Segment Process

INTRODUCTION

We want to describe the process that caused a change on the landscape (in the entire area of the polygon outlined in red in the KML on Google Earth), and we want to record as much as possible about that change as you can understand from the context of the Landsat satellite imagery, high resolution imagery, and the Glacier Time Series graph. We want to know what was there before the change, after the change, how confidant you are in your call, and why. Be aware of the 'Change Year' value.

TASK: IDENTIFY SEGMENT PROCESS USING DEFINED LIST

The key strategy here is to capture the intent or the reason for the change. Both the 'Most Likely' and 'Possible' change processes. Separately, we'll capture the effect of that change on the land cover, etc.

1. Stable

2. Glacier retreat
3. Glacier advance

4. Albedo increase
5. Albedo decrease

6. Debris flow

7. Water
8. Water - outburst flood
9. Water - fluvial changes
10. Water - supraglacial
11. Water – proglacial

12. Vegetation growth

13. Other

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DEFINITIONS

Stable = where no ecological or glacial change is evident in the spectral trajectory or image chips. This can include phenological or seasonal variability.

Glacier retreat = when a mountain glacier's terminus doesn't extend as far downvalley as it previously did; occurs when ablation surpasses accumulation. http://nsidc.org/cryosphere/glossary/R

Glacier advance = when a mountain glacier's terminus extends farther downvalley than before; glacial advance occurs when a glacier flows down valley faster than the rate of ablation at its terminus. http://nsidc.org/cryosphere/glossary/A. This process includes 'glacial surge' which is an event defined by 'glacier advance' and 'glacier retreat' segments. A glacier that experiences a dramatic increase in flow rate, 10 to 100 times faster than its normal rate; usually surge events last less than one year and occur periodically, between 15 and 100 years. http://nsidc.org/cryosphere/glossary-terms/glaciers?page=16

Albedo increase = primarily due to new snow deposition.

Albedo decrease = There are many reasons why albedo of the Earth's surface may decrease, including glacier debris cover, wind transported dust, supraglacial meltwater, and snow metamorphisis.

Debris flow = Includes downslope movement of soil or rock on, or near, the earth's surface under the influence of gravity.

Water = water was the main process of change.

Water - outburst flood (jokulhlaup) =[(a)] a large outburst flood that usually occurs when a glacially dammed lake drains catastrophically or, [(b)] any catastrophic release of water from a glacier. http://nsidc.org/cryosphere/glossary-terms/glaciers?page=11.

Water – fluvial changes = newly deglaciated areas with dynamic changes directly due to melt water from glacier Example: Bering4USGS, plot 38182

Water – supraglacial = water flowing over the surface of glacier ice. This class includes Moulin.

Water – proglacial = water at the front of glacier.

Vegetation growth = process of vegetation growth of any type including herbaceous, shrub, and trees.

Other = any disturbance not listed above. There must be further description in the comments.

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