The Interpretation of Color Infrared Aerial Photography

Color infrared photography, often called "false color photography", is widely used for the interpretation of natural resources. Due to the subjected degrees of degradation in handling before exposure and the use of high-speed film in color infrared photography, aerial photographs can and do vary in overall color tone. This variability may cause complications within the interpretation of colors between each unique photograph. The following guidelines are provided for our customers to aid them in their interpretations of this particular type of photography.

Knowledge of vegetation vigor and density is important in the interpretation of the various red shades within aerial photography. The color red is frequently associated with live vegetation. Very intense shades of red indicate dense vegetation that is growing quite vigorously. An irrigated alfalfa field would be an example of such vegetation. An evergreen forest, which also may be quite vegetatively dense, would not appear in a similar red tone since its level of growth activity is less compared to the irrigated alfalfa field.

As the amount of vegetation density and vigor decreases, the different red tones may change to more lighter red and pink colors. When the plant density activity becomes too low, the faint red coloring is overcome by the stronger colors representing the soil on which the plants have been growing. For instances such as these, the ground area would appear in shades of white, blue, or green, depending on the soil type and moisture content. When the plant vigor decreases, the vegetation would show as paler shades of red and pink, various shades of green, and possibly even tan in color. Dead vegetation, wheat stubble for example, would often be portrayed in tints of green or tan.

Bare soils appear as patches of white, blue, or green in most agricultural regions. Generally speaking, the moister the soil, the darker the soil color. Soil composition affects all color ranges shown on aerial photographs. Dry, sandy land will appear white in color. With the addition of moisture to this land, the white coloring turns into light gray or light tan. Soils composed of clay are darker in color than the sandy areas as well as tending toward more blue-green tones. Clay soils holding extreme moisture would resemble darker shades of the same colors. These identical soils, when high in organic matter, such as silt or loam, would be viewed darkest in the same corresponding color scheme.

In aerial photography, man-made features correlate their colors to the materials with which they were constructed. For example, asphalt (whose coloring ranges from dark to light) and concrete roads (whose coloring ranges from light to dark) vary in intensity on opposite ends of the color spectrum depending on their age. Gravel or dirt roads are shown as less intense colors due to their variations in soil make-up and composition. A town's streets and buildings could be considered similar to the above examples with their color also relying on their material textures.

Water, as expected, appears through various shades of blue ranging from nearly black to very pale. Pristine water has a black appearance. With the increase of sediment deposits in beds of water, the aerial photography colors turn slowly to lighter blue tones. Shallow water would reflect the material present in its stream bottom. For example, a shallow creek, bottom included, would be viewed as a white color in order to mirror the high levels of built-up sand.

Aerial photographs on degraded film cast an overall blue or green shadow on their images. When this occurs, the interpreter must consider how the overall cast has effected the original rendition of the photograph and therefore alter his or her scenic view.

This information taken from the EROS Data Center.