



CalPolyPomona

College of Letters, Arts,
and Social Sciences

GEO 4100/4100L

Remote Sensing of the Environment

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INTRO

- Zion National Park, a UNESCO World Heritage Site, is renowned for its stunning landscapes, including towering red rock formations and diverse ecosystems.
- Using Landsat 8 bands 5, 6, and 2, we can effectively analyze the park's healthy vegetation, focusing on areas of vibrant, thriving plant life.
- A supervised classification technique is applied to identify and categorize vegetation types, offering insights into the park's environmental health and biodiversity.
- This analysis contributes to monitoring ecosystem changes and supporting conservation efforts in one of America's most cherished natural landscapes.

STUDY AREA

- Location: Zion National Park
- Springdale, Washington County, Utah

DATA and METHODS

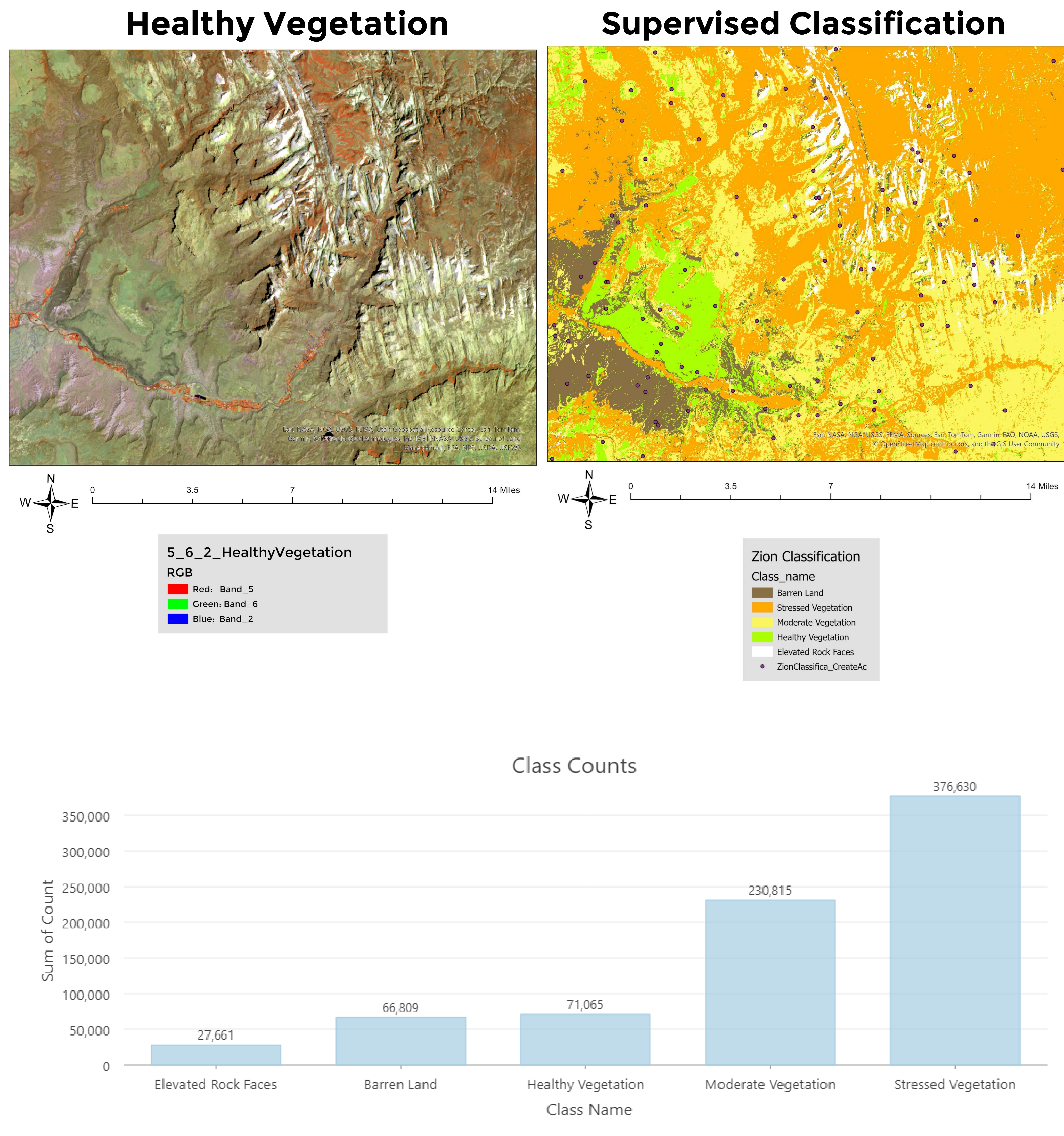
- Landsat 8 Images (Bands 1-7)
- July 9th, 2024
- Source: USGS Earth Explorer
- Software: ESRI ArcGIS Pro
- **Healthy Vegetation - Bands 5, 6, 2**

RESULTS

- **Dominant Class:** Stressed Vegetation leads significantly, indicating a possible concern or focus area for ecological or environmental studies. This could be reflective of environmental stress factors affecting large areas.

Zion National Park Analysis

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CLASSIFICATION LAYERS

- **Barren Land:** Areas with little or no vegetation, often consisting of rocks, sand, or dry soil.
- **Stressed Vegetation:** Vegetation showing signs of stress, such as yellowing or wilting, due to environmental factors.
- **Moderate Vegetation:** Vegetated areas with sparse or mixed plant cover, such as grasslands or shrublands.
- **Healthy Vegetation:** Lush, dense plant life with vibrant green color, indicating strong growth and vitality.
- **Elevated Rock Faces:** Steep, rocky surfaces with minimal vegetation, such as cliffs or mountain faces.

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