



EARTH SCIENCE
APPLIED SCIENCES

TRAINING

ARSET - Creating and Using Normalized Difference Vegetation Index (NDVI) from Satellite Imagery

PROGRAM AREA: ECOLOGICAL CONSERVATION

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DETAILS

February 10, 2016 - March 2, 2016

LANGUAGE(S): English

TRAINING TYPE: [Online Instructor-Led](#)

LEVEL: [Advanced](#)

TRAINING SOURCE: [ARSET](#)



DESCRIPTION

February 10, 2016 - March 02, 2016

In this advanced webinar, participants will learn how to acquire, use, and derive NDVI imagery from Landsat and MODIS. Weekly webinars include lectures, hands-on demonstrations of exercises, and written instructions on how to conduct the exercises. The exercises use QGIS, a cross-platform open source GIS application. Each session guides participants through the exercises, however, to achieve the course learning objectives, participants should expect to spend additional time outside the webinars. There is a homework assignment to complete after each exercise.

[AGENDA] [CITE THIS TRAINING]

PREREQUISITES

- Complete sessions one and two of [Fundamentals of Remote Sensing](#)

- [Download and install QGIS](#) and all accompanying software. This advanced webinar will use QGIS software, and although previous experience with this software is not required, some experience with geospatial software will be helpful. Before starting the first session, open QGIS and ensure the software is working properly. [Additional Download and Installation Instructions](#)

Citation

(2016). *ARSET - Creating and Using Normalized Difference Vegetation Index (NDVI) from Satellite Imagery*. NASA Applied Remote Sensing Training Program (ARSET). <https://appliedsciences.nasa.gov/get-involved/training/english/arset-creating-and-using-normalized-difference-vegetation-index-ndvi>

OBJECTIVE

Learn how to create NDVI imagery, time series, and anomaly maps using NASA data including:

- A basic understanding of NDVI
- Acquiring Landsat and MODIS imagery
- Creating NDVI images from Landsat
- Using MODIS NDVI images to derive time series and NDVI anomaly maps

AUDIENCE

Local, regional, state, federal, and international organizations interested in assessing vegetation condition using satellite imagery. Professional organizations in the public and private sectors engaged in environmental management and monitoring will be given preference over organizations focused primarily on research.

COURSE FORMAT

- Four 1-hour sessions

- Each week features a presentation, exercises, and a homework assignment.

SESSIONS

Session One: NDVI & QGIS

NASA ARSET: NDVI & QGIS, Part 1



An overview of NDVI and an introduction to QGIS.

English:

- [Presentation Slides](#)
- [Week 1 Data](#)
- [Week 1 Exercise](#)
- [Homework Assignment](#)

Spanish:

- [Presentation Slides](#)
- [Week 1 Exercise](#)

Session Two: Deriving NDVI from Landsat

NASA ARSET: Deriving NDVI from Landsat, Part 2/4



Acquiring a Landsat image and deriving NDVI from Landsat using QGIS.

English:

- [Presentation Slides](#)
- [Week 2 Data](#)
- [Week 2 Exercise](#)
- [Homework Assignment](#)

Spanish:

- [Presentation Slides](#)
- [Week 2 Exercise](#)

Session Three: MODIS NDVI Time Series

NASA ARSET: MODIS NDVI Time Series, Part 3/4



An overview of MODIS NDVI, a demonstration of the MODIS/NDVI Time Series Database from the Global Agriculture Monitoring (GLAM) Project, acquiring MODIS NDVI images, and how to create a time series from MODIS NDVI.

English:

- [Presentation Slides](#)
- [Week 3 Exercise](#)
- [Homework Assignment](#)

Spanish:

- [Presentation Slides](#)
- [Week 3 Exercise](#)

Session Four: MODIS NDVI Anomalies

NASA ARSET: MODIS NDVI Anomalies, Part 4/4



An overview of MODIS NDVI anomaly mapping, a demonstration of the GIMMS MODIS Agricultural Monitoring System, and how to create a MODIS NDVI anomaly map.

English:

- [Presentation Slides](#)
- [Week 4 Exercise](#)
- [Homework Assignment](#)

Spanish:

- [Presentation Slides](#)
- [Week 4 Exercise](#)

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