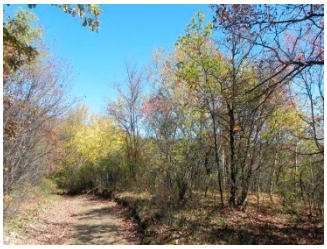
*remote sensing*

MDPI

*Supplementary*

# Quantifying Trends of Land Change in Qinghai-Tibet Plateau during 2001–2015

**Table S1.** Landscape photographs and descriptions of land cover types. AGRI, agricultural land; BARE, bare ground; CLSH, closed shrubland; DBLE, deciduous broadleaved forest; EBLE, evergreen broadleaved forest; ENLE, evergreen needle-leaved forest; MEDO, meadow; STEP, steppe; SPAS, sparse vegetation; OPSH, open shrubland; URBN, urban area; and WATR, water; (adapted from the Wang et al., 2016, Photographs were acquired from Google Earth photos near some reference points).

| Class | Physical photographs in GE | Images in GE | Description |
|---|---|---|---|
| AGRI |  |  | Located in Lanzhou, Gansu (35.959°N, 103.650°E). It has rectilinear shapes on the whole mountains. The acquisition date of this imagery was 2013/10/10. |
| BARE |  |  | Located in Qaidam Desert, Qinghai (37.917°N, 94.224°E). It has yellow color, the texture of sand. The acquisition date of this imagery was 2013/12/30. |
| CLSH |  |  | Located in Sichuan (32.406°N, 101.750°E). It appears green color comparing to light-green of meadow cover in satellite imagery, texture of mountain and more dots compare to grassland and open shrub. The acquisition date of this imagery was 2011/03/04. |
| DBLE |  |  | Located in Qingyang, Gansu (35.868°N, 108.494°E). It has green and yellow color, texture of mountain and hairy objects which are trees in the mid of Oct., when some leaves begin |

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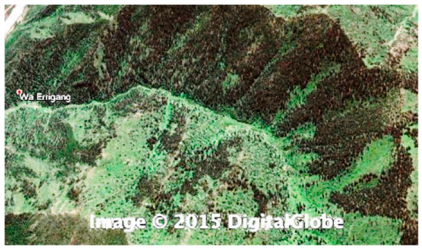
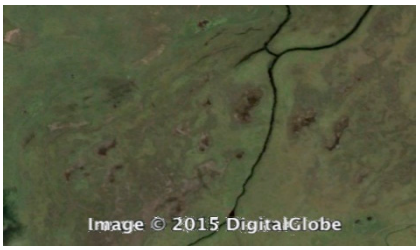
| | | | turning yellow. The acquisition date of this imagery was 2009/10/17. |
| EBLE |  |  | Located in Ya'an, Sichuan (29.738°N, 102.793°E). It has smooth canopy. We identify if the forest is evergreen by the imagery in winter and locations of the dominated species in China. The acquisition date of this imagery was 2015/02/11 |
| ENLE |  |  | Located in Qamdo, Tibet (31.558°N, 97.115°E). It has dark green and black objects on the surface which are evergreen trees in late May. We identify if the forest is coniferous by the physical photograph and locations of the dominated species in China. The acquisition date of this imagery was 2013/05/14. |
| MEDO |  |  | Located in Zoige, Sichuan (33.929°N, 102.634°E). It has smooth surface and emerald green color in growing season from satellite true color imagery. The acquisition date of the imagery was 2013/07/21. |
| STEP |  |  | Located Nagqu, Tibet (32.178°N, 87.271°E). The land surface is very smooth and has a green-brown color in growing season from satellite true color imagery. The acquisition date of the imagery was 2013/07/30. |

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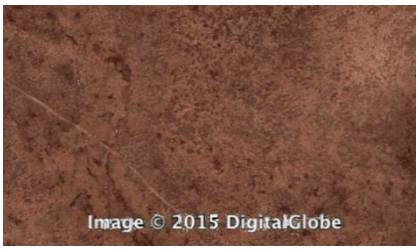
|---|---|---|---|
| SPAS |  |  | Located Tibet (37.224°N, 93.570°E). It's located on arid landscape with large areas near non-vegetation. The acquisition date of the satellite imagery was 2012/03/11. |
| OPSH |  |  | Located in Lhasa, Tibet (29.512°N, 91.567°E). It has brown color, texture of mountain with a lot of dots in the satellite true-color composited imagery, which are shrubs. The big dots have big canopy. The small ones have small canopy. The acquisition date of the imagery was 2008/10/16. |
| URBN |  |  | Located in Lhasa, Tibet (29.657°N, 91.125°E). It includes a lot of buildings, urban vegetation and roads. It is easy to identity because of human construction. The acquisition date of GE imagery was 2009/08/23. |
| WATR |  |  | Located in Linxia, Gansu (35.859°N, 103.270°E). It has a very smooth surface, specific shape and dark blue color (depends on images, sometimes it is green or grey). It can be identified by the shape, color of the water body. The acquisition date of GE imagery was 2010/05/01. |

The classification about meadow, steppe, and sparse vegetation was adopted from the paper **"Transformation of traditional pastoral livestock systems on the Tibetan steppe"**, which described: "The meadow type includes alpine meadow and temperate mountain-meadow types, distributed on the valley floors and mountain slopes in the eastern QTP (3,330 to 4,500 m); The alpine steppe type is widely distributed between 3,500 and 4,600 m in the central and western QTP; The sparse vegetation (e.g., alpine desert steppe) extends across western and northern QTP, with similar plants to alpine steppe but lower coverage. It only has short-time period vegetations when weather is favorable" (Sheehy et al. 2006).

## Reference

Sheehy, D. P., D. Miller, and D. A. Johnson. 2006. Transformation of traditional pastoral livestock systems on the Tibetan steppe. Science et changements planétaires/Sécheresse **17**:142-151.