

Special Issue on
Remote Sensing of Sustainable Ecosystems

CALL FOR PAPERS

Ecosystems are communities of biotic elements that continually interact with each other and with their abiotic environment to create complex systems with various emergent properties. There are various ecosystems that consist of combined forms of complex ecological or coupled human-natural units. Those ecosystems may include agroecosystem, atmosphere ecosystem, forest ecosystem, grassland ecosystem, marine (aquatic) ecosystem, and urban ecosystem.

Though different elements in each ecosystem may be investigated separately; it is now agreed by both researchers and practitioners that only overall sustainable development of an ecosystem can provide satisfactory and multiple ecosystem functions in the long run. One key milestone for attaining sustainable ecosystems is through advanced geospatial data acquisition and processing of all related elements contained in those ecosystems and by applying intelligent computational models that can measure those elements and explain their interactions in efficient ways. The latest advancements in remote sensor systems and computer technology have made it possible to collect ecological and geospatial data quickly and routinely. In particular, the increasing volumes of available multispectral and hyperspectral data from unmanned aerial vehicle (UAV) and airborne and satellite sensors such as Hyperspec-VNIR, AVIRIS, and Hyperion provide rich information for a wide range of ecological applications. These big data sets from RS are essential for understanding the science behind ecosystem function and thus provide critical insight on how ecosystems are sustained. It all leads to a situation where ecosystems can now be investigated in more systematic approaches by using advanced geospatial technologies.

This special issue will bring together research on various methods for spatial observation (using on-site or moving sensors, RS, or/and spatial navigation systems) for acquiring information on key ecosystem elements, and innovative data assimilation strategies to improve our understanding of the interactions of those elements within or between ecosystems. Based on acquired RS dataset, ecological models for simulating or quantitatively analyzing their interactions are encouraged. Potential papers should focus on the design of systematic data acquisition frames, and the approaches for obtaining and processing ecosystem related datasets. Above all, “sustainability” is key for measuring ecosystems, and thus submitted papers are welcome to suggest decision making measures or public policies to counteract ecosystem degradation and promote healthier ecosystems.

Potential topics include but are not limited to the following:

- ▶ Explore the resolutions of sensors, in particular their spectral, spatial, and temporal resolutions that are most appropriate for measuring ecosystem sustainability
- ▶ Data fusion and assimilation models of remotely sensed imagery from various sensors to support ecosystem studies
- ▶ Applications of earth observation sensors designed for sustainable ecosystems
- ▶ Spatial modeling, spatial data mining, and big-data analytics of big imagery data sets from various sensors

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/js/rsse/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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Submission Deadline

Friday, 27 April 2018

Publication Date

September 2018