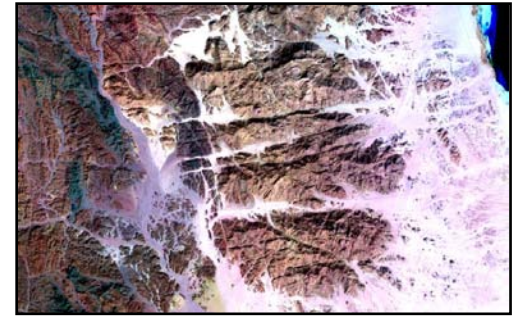


vector and raster graphics

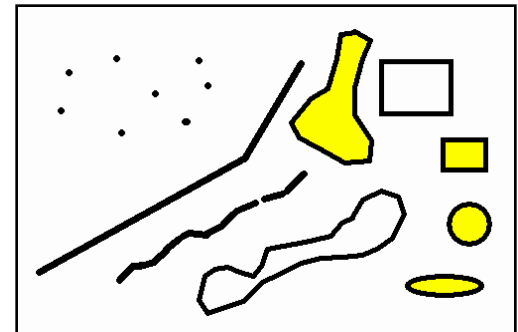
Raster data (Raster image)

- They are made up of a grid of pixels, each has **x, y, z** values.
- X and y values represent the location of the pixel within the image (column and row values of the pixel within the image itself, or as coordinates values of the pixel in registered images).
- Z represents the DN value of the pixel (the reflectance or brightness).
- Raster images are usually in the JPG, TIF, GIF, or BMP format.
- Raster graphics can typically be scaled down with no loss of quality, but enlarging a raster image causes it to look blocky and "pixelated."



Vector data (Vector image)

- Unlike raster **images**, **vector** graphics are not made up of a grid of pixels. Instead, **vector** graphics are composed of points, lines, and polygons. The line consists of several connected points. Polygon consists of several connected lines. Each point has a defined location (x and y values), and may or may not have a z value (magnitude of a certain parameter or variable)
- The most common file format is SHP.
- Because vector-based images are not made up of a specific number of pixels, they can be enlarged to any size without losing any image quality and the edges of each object within the graphic stay smooth and clean.



The difference between vector and raster graphics

- 1- Raster images are composed of pixels of various colors, which together form an image, while vector graphics are composed of points of known locations. Connected points form lines or polygons.
- 2- Because vector graphics are not made of pixels, the images can be scaled to be very large without losing quality. Raster graphics, on the other hand, become "blocky".