INTERIM REPORT

Aquatic Root Mat Communities Nos 2 – 4 of Caves of the Leeuwin Naturaliste Ridge

PHOTOGRAPHIC MONITORING OF THREATENED ECOLOGICAL COMMUNITIES

by

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Background

$1000 funding was obtained to assist in photographic monitoring of aquatic root mat communities 2-4 in the Leeuwin-Naturalsite Ridge. This monitoring was a recommendation of the recovery plan developed by the Department of Conservation and Land Management's WA Threatened Species and Communities Unit.

Aim

The purpose of this project is to record the extent and condition of the root mats over a minimum of a twelve month period. After this initial monitoring is complete, monitoring will continue at less frequent intervals.
Previous informal observation has shown that the apparent condition of the roots may vary from time to time.

Concurrently with the photographic monitoring, cave stream water levels, rainfall, and water quality will be monitored.

Progress
Each cave has been visited, photographs of the root mat areas have been taken, and specific "sample" sites have been selected. Further test photographs have been taken to help determine the best way to take standardized photos that can be easily compared over time.

The roots in the aquatic root mat sites generally emerge from the cave floor. It is possible to photograph sections of the root mats from above to show the extent, density, and age and condition of the roots. Wherever possible the position from which the photographs are taken is marked, as are the boundaries of the selected area.

Wider photographs are taken to put the sites in a context, and in the case of Kudjal Yolgah and Calgardup Caves, to show roots that emerge from the cave roof and hang down to the water below.

Root Mat Community Sites

Kudjal Yolgah West

The accessible section of the stream is about 13 m long. Three representative sections have been selected.

Kudjal Yolgah East

The water for the east stream seeps/flows over an extensive mud floor, approximately 20 m by 10 m, before consolidating into a well-defined stream. This stream is not accessible for most of the cave length.
Two sites on the mud floor, and the central roots that reach down from the cave roof to the mud floor have been selected for monitoring. Two sites in the stream down-stream from the mud floor will also be monitored.

Strongs Cave

In times of high water flow, the stream extends through a large part of the cave. The main monitoring site is the pool that has been formed by a root mat damn as this contains water even at times of low flow and is the site sampled by Jasinska (1997). Two sites upstream will also be monitored.

There is an extensive area of water upstream from the main monitoring site. Most of this area is without roots. Further upstream the water level is below the sandy floor of the cave. This area is covered in roots.

Calgardup Cave

The site in Calgardup Cave has roots hanging from the roof down into a pool. The roots do not form a mat suitable for photographing from above. The tannin in the water and depth of water (when present!) makes it difficult to record the extent of these roots below the water surface. At the present time, the water is so low that some of these roots are hanging above damp soil rather than water. These roots can be photographed from the side to show their condition and extent above the water.

The very low water level has also exposed roots that would not normally be visible. It is also possible to photograph these roots from the side. At higher water levels these roots would emerge from the rock and enter the water directly.

There are numerous tiny roots emerging from the soil around the pool. This area is usually under water, so it may be that when the water rises again root mats more like those found in Kudjal Yolgah and Strongs Caves may form. Two sites will be monitored in the area that is presently above the water level. It will be very interesting to record the development of a new area of aquatic root mats, if this does eventuate.

Future

It is proposed that a report be submitted in June 2003. This report will also include the monitoring of water quality, water levels, and rainfall as well as the photographic monitoring.