Lake Willoughby Rockslides

Jon Kim- Vermont Geological Survey, Waterbury, Vt and Tom Eliassen- Vermont Agency of Transportation



Figure 2- aerial photo of large granite promontory at the north end of the cliff closest to the contact with the granite pluton. Darker areas are predominantly metasedimentary rock whereas lighter areas are granite.



Figure 3- aerial photo of granite promontories looking to south along cliffs.

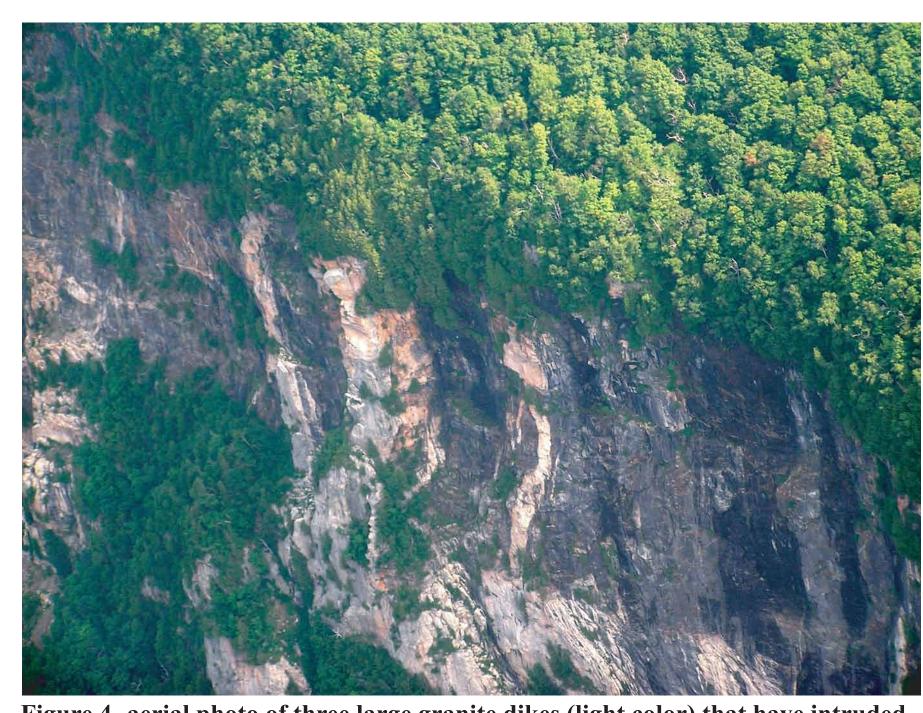


Figure 4- aerial photo of three large granite dikes (light color) that have intruded dark colored metasedimentary rocks of Waits River and Gile Mt. formations.

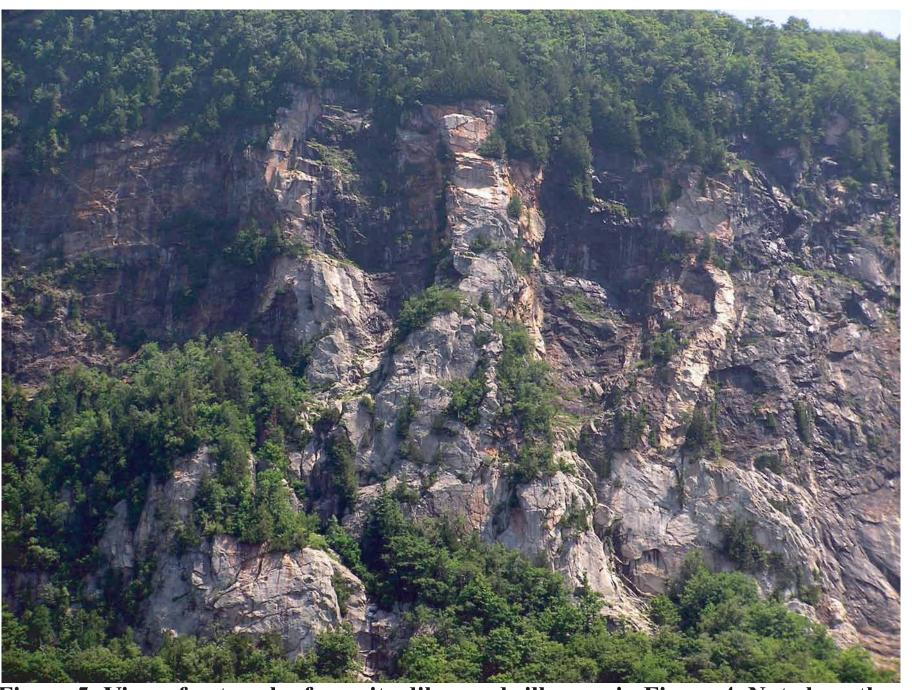


Figure 5- View of network of granite dikes and sills seen in Figure 4. Note how these intrusions form promontories in the Mt. Pisgah cliff face. Main failure areas are between the dikes and sills. Photograph taken at lake level.

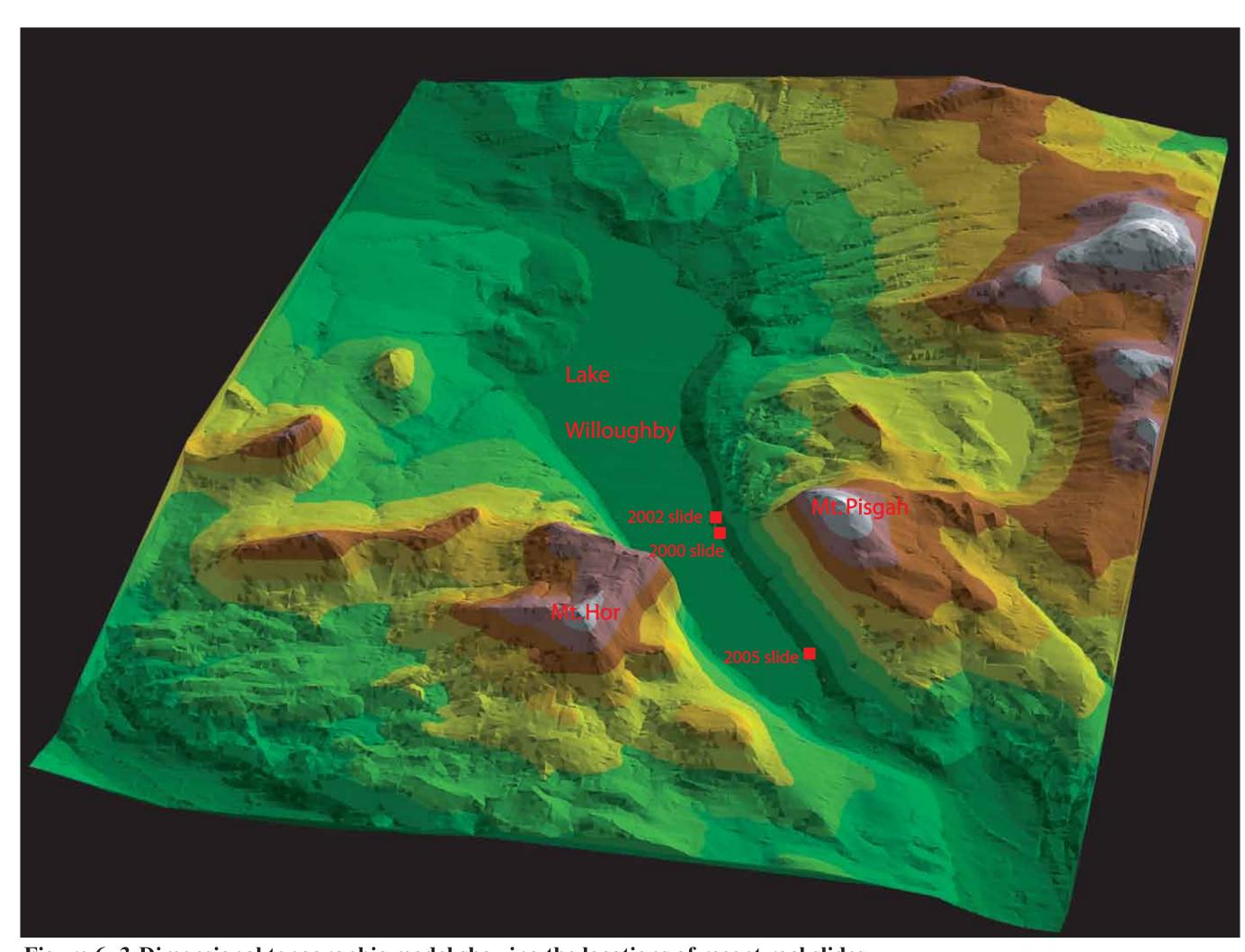


Figure 6-3-Dimensional topographic model showing the locations of recent rockslides.

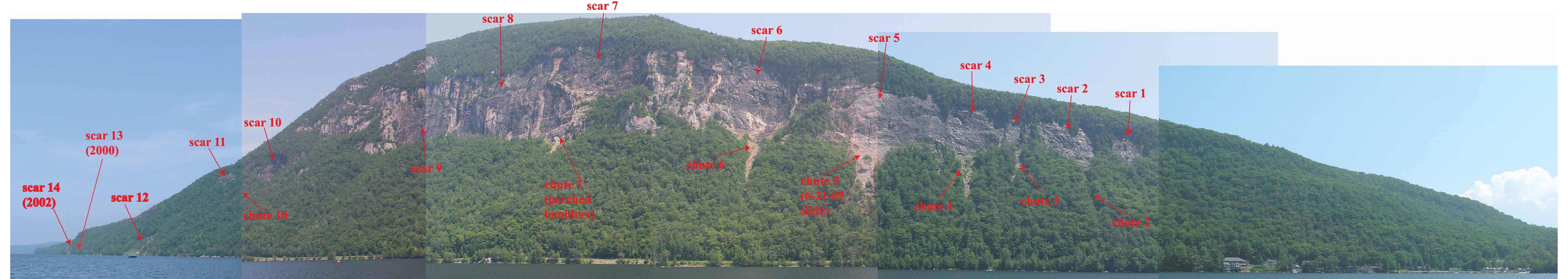


Figure 1- Panorama of the Mt. Pisgah cliffs on the southeast end of Lake Willoughby. Individual scars and chutes are labeled for reference. In general, the scars are metasedimentary rocks of the Waits River and Gile Mountain formations that have been intruded by small granite dikes. The promontories between scars in the northern half of the cliffs are composed of large dikes and sills of granite.

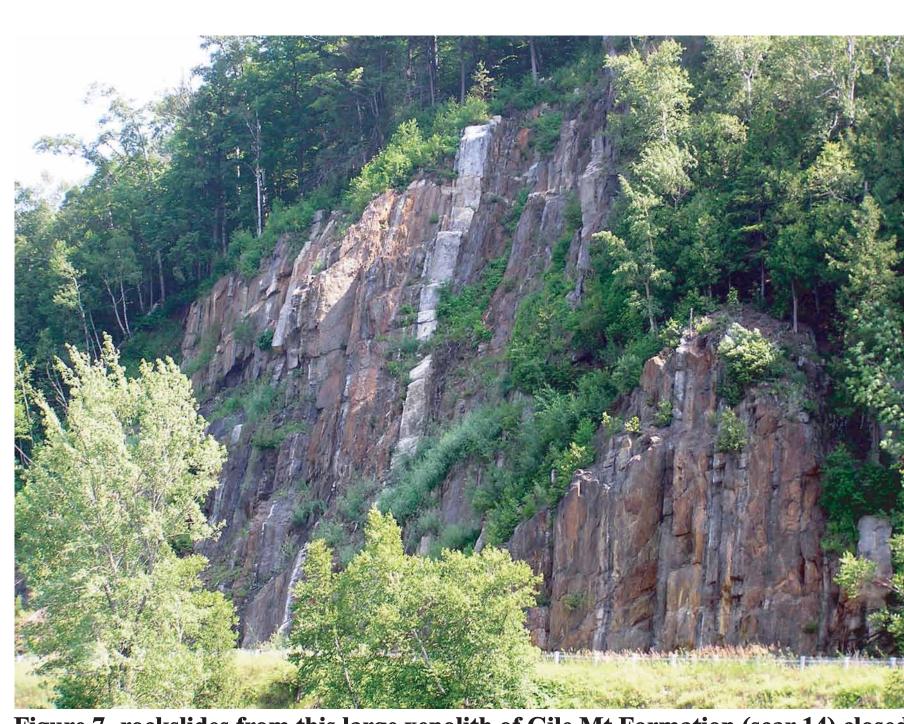


Figure 7- rockslides from this large xenolith of Gile Mt Formation (scar 14) closed Rte. 5A in 2002. Mitigation work to stabilize the slope was done in 2002 by Janod of Montreal. The nearly vertical foliation planes make this phyllitic quartzite unstable.



Figure 8- Front page photo from the Caledonian Record of the rockslide that closed Rte. 5A in 2000.

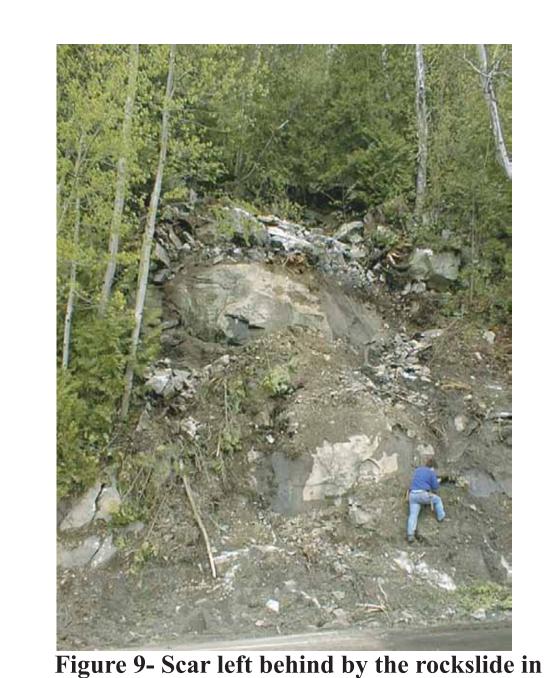
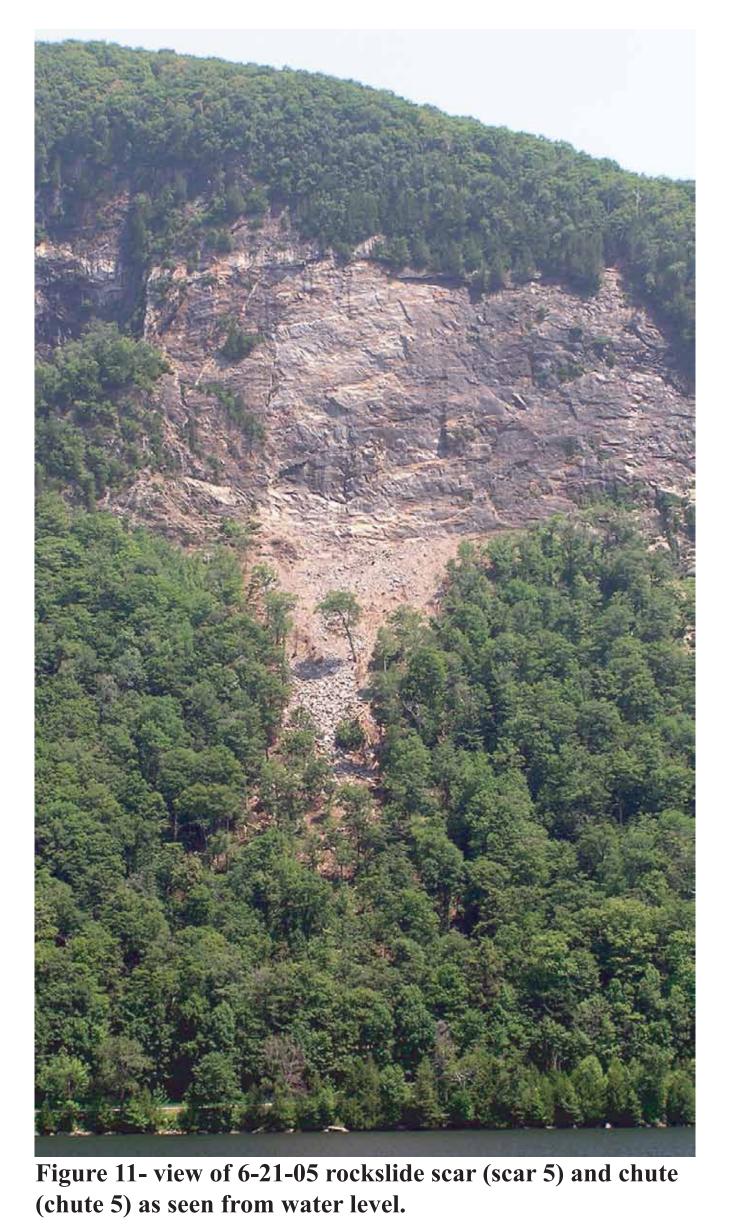
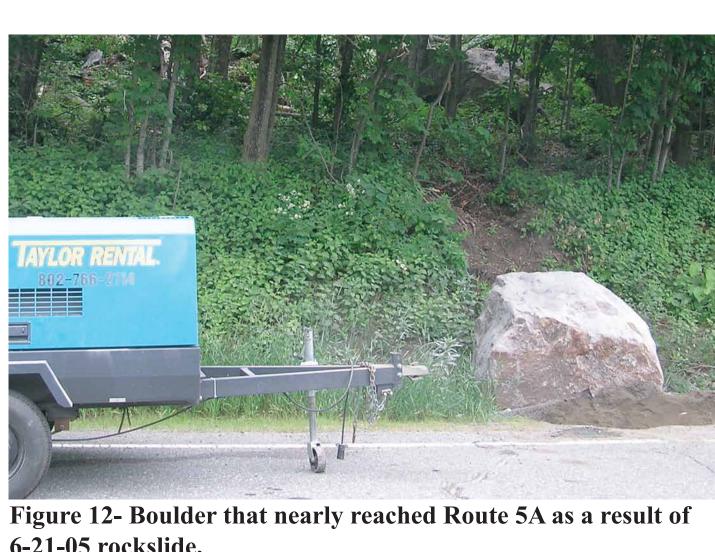


Figure 8 (scar 13).

Figure 10- steep slide scar on Route 5A north of Mt. Pisgah





6-21-05 rockslide.



Figure 13- looking up vertically along failure surface (sheeting fracture) for 6-21-05 rockslide. Overhang represents the termination of the failure surface.



Figure 14- boulder resting against a tree in the chute for the 6-21-05 rockslide.



Figure 15- boulder and crater in the chute for the 6-21-05 rockslide.

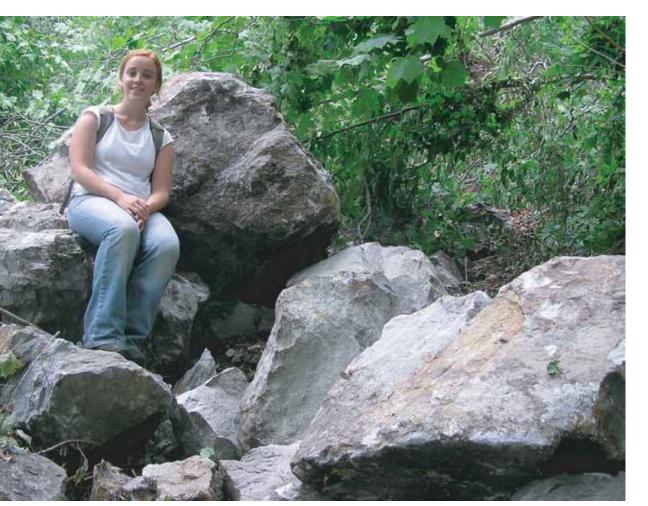




Figure 17- Looking up chute toward failure surface at cliff face.