

of pools on the Santa Rosa Plain would be triggered by the listed plants. Since the salamander and the federally listed plants do not substantially overlap, salamander breeding pools are unlikely to be protected by presence of the plants or their habitat. Furthermore, even if breeding pools of this animal are avoided due to the presence of a federally listed plant species, this protection may only extend to the pool itself with a small upland buffer. Since Sonoma County California tiger salamanders spend up to 80 percent of their life in small mammal burrows in upland habitats surrounding breeding pools, the protection of the pool itself, with concurrent loss of uplands surrounding the pool, would still result in the loss of local Sonoma County California tiger salamander breeding sites.

We conclude that regulation of wetlands filling by the Corps under section 404 of the CWA is inadequate to protect the Sonoma County California tiger salamander from further decline. Section 404 implementation fails to prevent losses of numerous small wetlands in California that may support California tiger salamander breeding. Section 404 does not regulate the continuing losses of California tiger salamander terrestrial habitat (except to the extent certain agricultural activities may be regulated). When authorized fills under section 404 do result in compensatory mitigation for wetlands losses, it is unlikely that California tiger salamander habitat losses at specific fill sites can, and will be, fully and successfully mitigated.

State

Since 1994, the CDFG recognizes the California tiger salamander as a "species of special concern" by the CDFG. More recently, the California tiger salamander has been placed on the State's list of protected amphibians, which means that it cannot be taken without a special permit issued for scientific collecting or research. Also, as stated earlier, the California Code of Regulations (2002) specifies California tiger salamanders can no longer be taken, possessed, or used for fishing bait. However, any more stringent protection of California tiger salamanders or their habitat, as would be provided under a CESA listing or designation as a Fully Protected species by CDFG, is lacking.

CDFG recognizes the importance of California tiger salamander conservation at the local population level, and routinely considers and recommends actions to mitigate potential adverse effects to the species during its review of development proposals. However,

CDFG's primary regulatory venue is under CEQA (Public Resources Code Sec. 21000–21177). CEQA has been a variable, and apparently inadequate, regulatory mechanism for providing protection to the California tiger salamander and its habitat.

The California Environmental Quality Act (CEQA) (Public Resources Code Sec. 21000–21177) requires a full disclosure of the potential environmental impacts of proposed projects. The public agency with primary authority or jurisdiction over a project for which it has discretion is designated as the lead agency and is responsible for conducting a review of the project and consulting with the other agencies concerned with the resources affected by the project. Section 15065 of the CEQA Guidelines, as amended, requires a finding of significance if a project has the potential to "reduce the number or restrict the range of a rare or endangered plant or animal." Once significant effects are identified, the lead agency has the option of requiring mitigation for effects through changes in the project or to decide that overriding considerations make mitigation infeasible (CEQA Sec. 21002). In the latter case, projects may be approved that cause significant environmental damage, such as destruction of listed endangered species and/or their habitat. Protection of listed species through CEQA is, therefore, dependent upon the discretion of the lead agency involved, although "overriding considerations" are infrequently found.

However, neither CEQA nor CDFG provide completely effective regulatory mechanisms for reducing or eliminating the introduction of non-native fish into Sonoma County California tiger salamander habitat. For example, there is no State regulation of non-native fish stocking into ponds and waters occupied by Sonoma County California tiger salamanders. Agencies and individuals may purchase fish from CDFG-licensed breeders and stock into such waters an array of non-native sunfish, catfish, and other fish for recreational fishing. Similarly, there is no State regulation of western mosquitofish stocking into Sonoma County California tiger salamander breeding ponds and waters. In addition, lethal control of small mammals in places where small mammal burrows occur may affect the survival of the California tiger salamander because the practice is not State-regulated, and is still widely and commonly practiced throughout the California tiger salamander's range. The burrows of these small mammals are used by California tiger salamanders to estivate

during the summer and fall months of the year.

Local

We are not aware of any specific county or city ordinances or regulations that provide protection for the Sonoma County California tiger salamander. Sonoma County recently has begun applying regulatory oversight to conversions to vineyards, which may indirectly benefit the species. This oversight is resulting in requirements for full-scale environmental analyses, restrictions on the steepness of slopes onto which vineyards may be established, and requirements for erosion control plans and measures. However, it is unclear if the restriction on planting vineyards on steep slopes will result in more pressures to cultivate flat areas that contain habitat for the Sonoma tiger salamander.

E. Other Natural or Manmade Factors Affecting Its Continued Existence

Several other factors, including contaminants, ground squirrel and gopher control, mosquito control, hybridization with non-native salamanders, competition with introduced species, and decreased population viability may have negative effects on California tiger salamanders and their aquatic and upland habitats.

Contaminants

Like most amphibians, California tiger salamanders inhabit both aquatic and terrestrial habitats at different stages in their life cycle, and are likely exposed to a variety of pesticides and other chemicals throughout their range. They are extremely sensitive to these pollutants due to their highly permeable skin, which can rapidly absorb pollutant substances (Blaustein and Wake 1990). Toxins at lower than lethal levels may still have adverse effects, such as causing abnormalities in larva and behavioral anomalies in adults, both of which could eventually lead to lethal effects (Hall and Henry 1992; Blaustein and Johnson 2003).

California tiger salamanders also could die from starvation by the loss of their prey-base. Hydrocarbon and other contaminants from oil production and road runoff; the application of numerous chemicals for agricultural production; roadside maintenance activities; urban/suburban landscaping applications; and rodent and vector control programs may all have negative effects on tiger salamander populations, as detailed below.

Road mortality is not the only risk factor associated with roads, as oil and other contaminants in runoff have been