Gursli

Information Sheet

Location: GURSLI MINES
Conservation designations: Cultural heritage
Grid reference: EU89, UTM-zone 33
Address: 4460 Moi
Parking available: Parking available for cars and smaller busses. Space for drop off from bus, parking for bus in Moi center.
Personnel to be contacted prior to visit: Magma Geopark, Elvegaten 23, 4370 Eigersund, E-mail: post@magmageopark.com, Phone +4791782594

Useful equipment:

- Warm clothes
- Wind and waterproof garments
- Good shoes
- Hand lense
- Meter stick
- Paper
- Color pencils and pen
- Camera

Relevance national curriculum:
Primary school – natural science and social science, especially 5th grade

Middle school – natural science and social science, especially 8th grade

High school – geography and geo science

Rock types and geological processes observed: Banded and granitic gneisses, ductile deformation, erosion and weathering
Geological structures: Folds, banding
Earth processes: eg. Rock falls, glacial processes (creation of moraines, erratics etc.)
Geological periods present: Precambrian and quaternary

Site specific hazards and risks:

- Crossing road at the beginning of hike
- If walking into the mines (needs agreement with guide) remember to wear a helmet

Mitigation measures:

- Park in a designated area
- Leave any found ore behind
- Leave nothing but footprints
- Respect private land
- Respect grazing animals
- Respect wildlife

Did you know:

Topics to cover before visit: Weather and erosion, large scale landforms and how they are formed (mountains), rocks and minerals, glacial landforms, lichens

Keywords: Gneiss, ore, mines, Rodinia, ice age

Format developed by the Western Education and Library Board's Magilligan Field Centre

Stop 1: Moraines

Stop 2: Moss growing on the north side of the tree and lichens growing on the south side

Stop 3: Boulder of banded gneiss

Stop 4: The winding road to the mines

Stop 5: fresh vs. weathered surface of gneiss

Stop 6: Folded banded gniss

Stop 7: foundation of the mine managers house containing blocks of different rocks

Stop 8: from gangue outside mines where some of the molybdenum ore remains

Geological history*:

It all started when sediments from an ancient ocean and intrusions of granite were transformed to gneisses due to high temperature and pressure caused by the collision of two plates (continental and oceanic). The collision was part of the formation of the supercontinent Rodinia and the result was a large mountain chain like the Andes today. Molten rock (magma) accumulated in a large magma chamber in the roots of the mountain chain and later solidified (crystallized) as anorthosite. This happened about 920 million years ago. The accumulated magma heated the surrounding gneisses resulting in mobilization (movement) of molybdenum. Hot fluids transported molybdenum to cracks where it concentrated and crystallized (solidified) as molybdenite. This happened more than 20 km below the surface of the earth. Rodinia started its slow process of breaking up after the enrichment of the molybdenite. Continental plates drifted apart and new oceans formed but it would take yet another continent-continent collision, formation of a mountain chain and a break-up of continents before the modern Atlantic Ocean would arise.