

Soil Crust Task Force

Report and Recommendations

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Charges

Rangeland health/soil quality indicator needs

- Identify agencies' needs and potential uses for biological soil crust information
- Locate areas to test soil crust identification, definition criteria in the field
- Develop and test the process to describe soil crusts
- Prepare recommendations and report for WRCSS Standards committee

Soil Crust Task Force Activities

- Colorado Plateau
 - Moab area, UT, May 6-9, 2002
 - AKA “Mecca” for biological soil crusts (BSCs)
- Training/technical guidance - J. Belnap
 - biological soil crust (BSC) diversity
 - Functional
 - Morphological
 - soil parent material-BSC relationships

Soil Crust Task Force Activities

- Test BSC surface cover methods – A. Tugel
- Explore BSCs in soil descriptions
- Presentations
 - Soil Stability Kit – A. Tugel
 - State and Transition Models – P. Shaver
- Discussions
 - Agency BSC information/training needs
 - Recommendations

Training & Technical Guidance



Jayne
Belnap

Lichen-rich BSC on Gysiferous Soil Parent Material



Eolian Fine Sand Parent Material: BSC training, cover method tests, soil description



Well-developed Pinnacles



Dominated by Cyanobacteria



BSCs: Up-close and Personal



Testing Surface Cover Methods



Stratified Line-point Intercept



Soil Stability Kit

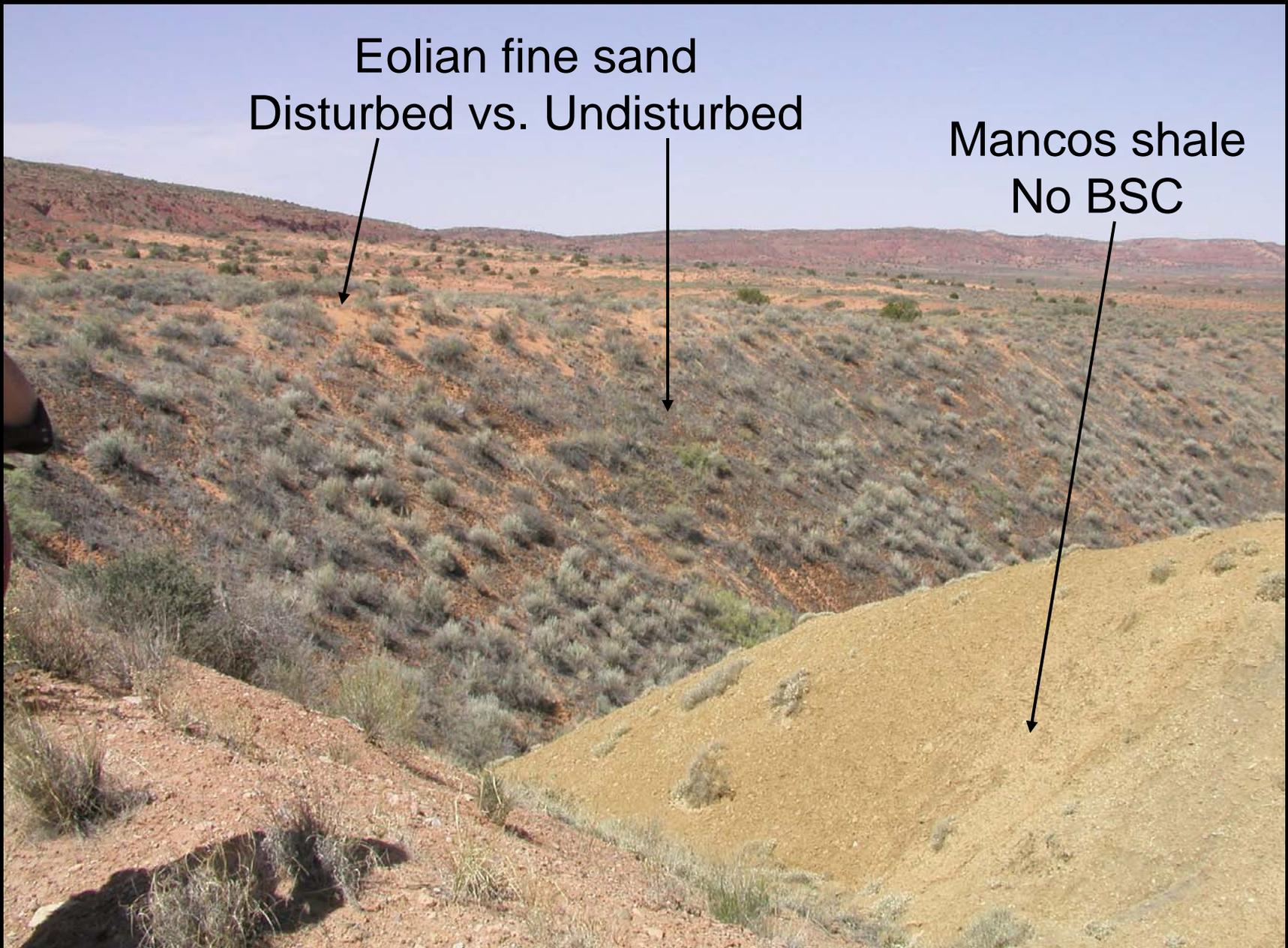


Stability test (A. Tugel) in action!



BSC Distribution:

Depends on Soil Parent Material, Disturbance



Vehicle Damage on Pinnacled Crust



Recommendations

- **Biological crusts are important**
- **Identify and describe in soil survey**
 - % cover by morphological group
(moss, lichen, cyanobacteria – light vs. dark)
 - Surface roughness/surface relief
(organism neutral)
 - Other
 - location in relation to canopy cover
 - color of crust organisms

Recommendations

- **Develop and evaluate approaches to describing crust morphology**
 - **A-horizon with biological crust (Au, crust)**
 - **Surface feature**

Recommendations

- **Include ALL surface features in soil surface cover methods**
 - **soil surface stability, runoff, infiltration**
- **Protocols needed**
 - **Collect data for functional interpretation**
 - **Increase efficiency of data collection**
 - **Develop national transect database**
 - **statistical analyses can be performed.**

Recommendations

- **Surface cover methods specified for each soil survey**
 - Ocular estimates and presence/absence of morphological group recorded in field notes
 - Line-point transects for surface features at typical pedons and map unit component documentation
 - Photo documentation of surface features at pedons
 - Quadrats for training and calibration

Recommendations

- **Develop and add crust data elements to NASIS**
- **Test soil surface cover and soil description methods on other BSCs in other regions**
 - Chihuahuan Desert, Sonoran Desert, Mojave Desert, Great Basin, short grass prairie
- **BSC training needed**
 - Multi-agency support encouraged

Soil Crust Task Force: Tanned and Ready for Their Next Assignment!

