Attachment 1: Type conversion and PRC 4482

Type conversion as related to California chaparral and coastal sage scrub occurs when the dominant shrub species are dramatically reduced or extirpated, the shrub canopy and biodiversity are significantly diminished, and non-native grasses are provided an opportunity to colonize and spread due to single or multiple disturbance events (e.g. cool season fires). Considering the changing climate and increasing fire frequencies, a fire rotation less than 30 years should be considered as increasing type conversion risk.

In chaparral plant communities, fire return intervals less than 30 years, depending on soil, aspect, and climatic conditions, can lead to type conversion by compromising the ability of chaparral shrub species, especially obligate seeding species (e.g. *Ceanothus spp.*, *Arctostaphylos spp.*, etc.), from properly regenerating. Resprouting species (e.g. *Adenostoma fasciculatum*) can also be negatively impacted by short fire return intervals since these plants need sufficient time to recharge their underground starch supplies to produce viable resprouts; short fire return intervals short-circuit this process. Native annuals that contribute to rich postfire species diversity are also negatively impacted by short fire return intervals as invasive non-native species out-compete them for nutrients and space. Coastal sage scrub communities are somewhat more resilient to fire return intervals less than 30 years because of a general lack of obligate seeding shrub species. Too-frequent fire disturbance in either chaparral or coastal sage scrub favors the establishment of rapidly reproducing non-native annual grasses and forbs that have a higher ignition probability and produce cooler fires than chaparral or coastal sage scrub communities. Establishment of grasses and forbs in place of shrubs can lead to an undesirable feedback loop called the grass-fire cycle.

Photo 1: An example of type conversion (chamise chaparral to non-native grassland) due to a single prescribed burn conducted during the cool season in the 1980's within Pinnacles National Park, California.

Photo 2. Type conversion of mixed chaparral to non-native grassland due to various vegetation treatments in the Cleveland National Forest, Trabuco Ranger District.

Photo 3. The type conversion of manzanita/mixed chaparral to non-native grassland due to mastication in the Los Padres National Forest, Santa Barbara Ranger District. An older treatment area is in the background, being invaded by non-native grasses. The most recent treatment is in the foreground. Note soil disturbance which facilitates the spread of non-native grasses.

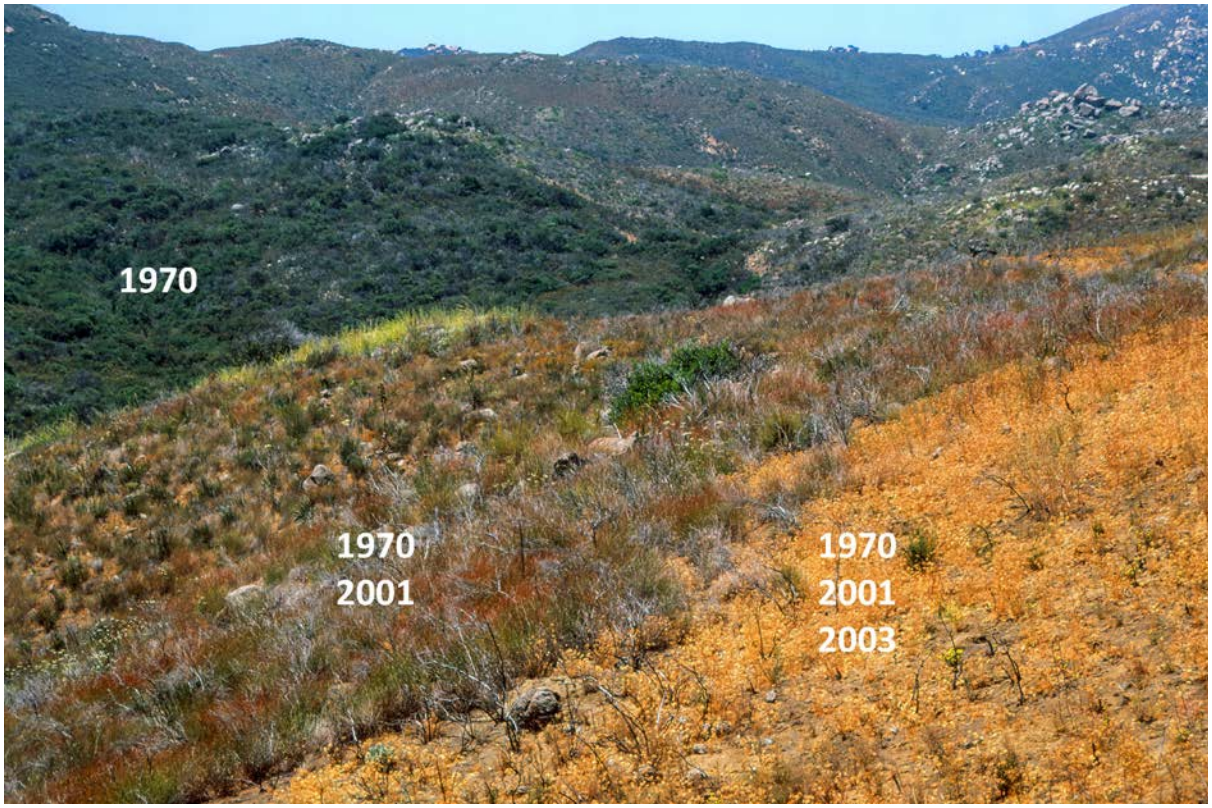

Photo 4. Type conversion of mixed chaparral resulting in reduced biodiversity. The far left shows an old-growth chaparral stand last burned during the 1970 Laguna Fire. The middle/left of the picture shows an area recovering from the 2001 Viejas Fire. It is composed primarily of chamise, deerweed, and several other shrub species. To the right is a portion of the Viejas Fire scar reburned in the 2003 Cedar Fire. The Cedar fire scar is now filled with non-native grasses. The majority of the resprouting shrubs have been killed and no obligate seeding species, such as Ceanothus, are present. The site was resurveyed in 2018. Results indicated a continued loss of obligate seeding species, a significant loss of resprouters, and large areas remain colonized by non-native grasses.

Missing a definition of type conversion in California Public Resources Code - PRC § 4483

(a) To the extent feasible, the board's Vegetation Treatment Program Programmatic Environmental Impact Report, when certified, shall serve, in addition to any identified entities in the report, as the programmatic environmental document for prescribed fires initiated by a third party for a public purpose pursuant to Section 4491.

(b)(1) It is the intent of the Legislature that additional consideration be provided for chaparral and coastal sage scrub plant communities that are being increasingly threatened by fire frequency in excess of their natural fire return patterns due to climate change and human-caused fires.

(2) Prescribed burning, mastication, herbicide application, mechanical thinning, or other vegetative treatments of chaparral or sage scrub shall occur only if the department finds that the

activity will not cause “type conversion” away from the chaparral and coastal sage scrub currently on site.

(3) This subdivision shall be in addition to the requirements in the Vegetation Treatment Program Programmatic Environmental Impact Report.