

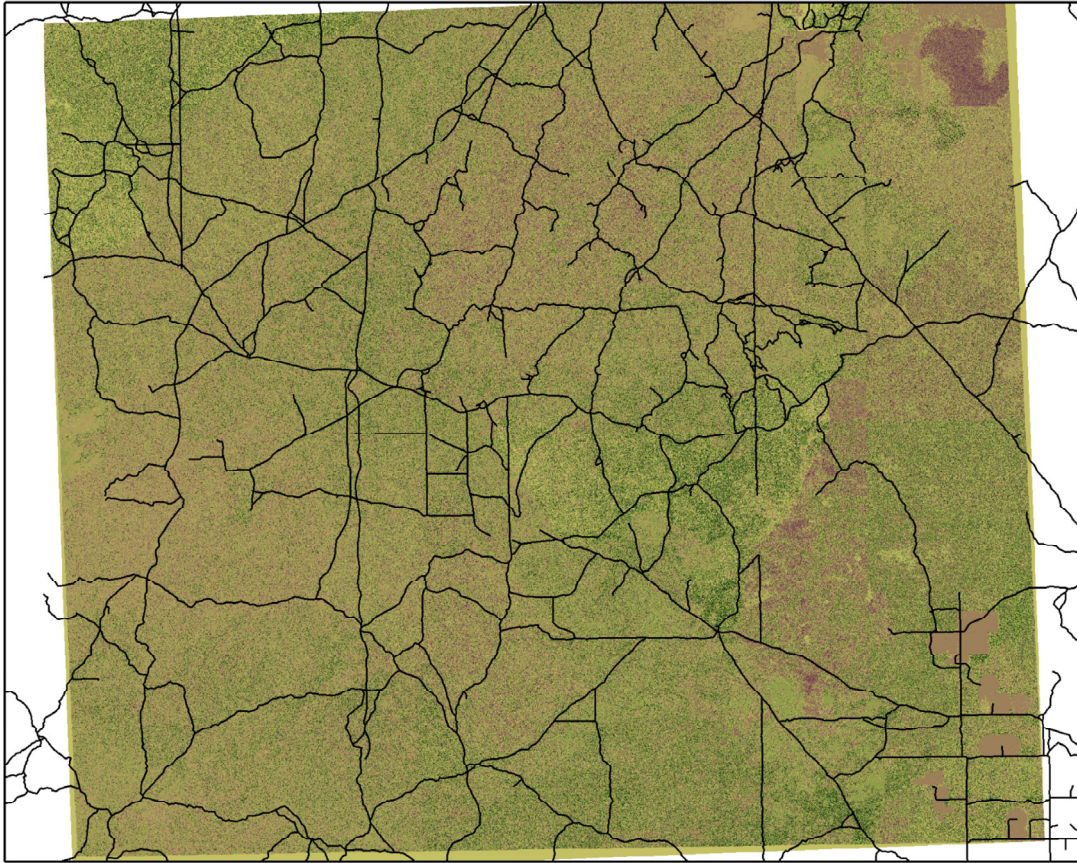
INTEGRATION

The newsletter for Geo-spatial and Range Sciences

This newsletter is produced by the GIS Training and Research Center at Idaho State University, Campus Box 8130, Pocatello, Idaho 83209-8130

This is the third issue of "Integration", the newsletter for Geo-spatial and Range Sciences. You are receiving a free subscription because of your past participation in ISU GIS Center's "Geo-spatial and Range Sciences Conference". As much as we are sure that you will enjoy reading this letter if you prefer not to receive it, simply contact us and ask to be removed from our mailing list. Our e-mail address is giscenter@isu.edu and our regular mailing address is given above.

So, sit back and enjoy "Integration".

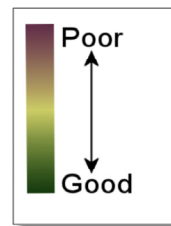
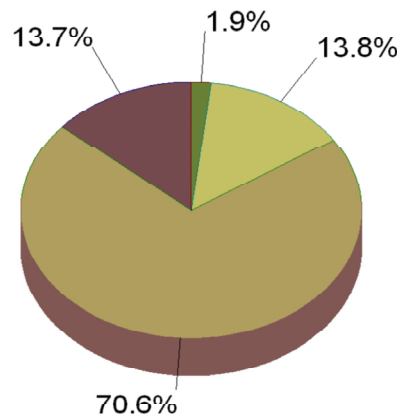
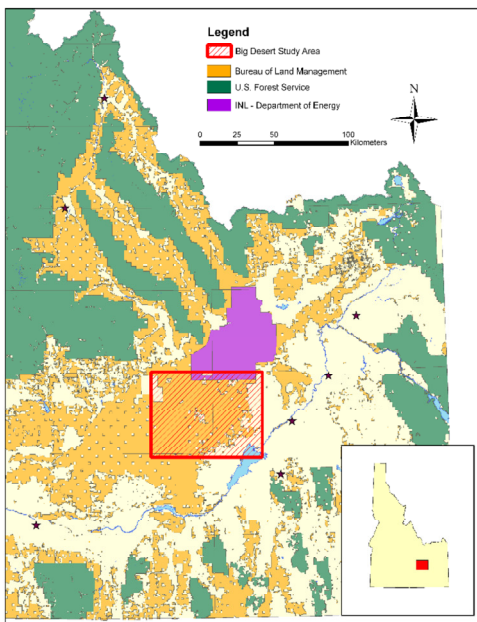


We are pleased to have completed and validated a rangeland health model for parts of south eastern Idaho. This model calculates a health index for each pixel (2.4x2.4 meter area) in our study area. The rangeland health index is based on the prevalence of exposed soil, slope and other soil erosion factors, along with the presence of grasses, shrubs, and litter. The model was built by Bhushan Gokhale, a PhD student here at Idaho State University. This model makes an important stride toward providing range managers with geo-spatial decision support tools.

To verify the accuracy of this model, ISU geotechnologies students Jed Gregory and Luke Sander collected 189 points throughout the study area this summer. A rangeland health index value was calculated at each point based upon the same input parameters (prevalance of exposed soil, slope and other soil erosion factors, along with the presence of grasses, shrubs, and litter) and then compared to the values predicted by the model. Given a 15pt error margin, the model predicted the rangeland health index correctly 62% of the time. With a more reasonable 25pt. error margin, the model's accuracy jumped to 91%!

...model accuracy jumped to 91%...

You cannot manage what you do not measure...



The resulting model is shown on the left along with roads to help our readers better orient themselves. The darkest brown colors represent the poorest range health conditions (~14% of the study area) while green represents the best range health conditions (~2% of the study area). It is of great interest to us that over 70% of the study area was classified in moderately-poor condition. Why? Well that's yet to be determined, but some leading causes are:

- exacerbated drought effects.
- loss of biodiversity.
- prolonged rest and minimal animal impact.
- modeling errors.

If you would like more information about this model or any of our rangeland research, just visit our website by pointing your browser at <http://giscenter.isu.edu/research>.

As always, we welcome your comments and questions.

The research described in this issue of Integration has been made possible through the support of Senator Larry Craig and the Idaho delegation and funding from the National Aeronautics and Space Administration.

