4.12 Secret

These photograph not for sale in market. Secret is use for educational purpose. (Figure: 9)

Figure 9: Secret

4.13 Negative Number

Figure10: Negative Numbers

4.14 Number of Press

Figure11: Number of Press

5. Elements of Aerial Photography Interpretation

There are several factors in identifying object on aerial photographs. Process of photo interpretation involves detection of a feature and its identification. Photo interpretation depends largely upon the capability of human eye to differentiate details in the aerial photographs and although object recognition is actually a function of photo quality and personal capability. It also depends upon the typical reflectivity of object itself. The following basic elements are used for the identification of objects on aerial photographs like shape, size, pattern, tone (or hue), texture, shadows, site and association. In Figure: 12 and Chart: 1

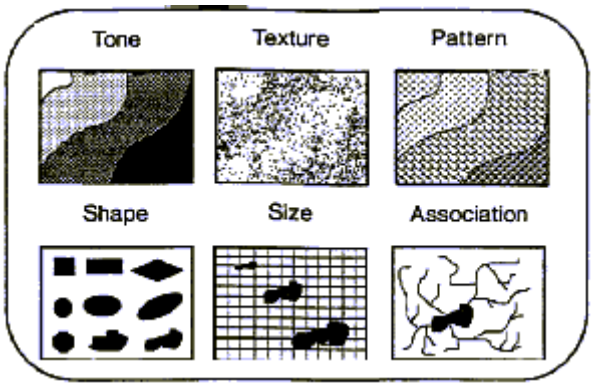

Figure 12: Elements of Aerial Photography Interpretation

5.1 Shape

Shape refers to the general form, configuration, or outline of individual objects. However, each object has its own shape or the object's height defines its shape. The shape of some objects is so distinctive that their images may be identified solely from this criterion. The shape of a tree is important in identification of the species. Oblique photography is very useful in this respect.

5.2 Size or Dimension

Size of objects on photographs must be considered in the context of the photo scale. Relative sizes among objects on photographs of the same scale must also be considered. The crown size of a tree is an important element in forestry. Height and crown size give an indication of tree species in some cases. Crown size is also correlated to the basal area of a tree and thus helps in getting idea of the volume.

5.3 Pattern

Pattern or repetition or the spatial arrangement of objects like orchards, plantation etc. is a characteristic of manmade objects as well as of some natural objects such as the different drainage patterns on different geological and soil types. Pattern is important in assessing land use type.

5.4 Tone or Hue

Tone (or Hue) refers to the relative brightness or colour of objects on photographs .Without tonal differences, the shapes, patterns and textures of objects could not be discerned. Objects of different colour have different qualities of light reflectance and therefore, appear in varying shades of grey on photograph. Tone on photograph also depends upon the conditions existing at the time of exposure such as angle of the sun, topography, moisture, clear or cloudy atmospheric conditions, developing and printing of negatives and positive prints etc.

5.5 Texture

Texture is the frequency of tonal change on the photographic image. Texture is produced by an aggregation of unit features that may be too small to be discerned individually on the photograph, such as tree leaves and leaf shadows. It is a product of their individual shape, size, pattern, shadow and tone. It determines the overall visual "smoothness' or 'coarseness' of image feature. It is also related to photographic scale.

5.6 Shadows

Shadows are important to interpreters in two opposing respects: (1) the shape or outline of a shadow affords an impression of the profile view of objects and (2) objects within shadows reflect little light and are difficult to discern on photographs. Shadows mainly depend upon the time of photography and direction of flight. Shadows falling on the ground beside an object, such as tree, help in knowing the shape of the crown and even length of shadow is useful in height determination. Shadows are not always useful and many times obscure ground details.

5.7 Site or Location

Site refers to topographic or geographic location and is a particularly important aid in the identification of vegetation types. For example, the permanent snow line is generally above 4000m in Himalayas. Species like fir, spruce, chirpine occur at certain elevations and on certain aspects.

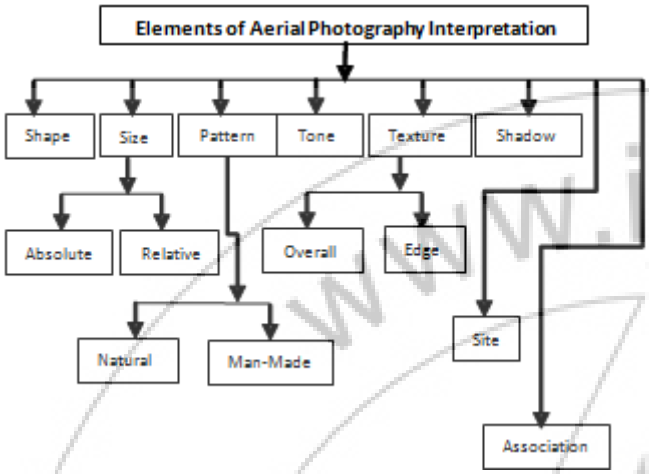

Chart 1

5.8 Association

Association refers to the occurrence of certain features in relation to others. Location and association is not object characteristic but denote its immediate surroundings. Deductive photo interpretation is done while dealing with these two elements and familiarly with the ground conditions is essential in analyzing them example Silver oak; Erythrina species are associated with tea plantations in Nilgiris.

6. Identification of objects on a single aerial photograph

Aerial photograph require interpretation like thematic and photogrammetric interpretation. Thematic interpretation is based on the subdivision of the photograph into areas that are visually distinct. Stereopair give surface relief and texture. Overlapping pairs of photographs provide a three dimensional view of the object photographed. Images on aerial photographed are permanent and unbiased representation of objects occurring on earth surface. In this aerial photograph (in Figure: 13), there are many thematic classes like drainage pattern, settlement, transport, vegetation, surface material, harvested and non – harvested area and topography.

Figure13: Aerial Photograph

6.1 Drainage Pattern

In this aerial photograph, the drainage pattern is dendritic and linear pattern. Dendritic word made of Greek language dendron which means `tree`. In dendritic Pattern, the tributaries meet in the main river on acute angles. (Figure: 14)

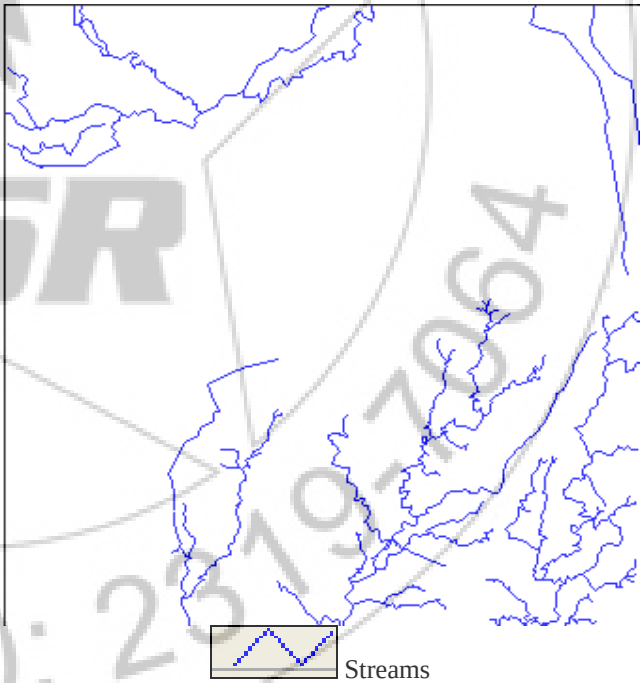

Figure 14: Drainage Pattern

6.2 Transport

In this aerial photograph, transport (roads, railway) pattern is linear. (Figure: 15)

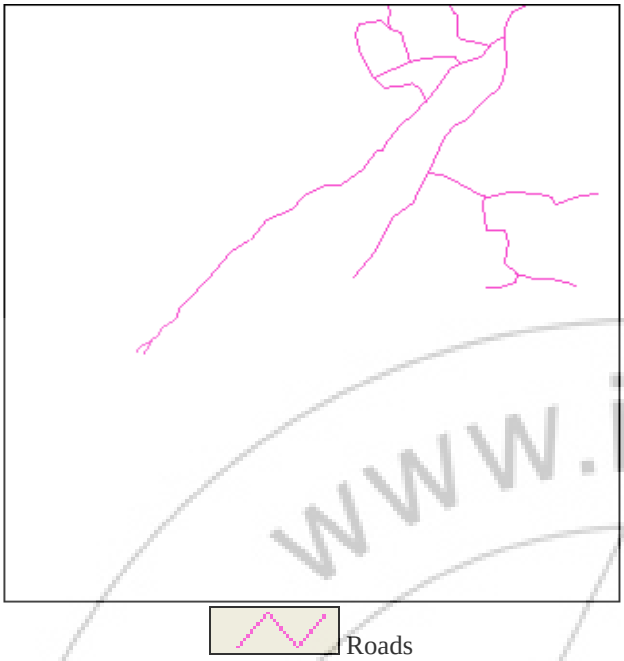

Figure15: Transport

6.3 Settlement

In this aerial photograph, the settlement is cover less area. The settlement pattern is cluster. (Figure: 16)

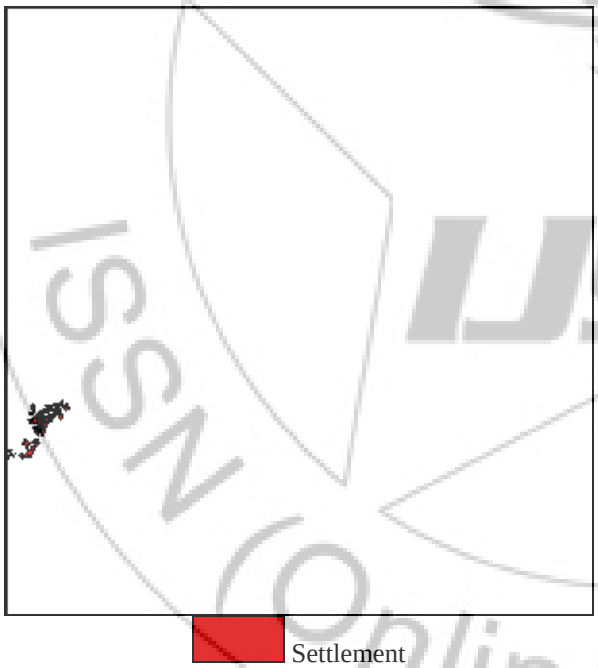

Figure16: Settlement

6.4 Field Pattern

In this aerial photograph**,** the field pattern of harvested area's is rectangular and square. In this aerial photograph, harvested area is more. (Figure: 17)

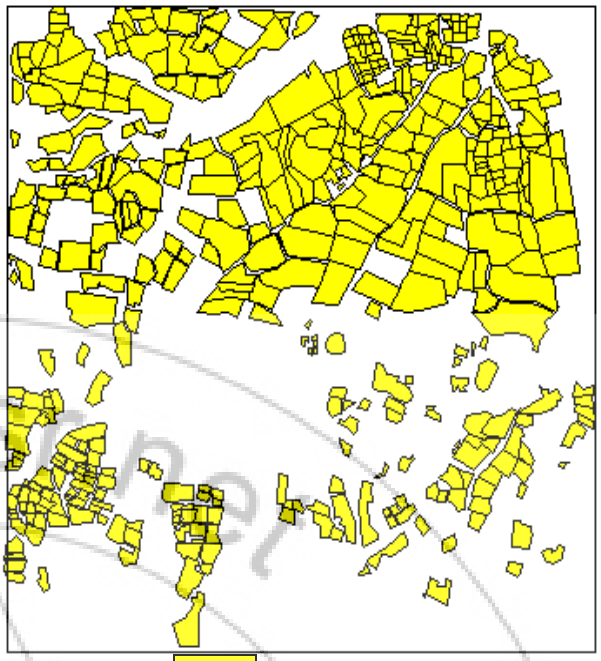

Figure17: Field Pattern

6.5 Non –Harvested Area

In this aerial photograph, the field pattern of non harvested areas is rectangular and square. In this aerial photograph, non harvested area is less. (Figure: 18)

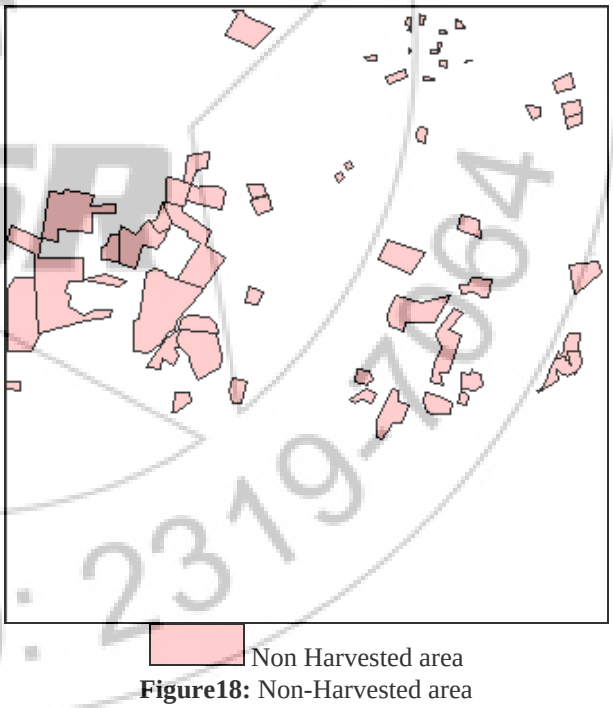

Figure18: Non-Harvested area

6.6 Vegetation

In this aerial photograph, there are major trees along roads and in fields. There is forest area. The forest area is more cover in this aerial photograph. Major trees pattern is linear and cluster. Vegetation's pattern is cluster. (Figure: 19)

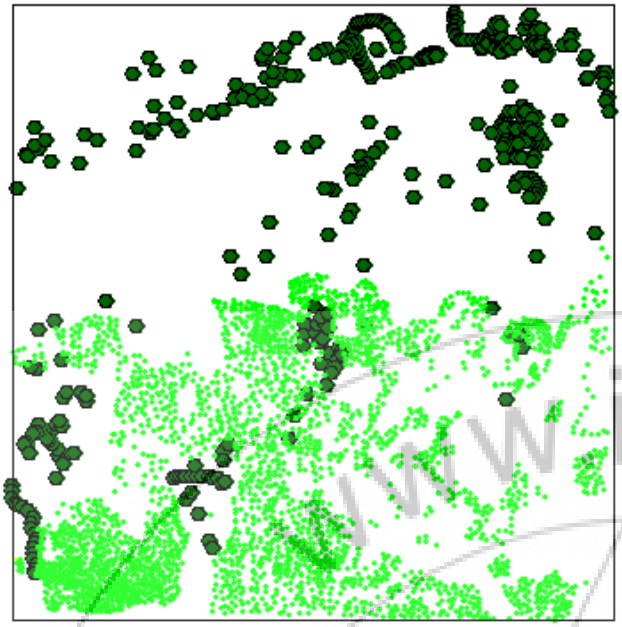

Figure19: Vegetation

6.7 Land-Use Pattern

In this aerial photograph, the area is use for fields, roads, vegetation, streams ect. (Figure: 20)

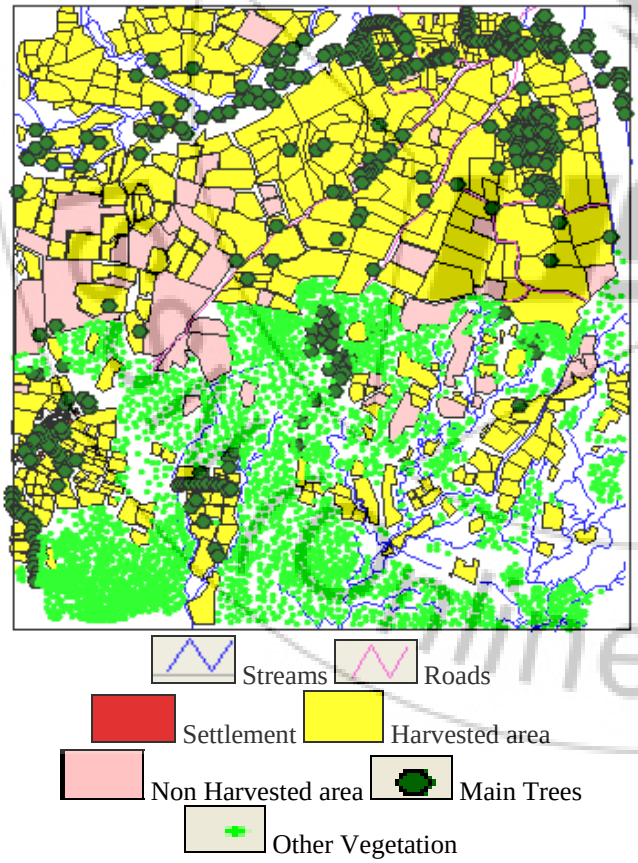

Figure 20: Land-Use Pattern

6.8 Topography

In this aerial photograph, two types of area. One is upland area and second is lowland area. The stream's area is lowland area. And the field area is upland area. (Figure: 21)

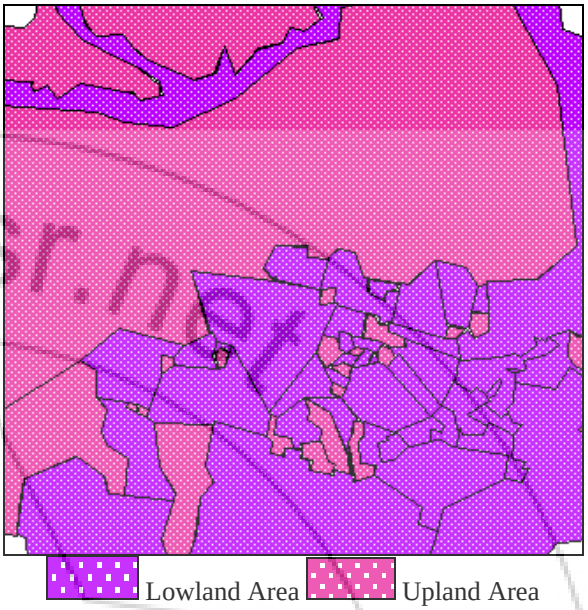

Figure 21: Topography

6.9 Surface Material

In this aerial photograph, two types of surface material. One is fine material and another is coarse material. In this aerial photograph, the fine material is fielded area. And streams are coarse material because streams' water flow surface material. (Figure: 22)

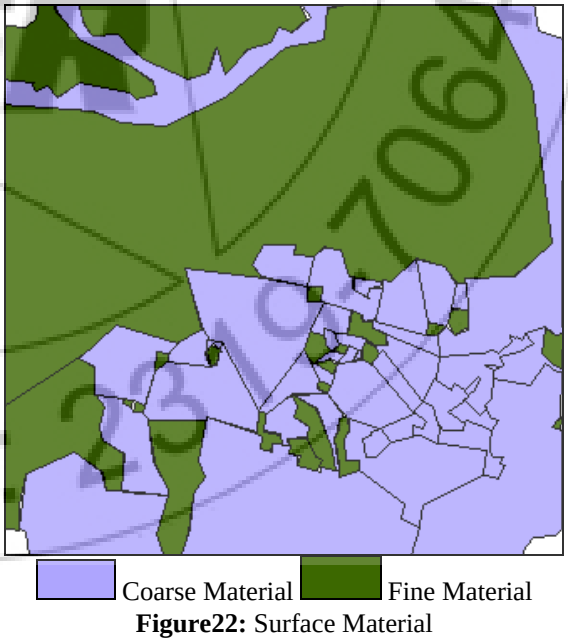

Figure22: Surface Material

7. Conclusion

Aerial photographs became obtaining a much more practical matter with the air plane than it had been with kites and balloons. Photography from air during World War I. The

greatest stimulation to photo interpretation occurred during World War II. The first interpretation of colour emulsions were made using aerial photographs which constituted a step forward in the direction of development of modern remote sensing. Aerial photograph require interpretation like thematic and photogrammetric interpretation. Overlapping pairs of photographs provide a three dimensional view of the object photographed. Images on aerial photographed are permanent and unbiased representation of objects occurring on earth surface. Thematic interpretation is based on the subdivision of the photograph into areas that are visually distinct. Stereopair give surface relief and texture. There are many terms on an aerial photograph like fiducial marks, focal length, altimeter, watch, strip number, task number, agency number, photographic number, Secret, negative number, number of press etc. There are many elements used for the identification of objects on an aerial photographs like shape, size, pattern, tone (or hue), texture, Shadows, site and association. Aerial photography has long been employed for topographic and thematic investigations for which a large number of surface maps which have been prepared using aerial photographs. They are used as guide maps and essentially for delineating boundaries between map units.

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