

Demonstration: Cumulative Effects to Carbone cactus (sensitive species)

Consider the direct and indirect effects of the Proposed Action on Carbone cactus.

1. What past actions had or still have an impact on Carbone cactus, and should therefore be considered in the cumulative effects analysis for Carbone cactus? *None*
2. What present actions are having an impact on Carbone cactus, and should therefore be considered in the cumulative effects analysis for Carbone cactus? *Gravel pit – dust inhibits reproduction of cactus plants on 3 acres of habitat. Note: Some students might debate whether this action is also a past and future action. It could be presented either way, as long as the cumulative effects analysis recognizes that the dust impacts are on the same 3 acres.*
3. What reasonably foreseeable future actions would have an impact on Carbone cactus, and should therefore, be considered in the cumulative effects analysis for Carbone cactus? *Powerline – construction activities would remove 1 acre of habitat. Gas company is not reasonably foreseeable because they haven't filed for a permit. It's a pipe dream*

4. a. Describe the cumulative effects (do the math):

	<u>Acres of habitat lost</u>	<u>Acres of Lost Reproductive Capacity</u>
Proposed Action	2	3
Past Action(s)		
Ongoing Action(s)		3
Future Actions	1	
Total:	3	6

- b. Interpret and answer “**why does this matter?**” *Cumulatively, the above actions are causing a reduction in the overall size and spread of this particular population of Carbone cactus.*

The proposed action would reduce the 20-acre cactus population to 18 and a reasonably foreseeable future action would further reduce it to 17 acres.

The additional effect of short- and long-term loss of reproductive capacity acts to further reduce the genetic diversity and potential increase of this population.

Alternative X

5. Describe the differences in cumulative effects under Alternative X.

Alternative X avoids the 2-acre habitat loss associated with the proposed action, so there is no cumulative effect relative to habitat loss. Alternative X has a larger footprint (4 acres instead of 3), which is more than offset by being slightly farther away since it doesn't encroach on the cactus. Alternative X would likely impact a little less cactus habitat with dust, but still has a cumulative effect on cactus reproductive capacity.

Comparison of Alternatives				
	Acres of Habitat Lost		Acres of Lost Reproductive Capacity	
	<u>PA</u>	<u>Alt.X</u>	<u>PA</u>	<u>Alt.X</u>
Proposed Action	2	0	3	4
Past Action(s)				
Ongoing Action(s)			3	3
Future Actions	1	1		
Total:	3	1	6	7