The Drone Rangers

UNMANNED VEHICLES, REMOTE SENSING, AND CAREERS IN SCIENCE

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OUR TEAM

OVERVIEW

01. Introduction to Remote Sensing

02. Drones and Research Opportunities

03. Drones and Targeted Grazing

REMOTE SENSING

Remote sensing allows us to measure the physical characteristics of an area by measuring its reflected and emitted radiation at a distance.

Examples include: satellite imagery, laser scanners, and unmanned vehicles.

An example of remote sensing - Google Earth!

RESEARCH IN REMOTE SENSING

- Cameras on satellites and airplanes take images of large areas on the Earth's surface, allowing us to see much more than we can see when standing on the ground.
- Sonar systems on ships can be used to create images of the ocean floor without needing to travel to the bottom of the ocean.
- Tracking clouds to help predict the weather or watching erupting volcanoes, and help watching for dust storms.
- Tracking the growth of a city and changes in farmland or forests over several years or decades.

DRONES

Drone are opening up new opportunities for research, monitoring, search and rescue, management, and much more!

Relatively inexpseinve, drones allow us to quickly capture images of and survey the landscapes around us.

CAREERS AND RESEARCH WITH DRONES

- Wildland fire fighters use drones to actively capture the scale of the fire and see how it is spreading.
- Wildlife ecologists use drones to locate nesting sites, burrows, and populations of animals as they move across the land.
- Rangeland specialists and biologists use the multispectral capabilities of drones to capture plant growth year to year, as well as the various types of plants within an area.
- Engineering firms can use drones to perform inspections, monitor construction, conduct site surveys, and detect code violations. Drones can gather data and create detailed maps and 3D models for accurate, highly detailed reports.

DRONES AND TARGETED GRAZING

Tracy Shane's research is focused on measuring the effects of targeted grazing on rangeland, especially focusing on reduction of cheatgrass, and thus fire risk.

Tracy has been measuring the pre- and post-grazing landscape of native and invasive grasses and shrubs through on the ground data collection as well as laser scanning and drone flights.

THANKS FOR HAVING US!