

Finding Related to Cactus

Review the following effects analysis and discuss the questions below:

There are 20 acres of Carbone cactus (a sensitive species) found between Loon Lake Road and Main Road. This is one of three populations found on The Ranch. The other occurrences of Carbone cactus are about 40 acres each.

The north parking lot would directly result in a loss of 2 acres of habitat by covering it up with fill. Construction will generate dust, which will settle in visible concentrations adjacent to the proposed site, including 3 acres of sensitive plant habitat. Dust has been shown to inhibit pollination of the cactus flowers (Gravel Pit Monitoring Report, 2005).

Overall, about $\frac{1}{4}$ of the sensitive species habitat (5 acres out of 20) may be affected due to the permanent loss of 2 acres of habitat and one growing season of reduced reproductive capacity on an additional 3 acres. This means less area would function to maintain or increase this sensitive plant population. Studies have shown that a minimum viable population is approximately 10 acres in size (Baker 2002).

Cumulatively, the effects of the proposed action are added to 3 additional acres of dust from the ongoing gravel pit and another acre of habitat permanently lost to the reasonably foreseeable powerline. These cumulative effects are acting to reduce the overall size and reproductive capacity of this particular population of Carbone cactus.

Does the analysis support a finding of no significant impact for this resource?

How would you describe your conclusion?

What would your finding be if credible science established that a minimum viable population was 18 acres in size?

What would your finding be if, in addition to the 18-acre minimum size, this was the only occurrence of Carbone cactus on the ranch? Only occurrence in Latin America?

Could you make the same conclusion about Alternative X?

Finding Related to Water Quality

Review the following effects analysis and discuss the questions below:

Schoolhouse and parking lot construction would involve excavation and grading, essentially exposing all soil within the construction site. Using normal best management practices (BMPs) such as straw wattles will minimize soil loss from the construction site. The Agricultural Research Service's Revised Universal Soil Loss Equation (RUSLE) predicts 1 ton/acre soil loss from the bunkhouse site over the expected construction period. With its 3-acre footprint, the proposed bunkhouse complex stands to lose 3 tons of soil during construction.

The RUSLE results, factoring in the cumulative contribution of sediment from the 2-acre gravel pit and recorded flows, indicate turbidity in Briar Creek is expected to be approximately 25 mg/L. This is well within water quality standards. However, a temporary reduction in trout spawning success can be expected from increased bedload sediment in lower Briar Creek. Where Lower Briar Creek widens out and the water velocity slows, suspended particles settle and become bedload sediment, rolling along the creek bottom. Bedload sediment can fill in interstitial spaces or crevices in the gravel stream bed, suffocating eggs or fry if present.

Does the analysis support a finding of no significant impact for this resource?

How would you describe your conclusion?

What would your finding be if the Juticalpa municipal water supply came from Lower Briar Creek?

What would your finding be if trout in Lower Briar Creek were a threatened species?

Would anything be different about Alternative X? What would it be?