Alabama Agriculture Earthzine Transcript

Claire: Hi, I'm Claire Herdy. I'm a first year graduate student in Earth Systems Science at UA Huntsville.

Eli: Hey, my name is Eli Hodges, and I'm majoring in Agrobusiness at the University of Georgia.

Claire: (voiceover while images scroll) The majority of current agricultural practices in Alabama rely on rain fed crops with little or no irrigation. Unfortunately for Alabama farmers, historical climate data shows that the majority of rain for a given year does not correlate with the growing season.

Eli: Drought conditions cause lost revenue for farmers in the state of Alabama.

(voiceover) There's a very big need for irrigation to shift back to the Southeast.

Cameron Handyside: My name is Cameron Handyside. I'm an environmental engineer here at the Earth Systems Science Center. I've been working for the last 5 to 7 years on an initiative here in the state of Alabama to promote sustainable agriculture through irrigation. This program was started as a Noah funded project looking at drought mitigation. The project was then expanded to include a large spatial crop model we call GriDSSAT. The spatial crop model was funded in part through a NASA project for the Gulf of Mexico ROSES program. The program uses a great deal of NASA data including spatial weather models from their SPORT program.

The DEVELOP program really came into play this last year. We had been running this program for a number of years, and we never really had the opportunity to analyze the results from previous years. So we actually teamed up with one of the DEVELOP students, and they, through the DEVELOP program, actually this last year analyzed our 2011 results, comparing our crop model results with the actual results from the USDA in a county-by-county analysis in the state of Alabama. Without their help we would have had a tougher time finding the time to get this information done.

Claire: We're validity checking the GriDSSAT predictions with yields from the National Agriculture Statistics Service to help NASS understand the state of crops, yields, and growth stages throughout the growing season.

Our methodology for this project: Dr. Richard McNider and Cameron Handyside did a lot of work before we started our validity checking. NASA data was collected for the GriDSSAT inputs. This is NLDAS-2, GOES derived solar insolation and the GFS model 8-day forecast. Precipitation was from NCEP. These datasets were then used in GriDSSAT. The first run was for 2008. Our validity checking was for the 2011 year. After that the GriDSSAT

results were compared with NASS crop yield data from the Alabama office to get an idea of what happened on the ground and of the accuracy of the GriDSSAT prediction.

(in computer lab) We worked for the Alabama Agriculture project with GriDSSAT, the gridded form of DSSAT, and you can see an example of this here on my screen. DSSAT is a point system model. You can see all the multiple points per county for the state of Alabama. Each of these points every day is updated with NASA data sets, so you can get a continual reading of the state of crops in Alabama.

Eli: This project we did two different GriDSSAT runs. This one it was assumed that was soil was in the state of Alabama, and this one the dominant soil in the county was used for each individual county. In the maps we did percent difference. The darker is the less accurate. We have found that generally according to NASS the more dominant states in agriculture like Madison and the Northeast in Alabama were more accurate.

Claire: (voiceover) The end product of this project will be a tool for farmers to make decisions regarding regional level and precision agricultural practice.

Music used (from iLife Sound Effects): “Daydream”, “Stepping Out Medium”, “Fireside”