

## Ecological relationships for Biological Soil crust cover



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## Why are there crusts on this soil?



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## Soil crusts fill the spaces between bunchgrasses like chinking between logs in a cabin



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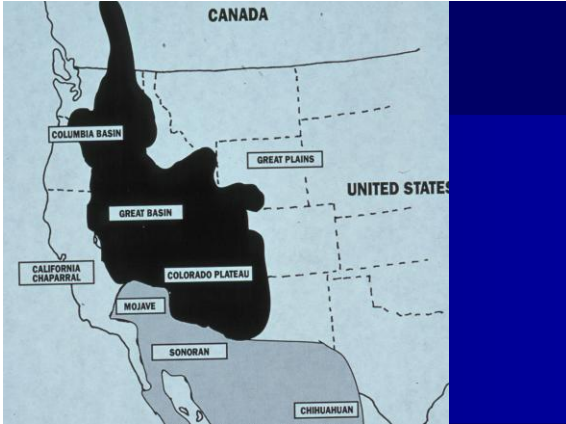
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**Summary BSC cover is:  
Influenced by:**

- Soil texture
- Vascular plant cover
- Elevation
- % rock cover
- Stability of the rocks
- Soil depth
- Type of climate cold/ hot deserts

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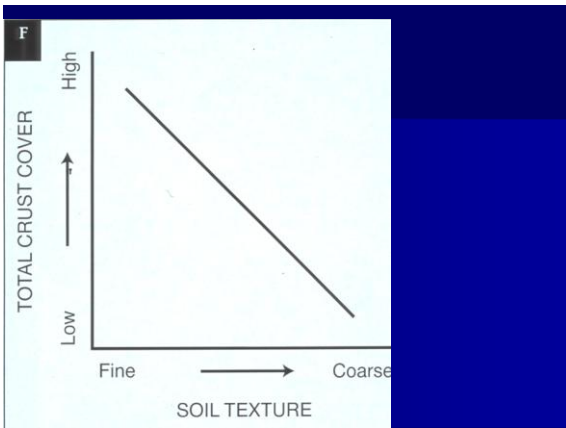
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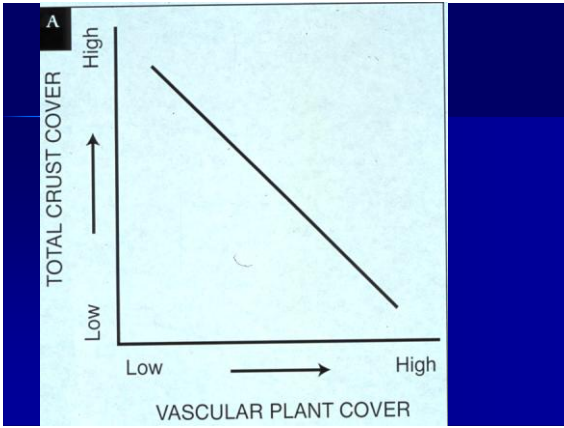
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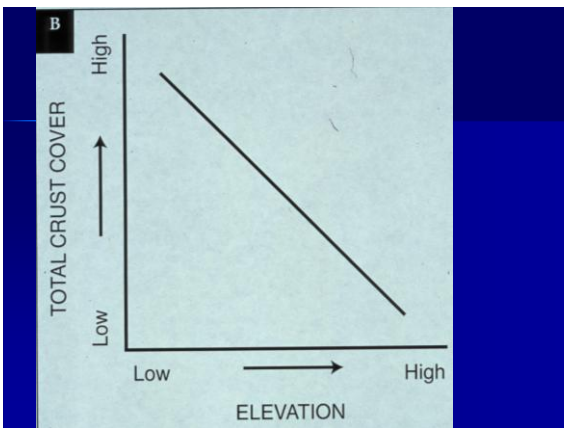
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Potential crust cover is high



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Potential crust cover moderate



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Crust cover is low, too much vegetation



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# Crust potential?



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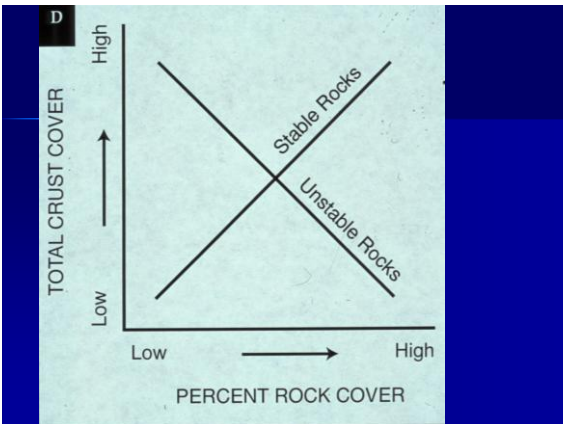
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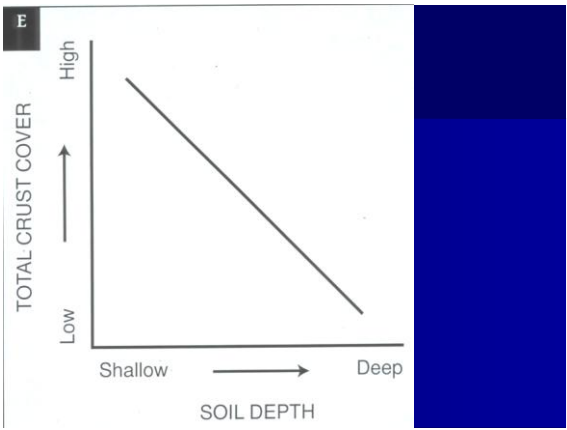
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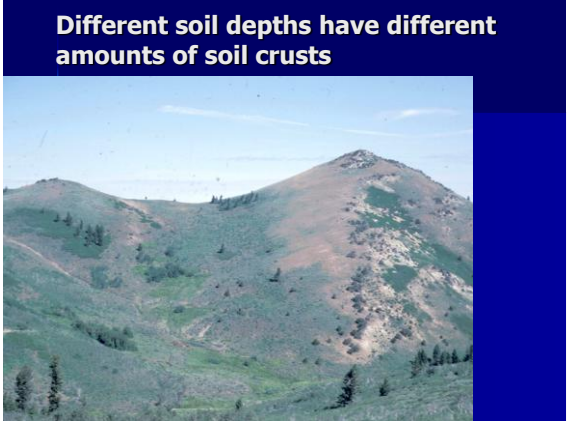
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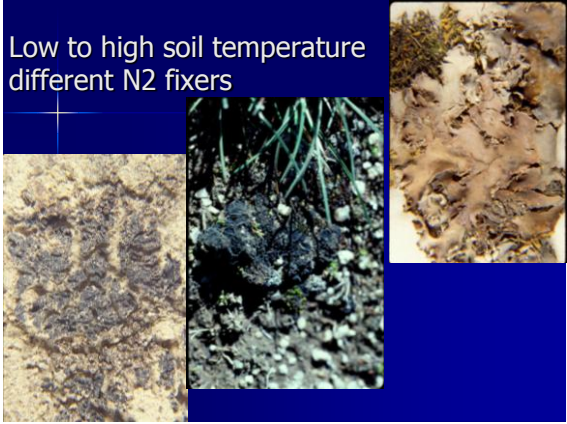
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## Soil crust lichens that are calcium carbonate indicators

Low Calcium carbonate	High Calcium carbonate
Acarospora schleicheri	Aspicilia fruticulosa
Arthonia glebosa	Aspicilia hispida
Aspicilia reptans	Buellia elegans
Cladonia borealis	Caloplaca tominii
Diploschistes muscorum	Collema tenax
Leptochidium albociliatum	Fulgensia bracteata
Megaspora verrucosa	Psora cerebriformis
Ochrolechia upsaliensis	Psora decipiens
Placynthiella spp.	Psora tuckermanii
Xanthoparmelia wyomingica	Toninia sedifolia

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## The Ecology of Crusts depends on:

- Soil texture
- Climate
- Competing vascular vegetation
- Calcareous soil
- Spatial arrangement of vegetation
- Site disturbance history





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## Why are there no crusts in this site?




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**Crust are limited by**

- OHV's
- Livestock trampling
- Wildfires



- & Other soil disturbances
  - Leads to bare ground
    - Dust
    - Recruitment of cheatgrass and other weeds

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