must require detailed data and analysis to support these unfounded “insubstantial” claims for downstream effects and cite NMFS’ own extensive literature on significant downstream effects of diversion dams on steelhead, including NMFS’ own assessment of diversion dams for the above discussed SHEP states that “these activities and current diversion affect steelhead” and where they required fish passage and downstream bypass flows.

Flows through cracks and joints in the dam is not a sufficient downstream flow measure

The HCP (p.56) continues to state: “During the period when there is no overflow, the amount of water flowing through the dam is fairly constant and not affected by the amount of water being diverted.” This statement of “no affect” is not substantiated with any data or analysis to support it and fails to acknowledge important considerations. Of particular importance with regards to downstream surface flow is how the Searsville Dam diversion impacts the timing and duration of low-flow conditions downstream that limit

steelhead migration, the timing and duration of no water spilling over the dam downstream, the degree of reservoir surface elevation drop and subsequent early season rainfall and inflow needed to refill the reservoir (and associated lack of downstream flow during that refilling time), and the nature of the “leaks” in the dam and data to show their “fairly consistent” flow. In addition, the “leaks” described in the dam are not an adequate, manageable, or acceptable means of by-pass flows below a dam. The HCP and DEIS must quantify the flow of water “through” the dam and analyze this impact on Covered Species and Critical Habitat downstream. In addition, the HCP does not describe how water flows through the dam, however, as reported in this letter, cracks reportedly caused by earthquakes are known to leak water downstream.

Observations of the dam and these leaks over the past two decades have shown that they often do not release an unobservable amount of flow and mainly keep some concrete blocks wet and sometimes the downstream scour pool with a shrinking amount of water until next winters flow. As observed many times and again during a tour of Searsville Dam on August 11, 2010, the downstream scour pool had shrunk considerably and there was no surface flow leaving the pool downstream in Corte Madera Creek. The exposed scour pool is becoming eutrophic and non-native fish were observed in the degraded water. On this same day, upstream of the dam and reservoir, Corte Madera Creek was flowing cool and clear with approximately 2 cfs and abundant native rainbow trout observed (pers. obs. Stoecker, Workman, Wegner). Page 57 of the HCP states that “steelhead are present in the pool immediately downstream of the (Searsville) dam...” The lack of by-pass flows and degraded water quality downstream of the dam violates CDFG Code section 5937 requiring dam operators to keep downstream fish in good condition as well as causing direct take of steelhead and other Covered Species and their identified habitat.

Water rights and Searsville Diversion use are unclear

The HCP and DEIS fail to discuss quantitatively what exactly Stanford’s water rights and diversion right are at this diversion facility. One of the most knowledgeable scientists on the operations of Searsville Dam, Stanford Professor, David Freyberg, and the Administrative Director of Stanford’s Jasper Ridge Biological Preserve, Philippe Cohen, state: “As noted above, one of the two discharge pipes is connected to the (non-potable) campus irrigation and fire protection distribution system, and for many years Stanford exercised its water right to divert from Corte Madera Creek/San Francisquito Creek at this point. The diversion point was transferred downstream to an infiltration gallery on San Francisquito Creek near the Stanford Golf Course in 1998 because of sedimentation of the inlet valve and the opportunity to divert water of higher quality. Thus, Searsville Lake is now no longer used as a water supply. (p. 3)” Freyberg and Cohen goes on to state that Searsville Reservoir “was operated as a water supply reservoir for irrigation and fire protection until 1998...” (p. 4). “Because the only outflows from Searsville Lake are through flow over the spillway, leakage through and under the dam, evaporation, and perhaps groundwater seepage, the water surface elevation under current operating conditions (no stop logs, no diversions) is relatively stable, varying on the order of 1-2 m (3-7 ft) between peak flood stage and low water at the end of the dry season” (Freyberg and Cohen 2001, p. 31). The above statements from two of Stanford’s most involved

employees with Searsville Dam, describe that the Searsville Diversion was not in use from at least 1998 to 2001 and expectedly longer since the writing of the 2001 report, which does not mention any plans to resume diversions from the dam. The HCP fails to provide clarity about the historic and present use of the diversion and this information is critical to provide and for the DEIS to thoroughly review and assess.

Similarly, there are disparities in water rights information provided in the HCP and from other sources, including Stanford Archival research and publications. California Water Law contains distinct differences between pre and post 1914 water rights, with pre 1914 water rights receiving increased rights or protections in some cases. Stanford's HCP states: "In 1914, Stanford University acquired the dam (Searsville) and water rights from the Spring Valley Water Company" (HCP 3.1.3 Searsville Reservoir p.58). However, the Stanford Historical Society publication by Regnery (1991) states: "In 1919, the Spring Valley Water Company and the Stanford University Board of Trustees agreed to rescind their 1887 agreement and to substitute a new Indenture and Agreement. According to the 1919 agreement, the Spring Valley Water Company released to the Trustees of Stanford University the (Searsville) dam and reservoir and the water rights..." (Regnery 1991 p. 125 from Deeds 104, p. 572). In 1920, Stanford raised the dam by 3.5 feet and this "required that another indenture with the water company be negotiated in 1920 to obtain title to about 134 acres that would be inundated..." (Regnery 1991 p. 125).

The HCP and DEIS fail to provide clarity about the above statements that Searsville Diversion had ceased for multiple years and water rights were transferred downstream. The HCP and DEIS fail to, and must, provide detailed original documents and detailed about the historic and current data related to the acquisition and use of this water right and diversion facility. The HCP and DEIS must explain disparities in the HCP claim of 1914 water rights and Regnery's citations of 1919 and 1920 water rights, the history and agreement of the stated water right transfer downstream, provide detailed water diversion agreements and records at both described downstream and Searsville Diversion facilities, and correct disparities in the statement within the HCP and DEIS. We understand that extensive, long-term water diversion records for the Searsville Diversion have been kept by Stanford. We request that Stanford provide, and the DEIS analyze in detail, the historic use, current use (if any), and proposed future impacts of diversions, or lack of diversions on habitat and Covered Species. We also request that Stanford provide to NMFS for inclusion in a revised EIS and their records, any records of disuse and duration of the Searsville Diversion and all legal documentation of water rights and permits for the described diversion transfer to the downstream infiltration gallery. We also request that the Agencies obtain and review all information related to any physical or operational modifications or changes that may have been made to the Searsville Diversion Dam Facility since the first federal listing of downstream species and reported disuse of the Searsville Diversion in 1998. These disparities in water rights, water diversion use, potential modifications to resume water diversion, and reported water right transfers must be thoroughly analyzed and determined by experts in the Agencies before any serious assessment or proposals for the Searsville Diversion, Dam, and Reservoir can be made.

DEIS fails to adequately assess and mitigate for Searsville Diversion Dam altered flows

The above information shows that the Searsville Dam is an integral part of the proposed Searsville water diversions and downstream release measures in the HCP and that the dam and larger Searsville Diversion Dam Facility are having a significant negative impact to hydrologic conditions in the watershed. Adequate downstream bypass flows for Covered Species have never been determined or implemented at Searsville Dam and downstream flows are not being regulated to maintain downstream habitat and wildlife in good condition. As the reservoir elevation drops below the spillway there is a cessation of downstream flows for Covered Species. The HCP proposes coverage for water diversion operations that divert water to a foot below the spillway of Searsville Dam considerably reducing the downstream flow duration and amount and causing a lack of downstream flows and often dewatering of Corte Madera Creek. This lack of adequately established bypass flows for listed species violates State DFG law and constitutes take of Covered Species. The DEIS fails to assess these impacts and State and Federal Agencies must require adequately determined bypass flows at the Searsville Diversion Dam. As described in this letter, the proposed dredging operations would also be expected to significantly reduce downstream flows through additional summer drawdown of the reservoir, need for prolonged winter reservoir filling duration, dredging operation water requirements, any proposed (but not described in the HCP and DEIS) sluicing techniques, and general cleaning, road wetting, and other dredging operations requiring water.

With multiple forms of direct take of steelhead and other Covered Species occurring at the Searsville Diversion Dam Facility (injury, impaired essential behavior patterns, blocked migration, reduced access to spawning locations, reduced spawning gravels downstream of the dam, reduced flows and habitat for rearing, altered migration ability downstream of the dam, altered prey availability and reduced shelter) it is extremely troubling that these impacts are not adequately assessed, mitigated for, or recognized as clearly impacted from Covered, Proposed, and incorrectly omitted actions resulting from the Searsville Diversion Dam Facility and operations. The DEIS must address these unacceptable deficiencies.

The Searsville Diversion Dam alters water quality

The combined presence of the artificial Searsville Reservoir, along with proposed water diversions, lack of adequate bypass flows, and major new dredging operation, have had and would continue to have considerable negative impacts to the water quality of lower Corte Madera Creek and the entire mainstem San Francisquito Creek, Covered Species, listed Critical Habitat, and San Francisco Bay.

Water quality is reduced because of Searsville Reservoir

“Searsville Lake on Jasper Ridge, created by a dam in 1891, was supposed to be a source of water for San Francisco. It didn’t work out” (Lund and Gullard 2003).Regnery (1991) describes that when the “Portola (later renamed Searsville) Reservoir water, which had been eagerly expected to supply the University’s water needs, finally flowed through the pipe, it was yellow- with a muddy residue -and had an unpleasant odor, due to decaying vegetation. It was generally concluded that the odor was caused by decaying vegetation

in the reservoir.” Freyberg and Cohen (2001) state: “Searsville Lake water has never used as a potable supply because of high turbidity and color, combined with an unpleasant smell and taste” (p. 3). Early caretakers of Searsville Dam and Reservoir reportedly did not drink the poor quality water of the reservoir and instead “carried potable water from the spring in a tunnel on the opposite side of the dam” (Regnery 1991 p.120). Natural springs in the vicinity of the dam contained higher quality water than the altered reservoir water. The poor water quality caused by the reservoir was unexpected and resulted in the reservoir not being used for its intended potable water purpose.

It is critical to note that the construction of Searsville Dam and continued operation today is responsible for the reservoir-caused poor water quality not the creeks feeding it. Upstream nutrients, suspended sediments, and organic material historically were transported and flushed along the creek to the SF Bay during high flows and then flowed clear as spring turned to summer. As shown below, this is the time that the reservoir becomes eutrophic and water quality decreases. Prior to the construction of Searsville Dam upstream creeks near the town of Searsville were advertised as places for people to come and “drink of the crystal water as it gushes from the spring” (Regnery 1991). Another article from the San Mateo Times-Gazette notes of the pre-dam streams: “We are well supplied with pure mountain water conducted in pipes from Alambique Creek, to this place (the town of Searsville).” (Lund and Gullard 2003). The high quality water that drew visitors to the town of Searsville to drink also provided high quality habitat for the natural wetland ponds and fishing. The artificial warm-water habitat caused by the construction of Searsville Dam and Reservoir, to everyone’s dismay, caused the stagnation and eutrophic conditions that reduced the water quality in the reservoir, diversion, and downstream that persists today.

Temperature alterations

The 2006 Jones and Stokes report, cited in the DEIS (4-30), listed the following key finding related to factors limiting steelhead in San Francisquito Creek: “Spring and summer stream temperatures in San Francisquito Creek can reach levels high enough to cause egg and fry mortality.” Notice that this statement and the report findings do not identify such temperature impairment for the Los Trancos Creek tributary, which was studied in that effort. Searsville Dam impacts downstream water quality to the entire mainstem of San Francisquito Creek. Tributaries upstream of Searsville Dam and Reservoir, such as Bear and Corte Madera Creeks, do not have identified temperature elevations leading to egg and fry mortality.

The HCP (p.58) states: “The Searsville Dam also creates a warm-water lacustrine environment that was not found in the system historically...” This statement acknowledges the shift from historic cold-water habitat to artificial warm-water habitat and resulting altered water quality both upstream and downstream of the dam where altered reservoir water is conveyed over the dam’s spillway downstream. The DEIS fails to analyze this past, present, and future activity within the Cumulative Effects analysis section of the report or acknowledge the connection between proposed Covered Activities in the HCP and alterations to water quality in the creek. .

As Searsville Reservoir has become more filled in with sediment and shallower water quality in the reservoir and water released downstream for Covered Species is being altered. Stanford Freyberg and Cohen correctly notes that "...too much shallow habitat could lead to detrimental temperature elevation and fluctuation, excess emergent and floating vegetation, and excess algal growth" (Freyberg and Cohen 2001, p. 31). The reservoir has become even more filled in a shallower since this 9 year old report and the excess vegetation at the reservoir brings up another critical impact on water quality; eutrophication.

The Searsville Diversion Dam Facility negatively impacts surface water temperature in Corte Madera Creek and Searsville Reservoir and likely downstream. Stanford consultants Balance Hydrologics (1996) showed (Table B-1) through field studies conducted in 1995 and 1996 that water temperatures in Corte Madera Creek, just upstream from its inflow to Searsville Reservoir were consistently colder than the Reservoir itself during surveys conducted on the same day from August 1995 to mid-December 1996. Summer/Fall surface flows during this time were also reduced from upstream on Corte Madera Creek to the reservoir-impacted area at Searsville Reservoir. On August 31, 1995, surface flows and water temperatures of 20.8C were observed on Corte Madera Creek at the "Cooper" location, upstream of the reservoir, and the reservoir recorded a temperature of 23C. On November 29th, 1995 water temperature in Corte Madera Creek at the Cooper site measured 11.3C and Searsville Reservoir measured 14.1C. On December 14th 1995, water temperature in Corte Madera Creek measured 9.5C and Searsville Reservoir measured 14.6C. These measurements show a clear and significant increase in water temperatures from the free-flowing Corte Madera Creek into the Searsville Dam caused Reservoir. While no data was provided for temperature readings downstream of the dam, it is assumed that no water was spilling over the dam or released downstream during the August and November measurements (based on review of USGS flow data and Table B-1) and that the stagnant creek downstream of the dam had elevated temperatures (if water was even present) and was not the cool temperatures recorded for Corte Madera Creek, just upstream.

The DEIS identifies "pool temperature" as one of the "factors affecting steelhead survival" (DEIS 4-30). As described in the DEIS (5-60), the Santa Clara Valley Water District is developing a Three Creeks Habitat Conservation Plan that rightly acknowledges the negative impacts of their dams and reservoirs on steelhead and is proposing to "improve streamflow and stream temperatures below District reservoirs on steelhead and salmon streams." The DEIS must analyze, with supporting data (not provided in the HCP or DEIS), how the Searsville Diversion Dam Facility, Reservoir, and operation impact water temperatures and quality above and below the dam, especially during periods when the dam and diversion operations are not spilling water over the dam. The Searsville Diversion Dam operation have a clear impact on water quality and connectivity from the free-flowing creeks feeding it upstream to the water released or left stagnant downstream of the dam. We want to make clear that we do not accept the notion that somehow adequate downstream bypass flows are not needed once the reservoir drops below the dam's spillway. The reservoir holds water all year long and the physical characteristics of the dam, intake piping, and water diversion operations

result in seasonal cessation of water flowing over the spillway of the dam. Likewise, the described multiple-level reservoir intake piping and downstream blow-off valves and piping suggest that the Searsville Diversion Facility could and should be providing adequate bypass flows downstream already, even after the reservoir surface has dropped below the spillway.

Eutrophication in Searsville Reservoir alters water quality

USGS (2010) includes several descriptions of the term ‘eutrophication’ or ‘eutrophic’ on their website, which include; “The process by which a body of water acquires a high concentration of nutrients, especially phosphates and nitrates. These typically promote excessive growth of algae. As the algae die and decompose, high levels of organic matter and the decomposing organisms deplete the water of available oxygen, causing the death of other organisms, such as fish” (Art 1993). “When the effects are undesirable, eutrophication may be considered a form of pollution” (National Academy of Sciences 1969). Eutrophic conditions are “...associated with wide swings in dissolved oxygen concentrations and frequent algal blooms” (Committee on Environment and Natural Resources, 2000).

The United Nations Environment Program website (2010) states the following: “Eutrophication is one of the most widespread environmental problems of inland waters...In shallow lakes and where plant production is high, deoxygenation of the sediment and water occur frequently too. Such conditions kill fish and invertebrates. Moreover, ammonia and hydrogen sulfide originated from bacterial activity can be released from sediments under conditions of anoxia, and their concentrations can rise to levels which adversely affect plants and animals as they act as poisonous gases. Phosphorus and ammonia may also be released into the water, further enriching it with nutrients.” In addition, “the low oxygen concentration may degrade water quality downstream of the lake or reservoir, particularly downstream of reservoirs with short retention times... Some particular type of algae, which grow in highly nutrient enriched lakes and reservoirs (blue-green algae or cyanobacteria), release in the water very powerful toxins which are poisonous at very low concentrations. High concentrations of nitrogen in the form of nitrate in water can also cause public health problems.” Eutrophication in reservoirs “can block light to submerged plants and produce large quantities of dead organic matter that can lead to low oxygen concentrations and the emission of unpleasant gases such as methane and hydrogen sulfide due to its decomposition or decay. Shifts in the abundance of, and significant reduction in diversity of species (biodiversity) of aquatic organisms within a lake or reservoir may also be caused by eutrophication. This results from the changes in the water and food quality together with decreased oxygen concentration which often alter the composition of the fish fauna from more to less desirable species.” The DEIS fails to address the issue of eutrophication in Searsville Reservoir, impacts to Covered Species, Critical Habitat downstream, water pollution, health risks, and impacts to biodiversity and shifts from native to non-native aquatic species.

The HCP (p.35) states: “Throughout the system, eutrophic runs and pools are not uncommon by the end of summer. In portions of the creek immediately downstream from

Searsville Dam, the water becomes tainted with a naturally occurring heavy load of decaying plant material, resulting in coffee-colored water by the end of summer.” Eutrophic runs and pools are, in fact, uncommon in most of the “system”, even during the end of summer. Eutrophic conditions are rare in the tributary streams to San Francisquito Creek (Corte Madera upstream of Searsville Dam, Bear Creek, and Los Trancos Creek). These tributaries maintain cool flows and have well-developed riparian canopies. In several decades of observations in the watershed, I have never observed eutrophic conditions in these tributary streams. However, the remainder of the above quote is accurate about eutrophication in the “system”, below the Searsville Diversion Dam, and especially in the Reservoir.

Like most reservoirs that occur in the lower elevations of California and are rich in nutrients, Searsville Reservoir undergoes the process of eutrophication as temperatures elevate. This process is well known to occur in reservoirs and ponds and promotes a proliferation of plant life, such as algae, which reduces the dissolved oxygen content of the water and dramatically alters water quality. This process can lead to dramatically increased water temperatures and reduced water quality. As the quote states, these eutrophic conditions downstream of Searsville Dam, combined with the lack of adequate water releases from the Covered Activities of water diversion and spillway operations, cause downstream water quality to decline. The tainted, coffee-colored water observed below the dam is not “naturally occurring” as stated in the HCP and the “heavy load of decaying plant material” can be partially, if not fully, attributed to the impacts of Searsville Dam and Reservoir. As noted elsewhere in this report, tributary creeks to Searsville Reservoir flow clear into the reservoir when the eutrophic conditions.

The Searsville Diversion Dam Facility alters water turbidity downstream

In discussing the hypothetical and future complete filling of Searsville Reservoir with sediment, Stanford’s consultant Balance Hydrologists (1996) states: “The lake (Searsville Reservoir) presently remains turbid often for a week or two after a storm; overflows from the lake keep clouding San Francisquito Creek, which otherwise tends to clear up a few days after a storm. Some benefit to steelhead and other aquatic biota may be expected by reduced turbidity persistence” (p.55). This statement shows the clear negative impacts of the Searsville Diversion Dam Facility on water quality both within the reservoir and released into downstream Critical Habitat where direct take of Covered Species is occurring. This elevated turbidity occurs during periods when Stanford proposes to be diverting water and allowing turbid overflows. This taking of listed species is a combined result of the integral and dependent components of the Searsville Diversion Dam Facility (dam, reservoir, and diversion) and proposed water diversion and downstream release measures, which rely on the presence and operation of Searsville Dam. Increased and prolonged turbidity caused by releases from Searsville Dam are expected to have major limiting effects on steelhead and other Covered Species and constitutes direct take as defined.

The National Marine Fisheries Service (1996) states the following:

“Sigler et al. (1984) reported that chronic turbidity in streams during emergence and rearing of steelhead affects the numbers and quality of fish production. In general, effects of sedimentation on salmonids are well documented and include: clogging and

abrasion of gills and other respiratory surfaces; adhering to the chorion of eggs; providing conditions conducive to entry and persistence of disease-related organisms; inducing behavioral modifications; entombing different life stages; altering water chemistry by the absorption of chemicals; affecting useable habitat by scouring and filling of pools and riffles and changing bedload composition; reducing photosynthetic growth and primary production; and affecting intergravel permeability and dissolved oxygen levels (Koski and Walter 1978) (Appendix A). Increased turbidity decreases photosynthesis of aquatic plants and can clog the respiratory surfaces and feeding mechanisms of aquatic animals. Turbidity results when fine silt, part of the overall sediment transport, remains suspended for long periods of time. Turbidity causes light to be scattered and absorbed, reducing light penetration and thus diminishing or even eliminating aquatic plant growth. Loss of aquatic plants leads to the loss of associated snails and aquatic invertebrates and serve as a food source for young fish. Turbidity generally reduces feeding by fish even if there is an abundance of prey (Noggle 1978). Some salmonid species have complex reproductive and social behaviors that depend on visual signals which may be obscured in turbid waters (Berg and Northcote 1985).”

The DEIS fails to assess the past, present, and future impacts of the Searsville Diversion Dam caused turbidity released downstream by the presence of Searsville Diversion Dam and HCP-covered spillway operation on Covered Species and habitat quality. The DEIS also fails to include adequate analysis of turbidity impacts caused by the proposed dredging operation.

Proposed operation and maintenance of the water diversion alters water quality

The HCP (56) states: “Flushing the pipes/valves at the base of the dam could have short-term effects on downstream water quality, which could adversely affect any steelhead or red-legged frogs that are located immediately adjacent to the pipe downstream of the dam.” The HCP (p.94) states: “Prior to flushing of Searsville Diversion pipes/valves, the Conservation Manager will conduct a visual survey immediately adjacent to the pipe downstream of the dam and relocate any Covered Species that could be affected by the flushing activity.” This flushing activity is not adequately described to understand quantitatively assess impacts to Covered Species. These water quality impacts would extend downstream further than “immediately adjacent to the pipe” and this impact must be quantified. Proposed flushing schedules, operational limitations, amount and duration of flushing water and suspended sediment, and exact location of flushing fall-out must be identified and assessed. In addition, a visual survey of the creek reach prior to flushing will not be able to identify many of the Covered Species, especially egg, larval, and juvenile phases. The HCP and DEIS fail to provide essential data and describe surveying methodologies to be used to effectively identify Covered Species or to adequately minimize and assess impacts to Covered Species.

Proposed dredging of Searsville Reservoir would alter water quality

The HCP (p.61) states: “Transporting the dredging equipment and offloading it into the reservoir could harm or kill red-legged frogs, western pond turtles or garter snakes, or displace them from the area. Turbidity resulting from the dredging could affect egg masses, and release of hydrogen sulfide could reduce oxygen levels in the reservoir

affecting frog tadpoles and metamorphosis.” The DEIS fails to quantify the impact of dredging on water quality alterations in Searville Reservoir and downstream. In addition to the potential deadly water quality alteration noted above, dramatically increased turbidity would release increased nutrients and increase eutrophic conditions. Elevated water temperature, increased evaporation, further reductions in dissolved oxygen, and other negative impacts to water quality and quantity are expected to result. While dredging operations are said to occur during times when no water is spilling over the dam, these operations dramatically alter the quality of water within the reservoir and water that spills over the reservoir when the reservoir spills again in the Fall or Winter. Alterations to the water that leaks through the dam is also not assessed in the HCP or DEIS.

The proposed HCP would negatively impact water quality

The proposed action of the HCP is said to provide benefits related to “biological resources, and water quality” (DEIS 1-5). By not adequately addressing the impacts of the Searsville Diversion Dam, Reservoir, proposed dredging, water diversion, and spillway operations, the DEIS fails to acknowledge the past, present, and future negative impacts to water quality and thus biological resources. There is no analysis or discussion on the impacts the reservoir has on downstream flows, water temperatures, dissolved oxygen, pH, nutrient loading, and other critical water quality parameters. The shrinking reservoir and proposed dredging actions are expected to increase nutrient dispersal in the reservoir, which will impact algal growth, eutrophication effects, and water quality released downstream.

The DEIS fails to assess the impacts of the Searsville Diversion Dam Facility on altering water quality to downstream Critical Habitat and Covered Species. The Searsville Diversion Dam Facility alters water quality due to temperature elevation in the reservoir, reservoir induced-eutrophic algae blooms and altered water chemistry, reductions in downstream Spring, Summer, and Fall flows caused by the proposed spillway operation of the dam, water diversion, and lack of adequate bypass flows measures which alter water quality, dam-caused operations of the spillway releases of altered and warmer Summer surface water from the reservoir downstream, and reservoir-impacted transport of decaying plant material and fine sediments downstream. The DEIS fails to provide quantitative data or assess these water quality alterations caused both directly and indirectly by the Searsville Diversion Dam Facility both downstream and in the reservoir. By omitting the presence of Searsville Diversion Dam, the HCP and DEIS also fail to acknowledge the direct association between the physical characteristics of the dam and spillway and Covered operations that determine downstream releases of altered water quality. The operations of the proposed reservoir dredging are also not assessed for the resulting high level of water quality alteration both in the reservoir and downstream.

The Searsville Diversion Dam Facility negatively impacts habitat conditions

For the many reasons outlined below, the Searsville Diversion Dam Facility has significantly altered habitat conditions along the entire length of San Francisquito Creek and lower Corte Madera Creek for almost 120 years. The proposed HCP would continue

and likely escalate these negative impacts in the face of proposed dredging operations and projected climate change impacts downstream of the dam. The HCP fails to adequately mitigate and the DEIS fails to adequately assess or require effective mitigation of these impacts. In addition to assessing current conditions in detail, the DEIS must also assess past and future effects within the required Cumulative Effects analysis.

Searsville Dam has dramatically altered sediment and wood transport downstream
Sediments of various sizes (boulders, cobbles, gravels, sand, silt, clay) and woody debris have critical historic and current roles in providing high quality habitat downstream of Searsville Diversion Dam. The Diversion Dam, resulting reservoir, water diversion operations, and ineffective downstream water release operations continue to prevent many of these beneficial materials from transporting below the dam. This has resulted in major historic and continuing negative impacts to downstream habitat. These impacts are not discussed in sufficient detail or adequately assessed in the HCP and DEIS.

The 2006 Jones and Stokes report cited in the DEIS (4-30) listed the following key finding related to factors limiting steelhead: “The lack of key habitat features such as boulder and cobble aggregations, large woody debris jams, root wads, and backwater habitat limit both winter and summer rearing habitat, with winter productivity more impaired than summer.” Searsville Dam traps all boulders and cobbles, as well as large woody debris, and has dramatically reduced input of these key habitat features downstream in Corte Madera Creek and the entire length of San Francisquito Creek for over a century and continues to do so today. In addition, riparian vegetation, root wads, and occurrence of backwater habitats are all impacted by the presence of the dam and reservoir and altered sediment transport and hydrology. The DEIS must analyze these impacts using the abundant, even NOAA authored, scientific literature related to such impacts. These impacts have had and continue to have an enormous impact on stream habitat conditions for the entire length of San Francisquito Creek and listed steelhead, red-legged frog, and pond turtle. It should also be noted that large woody debris, boulders, cobbles, root wads, and backwater channels are all present with rainbow trout populations.

The 2006 Jones and Stokes report cited in the DEIS (4-30) listed the following key finding related to factors limiting steelhead: “The loss of complex pool habitat used by over-wintering and over-summering juvenile steelhead is primarily the result of low recruitment of boulder and woody debris, the building blocks of complex habitat, from the upper watershed.” This statement is exactly correct and the boulders and woody debris from the largest tributary of the “upper watershed” have been trapped in Searsville reservoir for almost 120 years, unable to contribute to the identified reaches in Critical Habitat for steelhead. These impacts effect other Covered Species and riparian and aquatic habitat quality for lower Corte Madera and the entire length San Francisquito Creek. These impacts are also felt at the mouth of the creek and wetland habitats of the SF Bay. The DEIS fails to state that one of, if not the, primary reasons for this low recruitment is due to the fact that Searsville Dam and Reservoir have trapped all boulders (and cobbles and gravels), and most large woody debris, coming from the watershed’s largest tributary (Corte Madera Creek), or assess these long-term impacts.

The DEIS (5-75) states: “Reduced winter streamflows would likely have the greatest impact on San Francisquito Creek as the limiting factor for steelhead productivity is overwintering habitat (Jones and Stokes 2006). Reduced winter flow means less recruitment of the boulders and large woody debris that create complex overwintering habitat. In addition, lower flows means less scouring action and lower rates of fine sediment removal from the creek pools. Lowering recruitment of materials and less scouring action result in less overwintering habitat.”

The over-century-old presence of Searsville Dam has likely been, and continues to be, the single greatest limiting factor to boulder and large woody debris recruitment to Critical Habitat on lower Corte Madera Creek and the entire mainstem of San Francisquito Creek. Continued operation of the dam and reservoir as proposed in the HCP ensure that this major limiting factor to steelhead and other Covered Species and their habitat continues. The DEIS fails to analyze reductions in boulders and large woody debris and the negative impacts to downstream habitat and Covered Species in relation to Searsville Diversion Dam operations and climate change forecasts, quantitatively describe their impacts, and ensure their impacts are mitigated. Adding to our serious concern about the analytical rigor of the DEIS document are the following two sentences page 5-75; “Steelhead management includes the addition woody debris to San Francisquito Creek, which would improve overwintering conditions. In this way, the effects of global climate change on the Proposed Action would be reduced.” The notion that the undescribed addition of woody debris to San Francisquito Creek will somehow reduce the widespread and dramatic effects of climate change predictions to the creek, in a meaningful way, is absurd and not supported with any data. The DEIS must be realistic in these statements and also describe that the missing large woody debris, boulders, and cobbles occur upstream of, and are trapped by, the Searsville Diversion Dam. In addition, the DEIS must acknowledge the fact that abundant and high quality overwintering and oversummering habitat, with native rainbow trout, occurs upstream of the impassable Searsville Dam and it is not the lack of overwintering habitat in the watershed that is the most limiting factor to steelhead, but rather the impassable Searsville Diversion Dam that prevents them from accessing the habitat upstream and being confined to the downstream habitat degraded by the dam.

Stanford’s consultant NHC (2001) states that with hypothetical lowering or filling of Searsville Reservoir, “delivery of large woody debris from upstream of Searsville Lake will commence” and that “addition of large woody debris (LWD) is generally beneficial for steelhead, California red-legged frog, and other species with aquatic life stages...” (p.6). The HCP and DEIS fail to assess the cumulative effects of the large woody debris reductions to Covered Species habitat caused by the Searsville Diversion Dam and Reservoir.

Searsville Dam and Reservoir prevent spawning gravels from reaching Critical Habitat

In discussing potentially limiting factors to steelhead, the HCP (p.35) lists “the general paucity of suitable spawning sites”. The HCP (p.61) states: “Searsville Reservoir is filling with sediments and some areas downstream may be gravel-deficient as a result.”

Stanford's consultant Balance Hydrologics noted that bedload sediments from Corte Madera Creek make up 10-20% of the total mass of sediment discharge into the reservoir and that gravels are a portion of the sediment (Freyberg and Cohen 2001, p. 17). These critical spawning gravels are being prevented from transporting downstream where their noted lack of abundance is a key limiting factor for steelhead spawning. The DEIS fails to assess the past, present, and future cumulative effect of this impact on both steelhead and other Covered Species.

Searsville Diversion Dam operations may be increasing downstream erosion

In discussing the altered sediment transport downstream of Searsville Dam, Freyberg and Cohen state: "The dramatically reduced sediment flux may have contributed to the geomorphic changes in the San Francisquito Creek channel that have been observed in a number of reaches. (Freyberg and Cohen 2001 p.iii)" Freyberg and Cohen goes on to state that significant "bank sloughing" and erosion have occurred and that "such changes are not unexpected after dam construction" (Freyberg and Cohen 2001, p. 25). The dam and reservoir have reduced the transport of courser sediments and spawning gravels downstream and appears to be causing downstream bank erosion as is common with sediment-starved "hungry water" downstream of reservoirs. The impacts of the dam, reservoir, and diversion facility on downstream habitat alterations and potentially increased erosion and bank have not been addressed in the HCP and DEIS. The DEIS must assess this altered sediment flux and impacts to covered species, downstream erosion, and claims in the HCP and DEIS that the HCP could reduce erosion in the creek.

"No matter whether open water is maintained at Searsville and/or Searsville Dam is altered or removed, the sediment flux into San Francisquito Creek below the dam will increase in the future" (Freyberg and Cohen 2001). The HCP and DEIS fail to assess future projections for sediment transport below the dam as part of the cumulative effects analysis. The HCP and DEIS should include detailed information about the various expected impacts of no action or the proposed dredging on downstream habitat, Covered Species, and community safety. The DEIS fails to address safety issues related to the anticipated alteration of sediment flow downstream of the dam.

Stanford Freyberg and Cohen state that Searsville Dam traps an estimated 93% of sediment inflow (Freyberg and Cohen 2001, p. iii). The impacts of this finer, 7% of sediment passing over the dam must be discussed and analyzed in the HCP as this is a function of both the reservoir and entire Searsville Diversion Dam facility, including proposed water diversion, downstream releases at Searsville Dam and dredging operation, including the relationship to the dam and spillway configuration. Freyberg acknowledges that "reservoir sediment management alternatives have impacts well beyond the immediate vicinity of Searsville Dam and Lake. (p. iii)" Proposed new and major dredging impacts will, as stated, have major impacts well beyond the dam and must be assessed for the lower watershed, and impacts to Covered Species.

Searsville Diversion Dam impacts prey for Covered Species

The DEIS identifies the "loss of diversity and abundance of invertebrate prey species" as one of the "factors affecting steelhead survival" (DEIS 4-30). Scientific literature shows

that dams can reduce invertebrate species richness in streams. Griffith et. al. (2010) state: “Naturally functioning aquatic systems provide many ecological and human benefits. Restoration of these environments has a high potential to improve these ecological and human benefits. Dam removal sets in motion physical and chemical changes above and below the dam site. Many of these changes result in ecological changes. Bottom samples showed significantly lower invertebrate species richness in the pond (reservoir) above the dam than below the dam in Holts Creek. Invertebrate species richness was similar in Holts Creek above and below the mouth of the dam.” Following dam removal, “invertebrate richness data suggest we may see an increase in richness above the dam after connectivity is restored.” The DEIS must analyze, with supporting data, how the Searsville Diversion Dam Facility, Reservoir, operation, proposed dredging, and water withdrawals and lack of bypass flows impacts prey items for Covered Species.

Searsville Dam negatively impacts the transport of beneficial sediment downstream

The 2006 Jones and Stokes report cited in the DEIS (4-30) listed the following key finding related to factors limiting steelhead: “Deposition of fine sediment onto cobbles and gravels reduces the quality of over-wintering and over-summering habitat.” Stanford’s consultant Balance Hydrologics constructed a sediment budget for water year 1998 and found that of the 201,000 metric tons of sediment that entered Searsville Reservoir, “13,300 metric tons [of sediment] passed over the dam and downstream in Corte Madera Creek and San Francisquito Creeks” (Freyberg and Cohen 2001, p. 18). While the larger, and beneficial, boulders, cobbles, and gravels are trapped by the reservoir and dam, the fine, and less beneficial, sediments are still allowed to transport downstream. The HCP and DEIS fail to assess the impacts of the Searsville Diversion Dam and Reservoir to downstream sediment transport. The DEIS must assess how deposits of “fine sediments”, including decayed plant material and algae from the reservoir, on cobbles and gravels in San Francisquito Creek is influenced by the altered hydrology, water quality, and duration of summer flows as relates to the altered conditions caused by the Searsville Diversion Dam and Reservoir. The HCP proposes the continuation of Searsville Diversion Dam operations trapping beneficial substrates and woody debris and allowing less beneficial and potentially harmful fine substrates to negatively impact already reduced cobbles and gravels for spawning and rearing.

The Searsville Diversion Dam Facility promotes the spread of non-native species

“The (Jasper Ridge) Preserve does provide significant conservation benefit to the region, but it is not operated as a refuge for native plants and animals” (HCP p.20).

Non-native species negatively impact Covered Species

The DEIS (4-30) identifies “competition and predation by non-native fish” as one of the “factors affecting steelhead survival”. This section needs to include non-native amphibians, such as bullfrogs, and crustaceans, such as crawfish that thrive and breed in the artificial warmwater of Searsville Reservoir. The HCP (p.31) states: “... loss of habitat and the introduction of non-native species that compete with or prey upon both adult and larval red-legged frogs are much more significant to the fate of the red-legged frog.” The

HCP goes on to state: “ The introduction of non-native species is also to play a role in the spread of disease...”, one of which “has been linked to numerous amphibian declines across the world” and is “considered a major threat.” Stanford’s Freyberg and Cohon (2001) accurately state: “Certainly, there are real benefits to removing habitat supporting non-native species and restoring habitat for native and threatened species” (p. 30). Stanford’s HCP proposes no such removal of artificial reservoir habitat supporting non-native species or significant restoration of that habitat to a native state.

Searsville Diversion Dam and Reservoir are the source of non-native species

“Neither Searsville Reservoir or Felt Reservoir provide habitat for native aquatic species of conservation concern due to the presence of bullfrogs and abundance of non-native fishes” (HCP 9.27). Searsville Reservoir’s artificial habitat hosts, provides breeding habitat for, and allows for the dispersal of (over the Searsville Diversion Dam’s uncontrolled spillway) “a number of non-native species, including non-native fishes, crustaceans, and amphibians. Non-native fishes include, large mouth bass, sunfish species, black crappie, bullhead, mosquitofish, rainwater killifish, golden shiner...” The “non-native fish species are confined to areas in and ... below Searsville Lake, implying that... the Lake is their primary source” (Launer and Spain, 1998) (Freyberg and Cohen 2001, p. 27). These non-native species in the reservoir are not confined and operation and configuration of Searsville Diversion Dam (including covered downstream flow measures) allow for their dispersal downstream to Corte Madera Creek, the entire San Francisquito Creek mainstem, and to all Critical Habitat and Covered Species occurring there. “Searsville Lake provides apparently ideal habitat for the swamp crayfish and appears to be the source for there crayfish in the system. (Freyberg and Cohen 2001, p. 28) “Bullfrogs are abundant in Searsville Lake...(Freyberg and Cohen 2001, p. 28). “Bullfrogs are concentrated within the first 1000 meters downstream from Searsville Dam” (NHC 2001 Appendix C p.2). “Breeding habitat for bullfrogs and Louisiana red-swamp crayfish in Searsville Reservoir” (NHC 2001 p.7). Freyberg and Cohen correctly summarize there thoughts about the non-native species in Searsville Reservoir by stating that several non-native “fish species, both crayfish species, and bullfrogs are known to be detrimental to steelhead and red-legged frogs. Any modification to the Searsville regime must include among its goals the reduction in influence of these non-natives on protected species. (Freyberg and Cohen 2001, p. 28)” Stanford’s own consultants stated in 2001 that reducing or elimination the Searsville Reservoir habitat “has a net long term benefit to habitat conditions for both red-legged frogs and steelhead downstream of the dam due to a reduction passage of these predatory species over the dam” (NHC 2001 p. 7). The HCP (p.35) even acknowledges that it is “assumed that Searsville reservoir is the primary source of non-native fishes in the system.”

I have personally observed non-native fish species, while observing and conducting snorkeling surveys as far downstream as just upstream of the El Camino Road crossing (pers. obs. Stoecker 1985 to 2008). It is presumed that these non-native fish species migrate or are periodically flushed downstream the entire length of San Francisquito Creek and negatively impact listed species throughout their range on the mainstem.

HCP does not propose adequate mitigation for non-native species

Objective 4.2 of the HCP (p.15) states: “Eliminate or reduce non-native species that are impairing California red-legged frog reproduction or survival.” Objective 5.2 and 6.2 state the same objective due to non-native species “impairing” steelhead and western pond turtle. Objective 7.3 also acknowledges that non-native species could impair San Francisco Garter snake. Despite the good intentions of the above statements, the HCP fails to propose, and the DEIS fails to require, an effective non-native eradication plan and by not addressing their primary source of reproduction and dispersal at Searsville Reservoir, other limited efforts will not be successful in eliminating non-native species and their negative effects.

As part of the Cumulative Effects analysis, the DEIS must analyze and assess the critical role that Searsville Reservoir and the Searsville Diversion Dam’s spillway and proposed operation has played as the historic source for exotic fish plantings, continued role as the most expansive artificial habitat that these invasive species are able to survive in, reproduce, and spread to downstream habitats in San Francisquito Creek. As mentioned in the DEIS (1.2 Net Effect) monitoring and collection efforts could help to remove non-native species at specific and piecemeal locations, but provides no details about how this would be successful implemented, anticipated effectiveness, and especially how Searsville Reservoir is the main source of invasive species and how that issue will be addressed by proposed expansion and continuation of the reservoir with dredging. The meagerly described non-native removal efforts would not be effective or sustainable as long as Searsville Reservoir continues to harbor, produce, and allow the spread of non-native species downstream. Each year, as flows spill over the dam, non-native species of fish and bullfrogs will be able to spread downstream and repopulate any reaches were they were removed. The HCP and DEIS must quantify a timely, realistically-funded, and effective plan to eliminate non-native fish species and reduce other non-native species from Stanford lands and eliminate the artificial habitat supporting these harmful non-native species and dramatically altering flow and habitat in the San Francisquito Creek watershed. The HCP and DEIS fail to propose any significant action to limit the occurrence or dispersal of non-native species from Searsville Reservoir and the DEIS fails to analyze and require effective mitigation for this taking of listed species. The DEIS must also describe in detail how the Searsville Diversion Dam configuration and operation, proposed diversion and downstream flow measures, and Reservoir are promoting and dispersing non-native species and quantify these impacts on Covered Species. The DEIS should include requirements for elimination of the artificial habitat supporting non-native species and detailed plans for eradication of the non-native fish species and reduction in other species such as bullfrogs.

The Searsville Diversion Dam and Reservoir destroyed unique native habitat

Regnery (1991) describes that prior to the construction of Searsville Dam, in the vicinity of the town of Searsville, the “San Andreas Fault Zone bisected the (Lloyd’s) farm, and in the midst of the farm was a sag pond, “Lloyd’s Pond”. As Searsville Dam was being built in 1891, “Spring Valley Water Works employed a crew of men systematically to clear the lake bed expected to be covered by water, to remove plants, trees” and the

historic wetland ponds “known as Lloyd’s and Hoopers ponds, were purposely drained by means of a steam pump-engine” (Regnery 1991 p.114). In 1920, Searsville Dam was raised an additional 3.5 feet and this caused the additional flooding of creeks and wetlands. This dam raising required that Stanford raise the elevation of Portola Road and that a “number of acres of willow trees will be removed” and the natural wetland areas across Portola Road “will be flooded by the increased waters” (Regnery 1991 p. 126).

The HCP and DEIS completely fail to discuss the loss of unique habitat that has been buried and submerged by the dam, reservoir, and upstream deposited sediment. As part of the cumulative effects analysis it is critical for the DEIS to identify and quantify the historic and ecologically unique wetlands and riparian habitat that was buried by Searsville Dam and Reservoir. An estimated 2.5 miles of five different streams and riparian forests, as well as multiple wetland ponds were destroyed, submerged, buried, or impacted by the dam and reservoir. The DEIS fails to discuss these impacts on Covered Species and should identify pre-dam and pre-reservoir habitat conditions and assess how removal of Searsville Dam could restore miles of currently buried streams, extensive riparian forests and adjacent wetland habitats, unlike the artificial, warmwater, degraded water quality of the unsustainable Searsville Reservoir. Dam removal could increase the amount of highly productive wetland habitat that these historic riparian zones provide.

The HCP fails to meet the requirements of Section 10(a)(2)(B)

The DEIS (2-3) states “Section 10(a)(2)(B), provides that the Services (NMFS, USFWS) shall issue an ITP if the Services find, after opportunity for public comment, that: (Bullet Point 4) the taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild;” The overwhelming evidence provided within this letter and referenced documents show that the proposed HCP will likely appreciably reduce the likelihood of the survival and recovery of the species in the wild. The HCP proposes to not open up any additional historic habitat for steelhead, would result in continued and likely exacerbated negative impacts to water quality and quantity downstream of Searsville Dam, would not effectively eliminate or eradicate non-native species or their source in Searsville Reservoir, would continue to deprive and negatively alter Covered Species habitat in Corte Madera and San Francisquito Creek below Searsville Dam, and lead to the compounding of increased water temperatures, reduced flows, and prolonged drying downstream of Searsville Dam caused by impacts from the dam and the projections for climate change. Furthermore, forecasted increases in fires and possible major sediment transport event combined with possible dam failure, over the 50-year life of this HCP, present a serious possibility for extirpation of Covered Species occurring below Searsville Dam. The HCP fails to show adequate protection of Covered Species in light of these escalating negative impacts and safeguards for these devastating possibilities.

In addition, another bullet point in this section is not met; “the applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking.” As noted the applicant’s HCP does not even proposed adequate bypass flows at the

Searsville Diversion (as was required by NMFS at the other two applicant-owned water diversions), any improvements to degraded water quality spilling over Searsville Dam from the reservoir, eradication of non-native fish species and their artificial habitat, fish passage at the Searsville Diversion (as was required by NMFS at the applicants Los Trancos Diversion Dam), and other meaningful and practicable minimization measures. As such, the Services must decline the proposed HCP as written and require the applicant to address and fix the numerous forms of take identified either through the HCP process or independent of the HCP process.

Proposed dredging would have significant negative impacts to Covered Species

Dredging operation specifics are not adequately described

The HCP proposes major, new, and possibly sustained dredging of sediments from Searsville Reservoir. This proposal is not regular ongoing operation and maintenance and its impacts would have major biological, social, safety, and legal impacts not addressed in the HCP or DEIS. The HCP and DEIS are severely lacking in detailed information about the briefly stated and unspecific dredging operation described in the HCP: “During the life of the HCP, Stanford may initiate dredging in order to maintain the year 2000 capacity of the reservoir. The initially preferred method will involve a floating suction dredge with the sediments slurried through a pipeline to agricultural lands downstream for drying and processing. If reservoir bottom conditions prevent suction dredging, a secondary method may involve transporting large equipment on barges to locations in the reservoir. A second barge may be needed to hold the container filled with dredged sediment, and this material would then be transported off-site for disposal. Dredging will be conducted during periods when no water is passing over the dam. Some of the dried sediments may be reused for agricultural purposes on Stanford lands, and the remained would be used elsewhere at Stanford or hauled away to a landfill” (p.58).

The proposed dredging operation is not described in sufficient detail in the HCP or DEIS to know what is being proposed. While the proposed dredging appears to focus on removal of older sediment deposits in the lower part of the reservoir system near the dam and away from established wetland vegetation, Stanford’s Freyberg and Cohen state that “it is conceptually possible to achieve zero net sediment accumulation while “fresh” sediment is accumulating in upstream portions of the reservoir and “older” sediment is being removed from portions of the reservoir closer to the dam. Such a pattern is not sustainable over the long term, however, and the depth distribution in particular is unlikely to continue to meet performance criteria” (Freyberg and Cohen 2001, p. 34). The DEIS fail to describe how prolonged and sustained the dredging operation would be.

Freyberg and Cohen (2001) note that with sediment dredging and disposal from Searsville Reservoir, “impacts of transportation, whether by slurry or truck, are likely to be severe” (p. v). The HCP and DEIS fail to adequately quantify the impacts of proposed dredging and must provide detailed data related to the type of dredging proposed and expected impacts to habitat, water quality, water flows, Covered Species, air quality, traffic, noise, and other issues affecting the local community.

The HCP fails to include data from Stanford's Freyberg and Cohen (2001) that estimates, on average, roughly 30,000 cubic meters of sediment per year (approximately 3270 12 cubic yard truckloads per year) would need to be removed and transported out of the reservoir if there is to be no net accumulation of sediment in the reservoir (Freyberg and Cohen 2001, p. 35). The HCP and DEIS fail to quantify the exact type of sediment dredging operations proposed, amount of material to be removed, annual dredging details, location of dewatering and storage, transportation details, detailed long-term costs, and impacts to local roads, air quality, traffic, and other environmental safety considerations. These details must be provided and assessed in the DEIS.

With regards to dredging of the reservoir, Stanford's Freyberg and Cohen (2001) estimated that approximately 7.4 acres of land per year would need to be used to dewater and process the average annual amount of sediment inflow to the reservoir. They note that "impacts of transportation, whether by slurry or truck, are likely to be severe" and that "an average annual dredging of 30,000 cubic meters of sediment...yields a rough cost of \$180,000/yr - \$600,000/yr" (Freyberg and Cohen 2001, p. 50). These estimates do not include additional sediments accumulated between 2000 and the present, increased costs since then, or "the particular challenges of removal from Jasper Ridge Biological Preserve" or processing beyond the preserve as indicated. If Stanford intends to include dredging as part of the HCP discussion or Covered Activities within, the HCP and DEIS must include detailed plans, environmental impacts (including air pollution, noise, traffic impacts, water impacts, equipment details), costs, and acknowledgement that the Searsville Diversion Dam is responsible for, and an integral part of, the activity.

Dredging would have significant negative impacts to Covered Species

The HCP (p.61) states: "Transporting the dredging equipment and offloading it into the reservoir could harm or kill red-legged frogs, western pond turtles or garter snakes, or displace them from the area. Turbidity resulting from the dredging could affect egg masses, and release of hydrogen sulfide could reduce oxygen levels in the reservoir affecting frog tadpoles and metamorphosis. Suction in the shallow water along the edges could dislodge or suffocate egg masses, suffocate frog tadpoles, and displace or harm red-legged frogs, pond turtles, or garter snakes." Increased turbidity could lead to increased release of nutrients into the reservoir and resulting increases in water temperatures and eutrophic conditions. These conditions can impact downstream water availability, quality, and duration of flows. Dredging would also draw down the reservoir during summer months and require additional inflows to fill the reservoir back up to the point where it is spilling over the dam and providing flows downstream, thus reducing the amount and duration of flows downstream and limiting the effectiveness of early season adult steelhead migration and prolonged low water conditions and surface flow drying downstream in late fall. The DEIS fails to acknowledge negative impacts from dredging downstream of Searsville Reservoir and on Covered Species including steelhead, which are not discussed as being impacted.

Freyberg and Cohen (2001) state that "any scheme for maintaining some open water surface at Searsville Lake will require attention to its impacts on species of special

concern, most especially the federally-listed steelhead rainbow trout and California red-legged frogs. (p. v)” The HCP and DEIS fail to provide detailed data and analysis related to proposed dredging operations and impacts to these and other Covered Species, downstream habitat, and habitat upstream of the dam. The HCP and DEIS seemingly discount negative impacts of the dredging on steelhead or downstream habitat and flows despite this statement above. Freyberg and Cohen (2001) states: “Therefore, any actions at Searsville Lake altering the delineated habitat are regulated under the Clean Water Act, Section 404(a)... (p. v)” The DEIS fail to adequately discuss requirements of the Clean Water Act, Army Corps, and other potential permitting requirements related to this new dredging operation, and must clarify this relationship and requirements. We believe that this new and massive dredging proposal would require Stanford to apply for an Army Corps permit, among others, and completely separate permitting process with multiple federal, state, and local agencies involved.

Proposed dredging operations in Searsville Reservoir will alter downstream flows

As described and cited elsewhere in this report, the surface elevation of Searsville Reservoir typically drops below the dam spillway by a couple of meters over the course of the summer as claimed water withdrawals, evaporation, and other factors associated with the Searsville Diversion Dam Facility, as well as natural factors, reduces capacity. The proposed dredging operation would have major impacts to downstream surface flow which are not quantified or discussed at all in the HCP or DEIS. Dredging operations would result in the removal of sediment from Searsville Reservoir and this would expectedly result in the reduction of the reservoirs water level at the same time and increased water storage capacity of the reservoir. This action directly alters the sediment and water association with Searsville Diversion Dam. This connection again requires that the dam be adequately assessed as part of the dredging proposal as the dredging alterations to the reservoir will impact the hydraulic and sediment impacts on the dam and resulting structural considerations. The other direct impact of dredging is the fact that dredging is expected to reduce downstream surface flows in Critical Habitat. The dredging operation’s reduction in reservoir sediment, lowering of the reservoir’s water elevation, and increased capacity of the reservoir will require additional creek inflow and time to fill the reservoir back up to the dam’s spillway and allow downstream surface flows to resume with the onset of winter rains. This would result in prolonged duration of no flows spilling over the dam and a later start to surface flows each year that dredging occurred. This impact is expected to prolong downstream low water and drying conditions, water quality, and habitat conditions in Critical Habitat and reduce steelhead migration opportunities downstream during the early rain and flow events of the winter. Because the HCP does not commit to a specific type of dredging machinery or quantify this activity in a meaningful way, it is impossible to assess other factors associated with the operation and impacts. However, certain types of dredging operations, and maintenance of this type of machinery and associated transportation equipment (cleaning, slurring, water trucks for road traffic, etc.), usually require considerable water use. The HCP and DEIS fail to assess the impacts of proposed dredging on water quality upstream and downstream of the dam, surface flows downstream of the dam, or additional water use requirements of the dredging operation. A detailed description and quantifiable

analysis of the proposed dredging operation and impacts to Covered Species, along with detailed cost estimates for the life of the HCP, must be included in the DEIS.

In discussing options for maintaining open water at Searsville Reservoir, Freyberg and Cohen (2001) had the following statement that shows the clear connection between the dam, reservoir, sediment management, and impacts to regional communities and ecosystems. “The final complexity arises from the fact that most, if not all, reservoir sediment management alternatives have impacts well beyond the immediate vicinity of the Searsville Dam and Lake” (Freyberg and Cohen 2001, p. 34). The proposed dredging plan in the HCP is a “sediment management alternative”, as described by Freyberg and Cohen (2001), and correctly noted above, to “have impacts well beyond the immediate vicinity of Searsville Dam and Lake”. The HCP and DEIS fail to define and thoroughly assess the impacts of the proposed dredging on Covered Species upstream and downstream of Searsville Diversion Dam or require adequate mitigation for this impact.

Searsville Diversion Dam Facility exacerbates projected climate change conditions

As noted in the DEIS (5-74 to 5-75), climate change is expected to increase temperatures, prolong droughts, reduced total rainfall, reduced stream flow, and increase the risk of fire. The DEIS also states that lower spring and summer creek flows would reduce the number of smolts able to leave a watershed, particularly in arid systems that dry back in most water years. These affects appear to be happening now and are expected to be well underway over the course of this 50-year proposed HCP. San Francisquito Creek mainstem dries up in the lower reaches during summer months and its hydrology is altered by multiple surface water diversions and groundwater well withdrawals. The DEIS states that the “San Francisquito Creek watershed would likely experience the increased temperatures, particularly in summer, and generally reduced streamflows...” The proposed HCP does not adequately address or mitigate for these projected impacts related to climate change on the stream environment or survival of Covered Species. The most effective action that scientists are recommending to safeguard highly migratory species, such as steelhead, in the face of climate change, is to provide unimpeded migratory access within their range. This means providing access to blocked habitat in their watershed to the cool, perennial flows generally associated with headwater streams. The best strategy for protecting migratory fish like steelhead from projected increases in fires from climate change, and resulting erosion, is also to ensure unimpeded migration within the watershed so aquatic species can avoid fire impacted stream reaches and seek protection in reaches less impacted by fires. For example, if much of the Bear Creek tributary burned and major erosion resulted, the best protection for steelhead in this tributary is to be able to migrate downstream and up a different tributary that did not burn and thus avoid those impacts.

The proposed HCP does not include any new access to perennial headwater streams blocked by migration barriers, and in fact, proposes a reduction in steelhead habitat, reduced flows below Searsville Dam with no established bypass flows, negatively impacted water quality below Searsville Dam and Reservoir, and periodic dewatering of

creek reaches for Covered Activities. The DEIS fails to analyze the severe implications of continued operation of Searsville Dam in light of climate change predication over the course of the proposed 50 year HCP. As noted already, the impassable dam prevents steelhead from accessing the largest tributary in the watershed where numerous perennial streams flow cool all summer long under coniferous forests in largely protected open space preserves. These perennial reaches provide the best hope for sustaining aquatic species in the face of climate change. Downstream, in currently occupied Critical Habitat, the Searsville Diversion Dam and Reservoir will continue to heat up stream flows in the reservoir and reduce downstream flows with expected temperature increases, reduced year-round flows and prolonged low water and dewatering. The cumulative impact of the Searsville Diversion Dam Facility, proposed dredging, water diversion, and lack of adequate bypass flows are expected to decrease water quality and quantity on lower Corte Madera Creek and the entire length of San Francisquito Creek downstream. Evaporation of critical flows will continue in the reservoir, and possibly increase at the reservoir with increased temperatures, eutrophic conditions, altered water chemistry, continued reduction in habitat complexity, and prolonged drought. Cumulative effects of the dam and reservoir would be expected to further decrease downstream surface flows, reduce duration of mainstem migration opportunities to and from the Bay, and potentially enhance stream conditions for non-native species proliferation and eutrophication. The combined impact is expected to have major negative impacts to Covered Species and compromise long-term survival. The DEIS fails to adequately discuss or assess many of these critical issues. In the face of climate change predictions, the proposed HCP would likely result in the further reduction of available wetted habitat, further increases in water temperature downstream of the dam, further reductions in habitat quality, further reductions surface flows, continued reductions in habitat complexity, sediment, and woody debris recruitment, and likely improved conditions for non-native warm-water adapted predatory species. For these reasons, we believe that the HCP is biologically inadequate to address climate change and long-term Covered Species protection and persistence and the DEIS fails to recognize and adequately assess the severity of the combined negative impacts stemming from the Covered Activities and proposed operation of the Searsville Diversion Dam Facility.

The Searsville Diversion Dam Facility is a significant safety liability

While the DEIS states that the “primary geologic hazards within the study area include the potential for earthquake induced ground shaking” and “dam failure” the DEIS then fails to conduct an even cursory analysis of this identified “primary hazard” (4.1.1.1). The USGS (2007) states: “Dam Failure- Earthquake shaking can cause dams to fail, potentially causing catastrophic downstream flooding and reduced water supplies.” A picture in the document shows an unnamed local dam with the caption, “Cracks in the top of this dam were caused by the 1989 magnitude 6.9 Loma Prieta earthquake” (USGS 2007). It is well documented that dams degrade over time. It is not known what the current structural condition of Searsville Dam is because it has been 42 years since the Division of Safety of Dams (DSOD) has inspected the foundation, toe, and groins of the dam (DWR 2007). The DSOD 2007 report for Searsville Dam states: “The plunge pool at

the downstream toe was dewatered in 1968 to evaluate the downstream toe and foundation. It has been approximately 40 years since this inspection was performed and approximately 117 years since the construction of this dam. The dam has aged and undergone few earthquakes since then. In light of above mentioned reasons, it would be prudent to dewater the pool and observe the downstream toe, groins and foundation conditions with field branch personnel and geology branch” (DWR 2007 p.2). Stanford is responsible for coordinating this inspection with DSOD. As the dam and concrete continue to age, and experience additional earthquakes, the structural integrity of the dam will be reduced over time. The active San Andreas Fault run adjacent to Searsville Reservoir, which occurs directly adjacent to the highest “Very Violent” shaking severity level on map Shaking Intensity Figure for the Peninsula-Golden Gate San Andreas Quake Magnitude 7.2. (ABAG 1999).

The DEIS states: “Three major active branches of this fault system (San Andreas Fault Zone), the San Andreas Fault, the Hayward Fault, and the Calaveras Fault, are located close enough to Stanford to produce strong seismic ground motion in the study area” and that “the San Andreas Fault system has been mapped passing through the western-most portion of Jasper Ridge Biological Preserve in the vicinity of Sausal Creek and Searsville Reservoir” (DEIS 4.1.1.2). The USGS (2007) states that “We know large and damaging earthquakes are certain to occur in the future” and that “at least eight faults in the Bay Area are capable of producing earthquakes of magnitude 6.7 or larger. Such quakes can kill and injure many people and cause substantial damage to buildings, roads, bridges, and utilities.” USGS (2007) states that there is a “62% probability for one or more magnitude 6.7 or greater earthquakes from 2003 to 2032” in the “San Francisco Bay region”. This is less than half way into the proposed duration of the HCP. The USGS states: “Many critical facilities in the Bay Area will likely experience damaging earthquake shaking in the next 30 years” (from 2003 report) and describes how some facilities were “built in the 1950’s before the use of modern seismic-safety standards.” Searsville Dam is almost 120 years old with no seismic safety upgrades known or described in the HCP. Regnery (1991) accounts that immediately after the 1906 earthquake, the Searsville Dam caretaker examined the dam and “noticed a crack of about a finger’s width on the east side” and later the “crack was patched, and it has been watched and repacked, but a small amount of water seeps through it. Others have offered reassurance by saying that it is an “expansion crack” (p. 121). Following the 1906 earthquake, the Searsville Dam caretaker “observed a curious phenomenon for several days: big bubbles of gas-six or eight inches in diameter-came to the surface of the lake; and when they broke, they left traces of oil” (Regnery 1991 p.121). The Division of Safety of Dams also reports that three vertical cracks appear on the face of the Searsville Dam and have been observed since the 1930’s (DWR 2007). At least part of the described water leaking “through” Searsville Dam in “joints” appears to be from earthquake-influenced cracking in the dam and connection to bedrock, which were not part of the dam’s design. The DEIS must investigate cracking and the overall structural integrity of Searsville Dam now and projected for the next 50 years.

The average lifespan of a dam is reported, by Stanford’s own National Performance of Dams Program, to be “40 years” and Searsville Dam is 120 years old (NPDP 2010).

Dams are known to degrade over time. It is not known what the current structural condition of the dam. As the dam and concrete continue to age, experience additional earthquakes, and as the reservoir fills in and transported sediment potentially scours the dam, the structural integrity is expected to be reduced over time. The DEIS fails to discuss and assess the potential safety risks associated with seismically induced failure of the over-century-old Searsville Dam as well as the potential for the Searsville Diversion Dam Facility to elevate the regional earthquake risk of reservoir-induced-seismicity. This public safety issue must be addressed in detail in the DEIS.

The DEIS fails to adequately assess safety risks with the Searsville Diversion Dam

The DEIS states: “None of the Minimization Measures or monitoring would require earth-moving of the scale that could trigger a geologic hazard or adversely affect soil resources” (DEIS 5-1). “Conservation Program activities would not induce a geologic event or cause slope instability, erosion, or soil failure, and therefore would not have an adverse effect on resources that are vulnerable to geologic or seismic events” (DEIS 5-2). These quotes and others in Section 5.0 of the DEIS contain definitive and speculative statements about serious safety risks and in some cases fail to adequately describe or analyze proposed dredging operations at Searsville Reservoir, reservoir fluctuation impacts on potential reservoir-induced-seismicity, dam failure inundation analysis, earthquake safety of Searsville Dam, and continued operations of the Searsville Diversion Dam Facility for the 50 year life of the proposed HCP. This section must analyze the entire Searsville Diversion Dam Facility, as well as proposed diversion and overflow measures, dredging operations, relation to dam safety, dam failure inundation data and implications, location adjacent to the San Andreas Fault and associated faults (see Map on page 4-66), liquefaction and earthquake-induced landslides noted adjacent to the dam and within the reservoir (see Map on page 4-64), and the historic, current, and future impacts of Searsville Dam and Reservoir on reservoir-induced-seismicity (RIS).

Section 5.0 of the DEIS be rewritten and eliminate such unsupported statements as; “the Proposed Action provides a benefit related to geologic hazards and soils.” As noted on page 5-60 of the DEIS, the Santa Clara Valley Water District is preparing a Three Creeks Habitat HCP that acknowledges future “dam safety upgrades” that will be needed at their facilities and this DEIS should also acknowledge that over the next 50 years of the proposed HCP Searsville Dam would likely require major dam safety upgrades. The DEIS should quantify when major dam retrofits, upgrades, failure might be expected and what the estimated costs would be to address such scenarios over the next 50 years.

Personal safety liability

At least two, and possibly more, deaths are known to have occurred from people falling off of Searsville Dam. Regnery (1991) reports that in 1897, “either the force of water or the slippery surface of the concrete caused Duerst to lose his balance and fall about 40 feet, crushing his skull and drowning in the pool below” (p. 118). Again, in 1899, a “15-year-old student from Sacramento slipped on the moist, slick surface (of Searsville Dam) and fell to his death” (Regnery 1991 p.114). This safety liability continues to this day with regular visitors and tours across the dam as well as researchers and maintenance crews regularly crossing and accessing the dam. Trespassers are also known to enter

Jasper Ridge Biological Preserve and climb the face of the dam and cross the crest of the dam. The DEIS fails to address the safety liability of the dam or any current safety measures in place.

As part of the document's cumulative effect analysis of past, present, and future actions, the DEIS must assess in great detail the safety of Searsville Dam and projected major earthquake risk over the next 50 years, and other risks associated with the dam. This assessment must include the structural condition and design of the dam, comparison of the design to current earthquake standards at dams, associated geology, relation to the adjacent San Andreas Fault, dam failure inundation impacts to downstream communities, dam failure impacts to downstream habitat and Covered Species survival, and historic, current, and future regional earthquake threats from reservoir-induced-seismicity at Searsville Reservoir.

The Searsville Diversion Dam Facility impacts flooding

Upstream flooding risks caused by Searsville Diversion Dam will increase in the future Stanford's Freyberg and Cohen (2001) note that "aggradation of sediment" in the reservoir, caused by Searsville Dam, is "exacerbating flooding for about 20 residences along Family Farm Road" (p. iv). "Field observations, in addition to the bathymetric data for 1996-2000 make it clear that substantial sediment has accumulated and is continuing to accumulate above the crest elevation [of the dam] in the delta areas" (Freyberg and Cohen 2001, p. 17). Freyberg and Cohen describe the construction of a causeway in 1929, "which was essentially a small, non-engineered dam constructed across the upstream portion of the reservoir in an attempt to localize sedimentation upstream of it" (Freyberg and Cohen 2001, p. 21). In discussing the mitigation measures already completed to minimize flood damage on Family Farm Road, Freyberg and Cohen state that, "these measures provide relatively short-term flood damage mitigation in the face of continuing aggradation on Corte Madera Creek alluvial fan and floodplain." Moffatt and Nichol Engineers (2003) state: "Flooding in the vicinity of Family Farm Road has become more problematic in recent years. Sediment deposition and floodplain aggradation on the Corte Madera alluvial fan, alluvial plain, and Searsville Lake delta has increased the flood risk to adjacent properties. The floodplain aggradation will continue, further aggravating the degree of flood risk." Freyberg and Cohen (2001) acknowledge that one option for "[L]ong-term mitigation of this problem could require.... removing Searsville Dam. (p.iv)" Freyberg and Cohen go on to identify "removing the reservoir by removing the dam" as one possible "long-term damage mitigation" option. "Upstream of the reservoir, there needs to be a careful analysis of how flooding along Family Farm Road will be affected with or without dam lowering" (Freyberg and Cohen 2001, p. 50).

The HCP and DEIS fail to provide the above and additional detailed information or assessment about the extent of this sediment accumulation above the dam crest, rate and upstream expansion of accumulation, expected future upstream impacts on flooding and habitat, impacts of the constructed causeway, quantify pre-dam conditions, identify current and future flooding hazards caused by the dam, describe recent measures taken to

reduce flooding upstream, quantify how this safety issue will evolve over the course of the next 50 years of this permit, measures already taken to reduce the flooding and safety issues caused by the dam and reservoir, already implemented project effectiveness, and detailed plans to mitigate this risk to upstream residents. This analysis must also include an analysis of all cumulative effects related to the past, present, and future proposed actions related to flooding and their impacts to Covered Species and habitat upstream and downstream of the dam. The HCP and DEIS also fail to assess the above cited findings that dam removal may be the most effective long-term solution to this and other mentioned safety hazards. Along with all of the biological benefits, analysis of the noted long-term dam removal solution to upstream flooding must be assessed as a viable alternative to increase public safety and ensure Covered Species survival in the face of climate change predictions to downstream habitat availability, water quality, and surface flows.

Searsville Dam presents a dam failure inundation risk downstream

Please see additional discussion above in the earthquake and safety risk comment section. The Stanford University Medical Center (SUMC) Facilities Renewal and Replacement Draft EIR (SUMC 2010) states that: “The SUMC Sites are in a dam inundation zone from failure of the Searsville Dam. Searsville Reservoir is the major reservoir in the San Francisquito Creek watershed. Searsville Reservoir does not provide protection from flooding because it does not have an outlet works and cannot be operated as a flood control facility. Storm water runoff can only drain out of the reservoir by flowing over the spillway at the crest of the dam. Since the reservoir level cannot be lowered, it does not provide any flood storage or attenuation once it is filled by seasonal rains.” The DEIS should assess in detail what dam failure would entail for downstream communities in terms of inundation, but also in terms of projected mass sediment flushing from the reservoir, potential for mass sediment release to cause the creek to jump it’s bank during a high flow event, expected threat to human life, and impacts to Covered Species, Critical Habitat, and potential elimination of downstream wildlife populations.

While the Searsville Diversion Dam Facility exacerbates flooding upstream and represents a catastrophic safety hazard downstream, the facility itself was never built nor operated to provide any flood protection benefits downstream. Stanford’s Freyberg and Cohen describe it this way; “Because of its ungated overflow spillway and lack of lower-level outlets into Corte Madera Creek, Searsville Dam provides almost no flood water storage or peak flow reduction downstream” (Freyberg and Cohen 2001 p. iii). A well designed dam removal and sediment management plan could have significant benefits to downstream flood protection, would eliminate upstream flooding issues related to the dam, and eliminate dam failure and other safety hazards associated with the dam. The DEIS must consider and assess the flooding implications of continued operation of the Searsville Diversion Dam Facility, potential scenarios over the next 50 years, and impacts to public safety and Covered Species protection.

Other social and environmental impacts of the Searsville Diversion Dam Facility

The DEIS (5-16) fails to include and adequately analyze air quality, noise, traffic, and waste (sediment) impacts from the proposed dredging operation for Searsville Reservoir and briefly described potential proposal along Corte Madera Creek to make major channel alterations upstream of the reservoir. Dredging equipment, heavy equipment, sediment transport, truck loads on public roads, resulting air quality and noise impacts are not sufficiently described and must be assessed for the 50 years of this proposal. The channel grading and modification options mentioned should be clarified and explained in detail with concurrent assessment in the DEIS of impacts to Covered Species and habitat, as well as required permitting for such work. The DEIS should also quantify and analyze the long-term costs and above-mentioned impacts of expected Searsville Diversion Dam Facility maintenance, repairs, dredging, channel alteration, possible seismic upgrades, environmental upgrades, and retrofitting expected to occur over the next 50 years of this proposed HCP.

Environmental Justice

The DEIS (5-59) does not address the issue of environmental justice as related to the Searsville Diversion Dam Facility. As shown above, the proposed HCP includes retention of a nearly 120 year old dam, of undetermined structural integrity, adjacent to an active earthquake fault, with considerable safety hazard risk. The ABAG (2010) Dam Failure Inundation Map shows that dam failure at Searsville Dam would devastate the lower reaches of the San Francisquito Creek watershed and notably the lowest reaches; including Menlo Park, Palo Alto, and East Palo Alto. The DEIS should assess the safety and risk factors in relation to Searsville Dam with a minimum 50 year projection as it relates to environmental justice issues in all downstream areas and communities.

Collaboration is needed to address the Searsville Diversion Dam Facility

The HCP and DEIS fail to adequately commit Stanford University coordination with San Francisquito Creek watershed flood protection and restoration efforts outside of the Stanford Campus. Stanford's Freyberg and Cohen end their Executive Summary for the report *Maintaining Open Water at Searsville Lake* by stating, "it is clear that any scheme for the sustainable maintenance of open water at Searsville must be integrated into the overall management plan for the flood-damage mitigation and habitat maintenance and restoration in San Francisquito Creek" (Freyberg and Cohen 2001 p. vi). "The challenge of sustainably maintaining open water surface at Searsville Lake must be considered within the larger context of management issues confronting Stanford University and the communities of the San Francisquito Creek watershed" (Freyberg and Cohen 2001, p. 23).

Despite the attention drawn, and requests made, in letters during the HCP scoping process, almost 4 years ago (excerpts below and full letters included in the DEIS Appendix A), the NMFS and USFWS fail in the DEIS to adequately address direct, indirect, and cumulative impacts caused by the Searsville Diversion Dam and Reservoir and have failed to require actions to minimize or mitigate these impacts, including requiring adequate bypass flows and fish passage. It is extremely troubling that the two

federal agencies that wrote this DEIS have ignored these requests and even such basic duties as including an analysis of Searsville Dam as a “past” action under the required Cumulative Effects analysis in a DEIS. The level of analytical rigor put into researching, collecting data, analyzing, and crafting effective mitigation for this HCP is severely lacking. During the four years that went by since these letters below were written, NMFS could have been working with Stanford to conduct the necessary studies to determine adequate bypass flows, fish passage alternatives, and ways to reduce the other negative impacts caused by the Searsville Diversion Dam (as was done in preparation of and for the implementation of modifications to the Los Trancos Diversion Dam and successful SHEP program). Local, regional, state, and national groups are looking to the NMFS and USFWS to show leadership in proactively protecting and restoring our endangered species and working collaboratively with all relevant stakeholders to address complex issue that in the end impact us all and find solutions that we believe will be in our mutual best interest.

Letter from Trish Mulvey, San Francisquito Watershed Council, to NOAA and USFWS, dated October 9, 2006 states: “Searsville Dam and Reservoir should be included as essential habitat conservation elements that are covered in the Stanford HCP- including assessment of removal of the dam.”

Letter from Matt Stoecker, Biological Consultant and San Francisquito Watershed Council’s Steelhead Task Force founder, to NOAA and USFWS, dated October 4, 2006 states: “To be effective, the HCP must address this facility (Searsville Dam and Reservoir) and its impacts on the San Francisquito Creek watershed and ecosystem.” “The HCP should outline a specific plan and timeline for Stanford to work with interested watershed stakeholders to: a) compile baseline dam and reservoir conditions, b) develop and analyze Searsville dam removal alternatives, and c) develop and implement a final design plan that will protect native species, improve habitat conditions, and provide effective, unassisted steelhead passage to and from upstream habitat.”

Letter from Steve Rotherth, California Director for American Rivers, to NOAA and USFWS, dated October 31, 2006 states: “Searsville Dam and Reservoir is listed as one of facilities associated with Stanford University’s operations. As such, the environmental analysis conducted under NEPA in preparation of an HCP must identify the direct, indirect, and cumulative impacts of this facility on listed species.” (Please see the rest of this letter for additional ESA requirements and requests relating to analysis of bypass flows, dam modifications, fish passage, and dam removal)

Removal of Searsville Diversion Dam can provide enormous benefits

Searsville Dam and Reservoir have significant negative impacts

As noted earlier, Stanford’s consultants (NHC 2001) report the drastic effects of dams on Critical Habitat and Covered Species to include; interrupting “the longitudinal continuity of habitat and migration paths for organisms, and alter the flux of water, sediment, organic debris, and nutrients in rivers, in many cases changing seasonal and long-term

flow patterns”, in addition to, creating “major discontinuities in fish migration paths, which fish ladders can at best only partially rectify (because even if adult passage is possible, juveniles may be unable to safely pass downstream). Reservoirs interrupt riparian corridors... Dams also alter nutrient flux through rivers, trapping nutrients and transforming organic material in reservoirs. Probably the best-documented effects, however, are effects of dams on sediment supply and flow regime in downstream reaches” (p.8).

Mr. Dennis McEwan, from the California Department of Fish and Game states: “Ecological restoration should improve physical and biological processes, habitat functions, and linkages to allow necessary expression of ecological and evolutionary heritage. Because of their location at the margin of the range, California steelhead have a tremendous resiliency to environmental variation and perturbation. However, this resiliency is absolutely contingent upon them having access to upper reaches and tributaries, and reestablishing access through dam removal or modification...” (SF Bay Steelhead Symposium 2001). Mr. McEwan goes on to state that “recovery must focus on re-establishing linkages within populations by restoring access to upper watershed reaches.”

Dr. Jerry Smith, Fisheries Biologist with San Jose State University, states: “Removal of Searsville Dam would create more potential habitat in the upper, reasonably-wet watershed” (SF Bay Steelhead Symposium 2001). Smith and Harden (2001) also recognize the limitations of fish ladder alternatives for Searsville Dam, stating that the “height of the dam and limited amount of flow makes a fish ladder alternative highly unfeasible” (p.65). However, Smith and Harden (2001) state: “Due to the high quantity and adequate quality of spawning and rearing habitat upstream of the dam, fish passage upstream of Searsville Dam should be investigated.

The San Francisquito Watershed Council identified Searsville Dam as blocking the most steelhead habitat of any barrier in the watershed and the Center for Biological Diversity and Center for Ecosystem Management and Restoration has identified the dam as one of the most limiting factors to steelhead in the South San Francisco Bay. The Preserve harbors numerous non-native species that are dependent on the artificial Searsville Reservoir and spread to compete with and prey upon native species. The Preserve has a unique opportunity to promote the preservation of native species and become a model for watershed restoration and good land stewardship.

The removal of Searsville Reservoir would effectively eliminate or reduce the artificial habitat that supports most non-native fish species in the watershed (as well as bullfrog habitat) and would eliminate or dramatically reduce their numbers quickly and effectively. Dam removal should be discussed as an effective means by which to eliminate most of these non-native species and significantly reduce others. Dam removal has the potential to turn the unsustainable, artificial, reservoir habitat into restored stream habitat, riparian forest habitat, wetland habitat, and upland habitat.

Freyberg and Cohen (2001) acknowledge that one option for “[L]ong-term mitigation of this problem could require.... removing Searsville Dam. (p.iv)” Freyberg and Cohen go on to identify “removing the reservoir by removing the dam” as one possible “long-term damage mitigation” option. “Upstream of the reservoir, there needs to be a careful analysis of how flooding along Family Farm Road will be affected with or without dam lowering” (Freyberg and Cohen 2001, p. 50)

Stanford University’s Jasper Ridge Biological Preserve website states: “[D]am removal...does hold the potential for significantly enhancing riparian habitat and restoring steelhead trout runs through the Preserve and to the upper watershed. So unlike lowering the dam, removing Searsville Dam could potentially provide a net gain to the Preserve” (JRBP 2010).

In addition, much of the established riparian vegetation at the upper end of Searsville Reservoir that provides beneficial habitat can remain with multiple dam removal alternatives. This analysis should also include a detailed analysis of historic coho salmon use in the watershed, potential high quality coho salmon habitat in the wetland areas submerged by the dam and reservoir, and future restoration potential with dam removal and expected improvements to habitat and flow conditions in the watershed.

The removal of Searsville Dam can improve wildlife migration, water quality, water flows, habitat conditions, reduce or eliminate non-native species, eliminate ongoing dredging needs, eliminate dam failure risk and inundation, eliminate upstream flooding caused by the dam, potential to improve flood protection downstream, and restore Jasper Ridge Biological Preserve to a native preserve.

The DEIS fails to include essential data and adequate analysis of critical issues related to the presence, operation, and maintenance of the Searsville Diversion Dam Facility. The HCP and DEIS inappropriately separate the presence of the dam from Covered Activities that rely on and include the dam itself. The DEIS fails to adequately assess the many negative impacts to Covered Species and human safety outlined in this letter. Inadequate mitigation measures are proposed to ensure the continued survival and persistence of the Covered Species and we feel that implementation of this HCP would be extremely detrimental to their survival. All of these species utilize and rely on water and the streams and wetland environments of Stanford land. They migrate along these flowing arteries throughout our watershed and region. Stanford’s water supply has had a huge negative impact on these species for over a century. Recently some of the water system has been upgraded to benefit listed species and Stanford. Searsville Dam remains the lone antiquated and not updated water diversion that is have devastating impacts to the aquatic environment and larger watershed ecosystem. This HCP and DEIS fail to address and mitigate this and other critical issues impacting the health of the entire San Francisquito Creek watershed, Stanford lands, and local communities. We look forward to considering a new approach.

INDIVIDUAL DEIS COMMENTS

1-1 Paragraph 3

The DEIS states that “...only undeveloped lands provide habitat for the (listed) species” This statement is incorrect. Listed species occur along developed lands, especially within riparian areas along the stream banks of San Francisquito Creek, the Webb Ranch lease, nursery lease along lower Los Trancos Creek, and other residential lease and mixed-use areas adjacent to the top of the streambank.

2-6 Second Paragraph, Searsville Dam

The DEIS states that “Searsville Dam and Reservoir are located on San Francisquito Creek.” Searsville Dam and Reservoir are not located on San Francisquito Creek, but rather the Dam occurs on Corte Madera Creek and the Reservoir occurs on, and has buried portions of, Corte Madera, Sausal, Dennis Martin, Alambique, and other smaller streams.

Flood Control Capabilities of the Dam-

The DEIS states that, “The dam was built in 1982 and has trapped a significant amount of silt, reducing its flood control capacity.” The word “silt” does not accurately describe the diverse types of sediment (boulders, cobbles, gravels, sand, silt) and woody debris trapped behind the dam. The above quote also incorrectly states that the trapped silt is “reducing its flood control capacity”. This statement shows a clear lack of knowledge about the dam and reservoir. Searsville Dam was not built to, nor has it ever been operated to, provide flood control capabilities. The reservoir has lost water storage capacity, but not any “flood control” capacity.

Figure 3-1- Management Zones Map

This and other maps showing the different Management Zones (1-4), include Zones 1 and 2 adjacent to riparian areas and Zone 1 along streams. At Searsville Dam the maps show an approximately 0.1 mile wide (according to the scale provided on the map legend) area defined as Zone 4 across the dam and downstream. The HCP and DEIS fail to delineate the Management Zone boundaries with enough textual or visual detail to understand where some of these exact boundaries occur. The DEIS should provide additional detail on Management Zone Boundaries and in particular ensure that Zone 1 occur along the entire stream all the way to the base of the dam.

4.2.2.3 Western Pond Turtle

“They are found...from Searsville Dam to the downstream edge of Stanford’s boundary” and have been “historically found along the marshier areas of Searsville Reservoir”, however, “there have been no recent records from the reservoir”. In addition, I have observed and photographed western pond turtles in Corte Madera Creek, just upstream of the Jasper Ridge Boundary twice in the mid 1990’s and once in the early 2000’s.

4-30 Third Paragraph

A note about the 2006 Jones and Stoked report cited in the DEIS. As noted in the DEIS, the geographic scope of this study was very limited and did not include the upper

mainstem of San Francisquito Creek or its two largest sub-watersheds (Corte Madera Creek and Bear Creek) and thus does not represent a detailed watershed-wide habitat assessment or limiting factors analysis. This limitation was acknowledged and discussed at several San Francisquito Watershed Council's Steelhead Task Force meetings before the study began, with recognition of funding constraints and sole County (Santa Clara Co.) geographic scope limitations. As such, many of us on the Steelhead Task Force, as well as the report authors, concluded that the study missed assessing much of our watershed's most important habitat reaches and most limiting factors to steelhead. The Steelhead Task Force focused our efforts on what we, and the resource agencies, believed to be the most limiting factor to San Francisquito Creek steelhead; migration barriers. Searsville Dam is the largest migration barrier in the watershed and blocks or submerges approximately 18 miles of historically accessible steelhead habitat.

The 2006 Jones and Stokes report, cited in the DEIS (4-30), listed the following key finding related to factors limiting steelhead: "The lack of key habitat features such as boulder and cobble aggregations, large woody debris jams, root wads, and backwater habitat limit both winter and summer rearing habitat, with winter productivity more impaired than summer." Searsville Dam traps all boulders and cobbles as well as large woody debris and has reduced input of these key habitat features from the entire length of San Francisquito Creek for over a century and continues to do so today. In addition, riparian vegetation, root wads, and occurrence of backwater habitats are all impacted by the presence of the dam and reservoir and altered sediment transport and hydrology. The DEIS must analyze these impacts using the abundant, even NOAA authored, scientific literature related to such impacts. Such impacts have had and continue to have an enormous impact on stream habitat conditions for the entire length of San Francisquito Creek and listed steelhead, red-legged frog, and pond turtle. It should also be noted that upstream of the dam, large woody debris, boulders, cobbles, root wads, and backwater channels are present with rainbow trout populations.

4-31 First Paragraph

The DEIS must state that these non-native fish species identified below Searsville Dam come from the reservoir, are allowed to spill over the dam, reproduce in the reservoir, spread downstream from the reservoir, and are well studied stillwater species that rely on the presence of the reservoir's artificial stillwater habitat to survive and perpetuate in the watershed. This section should include other non-native species such as bullfrog and crayfish. The DEIS must analyze the impact of these exotic species on listed native species and their relationship to the dam and reservoir, as well as how current operations at the dam allow for the spread of these species downstream and the resulting resource competition and predation. Mitigation measures to eliminate the non-native fish and reduce bullfrog habitat should be identified with realistic costs estimates.

4-31 Second Paragraph

The DEIS states; "Stanford water diversion facilities act as partial barriers to steelhead migration and movement within Stanford-adjacent stream reaches." This statement is incorrect. The DEIS should state that Searsville Dam is a water diversion facility that is a complete barrier to steelhead migration. Figure 4-9 on page 4-71 shows "Searsville

Diversion” clearly noted as one of the “diversion” facilities of the “Lake” Water System. Only the Los Trancos Diversion Dam, Lagunita Diversion Dam, and San Francisquito Pump Station facilities are partial barriers.

5-11 Last Paragraph

The DEIS states: “Ongoing Stanford operations do not adversely affect surface or groundwater quality, modify groundwater quality or recharge, increase the risk of damage caused by flooding, or lead to the violation of applicable Federal, State, or local laws. The operations are currently regulated in a manner that protects water quality.” The DEIS continues on page 5-12 third paragraph: “The ongoing Covered Activities have not had an adverse effect on surface, drinking, or groundwater quality, and have not significantly increased the risk of damage caused by flooding. The continuation of these activities would not adversely affect hydrology or water quality.”

These above combined statements constitute perhaps the most unsubstantiated, absurd, and dangerous language in the entire DEIS. Page 5-64 of the DEIS states that “The gradual increase in impervious surfaces due to development in the watersheds has resulted in flooding problems in portions of the San Francisquito Creek watershed...” Stanford’s impervious footprint in the watershed is large, and ongoing operations and maintenance of these areas is part of the cumulative effects of past actions and current operations. The DEIS must quantify how the ongoing operation and maintenance of hundreds of acres of impervious surface, multiple surface water diversions, groundwater wells/pumps, and water quality issues resulting from Searsville Reservoir do not adversely affect surface and groundwater quality. This is an unbelievable statement to read in a federal environmental document and again leads to serious concerns about the analytical rigor that went into its preparation. In addition, the DEIS fails to show how operations do not adversely increase the risk of damage caused by flooding. Also, see above comments related to Searsville Dam and downstream safety hazards. In addition, it is well document that operations at the Searsville Diversion Dam and Reservoir have had, and continue to cause, flooding issues upstream and off of Stanford lands, putting upstream landowners at risk of flooding and impairing vehicle access. Contrary to the above statements made in the DEIS, the ongoing presence and operation of the Searsville Diversion Dam Facility does appear to violate several applicable laws including CDFG Codes cited and others included in the letter submitted by Shute, Mihaly, and Weinberg. The DEIS also fails to adequately address how climate change over the next 50 years of this proposed plan is expected to impact water quality and quantity issues below Searsville Dam as described previously. The DEIS must analyze how climate change predications are expected to impact water in the San Francisquito Creek watershed, listed species, and habitat conditions and in relation to proposed continuation of activities over the 50 year life of the proposed HCP.

5-65 Second Paragraph

See above comments in this letter related to this DEIS language about no adverse effect on flooding.

5-71 Second Paragraph, Second and Third Sentence

The DEIS should describe here that currently new, natural flood control projects are being built that provide dramatically improved habitat conditions for steelhead, red-legged frogs and other species. In addition to the example on the Guadalupe River, other projects are combining the removal of obsolete dams, with improvements to downstream channel capacity at confined bridges and culverts, as well as improved water diversion facilities to restore miles of historic habitat, restore submerged wetlands for peak flow retention, provide exceptional rearing habitat for steelhead and coho salmon, and safeguard downstream communities and water supplies. Completed and planned dam removal projects on the Rogue River, Elwha River, Ventura River, and others across the country are showing that dam removal, ecosystem restoration, improved flood protection, reduced liability, and reliable water supply can all be attained in a well-planned, collaborative project with agency support and with abundant public and also private funding opportunities.

5-78 Table 5-6 Comparison of Alternatives, First row “Geologic Hazards and Soils”
See above comments related to geologic hazards at the Searsville Diversion Dam Facility. All three descriptions for these alternatives should be rewritten and reanalyzed with regards to described potential geologic hazards associated with the continued operation and maintenance of Searsville Dam and Reservoir, including landslides, liquefaction, reservoir-induced seismicity, dam failure inundation data, and current and future structural integrity of the dam.

6-1 Persons and Organizations Consulted

It is particularly concerning that so much readily available information and involved groups and individuals were not referenced or contacted in the preparation of this DEIS. The list of contacted people includes someone from Friends of Corte Madera Creek in Marin County and does not include any of the dozens of individuals and groups that comprise(d) the former San Francisquito Watershed Council, CRMP, Steelhead Task Force or the current groups focused on the creek and restoration including San Francisquito Watershed Project, Acterra, San Francisquito Joint Powers Authority, American Rivers and Beyond Searsville Dam. In addition, key people from Stanford, Center for Ecosystem Management and Restoration, Center for Biological Diversity, DFG, USGS, local governments, and other participants in almost two decades of watershed council activities are not listed. The Peninsula Conservation Center and Acterra have many unreferenced documents that would have added greatly to this document, its accuracy, and the preparers understanding.

STANFORD HCP COMMENTS FOR INCLUSION IN DEIS COMMENTS

Page 25 Non-native Aquatic Species

As described above, the artificial stillwater of Searsville Reservoir is where most or all of these non-native fish species were introduced, persist, spawn, and disperse from into adjacent creeks. The HCP fails to adequately address the serious threat posed by these non-native species and source population at Searsville Reservoir.

Page 32 Top Right Paragraph

The HCP states that, “returning adults (steelhead) can be 15 to 25 inches in total length”. The adult female steelhead we (San Francisquito Watershed Council and DFG) transported from a drying pool below the CALTRANS culvert on the Bear Gulch Creek tributary in early 2000 measured 31 inches. Jim Johnson, the former Stream Keeper for the San Francisquito Watershed Council, noted adult steelhead in the watershed up to 40 inches in length (Johnson Undated Report).

Page 35

The HCP (p.35) states: “There is no direct evidence that the steelhead population reproducing in the San Francisquito watershed has declined in the last 100 years or is declining at the present time.”

This statement is absurd. First of all, 100 years ago most of the watershed was still recovering from the almost complete removal of old growth redwoods and other trees from it’s headwaters and habitat conditions were already severely altered. Secondly, Searsville Dam had already been blocking the largest spawning and rearing tributary in the watershed for almost 20 years, effectively reducing the tributary habitat by over one third. In addition, other barriers, such as old saw mills and water diversions on Bear Creek were blocking some of the best habitat in other tributaries. Searsville Dam, Bear Gulch Diversion Dam, and others had been removing water from the watershed for over a decade. There are few records in existence, and maybe none relating to steelhead numbers, about the watershed before major habitat alterations began to occur more than 150 years ago. The Agencies must contact the Center For Ecosystem Management and Restoration (Gordon Becker) as well as Stoecker Ecological (Matt Stoecker) to obtain the enormous amount of data related to historic steelhead and coho in the San Francisquito Creek watershed and the south San Francisco bay. The DEIS is seriously lacking in referenced and assessed salmonid data for the watershed.

Page 57 Creek Monitoring Facilities

While the HCP and DEIS do not adequately assess the impacts of Searsville Dam and Reservoir on Covered Species and downstream habitat, there are existing creek monitoring facilities in various locations within the watershed (with access to records), resource agencies, and others to analyze data relating to flows and even water quality, that would be helpful for Stanford. For example, Stanford and Palo Alto operate creek monitoring devices upstream of Searsville Dam on Corte Madera Creek, on Bear Creek, on Los Trancos Creek, and multiple locations on San Francisquito Creek. The longstanding USGS gauging station also has decades of flow data. A detailed analysis of these monitoring devices’ data should be conducted to gain understanding of possible impacts from the Searsville Diversion Dam’s operations as well as provide adequate analysis for the HCP and DEIS.

Page 58 Fifth Paragraph

The HCP again states: Searsville Dam is a barrier to fish migration in the system, and isolates some 3 to 5 miles of suitable spawning habitat from migrating adults.” See previous information about estimated habitat quantity blocked by the dam.

Page 58 Footnote 4

The HCP (p.58) states: “Despite this siltation, Stanford has been able to continue diversions at Searsville Dam by adjusting the operation of the water diversion to more efficiently divert water into the conveyance and distribution system during higher flow periods in winter and spring.” The HCP and DEIS must show detailed records of all completed modifications and changes to the Searsville Dam diversion facility, including dates, costs, type of construction, and resulting impact on the diversion facility, operations, and any changes to diversion capability and alterations to dam height, overall configuration, water release and diversion controls, and flashboard operation.

Page 59 Felt Reservoir

The HCP states that “recent system upgrades allow for water from... Searsville Reservoir to be moved to Felt Reservoir.” The DEIS must include detailed information about when these upgrades occurred, what was upgraded to allow this capability, what modifications, if any, were made at Searsville Dam and Diversion infrastructure and what the upgrades mean to diversion capabilities and operations at the Searsville Diversion Dam facility and downstream Covered Species. The DEIS must ascertain, if recent modifications to the Searsville Diversion Dam Facility were legally permitted and when they were made. As noted in the section above on Searsville Diversion Dam Facility, Stanford experts state that the Searsville Diversion was not being used from at least 1998 to 2001 due to sediment issues. In addition, the recent upgrades to divert water from Searsville Diversion to Felt Lake need to be considered in relation to above stated water rights discrepancies and adequate permitting for such actions. The DEIS must describe in detail these above discussed issues related to water rights, water transfers, operation and physical modifications, and permitting compliance.

Page 94

The HCP does not propose any exclusionary fencing at Felt Reservoir to promote the establishment of riparian vegetation along the edge of the reservoir. Cattle grazing currently is allowed along the entire perimeter of the reservoir and therefore no riparian trees or vegetation are allowed to become established. Well-planned exclusionary fencing at Felt Reservoir, with adequate cattle access to water, could create a unique and biologically rich ecosystem for several of the Covered Species and other wildlife. We would like to make clear, that we view Felt Reservoir as a well-positioned, off-stream water storage facility and support its continued operation and even possible expansion to offset potential storage capacity loss with the possibility of removing Searsville Dam.

Page 125

NOAA Fisheries should require that the described installation of a stream flow gauge on Corte Madera Creek immediately downstream of Searsville Dam be expanded to include a water quality component that gauges water temperature, dissolved oxygen, nutrient levels, and other key water parameters impacting habitat for Covered Species. The same parameters should be measured at the gage on Westridge Bridge upstream of Searsville Dam to assess reservoir modifications to water quality.

Page 132

The HCP estimates annual incidental mortality of juvenile steelhead to be 120 individuals or up to 8% of the population and that loss of steelhead habitat would be 2000 feet. Additionally, “the HCP would allow a maximum of 600 feet of creek to be dewatered in a single year” (page 136). This proposal is unacceptable and will put steelhead at risk. The HCP proposed no expansion of steelhead habitat size by allowing fish passage upstream of the impassable Searsville Dam and adequately determined bypass flows, but rather high mortality rates and a reduction of habitat size as well as the periodic dewatering of already susceptible water impacted areas.

Page 136

The HCP states: “Based on the best available data, the number of juvenile steelhead annually resnet during the summer filed season at Stanford over the last decade has ranged from 1,500 to 9,000 individuals.” The HCP and DEIS fail to include adequate data or methodologies used to estimate populations sizes and ranges.

The HCP states that annual “electrofishing is estimated to collect up to 2,000 juvenile steelhead” (HCP page 136) and collection mortality may be up to 90 juveniles or 6% of the population. Collection activities associated with the monitoring program are too high and pose a serious risk to steelhead in areas with impacted habitat and water quality especially during summer flows (as described); the time of year when they are most susceptible to harm from collection efforts.

Page 136

The HCP states that “water diversion structures and their operations could result in the take of steelhead. While this take has not been observed, and the population has continued to thrive in the existing environment, it is possible that diversion and operations could strand steelhead, increase rate of predation, or inhibit dispersal. It is estimated that the diversion operations wit the SHEP operating protocols could result in the annual incidental mortality of 20 juvenile steelhead. Incidental mortality associated with maintenance of these diversion facilities is included in the estimates associated with dewatering described above.” Many of the statements made in the above paragraph are false. The statement acknowledges expected take at “water diversion structures and their operations”, however, the HCP and DEIS fail to include Stanford’s identified water diversion structure at Searsville Dam (whose diversion activities are proposed for inclusion in the HCP). Take at Searsville Dam has been observed from adult “salmon” blocked below the dam in the earliest years of it’s operation (see other observation information described in this letter) to adult steelhead observed by this author jumping against the dam in the mid 1990’s. In addition, the HCP states and staff at Jasper Ridge have also noted, that steelhead are regularly observed in the scour pool below the dam, which becomes isolated and strands steelhead, inhibits dispersal, and contains non-native predatory fish species. Steelhead populations are not known to “thrive in the existing environment” on Corte Madera Creek downstream of the dam, where water quality is highly impacted by Searsville Reservoir, water releases are modified or prevented at Searsville Dam, dispersal is inhibited or prevented, and non-native predatory fish spilling over from Searsville Reservoir are most abundant. Incidental mortality estimates

associated with the Searsville Diversion Dam are not considered or included in the HCP or DEIS. This major omission in assessing Stanford's water diversion facilities renders mortality estimates low and incomplete. Mortality of steelhead and other Covered Species associated with the Searsville Diversion Dams operations and maintenance must be evaluated and included in any assessment of water diversion facility impacts. Other direct and indirect negative impacts associated with the Searsville Diversion Dam Facility described in this letter are not included in this HCP or DEIS and must be an integral part of such environmental documents and proposed HCP for Covered Species utilizing creeks below the diversion facility.

Page 136 The HCP states, "Monitoring activities will result in incidental mortality but will provide information important to the conservation of the species. Overall, the HCP will improve and protect steelhead habitat, and likely increase the population of steelhead at Stanford." The HCP shows an excessively high potential rate of steelhead mortality (the 8% mortality annually does not include the extensive and omitted assessment of the Searsville Diversion Dam Facility), proposes an actual decrease in available habitat, and shows no data estimating the stated, "likely" increase in population size.

Page 139

The HCP states that the Army Corps's Notice of Intent for the San Francisquito Creek Feasibility Study initiated by the JPA "identified several potential alternatives that could affect Stanford lands, including the construction of new detention basins, modification to Searsville dam, or the removal of Searsville dam."

The 2008 NMFS Biological Opinion for the SHEP states: "Stanford, in coordination with NMFS and the California Department of Fish and Game, has developed an operating plan with fish bypass flows for San Francisquito Creek Pump Station and Los Trancos Creek Fish Ladder and Diversion Structure that provides suitable instream flow conditions for threatened CCC steelhead below each facility."

No such suitable operating plan with fish bypass flows is proposed in the HCP or required in the DEIS and thus suitable instream flow conditions are not met downstream of the Searsville Diversion Dam Facility.

The 2008 NMFS Biological Opinion for the SHEP states: "During 2005, NMFS conducted field studies on San Francisquito Creek" and in February of 2006 completed the report "*An assessment of bypass flows needed to protect steelhead below Stanford University's water diversion facilities on Los Trancos Creek and San Francisquito Creek.*" This report was integral in the development, permitting, and implementation of the now celebrated Stanford University Steelhead Habitat Enhancement Project (SHEP). As was accomplished with this successful SHEP project, a similar study, in collaboration with the California Department of Fish and Game, should be carried out for the Searsville Diversion Dam in order to calculate suitable bypass for proposal prior to any requests for coverage of this structure. With this letter, we request that NMFS and DFG collaborate with Stanford to conduct a similar bypass flow assessment in a timely manner

independent of outcomes for the HCP process, but definitely prior to any agreements related to the Searsville Diversion Dam.

Other Comments-

Felt Reservoir- There is not mention in the HCP of enhancing the ecosystem benefits of Felt “Lake” Reservoir for Covered Species such as frogs, turtles, and maybe eventually salamanders. This reservoir is currently grazed to waters edge by cattle and exclusionary fencing of large portions of the reservoir could support riparian vegetation and productive habitat, while still allowing adequate watering access for cattle. The HCP and DEIS should assess native riparian vegetation and wetland restoration benefits at the Felt Reservoir.

Lagunita Diversion Dam

As described in the Implementing Agreement for the Stanford University Habitat Conservation Plan dated April 2010, we agree with the statements on page 11 that: “removing the dam and existing fishway, concrete weir, and apron between the abutments, and restoring the creek to a more natural configuration would best improve juvenile and adult CCC steelhead passage.” We request that this effort, which began before the HCP process, continue as planned and independently from the HCP process.

Other Barriers

The HCP and DEIS fail to identify and discuss several known partial migration barriers on Stanford lands and discussed in the Steelhead Task Force meetings with Stanford staff for years. These include; the concrete low-flow crossing over San Francisquito Creek in Jasper Ridge Preserve just downstream from the Bear and Corte Madera Creek confluence, recently emerged grade control type structures upstream of the golf-cart crossing that was removed, and possibly the Bonde Weir (if Stanford Lands are part of this barrier just downstream of the railroad crossing). While the first two are not serious barriers during most flows, they may limit migration opportunities, especially when considered cumulatively with other partial barriers. The Jasper Ridge in-stream crossing also represents a possible mortality issue for a variety of life stages for Covered Species in San Francisquito Creek, which is not addressed in the HCP and DEIS.

Comments from Jeff Miller, Center for Biological Diversity

The concept of Stanford earning mitigation credits through preserving, managing, and enhancing habitat that it already owns and should already be managing for ecological values is flawed. This approach creates no net benefit to the affected listed species nor does it create new habitat, unless enhancement projects dramatically increase habitat value. The end result, after Stanford completes build-out of its 180 acres of proposed development, is net loss of at least 30, and possibly up to 150 acres (15 acres of development in Zone 1; 30 acres in Zone 2; 105 acres in Zone 3) of habitat for listed species, and fragmentation of remaining suitable habitat.

These lands are under no threat of development, other than by Stanford. The EIS tries to downplay the impact of development and loss of 180 acres of covered species habitat, by calculating the percentage of habitat lost, but any habitat loss for these species is significant. It is unclear whether the habitat enhancements in the HCP will make up for the habitat loss in terms of population numbers. The attempt to equate not destroying some of the highest value habitat and putting it in reserves with "creating" new habitat for the affected species is misleading.

To provide meaningful mitigation, compensation for impacts to special-status species habitat should consist of protecting through purchase or conservation easement privately owned lands under threat of development with habitat value for special status-species, at a minimum of a 1:1 ratio. Given their well-documented problems with funding, monitoring and long-term management, mitigation banks should not be used. High value habitat and migration corridors on Stanford land should also be preserved, not an either/or situation with preserving on-site habitat or preserving off-site habitat. The alternatives section should include an alternative that both preserves high value habitat and migration corridors on Stanford land as well as purchase of or conservation easement on private lands in the region for habitat loss, at a robust mitigation ratio.

Any Stanford lands put into permanent conservation easements must be managed for special-status species habitat and ecosystem values in perpetuity, thus the EIS must describe a dedicated funding and monitoring program and who will be responsible for ensuring this outcome.

The EIS inappropriately proposes Stanford be able to use previously created and enhanced breeding ponds for CTS in the CTS Reserve area for mitigation credits for future development that will impact CTS habitat. It is unclear whether these ponds were created as mitigation for past Stanford activities that impacted CTS. The EIS references the CTS management agreement signed with USFWS and CA Fish and Game in 1998. Stanford has a long history of take of CTS at Lake Lagunita for example. It should be clarified whether these

ponds were created and enhanced as mitigation for past practices, and Stanford's past efforts to lessen take and mismanagement of CTS habitat should not be used as mitigation for future development that will harm CTS.

The concept of assigning relative habitat value to "zones" based on whether they are permanently occupied by covered species is deeply flawed. For species such as the CTS, CRLF, SFGS, and WPT, which migrate seasonally from wetlands and breeding areas to uplands, preservation of upland habitats and migration corridors can be as important as preservation of breeding habitat. Loss of or fragmentation of uplands or migration corridors, regardless of their relative habitat value, can result in extirpation of these species. For example, construction in Zones 2 or 3 that blocked migration of any of these species into uplands hibernation habitat could impact the species locally. Zones 2 and 3 contain significant migration corridors and uplands habitat for CRLF, CTS, SFGS, and WPT, and almost all of the Zone 2 and 3 lands are well within the known dispersal distances for these species from the creek corridors in Zone 1. The EIS does not adequately evaluate loss or degradation of dispersal and migration corridors or connectivity between breeding and uplands habitats for these species.

The discussion in the EIS of intergrades of SFGS with red-sided garter snake should not be used to downplay impacts to SFGS habitat in the HCP. The USFWS will determine whether the southern San Mateo County snakes are considered part of the listed SFGS population. Given that there are only 7 viable breeding populations in existence, any SFGS on Stanford lands are significant to the overall conservation of the species. The draft Recovery Plan for the SFGS identifies Stanford lands as important for potential reintroduction of SFGS and recovery of the species.

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REFERENCES

The HCP and DEIS do not adequately review and assess important information in the following documents:

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<http://www.abag.ca.gov/bayarea/eqmaps/mapsba.html>Earthquake

ABAG 2010 Dam Failure Inundation Hazard Map for Palo Alto/Stanford. Association of Bay Area Governments Source 1995 <http://www.abag.ca.gov/cgi-bin/pickdamx.pl>

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SUMC 2010 Stanford University Medical Center Facilities Renewal and Replacement Draft Environmental Impact Report, Prepared for the City of Palo Alto May 2010 SCH # 2007082130

Smith J. and Harden D. 2001 Adult Steelhead Passage in the Bear Creek Watershed Prepared for the San Francisquito Watershed Council. Supported by a grant from the California Department of Fish and Game July 2001

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