VegScape: an update on the large-scale crop condition and progress monitoring system **[1]**

Submitted by yugenong on Wed, 2014-12-17 01:03 **Event:** Winter Meeting 2015 [2]

Abstract:
VegScape (http://nassgeodata.gmu.edu/VegScape/ [3]) has been collaboratively developed as a national crop condition monitoring system by the Center for Spatial Information Science and Systems of Georege Mason University and the National Agricultural Statistics Service of USDA. The system is an open, Web-based, systems consists of geospatial Web services and components, including Web services following OGC specifications - Web Coverage Service (WCS) for data/product servicing, Web Map Service (WMS) for data presentation, Web Feature Service (WFS) for geographic features, and Web Processing Services (WPS) for data processing and analysis. The system enables the live link from Earth Observations (EO) to final crop condition indices and crop progress stages. The latest focused development was on crop progress modeling using time series analysis of crop condition profiles. Progressive double sigmoid models along with series of smoothing and noise-filtering have been applied in improving the crop growth stage estimation. The system currently estimates the 10 major crops in the States. VegScape reaches the stage of operational adoption in crop condition monitoring and crop progress stage estimation using primarily very high temporal resolution EO data.

Collaboration Area: Geospatial [4]
Information Technology and Interoperability [5]
Products and Services [6]
Visualization [7]

Reference: Yang, Zhengwei, Genong Yu, Liping Di, Bei Zhang, Weiguo Han, and Rick Mueller. "Web service-based vegetation condition monitoring system-VegScape." In IGARSS, pp. 3638-3641. 2013.
Yang, Z., and L. Di. "VegScape: US Crop Condition Monitoring Service." In AGU Fall Meeting Abstracts, vol. 1, p. 0350. 2013.
Mueller, Rick. "VegScape: A NASS Web Service-based US Crop Condition Monitoring System." In Agricultural Outlook Forum 2013, no. 147080. United States Department of Agriculture, 2013.
Yu, Genong, Liping Di, Zhengwei Yang, Zeqiang Chen, and Bei Zhang. "Crop condition assessment using high temporal resolution satellite images." In Agro-Geoinformatics (Agro-Geoinformatics), 2012 First International Conference on, pp. 1-6. IEEE, 2012.
Yu, Genong, Liping Di, Zhengwei Yang, Yonglin Shen, Zeqiang Chen, and Bei Zhang. "Corn growth stage estimation using time series vegetation index." In Agro-Geoinformatics (Agro-Geoinformatics), 2012 First International Conference on, pp. 1-6. IEEE, 2012.
Zhang, Bei, Liping Di, Genong Yu, Yuanzheng Shao, Ranjay Shrestha, and Lingjun Kang. "A Web service based application serving vegetation condition indices for Flood Crop Loss Assessment." In Agro-Geoinformatics (Agro-Geoinformatics), 2013 Second Internati

Author(s):

Name: Eugene Yu [8]
Organization(s): Center for Spatial Information Science and Systems [9] ,George Mason University [10]
Email: gyu@gmu.edu [11]

Name: Liping Di [12]
Organization(s): GMU [13]

Name: Zhengwei Yang [14]
Organization(s): Center for Spatial Information Science and Systems [9] ,GMU [13]

Name: Rick Mueller [15]
Organization(s): USDA National Agricultural Statistics Service [16]
Email: rmueller@nass.usda.gov [17]

Name: Weiguo Han [18]
Organization(s): Center for Spatial Information Science and Systems [9] ,GMU [13]

Name: Bei Zhang [19]
Organization(s): Center for Spatial Information Science and Systems [9]

Keywords: crop condition [20]
crop progress [21]
remote sensing [22]
geospatial Web service [23]

Source URL: https://commons.esipfed.org/node/7733

Links
[1] https://commons.esipfed.org/node/7733
[2] https://commons.esipfed.org/2015WinterMeeting
[3] http://nassgeodata.gmu.edu/VegScape/
[4] https://commons.esipfed.org/collaboration-area/geospatial
[5] https://commons.esipfed.org/collaboration-area/information-technology-and-interoperability
[6] https://commons.esipfed.org/collaboration-area/products-and-services
[7] https://commons.esipfed.org/collaboration-area/visualization
[8] https://commons.esipfed.org/node/7730
[9] https://commons.esipfed.org/taxonomy/term/283
[10] https://commons.esipfed.org/taxonomy/term/836
[11] mailto:gyu@gmu.edu
[12] https://commons.esipfed.org/node/275
[13] https://commons.esipfed.org/taxonomy/term/213
[14] https://commons.esipfed.org/node/287
[15] https://commons.esipfed.org/node/7731
[16] https://commons.esipfed.org/taxonomy/term/1746
[17] mailto:rmueller@nass.usda.gov
[18] https://commons.esipfed.org/node/286
[19] https://commons.esipfed.org/node/7732
[20] https://commons.esipfed.org/taxonomy/term/1747
[21] https://commons.esipfed.org/taxonomy/term/1748
[22] https://commons.esipfed.org/taxonomy/term/847
[23] https://commons.esipfed.org/taxonomy/term/1749