Designing a Panorama Map with Parallel and Spherical Projection

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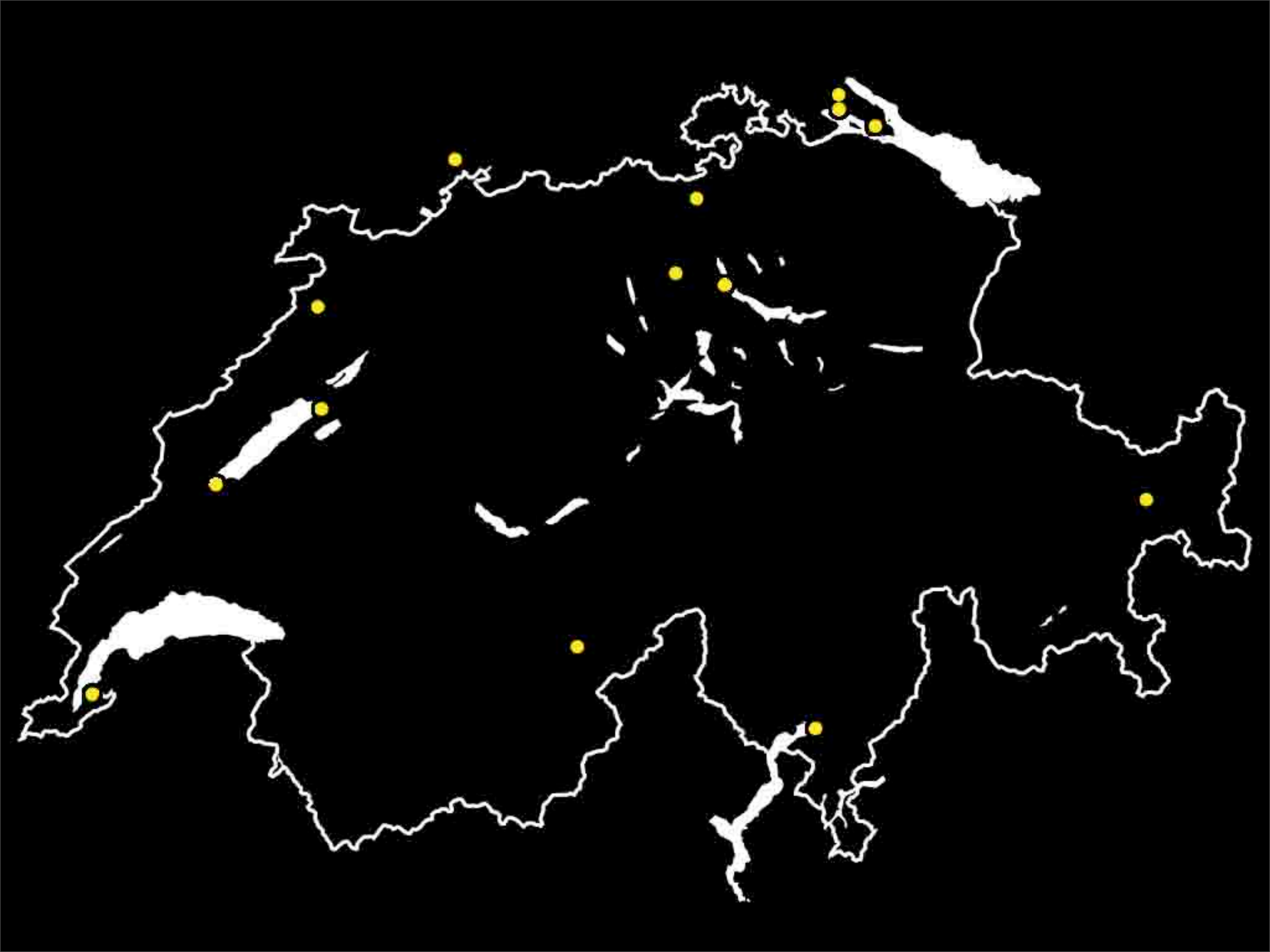
Purpose of the Map

- Initiator: Swiss Association for the Protection of Birds SVS / BirdLife Switzerland

BirdLife
SVS/BirdLife Schweiz

- Map Visitor Centers of BirdLife and other organizations for environmental protection



- Design
- Data
- Rendering
- Color Corrections

Design

- First idea: Oblique view of Switzerland
- Highly distorted
- Problem with centers in Northern part

Design

- Second idea: Less oblique
- Looks more familiar, but weaker 3D-effect

Design

- Third idea: Curved horizon
- Impression of depth

Design

- Plan oblique projection: shows inclined mountains but preserves familiar ground shape

Kersten, 1980. A Bird's Eye View of Switzerland. 1:300 000, Kümmerly + Frey.

Sketch: Spherical horizon with plan oblique view

Data

- DEM
- Satellite Image
- Land cover

Data – DEM

SRTM improved by Natural Graphics
(author of Natural Scene Designer)

cell size: 90 m.

Data – Satellite Image

- NASA Geocover 2000, pixel size: 14.25 m.
- NASA Geocover 1990, pixel size: 30 m

Data – Land cover

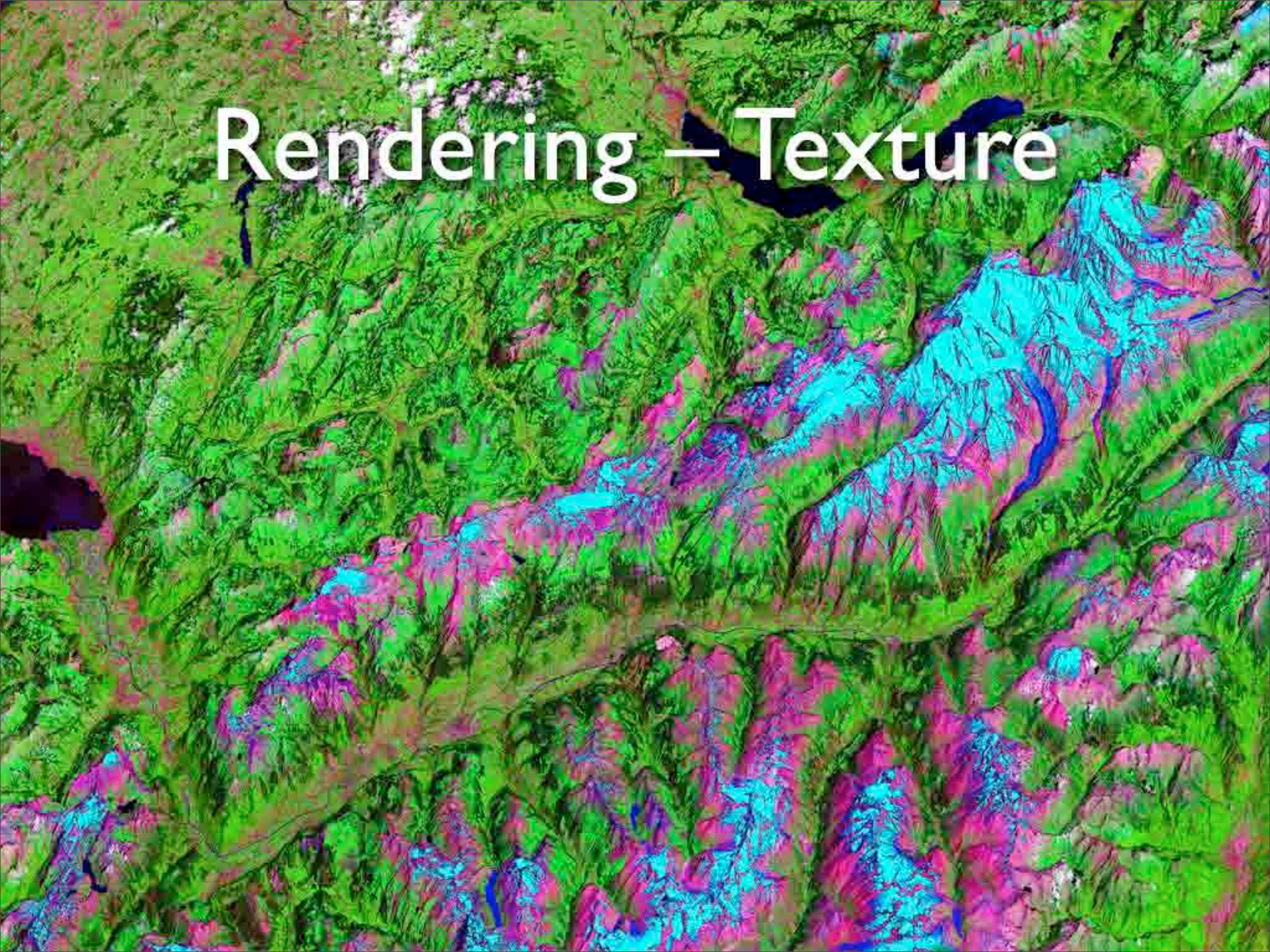
Arealstatistik der Schweiz, Corine Land Cover 100 m.

Rendering

- Custom prototype renderer for plan oblique projection
- Curved horizon with Photoshop (CS 2: Transformation “Upper Arc”)

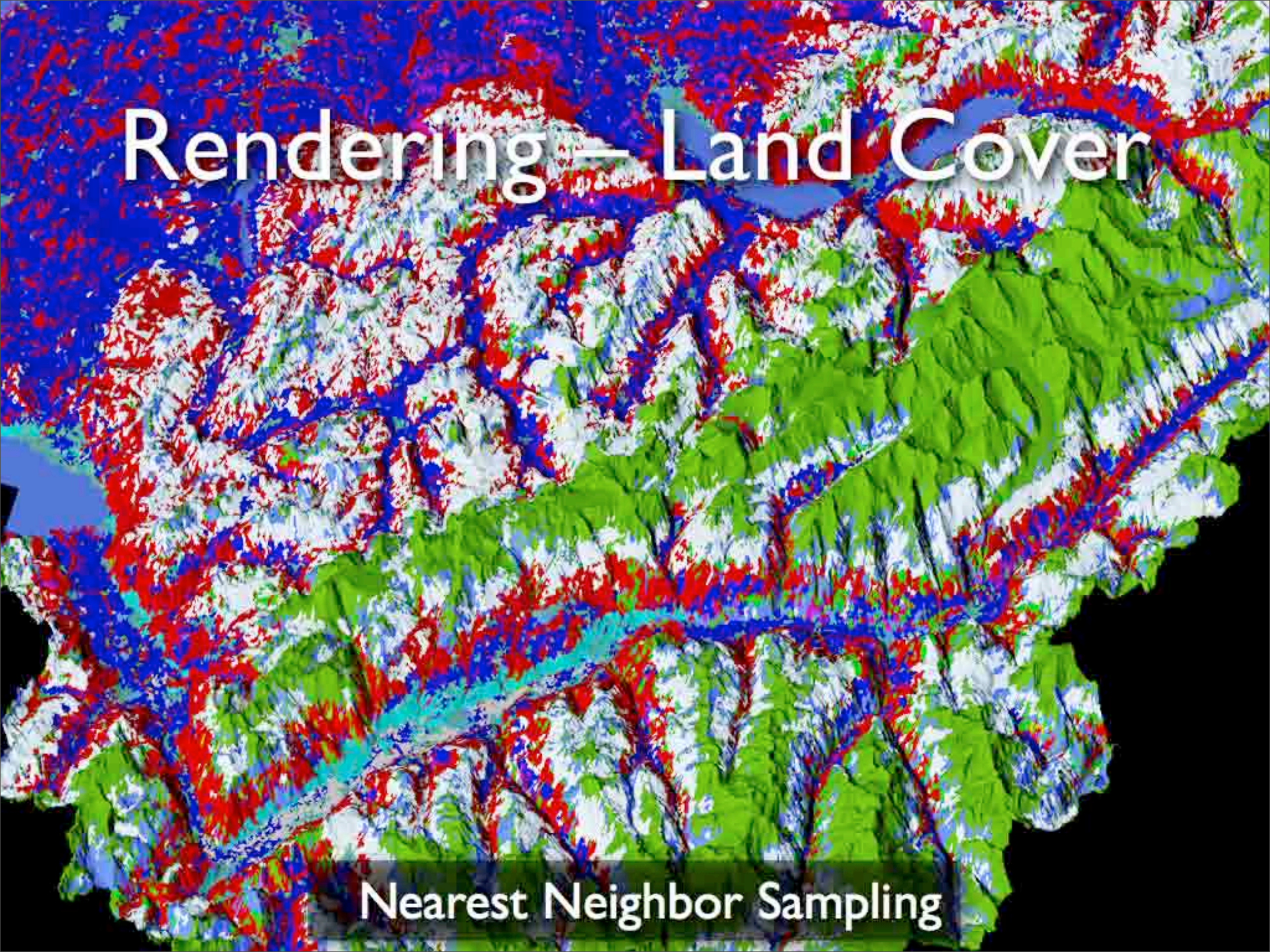
Rendering — Shading

Rendering — Texture



Rendering – Height Map

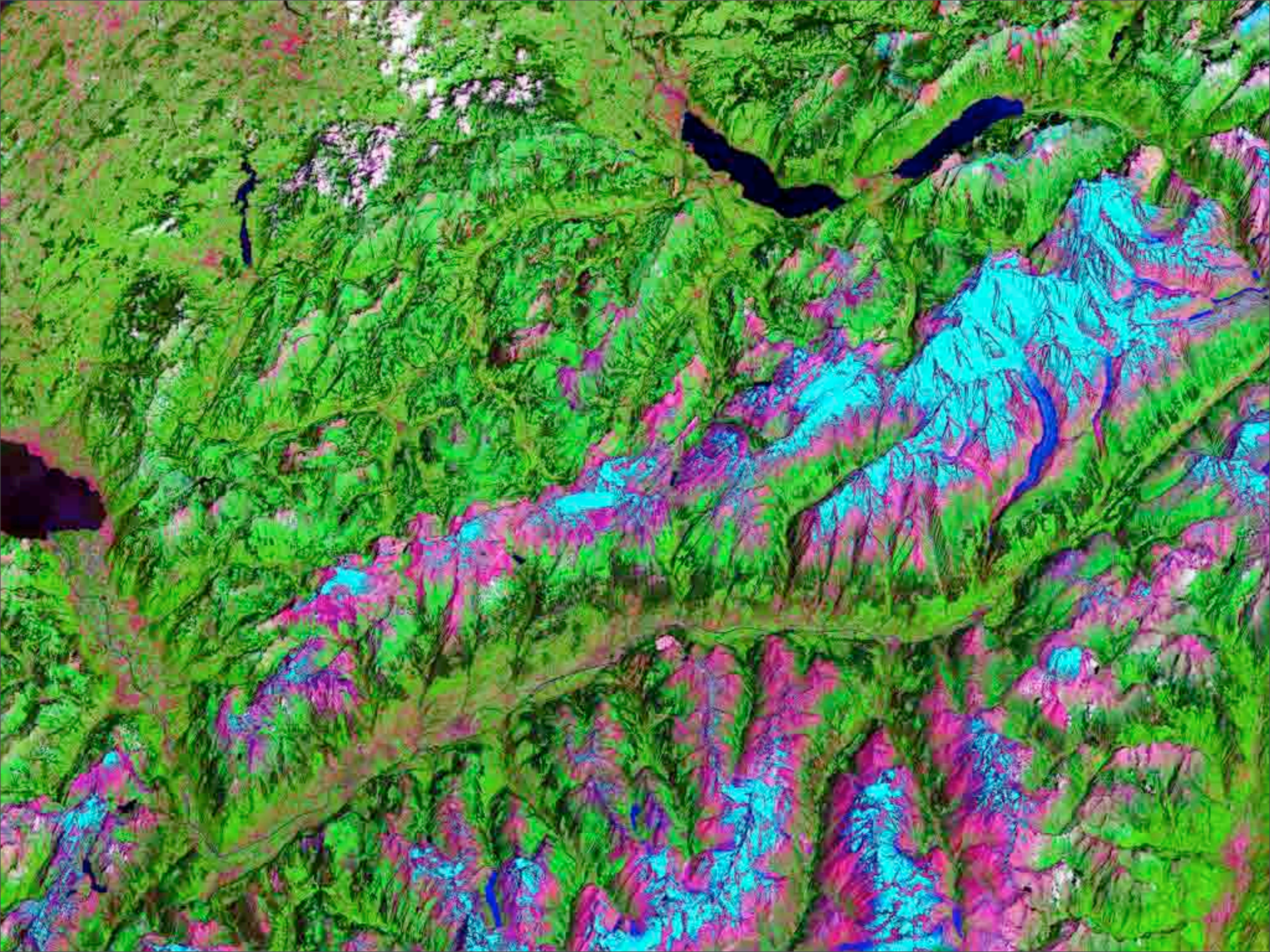
Rendering — Land Cover

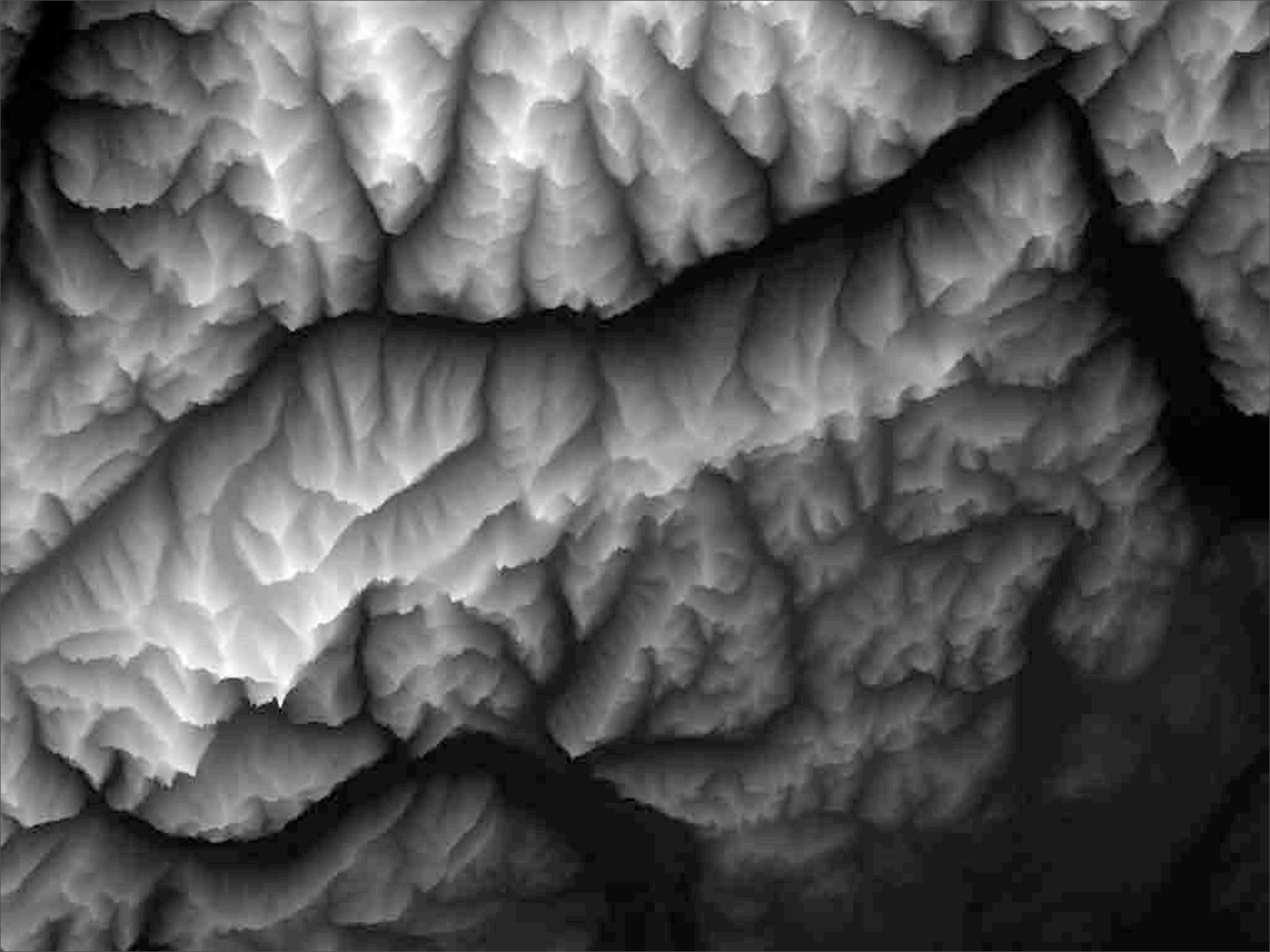


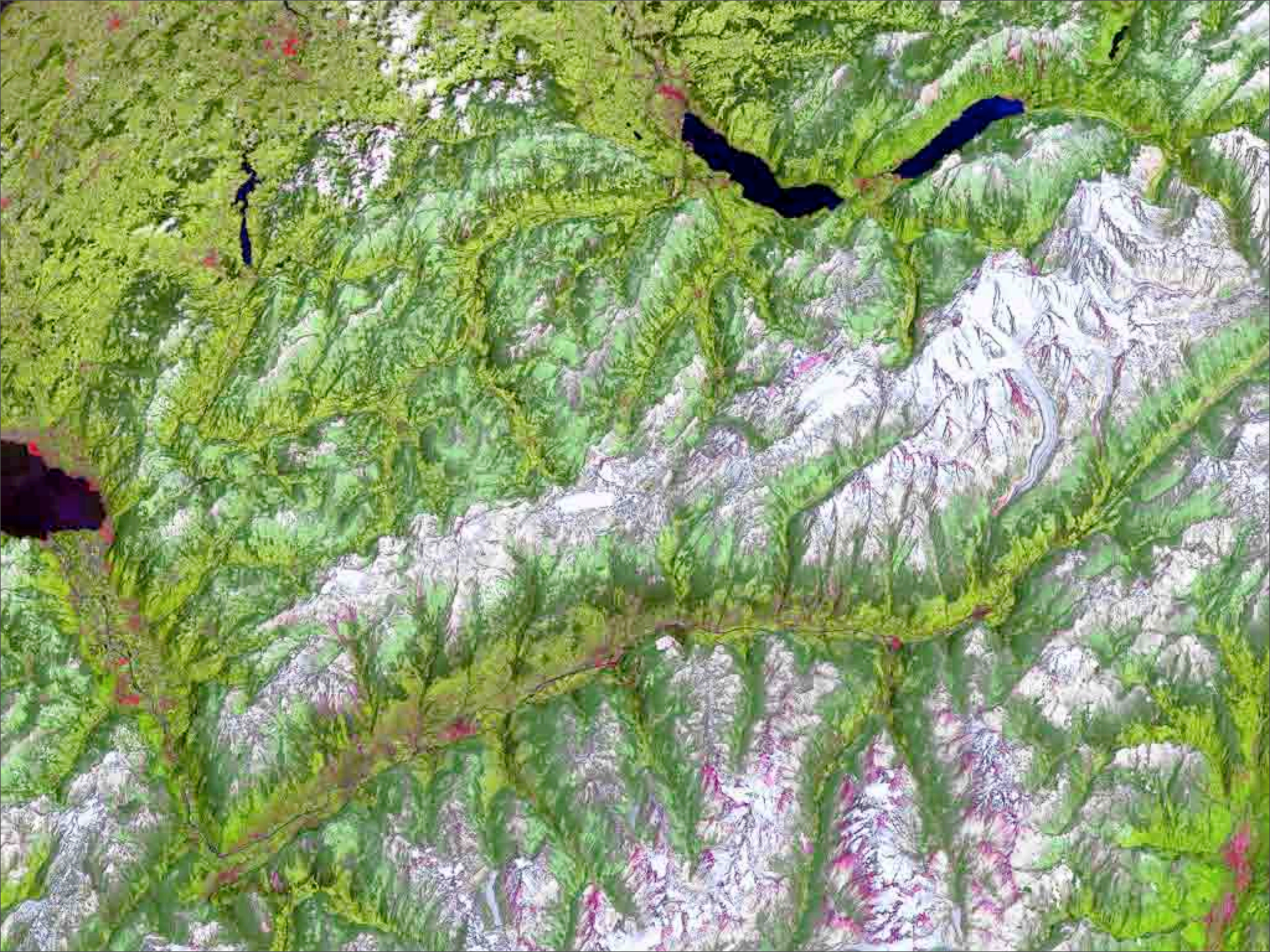
Nearest Neighbor Sampling

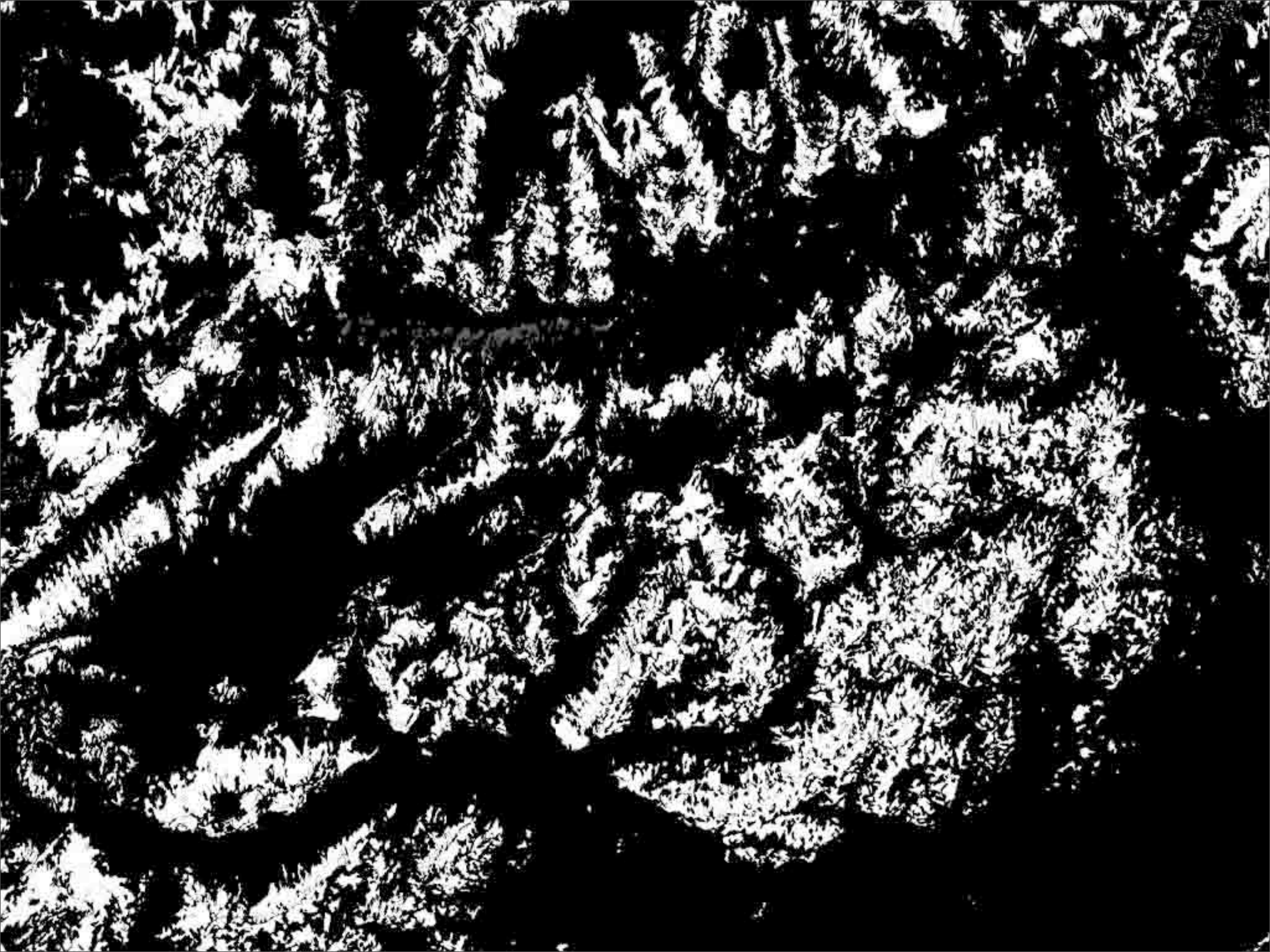
Color Correction

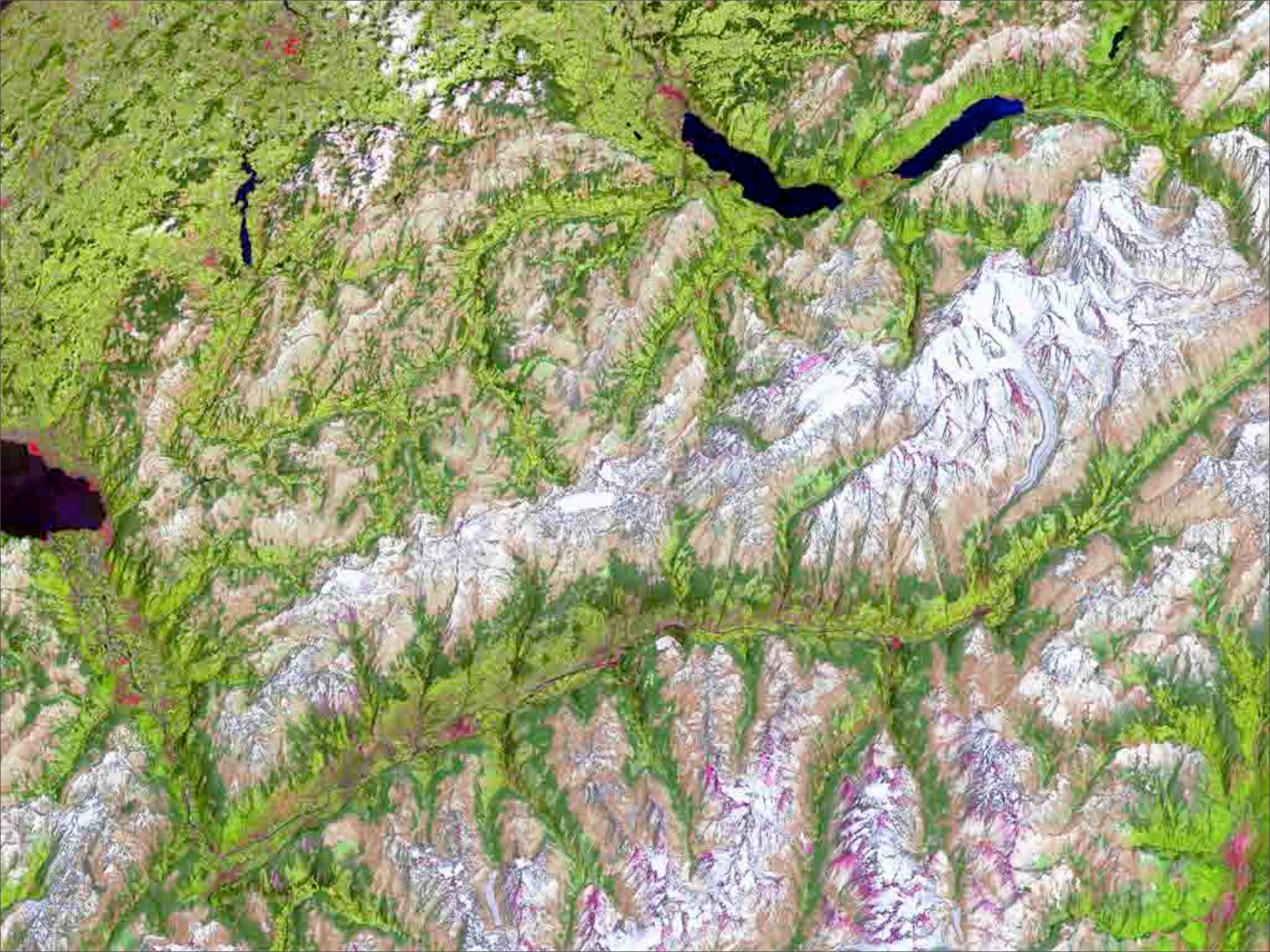
- Combine projected shading, texture, land cover in Photoshop
- Correct false colors in satellite image
- Use land cover and height mask for selective color corrections





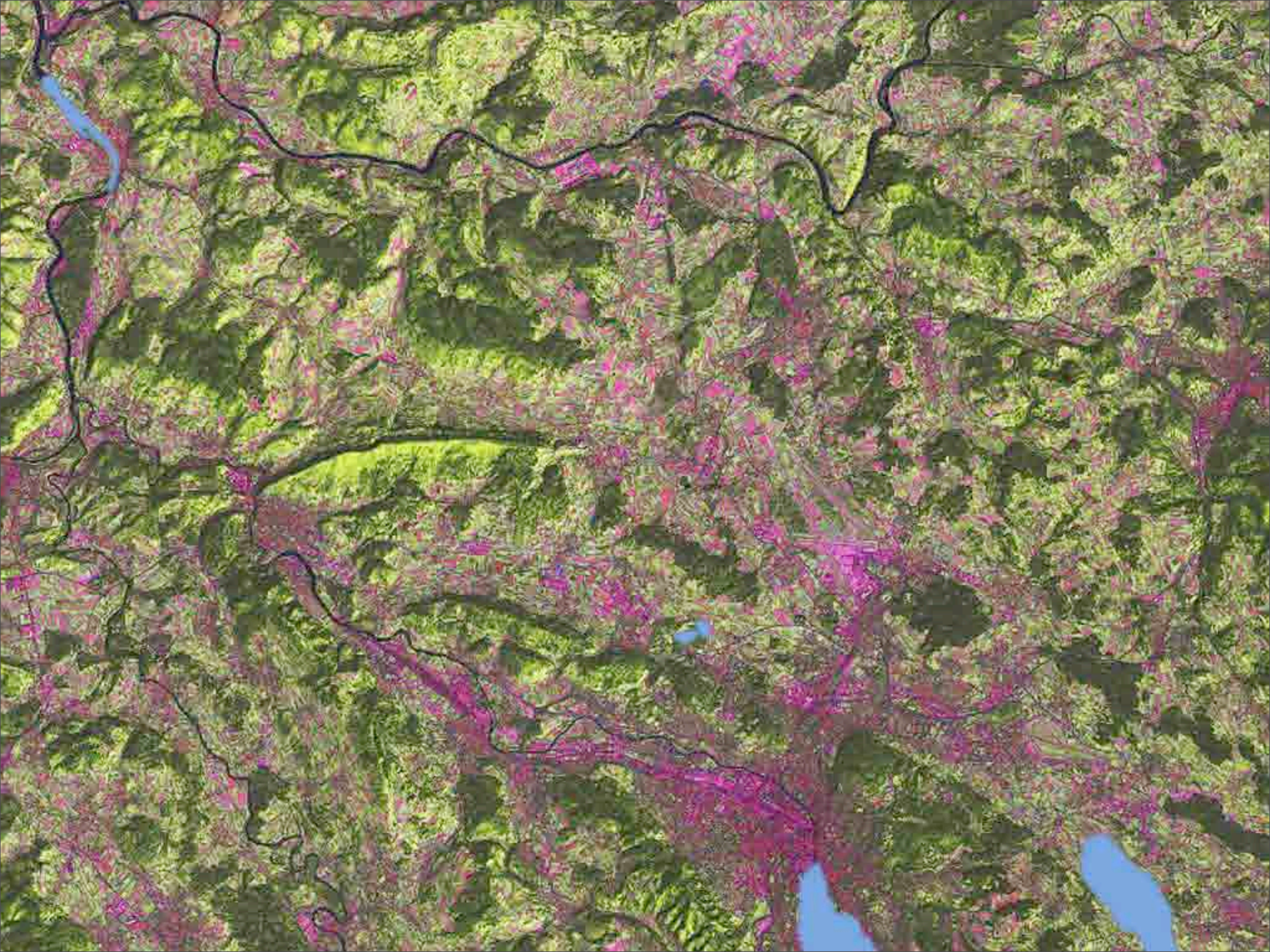


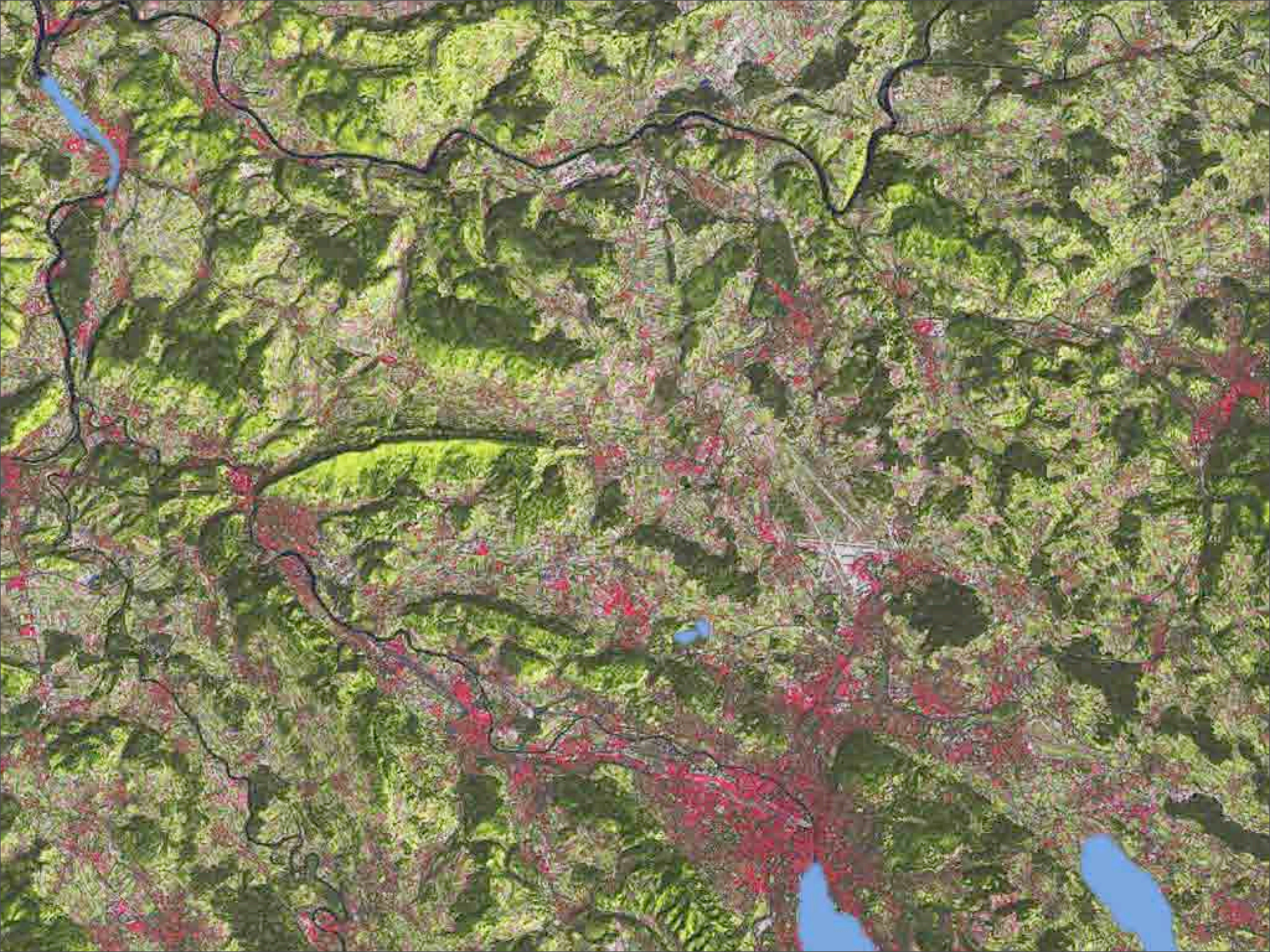


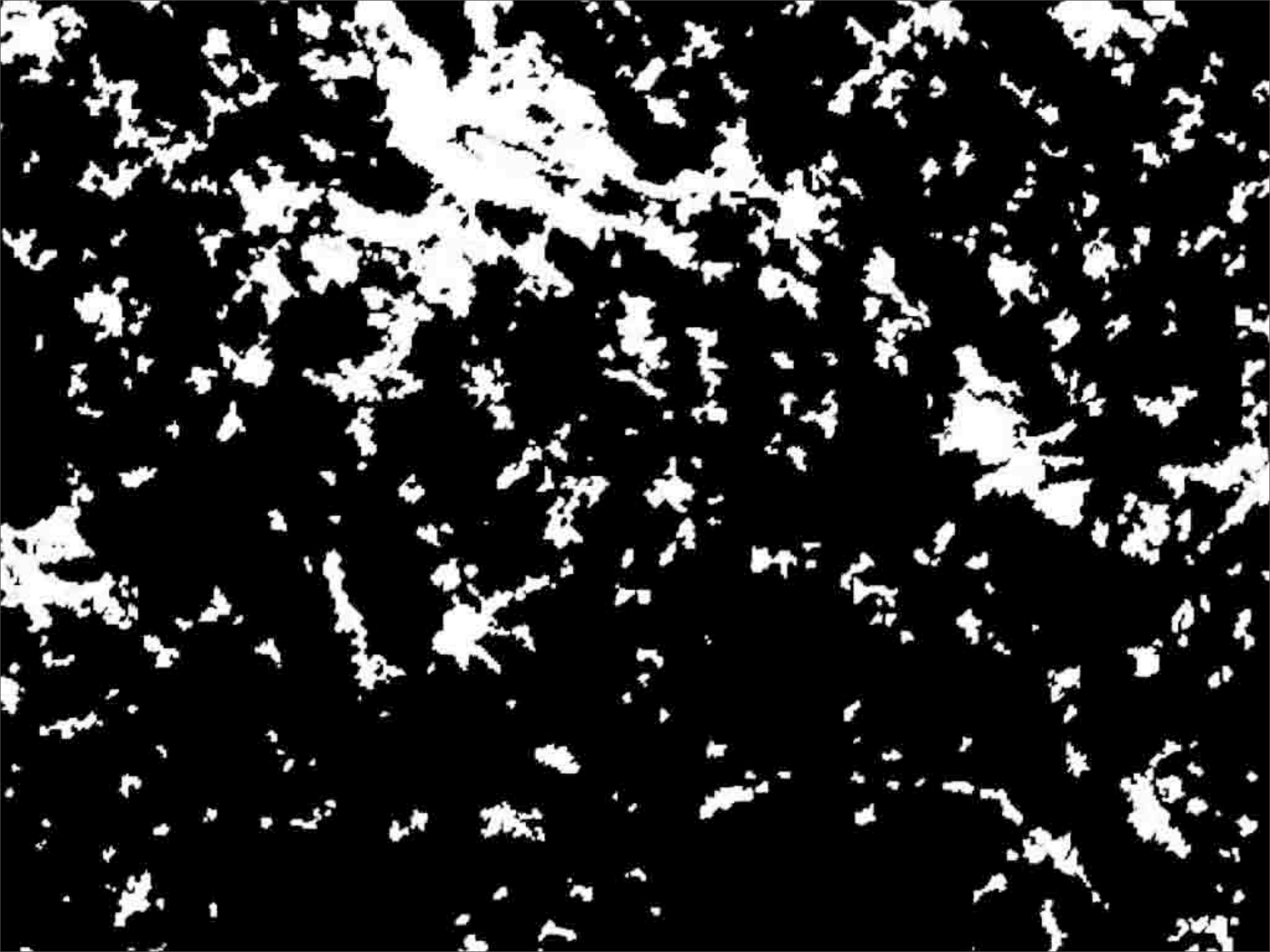


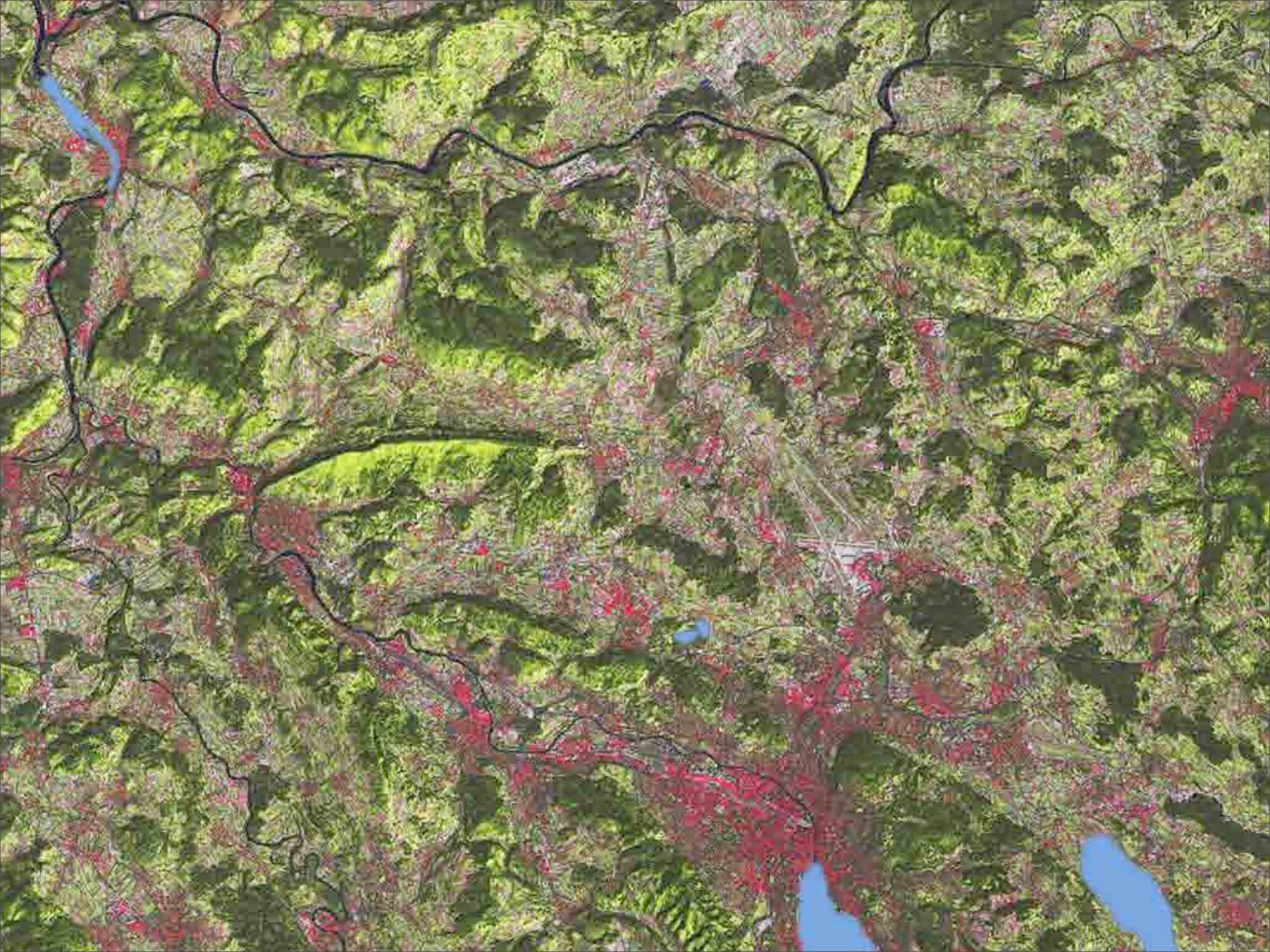

o Natura
o Pittet
Pro Nature Zentrum
Aletsch

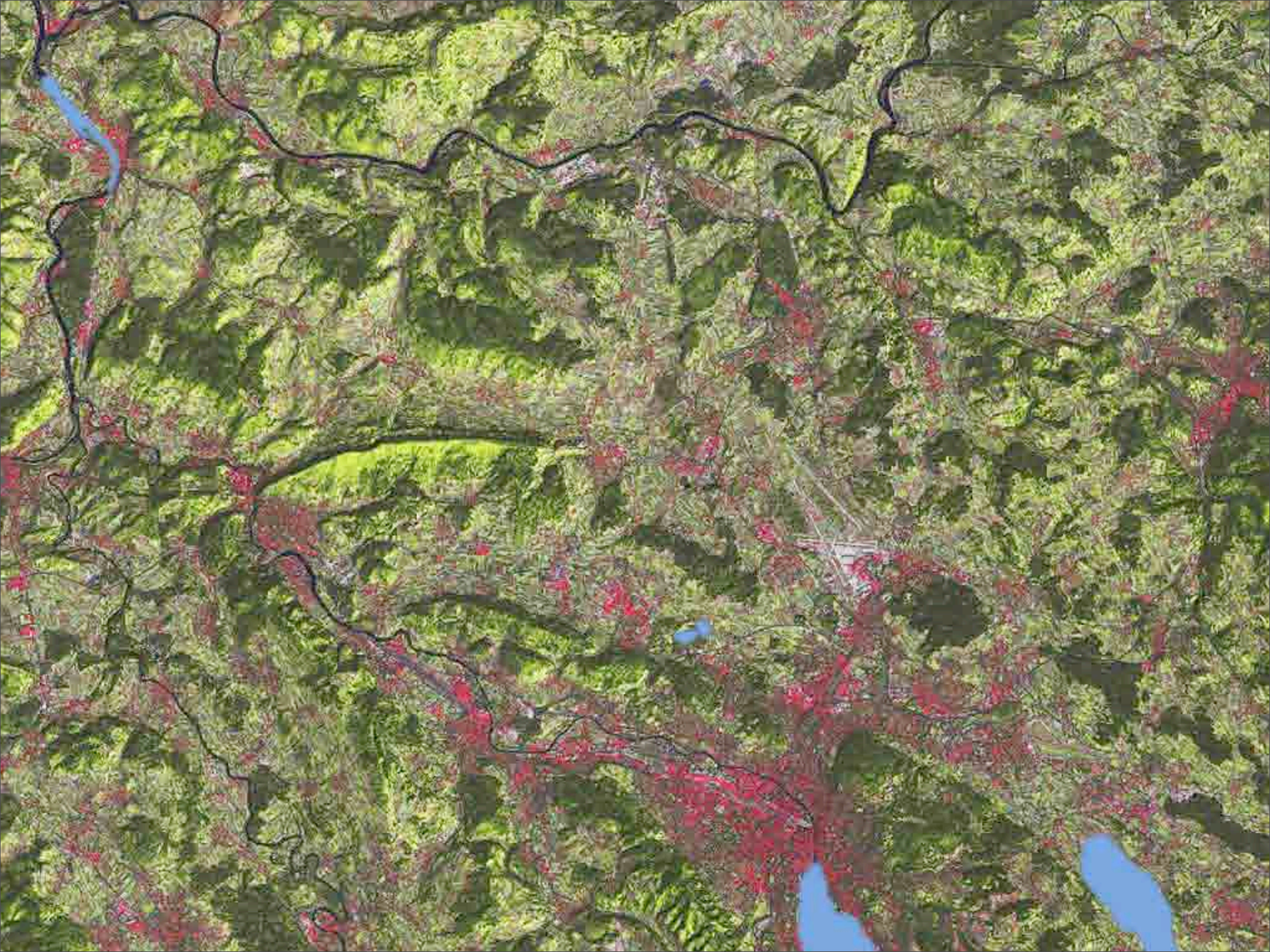
Land cover data for color correction of satellite images

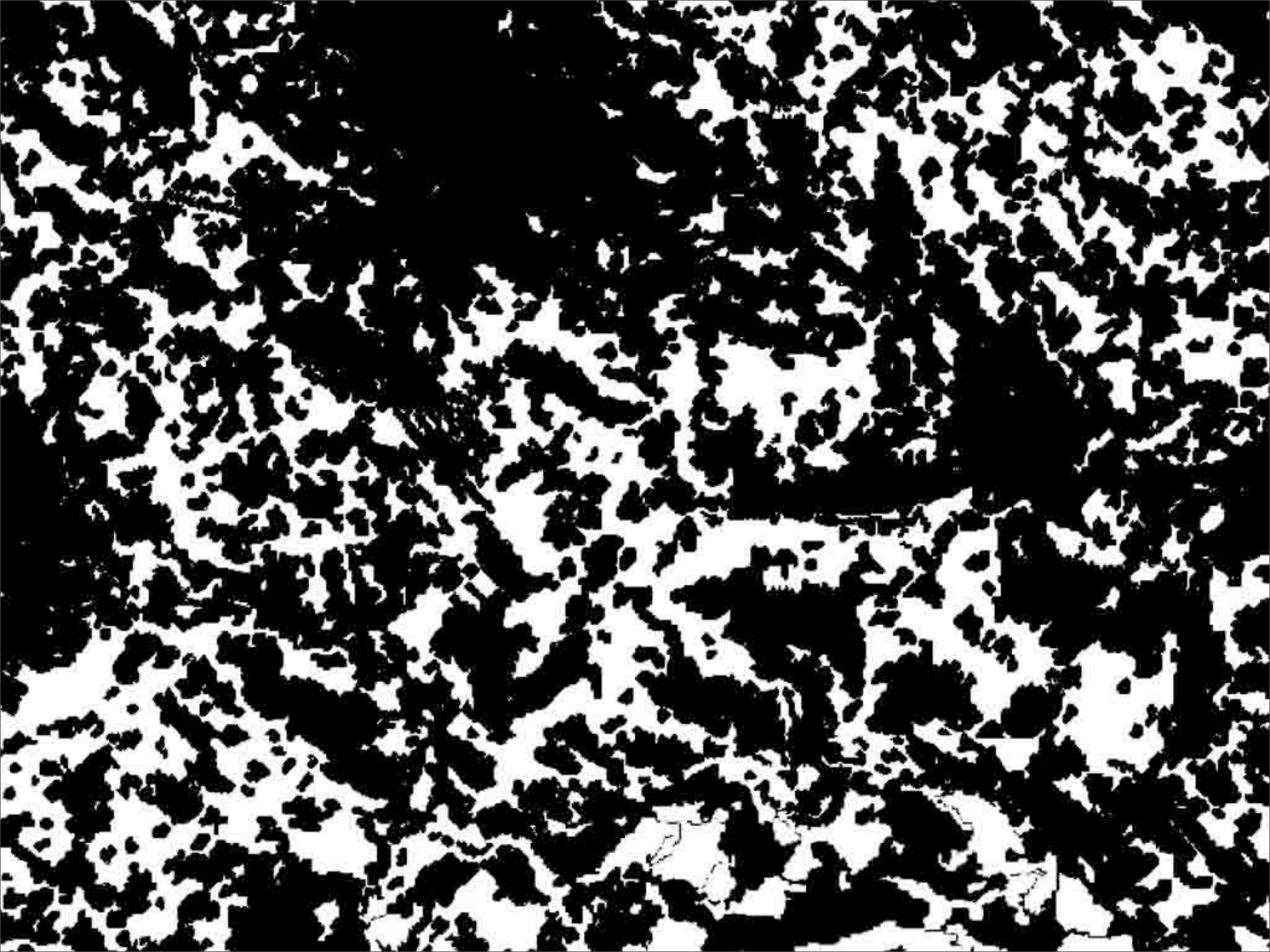












- Photoshop is your friend.
- Fast PC with a lot of RAM.
- Render shading, texture, land coverage, and height map separately.

- Take details from satellite image.
- Take classification from land cover data.
- Plan oblique projection preserves familiar ground shape.

Thank you for your attention.

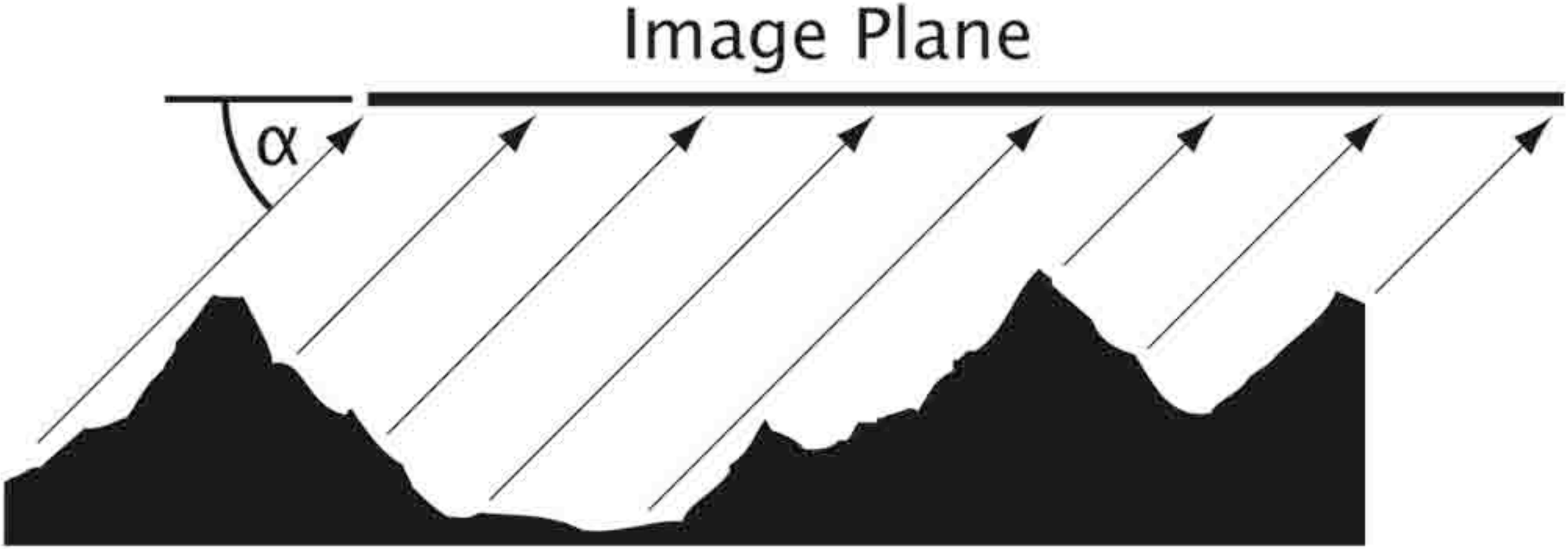


Image Plane
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Ground Plane