

Oxford University Expedition to the Philippines - Polillo 99 Cartography,

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Background Information:

The survey area the expedition worked in was approximately four kilometres northeast of Polillo Town. The survey area is often referred to as 'the watershed' and is designated on most DENR maps and literature as 'Watershed Reserve # 2'.

The soil layer is thin, highly siliciclastic and coarse grained. This facilitates easy weathering allowing deep channels to be eroded by watercourses. These watercourses meander and change path regularly.

Map sources for the research area on Polillo Island are limited to:

1. USC&GS Charts 4277 (1939 reliability good)
2. Aerial Photography November 1948, September 1950
3. NAMRIA 1:50 000 Sheets 3364 I and II, also 3464 III and IV (Polillo, Polillo Islands, Luzon, Philippine Islands) Last reprint by AFP Mapping Centre 1982
4. DENR

Aims:

By gathering cartographic data within the watershed area, it is hoped that an idea of watercourse scale will be established. This would allow the team to conduct research in as many varied locations as possible. The task of mapping watercourses was chosen for the following reasons:

1. Watercourses are easily identified and navigable.
2. Watercourses also provide an indication of relief.
3. Watercourses are an important amphibian habitat.

The production of a small-scale map of the survey area allows the results gathered during fieldwork to be displayed relative to location. This will allow an easier comparison between sites.

It is hoped this will also facilitate further research on the Polillo watershed by future scientific expeditions and allow them to easily identify survey sites used by Polillo '99.

Equipment:

Cartography was not a major objective for the expedition and funding was won for work specifically planned on amphibians, this prevented the purchase of expensive surveying equipment. The equipment used was a compass clinometer, numerous tape measures normally of fifty metre length, waterproof paper and bright marker ribbons accompanied by permanent marker pens. A photographic record was also taken on some occasions.

Method:

The method used proved very similar to that of the local DENR office on Polillo Island.

By identifying a landmark point within the watershed, which would be easily recognised, data could then be collected with respect to that landmark and placed relative to the watershed boundaries. The landmark chosen was the stream junction between the San Francisco River and a stream running between the two watershed reservoir tanks. Ideally, three people were used; one of which was a local guide.

1. One person walked up the watercourse in a straight line. This person held the beginning of the tape measure and marked a point.
2. The Second person held the other end of the tape measure and verified that the tape measure was straight. They read the distance measured to the third person, coiled the tape measure up between measurement points and walked to where the marked point had been made by the first person.
3. The third person measured a bearing from magnetic north from one measurement point to the next and recorded this three figure bearing alongside the measured distance on waterproof paper.

This process was repeated walking normally upstream, the lead person had the responsibility of path cutting and marking the measurement points.

The recorder marked any stream splits, which were passed with bright marker ribbon and an identifying code, which was noted in the results. This split would later be returned to and mapped.

Any gradient encountered was measured with a clinometer and recorded to allow a true horizontal distance to be calculated.

Problems Encountered and Accuracy:

Measurements taken were to the nearest centimetre. The degree of error associated with the results is subsequently based on the approximation of the stream course, the rounding as a result of scaling onto the map and future meanderings of the watercourses with respect to the collected field data.

Further Work required:

Aerial photographs would aid conservation efforts immensely in attempting to identify the fragmented patches of valuable rainforest left.

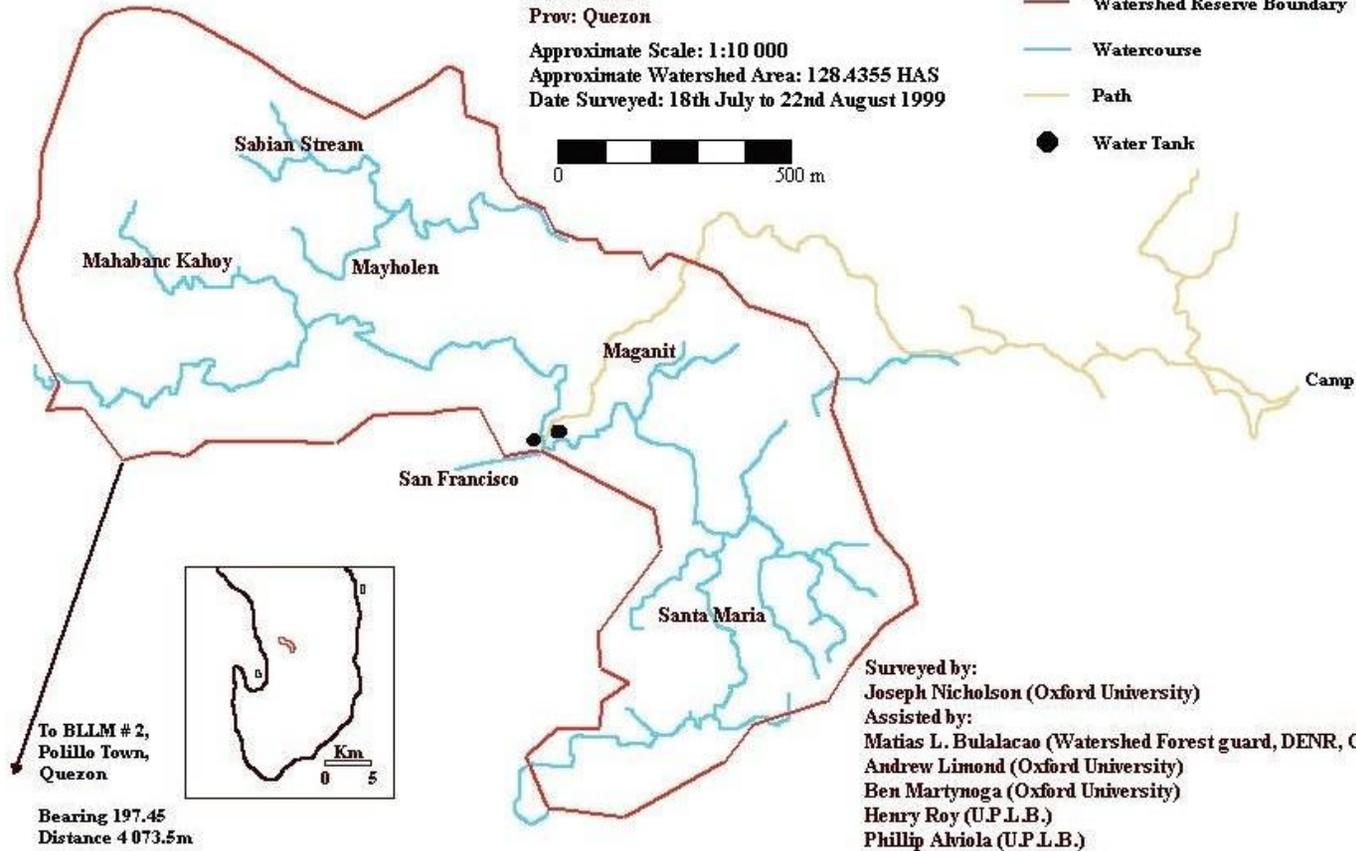
GIS would facilitate more accurate studies of the area and pin down sites of interest to the conservation community.

**Map of Scientific Research Expedition
Polilo Watershed Reserve # 2
Oxford University and U.P.L.B.**

Location:
Sito: Bigyan, Sabian, Maganit,
Santa Maria and San Francisco
Brgy: Sibulan
Mun: Polillo
Prov: Quezon

Approximate Scale: 1:10 000
Approximate Watershed Area: 128.4355 HAS
Date Surveyed: 18th July to 22nd August 1999

-  Watershed Reserve Boundary
-  Watercourse
-  Path
-  Water Tank



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