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NEWS RELEASE

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For release immediately October 6, 2010

NEW SATELLITE GIVES LAKE TAHOE AGENCIES HIGH-TECH INSIGHTS

LAKE TAHOE, CA/NV— Groundbreaking satellite and aerial imagery of the Lake Tahoe Watershed captured this summer is helping Lake Tahoe agencies with protective measures including wildfire threat reduction, stormwater runoff and aquatic invasive species.

This summer, the Tahoe Regional Planning Agency (TRPA), in partnership with the U.S. Geological Survey (USGS), used funding from the Southern Nevada Public Lands Management Act to collect state-of-the-art high-resolution eight-band multispectral satellite imagery and high-resolution LiDAR (Light Detection and Ranging) airborne imagery of the entire Lake Tahoe Basin. These datasets, covering approximately 247,000 acres, will provide land managers and the public with improved information on the current status of natural resources across Lake Tahoe's landscape.

"We are filling a significant gap in what we know about this ecosystem and getting current information about everything from defensible space to invasive species," TRPA Measurement and Reporting Branch Chief Shane Romsos said.

The multispectral imagery was collected with a satellite that was put into orbit last fall. Eight-band multispectral imagery is a powerful aerial digital photograph of the landscape that allows for the selecting of different color bands to reveal otherwise hidden landscape features. The multispectral dataset gathered for Lake Tahoe contains a color band that is capable of penetrating water, which TRPA and other agencies will use to map the locations and densities of aquatic invasive species in the Lake such as Asian Clam and Eurasian watermilfoil.

One example of how the data can be used is in the area of community wildfire protection. Fire agencies will use the data to better characterize wildfire risk in specific areas so that they can focus and prioritize fuel reduction projects and defensible space work, according to Romsos. Other uses include optimizing the location of stormwater treatment facilities to more effectively capture fine sediment and nutrients that threaten Lake Tahoe's famed clarity.

"The acquisition of this data reinforces TRPA's commitment to acquire and use the best available technology and science to inform land management and planning decisions at Tahoe," Romsos said.

The Tahoe Regional Planning Agency cooperatively leads the effort to preserve, restore, and enhance the unique natural and human environment of the Lake Tahoe Region now and in the future. For additional information, call Jeff Cowen at 775-589-5278, or email jcowen@trpa.org .

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Background

LiDAR stands for Light Detection and Ranging and is a remote sensing technology that measures structural characteristics of the landscape, such as terrain topography and the vertical configuration of forests. To collect this information, an aircraft was equipped with a laser sensor and flown back and forth over 100s of transects in the Tahoe Region. The laser sensor sends out 1000s of light beams aimed at the ground and records the distance between the aircraft and a landscape feature. The result is a detailed three-dimensional image of the landscape.

The data has been collected and is going through post-processing to ensure location accuracy and to guarantee complete Basin coverage.

“The initial review of the data is promising,” project collaborator David Saah of Spatial Informatics Group said. “We found that the imagery is extremely clean with less than 1 percent cloud cover. This will allow for the development of extremely complete and accurate map products.”

In concert with a high-resolution LiDAR dataset, this high-resolution imagery will fulfill a wide variety of applications:

Vegetation Management

- Classify and map the distribution and abundance of vegetation and noxious weeds.
- Contribute to the development of landscape conservation plans.
- Track the spatial extent and health of Aspen forests as well as their response to various management techniques.
- Upland and Wetlands Management
- Delineate the boundaries and types of sensitive wetlands.
- Map aquatic invasive species along the coastline particularly Asian clam
- (Corbicula fluminea), curly-leaf pondweed (Potamogeton crispus) and Eurasion milfoil (Myriophyllum Spicatum)
- Map suitable habitat for special status terrestrial and aquatic species.

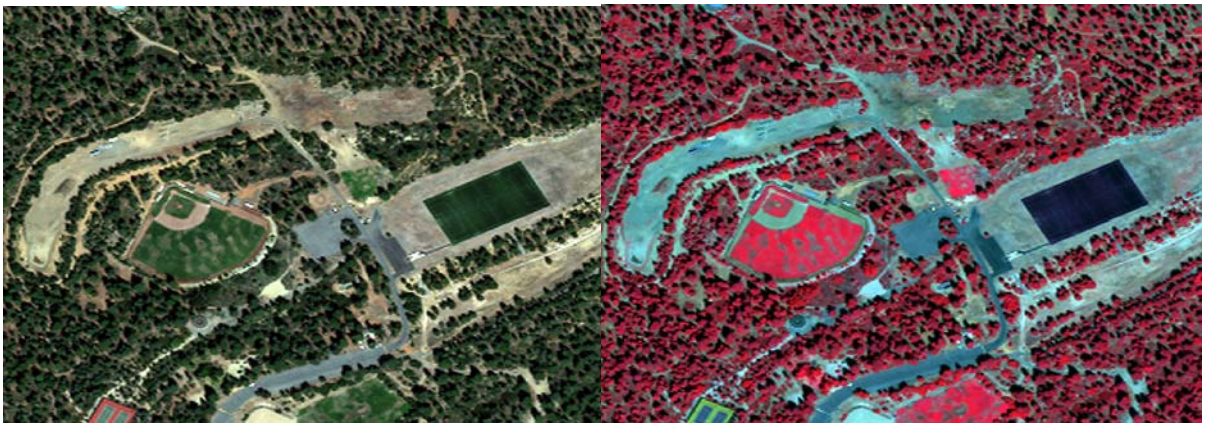
Urban Land Management

- Improve impervious surface calculations especially for soft permeables such as dirt roads and trails that are heavily compacted.
- Develop more accurate water flow models.
- Develop predictive wildfire risks models using the data’s ability to discriminate roof materials and local forestry management practices (such as the number of trees and their spacing).
- Monitor urban-forest interfaces particularly as related to fire outbreak dynamics.

It is expected that several map products and the LiDAR data will be made available to land managers, researchers and the public around January of 2011.

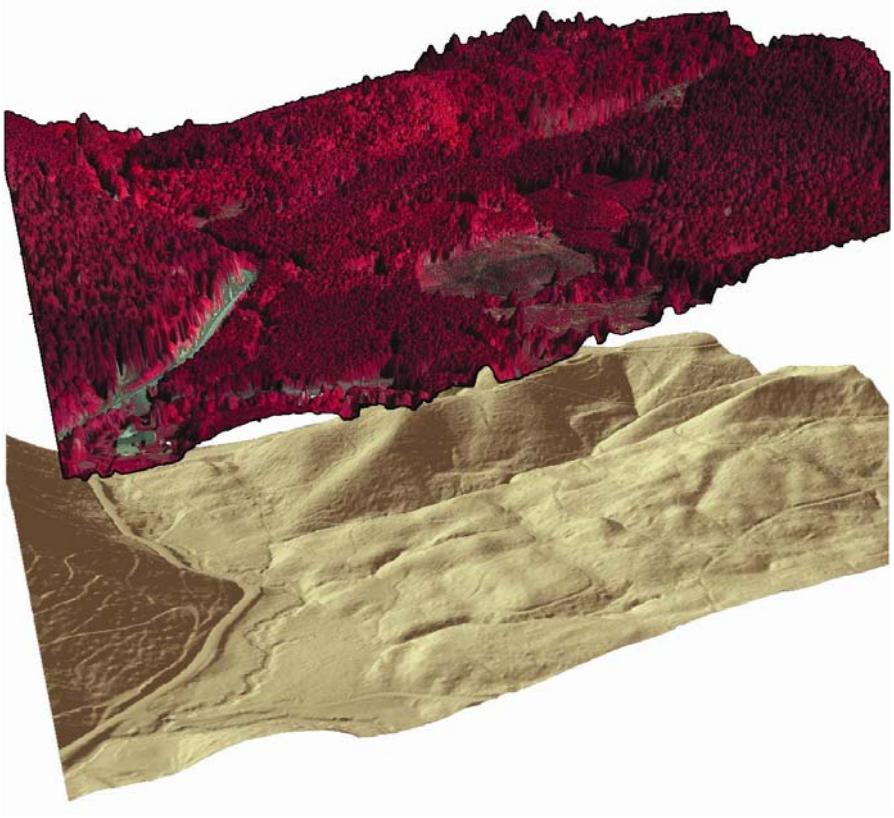
“This information is needed to plan and prioritize Environmental Improvement Projects like road and meadow restoration projects,” TRPA Implementation Branch Chief Jeanne McNamara said. “And because the data will be accessible to project planners at no cost, it will reduce project costs,

“These datasets are going to be fantastic to work with because they will provide us with incredible insight into all types of issues and interests in the Tahoe Basin,” USGS Geographer Toby Welborn said.



Caption: Some preliminary data form Tahoe's 8-band multispectral imagery showing part of North Tahoe Regional Park. The true color image (left) the soccer field (rectangle shape) looks like all other turf vegetation (green), but in the color infrared composite (on the right) it appears blue because it's artificial turf. Traditional true color imagery would have misclassified the field as turf, however, because different bands of color information are collected with the 8-band imagery, analyst can better discriminate landscape features. The result is a detailed 3-demenstional image of the landscape.

Caption: LiDAR data collected in Lewis County, Washington for the Puget Sound LiDAR Consortium showing "highest hit" and "bare earth" data. This data will provide agencies with a similar capability of measuring terrain characteristics of the Lake Tahoe Basin. Image provided by Watershed Science, Inc.



Caption: Fusing multi-spectral near infrared (NIR) band imagery with LiDAR highest hit and LiDAR bare earth data will be a powerful tool for interpreting different features of Lake Tahoe's terrain. Image provided by Watershed Science, Inc.