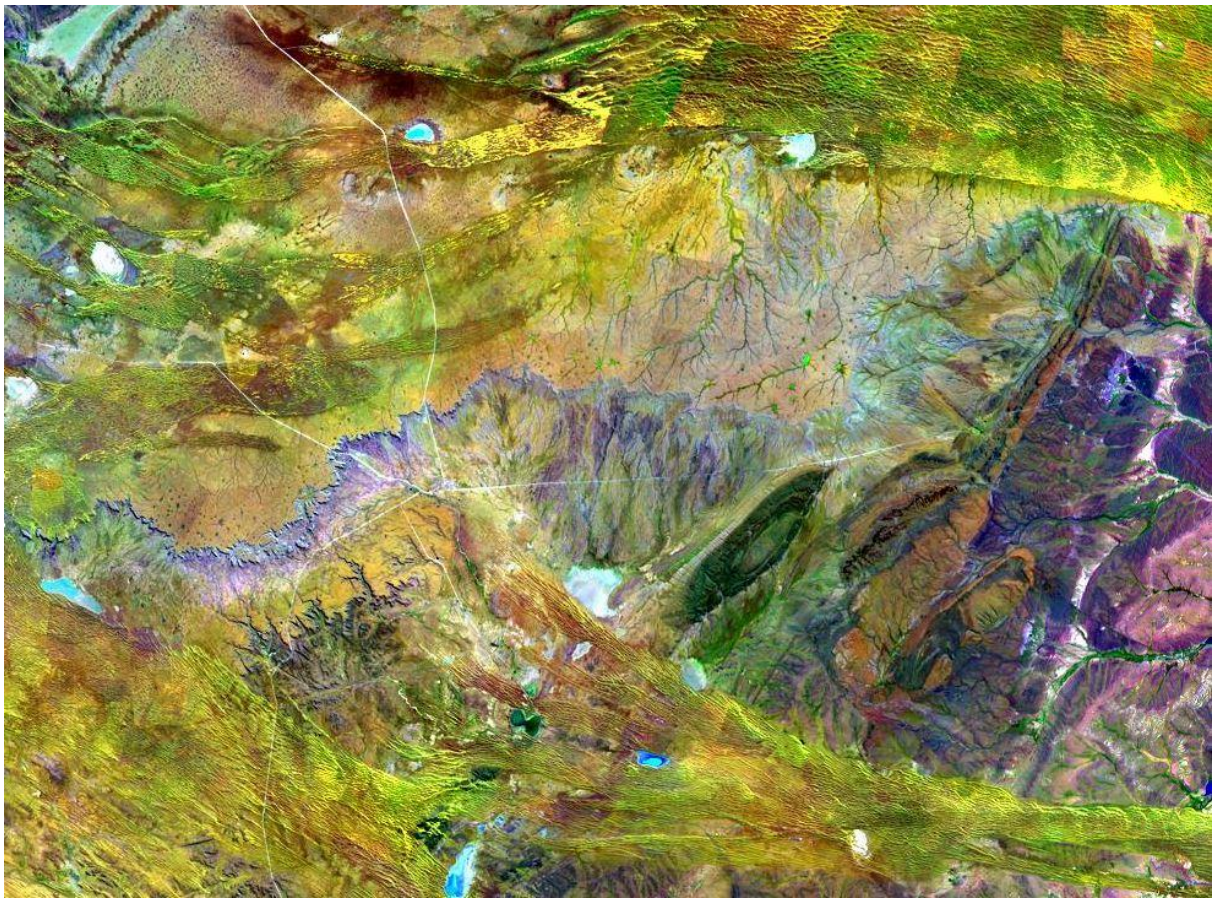
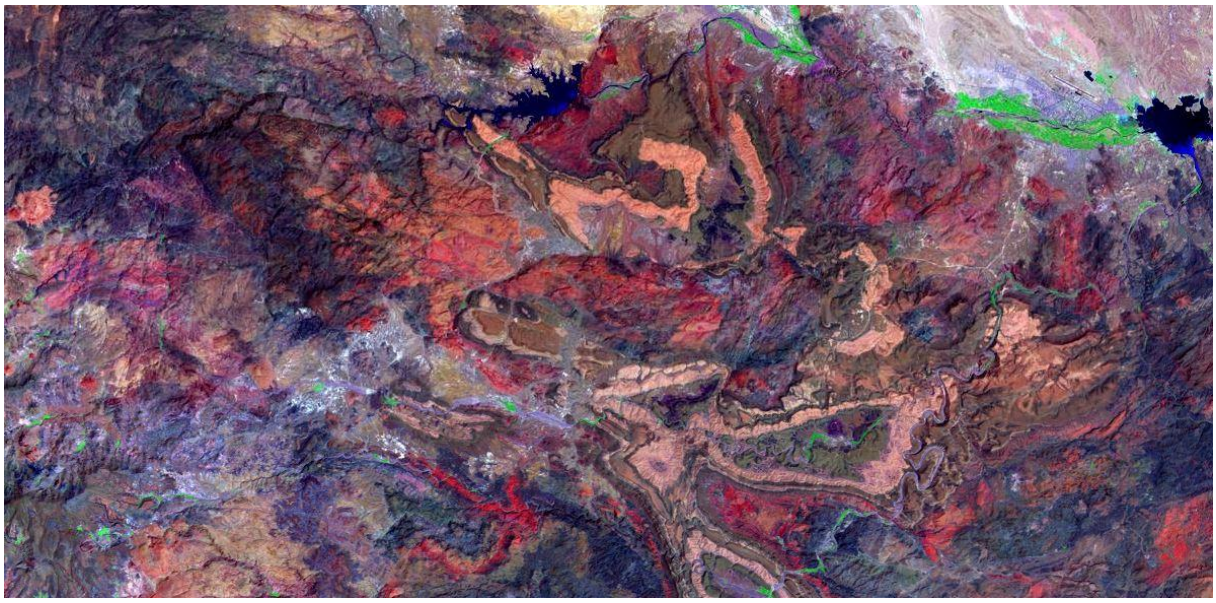
GEOSENSE - GEOLOGICAL MAPPING

Whatever the terrain you're working in (from desert to arctic to tropical jungle), whatever the tectonic setting, Geosense has undertaken geological mapping in similar regions. Across the globe, we've looked at areas of igneous, sedimentary, volcanic and metamorphic rocks, with ages ranging from Archean to Quaternary. Most importantly, we have worked across a variety of mineralization styles, including: high-sulphidation systems, low and intermediate sulphidation, porphyry systems, IOCG-systems, skarns, sedex deposits, iron-ore deposits and bauxite and nickel laterite environments. Thanks to this broad ranging experience, the trained eyes of the Geosense geologists will help you increase your understanding of the surface geology of your area of interest.

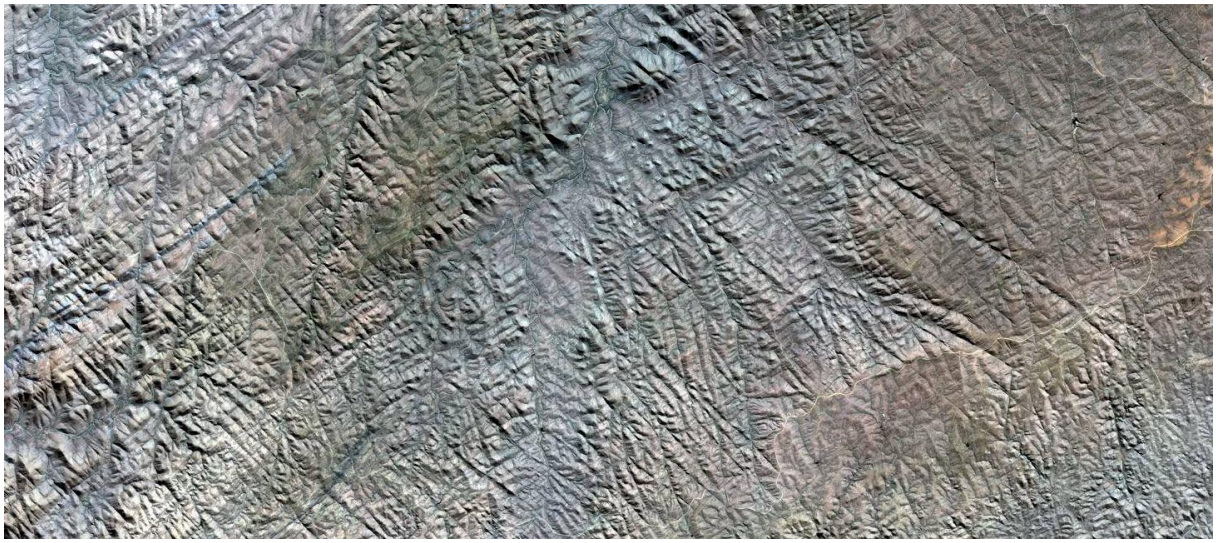


We start all our geological mapping work with customer interaction, because geology has many variables, and no two projects are the same. First, we determine what information needs to be gathered, and the most appropriate datasets for that purpose. Some aspects are clearly visible on satellite imagery, others are much more obvious on elevation data, or on radar data (particularly in vegetated terrain). Combining datasets will provide the best results, so that is what we do at Geosense. We then go ahead and process the data, to get the most out of it during the interpretation.

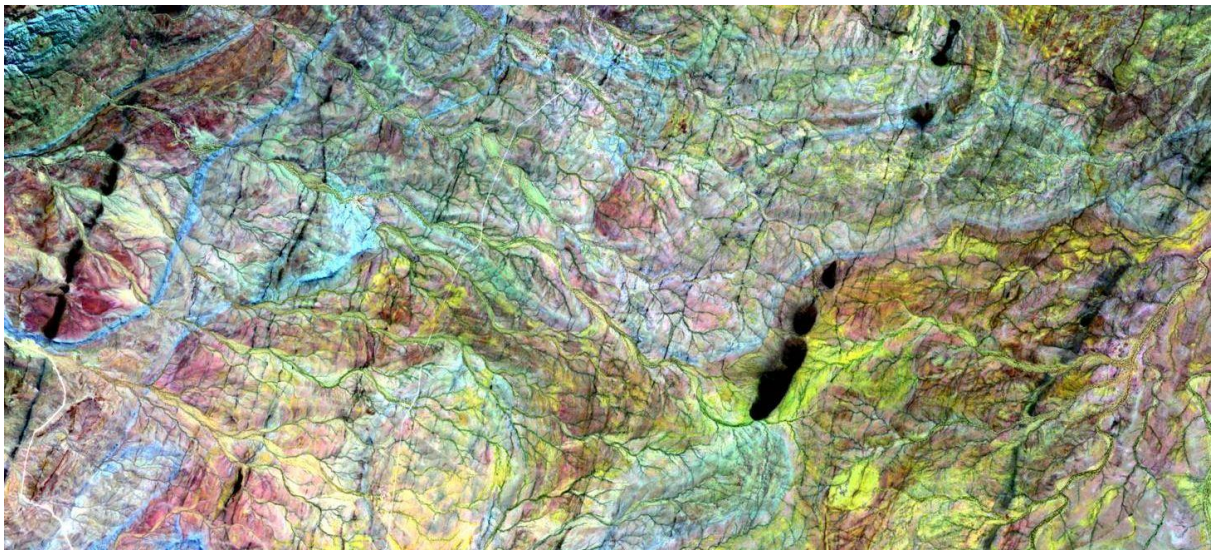
Whatever the scale required for your application, from large regional reconnaissance studies, to detailed mapping of alteration and structures around a single prospect, we can help you get answers to some of your key questions. A project can consist of several phases, starting out with the lowest resolution data, to determine smaller areas to focus follow up work with higher resolution data, which helps determine more subtle features that could be of interest to the explorers.



Satellite mapping makes it possible to cover large and/or inaccessible areas quickly, to determine locations that require a closer look. Thanks to the difference in perspective and scale, satellite data allows for detection of structures that you wouldn't be able to see while out in the field with your boots on the ground. Some of these are large, regional structures, that can control the locations and geometries of significant mineral deposits, but only have an indirect surface expression along parts of its trace.

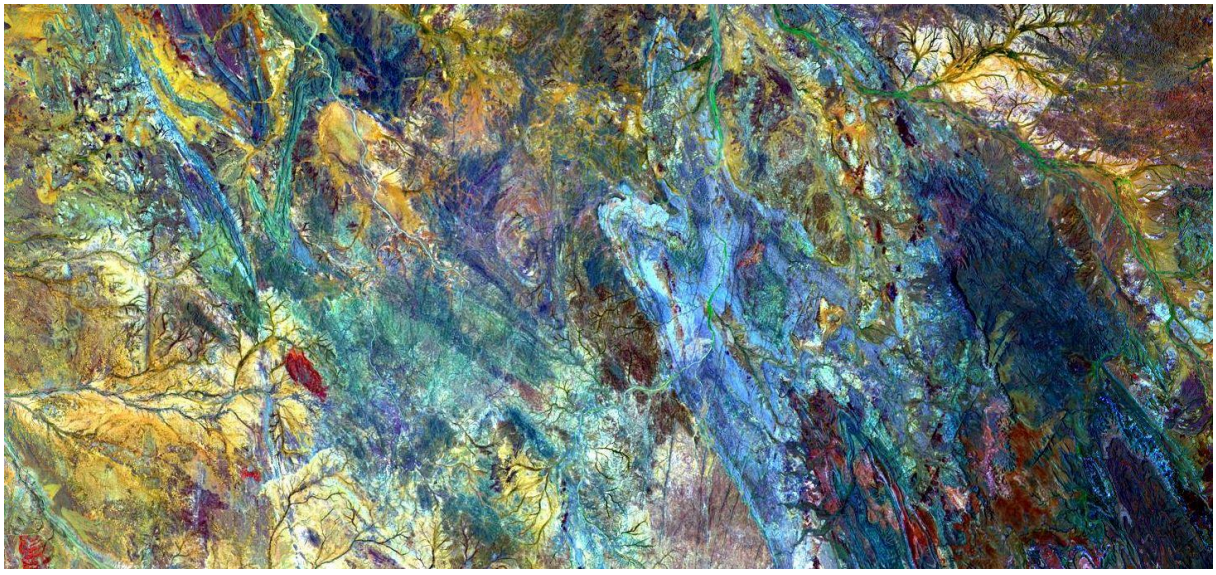


Many mineral deposits are (at least partly) controlled by structures. Satellite mapping will help determine the main structural trends in an area. Where the main trend that controls mineralization is already known, we can detect further structures with the same orientation. This way you can get the most out of your valuable time in the field, to determine if these structures are mineralized as well. We can detect faults, folds, unconformities, shear zones, dikes, sills, veins, lineaments and other structures. Under the right circumstances we can measure dips and recognize individual fault trends and families of different ages (e.g. pre-, syn and post-mineralization).

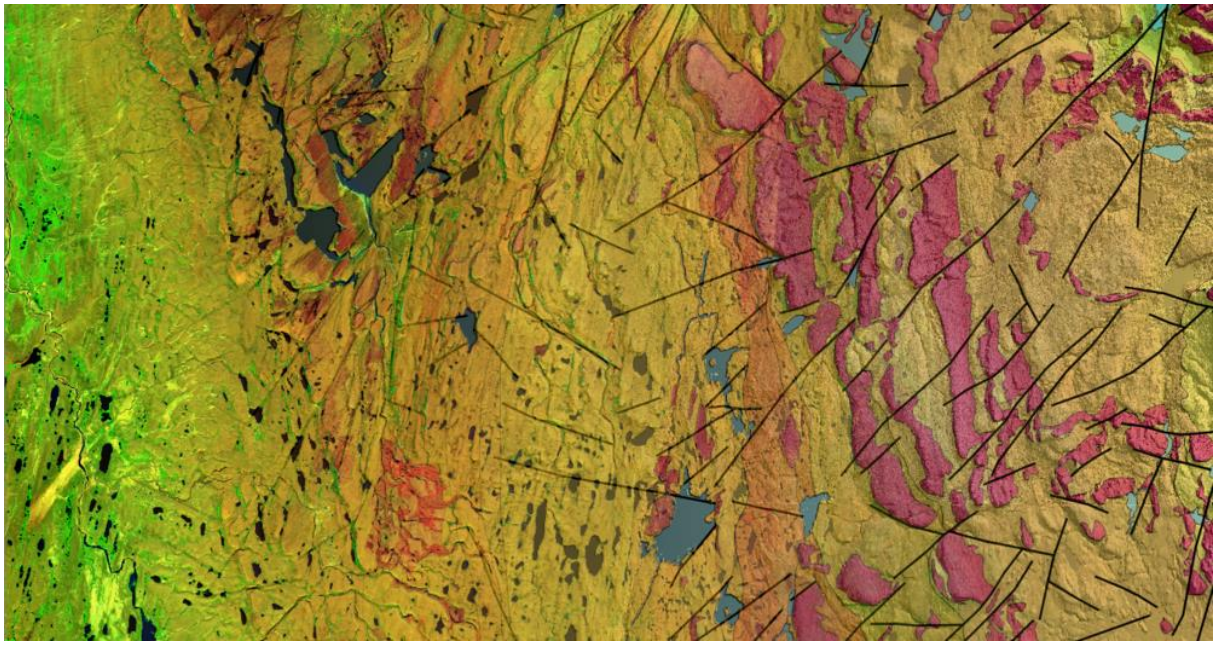


Lithologies are another aspect of our geological mapping projects. Mineralized fluids tend to enter favorable permeable lithological units, while avoiding those that have lower porosity. Therefore it is often important to have a good understanding of the distribution of different lithological units across an AOI. This can be determined by differences in spectral signal and morphology (related to differential erosion).

Spectral interpretation of multispectral satellite imagery is another one of our specialties. We locate potential alteration and map zoning in hydrothermal alteration systems. This is not just a matter of blunt processing using complex algorithms. Above all, it is an art that requires a lot of manual fine-tuning in order to be able to recognize subtle features, patterns and tonal subtleties, which are often characteristic for zoned alteration systems.



The end result of all this work will be a geological map, covering the AOI and showing all the important aspects of the interpretation.



If the customer has other datasets available, it is possible to integrate these, as each datasets has strengths and weaknesses. By combining several, you will get a more accurate understanding of your Area Of Interest (AOI). Geosense can also provide follow-up work, for example by doing spectral and/or structural analysis in the field.

Some of the datasets Geosense uses for geological mapping:

Optical and multi- & hyperspectral imagery:

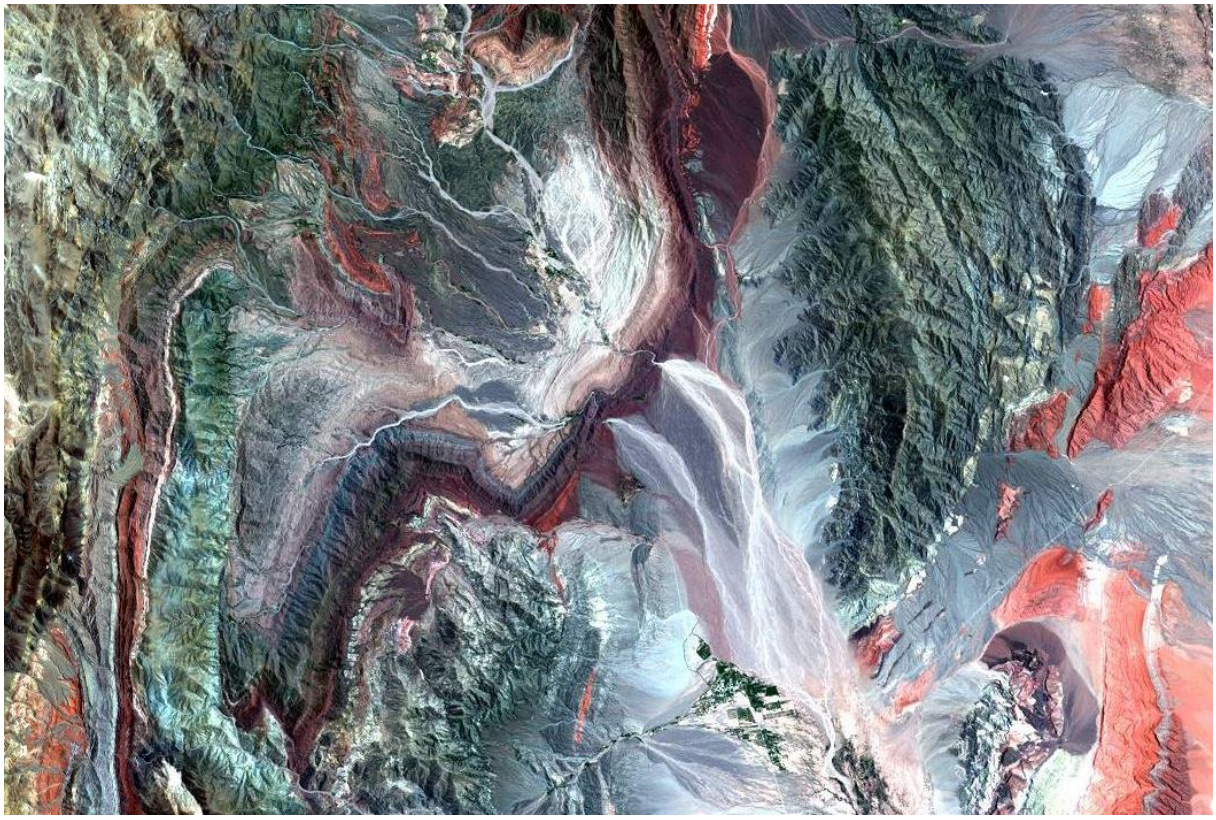
Landsat, Sentinel, ASTER, SPOT, Worldview 3, etc.

Digital Elevation Models (DEM):

SRTM, WorldDEM, Alos World 3D (30m & 5m), Lidar, etc.

Radar data:

Sentinel, Alos PalSAR, etc.



For further information, please do not hesitate to get in touch:

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All images shown are from the Sentinel-2 satellite mission, except the image on page 6, which is Landsat 8 with Geosense interpretation.