

**PRESERVATION OF ROCKY
BEACH, PORT MACQUARIE,
NSW AS A GEOHERITAGE
RESERVE**

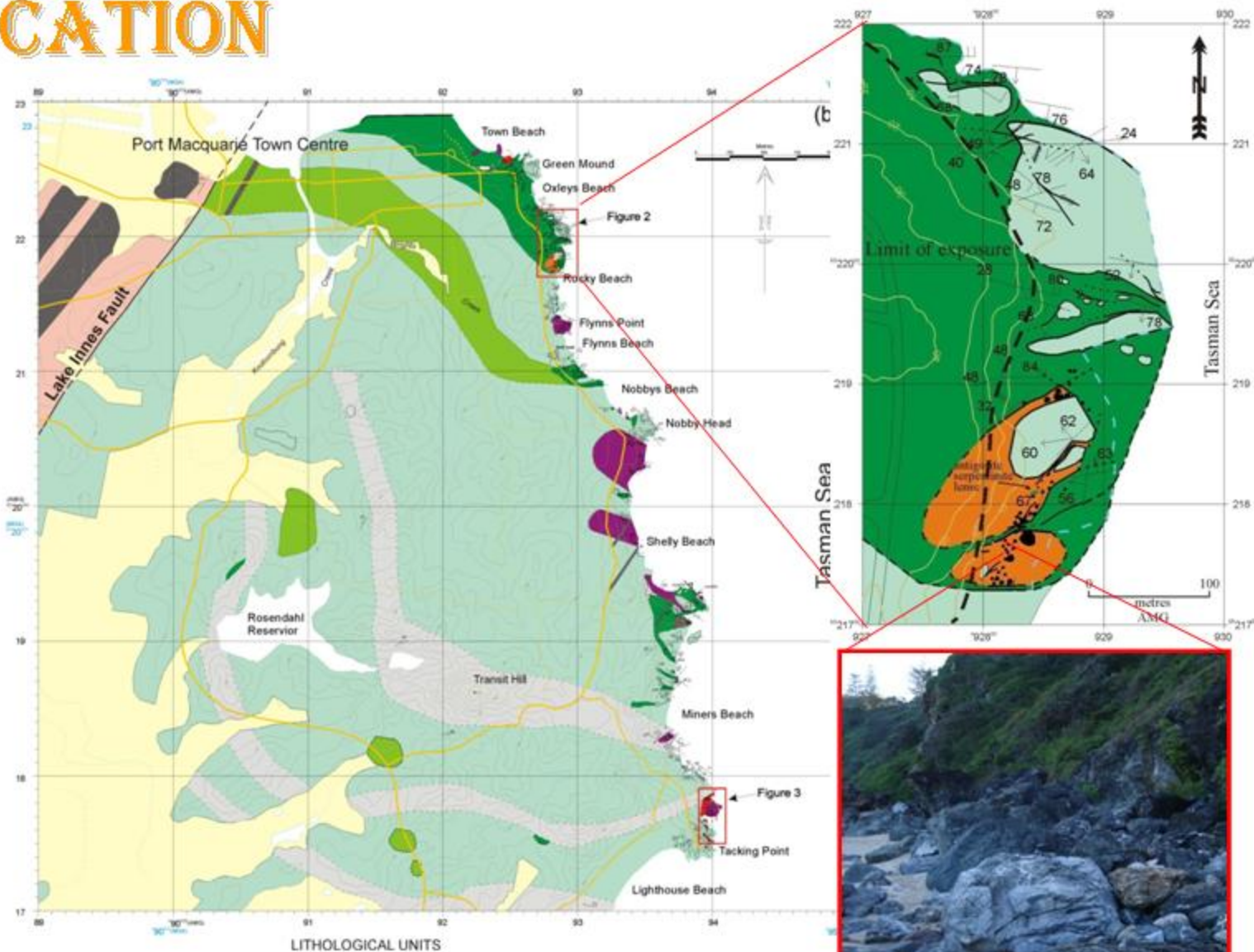
**DAVID. J. OCH
AND
IAN. T. GRAHAM**

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LOCATION



ROCKY BEACH, PORT MACQUARIE IS LOCATED ON THE MID NORTH COAST OF NEW SOUTH WALES, APPROXIMATELY 400 KM NORTH OF SYDNEY.

DEDICATION OF ROCKY BEACH

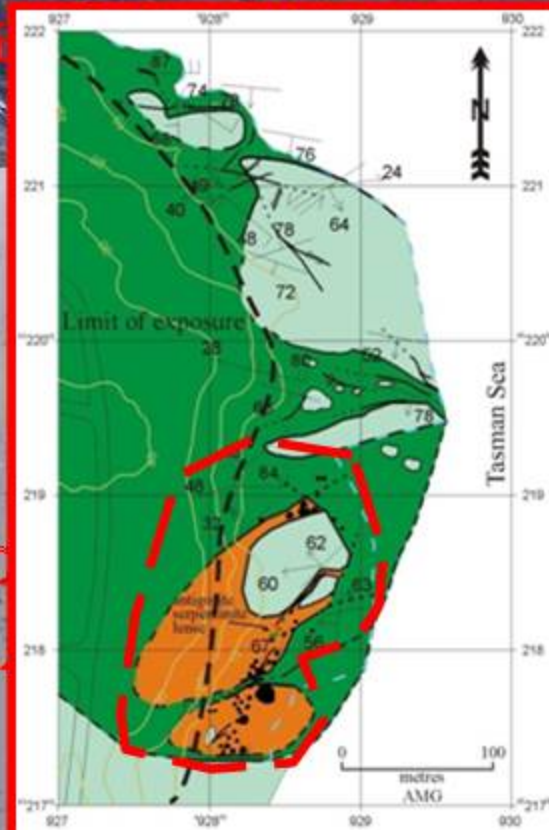
• ROCKY BEACH

– COVERS AN AREA OF JUST UNDER 1 HECTARE

- BOUNDED BY THE PACIFIC OCEAN TO THE EAST, OXLEY BEACH TO THE NORTH, FLYNN'S POINT HEADLAND TO THE SOUTH, AND STEEP DENSELY VEGETATED HILLS TO THE WEST

– GEOLOGY

- ROCKY BEACH METAMORPHIC MELANGE
- PORT MACQUARIE SERPENTINITE
- WATONGA FORMATION
- RESIDUAL SOIL AND COLLUVIAL SLOPE COVERS
- BEACH SAND AND DISTINCTIVE PEBBLE LAYERS



LOCATION

• ROCKY BEACH COMPRISES A RARE 'MELANGE-IN-MELANGE' STRUCTURE

- PRESERVING SERPENTINITE THAT HAS INVADDED THE WATONGA FORMATION ENVELOPING TWO LENSES OF METAMORPHIC ROCKS

- CONSISTING OF METRE-SCALE PHACOIDS OF LAWSONITE ECLOGITE, OMPHACITITE AND GLAUCOPHANE SCHIST EMBEDDED IN A CHLORITE-ACTINOLITE SCHIST MATRIX

- EXCELLENT FORMATIONAL CONTACTS THAT DEMONSTRATE AGE RELATIONSHIPS THAT ARE NOT OBSERVABLE FOR SIMILAR ROCK TYPES ELSEWHERE IN AUSTRALIA.

• GEOLOGICAL SIGNIFICANCE OF THE ROCKY BEACH METAMORPHIC MELANGE:

- 10 RECORDED OCCURRENCES OF LAWSONITE ECLOGITE IN PHANEROZOIC OROGENIC BELTS, GLOBALLY

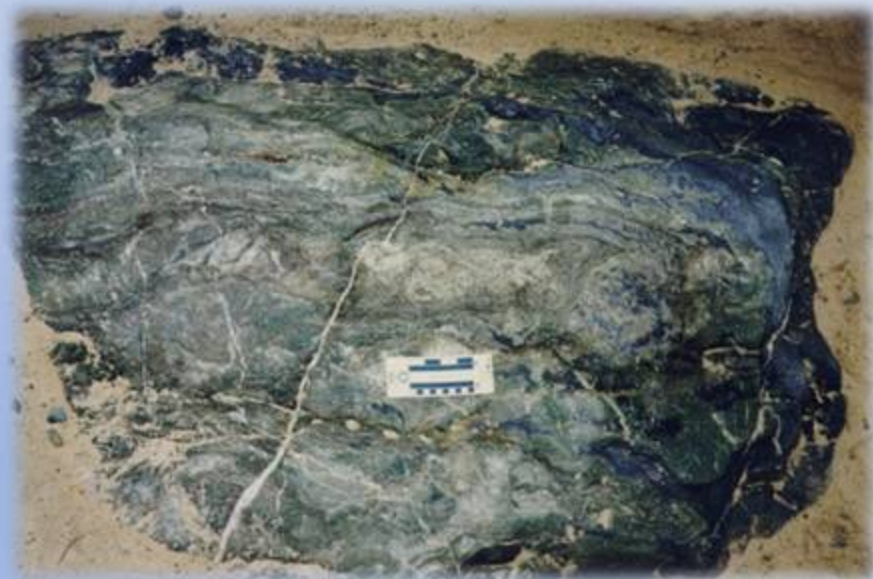
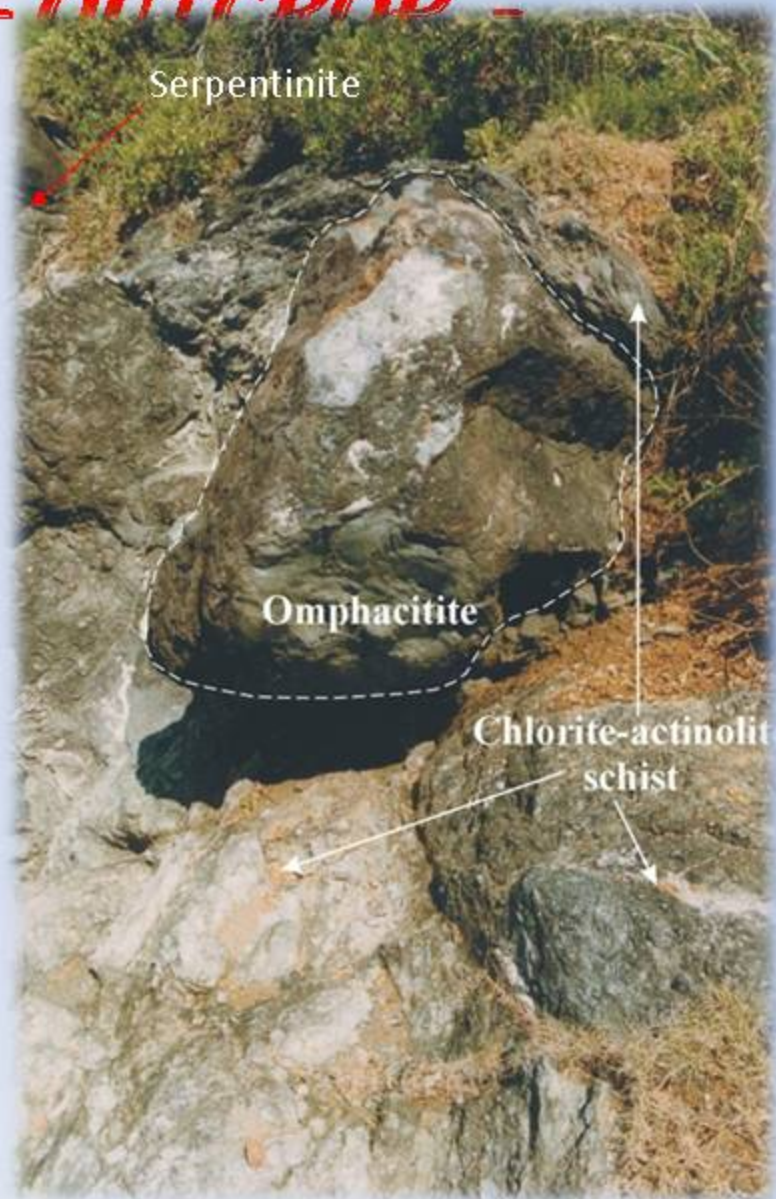
- POSSIBLY THE OLDEST KNOWN OCCURRENCE (? NEOPROTEROZOIC) ALONG WITH A SIMILAR OCCURRENCE IN SPITSBERGEN IN THE ARCTIC

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LOCATION

ROCKY BEACH METAMORPHIC MELANGE

- OUTCROP -

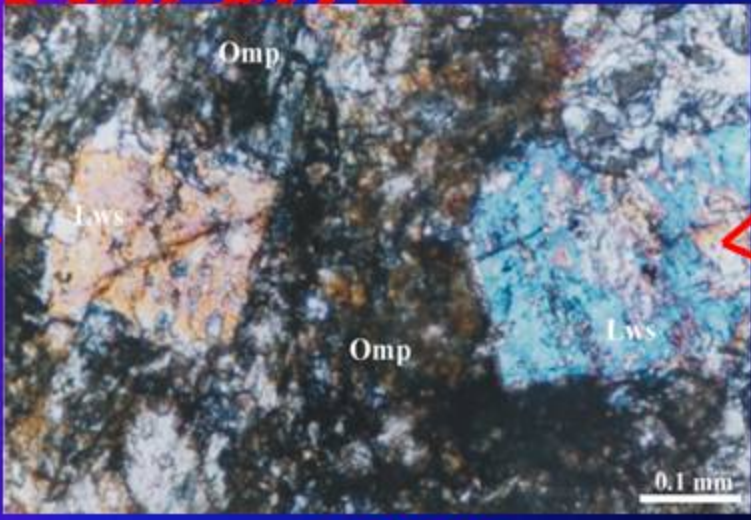


IMPORTANCE OF THE ROCKY BEACH

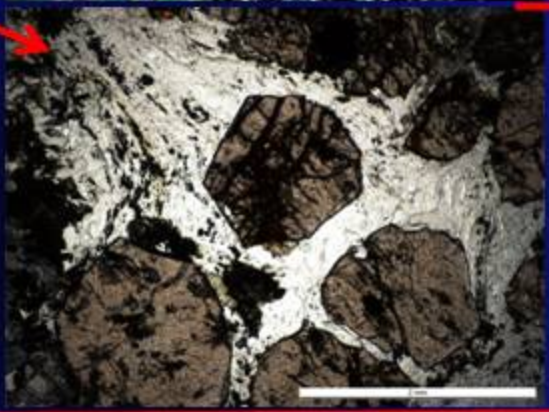
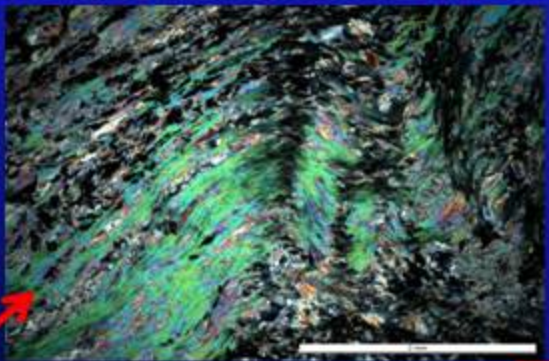
LOCATION

Rocky Beach Metamorphic Melange

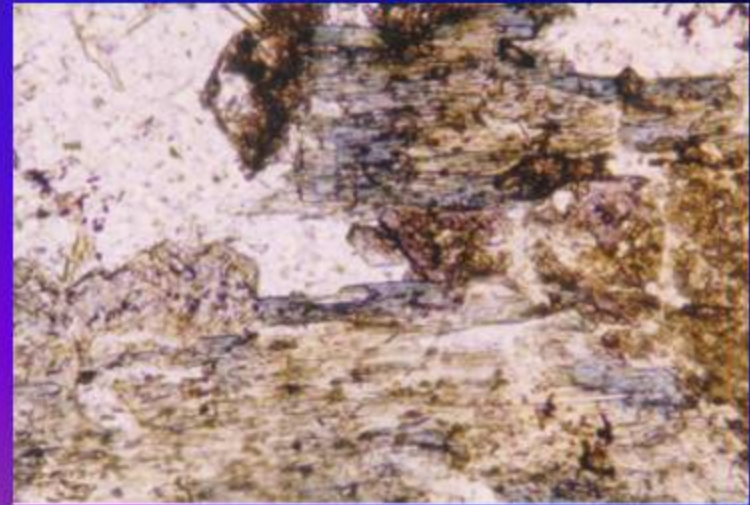
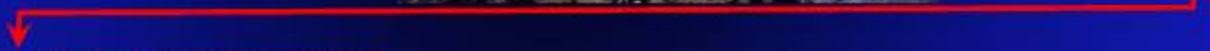
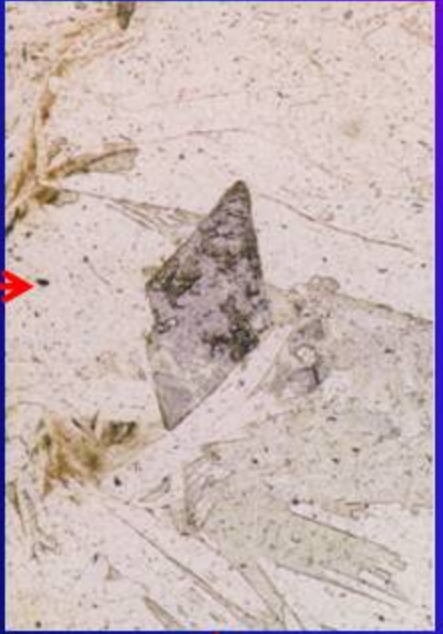
MICRO-



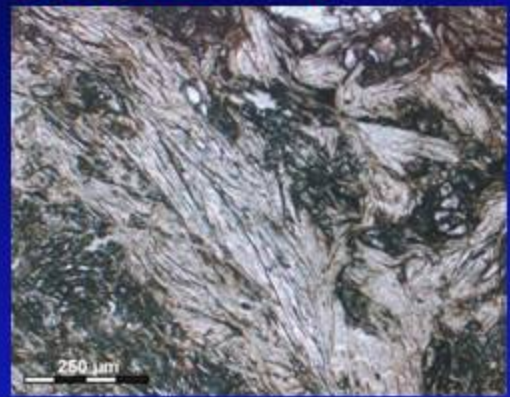
+ 530 Ma



470 Ma



427 Ma



LOCATION
- OUTCROP -

PORT MACQUARIE SERPENTINITE

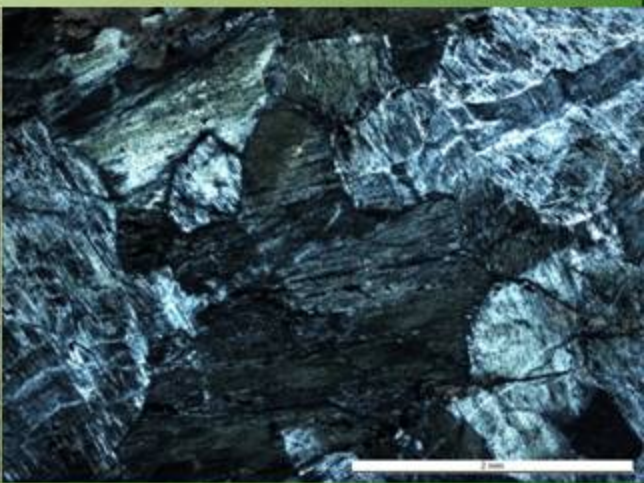
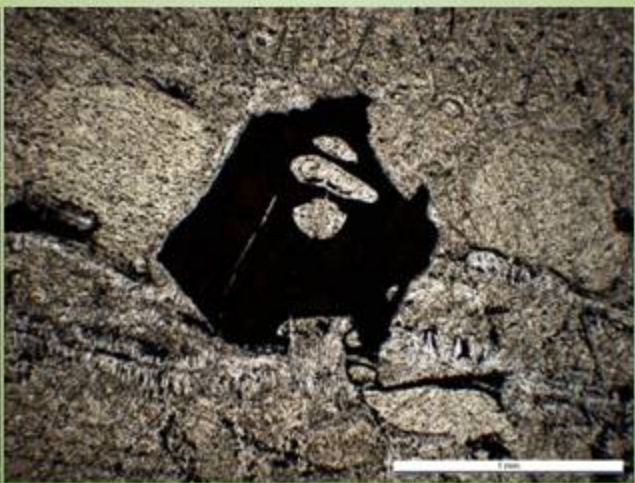
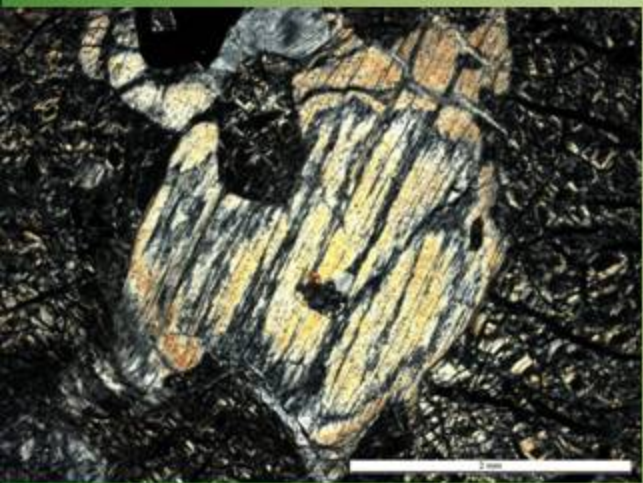
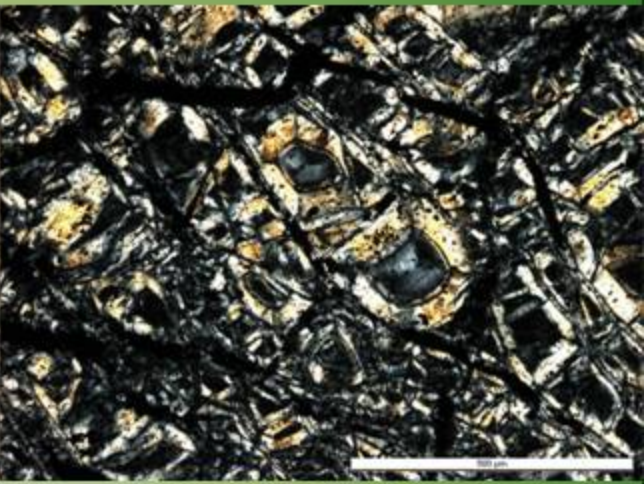
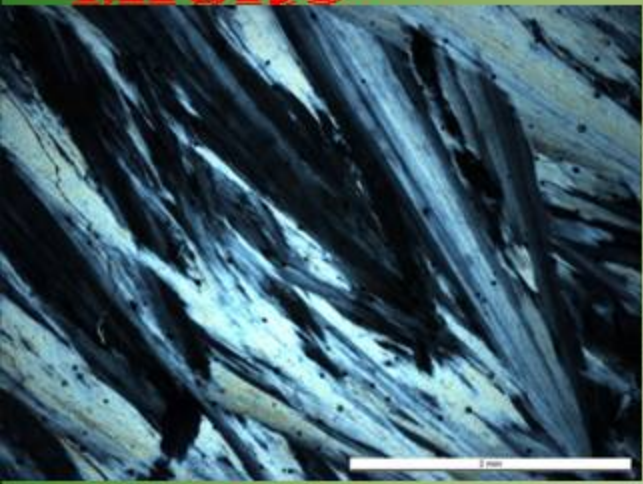


IMPORTANCE OF THE ROCKY BEACH

LOCATION

PORT MACQUARIE SERPENTINITE

- MICRO -



IMPORTANCE OF THE ROCKY BEACH

LOCATION

WATONGA FORMATION

- OUTCROP -

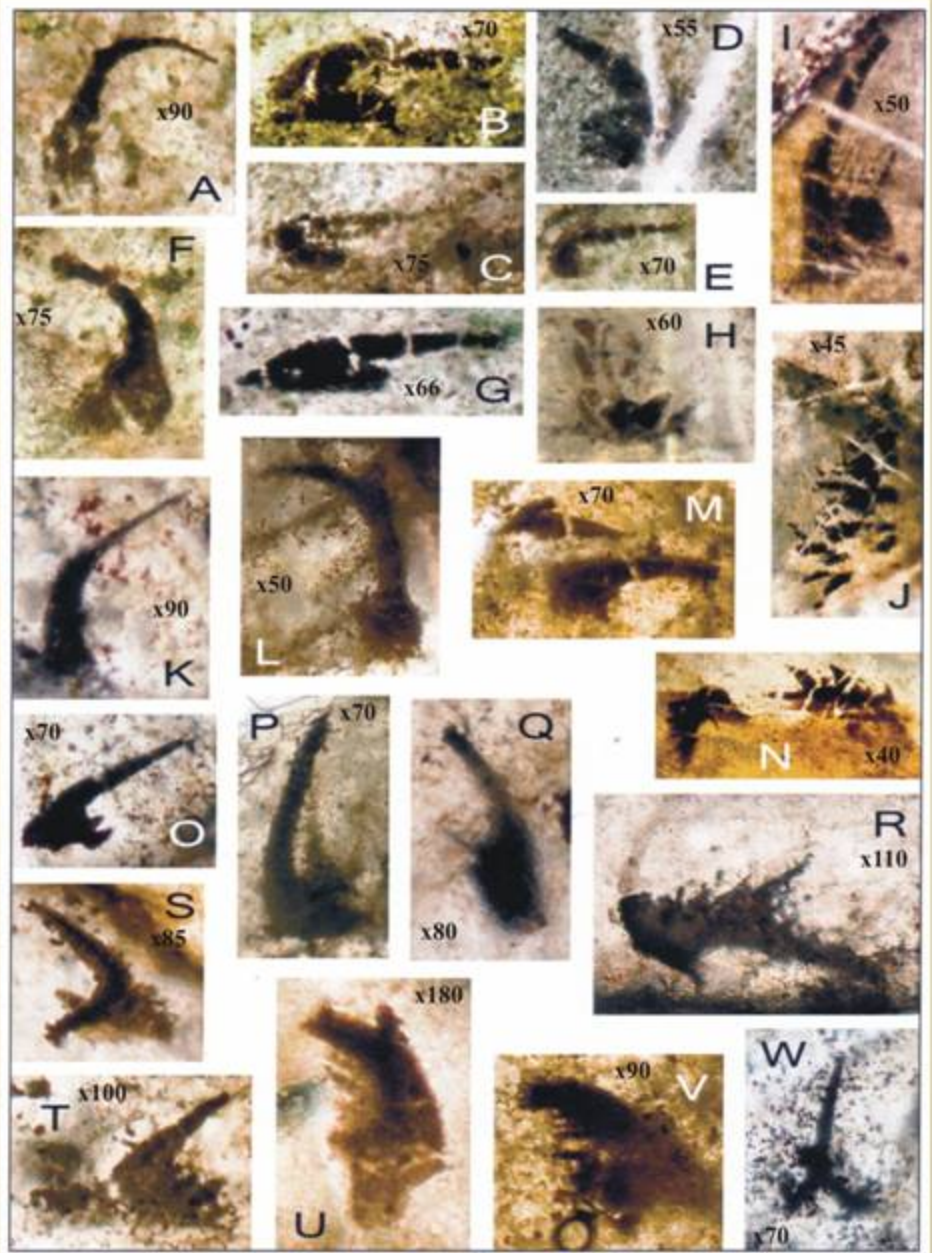


IMPORTANCE OF THE ROCKY BLEACH

LOCATION

WATONGA FORMATION

- MICRO -



USE OF LOCATION

• EDUCATION (SCHOOL – UNIVERSITY – INDUSTRY)

- THE VARIETY OF ANCIENT ROCKS AND EXCELLENT EXPOSURES ALONG THIS COASTLINE PROVIDE A SCIENTIFIC INTEREST FOR VISITOR***
- READY ACCESSIBILITY OF THE COASTAL OUTCROPS HAVE ATTRACTED NUMEROUS GEOLOGICAL VISITORS;***
 - SECONDARY SCHOOL SCIENCE GROUPS***
 - UNIVERSITY UNDERGRADUATE GROUPS***
 - GEOLOGICAL CONFERENCE EXCURSIONS***
 - RESEARCH SCIENTISTS FROM AROUND THE WORLD***

• SCIENTIFIC RESEARCH

- UNIVERSITY OF TECHNOLOGY***
- UNIVERSITY OF NEWCASTLE***
- UNIVERSITY OF NEW SOUTH WALES***
- WOLLONGONG UNIVERSITY***

• GEOTOURISM

IMPLEMENTATION

- **RESERVE THE ROCKY BEACH LOCATION**
 - GUIDELINES SET OUT UNDER THE NATIONAL PARKS AND WILDLIFE ACT
 - ASSOCIATED WITH SEA ACRES NATURE RESERVE
 - IN CONJUNCTION WITH LOCAL COUNCIL
 - PROTECTION ORDER FOR THESE ROCKS FROM COLLECTORS (AS THE ROCK ARE VERY LIMITED)
- **UNDERTAKE ENVIRONMENTAL STUDIES**
- **UPPER SLOPE STABILITY STUDY**
 - LANDSLIPS COULD POTENTIALLY COVER EXPOSURES
- **CLOSE OLD TRAILS, CONSTRUCT TIMBER STAIR CASE-BOARDWALKS WITH COASTAL WALK. REGENERATE AND ADD SIGNAGE**
 - COULD ALSO POSE OPPOSITE EFFECT





THANK YOU

18 2 2006

FIELD TRIP 1 & 2

