IAP Soils

Future changes to climate may affect vulnerable soils before we see changes to vegetation, species and habitats. Soil indicators that can be used to predict change to above-ground systems include temperature, moisture, organic carbon, pH, and microbial diversity. These indicators can help prescribe management actions that maintain ecological functionality needed to adapt to a warmer climate. Changes to soil properties are generally slow, although once changes occur to soils, both soils and ecosystems may have reached irreversible conditions. Protecting soil health is key to maintaining ecosystem integrity and storing carbon (soils have three times more carbon than vegetation in an average forest). Changes expected in soils in a warmer climate include:

- Increase in soil respiration and CO\textsubscript{2} release from the soil;
- Increase in soil bulk density and reduction in soil porosity;
- Increase in growing-season days in cold high-elevation soil;
- Decrease in available soil water at low elevation, and increase at high elevation; and
- Mixed changes to soil pH, cation exchange capacity, and soil biology.

Management options to maintain soil health in a warmer climate include:

- Map soil vulnerability to climate change at regional and project scales.
- Increase and maintain soil carbon. A two percent increase in soil carbon by weight will allow 1 to 1.5 inches more of water storage in the soil profile.
- Promote native plant diversity as well as soil microflora diversity.
- Use grazing management systems that can respond quickly to short periods of drought.

IAP Timeline

April 2015: Kick-off meeting
May 2015 - Feb 2016: Synthesize info and develop draft chapters
March 2016: Five two-hour webinars
May - June 2016: Five two-day workshops throughout Region
July 2016: Draft chapters due
Aug 2016 - March 2017: Edit, review, and format of assessment
May 2017: Draft peer-reviewed assessment to be posted to IAP website
Dec 2017: Target date for final product availability

IAP Workshop Summary

Five successful and productive two-day workshops were held. Summary statistics follow.

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<th>Dates</th>
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<th>Total Attendees</th>
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<th>Partners</th>
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