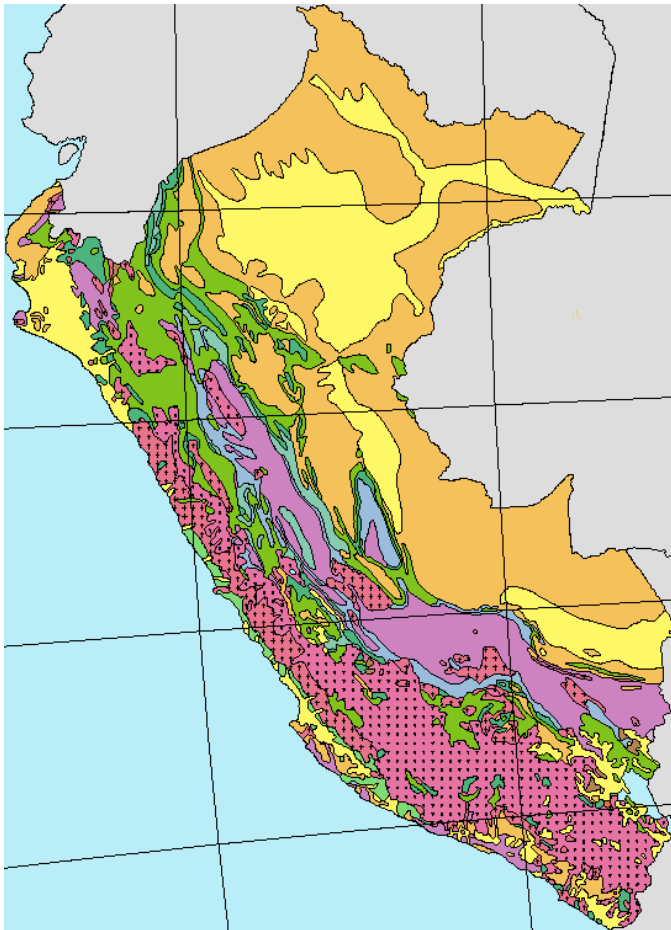


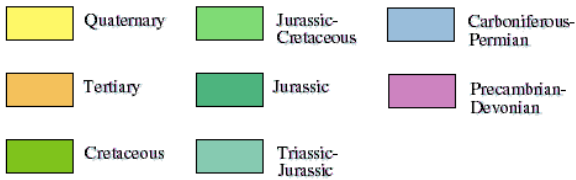
Basic Geology of South Peru

Lake Titicaca Region

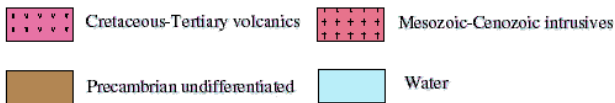
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Sedimentary Rocks



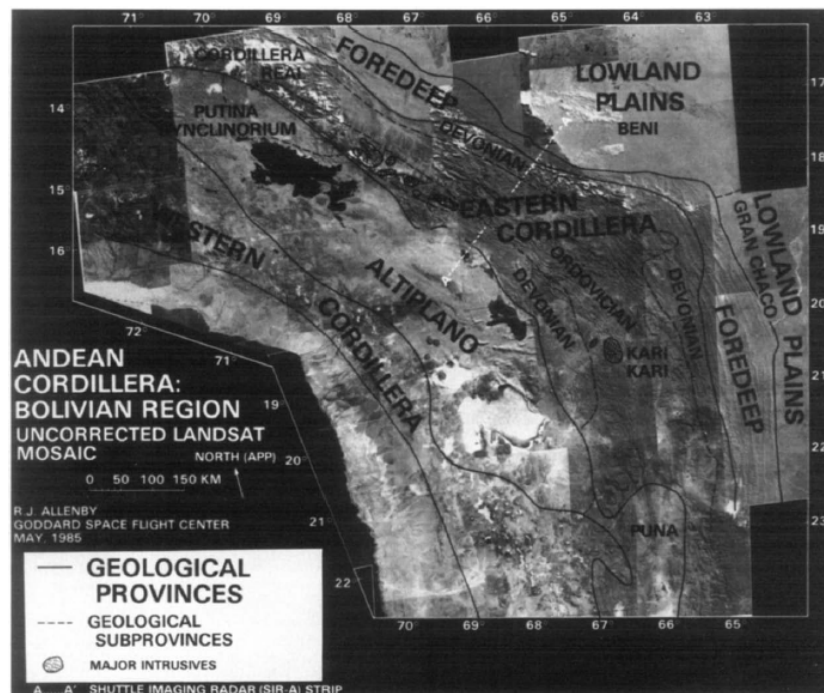
Igneous and Metamorphic Rocks



Geology around Lake Titicaca can be divided into four regions:

5. Cordillera Occidental (Western mountain range)
6. Cordillera Oriental (Eastern mountain range)
7. Putina synclinorium
8. Altiplano

Each region is distinguished by its own stratigraphy and petrology.



Cordillera Occidental

- Volcanic plateau
- Extrusive igneous rocks with some exposed sedimentary rock
- Commonly dacites and andesites in the region

Cordillera Oriental

- Includes Apolobamba, Munecas, and Real Cordilleras
- Quartzite, Slate, shale, with intrusions of granodiorite causing some metamorphism
- High relief primarily from faulting

Putina Synclinorium

- Thick cretaceous sandstone and quartzite
- Made up of parallel anti-syncline pair with ~NW-SE strike
- Some folds can be traced for over 100km

Altiplano

- Alluvial lacustrine plain
- Varies from flat to complexly folded morphology
- Folding due to regional compression
- General NE motion opposed by the Putina

Basic Geology of South Peru

Arequipa Region

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Geology around Arequipa can be divided into four regions:

1. Low hills and coastal region to the southwest (“lomas”)
2. Inclined plains near the Vitor River
3. The Caldera
4. The mountains to the north

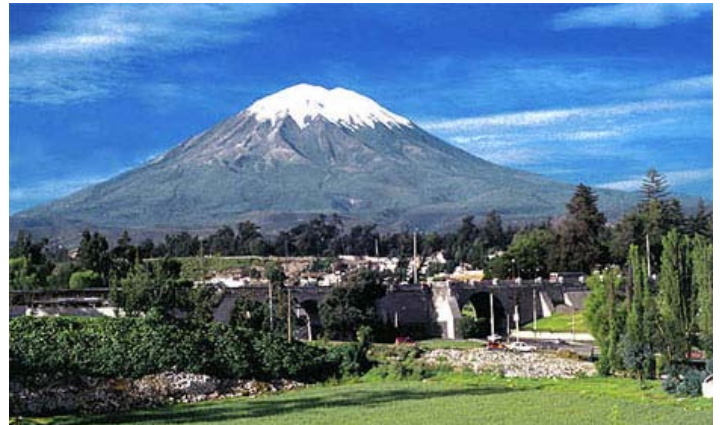
Barchan dunes common to the plains region

“Lomas” or sloping hills

- Made up primarily of crystalline sedimentary rock (i.e. sandstone)
- Marine deposits at 300m elevation
- Wave cut terraces
- Fossiliferous deposits

Inclined Plains

- Meet the lomas at their mean elevation 1,100m
- End at the edge of the caldera at 1,500m
- Sandstone base
- Mostly an arid desert grassland
- Home to many barchan dunes



Mt. Misti as seen from Arequipa

The Caldera

- Formed ~50,000 years ago
- Explosion of Mt Picchu Picchu
- Rocks in the region: diorite, granodiorite, monzonite

Mountains

- Part of the Andes to the North and North East
- Mt. Misti – dormant cone volcano pictures on the right
- Chachani Mountains – slightly shorter cluster of peaks north of Arequipa

Charcani Gneiss

- Formed in the hills and to a lesser extent in the plains
- Made from granite intruding into marine sedimentary rocks near the coast
- Pre-Cambrian
- Granite originating from the same magma to form the Northern Mountains

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