An Archaeology of Waigeo
Raja Ampat Islands, West Papua



University of Otago, Working Papers in Anthropology, 8

Dylan Gaffney, Daud Tanudirjo,
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Archaeology Programme
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Dunedin, New Zealand
2023

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Summary

This book describes the archaeology of Waigeo Island in the Raja Ampat archipelago of West Papua. This island was first visited by humans over 50,000 years ago, representing the earliest settlement of the Pacific region by boat or raft. We have very little archaeological evidence for what these people did on the island, but we know they were processing plants in complex ways, using tree sap to make resins for use in fires or as adhesives. These early people moved from the coast to the inland rainforests to hunt native animals such as marsupials, ground birds, and possibly rats and bats too. Later in time, about 14,000–4000 years ago as the global climate got warmer, humans on Waigeo began to hunt an even larger number of rainforest animals like fruit bats, large rats, bandicoots, cuscus, sugar gliders, and pythons. At the same time, people foraged for freshwater shellfish and plants like tubers. They also caught some coastal animals like fast-swimming fish and sea urchins. People may have even transported forest wallabies from the mainland of New Guinea to Waigeo, which are now locally extinct on the island. By about 3000 years ago, at the time when new 'Austronesian' languages were entering the Pacific, there was a distinctive change in the archaeological record. People stopped hunting intensively in the rainforest and began to catch fish and collect shellfish from the nearby coral reefs and mangroves. These people were the first to use pottery on the island and may be associated with red rock art painted high on coastal cliffs. Finally, within the last 1200 years, people on Waigeo became more connected with global trade networks, obtaining Chinese glazed ceramics, glass beads from Southeast Asia or India, and eventually pottery from the Netherlands. We know that a new style of white rock art was produced during this time and that people placed their ancestors' bones in caves and crevices along the coast. The archaeology of Waigeo is testament to the long and diverse histories of human culture on this western Pacific island.

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Front cover photograph: Hand stencils on Pef Island (Tristan Russell 2018).

Back cover photograph: Excavation Trench 2 at Mololo Cave (Dylan Gaffney 2018).

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Dedication



This book is dedicated to the memory of Martin Makusi.

An enthusiastic proponent of West Papuan history, language, and culture, and a supportive field collaborator of the Raja Ampat Archaeological Project.

Martin is pictured here surveying cave sites around northern Gam in 2018.

Acknowledgements

We thank the communities of Waigeo, Gam, Batanta, and surrounding islands for their support, hospitality, and friendship during the Raja Ampat Archaeological Project. Numerous survey guides and their families were crucial to locating and understanding archaeological sites. These guides included Wolter Gaman and Solomon around Mayalibit Bay, Yeheskial and family around Laensorongga, Dorteus around Kalitoko, Martin Makusi, Tobias Mambrasar, Yahya Mambrasar, and Obed Makusi around Gam and western Waigeo, Karolis around inland Gam and Pef, Alfred Gaman, Motor, Josuah Lapon, and Ababnar Wakman around northern Waigeo, Nixon Anson around rock art in Mayalibit Bay, and Frans Waiganyam around rock art in Kabui Bay. We also thank Maya and the staff of 'Raja4Divers' ecoresort on Pef for discussions about the local area. Max Ammer at Kri kindly provided accommodation and loan of a speedboat to Mansuar. In Waisai, Iin and family provided helpful use of their four-wheel drive and accommodation.

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We thank Herman Soor at the Raja Ampat regency government and Arif Prabowo at The Nature Conservancy in Sorong for advice about Waigeo. We are particularly thankful to Zubair Mas'ud who provided preliminary information and reports about his work around Raja Ampat. We are grateful to Laura Arnold, Raymond Corbey, Cam Webb, and Christoph Parsch for advice about local languages, ethnography, and environments. We also thank project collaborators Fiona Bradshaw, Fiona Petchey, Anna Florin, Patrick Roberts, Mary Lucas, Monica Tromp, Karen Greig, Hermine Xhauflair, Alvaro Montenegro, Robert Hall, Clara Boulanger, Rintaro Ono, Denis Scholz, Megan Spitzer, Katherine Szabo, Irene Bertelli, Erika Ribechini, and Simon Haberle for their important contributions to analysing the archaeological material.

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The Wayag Islands,
northwest of Waigeo.




The Philippines
Celebes Sea
Talaud Is.
Halmahera
Raja Ampat Is.
Bird's Head Peninsula
Sula Is.
Seram Sea
Seram
Banda Is.
Aru Is.
Banda Sea
Tukangbesi Is.
Kai Is.
Tanimbar Is.
Timor
Arafura Sea
Timor Sea
0
1000
km
Australia


PACIFIC
OCEAN
Equator
Manus
Bismarck Sea
New Guinea
New Britain
Solomon Sea
Gulf
of
Papua
Massim Is.



- Regency capital
- Village

Settlement

1. Saulalkasoe
2. Salio
3. Selpele
4. Waisilip
5. Manyaifun
6. Bianci
7. Mutus
8. Manggara
9. Go
10. Kapidiri
11. Araway
12. Waifoi
13. Kabilol
14. Beo
15. Warimak
16. Kalitoko
17. Wawiyai
18. Lopintol
19. Warsambin
20. Mumes
21. Bonkawir
22. Waisai
23. Saonek
24. Saporkren
25. Kabui
26. Raswan
27. Yenbeser
28. Friwen
29. Supnin
30. Kabare
31. Asokweri
32. Boni
33. Warwarnai
34. Mnier
35. Puper
36. Yenbekaki
37. Urbinasopen
38. Yensner
39. Saukabu
40. Saupapir
41. Kapisawar
42. Yenwaupnor
43. Arborek
44. Sawandare
45. Kurkapa
46. Yenbuba
47. Marandan.
48. Yensawai
49. Arefi
50. Waiweser
51. Amdui
52. Yenanas
53. Wailebet
54. Kalyam
55. Kalwal
56. Solol
57. Kapatlap
58. Samate
59. Jeffman
60. Doom
61. Sorong
62. Tolobi
63. Awat
64. Deer
65. P. tikus
66. Wejim
67. Satukurano
68. Wailabu
69. Waijan
70. Waimeci
71. Waibu
72. Wamega
73. Kalobo
74. Sakabo
75. Durriankari
76. Kasim
77. Sailolof
78. Waigama
79. Solal
80. Aduwei
81. Atkari
82. Limalas
83. Folley
84. Tomolol
85. Usaha Jaya
86. Fafanlap
87. Gamta
88. Biga
89. Lilinta
90. Kapatcol
91. Kayerepop
92. Harapan.
93. Yellu
94. Dabatan

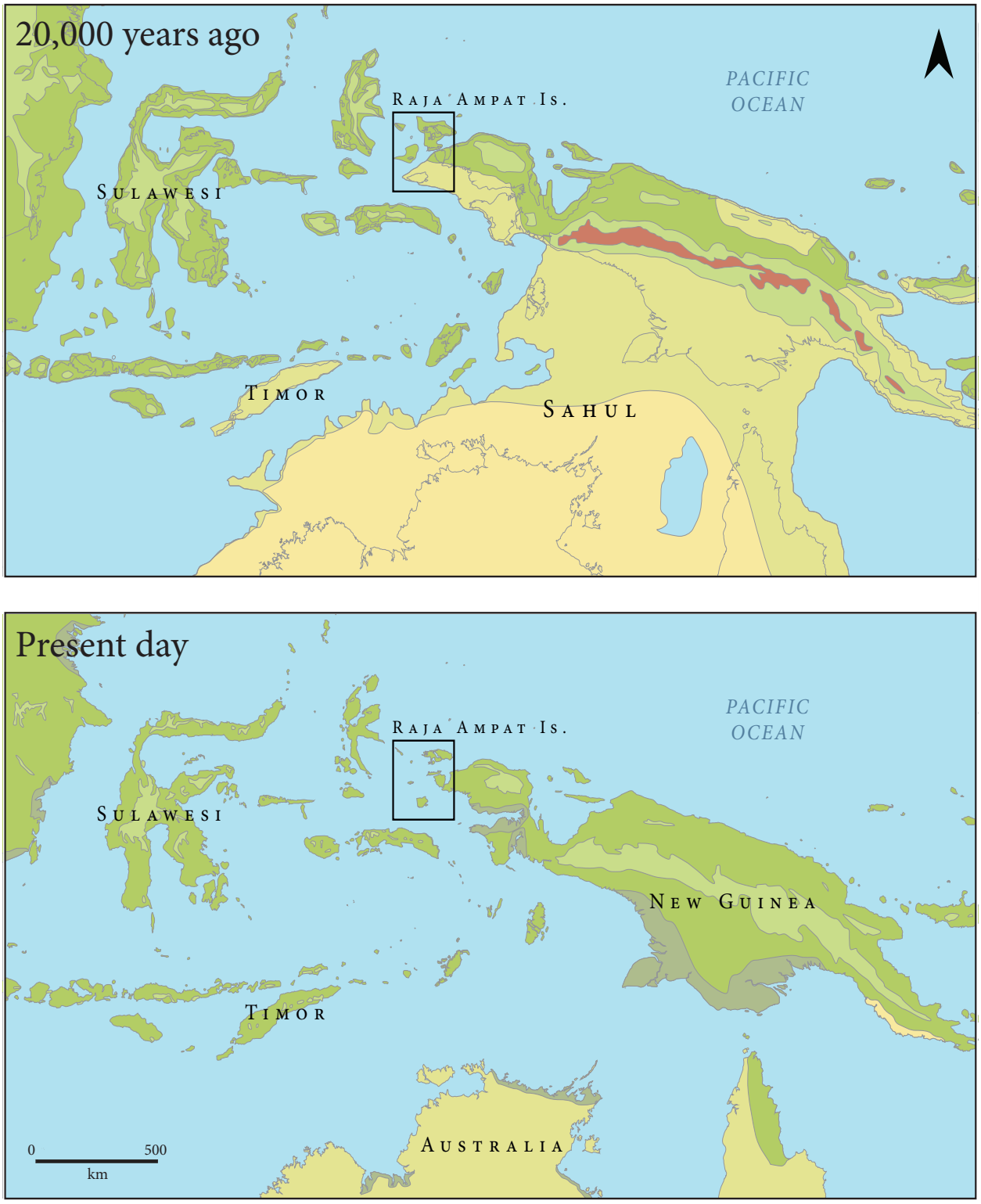
Introduction

The Raja Ampat (Four Kings) Islands lie just off the Bird's Head (Doberai) Peninsula of New Guinea in the far western Pacific Ocean. Together these islands form the richest reef ecosystem on the planet at the heart of the coral triangle. Waigeo is the northernmost and largest of the four main Raja Ampat Islands. Today, Waigeo island is separated from nearby Gam by only a short passage, but before about 10,000 years ago in what is known as the Pleistocene period (or the Ice Ages), both islands would have been connected together along with Batanta. This large ancient island was called Waitanta, and the deep Sagewin Strait separated it from the mainland of New Guinea (itself part of the larger continent of Sahul, which connected Australia, New Guinea, and several offshore islands). What is today Mayalibit Bay in the interior of Waigeo would have been a large, forested valley, perhaps with a river flowing through it. The north coast of Waitanta may have looked similar to today, with steep cliffs and hills overlooking the Pacific Ocean, but in the west the island extended all the way to the high peaks that now form the Wayag Islands.

Outside of the main town of Waisai, Waigeo and its satellite islands are inhabited by around 20,000 individuals, who speak three distinct languages all within the Austronesian language family: Ambel, Ma'ya, and Biak. Until quite recently most of these people made their livelihoods by harvesting their traditional tree crop — the sago palm — alongside hunting wild game, fishing, and producing items such as pottery for exchange around the island group. From early European explorers' written records, and the islanders' own oral histories, it is clear that this area has for a long time been a melting pot of people, ideas, and material culture, linking the societies of Island Southeast Asia in the west and New Guinea further east.



Above: lowland tropical forest meets coral reefs around southern Gam.



Above: changes to the environment and coastline around New Guinea and the Raja Ampat Islands from the Pleistocene period (20,000 years ago) to the present.

About 50,000 years ago.
Sea level –60 m below present.



About 20,000 years ago.
Sea level –120 m below present.



Present day.





Sago processing area in the forest of Mayalibit Bay.



Sago oven pottery production shed at Kabilol village, Mayalibit Bay.

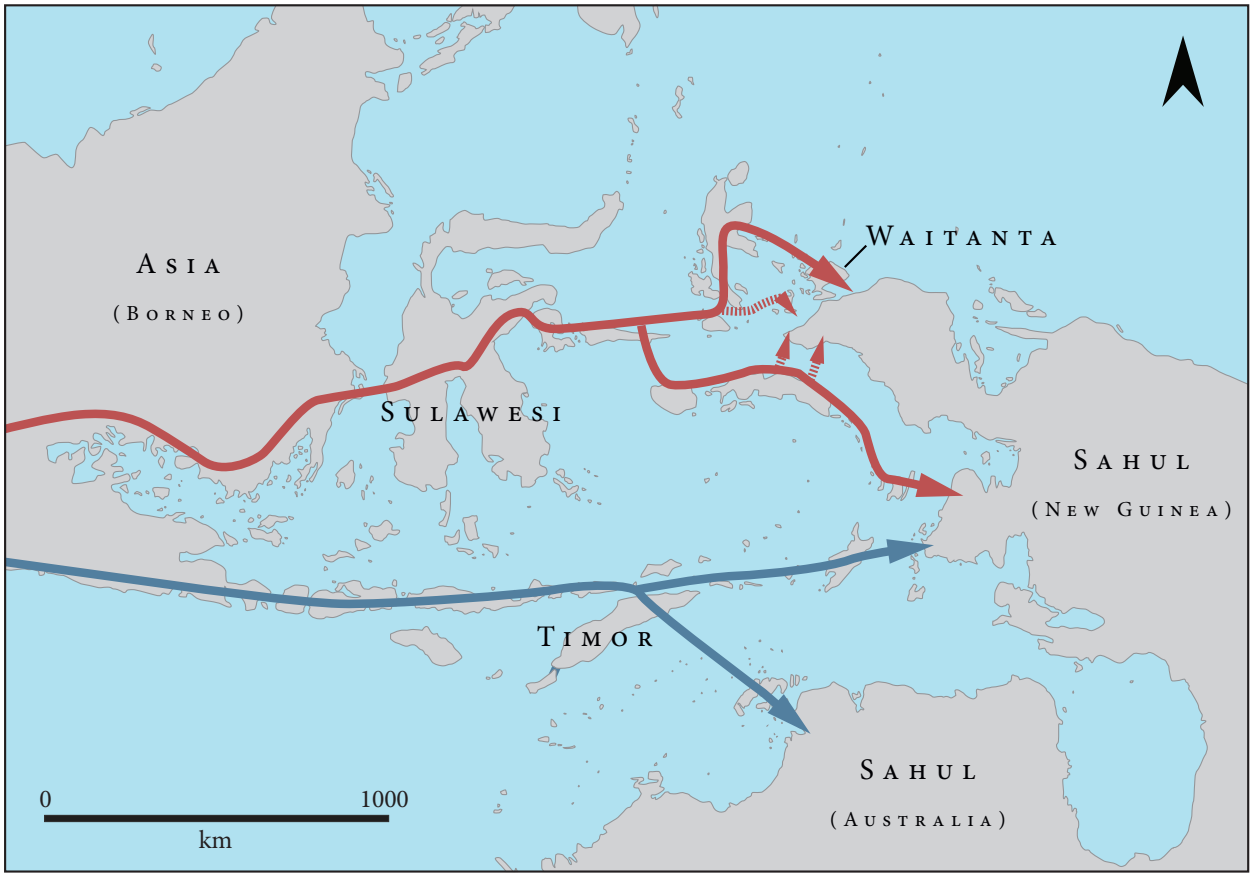


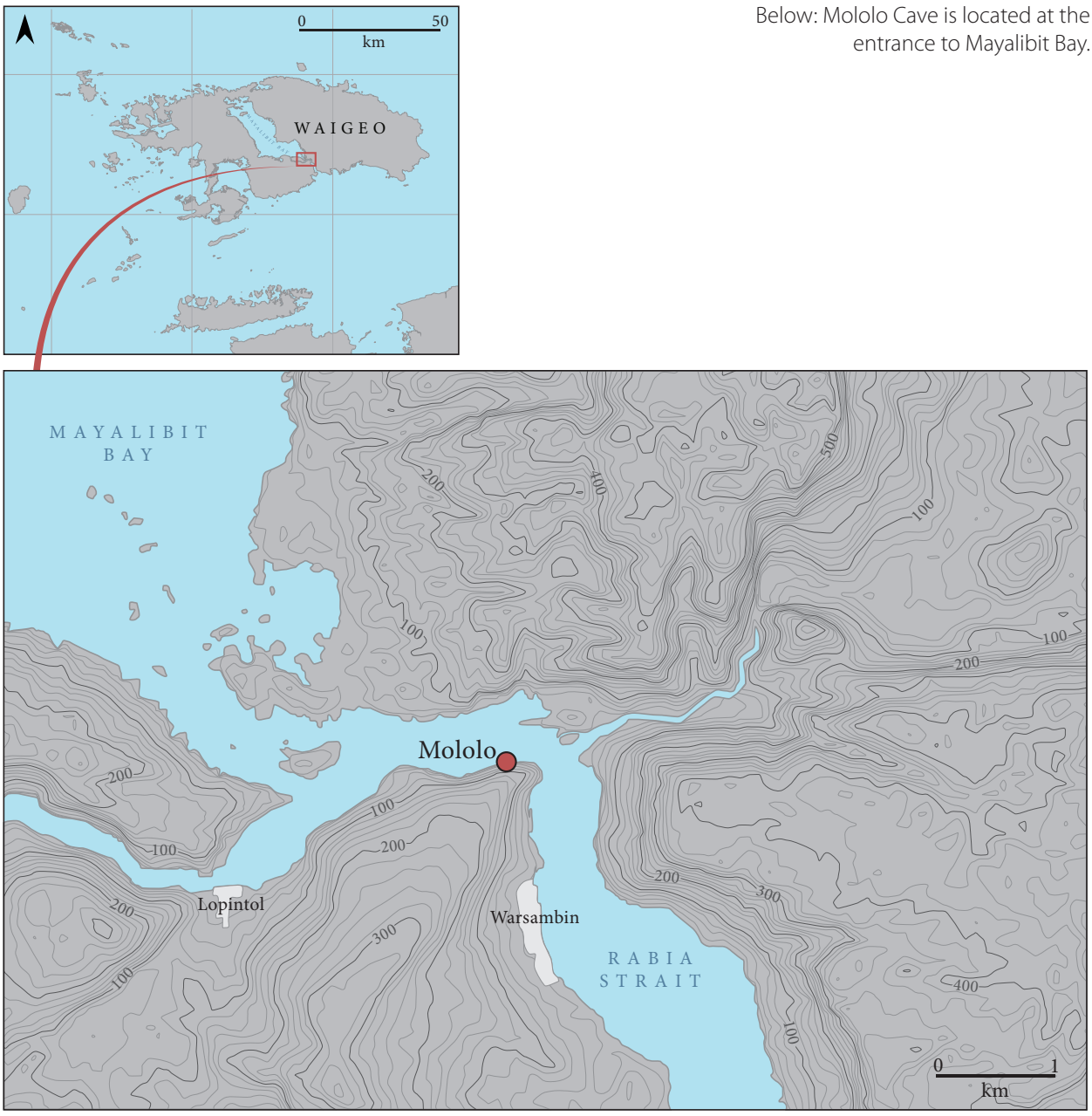
Stilt houses and fishing canoes at Wawiyai village in Kabui Bay.

The First Pacific Islanders

Archaeologists have long tried to understand when and how early humans migrated across the seas of Indonesia to reach the Pacific Islands. Some scholars have hypothesised that the first people rafted along the Lesser Sunda Islands (e.g. Timor) and then crossed to what is today Australia. Archaeological evidence from sites in northern Australia indicate humans arrived sometime between 50,000 and 65,000 years ago. Other researchers have argued that people moved along the equator, passing from Borneo to Sulawesi, then to the northern Maluku Islands and Raja Ampat Islands, before arriving to what is today New Guinea. The earliest known archaeological site previously recorded in Papua New Guinea comes from the Ivane Valley and dates to about 45,000 years old.

Below: two possible migration routes used by the earliest humans to arrive on Sahul, today New Guinea and Australia: northern route (red) and southern route (blue).





Below: Mololo Cave is located at the entrance to Mayalibit Bay.

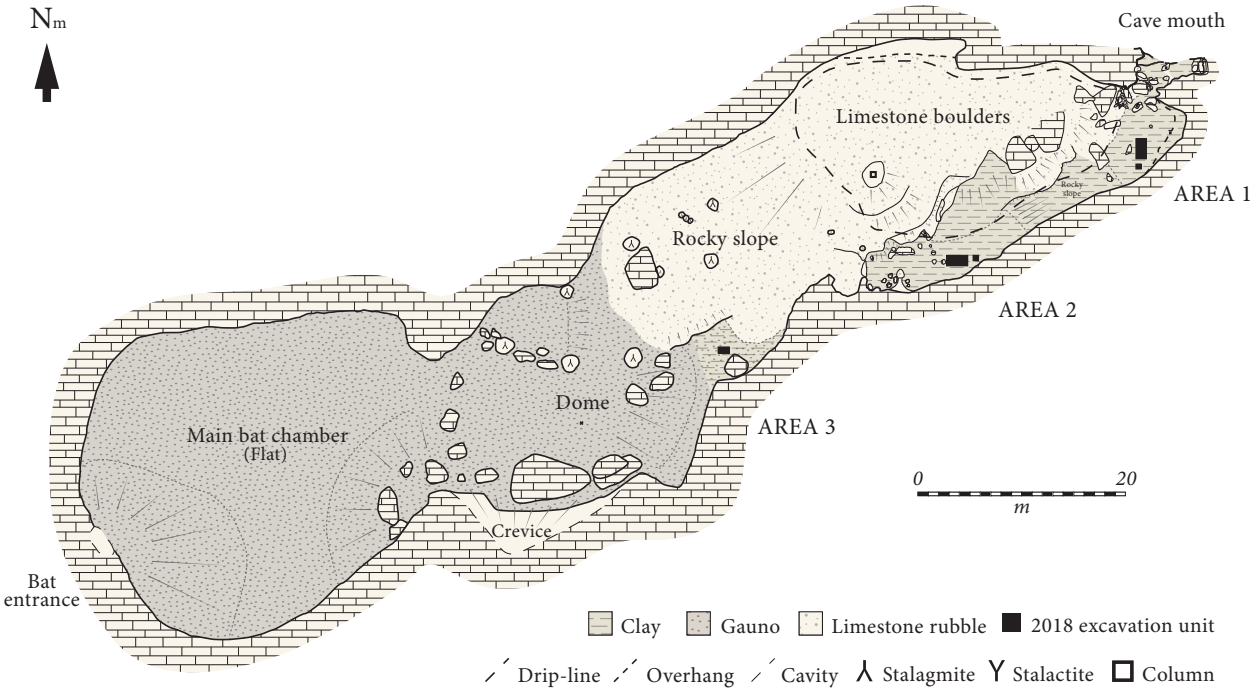


Right: the entrance to Mololo Cave under the tropical forest canopy.

To begin to answer these questions, archaeological fieldwork was undertaken around Waigeo Island by an international team in 2018–2019. The team conducted excavations at Mololo Cave, which is today located near Warsambin and Lopintol villages at the entrance to Mayalibit Bay, but during the Pleistocene it would have been about 15 km inland. The team's excavations revealed several layers of human habitation spanning back to a very early time period. In the lowest layer of one excavation, an artefact made from fossilised tree resin was radiocarbon dated to over 50,000 years old and provides the earliest evidence for when humans entered the Pacific Ocean. Microscopic analyses of the resin artefact, known as 'dammar' in the Malay language, demonstrate that the object was produced in an innovative multi-step process. First the bark of a resinous tree was cut, allowing sap to run down the trunk. The sap was then collected. After the sap hardened on the tree trunk it was brought to Mololo Cave and snapped on two edges. It is likely that the artefact would have been used as a fuel source for making fires; similar dammar torches were common around the islands even in the twentieth century. Other uses for resin could have included adhesives (to attach tools together or even make rafts), incense, and medicine.

There is very little evidence for what early people were doing at the cave, although a small number of animal bones at Mololo indicate humans were hunting native rainforest species. These animals included a terrestrial bird the size of a chicken, the New Guinea Spiny Rat, and marsupials. Because the bones were very fragmentary, the archaeologists could not always be sure which species they belonged to. Stable oxygen and carbon isotopic analysis of the bones, however, indicated that these animals inhabited Waitanta at a time when the island was less densely forested than today, with woodlands occurring alongside patches of open canopy rainforest.

Below: map of Mololo Cave.







Interior of Mololo Cave in
Mayalibit Bay, Waigeo Island.













Excavations at Mololo Cave, Waigeo Island.

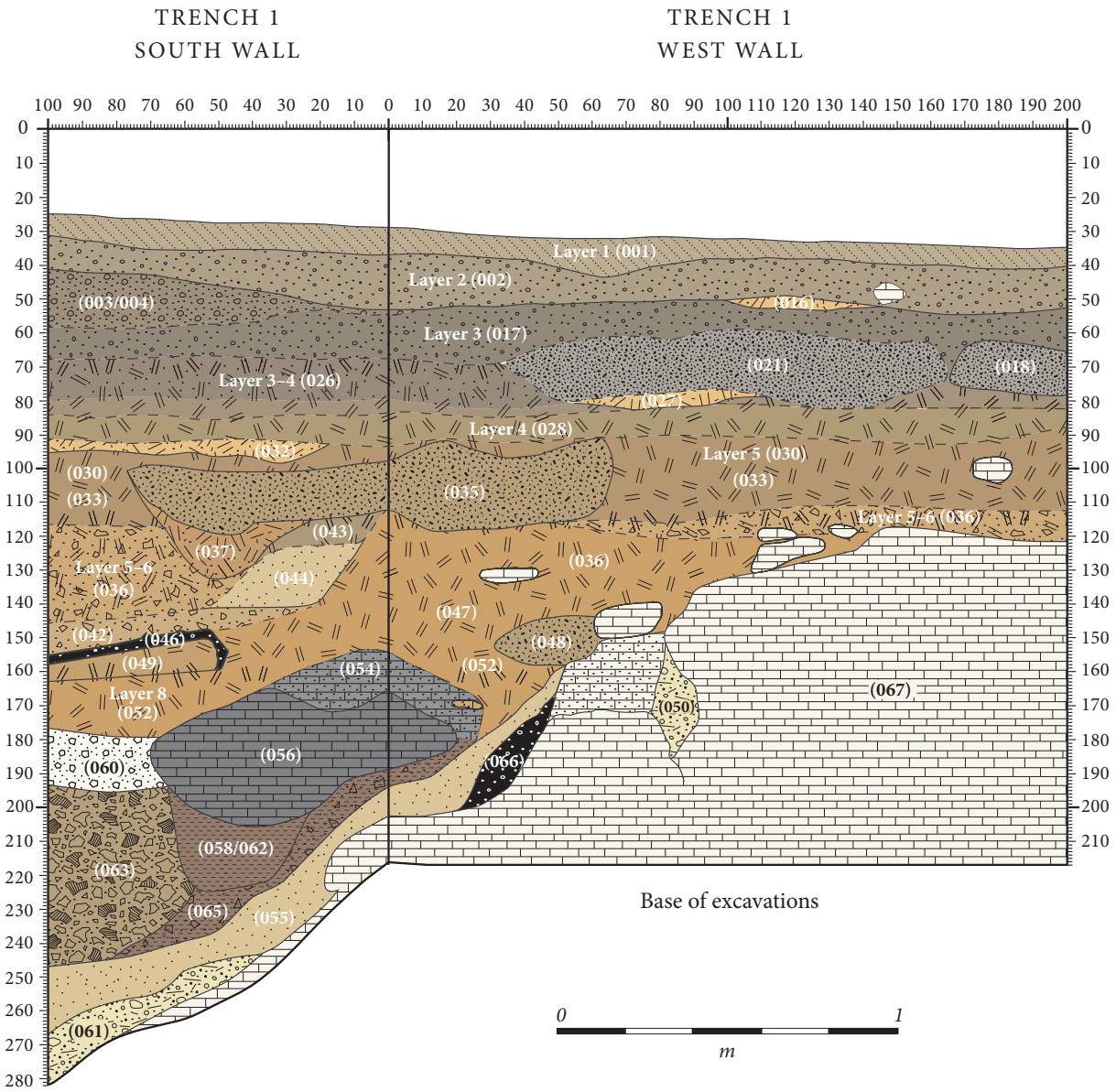




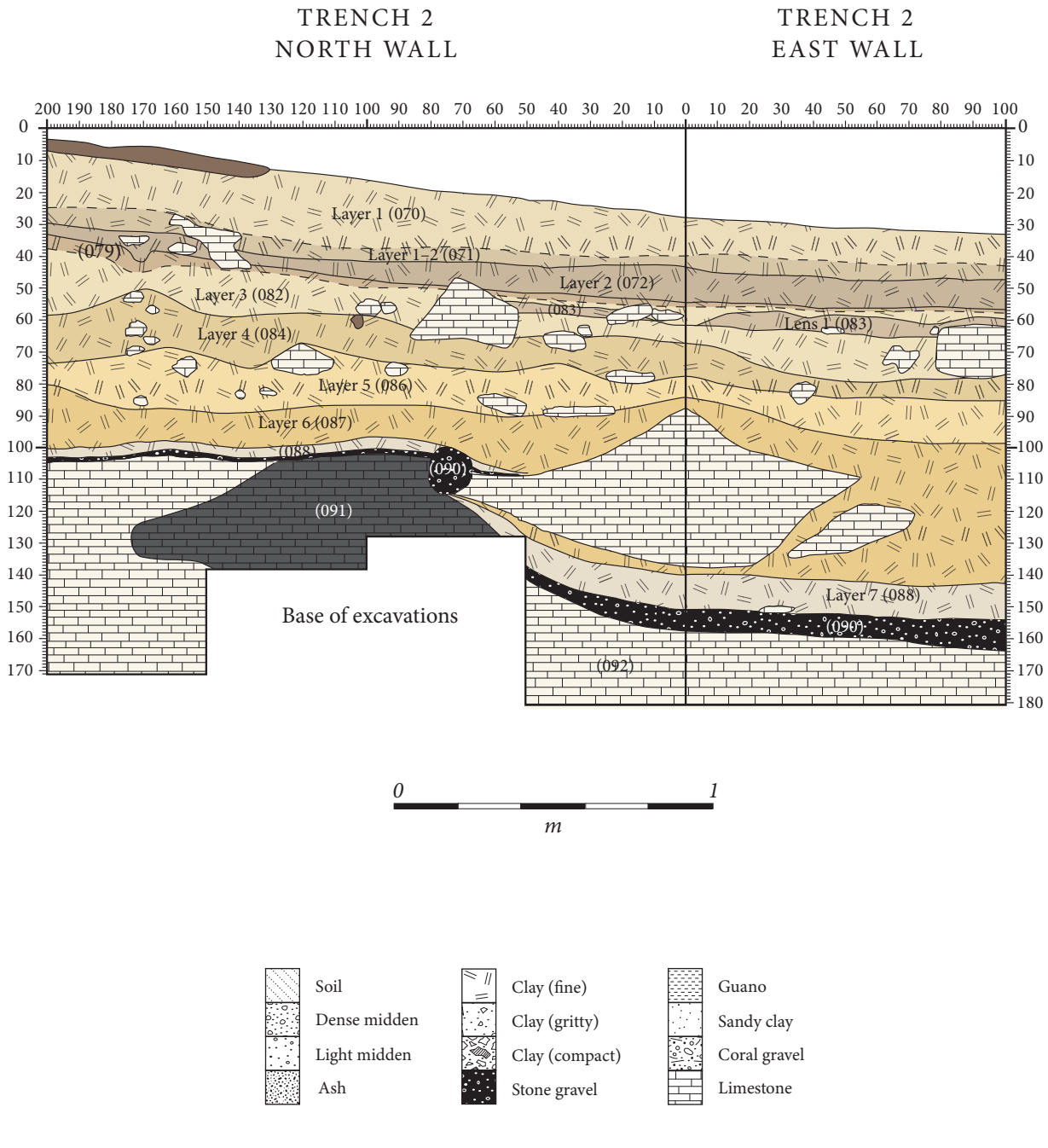




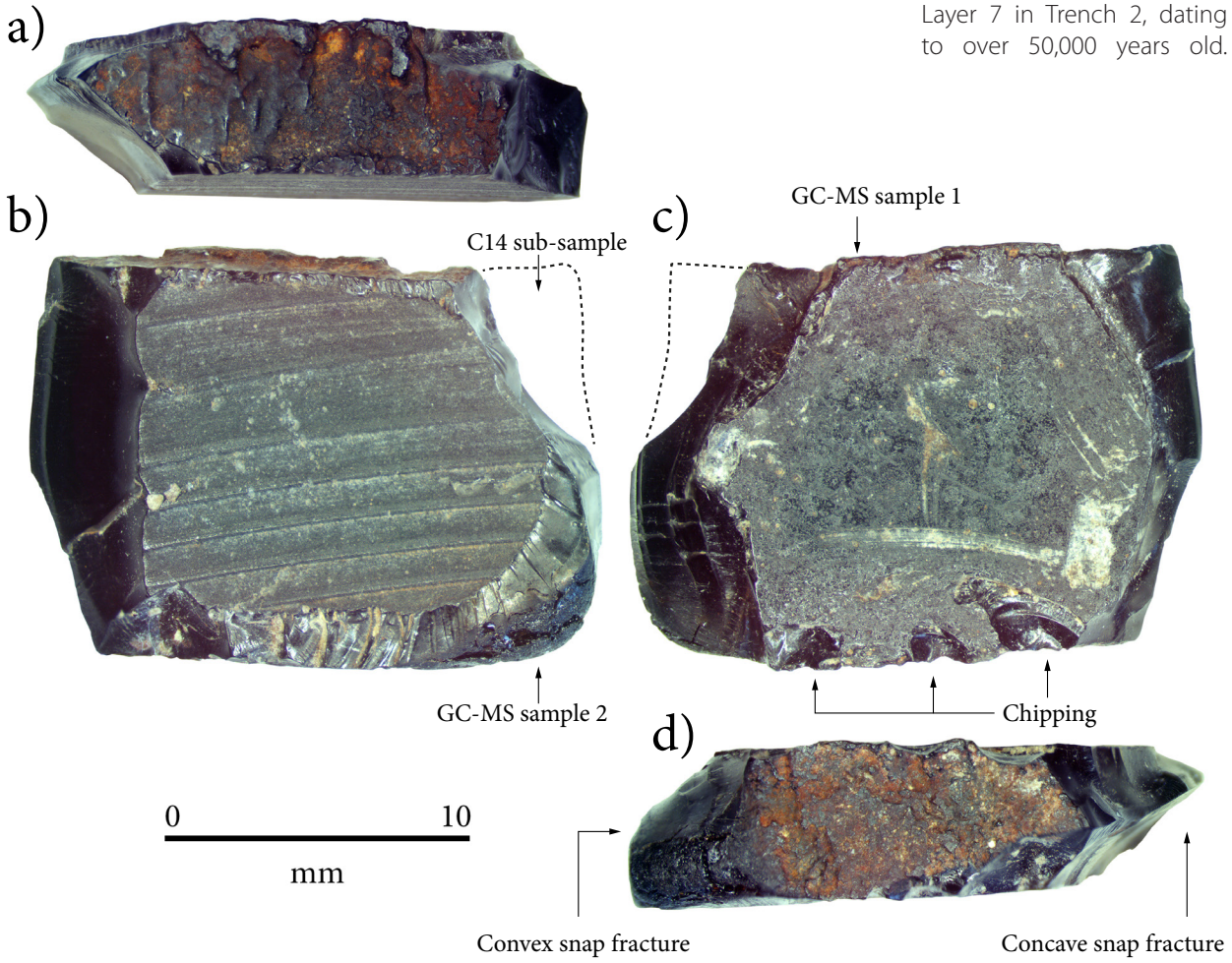


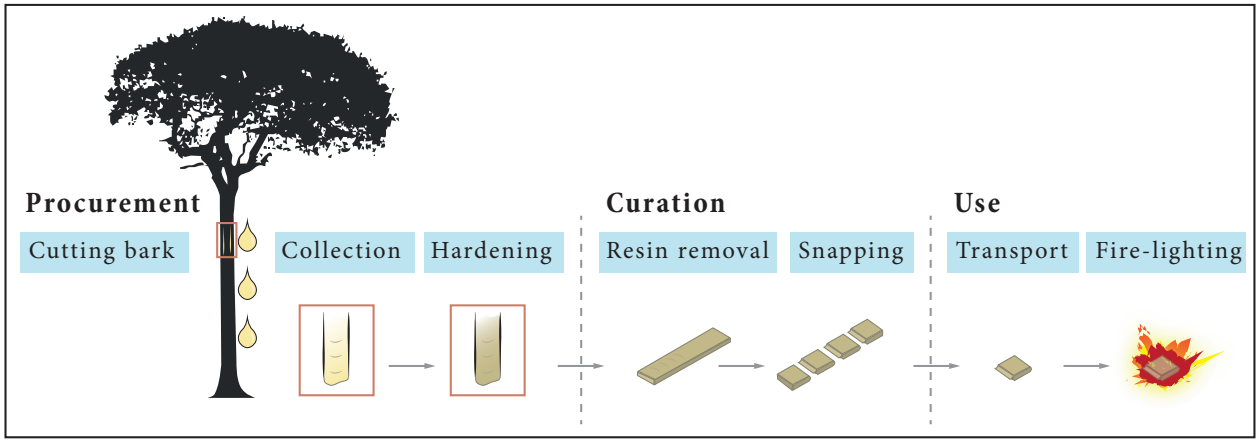


Above and right: stratigraphy of Trench 1 and Trench 2 at Mololo Cave, showing ash from fireplaces and clays with bone midden.


TRENCH 2
NORTH WALL
TRENCH 2
EAST WALL
Layer 1 (070)
(079)
Layer 1–2 (071)
Layer 2 (072)
(083)
Layer 3 (082)
Layer 4 (084)
Lens 1 (083)
Layer 5 (086)
Layer 6 (087)
(088)
(090)
(091)
Base of excavations
Layer 7 (088)
(090)
(092)
0
1
m
Soil
Dense midden
Light midden
Ash
Clay (fine)
Clay (gritty)
Clay (compact)
Stone gravel
Guano
Sandy clay
Coral gravel
Limestone

Below: tree sap artefact from Mololo Cave from Layer 7 in Trench 2, dating to over 50,000 years old.





Above: method of tree sap artefact production and use.

Rainforest hunter-gatherers

By about 14,000 years ago the global climate was beginning to warm. While this happened, sea levels rose dramatically, dividing Waitanta into Waigeo, Gam, and Batanta. The Mayalibit valley system also flooded by around 9500 years ago to create what is today Mayalibit Bay. Isotopic evidence demonstrates that during this period the lowland rainforests expanded and became wetter and more dense too.

The excavations at Mololo Cave uncovered middens (ancient rubbish heaps) containing abundant animal bone from the period between 14,000–4000 years ago. These bones belonged to a wide range of rainforest species including fruit bats, large rats, bandicoots, cuscus, sugar gliders, and pythons. Fruit bats of the species *Dobsonia magna* (the New Guinea Naked-Backed Fruit Bat) which roost in the darkest parts of Mololo Cave were hunted most intensively. Their bones preserved evidence for burning and breakage marks indicating that humans regularly hunted these animals and cooked and ate them at the cave site. The presence of forest wallaby bones in these middens suggest people may have translocated animals from the mainland of New Guinea to Waigeo as pets or as a food source; as far as we know, wallabies are now extinct on the island.









Above: excavations at Mololo Cave, Waigeo Island.



Lowland rainforest in
Mayalibit Bay, Waigeo Island.

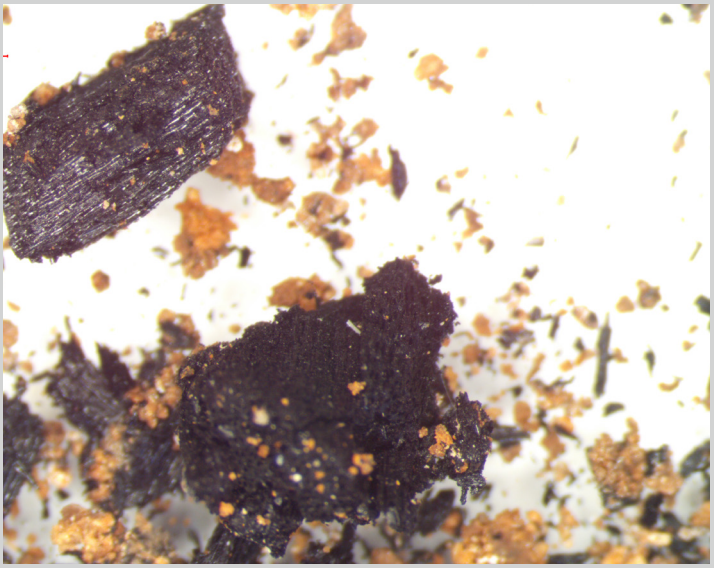


Radiocarbon dating Mololo Cave



Step 1: charcoal is selected from the excavation wall.

Left: Trench 1 at Mololo showing location of charcoal specimens.



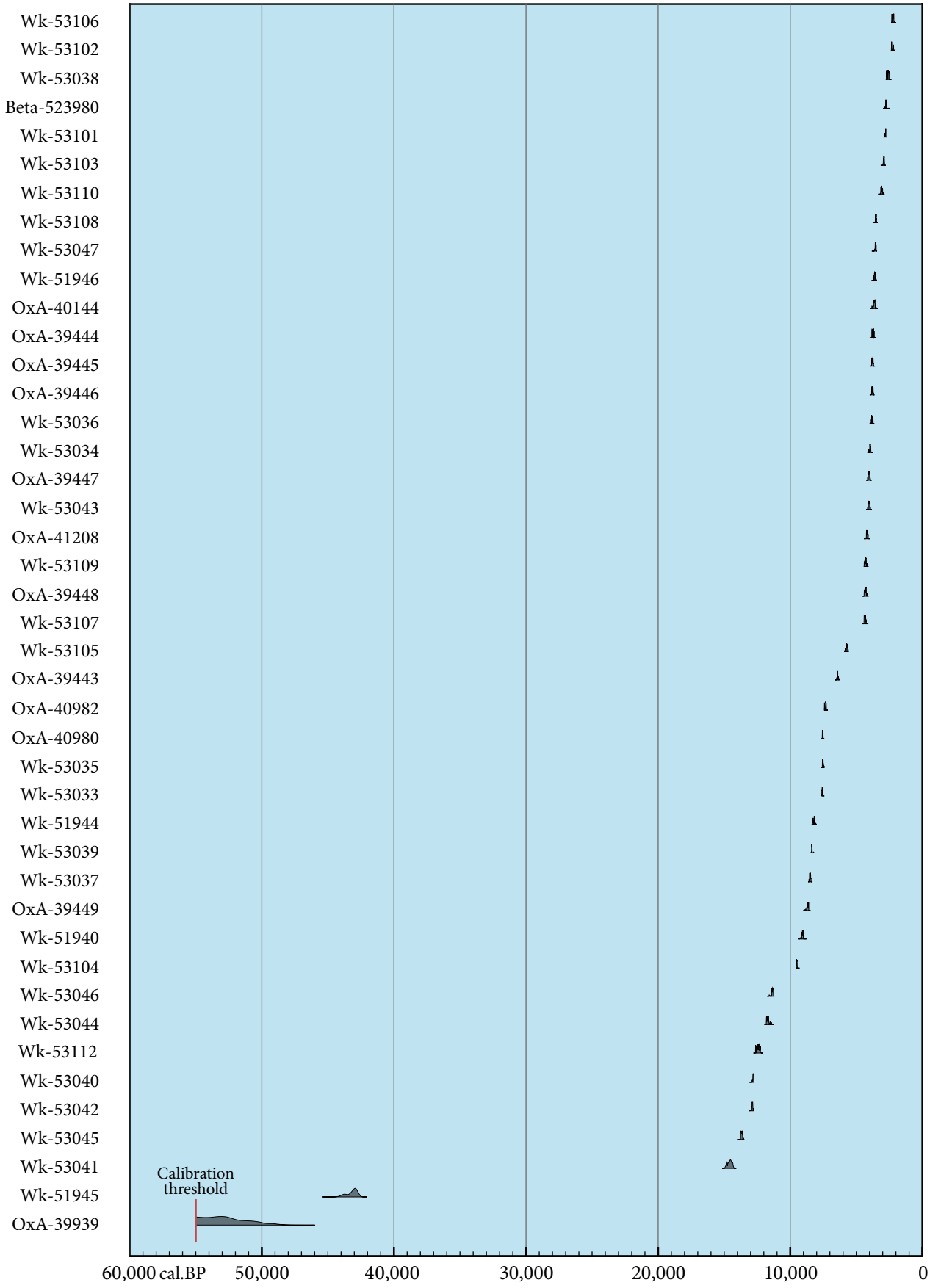
Step 2: the charcoal is catalogued, weighed, and inspected under a microscope.

Left: charcoal from Trench 1 under the microscope at the University of Cambridge.

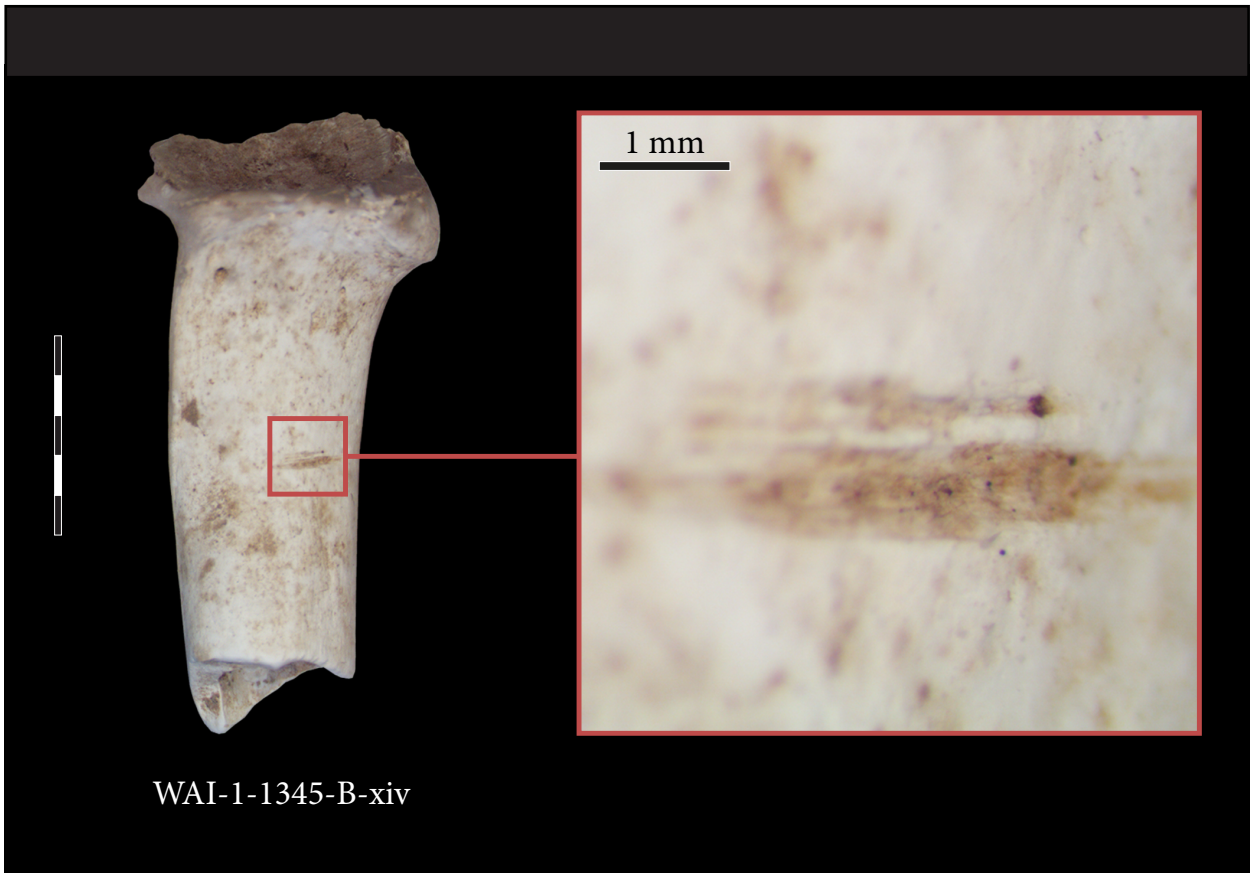


Step 3: the charcoal is processed and analysed with an accelerator mass spectrometer to determine how old it is.

Left: Oxford Radiocarbon Accelerator Unit (photo: Lorena Becerra Valdivia).



Above: radiocarbon dates from charcoal at Mololo Cave. Two dates are very early and show human occupation of the site between >55,000 and 44,000 years ago. Most other dates occur after 14,000 years ago and show that people used the site regularly until after 2000 years ago.



Above: wing bone of New Guinea Naked-Backed Fruit Bat with cut marks, excavated at Mololo Cave.



Left: New Guinea Naked-Backed Fruit Bat (photo: Markus Lilje).



Above: skeletal remains of Brown Dorcopsis with burn marks, excavated at Mololo Cave.



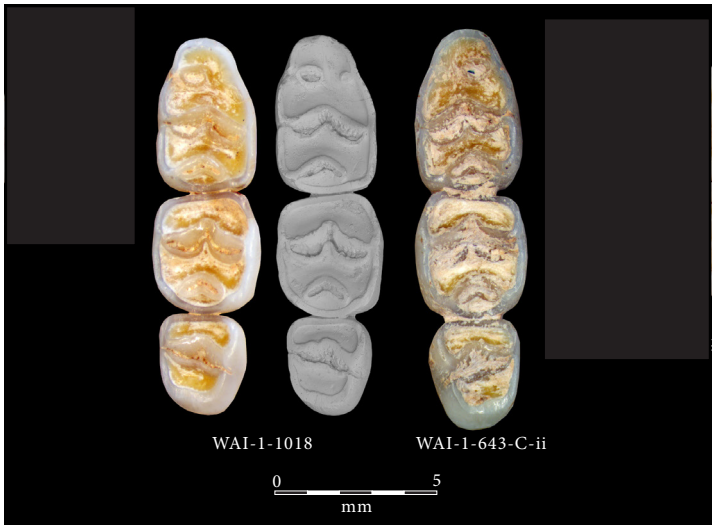
Left: Brown Dorcopsis or forest wallaby (photo: Mehd Halaouate).



Sugar Glider humerus bone from Mololo Cave.



Sugar Glider (photo: James Bailey).



White Tailed Giant Rat teeth from Mololo Cave.



White Tailed Giant Rat (photo: Rog Standen).



Common Echymipera humeri and femora from Mololo Cave.



Common Echymipera, or bandicoot (photo: Michael Pennay).

Bone pointed artefacts may have been used for knitting things like string bags (known as noken around West Papua), which have been produced in New Guinea for at least 5000 years, or they may have been used as projectile tips for hunting with bow and arrow, spears, or blow pipes. What we do know is that these bone points were made between 8500 and 3500 years ago and are similar to artefacts made at a similar time in Maluku and the Bird's Head of New Guinea.

Aquatic animal remains were also recovered from this time period, including freshwater shell, teeth from fast swimming and predatory fish (perhaps barracuda) and sea urchin spines indicating that people collected food from the rocky shoreline.

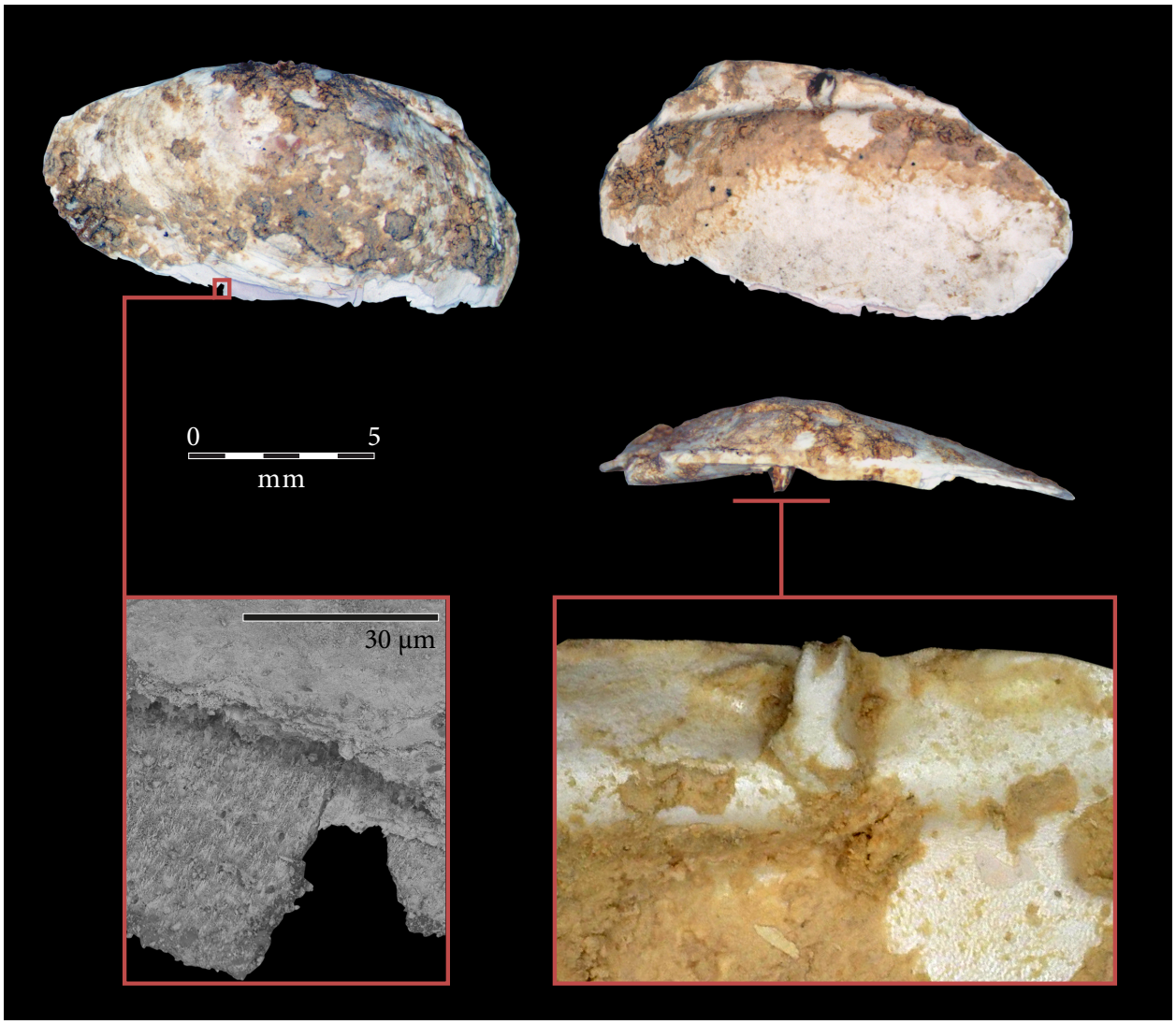
A small number of charred plants were found at the site too. One fragment of a tuber dated to about 13,000 years ago and shows that people were cooking carbohydrate-rich plant foods alongside animal protein. It is likely that people's diet included a wide array of plants but most of this evidence does not preserve well in the archaeological record.



Right: close up of bone point artefact from Mololo.

Below: bone points from Mololo.





Above: the remains of freshwater mussel shellfish eaten at Mololo Cave.

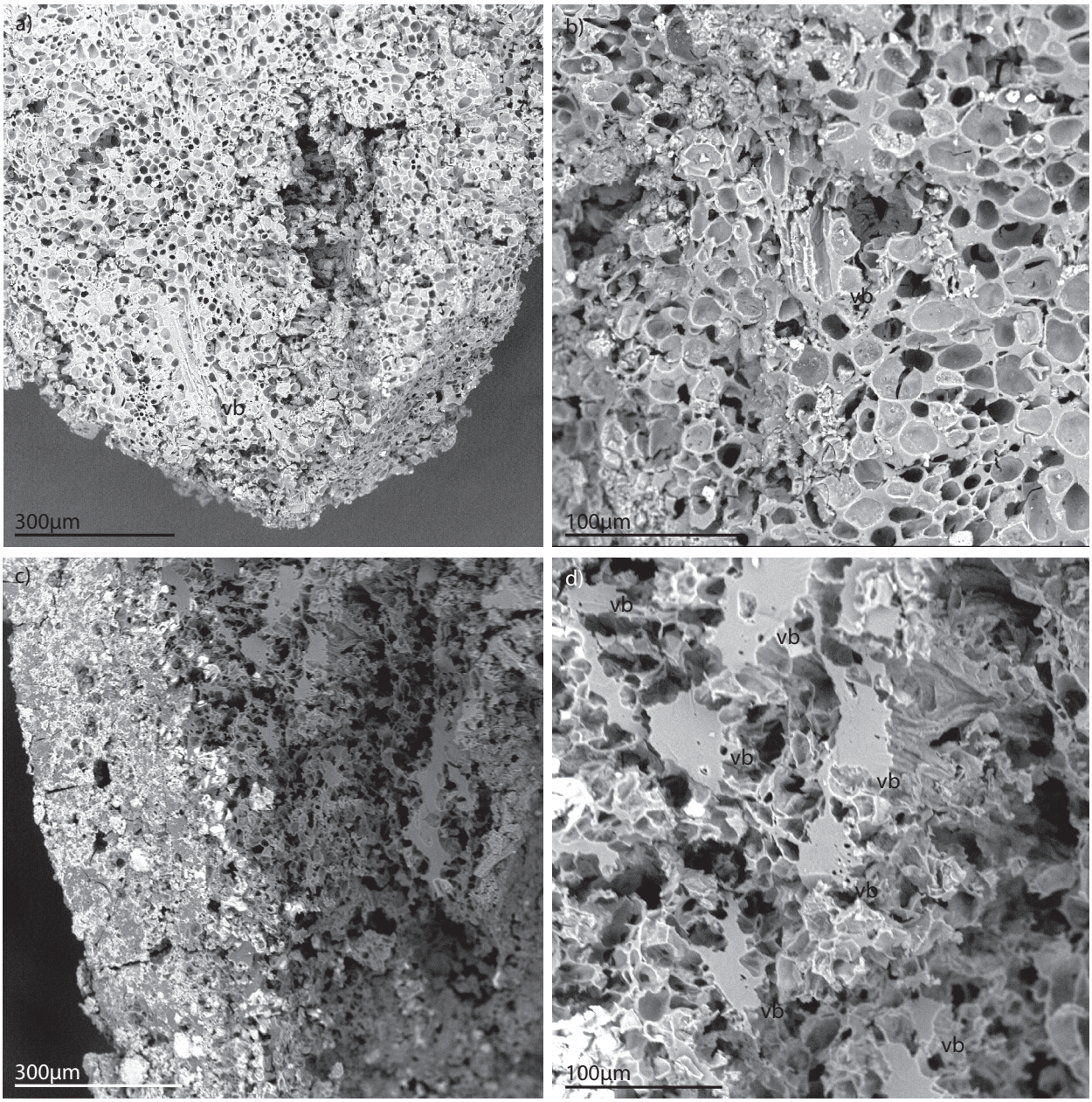
Below: teeth from a large predatory fish, excavated from Mololo Cave.





Left: charred vegetable remains excavated at Mololo (photo: Anna Florin).

Below: scanning electron microscope images showing close up of charred plant remains (photo: Anna Florin).





Large cave near Lopintol village in Mayalibit Bay.

Austronesian interactions

The study of historical linguistics suggests that a new group of languages entered the Pacific between 4000 and 3000 years ago. This language family is known as Austronesian, which was initially spoken in Taiwan and then was brought into Island Southeast Asia, New Guinea, and then the rest of the Pacific Islands by seafaring populations. Genetic analysis supports these ideas and indicates that the initial speakers of these languages in the Pacific had a distinct ancestry deriving from East Asia. Sometime after they arrived around New Guinea, they began to marry local people already living in the area. The descendants of these marriages are present around coastal parts of New Guinea including in the Raja Ampat Islands.

Today, all local languages spoken around Waigeo are Austronesian languages. However, the speakers share genetic ancestry from both the early Austronesian speakers and people already living in the islands who spoke Papuan languages. Although most of the core vocabulary of Ma'ya and Ambel languages derives from ancient Austronesian, the tone and structure of the languages might reflect patterns that were used in the original Papuan languages on Waigeo.

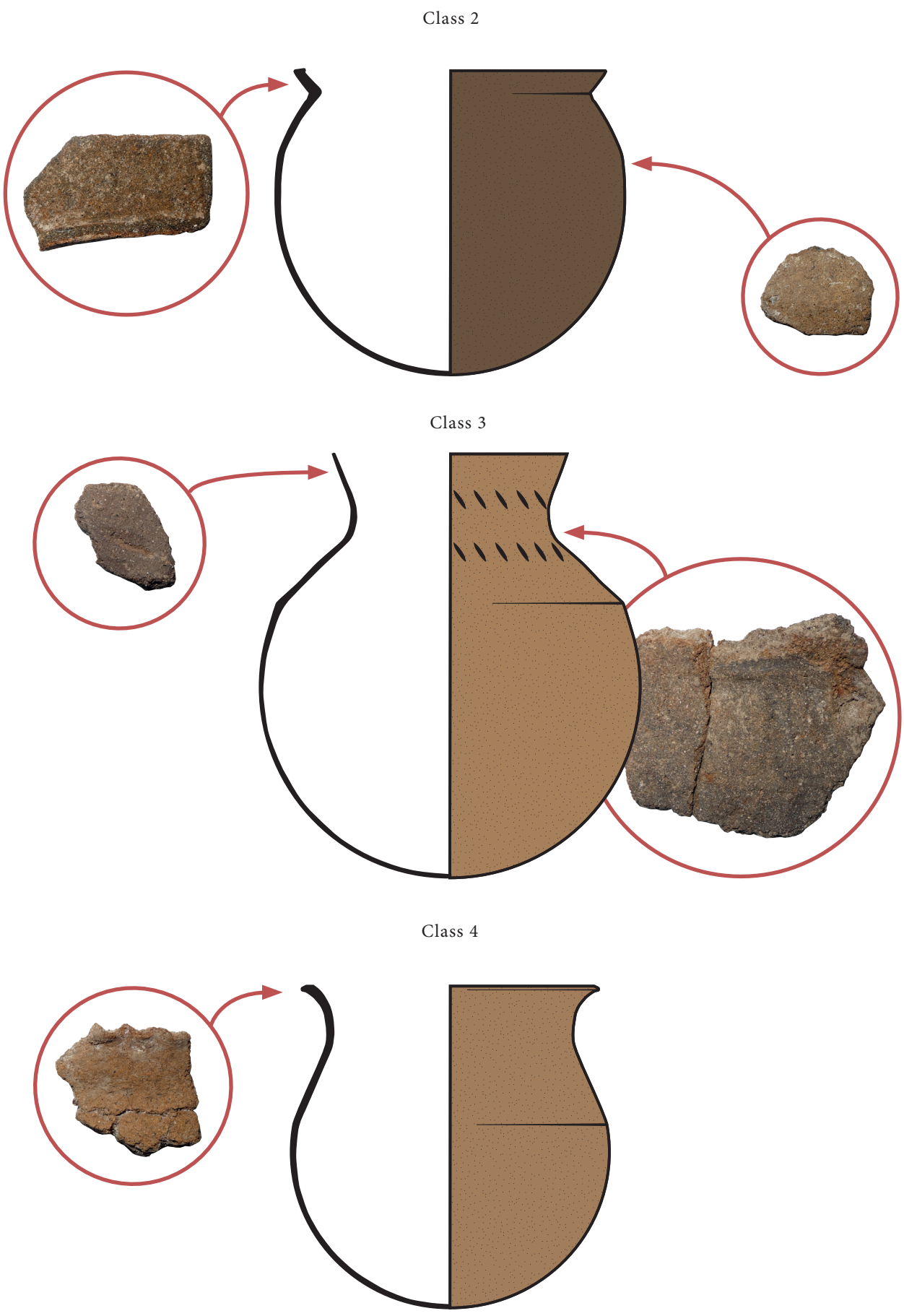


Dispersal of Austronesian speakers through Island Southeast Asia to the Pacific.

Gaman Bay, southern Gam Island.







Reconstructing pot shapes based on ceramic artefacts excavated at Mololo Cave.

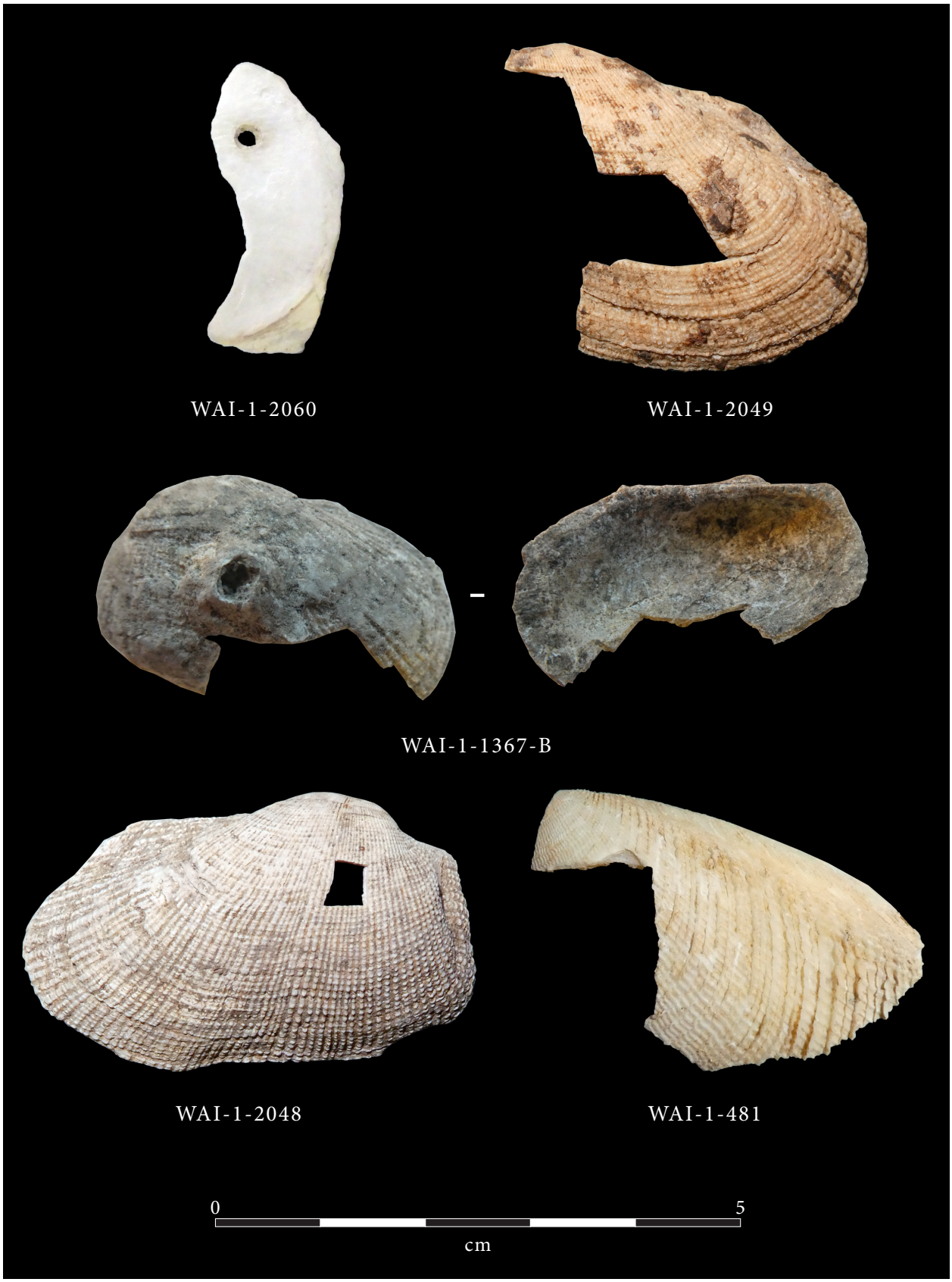
Mololo Cave provides archaeological evidence for these movements of Austronesian speaking groups. In layers dated to about 3500 to 3000 years old, pottery was recovered which looks similar to pots excavated in Maluku and from further east in the Bismarck Archipelago in Papua New Guinea (known as Lapita pottery). The pottery fragments at Mololo are few in number, so we cannot be sure if the people using them at the site were the same people that made to pots, or if they obtained the pots by trading. However, the evidence does tell us that new technology was brought into the Raja Ampat Islands at the time that Austronesian languages entered the region.

At the same time, about 4000–3000 years ago, the types of animals discarded at the site changed too, indicating that people transitioned from hunting and gathering rainforest animals to collecting fish and shellfish around nearby coral reefs and mangroves. The fish bones from Mololo Cave are small and might indicate that people were using nets to collect a large number of smaller fishes. The shellfish at the site include a variety of bivalve and gastropod species, and some even needed to be cooked to remove toxins before they could be eaten. Some of these shells were made into necklaces and personal ornaments too.

Red and orange rock art was produced around the coastal cliffs of Waigeo and other Raja Ampat Islands at some time in the middle of our current climatic warm period (known as the Holocene period). We know this because the art occurs several metres high up the cliffs and must have been painted when the sea level was higher (in the Pacific Ocean between 6000–3000 years ago the sea was about 3–5 metres higher than today). This may mean that these early rock paintings were produced at a similar time that early Austronesian speakers were entering the region. There are several locations where this rock art can be observed around Waigeo, including on Pef Island and in Kabui Bay. The most extensive paintings occur around Selpele village in western Waigeo, with motifs depicting hand stencils, sea animals, human-like figures, and abstract designs.



Sorting the Mololo Cave shell midden at Warsambin village.



Shell artefacts exacavted at Mololo Cave.











Red and orange rock paintings high up cliffs around Waigeo.

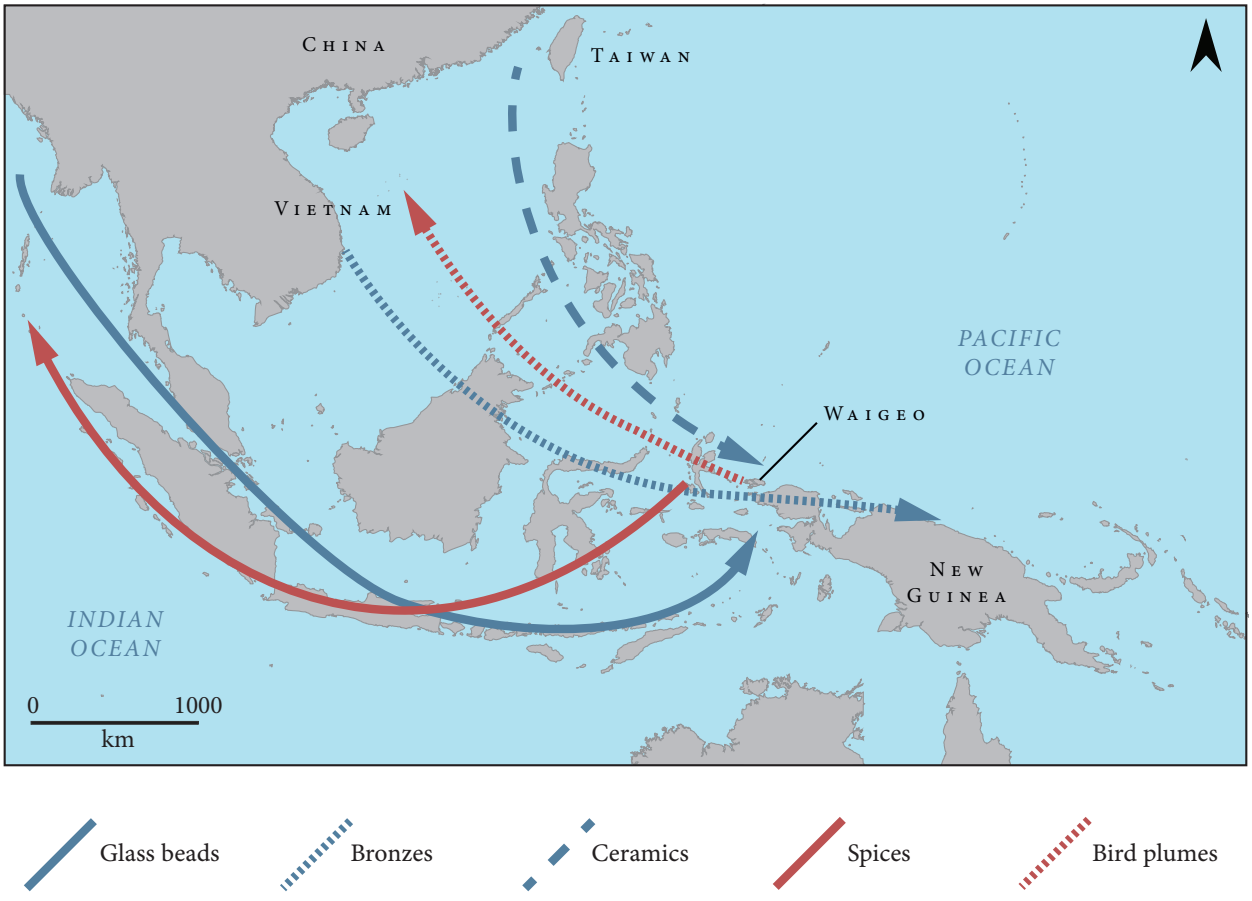


Limestone island in Kabui Bay.

Global trade networks

After about 2000 years ago, coastal exchange networks around New Guinea began to change, and some of these networks became connected to global trade systems. For instance, bird of paradise feathers and spices would be exchanged for exotic material culture from the west, including glass beads from Southeast Asia and India, bronze axes from Vietnam, and porcelain from China. At this time, the Raja Ampat Islands and the Bird's Head of New Guinea were becoming more connected with established trade networks in the Pacific, Southeast Asia, and beyond.

Below: examples of products traded between the Raja Ampat area, Asia, and Europe.





Cloves were traded from the nearby Spice Islands in Maluku to the Middle East from 3500 years ago and Europe from 2000 years ago (photo: Wikimedia commons).



Bird of paradise feathers from New Guinea and the Raja Ampat Islands were traded to Asia and later Europe (photo: Wikimedia commons).



Bronzes like this axe known as 'Dong Son' were imported from Vietnam to New Guinea including the Bird's Head Peninsula (photo: Wikimedia commons).



Early glazed ceramics from China were traded to coastal parts of New Guinea and the Raja Ampat Islands (photo: Wikimedia commons).



Glass beads made in Mainland Southeast Asia or India were brought to ports in Java and Bali where they were then redistributed as far as Raja Ampat, Cenderawasih Bay, and New Guinea (photo: Wikimedia commons).

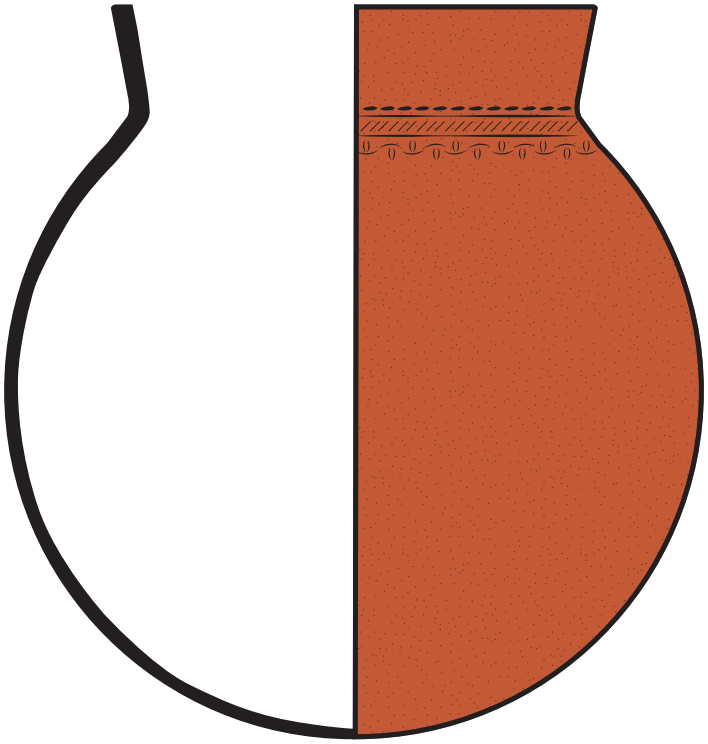
Some pottery at Mololo Cave, dating to sometime between 3000–2000 years ago, shows similarities with ceramic designs from archaeological sites around northern Maluku. These include red 'fingernail incised' pots known from Kayoa Island near Halmahera. Such similarities suggest there were strong connections between the pottery makers around Raja Ampat and northern Maluku after the initial introduction of pottery by Austronesian speakers several centuries earlier.

Centre: red pottery being excavated from Trench 2 at Mololo Cave.

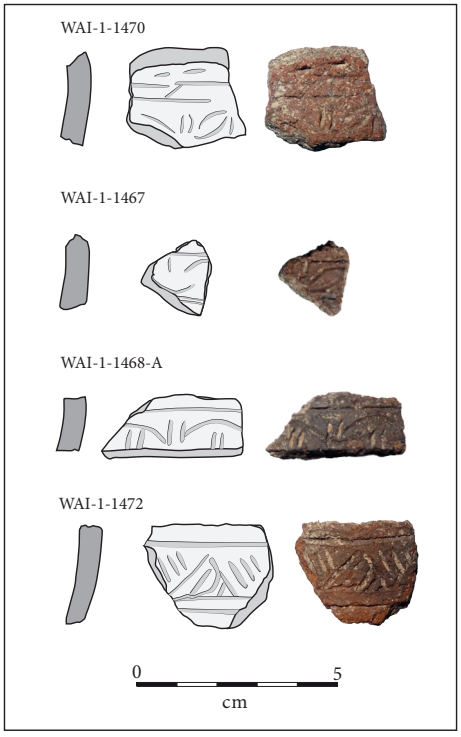
Below: reconstruction of red pottery shape and decoration at Mololo Cave.



Class 1









The north coast of Waigeo Island.

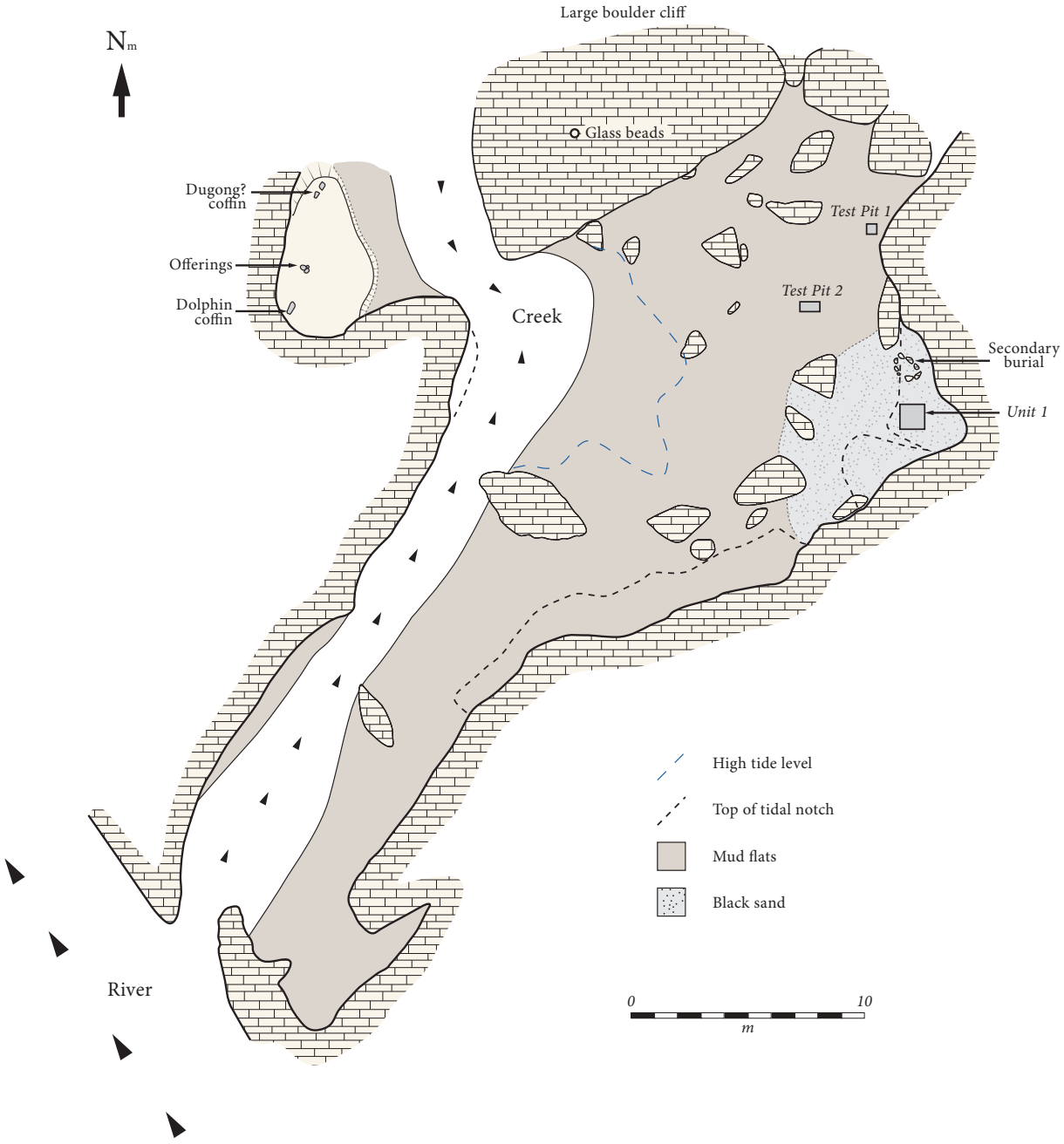


Excavations at another cave site known as Manwen Bokor, near Asukweri village on the north coast of Waigeo, provide a snapshot of these trade systems around 1200 years ago. At Manwen Bokor, some red pottery fragments are similar to pots made along the north coast of New Guinea. Other ceramics from the site include 'circle stamp' designs that are similar to decorations used throughout northern Maluku as well as other parts of Island Southeast Asia like Banda, Sulawesi, and even Taiwan.

At Manwen Bokor, the archaeologists also uncovered glazed ceramics that were produced in China and exported to Southeast Asia, eventually arriving to Raja Ampat. On the surface of a large cliff overlooking the site, the team also recovered two yellow glass beads that may have been produced on the mainland of Southeast Asia or in India, before being traded along the Indian Ocean rim to eventually arrive on Waigeo. Beads like these would have been used for decoration, exchanges, marriage ceremonies, and even to decorate ancestor figurines.



Location of Manwen Bokor Cave, north Waigeo Island.



Map of Manwen Bokor Cave.

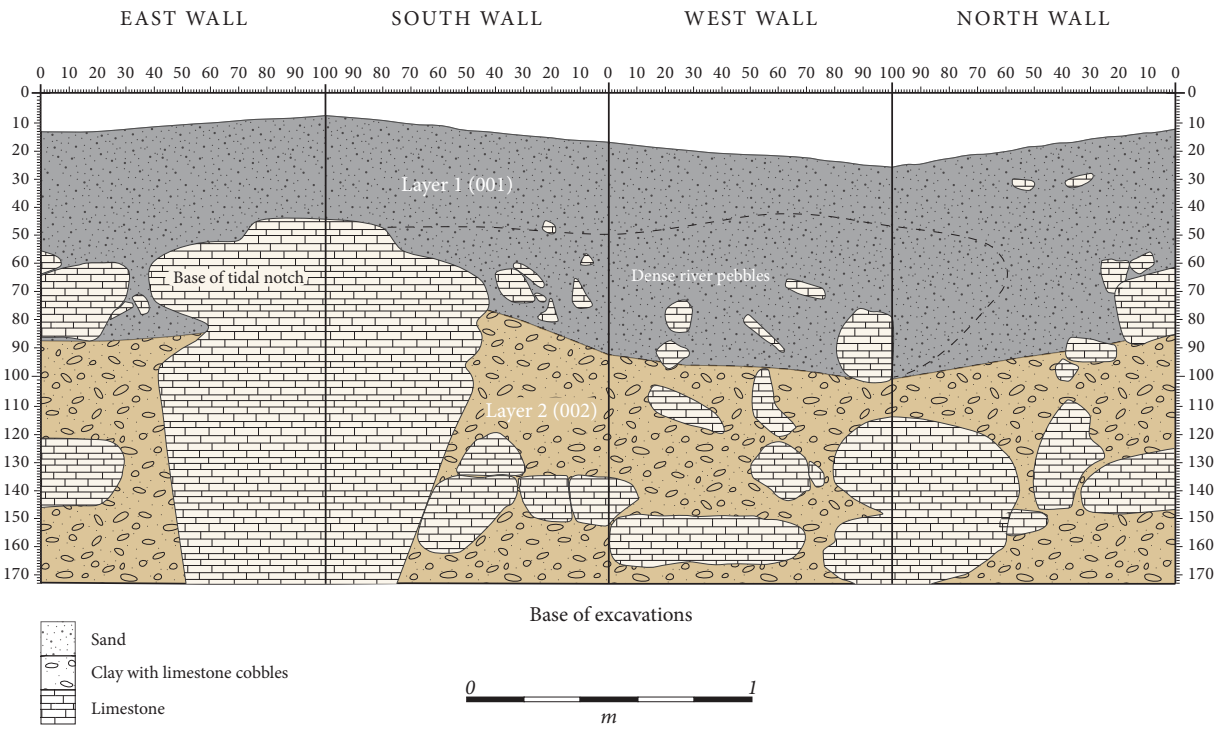




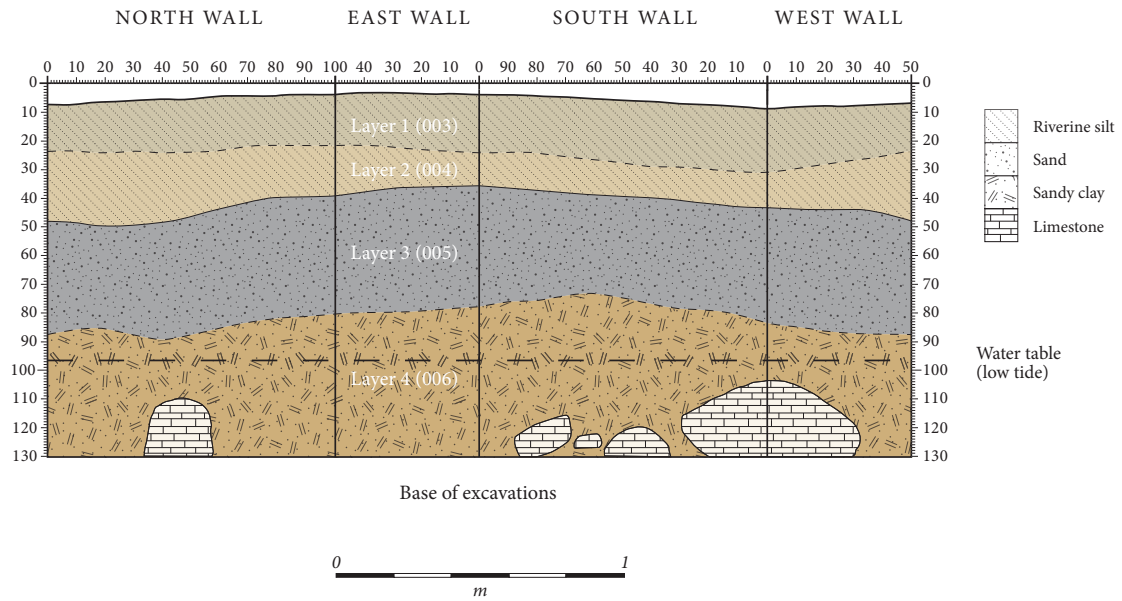




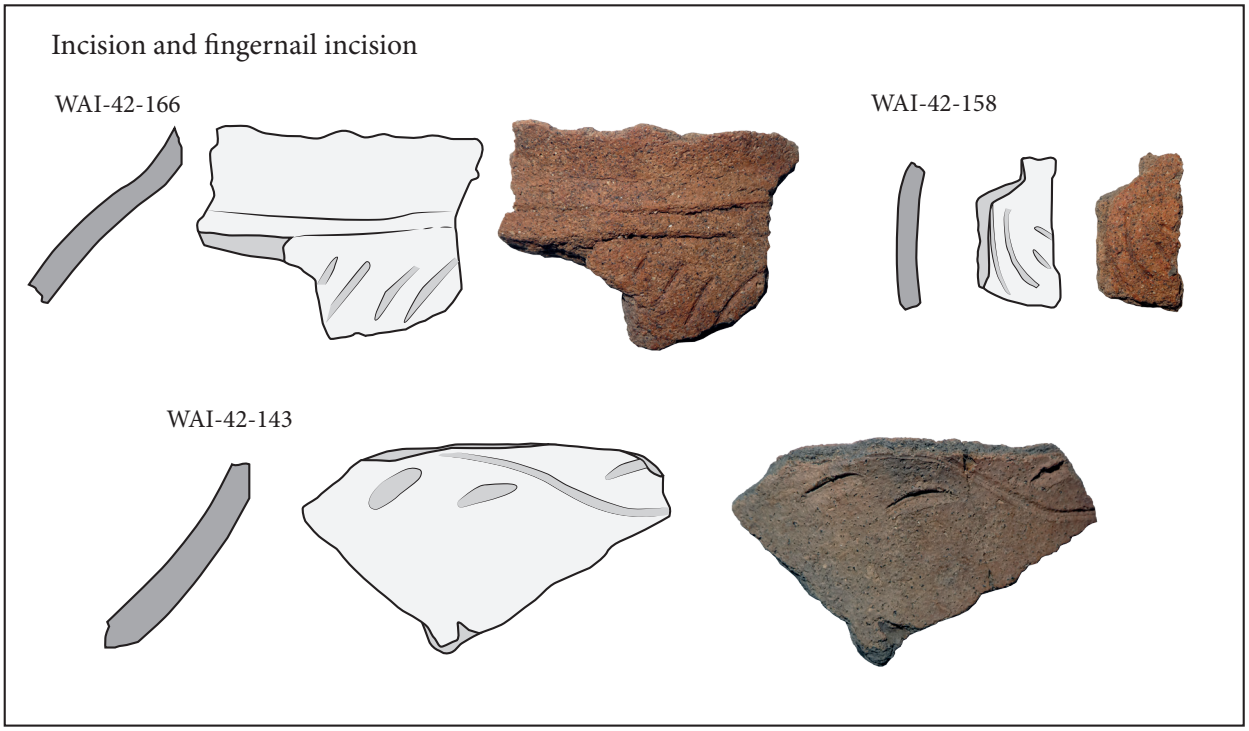
Excavations at Manwen Bokor Cave.

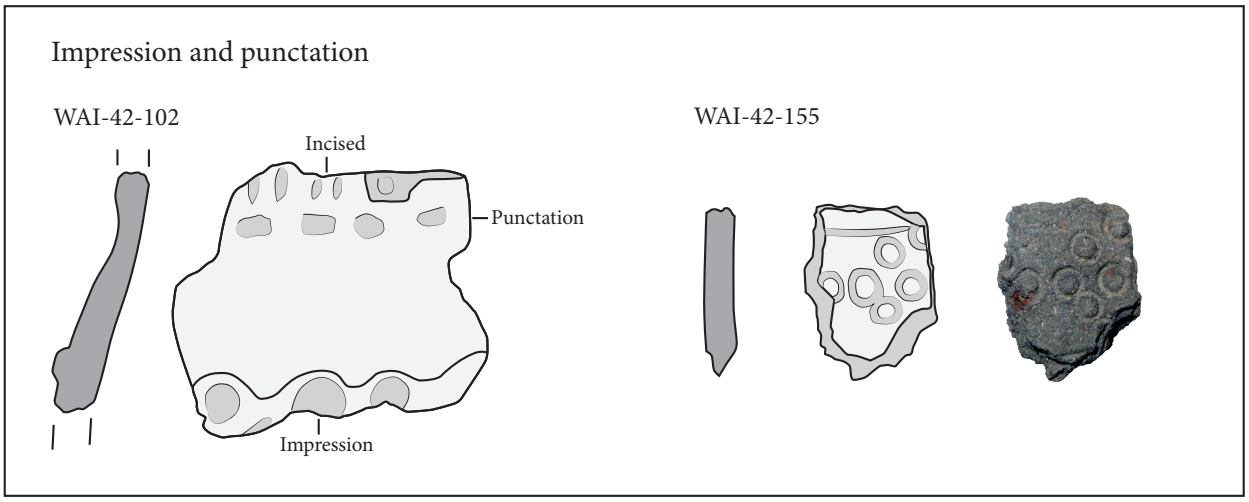


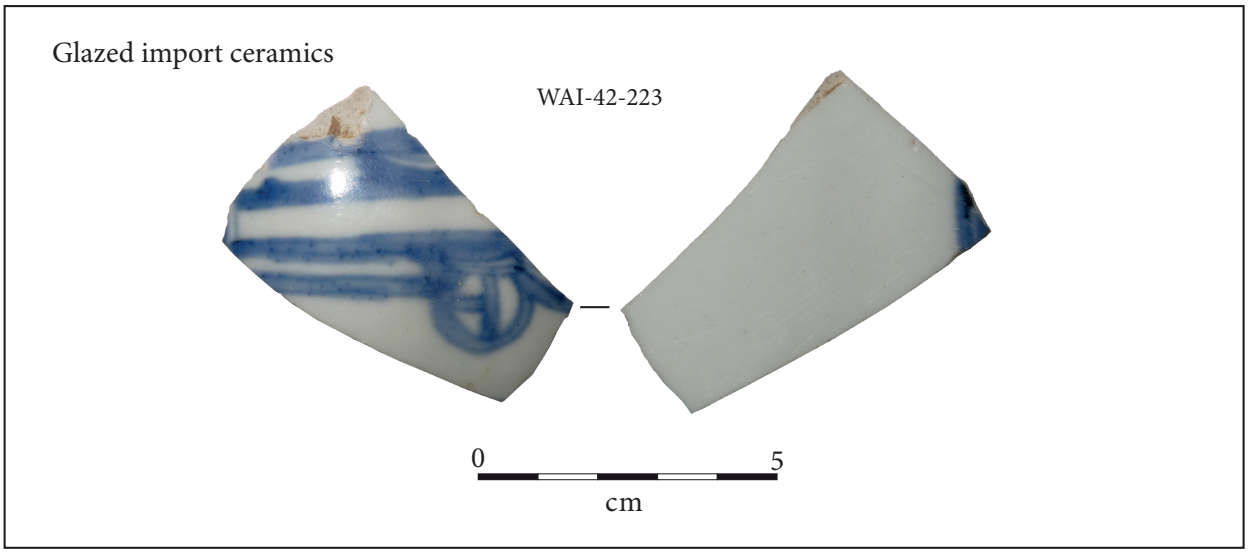
Above: stratigraphy of Unit 1 at Manwen Bokor Cave.



Above: stratigraphy of Test Pit 2 at Manwen Bokor Cave.







Decorated pottery from Manwen Bokor Cave.

Other sites around the coast of Waigeo provide information about the last few hundred years of human settlement. Rockshelters and coastal cliffs were often used as spaces for secondary burials of ancestors and offerings were placed alongside these ancestors. These offerings included wooden furniture and canoes, glazed plates and dishes, and food. Radiocarbon dating of charcoal found at one of these sites, known as Aput Lo in western Waigeo, shows that these burial practices are at least 500 years old. These radiocarbon analyses also tell us that people returned to these burial sites over hundreds of years.

Other types of sites can be found around coastal flats of Waigeo and offshore islands, where middens of shell and pottery are eroding onto the beach. The marks on the base of these pots can tell us about where they were made. For instance, many ceramics from old village sites come from manufacturing centres like Maastricht in the Netherlands.

A distinct style of white painted rock art was also produced around Waigeo within the last few centuries. These paintings occur lower down the cliff compared with the older red and orange paintings. This is because, within the last few hundred years, the sea level has remained similar to today, allowing people to paint on the cliffs from their canoes. These white painted scenes can be found at several sites in Kabui Bay, at the entrance to Mayalibit Bay, and around north Waigeo. The paintings depict abstract shapes, sea life, and even battles between different local groups.







Historical pottery and shell middens around Gam Island.











White rock art on cliffs around Waigeo Island.

Oral traditions and cultural heritage preservation

Archaeology uses scientific methods and techniques to try to understand the human past, but it cannot tell us everything. Many elements of culture decay and do not survive in the archaeological record (e.g. clothing and artefacts made from plants) or are intangible (e.g. the nature of people's political organisation or cosmology). Oral histories and stories are an important way to understand the past in more detail and can work hand-in-hand with archaeology. For instance, oral traditions tell us where different family groups moved and settled when Biak speakers moved into the small islands off the western coast of Waigeo and on Gam Island within the last few centuries. They also tell us about the larger-than-life events that gave rise to the Raja Ampat cultural landscape; for instance, the story of the Kali Raja site in the interior of Waigeo tells the origin of the Rajas of Waigeo, Salawati, and Misool.

Like the natural environment, the vibrant cultures and deep history of the Raja Ampat Islanders are at the heart of what makes these islands unique. Just like the coral reefs and rainforests of Waigeo, archaeological sites and cultural heritage can be threatened by human activity like logging, building projects, coastal erosion, and fossicking. It is important that both the natural environment and cultural heritage sites are safeguarded for the future. For this to work, it is important that local Raja Ampat voices and ideas are at the centre of cultural heritage management.



On route to the Kali Raja site in the interior of Waigeo, home to one of the key origin stories about Raja Ampat.



Sago oven pottery manufacture at
Arefi village, near Batanta Island.



First Pacific Islanders...

Occupied Mololo Cave over 50,000 years ago

Explored from the coast to inland regions

Processed tree resin for fire or adhesive

Hunted small native birds and mammals







Rainforest hunter-gatherers...

Revisited Mololo many times for shelter

Hunted a wide range of forest animals

Collected wild plants like tubers

Made bone points for tools







Pleistocene (Ice Ages)

60,000 Years ago 50,000 40,000

Austronesian interactions...

Involved the arrival of new language speakers near Mololo

Brought new technology to the region like pottery

Coincided with a change to fishing and shellfishing

May be linked to red and orange rock art

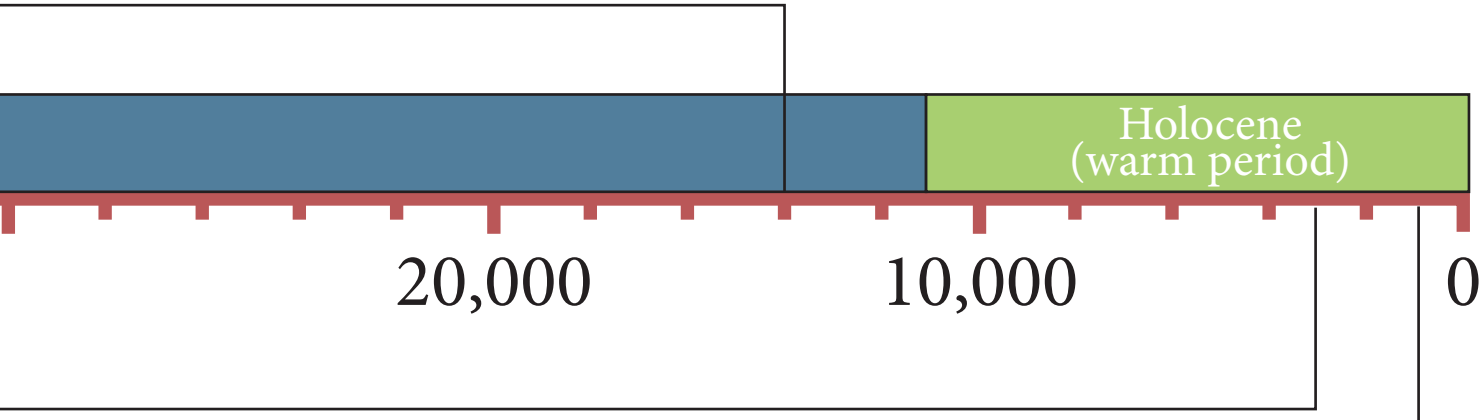






Conclusion

The people of Waigeo Island have a deep and rich history that can be explored using archaeology. As a discipline, archaeology can help us answer questions about the human past that are not discussed in local stories and legends. Archaeological survey and excavations in 2018–2019 undertaken by international, Papuan, and Indonesian scholars, as well as local team members from several villages around Waigeo, has produced an important dataset to help interpret the past in new ways. The archaeological data shows us that the ancestors of today's Raja Ampat Islanders were the first people to reach the Pacific region over 50,000 years ago. These people were highly innovative explorers that arrived to Waitanta by boat or raft. They successfully adapted to the challenges of living on a small rainforested island, and over time began to modify and shape that environment. For thousands of years these people lived by sustainably hunting rainforest animals, collecting plants, and fishing for marine resources. These people continued these practices as climates warmed up and global sea levels rose, separating Waitanta into Waigeo, Gam, and Batanta. About 3500 years ago new technology entered the region, including pottery, which was brought to the region by the first Austronesian language speakers. These groups intermarried with local Papuan communities around Waigeo producing new fusions of culture. Later in time, in the last few thousand years, Waigeo became connected with global trade networks and people were able to import exotic new materials like glass beads, metal, and glazed ceramics. Because of this impressive cultural history, it is important that cultural heritage sites are looked after for future generations and that Raja Ampat Islanders are involved in decisions that impact these sites.





Global trade networks...

Led to the import of glass and ceramics to Manwen Bokor

Involved the export of bird plumes and other products

Connected Waigeo with Asia, Europe, and the Pacific

Corresponds to white rock art and burial caves



Sunset over Warparim Bay,
near Kabui Village, Gam Island.

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