



Alaska Inventories its Forests

—by Chuck Herring

The State of Alaska Department of Natural Resources (DNR) is using QuickBird satellite imagery for forest inventory management, and practice, health, and disease assessments. The DNR Division of Forestry selected QuickBird products because of the superior resolution compared to other available satellite imagery products.

The DNR recently purchased eighteen scenes of QuickBird Basic and Standard imagery products covering 1,300 square kilometers—or roughly 320,000 acres—over the Haines State Forest and adjacent lands.

The 60-centimeter resolution of QuickBird imagery allows forest managers to examine timber stands and make reasonably accurate assessments of the State forest inventory. The imagery also helps visually evaluate forest land available to Alaska's timber sale program.

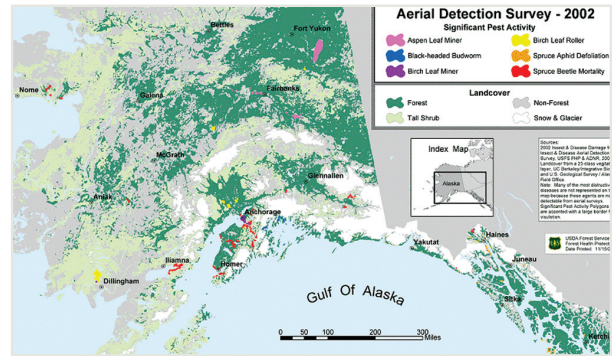
Pre-commercial tree thinning and pruning are two management tools that can be enhanced by utilizing the imagery. Additionally, the imagery helps the DNR get a handle on the locations of areas affected by a bark beetle outbreak that has damaged many acres of forest land in the Haines area and other parts of Alaska over the past 15 years.

For the past 10 years, the state of Alaska has used lower resolution satellite imagery (30-meter and 15-meter resolution) in addition to low altitude aerial photography to gather information about its forests. “Technology has come so far,” said Joel Nudelman, forest practices and resource forester for the DNR’s Juneau office. “With the high-resolution QuickBird data we can see so much more detail than we could with lower resolution satellites, and the new QuickBird data are much more affordable than low-altitude aerial photography for the amount of land we want to cover.”

The Division of Forestry partnered with the Alaska Department of Fish & Game to purchase a multi-

agency license of the image products. They have provided the imagery to the Haines Borough and local native organizations, which use the products for planning and assessment projects. Photo maps are also provided to the public for recreational purposes.

The DNR also purchased QuickBird Orthoready products covering 1,157 square kilometers or approximately 285,000 acres of land in Alaska’s



southeastern panhandle. These products are helping the State assess water quality, fish passage, general road conditions and forest regeneration.

“QuickBird is a remarkable tool for visually evaluating landslides, pulled culverts, road construction, timber harvesting and other influences on water quality, fish habitats, and road drainage,” said Nudelman.

Nudelman says that Alaska’s remote, rugged landscape and steep terrain make it a good fit for digital satellite imagery. Flying planes to these regions is not only difficult and dangerous, but also adds to the expense of collecting aerial data. Finally, Nudelman cites change detection as an important application for digital imagery, explaining that streams move or change course, development and

urbanization occur, and land is often converted from forest to residential use. He references the digital imagery to other GIS data in order to better visualize the terrain and the changes that take place. [cherring@digitalglobe.com]