OklahomaView 2020 - 2021

OklahomaView 2020 - 2021 Activities

The proposed HIA for GY20 was to publish a peer-reviewed fact-sheet on the potential and availability of remote sensing technologies, data, and services to help farmers in Oklahoma better adopt remote sensing in their daily operations. Based on the survey of a wide range of literature on the applications of remote sensing in agriculture and natural resources, a question driven outline was developed (see below). The authors of the fact-sheet worked on the following questions depending on their expertise to develop a draft of the fact-sheet.

- **What is remote sensing** (definition and examples of remote sensing)?
- **How does remote sensing work** (principles of remote sensing: active vs. passive and platforms of remote sensing)?
- **How can remote sensing be used in agriculture and natural resources specifically** (examples of how remote sensing is used in agricultural and natural resource applications)?
- **What are the considerations when using remote sensing in agriculture and natural resources** (spatial, temporal and spectral resolutions)?
- **What are the current datasets and tools available for using remote sensing in agriculture and natural resources** (common freely available remote sensing datasets and tools)?

The goal of this fact-sheet is to convey the potential of remote sensing in agriculture and natural resources to farmers in the state of Oklahoma. The factsheet used plain and easy to understand language to explain important remote sensing concepts. Well-recognized sources about remote sensing concepts were used to answer these questions with appropriate citation. For example, one figure from the National Aeronautics and Space Administration (NASA) was used to explain the difference between passive and active remote sensing (Fig. 1). The authors also developed several ways to explain other important concepts in remote sensing. For example, the authors used different images of Oklahoma State University Stillwater campus to illustrate the concept of spatial resolution (Fig. 2).

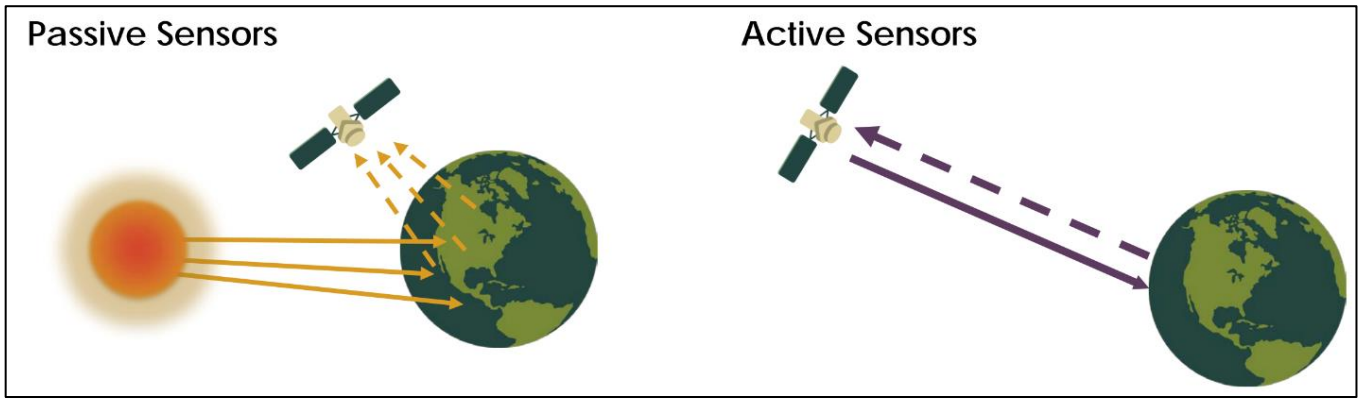

Fig. 1 Diagram of passive sensor versus an active sensor. Credit: National Aeronautics and Space Administration Applied Remote Sensing Training

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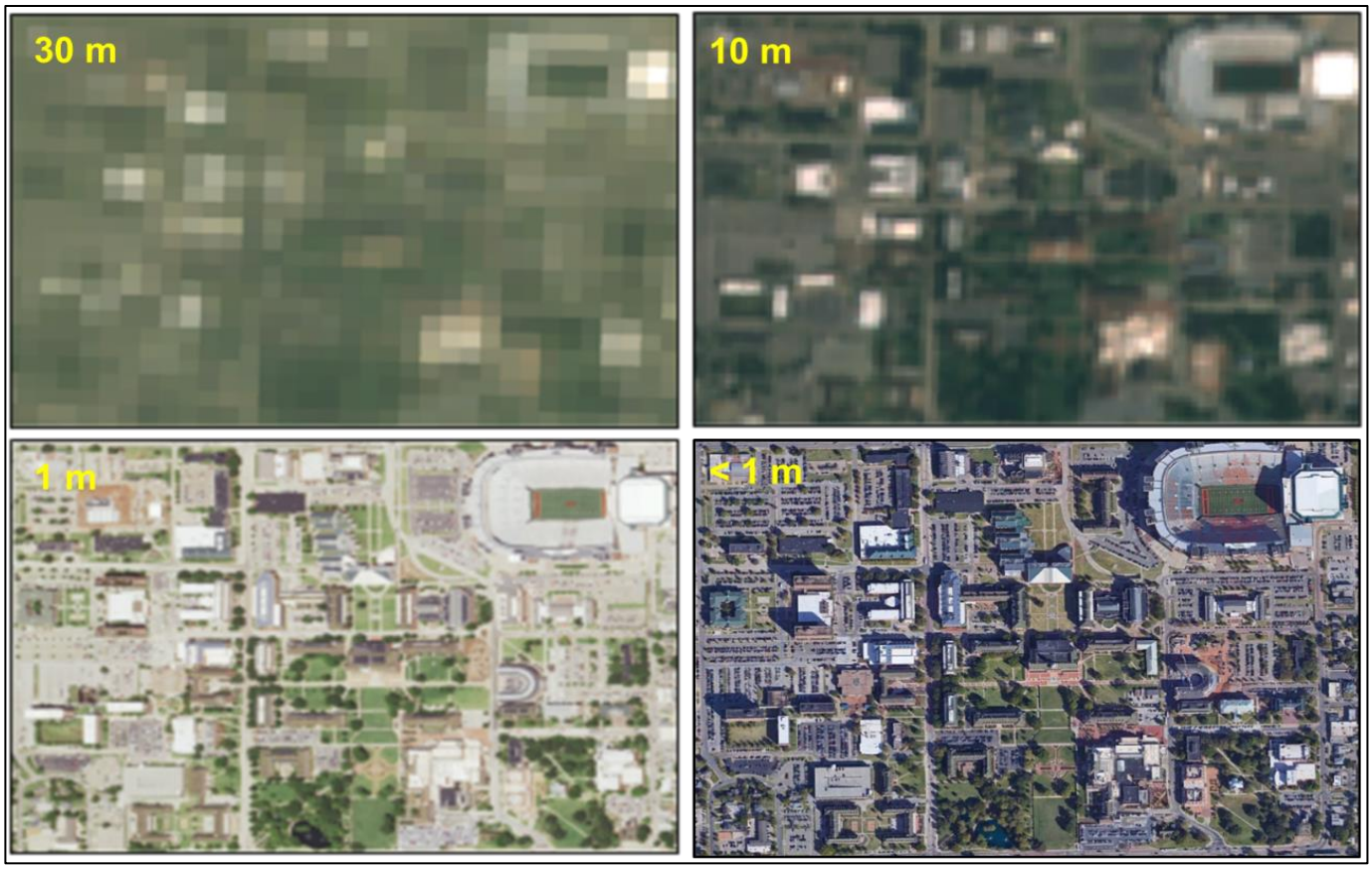

Fig. 2 Imagery of Oklahoma State University Stillwater campus at 30 × 30 m (from Landsat 8), 10 × 10 m (from Sentinel-2), 1 × 1 m (from National Agriculture Imagery Program (NAIP)), and sub meter resolution (from Google Earth).

Benefits to Oklahoma

- Trained one graduate student on how to conduct literature review
- Enhanced the collaboration among consortium members
- Increased the awareness of the potential of remote sensing among faculty across the university
- Explained important concepts in remote sensing using common language and easy to understand examples
- Provided a list of datasets and tools available for using remote sensing in agriculture and natural resources
- Encourage farmers adopt remote sensing in their operations to increase profitability

OklahomaView Consortium Membership

OSU | OU | USDA Agricultural Research Service | Noble Research Institute – Science Serving Agriculture | Oklahoma Climatological Survey | Oklahoma Geographic Information Council | OU Oklahoma Biological Survey – The University of Oklahoma

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