AERIAL PHOTOGRAPHY - AN IMPORTANT TOOL USED IN EXPLORATION AND RECORDING OF LIMESTONE KARST AREAS IN FAR NORTH QUEENSLAND, AUSTRALIA.

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ABSTRACT

The existence of caves at Chillagoe has been known for over a century. In those days, however, knowledge came from individual experience or by word of mouth from someone with that experience. Only in the last twenty years has an organised attempt been made, to document features as an aid to conservation of this and other, limestone areas.

This documentation involved the naming or numbering of the limestone outcrops and tagging of the individual entrances to caves with a numbered metal plate identifying the cave to which it led. Having tagged an entrance it became extremely important to record exactly where it could be found by persons who had never been there before. In North Queensland, relocation can be hampered by the complex and rugged tower karst terrain and the vegetation, which seasonally camouflages or exposes, the bedrock slopes and collapse dolines. Add to this insufficient information as to the whereabouts of the entrance, and you have the recipe for a lost cave.

INTRODUCTION

Most cavers in North Queensland have experienced difficulties in the relocation of a cave. Often, in looking for an elusive entrance, they find others. Recognizing the correct entrance can be difficult unless it is accompanied by an accurate description or a photograph, if the latter is possible. The position of the actual tag should be noted in the original entrance description, as a guide to just where to look. Chillagoe Caving Club have adopted a convention of placing tags on the left hand side of entrances at about chest height and visible from the most practical approach to the entrance. Where entrances are large dolines, lengthy grikes or shafts this convention breaks down so the description is vital.

Ideally, external surveys from the cave tag to a base datum point should be the responsibility of the tagger. This should be provided together with an entrance description, and if possible, bearings to other salient features visible from the entrance, not forgetting the relevant tower numbers.

Where there are no other established base datum points, the job of recording an entrance becomes more difficult. In areas where time and access problems are not great, it is possible to spend time establishing survey datum points on, or at the foot of, the cavernous towers. These can be used as reference points for later cave entrance location surveys. Care must be taken in the choice of reference points. Blazed trees are not successful. Numbered plates attached to trees by nails were attacked by sap chemicals, expelled or overgrown within two years of application. Large rocks at the foot of bed-rock slopes are far more easily recognized as reference points, and may be photographed for record purposes. Should they be identified with numbered triangular shaped perimeter survey tags, these should be fixed in a way that expansion or contraction will not loosen them. (One such survey tag was removed by a Bower bird, and was later recovered from its bower.)

AERIAL PHOTOGRAPHY

In remote wilderness areas, such activity may be considered a waste of precious time, especially when exploration is considered to be of prime importance. In such areas aerial photography has much to offer. Firstly by obtaining the relevant photographs of the area in stereo pairs, larger scale detail maps can be prepared of the area to be of assistance to the ground party. It is advisable to purchase those flown at the lowest altitude, and if possible have them enlarged to 1:5000 scale for mapping purposes. Maps drawn to scales larger than this will be too small to record entrances clearly, should the density of cave entrances be great.

Such aerial photography will also indicate drainage patterns, the breakdown of the tower into tower groups, and other landmarks useful for survey purposes. Sometimes resolution on the photo allows cave entrances to be suggested.

OBLIQUE AERIAL PHOTOGRAPHY

Having produced a map of the area, other forms of aerial photography complement the system. Actually an extension of "photo tagging", this method involves the taking of a number of low level, oblique aerial photographs, while circumnavigating the tower or towers concerned. It is essential that these obliques should contain the whole "face" of the tower including the top and the base and to avoid confusion, should the aircraft be on an extensive photographic mission, detailed records should be kept of the position of the aircraft relative to the towers for each photograph in the sequence. Copies of these photos can be used in the field by parties to more readily identify the actual position of entrances which can be marked on the photograph. An entrance location and description is all that is required to supplement the oblique photos and accurately place the entrance position on the map.

CONCLUSIONS

Though initially expensive this method of recording cave entrances is very effective and is really the only form of "photo tagging" suitable to North Queensland tower karst areas. It also provides a "bird's eye" view and often gives the cave explorer clues of where to look for new caves.

COMPARISON OF NORTH QUEENSLAND TROPICAL KARST AREAS

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ABSTRACT

Comparisons between the Chillagoe, Mitchell-Palmer, Wallace Creek and Mt. Consider areas. Factors contributing to the evolution of the present day landscape.

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