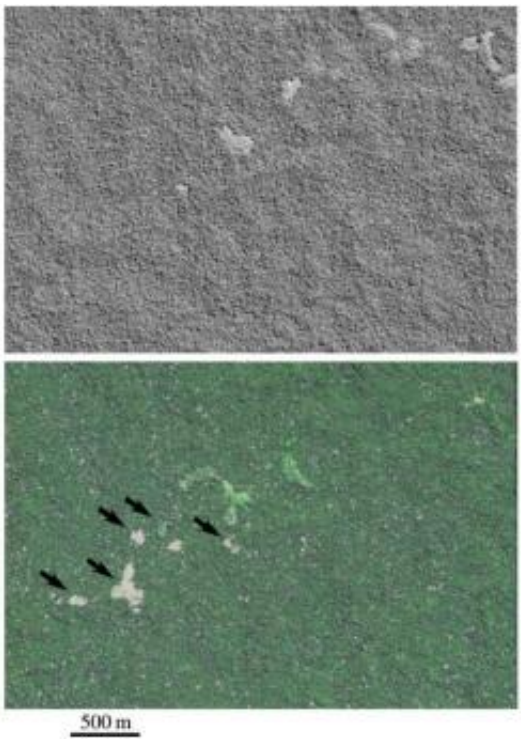
Hi-res satellite imagery helps researchers monitor isolated Amazonian tribes-people

November 5 2014, by Bob Yirka



Top image is the western portion of site H in May 2012 and the bottom image is the same area in July 2013. Note the addition of more slash-and-burn fields (designated by arrows) and the expansion of the two large cleared areas in the centre of the image. These additions total 16 ha cleared in 14 months. Areas that were cleared in 2012 are filled with planted crops in 2013. Credit: *Royal Society Open Science*, doi/10.1098/rsos.140246

(Phys.org) —A trio of researchers has found that it is now possible to

monitor isolated indigenous tribes-people living in the Amazonian jungle, using high resolution satellite images. In their paper published in the journal *Royal Society Open Science*, the team describes how studying such images can help governments protect such people from dangers posed by poachers, those in the illegal drug trade and others that may spread disease.

Scientists believe that there are approximately fifty to one hundred tribes of people living in the dense Amazonian jungle—people who exist at different levels of modernization. For the most part, most of the people survive by planting crops, and carrying on much as they have for hundreds, if not thousands of years. As the existence of such tribes became known, governments of the countries involved have chosen to allow such people to continue to live as they wish, preserving their way of life, on land that has been protected from use by others. As the value of land in the Amazon has gone up, however, tribes-people have been put at risk from illegal loggers, those in the illegal drug trade etc.

Further complicating the matter is that because the jungle is so vast and dense, it's been difficult for governments to know where the tribes are, how they are doing, and whether they need protection. In the past, explorers were dispatched to hike into the jungle to see what they could find. Later, planes have been used to fly over vast stretches, looking for breaks in the jungle that might indicate cropland. Both methods have their drawbacks. The jungle is too big to simply canvass, and allowing modern people to enter such tribes brought with them the risk of spreading diseases—and having planes fly over caused alarm and stress. In this new effort, the researchers have found that satellite imaging technology has now advanced to the point that it can be used to identify not just villages, but activity going on there, such as home building or what types of crops are being grown.

The team reports that they have found the locations of five villages (with

populations ranging from 50 to 300) and have been able to monitor changes over time by revisiting older satellite images. They report also that they have information regarding 29 more villages and plan to find them and to learn more about all the tribes by watching them over time, and presumably, alerting officials if they spot any activity that might cause harm.

More information: Remote sensing and conservation of isolated indigenous villages in Amazonia, *Royal Society Open Science*, rsos.royalsocietypublishing.or … /10.1098/rsos.140246