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TORRES STRAIT ISLANDER MARINE SUBSISTENCE SPECIALISATION AND TERRESTRIAL ANIMAL TRANSLOCATION

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Torres Strait Islanders are among the highest consumers of seafood in the world. Their specialised marine subsistence system involves use of over 350 species of fish, shellfish, sea birds, turtles and dugong. When historical records are included, the dietary range increases to over 450 species. The late Holocene development of this marine specialisation reflects the superabundance of marine resources and the paucity of alternative terrestrial animal foods. Torres Strait islands exhibit only 27% of the 294 terrestrial vertebrate species (excluding birds) known for the adjacent mainland areas of New Guinea and Australia. Islanders contributed to the depauperate terrestrial animal base both deliberately by restricting imports of Papuan pigs prior to European/South Sea Islander settlement (c.1870) and inadvertently by importing Papuan Dingoes. Import restrictions helped preserve the integrity of gardens while Dingo imports may have impacted local faunas, particularly macropods. These import restrictions denied Aboriginal hunter-gatherers of the SW Strait access to potentially useful Papuan animals such as pigs, while Dingo introductions had a major negative impact on macropod resources. Historically, macropods were restricted to small islands in the SW Strait. Aboriginal people may have artificially established these populations as new food sources. Archaeological evidence reveals more widespread macropod populations during the last 1,000 years and possible trade in macropods between islands and between mainland Australia and the islands. It is hypothesised that Islanders introduced the ingo to mainland Australia 3,500-3,000 years ago. While an abundance of marine foods provided the potential for high population densities on islands, population size and growth in the past (and in many respects today) was ultimately limited by availability of natural and artificial reserves of drinking water and the degree to which the terrestrial resource base of islands was affected by imported animals and plants. Thus, the islands of Torres Strait, far from being pristine landscapes, are constructed environments, reflecting the long-term operation of a specialised marine subsistence system. In this sense, the human history of Torres Strait has much in common with processes of human colonisation of the Pacific. ❒ *Marine subsistence specialisation, Torres Strait Islanders, animal translocation, pigs, Dingo origins*.

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> Although the land fauna is deficient in terms of economic importance, the natives have names for animals which are not of value to them, and are acquainted with their habits; their knowledge of the natural history of marine animals being very extensive (Haddon, 1912: 230).

It is axiomatic in archaeology that a key determinant of the viability of places for human occupation is the nature of available foods, drinking water and raw materials. The availability of foods reflects natural productivity and the impact of humans on that productivity. The selection of available food resources by any human group is conditioned by a broad range of factors such as social relations, population density, available technology and ontological views on the appropriateness of eating and manipulating the production of various animals and plants. Furthermore, the long-term viability of any food procurement strategy reflects a complex relationship between the energy expended obtaining, processing, distributing and consuming the food and the energy (calorific) return provided by the food (Smith & Winterhalder, 1992). Coastal regions provide interesting contexts to examine the development of human subsistence strategies given that most coastlines are highly dynamic environments that only formed in the last few thousand years following the end of the marine transgression some 6,000 years ago. On a world stage, the human occupation of the Australian coastline over the last 50,000 years and the islands of Oceania in the last 4,000

years represent the most extraordinary examples of the dynamism and specialised skills of peoples to colonise newly forming marine environments (Allen, 2000; Hall & McNiven, 1999; Kirch, 1997; O'Connor & Veth, 2000; Spriggs, 1997).

The formation of Torres Strait in the last 8,000 years created an island archipelago that bridged Australia and New Guinea. When, why and how people colonised this region and developed the unique Torres Strait Islander maritime culture known historically has puzzled researchers for over 150 years (e.g., Barham, 2000; Barham et al., this volume; Carter et al., this volume; Golson, 1972; Haddon, 1935; Harris, 1995; MacGillivray, 1852; Vanderwal, 1973). Barham (2000; Barham et al., this volume) asks the important question of whether or not peoples who colonised the Strait in the late Holocene from the north (Papua) either came equipped as maritime specialists or subsequently developed specialised maritime subsistence strategies upon arrival. To answer this question requires archaeological and palaeo-environmental data. Archaeological research is the key to understanding the long-term history of human subsistence in the region through recovery of food remains from occupation sites. Palaeo-environmental research provides information on long-term developments in food resources, particularly plant resources and the effects of fires on the development of plant communities. Key here is the formation of critical marine habitats such as sea grass banks and coral reef systems. Barham (2000) demonstrated that the highly elaborate reef systems that support the historically known maritime subsistence base of Torres Strait Islanders mostly formed in the last 4000-3000 years following sea level stabilisation (Woodroffe et al., 2000). It is likely that most evidence for human use of Torres Strait will similarly date to within this time period. That the earliest available dates for human use of the region are within the last 2500 years is consistent with this hypothesis (Barham, 2000; Barham et al., this volume; Carter et al., this volume; David & McNiven, this volume).

Considerable anthropological and archaeological literature reveals the specialised marine economy of Torres Strait Islanders of the last 2,500 years (Barham, 2000; Barham et al., this volume; Carter et al., this volume; Ghaleb, 1998; Haddon, 1935; Johannes & MacFarlane, 1991). Researchers acknowledge that marine specialisation is demonstrated by use of a wide range of marine resources and the general lack of use of terrestrial animals. As Cordell (1993: 159) put it, Torres Strait Islanders are 'one of the most marine-oriented and sea-life dependent indigenous societies on the planet'. Despite these pronouncements, no publication has explored the marine specialisation of Islanders by comparing the total range of known terrestrial animal foods with those foods procured from the sea. Furthermore, no publication has demonstrated explicitly the relative terrestrial animal food paucity of the islands compared to the adjacent mainland regions of New Guinea (Trans-Fly) and Australia (Cape York). Schode & Calaby (1972) and Tyler (1972) provided early, but incomplete, comparative listings of some groups of mammals, reptiles and frogs for these regions. It is only in the last 15 years that data has become available to allow compilation of comprehensive food lists and animal species lists for the region. This paper synthesises these lists to provide unequivocal evidence for continuities in operation of one of the world's most specialised marine economies from the ancient past through to the present. In doing so, it sets the scene for a detailed discussion on why Islanders decided to import certain animals from New Guinea (Dingoes, cuscuses) and mainland Australia (macropods) but generally rejected the live import of 2 key food animals from New Guinea — pigs and cassowaries. This discussion leads to a series of hypotheses on the degree to which Islanders altered local marine and terrestrial ecosystems, and in the case of the introduction of the Dingo, the ecological and social world of mainland Aboriginal Australians.

TORRES STRAIT ISLANDS: MEAT OPTIONS

The list of terrestrial faunal species (mammals, reptiles and amphibians) for Torres Strait and the adjacent mainland regions of the Trans-Fly (Papua New Guinea) and Cape York (Australia) (Table 1) is based on a detailed literature survey and listing of individual species presented in Appendix 1. The survey does not include species first introduced to Torres Strait after European settlement in the 1860s. Thus we do not consider the impact of House Mice (*Mus musculus*), Black Rats (*Rattus rattus*), domestic dogs (*Canis familiaris*), cats (*Felis catus*), rabbits (*Oryctolagus cuniculus*), Rusa Deer (*Cervus timorensis*), horses (*Equus caballus*), sheep (*Ovis aries*), goats (*Capra hircus*) and cattle (*Bos* sp.) (e.g., Cameron et al., 1984: 1152).

In all, 297 species of terrestrial mammals, reptiles and amphibians have been recorded for

TABLE 1. Number of terrestrial/freshwater mammals, reptiles and amphibians of the Trans-Fly, Torres Strait and Cape York.

Animals Groups	Trans-Fly	Torres Strait	Cape York
Mammals			
Introductions (pre-1860)	2	2	1
Monotremes	1	1	1
Macropods	5	1	3
Dasyurids	5	0	5
Possums	5	0	6
Bandicoots	4	1	3
Rodents	13	2	13
Bats	19	9	31
Sub-total	54	16	63
Reptiles & Amphibians			
Freshwater Crocodiles	1	0	1
Freshwater Turtles	7	1	4
Geckos	15	11	13
Legless Lizards	2	1	3
Lizards	15	4	12
Skinks	44	16	26
Snakes	40	22	44
Frogs	10	9	23
Sub-total:	134	64	126
Total	188	80	189

the 3 regions. Of these, 80 species occur on Torres Strait islands while 188 and 189 species are currently known from adjacent regions of New Guinea and Australia respectively. Cape York data are comprehensive, Torres Strait data are less comprehensive and the vertebrate fauna of the Trans-Fly is only moderately well documented (e.g., Cameron et al., 1978: 191, 193; Flannery, 1995: 36; Tyler, 1972: 232). Recent scientific description of a large flying fox (*Pteropus* sp.) from Mua Island 'provides a striking example of how little attention has been given to Torres Strait by mammalogists' (Strahan, 1995: 444). Despite these limitations, it is clear that Torres Strait is poorly endowed with terrestrial vertebrates (excluding birds) compared to adjacent mainland areas with only 27% of species listed in Appendix 1. This paucity is most evident with the general absence of large and medium sized mammals on the islands. The only exceptions are Short-beaked Echidnas (*Tachyglossus aculeatus*) and bandicoots (*Echymipera* and/or *Isoodon* spp.) on Mua, and Agile Wallabies (*Macropus agilis*) on 2 small islands in the SW Strait, and 1 introduced animal — the Dingo (*Canis lupus dingo*). Bats and rodents make up the remainder of mammals on Torres Strait islands.[1] All other terrestrial vertebrates on the islands are reptiles and amphibians (mainly geckos, skinks, snakes and frogs). Following Golson (1972), the key conclusion to draw from these data is that the islands of Torres Strait are not capable of supporting groups of specialist terrestrial hunter-gatherers.

An extremely rich bird and marine vertebrate/invertebrate fauna compensates for the depauperate terrestrial vertebrate food resource base of Torres Strait. To date, more than 250 species of birds have been recorded for the islands of Torres Strait (Carter et al., 1997; Draffan et al., 1983; Garnett, 1991). Of these, 87 are resident and at least 165 move between Australia and New Guinea at various times of the year (Draffan et al., 1983: 228). The largest bird is the Australian Pelican (*Pelecanus conspicillatus*) as populations of neither Emus (*Dromaius novaehollandiae*) nor cassowaries (Southern Cassowary, *Casuarius casuarius*) have been recorded on the islands. The most abundant birds are sea birds that, in the case of noddies (*Anous* spp.) and terns (*Sterna* spp.), can produce huge rookeries of thousands of individuals (and their eggs) on sandy cays. For example, 'more than ten thousand' Common Noddies (*Anous stolidus*) 'breed on Bramble Cay in the wet season' (Draffan et al., 1983: 216). Such estimates are consistent with actions by Masters (1876: 64) when he visited Bramble Cay in 1875 as part of the *Chevert* expedition: 'To give some idea of their numbers, I may state, that from one discharge of the gun I killed forty-six, and there appeared to be quite as many wounded'.

Of the terrestrial birds, one of the most common and popular in terms of local Islander consumption is Torres Strait Pigeon (*Ducula spilorrhoa*). Macleay (1875: 37) observed that 'it commenced its migration southwards in the month of July; at that time the low islands of Torres Straits were covered with them, their favourite fruit — the date plum — being then ripe and abundant'. In terms of hunting of Torres Strait Pigeon in the late 19th Century, Jardine (1904: 184) remarked:

> I think I may safely say that by the people of Somerset [Cape York] there are more birds shot than by the whole of the other residents of Torres Strait combined, and the bag there last season did not exceed 600 birds. Taking this as a basis, I do not think the assertion that in all Torres Strait the number of Pigeons (taking the extreme limit) which fall to the gun annually does not exceed 1,000 can be veritably contradicted, and this proportion in relation to their vast numbers is infinitesimal, so that those interesting themselves in the subject may feel assured, and lay their minds to rest as to the most superlatively remote possibility of one of the "glories of our avifauna" becoming a rare bird. Probably more Pigeons are killed by the natives during the north-west monsoon than by any other agency, on some of the small, less densely wooded islands, where at night, with

> torches made of pandanus leaves and gum, they spear a good many, perhaps 30 or 40 during a night. The spear is not thrown, but made with a long, light bamboo shaft, and used from underneath, lance fashion.

The resource jewel of Torres Strait is marine foods. A vast mosaic of coral reefs, sand banks, sea grass beds and mangrove forests, representing the northern extremity of the Great Barrier Reef, is found across Torres Strait. As a result, 'Torres Strait is a biologically productive area whose waters yield large amounts of seafood' capable of supporting local subsistence needs and export markets 'throughout Australia and overseas' (Williams, 1994: 8). At least 600 species of fish (including sharks and rays) occur within Torres Strait (Allen, 1997; Grant, 1995). Although no shellfish lists have been published for Torres Strait, it is clear that the diverse marine habitats of the region (e.g., mangroves, sand banks, coral reefs) support hundreds of species of molluscs. In addition, the Torres Strait marine environments support an abundance of crustaceans (crabs, crayfish) and other small edible creatures (e.g., octopus, squid, bêche-de-mer). The Queensland Museum has specimens of 86 species of crustaceans from Torres Strait, but there are many others in the region (Peter Davie, pers. comm., 2002).

Larger marine animals of the Strait are mammals (dugongs, whales and dolphins), sea turtles and crocodiles (Appendix 2). Low numbers of Saltwater Crocodiles (*Crocodylus porosus*) can be found across the Strait. Freshwater crocodiles do not occur on Torres Strait islands. Dugong (*Dugong dugon*) is the most abundant marine mammal of the region. The estimated population of 12,000-28,000 dugongs in the Strait represents the single largest population of the species in the world (Marsh et al., 1999: 980; Marsh et al., 2003). Other marine mammals include 9 species of dolphin while 14 species of whales are thought to make rare forays into the Strait.

Four species of sea turtle occur regularly within Torres Strait: Green Turtle (*Chelonia mydas*), Hawksbill Turtle (*Eretmochelys imbricata*), Flatback Turtle (*Natator depressus*) and Loggerhead Turtle (*Caretta caretta*) (Johannes & MacFarlane, 1991). The Pacific Ridley Turtle (*Lepidochelys olivacea*) and the Leatherback Turtle (*Dermochelys coriacea*) 'occur only rarely within Torres Strait' (Limpus & Parmenter, 1986: 95). Preliminary estimates for the number of sea turtles in Torres Strait are limited to the 3 species of nesting turtles. While Hawksbill and Flatback Turtles each number in the 'several thousands', Green Turtle numbers are thought to exceed 60,000 and the region is internationally significant as a migratory and foraging habitat (Miller & Limpus, 1991; Mulrennan et al., 1994: 64). Bramble Cay (NE Torres Strait) is the key Green Turtle rookery in the Strait (Limpus & Parmenter, 1986: 95). The rookery complexes of Deliverance, Turu and Kerr Islands (NW Torres Strait) and Crab Island (SW Torres Strait) are the largest in the world for Flatback Turtles (Limpus et al., 1983: 181; Limpus et al., 1989: 522; 1993; Limpus & Parmenter, 1986: 97). Sassie Island (Central Torres Strait) hosts the largest known rookery in the world for Hawksbill Turtles (Limpus et al., 1983; Limpus & Parmenter, 1986: 96). Loggerhead Turtle nests have not been recorded in Torres Strait (Limpus & Parmenter, 1986: 97).

The marine resource productivity of Torres Strait is revealed by catch data for the local commercial fishery. For example, the 11-17 million crayfish (*Panulirus ornatus*) of the Strait support an annual commercial catch of between 200-400 tonnes but with a potential sustainable yield of at least 700 tonnes (Evans & Polon, 1995; Pitcher, 1991: 255-56; Williams, 1994: 16, 54-5). During the 1990s the average annual catch of Spanish Mackerel (mostly *Scomberomorus commerson*) was 150-180 tonnes of fillets (Anon, 2001: 17; Menham, 2002: appendix 2). In 1916-17, 558 tonnes of processed (cooked and dried) bêche-de-mer (mostly *Holothuria* spp) was exported from Torres Strait to Asian markets (Williams, 1994: 11). In 1900, the commercial production of pearshell (*Pinctada* spp.) peaked at nearly 1,100 tonnes (Ganter, 1994: 248). In 1999, 24 tonnes of Trochus Shell (*Trochus niloticus*) and 2,200 tonnes of prawns were collected commercially in the region (Anon, 2001: 8, 32; Elmer & Coles, 1991: 292). Commercial fishing of dugong and sea turtle is banned in Torres Strait as it is for the rest of Australia. Overall, Johannes & MacFarlane (1991: 198) estimated that there are 'about 30,000 km^2 of accessible shallow water in the strait from which to obtain seafood'. However, it is with the extraordinary range of marine foods and subsistence procurement rates for dugongs, sea turtles and bird eggs by Islanders that full appreciation is gained of the productivity of Torres Strait marine environments.

TORRES STRAIT ISLANDERS: KNOWN ANIMAL FOODS

TERRESTRIAL ANIMAL SUPPLEMENTS. Alfred Haddon (1912: 137) made the observation that '[a]s there were no indigenous land animals, milk and ordinary flesh food were unknown' elements of 'traditional' Torres Strait Islander diet. The general veracity of this view is borne out by terrestrial faunal lists for the islands

(Appendix 1 & Table 1) and dietary lists of terrestrial fauna. Appendix 3 provides a list of all known, local animal foods eaten by Torres Strait Islanders, both past and present. Today, pigs, echidnas, bandicoots, flying foxes and monitor lizards (goannas) are the only terrestrial animals (excluding birds – see below) hunted and eaten in Torres Strait. In the case of echidnas, consumption is very localised with records only available for Mua Island (John Manas, Mua, pers. comm., 2002) and Horn Island (Joshua Nawie, pers. comm., 2002). Flying foxes (*Pteropus* sp. and/or *Dobsonia* sp.) have also been eaten recently on Mua (John Manas, pers. comm., 2002). The only known record of 'bandicoot' consumption comes from Mua (John Manas, pers. comm., 2002). Historically, this list expands to include snakes and frogs. Haddon (1912: 139) also documented consumption of selected insects. Archaeological research has furnished little evidence of terrestrial animal use. To date, the only finds are bones/teeth of Agile Wallaby and possibly Common Wallaroo (*Macropus robustus*) on Mua Island. Excavations at Tigershark Rockshelter (Pulu Islet) and Tudu Bone Mound reveal consumption of birds while a low number of lizard bones have been recovered from Tigershark Rockshelter and Seegan Midden (Mua Island) (McNiven, 2002; Rowland, 1985).

MARINE ANIMAL STAPLES. Marine vertebrates (e.g., dugongs, turtles, fish) and invertebrates (e.g., shellfish) are the 'primary' sources of protein for the over 6,000 indigenous residents of Torres Strait (Australian Bureau of Statistics, 2001: Table 8; Barham, 2000: 252-67; Williams, 1994: 8). It is estimated that most of the 850 tonnes of marine foods caught annually is 'used for traditional subsistence' (Harris et al., 1995: 3). This catch is represented by over 350 species of marine/aquatic animals including dugongs, 4 species of sea turtle (and their eggs), at least 20 species of bird (and their eggs), at least 270 species of fish (including sharks and rays), at least 40 species of shellfish and at least 10 species of crustacean (Appendix 3). Such is the scale and diversity of marine resource use that to 'provide a comprehensive list of all Torres Strait Island[er] names for marine animals and the variations on these names throughout the strait would be a herculean task' (Johannes & MacFarlane, 1991: 211). As Rivers (1901: 44) noted, 'nearly every species which the zoologist or botanist would recognise as distinct was also differentiated by the natives [Islanders] and had its distinctive name'.

Despite the incredible range of finfish and shellfish eaten by Torres Strait Islanders, dugongs and turtles are the key sources of marine protein (Johannes & MacFarlane, 1991: 195-197). Harris et al. (1995: 3) estimate that dugongs and turtles make up just over 50% (28% and 26% respectively) of the contemporary catch, followed by fish (18%), crayfish (16%), shellfish (11%) and cephalopods (<1%). In this sense, the protein diet of Torres Strait Islanders has changed little since European settlement, as Haddon (1935: 355) observed that the 'two most important food animals of the Torres Strait islanders were the dugong and turtle' in the late 19th Century. Haddon (1912: 138) suggested turtle meat and eggs constituted 'the most important meat diet of the islanders'. This situation with turtles extends back at least 400 years, as the Torres expedition observed that many Torres Strait Islanders 'live on the turtle flesh' in 1606 (Stevens & Barwick, 1930: 159).

Reliable estimates of the number of sea turtles caught annually by Torres Strait Islanders range from 1,500 to 2,600 during 1991-2001 (Skewes et al., 2002: 20). It is estimated that a further 1000 turtles are taken annually by Papuans from Torres Strait (Kwan, 1991: 240). Thus the number of turtles currently hunted in Torres Strait may be 2,500-3,600. The hunting of turtle continues to be widespread (and reflects the species' local abundance and distribution) amongst all communities in Torres Strait (cf. dugongs, see below). It is difficult to determine how this current hunting rate compares to pre-colonial times. Ghaleb (1990: 266-67) estimated that the remains of around 22,000 turtles occur at Gumu midden (Mabuiag Island), which equates to around 24-48 turtles per year over the last millennium.

Reliable estimates of the number of dugongs caught annually across the Strait range from 240 to 1,000 for the period 1991-2001 (Skewes et al., 2002: 20; Marsh et al., 1997: 1383). Hunting of dugong is mainly by Islanders from the western islands of Boigu, Badu and Mabuiag (coincident with seagrass areas) with occasional hunting reported by Mua and Yam Islanders. How this hunting rate compares to pre-colonial times is difficult to determine. Ghaleb (1990: 266-267) estimated that the remains of around 23,000 dugongs for Gumu, which equates to around 26-49 dugongs per year over the last millennium.

Apart from dugongs, use of other marine mammals by Islanders was extremely rare. Haddon (1912: 137) recorded that 'porpoise or dolphin, *bid*, is not eaten in most of the islands'.[2] In the late 1840s, Barbara Thompson reported that the Kaurareg of the SW Strait 'will not eat shark or porpoise, they are *ogood* – tabu' (Moore, 1972: 340). No archaeological evidence for porpoise consumption has been identified in Torres Strait. Although no published records exist for whale hunting by Torres Strait Islanders, Mabuiag Islanders ate meat from a whale in the mid-20th Century. The whale was found grounded on a reef and towed to a beach at Aubait on the N coast of Mabuiag where it was butchered and the ribs used as fence posts within the settlement (Cygnet Repu, pers. comm., 2001; Raven-Hart, 1949: 158). Bones of the whale remain on the beach today (Fig. 1). Overall, it appears that whales were only a concern to Islanders in relation to the destruction of property. Haddon (1935: 170) mentioned the inconvenience of a stranded and rotting whale in a tidal fishrap on Mer. Hunt (1899: 8) documented the *Galbol zogo* (sacred shrine/charm) that was used by the Meriam (Murray Islanders) to 'keep whales from destroying their canoes' and 'to ensure the canoes of their enemies being destroyed'.

While Haddon (1935: 369) recorded that Islanders occasionally ate Saltwater Crocodiles, no archaeological evidence for crocodile consumption has been found.

Archaeological, historical and contemporary data reveal consumption of at least 20, 70 and 270 species of fish (including sharks and stingrays), respectively. While it seems clear that a greater range of fish are consumed today compared to the late 19th and early 20th Centuries, it also needs to be kept in mind that historical records on fishing are inadequate and greatly under-represent the range of fish consumed in the past.

Archaeological evidence of fishing in Torres Strait extends back to at least 1300 years BP (McNiven, 2002). Analysis of fish bones from Gumu midden (Mabuiag Island) and St. Pauls Middens 2 & 4 (Mua Island) revealed 10 species of fish and 1 species of stingray (Ghaleb, 1998; Harris et al., 1985: 16). Preliminary identification of fish remains from Tigershark Rockshelter (Pulu Islet) reveals a further 9 species of shark (McNiven, 2002). Thus, while the archaeological record documents a greater range of shark hunting in the past, historical and contemporary records reveal a much wider variety of fish were consumed in the last 100 years. Poor fish bone preservation coupled with difficulties in identifying the species of small fish bones may account for much of the discrepancy between archaeological and historical/contemporary fishing records (see Ghaleb, 1998).

FIG. 1. Whale bones on beach at Aubait, Mabuiag Island. Cygnet Repu (left) and Judith Fitzpatrick (right) (Photo: Ian McNiven, Nov 2001).

Haddon (1912: 139) observed that 'numerous kinds of molluscs and crustaceans were eaten'. Unfortunately, Haddon, like other late 19th Century and early 20th Century researchers, failed to make detailed recordings of the range of actual species of shellfish and crustaceans consumed. Available evidence indicates that Islander diets today, as in the past, include bivalves, gastropods, crabs, crayfish, prawns, yabbies, squid, octopus and cuttlefish. Recent detailed shellfishing studies (particularly by Doug Bird and Rebecca Bliege Bird) reveal that Torres Strait Islanders currently consume at least 34 different species of shellfish (Laade, 1969). Archaeological evidence from Gumu midden (Mabuiag Island) and St Pauls Middens 2 & 4 (Mua Island) reveal collection and likely consumption of over 65 species of shellfish in the millennium prior to European settlement in the mid-19th Century (Harris et al., 1985: 17; Barham & Harris, 1987: 21-22). It is unwise to see these data as indicating a drop-off in shellfishing activities in recent times until comparable studies are carried out with known shellfishers in the Central and Western Strait.

Few surveys have been conducted on bird/bird egg foraging by Torres Strait Islanders. However, Bramble Cay, located in the NE Strait, is a renowned bird collection location where boatloads of eggs

can be obtained weekly during the breeding season (Draffan et al., 1983: 231; Johannes & MacFarlane, 1991: 104-5; Stevenson, 1987: 54). How the current consumption of more than 20 species of birds compares to the past is difficult to determine. The general paucity of bird collection information in historical and archaeological records may reflect deficient data or a real increase in birding activities in recent times.

In summary, the more than 350 species of marine animals (birds, mammals, reptiles, amphibians, fish and molluscs) currently eaten across Torres Strait reveals a heavy reliance on seafood and high-level knowledge of marine ecosystems. This degree of specialisation is reinforced when archaeological, historical and contemporary records are combined to increase the dietary range to over 450 species (Appendix 3).

DEPAUPERATE TERRESTRIAL FAUNA: NATURAL OR CONSTRUCTED?

At face value, the marine subsistence specialisation of Torres Strait Islanders is obvious. It simply reflects the depauperate terrestrial fauna of the islands and the extraordinary marine productivity of the region. The remainder of this paper questions the assumption that the depauperate terrestrial fauna of Torres Strait is natural. The key to understanding this issue is the impact of Islander translocation of a range of terrestrial vertebrates from the adjacent New Guinea and Australian mainlands onto various islands of the Strait. These translocated animals can be divided into 4 groups based on the degree to which they impacted island environments.

1. CUSCUSES, PIGS AND CASSOWARIES: THE RESTRICTED PAPUAN IMPORTS. Despite the wide range of animals available on the PNG coast, many edible, Torres Strait Islanders were only recorded importing 3 species in the 19th Century — cuscuses, pigs and cassowaries. In the 20th Century, records exist for the isolated importation of possums, wallabies and emu.

Cuscuses. Cuscuses have not been recorded in the wild on Torres Strait islands. However, a number of 19th Century mariners and researchers documented imported cuscuses across the Strait. In 1793, Capt. Bampton observed an 'opossum … in a cage' on Ugar in the Eastern Strait (Flinders, 1814, I: xxxviii). He believed it had 'probably been brought, either from New Guinea, or New South Wales [Australia]'. In 1845, Jukes (1847, II: 190) tried unsuccessfully to obtain a 'yellow, naked-tailed opossum [cuscus, probably *Spilocuscus maculatus*] called "barreet"' (*barit* – Ray, 1907: 135) held in a 'cage' on Erub (Sweatman, cited in Allen & Corris, 1970: 41). The Islanders, according to Jukes (1847, II: 194), 'seemed strangely unwilling to part with it', but informed him that 'in Dowdee [New Guinea] there was "bareet, barreet, barreet" (a plenty of barreets)'. A few weeks latter, Jukes (1847, II: 202) observed another 'highly' prized 'opossum … in a cage' on Mer. Jukes (1847, II: 234-35) eventually shot a 'cuscus' on the New Guinea coast and donated its skin to the British Museum. In 1849, MacGillivray (1852, II: 48-9) was shown a '*barit*' (Spotted Cuscus) in a 'large cage of split bamboo' on Erub that had been brought over from Ugar for him to see. He believed that the Islanders 'occasionally procure [*barit*] from New Guinea'. Alfred Haddon's recording of a cuscus (*bait/sana* – Ray, 1907: 91, 120) on Mabuiag in the Western Strait in 1898 reveals that the Torres Strait Islander practice of importing New Guinea cuscuses continued at least until the late 19th Century (Fig. 2).

FIG. 2. Spotted Cuscus (*Spilocuscus maculatus*) on Mabuiag Island (Torres Strait) traded down from Papua. Photo by Alfred Haddon, 1898. (Courtesy of Cambridge University Museum of Anthropology & Archaeology – #P691 ACH1).

Why Islanders kept caged cuscuses is unknown, but Jukes (1847, II: 294) felt it revealed 'their general fondness for pet creatures'. This view is consistent with the lack of evidence for use of cuscuses as either food or totems across Torres Strait. In this connection, Hunt (1899: 9) recorded a taboo (*uakai*) on killing cuscuses on Mer and that 'offenders against this would be

killed'. However, cuscuses continue to be kept as pets and also eaten by peoples of the adjacent Papuan coast (Landtman, 1927: 441; Ohtsuka, 1983: 82). No evidence for Australian Aboriginal use of cuscuses as either pets or food was found in the literature. However, some Aboriginal people kept possums as pets and even restocked areas with possums after droughts (Campbell, 1965: 210). The keeping of cuscuses as pets is documented amongst many indigenous peoples of the southwest Pacific (Baldwin, 1990: 232).

Representations of cuscuses have not been recorded on Torres Strait material culture. In 1888, Haddon (1912: 35) collected a unique cuscus item from Torres Strait — a 'fillet made of cuscus fur, *barit* (Phalanger maculatus)' from Tudu in the Central Strait. Although the function of this item is unknown, Landtman (1927: 59-60) noted that the Kiwai Papuans used the 'dried skin of a cuscus' (*padi* or *parima*) in rituals to control the wind. In 1910-12, Landtman collected from Kiwai Island a headdress made from cuscus fur, seeds and shells that was used in male initiation ceremonies (Lawrence, 1994: 438).

No archaeological evidence for cuscus bones has been recorded for Torres Strait. Whether or not relict populations of cuscuses on the larger islands became extinct from predation by humans prior to 2500 years ago is unknown. This said, the possibility for relic populations of cuscuses on Torres Strait islands after sea level rise is considered low given the likely tenuity of suitable closed forest habitats across the land-bridge (Tom Heinsohn, pers. comm., 2003). The absence of remains from recent midden sites suggests cuscuses were a rare import to the region during the late Holocene and that Islanders never successfully introduced breeding pairs that subsequently went wild and populated islands.

Schomberg (n.d.: 219, 220) has photos of 'three young possums [that] were brought to St. Pauls [Mua Island] in the middle 1920s'. Judging from the photos, the possums appear to be Common Brushtails (*Trichosurus vulpecula*). The possums must have been transported from the Australian mainland (Cape York Peninsula), as they have never been recorded for Torres Strait or the Trans-Fly region (Table 1). Schomberg (n.d.: 219) noted that he 'named them – Billy, Nasonah and Jacob. These were 3 men of the village. Billy Abednego. Jacob Abednego. Nasonah Kris. I think the carpet snakes took a liking to them as they disappeared one day'. As with cuscuses, it is likely that the possums were introduced as pets/curiosities. However, it is unclear if either Islanders or Europeans introduced the possums.

Pigs. Early European explorers of Torres Strait islands during the first half of the 19th Century made no mention of pig populations. In the mid-1830s, castaway John Ireland observed that the people of Mer had 'never … seen any other animal but the dog' (Anon., 1837: 754). A decade later, Jukes (1847, II: 188) recorded that some people on Erub had trouble identifying a 'young pig' on board the *Bramble*:

> They at first called it "omai" (a dog), but on my shaking my head, and saying "lola, lola" (no, no), they called it "burroom," a word I afterwards heard applied to some boars' tusks I saw among them, and which came from New Guinea.[3]

Senior Mabuiag Islanders informed the Haddon expedition in 1898 that there were no pigs and fowls on their island prior to the arrival of Europeans in the 1870s (Haddon, 1904: 290). This absence of early recordings of pigs on Torres Strait islands is no doubt behind Haddon's (1912: 137) contention that 'it is doubtful whether the pig was introduced into and allowed to run wild on any of the islands before the coming of the European'. Hunt (1899: 13) also believed pigs were 'introduced by foreigners'. These comments are borne out by the fact that the earliest European observations of pigs in Torres Strait date to the 1870s. For example, members of the *Chevert* expedition were offered 'roast pig' on Erub in 1875 (MacMillan, 1957: 114). Pennefather (1879: 82) mentioned pigs (and fowls) on Mabuiag in 1879. Haddon (1901: 186) mentioned pigs at Murulag in 1888. Beckett (1972: 316) concluded that if pigs were pre-contact, their general absence in Islander 'folk tales or traditions' and 'ceremonial exchange' systems indicates they were a rarity. Today, wild pigs are found on many Torres Strait islands and are hunted for food by men using rifles (McNiven, pers. obs.; Draffan et al., 1983: 231). Up until recent times pigs were kept in pens by families on many Torres Strait Islanders (Fig. 3). These domestic pens have been phased out on some islands by government authorities following the role of pigs in the spread of Japanese Encephalitis, a disease that can be fatal for humans (Hurk et al., 2002). In response to these new restrictions on keeping domestic pigs, some Yam Islanders released pigs onto the uninhabited island of Gebar in the Central Strait to preserve their pig stocks, albeit in a wild state (ABC, 2002).[4] These new policies notwithstanding, wild pig populations remain on some islands, such as

FIG. 3. Penned pig at Badog Village, Erub, January 2003 (Photo: Garrick Hitchcock).

Mabuiag, Badu, Mua and Erub, and wild piglets are occasionally caught and reared in pens. Contemporary Aboriginal people of Cape York also actively hunt wild pigs (Roberts et al., 1996).

No historical evidence exists for pig hunting in Torres Strait or on mainland Australia prior to European contact. In marked contrast, pig hunting occurrs along the adjacent PNG coast (Landtman, 1927: 111-113; Ohtsuka, 1983: 82; Williams, 1936: 221, 224-225). However, it is apparent that the people of Saibai and Boigu Islands in the N Strait visited PNG to hunt pigs. For example, Stone (1875-76: 103) recorded, while surveying the Mai Kussa (river), that 'wild boar are often captured by' visitors from Boigu. Further information comes from the Story of Agburug, recounted by Nawia Elu of Saibai Island to Margaret Lawrie in 1967. 'Formerly it was the custom for men of Saibai Village to sail across to mainland Papua (Daudai) whenever they wanted the flesh of kangaroo [wallabies] and pig to eat. They used to land at Warukuik and then walk inland to a big swamp, Sirpupu, and hunt' (Lawrie, 1970: 186-188). While this story suggests a lack of pigs on Saibai prior to European colonisation, it is clear that pigs were quickly introduced after European contact as Moresby (1876: 133) observed in the early 1870s that Saibai 'abounds' in pigs. Similarly, in 1873, Connor observed that 'Pigs ... are common about Saibai and Mowatta' (cited in Moresby, 1875: 5). A decade later, Strachan (1888: 25) recorded pigs kept as 'pets' on Saibai. In 1896, Rev. Chalmers saw 55 pigs slaughtered for a feast associated with the opening of a new church on Saibai (Lovett, 1902: 442-443).

Records from the *Fly* expedition in the 1840s support the view that pigs were absent or extremely rare in Torres Strait prior to European settlement. So gastronomically excited were the ship's crew to find pigs on the southern Papuan coast after months in Torres Strait that they nicknamed the place 'Pigville' (Jukes, 1847, I: 276).

The lack of historical records for pre-contact pig hunting in Torres Strait does not discount the fact that live pigs (or pig meat) were occasionally traded into the region from New Guinea. Haddon (1935: 81-3) recounts an old story where 'legs' of pig were canoed down from the PNG coast to Tudu Island in the Central Strait (Lawrence, 1989: 104). The Story of Agburug mentions a group of Saibai men returning from a hunting trip to PNG 'empty-handed', suggesting pig (and macropod) meat movement into the Strait. These meat movements have parallels with known exchanges of dugong and turtle meat between Torres Strait and the PNG mainland (Lawrence, 1994: 296, 332-335). The only evidence for a live pig import from pre-contact times is in a story from Dauan Island located next to Saibai. A Dauan woman received a 'baby pig' from friends on the adjacent Papuan coast with instruction to feed and raise it. However, the pig was eventually eaten by the Dauan people, which made its Papuan owners 'exceedingly angry'. As punishment, a number of Dauan people were beheaded by a

FIG. 4. Boigu dancers wearing headdresses representing pigs heads, Thursday Island, 1927 (Dixon 1927).

group of Kiwai (PNG) raiders (Simona Naiama, 1968, cited in Lawrie, 1970: 143-147; McNiven, David & Brady, this volume). The various lines of evidence support Beckett's (1972: 316) conclusion that some Islanders in pre-contact times 'at least intermittently kept pigs, though probably in small numbers' (Baldwin, 1982: 40-41; White, 1971: 187).

Representations of pigs have not been recorded on Torres Strait material culture. However, in 1927 at the Jubilee Celebrations on Thursday Island, visiting Boigu Island dancers wore head-dresses representing life-size pigs' heads (and in some cases danced holding looped pigcatchers (Figs 4, 5). It is unclear to what extent the pig headdresses incorporated pieces of pigs (e.g., tusks). In this connection, historical items of material culture (mostly body adornments) incorporating pigs' tusks have been recorded from Yam/Tudu (Haddon, 1935: 387; Moore, 1984: 55, pl. 17), Erub (Haddon, 1935: 184) and Mer (Haddon, 1912: 204; Moore, 1984: 64, 77, 82, pls 30, 46, 53) (see also Vanderwal, this volume). Haddon (1935: 296) recorded that most pigs' tusks seen on Mer had been imported from New Guinea. Indeed, all available evidence suggests pigs' tusks used by Torres Strait Islanders were imported from New Guinea (Lawrence, 1994: 356). The pig totem (*Boromo*/*Blome*) is known for the southern PNG coast (Landtman, 1927: 185, 189) but not for the islands of Torres Strait or Cape York.

Archaeological evidence of pigs in Torres Strait is restricted to a 'fragment' of tusk from St. Pauls Middens 2 & 4 on the E coast of Mua Island (Harris et al., 1985: 16). The most parsimonious explanation for this tusk is importation from PNG for use as a body adornment or as a wood scraper (Ray, 1907: 114). No representations of pigs have been recorded to date in Torres Strait rock-art (McNiven & David, this volume). The lack of pig bones recovered from archaeological sites in Torres Strait is fully consistent with historical evidence for their recent introduction to the region. In contrast, pig bones have been dated back at least 2000 years on the S PNG coast (Gulf region) (Rhoads, 1980). While pig bones dated back to the early- to mid-Holocene (e.g., Gorecki et al., 1991 cf. Hedges et al., 1995; Hide, 2003: 12-13) have been suggested for other parts of Melanesia, Harris (1995: 853; Spriggs, 1997) suggested pigs may only have arrived in New Guinea in the last 3,500 years with Austronesian (Lapita) expansions. Allen (2000: 157-159) made a convincing case for *wild* pigs in New Guinea prior to 5,000 years ago, acknowledging that *domesticated* pigs may indeed date to the last 3,500 years.

FIG. 5. Boigu dancers carrying looped pigcatchers, Thursday Island, 1927 (Dixon 1927).

Cassowaries. Haddon (1901: 133) noted that 'the cassowary does not occur in the islands of Torres Strait; if it ever did, it must have been exterminated very shortly after the islands were inhabited'. The absence of cassowaries from the Strait is borne out by detailed bird surveys (Draffan et al., 1983). Cassowaries (i.e., Southern Cassowary, *Casuarius casuarius*) are common on the adjacent PNG coast and occur 200km S of Cape York in NE Queensland rainforest (Lindsey, 1992: 5). The closest Australian population of cassowaries is found 200km S of Cape York in the McIlwraith/Iron Ranges region immediately N of Princess Charlotte Bay (Pizzey & Knight, 1997). Despite the absence of cassowaries within Torres Strait, in the early 1870s cassowaries imported from the Papuan coast were observed on Dauan Island in NW Torres Strait. In October/November 1872, Rev. Wyatt Gill (1874: 777) observed a 'half-grown' cassowary on Dauan, received as a gift from a Papuan mainlander. In January/February the following year, Captain John Moresby (1876: 229-230) collected a cassowary (possibly the same bird seen by Gill a few months earlier) from Dauan that was eventually taken to the Zoological Gardens in London. As with cuscuses and pigs, it appears

Islanders very occasionally imported individual cassowaries (most likely chicks) from New Guinea but never to the extent that they began to breed.

The cassowary (*Sam/Samu*) is a totem in Torres Strait on Murulag, Mabuiag, Badu, Yam/Tudu, Boigu, Dauan and Saibai (Boigu Island Community Council, 1991: xv-xvi; Haddon, 1904: 154-155; Lawrie, 1970: 153, 185, 219) and on the adjacent PNG coast (*Diwari*/*Divare*/*Wia*/*Kauria* – Haddon, 1904: 156; Landtman, 1927: 188, fig. 57). (*Morau* was another Western Islander language term for cassowary according to Ray, 1907: 112). Haddon (1901: 133) speculated that the cassowary totem on Mabuiag 'points to a time when the ancestors of the Mabuiag people actually inhabited New Guinea'. While no records exist for cassowary consumption by Islanders, cassowary hunting is well documented for the adjacent PNG coast (Landtman, 1927: 111; Ohtsuka, 1983: 82; Williams, 1936: 221) and for Aboriginal groups of NE Queensland (Roth, 1901: 26; Tindale, 1974: 109). It is possible that cassowary chicks were imported to the N islands of Torres Strait and raised until of edible size. The Western Islanders certainly had a term for a 'young cassowary' (*daga-sam* – Ray, 1907: 94). Wild cassowary chicks are raised within domestic settlements in New Guinea and placed into pens at around 1 year of age when they start becoming dangerous (Baldwin, 1990: 233). They are eventually killed for food and raw materials (e.g., feathers and bones). No recordings exist of New Guinea cassowaries breeding in captivity (Baldwin, 1990: 235). Tindale (1974: 109) reports that rainforest Aboriginal peoples of N Queensland similarly took in wild cassowary chicks and allowed them to roam around their camp sites for up to a year until they were large enough to eat (and presumably before they became aggressive and dangerous – Baldwin, 1990: 236). Baldwin (1990: 236) suggested penning of older and dangerous cassowaries was not a viable option for the 'peripatetic Aborigines'. Aboriginal Australians, as with New Guinea peoples, had no desire to 'encourage breeding' of captive cassowaries (Tindale, 1974: 109).

Representations of cassowaries are 'often found engraved on [Torres Strait] drums' which are New Guinea imports (Haddon, 1912: 357, 368-69). Historically, cassowary leg bone coconut scrapers, daggers and arrow tips, along with cassowary feathers, were imported into Torres Strait from S PNG (Haddon, 1912: 36-37, 127; 1935: 65, 91; Lawrence, 1994: 366; Vanderwal, this volume). Cassowary feathers for use in dance costumes continue to be traded into Torres Strait from S PNG (Lawrence, 1994: 358-360). No archaeological evidence of cassowaries (e.g., bones) has been reported for Torres Strait, although an engraved bone artefact excavated on Dauar in the Murray Island Group (Carter, 2002: fig. 2; Carter et al., this volume) may be made from cassowary leg bone. Certainly the historical evidence for cassowary bone artefacts indicates that archaeological evidence should exist.

We also note that an emu was introduced to St. Pauls on Mua Island sometime in the first half of the 20th Century. As with cassowaries, the emu was considered a danger to people. Schomberg (n.d.: 219) provided a photo of the bird. He noted that the emu 'became a nuisance and frequently chased Lewis & Dorothea Schomberg causing them to dive under the Mission House for protection. It was taken to the centre of the island and released. It was never seen again' (Schomberg, n.d.: 219). It is unclear if either Islanders or Europeans introduced the emu.

Restricted imports and garden protection. Torres Strait Islander treatment of pig imports shows similarities with island Melanesians of E New Guinea. Here pigs were traded in from the adjacent mainland, reared to adulthood, and slaughtered for food. Baldwin (1990: 243) suggested that no attempt was made to breed the imported pigs 'probably because of the limited food resources available' on these islands. This explanation may be most applicable to the Central Islanders, who 'flitted' from island to island, and undertook little gardening (Haddon, 1904: 353; Shnukal, this volume). We also suggest that Torres Strait Islanders (except the Kaurareg – see below) had little interest in establishing viable populations of pigs (or any other larger vertebrates) on their islands because of their highly specialised maritime subsistence strategies. That is, Islanders had no desire to create populations of terrestrial animals because their subsistence strategies were not geared towards terrestrial hunting. The lack of pigs (and probably cassowaries) may also have reflected a desire not to have wild populations of aggressive and dangerous animals roaming their islands and being a hazard to people. Ohtsuka (1983: 7) noted that pigs and cassowaries were the 2 key animals that posed a danger to human life on the Oriomo Plateau (Trans-Fly) (Bulmer, 1969). Stories featuring pigs in Lawrie (1970) associate pigs with fear and even death. For example, apart from

the Dauan beheading saga, a story from Mua Island recounts how the people of Mua moved temporarily to Badu Island until a very large pig (*burum*), which had killed a number of people, was killed (Lizzie Nawia, 1967, cited in Lawrie, 1970: 38-39). Similarly, a story from Boigu recalls how Sagewa, a man who could change into a pig, 'terrified' people (Moses Dau, 1968, cited in Lawrie, 1970: 238-39).

Perhaps the most important reason Islanders did not want larger animals — cassowaries, macropods and particularly pigs — was due to the damage they could inflict upon critical gardens plots. This concern, particularly with wild pigs, may have come from bad experience and/or from discussions with their Papuan neighbours who lived with the constant threat of garden destruction from wild pigs, requiring the construction of fences (Chalmers, 1903: 119; Laba, 1975: 34; Landtman, 1927: 72-73; Williams, 1936: 218; but also see Dwyer, 1990). Chester, visiting Katow village (also known as Mowatta) at the mouth of the Binaturi River in 1870 in company with Tudu Islanders, remarked on 'plantations of from 10 to 20 acres fenced in with neat pig proof fences of bamboo about 4 feet in height' (1870: 5), as well as a pole in the village bearing 'the jaw bones of an immense number of pigs' (1870: 4).[5] In 1875, on the Mai Kussa further to the west, Stone (1875-76: 101) noted:

> Wending our way through grass 5 feet high, we suddenly came upon a neat fence ... 4 feet 6 inches high and supported by poles driven in the ground, 3 feet 6 inches apart. It enclosed an area of no less than 6 acres, and was so compactly constructed that it was with difficulty a holding-place could be found to pull oneself up by.

The status of pigs and the function of bamboo fences recorded in Torres Strait during the 19th Century is open to debate. Haddon (1912: 144) made the general comment that Torres Strait Islander '[g]ardens are frequently fenced, mainly for the purpose of keeping out pigs'. The issue of pig impact to gardens is borne out by a story (most likely from the 20th Century) from Erub relating how the gardens established by visiting Papuan traders were 'destroyed by wild pigs' (Lawrence, 1994: 296). Beckett (1972: 316) rightly notes that for Islanders with 'gardens, wild pigs would be a menace and it seems that even domesticated pigs were hard to confine'. Yet Seligmann was informed in 1898 that the pig 'was once domesticated on Mabuiag, but was given up as being a nuisance, for, as they said, "too much he humbug," probably meaning by this that the pigs damaged the gardens too much' (Haddon, 1912: 137). In this connection, Singe (1979: 190) notes that in the early 20th Century, Saibai Islanders finally 'hunted down' the last wild pigs with 'bow and arrows' in order to 'protect the gardens which were extensive and unfenced'. Raven-Hart (1949: 12) observed that on Mer 'vegetable-gardens' were not 'fenced as a rule' and that all domestic pigs were decreed by 'island law' to be 'kept in sites, well away from houses, towards the end of the island'. Singe (1979: 188) concluded that: '[e]arly Europeans found gardens on Mer guarded by stout fences as if to protect them from a foraging animal such as a pig, but found no pigs. Perhaps in comparatively recent times they were introduced, found to be too much trouble and all killed'.

It seems more likely that the 'fences' seen by Europeans during the early contact period (first half of the 19th Century) functioned primarily as windbreaks and not pig barriers. For example, Sweatman mentions 'plantations' of 'fruits & vegetables … enclosed with a bamboo fence' and 'fencing of one of the gardens' backing a village on Erub in the mid-1840s (cited in Allen & Corris, 1970: 25). If these 'fences' were old obsolete pig fences they would have to date to before 1800, as early contact narratives consistently note that Torres Strait Islanders did not keep pigs. Clearer insight into the function of these fences is provided by Phillip Parker King who in the 1830s observed houses on Mer 'surrounded with a bamboo fence, as a protection from the inclemency of the N.W. monsoon' (Anon., 1837: 754). Similar large bamboo 'fences' continue to be used as windbreaks on Erub today (McNiven, pers. obs., 2000). In all these cases, however, fences may also have functioned as property/boundary markers.

We suggest that pig fences in Torres Strait were a post-European settlement (i.e., post- c.1870) development when pigs were introduced as stock animals to various islands. As pig populations increased and wild populations became established, a need developed for 'stout' fences to protect gardens from damage by pigs. This innovation was clearly an elaboration of an existing tradition of constructing fences as windbreaks and possibly also as property/boundary markers. In this connection, Haddon (1901: 186) mentioned 'an enclosure at the back of the chief's house' on Murulag in 1888 that 'served the double purpose of a wind-screen, and a fence to keep out obtrusive pigs'. At the same time, certain Islander communities (e.g., Saibai) decided to remove the pig problem by exterminating wild pig populations. Thus it is possible that the 'fences of

bamboo or mangrove' recorded by Wilkin around gardens on Mabuiag in 1898 (Haddon, 1904: 289) were built as pig barriers.

Other potential concerns with pigs are their ability to 1) destroy valuable turtle egg nests (as currently happens along western Cape York Peninsula – Limpus & Parmenter, 1986: 97), 2) turn rare and critical sources of freshwater (e.g., wells) into mud-holes (Singe, 1979: 188) and 3) damage fragile cultural sites such as rock painting sites, *bu* shell arrangements, graves and other ritual places (McNiven, Fitzpatrick & Cordell, this volume).

It is possible that over the past 2,500 years, populations of pigs became established on some Torres Strait Islands. We posit that such populations would fairly rapidly be extirpated by hunting (for food) and for protection of gardens and other resource and cultural sites.

It is probable that Aboriginal peoples of SW Torres Strait would have promoted wild pig populations on their islands prior to European settlement if live 'Papuan' pigs had been made available to them as part of customary exchange across the Strait. These Aboriginal Islanders (Kaurareg) were hunters who were well aware of terrestrial hunting practices due to their close ties with the Gudang of Cape York, and who likewise only occasionally propagated plant foods (e.g., yams) (Harris, 1976; 1977; 1979; Moore, 1972: 341-42). As such, they were in a better position to manage populations of wild and dangerous animals and did not have the major concern of damage to gardens. The lack of a live pig trade across Torres Strait explains the absence of prehistoric pig remains on mainland Australia (cf., Baldwin, 1976, 1983; Singe, 1979: 188). These inferences help answer Groube's (1993: 165) question of 'Why was the pig, an oft-times passenger in Melanesian canoes, held in such disfavour by the northern Australians?'. We contend that it was not 'northern Australians' who held the pig in 'disfavour' but their immediate neighbours across the islands of the N half of Torres Strait. Thus, it was island Melanesians who stopped the pig getting onto mainland Australia, not Aboriginal people.

It is likely that Islanders had little say in the introduction of pigs in the post-contact era (Allen et al., 2001). The subsequent widespread use of domestic pigs by Islanders may reflect forced sedentism by European and South Sea Islander missionaries (backed by colonial authorities) after 1871 and the subsequent need to intensify food production at these permanent settlements. We suggest that the 2 key reasons why wild pig populations are tolerated (and enhanced in some cases) on many Torres Strait islands are that many men desire to hunt pigs for food and wild pigs no longer pose a threat to people or property. The perceived lack of threat stems from: 1) decreased need to use horticultural gardens (most plants foods today are purchased from stores); 2) decreased need to walk across islands (due to sedentism and use of vehicles); 3) increased availability of firearms; and 4) widespread use of vaccinations against Japanese encephalitis. Historical changes in mobility, particularly the move to sedentism, may also explain the recent reluctance to curb the spread of wild populations of aggressive dogs on many Torres Strait islands.

2. WALLABIES: THE STOCK IMPORT? No 19th Century scientific expedition to Torres Strait recorded macropods on islands (e.g., Jukes, 1847; MacGillivary, 1852; Thomas, 1884). Twentieth Century recordings of macropods in Torres Strait are limited to Agile Wallabies (*Macropus agilis*) on 2 small islands. Warham (1962) recorded wallabies on Mai Island (0.2 km^2) 500m off Albany Island in 1958 that appear to be Agile Wallabies (Abbott, 1980: 348). Cameron et al. (1984: 1152) reported a 'colony' of Agile Wallabies on Friday (Giralag) Island (4.5km^2) 900m off the NW corner of Murulag Island.

The general absence of macropods across Torres Strait matches the lack of historical evidence for macropod hunting on any island and the absence of macropods in local totemic systems. In contrast, the wallaby totem (*Usara*/*Usaro*) is well documented for the adjacent Papuan coast (Haddon, 1904: 157; Landtman, 1927: 188) where wallabies abound. Similarly, wallabies are a well-documented source of food (e.g., meat) and raw materials (e.g., bones, teeth) on the adjacent Papuan coast (Ohtsuka, 1983: 82; Williams, 1936: 221). Macropods do not feature in 'stories' and 'legends' of Torres Strait Islanders (Lawrie, 1970). The major exception comes from the Story of Agburug where Saibai Island hunters visit the Papuan mainland to obtain 'kangaroo' (Lawrie, 1970: 186-88; see above).

Representations of macropods are unknown for Torres Strait material culture, including rock-art (see McNiven & David, this volume). Haddon (1912: 35, pl. 9.5) collected a rare 'coronet' of 'kangaroos' teeth' (all mandibular incisors) from Mabuiag Island that was 'necessarily imported' from 'New Guinea' (see

also Vanderwal, this volume). Moresby (1876: 134) observed arrows barbed with 'wallaby bones' on Saibai. These arrows were most likely imported from the adjacent PNG coast — a known location for the manufacture of arrows tipped with shaped splinters of 'femur' bone from either cassowary or wallaby (Lyons, 1922: 146). Kangaroos/wallabies are known as *usar* by both the Western and Eastern languages of Torres Strait while the special term for wallaby in the Western language is *walkadun* (Ray, 1907: 127-128, 163). This linguistic information indicates that despite the general absence of macropods from the Strait, Islanders were well aware of these animals.

Wallabies In Canoes? Abbott (1980: 348) noted that Mai Island is too small to support a viable population of Agile Wallabies and posits that they were 'put on the island by Torres Strait Islanders'. This inference is based on Abbott's (1980: 347, 351) finding that 50 km^2 is the minimum island size for 'local long-term persistence of at least one species of macropod'. However, it is possible that the Mai Island wallaby population was both established and continuously restocked by wallabies swimming across from the mainland via Albany Island. Recent research demonstrates the considerable swimming abilities of Agile Wallabies (Abbott, 1980: 349); a finding supported by the recent recording of a wallaby swimming in the sea 7km off the coast of Cairns (Wex, 1999). The small size of Friday Island combined with its 30km from mainland stocks of Agile Wallabies (the species has not been recorded on Murulag) is more difficult to explain away simply as natural colonisation and restocking by swimmers. However, the small size of the island strongly suggests that the local wallaby population is not viable in the long-term. As such, it is unlikely to be a relict population from sea level rise and island formation some 8,000-7,000 years ago. Clearly, the wallabies have been introduced sometime in the late Holocene. Two hypothetical explanations are possible — either the wallabies swam to Friday Island from stocks that once existed on nearby Murulag Island, or the wallabies were introduced by Aboriginal Islanders (the Kaurareg) from either Cape York stocks or stocks that once existed on other islands such as Murulag. Strong support for Kaurareg stocking is the fact that wallabies never swam back to (re)colonise Murulag. This lack of evidence is consistent with strong tidal currents running through the area that would certainly dramatically decrease the ability of wallabies to successfully swim between the two islands.

Ironically, circumstantial evidence for Kaurareg stocking of islands with wallabies (presumably as food sources) is not matched by accounts of macropod hunting by the Kaurareg. Indeed, no historical records exist of the Kaurareg hunting macropods on Torres Strait islands (Moore, 1979: 276). The fact that Barbara Thompson, who lived with the Kaurareg for nearly 5 years in the 1840s, saw no such hunting is compelling in this regard (Moore, 1979). Furthermore, excavation of Kaurareg sites (albeit limited to a few coastal sites dating to within the last 600 years) has failed to recover evidence of macropod consumption (Harris et al., 1985: 38-40; Moore, n.d.; 1978: 204). For Aboriginal people of the adjacent mainland at Cape York – the Gudang ('Somerset tribe'), Police Magistrate John Jardine (1865, cited in Byerley, 1867: 83) noted that their diet 'consists chiefly of fish, and in the season, turtle, with roots and fruits'. A few years later, members of the *Challenger* expedition in early September 1874 similarly observed that Aboriginal people around Somerset 'do not hunt the Wallabies or climb after the Opossums, like the more southern blacks' as they 'live almost entirely on creeping things and roots, and on fish' (Thomson & Murray, 1885: 538). Yet, earlier observations from the mid 19th Century suggest these dietary observations are not representative and may reflect changes brought on by the near decimation of the Gudang by Europeans at Somerset in the 1860s and 1870s (Sharp, 1992). In early December 1849, members of the *Rattlesnake* crew visited Cape York and recorded:

> On the way back observing that the grass had been burnt on portions of the flats, the Blacks said that the rain that was coming on would make the young grass spring up and that would bring down the kangaroos and the Blacks would spear them from the scrub (Moore, 1979: 127).

MacGillivray (1852, II: 18) also observed spears tipped and barbed with a large (15cm-long) bi-point made from the 'leg-bone of a kangaroo' amongst Cape York Aboriginal people. Thus, 'kangaroos' were clearly part of the diet of 19th Century Cape York Aboriginal people, the species being Agile Wallabies, Red-legged Pademelons and/or Swamp Wallabies (Appendix 1). Today, Aboriginal people of the Cape York region continue to hunt Agile Wallabies (Roberts et al., 1996: 155). The Kaurareg certainly knew of macropods as MacGillivray (1852, II: 282) recorded that they had their own word for 'kangaroo' – *úsur* (the term used by all Torres Strait Islanders – see above). In contrast, the

Gudang word for 'kangaroo' was recorded as *epáma* (MacGillivray, 1852, II: 282) and *ipamoo* (Jardine, 1886: 282). Thus, despite the lack of historical records of Kaurareg hunting macropods in Torres Strait, linguistic information reveals they were aware of macropods while their close ties with the Gudang indicates they knew about macropod hunting and consumption. Sharp (1992: 14) considered that Gudang peoples 'relations with the Kaurareg were so close that despite their distinct identity they could be regarded almost as an outpost of the latter'.

We argue that the Agile Wallabies of Friday Island support the hypothesis that the Kaurareg hunted macropods on Torres Strait islands in the recent past, sometime before European contact. The major implication of this hypothesis is that macropods once existed on other islands in SW Torres Strait, particularly Murulag. Moore (1979: 276) similarly hypothesised that macropods once existed on Kaurareg islands, but '[p]robably the combination of hunters and dingoes had exterminated them' .

Pre-contact Macropod Consumption. Insight into the intriguing issue of pre-contact macropod consumption by the indigenous peoples of Torres Strait is provided by archaeological evidence of macropod bones from Mua Island in the W Strait. The Mua finds are 1) a macropod molar fragment dating to within the last 1,000 years recovered from Turao Kula Rockshelter (David et al., in press) and 2) 'teeth' of Agile Wallaby (*Macropus agilis*) and 'teeth, long bone, vertebra [and] metatarsal' of Common Wallaroo (*Macropus robustus*) from St Pauls Middens 2 & 4 (Harris et al., 1985: 16) that may also date to within the last 1000 years (Barham, 2000: Fig. 10). It is highly unlikely that these isolated macropod remains were 'natural' elements of the Mua fauna with ancestral connections to the Torresian land bridge of more than 8,000 years ago. The lack of macropod remains in other midden levels suggests that viable populations of macropods were not present on Mua, at least in the last 3,000 years or so. Furthermore, with the restricted importation of Papuan fauna, it is doubtful the people of Mua were interested in having large terrestrial vertebrates roaming their island. In this connection, during the 1930s or 40s, a breeding pair of Cape York Peninsula wallabies was introduced to Mua Island in an attempt to establish a viable population. However, the pair was soon killed when it was realised the damage that they could inflict upon horticultural gardens (John Manas, pers. comm., 2002).

We hypothesise that the archaeological remains of macropods on Mua points to importation of macropods, most likely from Kaurareg neighbours to the south. Whether or not the wallabies were a live import or from a small and well-controlled local population descended from live imports is unknown. In both cases, island biogeographical theory dictates that small wallaby populations would have no long-term viability (Abbott, 1980; Diamond, 1984; Quammen, 1996). Significantly, historical records reveal that the Kaurareg had close alliances and exchange relations with Mua Islanders but that an enmity existed between the people of Badu and Mua (Haddon, 1935: 61; Lawrence, 1994) and sometimes between the Kaurareg and the people of Badu (Moore, 1972: 337-338). In terms of the source of the wallabies, either the Kaurareg obtained them from Cape York, or, more likely, use was made of a once extant wallaby population in the Prince of Wales Island Group (e.g., Murulag).

More difficult to explain is the Common Wallaroo remains from Mua. This species of macropod has never been recorded for New Guinea, Torres Strait or Cape York. Indeed, the closest recorded populations of Common Wallaroo are in the vicinity of Temple Bay (E coast of Cape York Peninsula) 250km SE of Mua Island. While the relic wallaroo populations on larger Torres Strait islands such as Mua are feasible (extinct wallaroo-like macropods have been recovered from Pleistocene deposits on Aru Island – O'Connor et al., 2002), an equally feasible explanation is importation from the Australian mainland. In this connection, historical evidence reveals long distance Islander voyaging down the E coast of Cape York and into known Common Wallaroo areas. For example, Stokes (1846, II: 256-57) observed a group of 'natives from Torres Strait' on Restoration Island just S of Temple Bay (see McNiven, 1998: 101, 103 for discussion of Torres Strait Islander expeditions along the E coast of Cape York Peninsula). However, any suggestions of long-distance movement of Common Wallaroo must remain tentative until species identification of the bones excavated from Mua Island is confirmed.

In terms of the Indigenous history of Australia and Melanesia, the importation of exotic mammal food resources to islands is not unique to Torres Strait (Heinsohn, 2001). For example, Beaton (1985: 6) reported Agile Wallaby (*Macropus agilis*) remains dating to within the last 2,400 years from Endaen Shelter on Stanley Island (Princess Charlotte Bay) 9km from the mainland.

He suggested that the wallabies were (carcass?) imports from the mainland, as the island does not support the appropriate savannah habitat of these animals. Similarly, the presence of Dusky Pademelon (*Thylogale brunii*), along with Spotted Cuscus (*Spilocuscus maculatus*) and Northern Common Cuscus (*Phalanger orientalis*), in occupation sites on New Ireland, NE PNG, is attributed to use of wild stocks originally established by humans during the late Pleistocene and early Holocene (Flannery & White, 1991; Leavesley & Allen, 1998; Spriggs, 1997: 53-5; Steadman et al., 1995: 2564; White et al., 1991). Flannery et al. (1999) reported translocation of macropods (*Dorcopsis muelleri mysoliae*) to Gebe Island in the Moluccas of eastern Indonesia at least 8,000 years ago.

3. DINGOES: THE IMPACT IMPORT. Dogs, or more correctly Dingoes (*Canis lupus dingo*) (Corbett, 1995), were present in Torres Strait at the time of early European contact. For example, soldiers in Torres' party killed and ate a dog, and chased others, on an island in the Central Strait that they named 'Isla de los Perros' (Isle of Dogs) in 1606 (Stevens & Barwick, 1930: 159); Edwards heard the 'howling of wolves' on the N coast of Murulag in 1791 (Edwards & Hamilton, 1915); while Thompson mentioned wild dogs on Murulag in the 1840s (Brierly, 1849 cited in Moore, 1979: 276). In 1845, the *Fly* expedition observed 'a few dogs … not greatly differing from those of Australia, but apparently more domesticated' on Erub in the Eastern Strait (Jukes, 1847, II: 180) and on Naghir in the Central Strait (see cover illustration, this volume). These dogs were clearly not of European origin as Jukes (1847, II: 199) 'never heard' the dogs on Mer bark (a trait of Dingoes). Jukes (1847, II: 268-69) noted that the dogs he observed on the adjacent PNG coast 'resembled, both in appearance and cry, the dingo or native dog of Australia' and some were 'precisely like the dingo'. Yet in 1873, Lt. Connor observed that 'dogs are common about Saibai and Mowatta' but that they 'are quite different from the dingoe [sic] of Australia – the tail, instead of being bushy, is thin, like a pointer's or a hound's' (cited in Moresby, 1875: 5). Haddon referred to the Torres Strait dog as 'Canis dingo' (Ray, 1907: 127), indicating his belief that it was the same as the mainland Australian Dingo: 'the only domesticated animal was the dingo, as is the case with the Papuans and Australians; at present [1898] they have a mongrel breed of dogs' (Haddon 1912: 230). It was called *umai* in the Western Strait and *omai* in the Eastern Strait (Ray, 1907: 127, 156).

Torres Strait Dingoes were most likely kept as pets and as hunting aids to assist capture of small terrestrial game. In recent times, Torres Strait dogs (mostly domestic dogs, *Canis familiaris*) are kept as pets and in some cases alert hunters to the location of turtles and fish in home reef shallows and fishtraps (Garrick Hitchcock pers. obs., 2002). Torres Strait Islanders did not eat Dingoes (Haddon, 1912: 137). The 'dog' totem (*Umai*) is known for the Western (e.g., Murulag, Badu, Mua and Mabuiag), Top Western (e.g., Saibai), Central (e.g., Yam/Tudu, Masig) and Eastern (e.g., Mer) Island Groups (Haddon, 1904: 154-57; Hunt, 1899: 6). The 'dog' totem (*Umu*/*Drego*) also occurs on the adjacent PNG coast (Haddon, 1904: 187; Landtman, 1927: 188-89) where dogs (*Canis lupus dingo* – Brisbin et al., 1994) were used to assist hunting of pigs, wallabies and cassowaries (Baldwin, 1990: 239; Landtman, 1927: 111, 442-443).

Representations of 'dogs' (Dingoes) are 'rare' on Torres Strait material culture and are limited to engravings on drums (Haddon, 1912: 358). Warriors from Tudu sometimes took Dingo heads as trophies during headhunting expeditions otherwise focused on human heads (Haddon, 1935: 80). Items of material culture incorporating 'dogs' (Dingo) teeth (all canines) have been recorded for Badu (Moore, 1984: 46, pl. 5), Mabuiag (Haddon, 1912, 41, pl. 9.4; Moore, 1984: 48, pl. 7), Yam/Tudu (Haddon, 1935: 387) and Mer (Haddon, 1912: 41, pl. 11.18; Moore, 1984: 69, 77, pls 34, 46). Haddon (1912: 23, 41; 1935: 296) recorded that most dogs' teeth were imported into Torres Strait from New Guinea (see also Vanderwal, this volume).

To date, dog (presumably Dingo) bone has only been recovered from a single archaeological site in Torres Strait – *Pitkik* open midden site on Mer (Carter, 2001: 50). A rock painting of what may be a dog (presumably a Dingo) was recorded on Pulu Islet off Mabuiag in the central western Strait (McNiven et al., 2002). Mabuiag Islanders informed the Haddon expedition in 1898 that they do not keep dogs because 'if they tread upon dogs' foot-prints it makes their own feet sore' (Haddon, 1904: 290). Irrespective of the dates for Dingoes in Torres Strait, it is clear that people transported these animals to the islands in canoes from the adjacent mainlands of PNG and/or Australia. In the 1830s, John Ireland reported that the people on Mer had 'the dog, which they

obtained from the north coast of New Holland' (Anon., 1837: 754).

Impact on Island Fauna. Abbott's (1980) figure of 50km^2 as the minimum size of an island to support a long-term viable population of macropods indicates that the only islands of 'viable' size for macropods in Torres Strait are Murulag (205km^2), Mua (170km^2), Saibai (106km^2), Badu (105km^2) and Boigu (85km^2). While it is likely that the swampy vegetation that dominates Saibai and Boigu in the Top Western Strait is not conducive to macropod populations, Murulag, Mua and Badu support extensive open Eucalypt forests that could support sizable macropod populations. It is possible that relict populations of land bridge macropods once existed on the islands after formation of the Strait some 8,000 years ago. These populations may have subsequently become extinct from human over-hunting (cf., Abbott, 1980) or through habitat depletion from environmental change associated with sea level change and insularisation (O'Connor et al., 2002; Veth, 1993). However, it is also possible that Islanders were indirectly responsible for the demise of 'natural' macropod populations on Murulag, Mua and Badu following the introduction of Dingoes. Following Moore (1979: 276), Dingoes may have been responsible for the demise of macropods on Murulag. Indeed, the persistence of an Agile Wallaby population on Friday Island most likely reflects the lack of predatory Dingoes. The vulnerability of island macropod populations to extinction from the combined impacts of human hunting and dog predation is exemplified well by the extermination of certain macropods on some Bass Strait islands and Kangaroo Island in southern Australia in the 19th Century following occupation by sealers and their dogs (Flannery, 1994: 190-194; Hope, 1969, 1973; Kohen, 1995: 87-88). At present, too few data are available to know whether or not Dingoes influenced the survival of other species on Torres Strait islands, particularly birds (Diamond, 1984: 843; Steadman, 1995; Steadman et al., 1995). Whatever the case, the introduction of Dingoes into Torres Strait surely contributed to the depauperate terrestrial animal resource base of many islands, thus ensuring the need of Islanders to maintain specialised marine subsistence strategies.

Impact on Mainland Australia. Dingo movements across Torres Strait raise the important question of Dingo origins for mainland Australia. While Gollan (1984: 923) suggested that the New Guinea Wild Dog is not closely related to the Australian Dingo, more recent morphological analysis indicates major similarities between both types of dogs (Corbett, 1995: 9-22; Flannery, 1995: 56; see also Barker & Macintosh, 1979). Indeed, Brisbin et al. (1994) classified the New Guinea Singing Dog as *Canis lupus dingo*. Bulmer's (2001) detailed survey of dog remains in New Guinea archaeological sites reveals a maximum antiquity of 5500 years BP. We suggest that the available dates for New Guinea dogs coupled with correspondence between the earliest available evidence for occupation of Torres Strait 2,500-3,000 year ago (Barham et al., this volume) and the 'first occurrences' of Dingoes in Australia 3,500-3,000 years ago (Corbett, 1995: 17; Gollan, 1984: 924; Meehan et al., 1999: 85; Milham & Thompson, 1976) is not coincidental. We concur with Mulvaney & Kamminga (1999: 260) that Torres Strait is the answer to the origin of the Australian Dingo with occupation of the Strait providing the necessary human conduit to transport Dingoes from New Guinea into Australia (Cameron et al., 1984: 1152; Golson, 1972: 393; Harris, 1995: 853; Wurm, 1972: 359). Gill (1874: 779) posited that the 'dingo of Australia is doubtless derived from New Guinea, being found in all the intervening [Torres Strait] islands'. This hypothesis does not require broad-scale settlement of the Strait, only use of the region to the point that Dingoes would eventually be moved southwards across the Strait. This view is more parsimonious than Corbett's (1995: 15) contention that the Dingo was 'introduced into Australia by Asian seafarers'. No archaeological data are available to indicate that Holocene Aboriginal Australians had contacts with Asians prior to 1,000 years ago, when 'Macassans' began fishing for sea slugs along the continent's north coast (MacKnight, 1976; 1986). Furthermore, the view that Dingoes somehow arrived with the Small Tool Tradition has no credibility since it has been demonstrated that a key technological trait of this stone-working tradition — backing — developed in Australia during the late Pleistocene and early Holocene (Hiscock & Attenbrow, 1998; McNiven, 2000). If our hypothesis is correct, the slightly earlier dates for Dingoes in Australia indicates that settlement (permanent or otherwise) of the Torres Strait island chain dates back 3,000-3,500 years ago. Such a date matches well with the establishment 'sometime after 4000 BP' of the rich marine habitats (reefs and sea-grass beds) of the Strait that were essential to sustain the large,

historically recorded populations of people (Barham, 2000: 290).

Recent recovery of dog remains dating within the last 3,500 years on the Aru Islands to the W of Torres Strait (O'Connor et al., 2002: 296) reveals that 3,500 years ago may have been a critical time for dog movements in the Australasian region. Such a view parallels Lapita colonisation (with dogs) in the W Pacific during this time (Bulmer, 2001; Kirch, 1997; Spriggs, 1997) and links Australia to these Melanesian maritime expansions (Lilley, 2000; Rowland, 1987). In terms of mainland Australia, introduction of Dingoes had a profound impact on local fauna (e.g., demise of mainland populations of the Tasmanian Tiger, *Thylacinus cynocephalus*, and the Tasmanian Devil, *Sarcophilus harrisii*) and Aboriginal society and cosmology (e.g., Kohen, 1995: 88-89; Meehan et al., 1999). Thus, despite the current ban on the movement of live terrestrial animals (e.g., pigs, dogs, chickens) from PNG into the Torres Strait Protection Zone imposed by the Australian Quarantine Service (Lawrence, 1994: 378-381), Islanders may have long since influenced the environment of Australia through introduction of Dingoes over 3,000 years ago.

4. RODENTS: THE STOWAWAY IMPORT. At present, the only exotic rodent in Torres Strait that may pre-date European contact is the Pacific Rat (*Rattus exulans*) (Strahan, 1995: 650; Watts & Aslin, 1981: 260). This rodent, whose 'homeland' is SE Asia, was transported prehistorically by people to many parts of the Pacific where it had considerable impact in terms of decreasing 'the richness of island biotas' (Grayson, 2001: 25; Holdaway, 1999; Matisoo-Smith & Allen 2001; Matisoo-Smith et al., 1998). Within Torres Strait, the Pacific Rat has only been recorded on Mer (Murray Island) in the E Strait. The specimen was collected in the late 19th Century and no new survey data are available on the Pacific Rats across Torres Strait. The only other locations with Pacific Rat in Australia are Adele and Sunday Islands off the Kimberely coast of N Western Australia (Menkhorst, 2001: 200). While no chronological data are available on the antiquity of this rodent on Mer, its history could be considerable given that Melanesians have inhabited the island for at least 2,500 years (Carter, 2001, 2002; Carter et al., this volume). However, the possibility that the rodent first arrived in the second half of the 19th Century with Pacific missionaries and/or pearl shellers (Mullins, 1995; Ganter, 1994) should not be discounted. As Watts & Aslin (1981: 260) note, the absence of this rodent from the Australian mainland is 'puzzling'. This situation is particularly so given likely long-term contacts between Torres Strait Islanders and Aboriginal peoples of Cape York and suggested mammal movements (macropods and Dingoes) between both areas. Further zoological and archaeological research is required to document the occurrence of the Pacific Rat across Torres Strait, both geographically and chronologically. Once basic distribution data are available we will be in a better position to discuss the apparent lack of movement of the Pacific Rat from Torres Strait to the Australian mainland. In terms of the subsistence focus of this paper, the main significance of the Pacific Rat is its potential impact on local fauna, particularly birds.

BIRD EXTINCTIONS

In the broader context of Melanesian archaeology, the human history of Torres Strait raises the inevitable question of animal extinctions in the wake of human colonisation. For example, archaeological research in the Bismarck Archipelago of NE PNG revealed bird species no longer locally present. On New Ireland, at least 12 species of birds have become extinct since human colonisation 35,000 years ago (Steadman et al., 1999). These extinctions appear to reflect indirect human impacts in the form of introduced mammalian predators such as rodents (Steadman et al., 1995: 2567), a pattern repeated across the Pacific (Diamond, 1984: 841-843; Grayson, 2001: 28-34; Steadman, 1995, 1999; Weisler & Gargett, 1993). For Torres Strait, too few bone assemblages have been analysed in detail to determine if similar bird extinctions took place. We simply lack data on long-term bird use by Torres Strait Islanders and chronological information on the introduction of rodents. However, Draffan et al. (1983: 230-231) noted that megapodes have become extinct on some Torres Strait islands within the last 100 years or so. Brush Turkeys (*Alectura lathami*) no longer occur on Mawain (Wednesday) Island but were recorded there by the *Challenger* expedition in 1874 (Forbes, 1881; Moseley, 1879). Similarly, while no Orange-Footed Scrubfowls (*Megapodius reinwardt*) can be seen today on Warraber and nearby Ulu (Saddle) Islands, Draffan et al. (1983) and Haddon et al. (1894: 461) recorded deserted mounds (nests) of these birds on each of these islands, respectively. In the early 20th Century, MacGillivray (1914: 135) reported that 'old mounds [of scrubfowls] were seen on all the scrub-covered islands in Torres strait, but no birds'. Such localised and recent bird extinctions

may well reflect either impact by introduced rodents and/or unsustainable resource use strategies of the post-contact era when a wide range of outsiders (particularly those associated with the pearling industry) plundered many islands (Shnukal, this volume; Steadman, 1999). If analogous extinctions are found for pre-contact contexts, the issue of the sustainability of Islander subsistence practices will be complicated by animal translocation. That is, some species that became extinct on islands may represent species originally introduced to those islands by Islanders. In this connection, it is hypothesised that cycles of species seeding and extirpation may have been elements of some Torres Strait Islander ecosystem management and subsistence strategies, particularly for larger terrestrial species such as macropods and megapodes.

MARINE SUBSISTENCE SPECIALISATION: SETTING THE PARAMETERS

A superficial reading of Torres Strait subsistence explains marine specialisation simply as reflecting a natural depauperate terrestrial fauna and a superabundance of seafood. A key argument of this paper is that the depauperate terrestrial food resource base was maintained by deliberate and inadvertent impacts associated with importing exotic animals. Because of their specialised focus on marine protein, Torres Strait Islanders are amongst the highest consumers of seafood in the world (Johannes & MacFarlane, 1991: 196). Yet Johannes & MacFarlane (1991: 198) estimated that such is the extraordinary productivity of the waters of Torres Strait that 'Islanders could harvest from their waters at least an order of magnitude more seafood than they do today'. Clearly, availability of seafood is not the limiting factor on population growth and size in the region. While a broad range of social and historical factors have shaped local demography, it is highly likely that availability of plant foods and drinking water were key limiting factors on population size prior to European colonial influence. It is in this connection that high plant food returns from horticulture and the production of yams, sweet potatoes, taro, bananas, sugarcane and coconuts (Harris, 1977) complemented the natural super-abundance of marine protein. Haddon (1890: 359) noted that '[t]he small size of the islands and the difficultly in procuring food, especially of a vegetable character, were very strong reasons for limiting the population' (see also Harris, 1977: 448). In terms of drinking water, a range of extreme strategies was employed by Islanders to compensate for water shortages during the late dry season in the second half of the year. Moresby (1876: 135) noted that no freshwater existed on Coconut (Poruma) Island and 'all the water used' was brought in from Warraber Island over a distance of 31km in canoes carrying 'large hollow bamboos'. Similarly, the residents of Tudu Island often had to import drinking water in 'long pieces of bamboo' from Yam Island 23km to the sSW (Haddon, 1935: 28). When wells on Boigu and Saibai dried up in the hot season (November – December), people obtained water from the adjacent New Guinea coast or nearby Dauan Island (Laade, 1971: xxiii). The paucity of available drinking water on Torres Strait community islands has only been overcome in recent years with construction of dams (e.g., Federal Race Discrimination Commissioner, 1994: 378-424; Gibuma, 1991).

TORRES STRAIT — A CONSTRUCTED ENVIRONMENT?

This paper brings together a broad range of information to show how Torres Strait Islanders not only intensively exploited marine ecosystems, but also deliberately manipulated the availability of terrestrial plant, animal and freshwater resources to support their maritime culture. Such complex and broad-scale resource interactions raise the important question of whether or not any environments of Torres Strait are pristine. This paper argues that given evidence of intensive human occupation and use of Torres Strait back at least 2,500 years ago, it is highly likely that most, if not all, marine and terrestrial ecosystems in the region have been modified to some extent by Islanders to support their unique culture. In short, the land- and seascapes of Torres Strait are an artefact of longterm Islander occupation and cultural inscription. While terrestrial faunal manipulation has been the focus of this paper, evidence for marine faunal manipulation is mounting. For example, Ghaleb (1990) calculated that the residents of Gumu village on Mabuiag hunted 22,000 turtles and 23,000 dugongs over the last 1,000 years. While Gumu is a large village site, it is conceivable that hundreds of thousands of turtles and dugongs have been hunted in Torres Strait given that a further 70 villages have been recorded for the region (McNiven, Fitzpatrick & Cordell, this volume). It would be naïve to deny that Islander hunting over the past 2,500 years has not affected turtle and dugong populations in Torres Strait. Similarly, Islander foraging across home reefs at low tide

over the last 2,500 years also must have affected shellfish ecology. As Cordell (1996: 11) succinctly noted, 'biological populations such as turtle and dugong are hardly pristine, they have long had to adjust to exploitation pressure and continuous use by local communities; marine biodiversity in Torres Strait is by no means culture-free'. These conclusions have 3 important implications. First, all animal research in Torres Strait needs to consider the potential role of Islanders in the biology of species (similar comments can be made for plants). Second, archaeological analyses of animal/plant remains coupled with palaeoenvironmental investigations of landscape evolution (through analyses of pollen cores, etc) are the keys to documenting the long-term adjustments of local fauna and flora to Islander lifeways. Third, management of Torres Strait marine and terrestrial fauna requires documentation of long-term Islander-animal ecological relationships and understanding of human processes shaping the biology of different species (Cordell, 1996). In short, if management agencies are going to effectively manage animal species in Torres Strait within an ecological framework, they will need to know the extent to which the biology of species (e.g., distribution, density, demography, reproductive strategies, etc.) and ecological relationships between species are an adaptive response to long-term human manipulation.

CONCLUSION

Despite considerable information on Torres Strait Islander subsistence practices, both past and present, our understanding of the long-term development of marine specialisation remains rudimentary. While marine resources are the only viable protein source to support a resident Islander population, the role of Islanders in the deliberate and inadvertent manipulation of terrestrial animal species in the development of this marine specialisation is equally important and equally poorly understood. Four key areas require detailed investigation. First, comprehensive terrestrial fauna surveys are required for all the major island groups of Torres Strait and the adjacent Trans-Fly region, together with examination and publication of the large number of specimens currently held in museum collections. Without detailed faunal data, our ability to model Torres Strait Islander use and manipulation of terrestrial faunas will remain rudimentary and hypothetical. Second, further studies on contemporary animal use — both marine resources (e.g., dugong, turtle, fish and shellfish) and terrestrial animals (e.g., birds, pigs, bandicoots) — are required to provide a broader context to understand historical and archaeological subsistence practices and processes. Third, greater documentation and understanding is required on Islander ethno-taxonomy and traditional ecological knowledge. Fourth, detailed faunal analyses of archaeological midden deposits is required for all 4 major island groups of the Strait, including small and large islands, to document long-term Islander-animal relationships and co-evolutionary processes. We lack detailed data on spatial and chronological variations in subsistence behaviour for Torres Strait. Following Barham (2000), the critical question is to what degree specialised marine subsistence practices of the last 2,500 years represent either 'cultural arrival' as part of the cultural baggage of late Holocene immigrants (from the adjacent mainland coasts of PNG and Australia) or 'cultural emergence' in terms of in-situ evolution amongst long-term resident groups (perhaps with ancestral links back to the late Pleistocene land bridge period). While Barham (2000) leant towards 'cultural arrival', it is likely that the applicability of the 'cultural arrival or cultural emergence' hypotheses will vary for different island groups across the Strait. For example, it has been recognised for some time that the larger continental islands of the Western Strait (Mua, Badu and Murulag) have the potential to reveal long-term use in contrast to sandy cays of the Central Strait that formed only during the late Holocene (Barham, 2000: 273; Golson, 1972; Haddon, 1935: 275-78, 410-4; Harris, 1995; Moore, 1979: 308-14; see David & McNiven, this volume). Barham (2000) argued convincingly that the key to understanding the timing of marine specialisation is palaeoenvironmental insights into the evolution of marine habitats across the Strait. While we agree the 'natural' availability of marine foods is critical to understanding the development of marine specialisation, it is clear that we also need to understand long-term Islander impacts on marine ecology and the degree to which Islanders modified terrestrial environments through translocation of fauna. When this information is combined with data on the movement of plant domesticates (e.g., yams, sweet potatoes, bananas, bamboo), we will be in a better position to understand the degree to which Islanders not only colonised Torres Strait, but also modified the terrestrial resource base of islands (plants and animals) to support and complement their specialised maritime culture. It is in this sense that the human history of Torres Strait has major parallels with the human

settlement of the Pacific with the familiar themes of 'transported landscapes' (Kirch, 1982), animal translocation and ecosystem transformation (Enright & Gosden, 1992).

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ENDNOTES

1. Strahan (1995: 397) includes the southern islands of Torres Strait within the distribution of Red-legged Pademelon (*Thylogale stigmatica*). The entry in Strahan (1995) was written by Karl Vernes and Peter Johnson. According to Johnson (pers. comm. to McNiven, 2003), the inclusion of Torres Strait is an extrapolation based upon a reference to a specimen of *Thylogale stigmatica* (syn. *Thylogale coxeni*) in Thomas (1888: 47) provenanced to Albany Island off the east coast of Cape York. However, Thomas (1888: 47) provenances the specimen to 'Port Albany' located in the channel that separates Albany Island from the mainland. As such, it is unclear whether or not the specimen was collected from either Albany Island or the mainland. As no other references to macropods on Albany Island exist, parsimony would suggest that the specimen was obtained from the mainland.
2. Beardmore (1890: 462) also reports that porpoise was not eaten by the Kiwai people of Mowat (Mawatta), on the adjacent Papuan coast.
3. Smith (1978: 60) notes that on Kiwai Island 'the Motu word *boroma* appears to have influenced a common word for pig *boromo*, which is commonly used in place of *tumu'un*'.
4. The introduction of pigs onto uninhabited islands is not a new practice as it is clear that wild pigs observed on the isolated islet of Ului (southwest of Badu) in 1932 had been introduced, most likely by Islanders (Birtles, 1935: 237).
5. It should be noted, however, that not all gardens in the area were fenced (e.g., Beaver, 1920: 90).

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APPENDIX 1
Terrestrial/freshwater mammal, reptile and amphibian fauna of the Torres Strait region

Appendix 1 was constructed using published references to animal distributions for Southern Papua (Trans-Fly) region (taken as the area bounded by Fly River south of the Strickland River junction and west to the international border with West Papua), Torres Strait islands and Cape York (north of Shelburne Bay). Scientific names are based wherever possible on the latest and most accepted taxonomy. We note that the status of various groups and species, in particular some reptiles and frogs, are currently under review. Mammal distribution data for the Trans-Fly region is from Hitchcock (1997, 1998), Flannery (1995), Schodde & Calaby (1972) and Waithman (1979). All these sources provide distribution data that can be localised to the Trans-Fly region. The main sources of mammal distribution data for Torres Strait islands and Cape York are distribution maps in Ingram & Raven (1991), Strahan (1995) and Winter et al. (1991). The main limitation of Strahan (1995) is that the small-scale distribution maps make it difficult to determine whether or not the small islands of Torres Strait are included in some mammal distributions. A key limitation of the distribution maps in Ingram & Raven (1991) is that they refer only to mammal specimens in the Queensland Museum.

Reptile and amphibian distributions for the Trans-Fly region were obtained from Johannes & MacFarlane (1991), Hitchcock (unpubl. data), O'Shea (1996), Parker (1982) and Whitaker et al. (1982). Tyler's (1972) and Cogger's (2000) distribution data for 'Southern New Guinea' are not used as no mention is specially made of the Trans-Fly. Parker (1982) makes specific reference to snakes of the Trans-Fly region with distribution information for 'Daru Island', 'Daru mainland' and 'Morehead'. Whitaker et al. (1982) provide distribution data for the 'Western Province' of southwest Papua New Guinea. It needs to be kept in mind that the designator 'Western Province' can include the middle and upper reaches of the Fly River and in some cases may not include the Trans-Fly region. The key reference used for snakes of the Trans-Fly is Parker (1982). Reptile and amphibian distributions for Torres Strait and/or Cape York are based on Cogger (2000), Ingram & Raven (1991), Johannes & MacFarlane (1991) and Tyler (1972). Tyler's (1972: 242) provides a table of frogs specifically for Torres Strait. Cogger (2000) and Ingram & Raven (1991) present distribution data on maps that in the case of Cogger (2000) is supplemented by textual distribution information. Again, the limitation of Ingram & Raven (1991) is that distribution maps only show reptile and amphibian specimens in the Queensland Museum. A major data void exists for frogs of the Trans-Fly region.

It is important to note that while limited published material on the reptiles, amphibians and mammals of Torres Strait and southern Papua exist, important collections of specimens exist in museums, including the University of Papua New Guinea; National Museum of Papua New Guinea; Macleay Museum, University of Sydney; Australian Museum and Queensland Museum.

Fauna	Southern Papua (Trans-Fly)	Torres Strait Islands	Cape York (N. of Shelburne Bay)
Mammals			
Human introductions (before AD 1860)			
Dingo *Canis lupus dingo*	Waithman (1979: 315)	Haddon (1912: 137)	Strahan (1995: 697)
Pig *Sus scrofa*	Waithman (1979: 315)	-	-
Pacific Rat *Rattus exulans*	-	Strahan (1995: 650)	-
Monotremes			
Short-beaked Echidna *Tachyglossus aculeatus*	Flannery (1995: 69) Waithman (1979: 315)	John Manas (pers. comm., 2002)	Strahan (1995: 41)
Macropods			
Agile Wallaby *Macropus agilis*	Schodde & Calaby (1972: 279) Flannery (1995: 154) Waithman (1979: 315)	Abbott (1980: 348) Cameron et al. (1984: 1152)	Strahan (1995: 322)
Swamp Wallaby *Wallabia bicolor*	-	-	Strahan (1995: 404)
Red-legged Pademelon *Thylogale stigmatica*	Schodde & Calaby (1972: 278) Waithman (1979: 315) Flannery (1995: 159)	-	Ingram & Raven (1991: 305) Strahan (1995: 397)
Dusky Pademelon *Thlyogale brunii*	Schodde & Calaby (1972: 278) Flannery (1995: 157) Waithman (1979: 315)	-	-
Grey Dorcopsis *Dorcopsis luctuosa*	Flannery (1995: 146)	-	-
Spectacled Hare-wallaby *Lagorchestes conspicillatus*	Hitchcock (1997)	-	-
Dasyurids			
Bronze Quoll *Dasyurus spartacus* (cf. *Dasyurus geoffroii*)	Waithman (1979: 315) Van Dyck (1987) Flannery (1995: 86)	-	-
Northern Quoll *Dasyurus hallucatus*	-	-	Schodde & Calaby (1972: 278) Ingram & Raven (1991: 288) Strahan (1995: 65)
Brush-tailed Phascogale *Phascogale tapoatafa*	-	-	Strahan (1995: 104)

Fauna	Southern Papua (Trans-Fly)	Torres Strait Islands	Cape York (N. of Shelburne Bay)
Chestnut Dunnart *Sminthopsis archeri*	Flannery (1995: 101)	-	Ingram & Raven (1991: 290) Strahan (1995: 124)
Red-cheeked Dunnart *Sminthopsis virginiae* (Syn. *Sminthopsis rufigenis*)	Flannery (1995: 103) Waithman (1979: 315) Schodde & Calaby (1972: 278)	-	Schodde & Calaby (1972: 278) Ingram & Raven (1991: 292) Strahan (1995: 156)
Three-striped Dasyure *Myoictis melas*	Flannery (1995: 92)	-	-
Common Planigale *Planigale maculata*	-	-	Ingram & Raven (1991: 290) Strahan (1995: 112)
Papuan Planigale *Planigale novaeguineae*	Flannery (1995: 100) Waithman (1979: 315)	-	-
Possums			
Common Spotted Cuscus *Spilocuscus maculatus*	Schodde & Calaby (1972: 278) Flannery (1995: 184) Waithman (1979: 315)	-	Ingram & Raven (1991: 297) Winter et al. (1991: 170) Strahan (1995: 268)
Southern Common Cuscus *Phalanger intercastellanus*	Flannery (1995: 170)	-	-
Striped Possum *Dactylopsila trivirgata*	Schodde & Calaby (1972: 278) Flannery (1995: 203) Waithman (1979: 315)	-	Winter et al. (1991: 165) Strahan (1995: 222)
Long-fingered Possum *Dactylopsila palpator*	Waithman (1979: 315)	-	-
Sugar Glider *Petaurus breviceps*	Schodde & Calaby (1972: 278) Flannery (1995: 207) Waithman (1979: 315)	-	Ingram & Raven (1991: 295) Strahan (1995: 231)
Feathertail Glider *Acrobates pygmaeus*	-	-	Strahan (1995: 264)
Common Ringtail Possum *Pseudocheirus peregrinus*	-	-	Ingram & Raven (1991: 296) Strahan (1995: 254)
Common Brushtail Possum *Trichosurus vulpecula*	-	-	Ingram & Raven (1991: 298)
Bandicoots			
Bandicoot *Echymipera* sp. and/or *Isoodon* sp.	-	John Manas & William Bowie (pers. comm., 2002)	-
Rufus Spiny Bandicoot *Echymipera rufescens*	Waithman (1979: 315)	-	Ingram & Raven (1991: 292) Winter et al. (1991: 172) Strahan (1995: 192)
Menzies' Echymipera *Echymipera echinista*	Flannery (1995: 108)	-	-
Common Echymipera *Echymipera kalubu*	Schodde & Calaby (1972: 278) Flannery (1995: 110) Waithman (1979: 315)	-	-
Northern Brown Bandicoot *Isoodon macrourus*	Schodde & Calaby (1972: 278) Flannery (1995: 123) Waithman (1979: 315)	-	Ingram & Raven (1991: 292) Strahan (1995: 175)
Southern Brown Bandicoot *Isoodon obesulus*	-	-	Ingram & Raven (1991: 293) Strahan (1995: 177)
Rodents			
False Water-rat *Xeromys myoides*	Hitchcock (1998)	-	-
Water-rat *Hydromys chrysogaster*	Flannery (1995: 237) Waithman (1979: 315)	-	Ingram & Raven (1991: 320) Strahan (1995: 629)
Lakeland Downs Mouse *Leggadina lakedownensis*	-	-	Ingram & Raven (1991: 320)
Fly River Leptomys *Leptomys signatus*	Flannery (1995: 244)	-	-
Brush-tailed Rabbit-rat *Conilurus penicillatus*	Schodde & Calaby (1972: 279) Flannery (1995: 258) Waithman (1979: 315)	-	-
Delicate Mouse *Pseudomys delicatulus*	Flannery (1995: 259) Waithman (1979: 315)	-	Ingram & Raven (1991: 323) Strahan (1995: 593)
Lesser Tree-mouse *Chiruromys vates*	Flannery (1995: 272)	-	-
White-bellied Melomys *Melomys leucogaster*	Schodde & Calaby (1972: 279) Flannery (1995: 296)	-	-
Grassland Melomys *Melomys lutillus*	Flannery (1995: 299) Waithman (1979: 315)	Ingram & Raven (1991: 320) Strahan (1983: 376)	Ingram & Raven (1991: 320) Strahan (1995: 633)
Monckton's Melomys *Melomys moncktoni*	Schodde & Calaby (1972: 279) Flannery (1995: 303)	-	-

Fauna	Southern Papua (Trans-Fly)	Torres Strait Islands	Cape York (N. of Shelburne Bay)
Bramble Cay Melomys *Melomys rubicola*	-	Ingram & Raven (1991: 321) Strahan (1995: 637)	-
Black-tailed Melomys *Melomys rufescens*	Schodde & Calaby (1972: 279) Flannery (1995: 310) Waithman (1979: 315)	-	-
Cape York Melomys *Melomys capensis*	-	-	Ingram & Raven (1991: 321) Strahan (1995: 634)
Fawn-footed Melomys *Melomys cervinipes*	-	-	Ingram & Raven (1991: 321)
Giant Whie-tailed Rat *Uromys caudimaculatus*	Schodde & Calaby (1972: 279) Flannery (1995: 325) Waithman (1979: 315)	-	Ingram & Raven (1991: 327) Winter et al. (1991: 165) Strahan (1995: 640)
Black-footed Tree-rat *Mesembriomys gouldii*	-	-	Strahan (1995: 564)
Northern Hopping-mouse *Notomys aquilo*	-	-	Strahan (1995: 572)
Prehensile-tailed Rat *Pogonomys mollipilosus*	-	-	Strahan (1995: 644)
Cape York Rat *Rattus leucopus*	Schodde & Calaby (1972: 279) Flannery (1995: 330) Waithman (1979: 315)	-	Ingram & Raven (1991: 325) Strahan (1995: 652)
Canefield Rat *Rattus sordidus*	Schodde & Calaby (1972: 279) Flannery (1995: 335) Waithman (1979: 315)	-	Ingram & Raven (1991: 326) Strahan (1995: 660)
Pale Field-rat *Rattus tunneyi*	-	-	Ingram & Raven (1991: 326) Strahan (1995: 663)
Bats			
Bare-backed Fruit-bat *Dobsonia moluccensis*	Flannery (1995: 352) Waithman (1979: 315)	-	Strahan (1995: 431)
Torresian Flying-fox *Pteropus* sp.	-	-	Strahan (1995: 444)
Black Flying-fox *Pteropus alecto*	Flannery (1995: 370) Waithman (1979: 315)	Ingram & Raven (1991: 307) Waithman (1979: 321)	Strahan (1995: 432)
Little Red Flying-fox *Pteropus scapulatus*	Flannery (1995: 378) Waithman (1979: 315)	Ingram & Raven (1991: 307)	Strahan (1995: 443)
Spectacled Flying-fox *Pteropus conspicillatus*	-	-	Strahan (1995: 435)
Large-eared Flying-fox *Pteropus macrotis*	Flannery (1995: 375) Waithman (1979: 315)	Strahan (1995: 438)	-
Greater Flying-fox *Pleropus neohibernicus*	Flannery (1995: 377) Waithman (1979: 315)	-	-
Eastern Long-eared Bat *Nyctophilus bifax*	-	Ingram & Raven (1991: 316)	Ingram & Raven (1991: 316) Strahan (1995: 501)
Torresian Tube-nosed Bat *Nyctimene vizcaccia*	-	Strahan (1995: 429)	-
Pallas's Tube-nosed Bat *Nyctimene* sp. cf. *cephalotes*	Flannery (1995: 362) Waithman (1979: 315)	-	-
Eastern Tube-nosed Bat *Nyctimene robinsoni* (Syn. *Nyctimene albiventer*)	Flannery (1995: 359) Waithman (1979: 315)	Ingram & Raven (1991: 306)	Ingram & Raven (1991: 306) Strahan (1995: 426)
Northern Blossom-bat *Macroglossus minimus* (Syn. *Macroglossus lagochilus*)	Flannery (1995: 356) Waithman (1979: 315)	Ingram & Raven (1991: 306)	Ingram & Raven (1991: 306) Strahan (1995: 422)
Rousette Bat *Rousettus amplexicaudatus*	Bonaccorso (1998: 153)	-	-
Common Blossom-bat *Syconycteris australis* (Syn. *Syconycteris crassa*)	Flannery (1995: 383) Waithman (1979: 315)	-	Ingram & Raven (1991: 308) Strahan (1995: 423)
Ghost Bat *Macroderma gigas*	-	-	Strahan (1995: 446)
Papuan Sheathtail-bat *Saccolaimus mixtus* (Syn. *Taphozous mixtus*)	Flannery (1995: 399) Waithman (1979: 315)	Strahan (1995: 469)	Ingram & Raven (1991: 308) Strahan (1995: 469)
Bare-Rumped Sheathtail-bat *Saccolaimus saccolaimus*	Flannery (1995: 401) Waithman (1979: 315)	-	Strahan (1995: 470)
Yellow-bellied Sheathtail-bat *Saccolaimus flaviventris* (Syn. *Taphozous flaviventris*)	-	-	Ingram & Raven (1991: 308) Strahan (1995: 467)
Coastal Sheathtail-bat *Taphozous australis*	-	-	Ingram & Raven (1991: 309) Strahan (1995: 472)

Fauna	Southern Papua (Trans-Fly)	Torres Strait Islands	Cape York (N. of Shelburne Bay)
Eastern Horseshoe-bat *Rhinolophus megaphyllus*	-	-	Strahan (1995: 449)
Large-eared Horseshoe-bat *Rhinolophus philippinensis*	-	-	Strahan (1995: 452)
Dusky Leafnosed-bat *Hipposideros ater*	-	-	Ingram & Raven (1991: 311) Strahan (1995: 455)
Fawn Leafnosed-bat *Hipposideros cervinus*	-	Ingram & Raven (1991: 311)	Strahan (1995: 458)
Semon's Leafnosed-bat *Hipposideros semoni*	-	-	Strahan (1995: 461)
Diadem Leafnosed-bat *Hipposideros diadema*	-	-	Strahan (1995: 460)
Maggie Taylor's Horseshore-bat *Hipposideros maggietaylorae*	Flannery (1995: 420)	-	-
Little Northern Broad-nosed Bat *Scotorepens sanborni*	Flannery (1995: 474) Waithman (1979: 315)	-	Strahan (1995: 533)
Northern Freetail-bat *Chaerophon jobensis*	Flannery (1995: 476) Waithman (1979: 315)	-	Ingram & Raven (1991: 309) Strahan (1995: 479)
Beccari's Freetail-bat *Mormopterus beccarii*	Flannery (1995: 478) Waithman (1979: 315)	-	Strahan (1995: 481)
Little Northern Freetail-bat *Mormopterus loriae*	-	-	Strahan (1995: 482)
Common Bentwing-bat *Miniopterus schreibersii*	-	-	Ingram & Raven (1991: 315) Strahan (1995: 495)
Little Bentwing-bat *Miniopterus australis*	-	-	Strahan (1995: 492)
Hoary Wattled Bat *Chalinolobus nigrogriseus*	Bonaccorso (1998: 322-24)	-	Strahan (1995: 516)
Large-footed Myotis *Myotis moluccarum* (Syn. *Myotis adversus*)	Bonaccorso (1998: 327)	-	Ingram & Raven (1991: 316) Strahan (1995: 522)
Golden-tipped Bat *Kerivoula papuensis* (Syn. *Phoniscus papuensis*)	-	-	Strahan (1995: 490)
Cape York Pipistrelle *Pipistrellus adamsi* (Syn. *Pipistrellus papuanus, P. tenuis*)	Waithman (1979: 315)	-	Ingram & Raven (1991: 318) Strahan (1995: 525)
Eastern Cave Bat *Vespadelus troughtoni*	-	-	Strahan (1995: 545)
Reptiles			
Freshwater Crocodiles			
Freshwater Crocodile *Crocodylus johnstoni*	-	-	Cogger (2000: 175)
New Guinea Freshwater Crocodile *Crocodylus novaeguineae*	Whitaker et al. (1982: 41)	-	-
Freshwater Turtles			
New Guinea Snake-necked Turtle *Chelodina novaeguineae*	Whitaker et al. (1982: 41)	-	Cogger (2000: 191)
Northern Snake-necked Turtle *Chelodina rugosa*	-	-	Cogger (2000: 192)
Parker's Snake-necked Turtle *Chelodina parkeri*	Whitaker et al. (1982: 41)	-	-
Torres Straits Snake-necked Turtle *Chelodina siebenrocki*	Whitaker et al. (1982: 41)	Whitaker et al. (1982: 41)	-
Saw-shelled Turtle *Elseya latisternum*	-	-	Ingram & Raven (1991: 50) Cogger (2000: 195)
Yellow-striped Turtle *Elseya novaeguineae*	Whitaker et al. (1982: 41)	-	-
Turtle *Emydura subglobosa*	Whitaker et al. (1982: 41)	-	Ingram & Raven (1991: 51) Cogger (2000: 199)
Fly River Turtle *Carettochelys insculpta*	Whitaker et al. (1982: 41)	-	-
Bibron's Soft-shelled Turtle *Pelochelys bibroni*	Whitaker et al. (1982: 41)	-	-
Geckos			
Gecko *Gehyra baliola*	Whitaker et al. (1982: 42)	Ingram & Raven (1991: 56) Cogger (2000: 237)	-
Gecko *Gehyra interstitialis*	Whitaker et al. (1982: 42)	-	-
Gecko *Gehyra papuana*	Whitaker et al. (1982: 42)	-	-

Fauna	Southern Papua (Trans-Fly)	Torres Strait Islands	Cape York (N. of Shelburne Bay)
Gecko *Gehyra vorax*	Whitaker et al. (1982: 42)	-	-
Gecko *Gehyra dubia*	-	Ingram & Raven (1991: 56)	Ingram & Raven (1991: 56) Cogger (2000: 240)
Gecko *Gehyra nana*	-	-	Cogger (2000: 240)
Oceanic Gecko *Gehyra oceanica*	Whitaker et al. (1982: 42)	Cogger (2000: 240)	Cogger (2000: 240)
Gecko *Gehyra mutilata*	Whitaker et al. (1982: 42)	-	-
Tree Dtella Gecko *Gehyra variegata*	Whitaker et al. (1982: 42)	-	-
House Gecko *Hemidactylus frenatus*	Whitaker et al. (1982: 42)	Ingram & Raven (1991: 57)	Ingram & Raven (1991: 57) Cogger (2000: 246)
Bynoe's Gecko *Heteronotia binoei*	-	Ingram & Raven (1991: 58)	Ingram & Raven (1991: 58) Cogger (2000: 247)
Mourning Gecko *Lepidodactylus lugubris*	Whitaker et al. (1982: 43)	Ingram & Raven (1991: 58) Cogger (2000: 249)	Ingram & Raven (1991: 58) Cogger (2000: 249)
Gecko *Lepidodactylus pumilus*	Whitaker et al. (1982: 43)	Cogger (2000: 250)	Ingram & Raven (1991: 58)
Gecko *Lepidodactylus magnus*	Whitaker et al. (1982: 43)	-	-
Pelagic Gecko *Nactus pelagicus*	-	Ingram & Raven (1991: 59) Cogger (2000: 253)	Ingram & Raven (1991: 59) Cogger (2000: 253)
Gecko *Nactus eboracensis*	-	Cogger (2000: 741)	Cogger (2000: 741)
Gecko *Nephrurus asper*	-	-	Ingram & Raven (1991: 59) Cogger (2000: 256)
Northern Velvet Gecko *Oedura castelnaui*	-	Ingram & Raven (1991: 59)	Ingram & Raven (1991: 59) Cogger (2000: 261)
Gecko *Oedura rhombifer*	-	-	Ingram & Raven (1991: 61) Cogger (2000: 267)
Gecko *Pseudothecadactylus australis*	-	Cogger (2000: 272)	Cogger (2000: 272)
Gecko *Cyrtodactylus derongo*	Whitaker et al. (1982: 42)	-	-
Giant Tree Gecko *Cyrtodactylus loriae*	Whitaker et al. (1982: 42)	-	-
Gecko *Cyrtodactylus mimikanus*	Whitaker et al. (1982: 42)	-	-
Gecko *Cyrtodactylus papuensis*	Whitaker et al. (1982: 42)	-	-
Legless Lizards			
Legless Lizard *Delma tincta*	-	-	Cogger (2000: 291)
Burton's Snake-lizard *Lialis burtonis*	Whitaker et al. (1982: 43)	Cogger (2000: 294)	Ingram & Raven (1991: 65) Cogger (2000: 294)
Jicar's Snake Lizard *Lialis jicari*	Whitaker et al. (1982: 43)	-	-
Hooded Scaly Foot *Pygopus nigriceps*	-	-	Cogger (2000: 298)
Lizards			
Frilled Lizard *Chlamydosaurus kingii*	Whitaker et al. (1982: 43)	-	Ingram & Raven (1991: 107) Cogger (2000: 306)
Lizard *Diporiphora australis*	-	-	Cogger (2000: 329)
Two-lined Dragon *Diporiphora bilineata*	Whitaker et al. (1982: 43)	Ingram & Raven (1991: 108)	Ingram & Raven (1991: 108) Cogger (2000: 331)
Lizard *Hypsilurus auritus*	Whitaker et al. (1982: 43)	-	-
Lizard *Hypsilurus binotatus*	Whitaker et al. (1982: 43)	-	-
Keeled Anglehead *Hypsilurus dilophus*	Whitaker et al. (1982: 43)	-	-
Green Anglehead *Hypsilurus modestus*	Whitaker et al. (1982: 43)	-	-
Lizard *Goniocephalus nigrigularis*	Whitaker et al. (1982: 43)	-	-
Water Dragon *Physignathus lesueurii*	Whitaker et al. (1982: 43)	-	-
Lizard *Lophognathus temporalis* (Syn. *Lophognathus lateralis*)	Whitaker et al. (1982: 43) Shea & Sadlier (1999: 19)	-	Ingram & Raven (1991: 110)
Lizard *Lophognathus gilberti*	-	-	Cogger (2000: 342)
Sand Monitor *Varanus gouldii*	Whitaker et al. (1982: 44)	-	Cogger (2000: 365)
Mangrove Monitor *Varanus indicus*	Whitaker et al. (1982: 44)	Ingram & Raven (1991: 114) Cogger (2000: 368)	Ingram & Raven (1991: 114) Cogger (2000: 365)
Merten's Water Monitor *Varanus mertensi*	-	-	Cogger (2000: 373)
Monitor *Varanus panoptes*	-	Amey (pers. comm.) Hitchcock (pers. obs.)	Cogger (2000: 376)
Emerald Monitor *Varanus prasinus*	Whitaker et al. (1982: 44)	Cogger (2000: 376) Whittier &Moeller (1993)	-
Rusty Monitor *Varanus semiremex*	-	-	Cogger (2000: 376)
Spotted Tree Monitor *Varanus scalaris* (Syn. *Varanus timorensis*)	Whitaker et al. (1982: 44)	-	Ingram & Raven (1991: 114) Cogger (2000: 377)

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Monitor *Varanus tristis*	-	-	Cogger (2000: 378)
Monitor *Varanus salvodorii*	Whitaker et al. (1982: 44)	-	-
Monitor *Varanus doreanus*	Hitchcock (in prep.)	-	-
Skinks			
Skink *Anomalopus pluto*	-	-	Ingram & Raven (1991: 67) Cogger (2000: 385)
Skink *Carlia longipes*	Hitchcock (in prep.)	Ingram & Raven (1991: 70) Cogger (2000: 394)	Ingram & Raven (1991: 70) Cogger (2000: 394)
Skink *Carlia munda*	-	-	Cogger (2000: 397)
Skink *Carlia storri*	-	Cogger (2000: 399)	Ingram & Raven (1991: 73) Cogger (2000: 400)
Skink *Carlia vivax*	-	Ingram & Raven (1991: 73)	Cogger (2000: 400)
Skink *Carlia parrhasius*	-	-	Cogger (2000: 749)
Skink *Carlia bicarinata*	Whitaker et al. (1982: 44)	-	-
Brown Four-fingered Skink *Carlia fusca*	Whitaker et al. (1982: 44)	-	-
New Guinea Four-fingered Skink *Carlia novaeguineae*	Whitaker et al. (1982: 44)	-	-
Skink *Carlia aeratus*	-	Cogger (2000: 539)	Cogger (2000: 539)
Skink *Carlia macfarlani*	Hitchcock (in prep.)	Ingram & Raven (1991: 97) Cogger (2000: 540)	Ingram & Raven (1991: 97) Cogger (2000: 539)
Skink *Carlia sesbrauna*	-	-	Ingram & Raven (1991: 98) Cogger (2000: 539)
Skink *Sphenomorphus tenuis*	-	Ingram & Raven (1991: 105)	Ingram & Raven (1991: 105)
Skink *Sphenomorphus jobiensis*	Whitaker et al. (1982: 47)	-	-
Mueller's Skink *Sphenomorphus muelleri*	Whitaker et al. (1982: 47)	-	-
Skink *Sphenomorphus pratti*	Whitaker et al. (1982: 47)	-	-
Skink *Sphenomorphus undulatus*	Whitaker et al. (1982: 48)	-	-
Skink *Sphenomorphus cinereus*	Whitaker et al. (1982: 46)	-	-
Skink *Sphenomorphus forbesi*	Whitaker et al. (1982: 47)	-	-
Skink *Sphenomorphus fragosus*	Whitaker et al. (1982: 47)	-	-
Skink *Sphenomorphus minutus*	Whitaker et al. (1982: 47)	-	-
Skink *Sphenomorphus derroyae*	Whitaker et al. (1982: 47)	-	-
Skink *Sphenomorphus nigriventris*	Whitaker et al. (1982: 47)	-	-
Skink *Sphenomorphus oligolepis*	Whitaker et al. (1982: 48)	-	-
Skink *Sphenomorphus stickeli*	Whitaker et al. (1982: 48)	-	-
Skink *Sphenomorphus solomonis*	Whitaker et al. (1982: 48)	-	-
Skink *Sphenomorphus schultzei*	Whitaker et al. (1982: 48)	-	-
Skink *Sphenomorphus papuensis*	Shea & Sadlier (1999: 36)	-	-
Hore Skink *Cryptoblepharus litoralis*	Whitaker et al. (1982: 44)	Ingram & Raven (1991: 75) Cogger (2000: 405)	Ingram & Raven (1991: 75) Cogger (2000: 406)
Skink *Cryptoblepharus virgatus*	Hitchcock (in prep.)	Ingram & Raven (1991: 75)	Ingram & Raven (1991: 75) Cogger (2000: 406)
Skink *Cryptoblepharus plagiocephalus*	-	-	Cogger (2000: 406)
Fence Skink *Cryptoblepharus pallidus*	Whitaker et al. (1982: 44)	-	-
Skink *Ctenotus robustus*	Whitaker et al. (1982: 44)	-	Cogger (2000: 440)
Spalding's Skink *Ctenotus spaldingi*	Whitaker et al. (1982: 44)	Ingram & Raven (1991: 84) Cogger (2000: 444)	Ingram & Raven (1 991: 84) Cogger (2000: 446)
Major Skink *Egernia frerei*	Whitaker et al. (1982: 44)	Ingram & Raven (1991: 86) Cogger (2000: 461)	Ingram & Raven (1991: 86) Cogger (2000: 458)
Skink *Emoia atrocostata*	Whitaker et al. (1982: 44)	Ingram & Raven (1991: 88) Cogger (2000: 476)	Ingram & Raven (1991: 88) Cogger (2000: 476)
Skink *Emoia longicauda*	Hitchcock (in prep.)	Ingram & Raven (1991: 89) Cogger (2000: 477)	Ingram & Raven (1991: 89) Cogger (2000: 476)
Skink *Emoia caeruleocauda*	Whitaker et al. (1982: 45)	-	-
Skink *Emoia cyanura*	Whitaker et al. (1982: 45)	-	-
Skink *Emoia mivarti*	Whitaker et al. (1982: 45)	-	-
Skink *Emoia pallidiceps*	Whitaker et al. (1982: 45)	-	-
Skink *Emoia physicae*	Whitaker et al. (1982: 45)	-	-
Skink *Emoia submetallica*	Whitaker et al. (1982: 45)	-	-
Skink *Emoia cyanogaster*	Whitaker et al. (1982: 45)	-	-
Skink *Emoia kordoana*	Whitaker et al. (1982: 45)	-	-

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Skink *Eugongylus albofasciolatus*	Whitaker et al. (1982: 45)	Cogger (2000: 480)	Cogger (2000: 480)
Skink *Eugongylus rufescens*	Whitaker et al. (1982: 45)	Ingram & Raven (1991: 89) Cogger (2000: 481)	Ingram & Raven (1991: 89) Cogger (2000: 480)
Olive Tree Skink *Lamprolepis smaragdina*	Whitaker et al. (1982: 46)	-	-
Skink *Lipinia longiceps*	Whitaker et al. (1982: 46)	-	-
Skink *Lobulia elegans*	Whitaker et al. (1982: 46)	-	-
Skink *Prasinohaema semoni*	Whitaker et al. (1982: 46)	-	-
Skink *Glaphyromorphus crassiscaudus*	-	Cogger (2000: 492)	Cogger (2000: 493)
Skink *Glaphyromorphus nigricaudis*	Shea & Sadlier (1999: 36)	Cogger (2000: 496)	Cogger (2000: 497)
Skink *Glaphyromorphus pardalis*	-	-	Cogger (2000: 497)
Skink *Glaphyromorphus pumilus*	-	-	Cogger (2000: 497)
Skink *Morethia taeniopleura*	-	-	Ingram & Raven (1991: 100) Cogger (2000: 550)
Eastern Blue-tongued Lizard *Tiliqua scincoides*	-	-	Cogger (2000: 581)
Blue-tongued Lizard *Tiliqua gigas*	Whitaker et al. (1982: 48)	-	-
Terrestrial Snakes			
Snake *Ramphotyphlops affinis*	-	-	Cogger (2000: 590)
Snake *Ramphotyphlops braminus*	-	Ingram & Raven (1991: 117) Cogger (2000: 590)	Cogger (2000: 590)
Snake *Ramphotyphlops broomi*	-	-	Cogger (2000: 590)
Snake *Ramphotyphlops diversus*	-	-	Cogger (2000: 590)
Blind Snake *Ramphotyphlops leucoproctus*	Parker (1982 : 9) Whitaker et al. (1982: 49)	Cogger (2000: 593)	Cogger (2000: 595)
Blind Snake *Ramphotyphlops polygrammicus*	Parker (1982: 9) Whitaker et al. (1982: 49)	Cogger (2000: 596)	Cogger (2000: 596)
Snake *Ramphotyphlops unguirostris*	-	-	Cogger (2000: 598)
Snake *Ramphotyphlops wiedii*	-	Ingram & Raven (1991: 119)	Cogger (2000: 598)
Snake *Ramphotyphlops chamodracaena*	-	-	Cogger (2000: 768)
Ground Boa *Candoia aspera*	Parker (1982: 9) Whitaker et al. (1982: 49)	-	-
Tree Boa *Candoia carinata*	Parker (1982: 9) Whitaker et al. (1982: 49)	-	-
Black-headed Python *Aspidites melanocephalus*	-	-	Ingram & Raven (1991: 120) Cogger (2000: 602)
Green Tree Python *Morelia viridis*	Parker (1982: 9) Whitaker et al. (1982: 49)	-	Cogger (2000: 604)
D'Albertis Python *Leiopython albertisii*	Parker (1982: 9) Whitaker et al. (1982: 49)	Cogger (2000: 605-7)	-
Water Python *Liasis fuscus*	O'Shea (1996: 86)	O'Shea (1996: 86)	Cogger (2000: 607)
Olive Python *Liasis olivaceus*	-	-	Cogger (2000: 609)
Python *Liasis mackloti*	Parker (1982: 9) Whitaker et al. (1982: 49)	Ingram & Raven (1991: 121)	-
Papuan Python *Liasis papuanus*	Parker (1982: 9) Whitaker et al. (1982: 49)	-	-
Amethystine Python *Morelia amethistina*	Parker (1982: 9) Whitaker et al. (1982: 49)	Ingram & Raven (1991: 120) Cogger (2000: 611)	-
Amethystine Python *Morelia kinghorni*	-	-	Harvey et al. (2000)
Carpet Python *Morelia spilota*	Parker (1982: 9) Whitaker et al. (1982: 49)	O'Shea (1996: 74)	Cogger (2000: 614)
Python *Morelia childreni*	-	Ingram & Raven (1991: 121)	-
Python *Antaresia maculosus*	-	-	Cogger (2000: 609)
Arafura File Snake *Acrochordus arafurae*	Parker (1982: 9) Whitaker et al. (1982: 50)	-	Ingram & Raven (1991: 119) Cogger (2000: 616)
Little File Snake *Acrochordus granulatus*	Parker (1982: 9) Whitaker et al. (1982: 50)	-	Cogger (2000: 616)
Brown Tree Snake *Boiga irregularis*	Parker (1982: 9) Whitaker et al. (1982: 50)	Ingram & Raven (1991: 123)	Ingram & Raven (1991: 123) Cogger (2000: 618)
Banded Water Snake *Cantoria annulata*	Parker (1982: 9) Whitaker et al. (1982: 50) O'Shea (1996: 115)	-	-
Bockadam *Cerberus rynchops*	O'Shea (1996: 116)	-	Cogger (2000: 620)

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Northern Tree Snake *Dendrelaphis calligastra*	Parker (1982: 9) Whitaker et al. (1982: 50)	Ingram & Raven (1991: 123) Cogger (2000: 620)	Ingram & Raven (1991: 123) Cogger (2000: 622)
Common Tree Snake *Dendrelaphis punctulata*	Parker (1982: 9) Whitaker et al. (1982: 50)	Ingram & Raven (1991: 123)	Ingram & Raven (1991: 123) Cogger (2000: 622)
Lorentz River Tree Snake *Dendrelaphis lorentzi*	Parker (1982: 9) Whitaker et al. (1982: 50)	-	-
Papuan Tree Snake *Dendrelaphis papuensis*	Parker (1982: 9) Whitaker et al. (1982: 50)	-	-
Macleay's Water Snake *Enhydris polylepis*	Parker (1982: 9) Whitaker et al. (1982: 50)	-	Ingram & Raven (1991: 124) Cogger (2000: 623)
White-bellied Mangrove Snake *Fordonia leucobalia*	Parker (1982: 9) Whitaker et al. (1982: 50)	-	Cogger (2000: 624)
Grey Mangrove Snake *Myron richardsoni*	Parker (1982: 9) Whitaker et al. (1982: 50)	-	-
Slaty-grey Snake *Stegonotus cucullatus*	Parker (1982: 9) Whitaker et al. (1982: 51)	Ingram & Raven (1991: 124)	Ingram & Raven (1991: 124) Cogger (2000: 627)
Snake *Stegonotus parvus*	Parker (1982: 9) Whitaker et al. (1982: 51) O'Shea (1996: 110)	Cogger (2000: 627)	-
Snake *Stegonotus diehli*	Parker (1982: 9) Whitaker et al. (1982: 51)	-	-
Northern Death Adder POISONOUS *Acanthophsis praelongus*	-	Ingram & Raven (1991: 125)	Ingram & Raven (1991: 125) Cogger (2000: 632)
Death Adder POISONOUS *Acanthophsis antarcticus*	Parker (1982: 10) Whitaker et al. (1982: 51)	-	-
Snake POISONOUS *Aspidomorphus muelleri*	Parker (1982: 10) Whitaker et al. (1982: 51)	-	-
Black Whip Snake POISONOUS *Demansia atra*	Parker (1982: 10) Whitaker et al. (1982: 51)	-	Cogger (2000: 640)
Black Whip Snake POISONOUS *Demansia papuensis*	O'Shea (1996: 154)	-	Ingram & Raven (1991: 127) Cogger (2000: 640)
Yellow-faced Whip Snake POISONOUS *Demansia psammophis*	-	-	Cogger (2000: 641)
Collared Whip Snake POISONOUS *Demansia torquata*	-	-	Cogger (2000: 641)
Whip Snake POISONOUS *Demansia vestigiata*	-	Ingram & Raven (1991: 127)	Ingram & Raven (1991: 127)
Small-eyed Snake POISONOUS *Micropechis ikaheka*	Parker (1982: 10) Whitaker et al. (1982: 51)	-	-
Orange-naped Snake *Furina ornata*	-	Ingram & Raven (1991: 129)	Ingram & Raven (1991: 129) Cogger (2000: 652)
Brown-headed Snake *Furina tristis*	O'Shea (1996: 140)	Ingram & Raven (1991: 129) Cogger (2000: 654)	Ingram & Raven (1991: 129) Cogger (2000: 652)
Taipan POISONOUS *Oxyuranus scutellatus*	Parker (1982: 10) Whitaker et al. (1982: 51)	-	Ingram & Raven (1991: 131) Cogger (2000: 662)
King Brown Snake POISONOUS *Pseudechis australis*	Parker (1982: 10) Whitaker et al. (1982: 51) O'Shea (1996: 140)	-	Cogger (2000: 664)
Papuan Black Snake POISONOUS *Pseudechis papuanus*	Parker (1982: 10) Whitaker et al. (1982: 51)	Wilson (1997) Cogger (2000: 771)	-
Western Brown Snake POISONOUS *Pseudonaja nuchalis*	-	-	Cogger (2000: 670)
Eastern Brown Snake POISONOUS *Pseudonaja textilis*	-	-	Cogger (2000: 670)
Carpentaria Whip Snake *Rhinoplocephalus boschmai*	O'Shea (1996: 139)	-	Cogger (2000: 677)
Eastern Small-eyed Snake POISONOUS *Rhinoplocephalus nigrescens*	-	-	Cogger (2000: 677)
Black-striped Snake *Rhinoplocephalus nigrostriatus*	-	-	Cogger (2000: 677)
Pink Snake *Rhinoplocephalus incredibilis*	O'Shea (1996: 139)	Cogger (2000: 680)	-
Half-girdled Snake *Simoselaps semifasciatus*	-	-	Cogger (2000: 688)
Curl Snake *Suta suta* POISONOUS	-	-	Cogger (2000: 693)
Bandy-bandy *Vermicella annulata*	-	-	Ingram & Raven (1991: 137) Cogger (2000: 696)

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Freshwater Snakes			
Freshwater Snake *Tropidonophis mairii*	O'Shea (1996: 206)	Ingram & Raven (1991: 125)	Ingram & Raven (1991: 125) Cogger (2000: 628)
Freshwater Snake *Tropidonophis multiscutellatus*	O'Shea (1996: 98)	-	-
Freshwater Snake *Tropidonophis doriae*	O'Shea (1996: 97)	-	-
Frogs			
Mawatta Frog *Hylophorbus rufescens*	Shea & Sadlier (1999: 10)	-	-
Frog *Crinia deserticola*	-	-	Ingram & Raven (1991: 33)
Frog *Crinia remota*	-	-	Ingram & Raven (1991: 34) Cogger (2000: 60)
Marbled Frog *Limnodynastes convexiusculus*	-	-	Ingram & Raven (1991: 35) Cogger (2000: 74)
Ornate Burrowing Frog *Limnodynastes ornatus*	-	Tyler (1972: 242) Ingram & Raven (1991: 36)	Ingram & Raven (1991: 36) Cogger (2000: 77)
Northern Banjo Frog *Limnodynastes terraereginae*	-	-	Ingram & Raven (1991: 37) Cogger (2000: 79)
Frog *Uperoleia mimula*	-	Ingram & Raven (1991: 43) Cogger (2000: 113)	Cogger (2000: 113)
Frog *Cyclorana brevipes*	-	-	Cogger (2000: 119)
Frog *Cyclorana novaehollandiae*	-	-	Ingram & Raven (1991: 19) Cogger (2000: 120)
Northern Dwarf Tree Frog *Litoria bicolor*	Menzies (1975: 30-1)	Tyler (1972: 242) Ingram & Raven (1991: 20)	Ingram & Raven (1991: 20) Cogger (2000: 129)
Green Tree Frog *Litoria caerulea*	Menzies (1975: 34-5)	Tyler (1972: 242) Ingram & Raven (1991: 20)	Ingram & Raven (1991: 20) Cogger (2000: 130)
Dwarf Rocket Frog *Litoria dorsalis*	Menzies (1975: 37)	-	Cogger (2000: 134)
Frog *Litoria genimaculata*	Menzies (1975: 38)	-	Cogger (2000: 140)
Dainty Green Tree Frog *Litoria gracilenta*	-	Tyler (1972: 242)	Ingram & Raven (1991: 22) Cogger (2000: 140)
Frog *Litoria inermis*	-	-	Ingram & Raven (1991: 23) Cogger (2000: 140)
Giant Tree Frog *Litoria infrafrenata*	Menzies (1975: 34-5)	Tyler (1972: 242)	Ingram & Raven (1991: 23) Cogger (2000: 140)
Rocket Frog *Litoria nasuta*	-	Tyler (1972: 242)	Ingram & Raven (1991: 25) Cogger (2000: 145)
Frog *Litoria nigrofrenata*	-	Tyler (1972: 242) Cogger (2000: 146-47)	Ingram & Raven (1991: 25) Cogger (2000: 147)
Frog *Litoria pallida*	-	-	Ingram & Raven (1991: 26) Cogger (2000: 149)
Frog *Litoria rothii*	Menzies (1975: 36)	-	Ingram & Raven (1991: 27) Cogger (2000: 153)
Desert Tree Frog *Litoria rubella*	Menzies (1975: 37)	Tyler (1972: 242)	Ingram & Raven (1991: 27) Cogger (2000: 153)
Frog *Litoria eucnemis*	-	-	Cogger (2000: 736)
Frog *Sphenophryne gracilipes*	-	-	Ingram & Raven (1991: 32) Cogger (2000: 166)
Wood Frog *Rana daemeli*	Menzies (1975: 25)	-	Ingram & Raven (1991: 44) Cogger (2000: 168)
Frog *Lechriodus melanopyga*	Menzies (1975: 21)	-	-

APPENDIX 2
Marine mammal and reptile fauna of the Torres Strait region

Fauna	Southern Papua (Trans-Fly)	Torres Strait	Cape York (N. of Shelburne Bay)
Sirenians			
Dugong *Dugong dugon*	Marsh (1989) Marsh et al. (2002: 115)	Marsh (1989) Marsh et al. (2002: 115)	Marsh (1989) Marsh et al. (2002: 115)
Baleen Whales			
Blue Whale *Balaenoptera musculus*	Tucker (1989: 14) Martin (1990: 68)	Tucker (1989: 14) Martin (1990: 68)	Tucker (1989: 14) Martin (1990: 68)
Fin Whale *Balaenoptera physalus*	Tucker (1989: 15) Martin (1990: 71)	Tucker (1989: 15) Martin (1990: 71)	Tucker (1989: 15) Martin (1990: 71)
Sei Whale *Balaenoptera borealis*	Tucker (1989: 16) Martin (1990: 74)	Tucker (1989: 16) Martin (1990: 74)	Tucker (1989: 16) Martin (1990: 74)
Bryde's Whale *Balaenoptera edeni*	Tucker (1989: 17) Martin (1990: 76)	Tucker (1989: 17) Martin (1990: 76)	Tucker (1989: 17) Martin (1990: 76)
Minke Whale *Balaenoptera acutorostrata*	Tucker (1989: 18) Martin (1990: 78)	Tucker (1989: 18) Martin (1990: 78)	Tucker (1989: 18) Martin (1990: 78)
Humpback Whale *Megaptera novaeangliae*	Tucker (1989: 19) Martin (1990: 80)	Tucker (1989: 19) Martin (1990: 80)	Tucker (1989: 19) Martin (1990: 80)
Toothed Whales			
Sperm Whale *Physeter macrocephalus*	Tucker (1989: 24)	Tucker (1989: 24)	Tucker (1989: 24)
Pygmy Sperm Whale *Kogia breviceps*	Tucker (1989: 25) Martin (1990: 90)	Tucker (1989: 25) Martin (1990: 90)	Tucker (1989: 25) Martin (1990: 90)
Killer Whale *Orcinus orca*	Tucker (1989: 26) Martin (1990: 118)	Tucker (1989: 26) Martin (1990: 118)	Tucker (1989: 26) Martin (1990: 118)
False Killer Whale *Pseudorca crassidens*	Tucker (1989: 27) Martin (1990: 122)	Tucker (1989: 27) Martin (1990: 122)	Tucker (1989: 27) Martin (1990: 122)
Pygmy Killer Whale *Feresa attenuata*	Tucker (1989: 28) Martin (1990: 124)	Tucker (1989: 28) Martin (1990: 124)	Tucker (1989: 28) Martin (1990: 124)
Short-finned Pilot Whale *Globicephala macrorhynchus*	Tucker (1989: 29) Martin (1990: 128)	Tucker (1989: 29) Martin (1990: 128)	Tucker (1989: 29) Martin (1990: 128)
Melon Headed Whale *Peponocephala electra*	Tucker (1989: 30) Martin (1990: 125)	Tucker (1989: 30) Martin (1990: 125)	Tucker (1989: 30) Martin (1990: 125)
Cuvier's Beaked Whale *Ziphius cavirostris*	Martin (1990: 105)	Martin (1990: 105)	Martin (1990: 105)
Dolphins			
Bottlenose Dolphin *Tursiops truncatus*	Tucker (1989: 31) Martin (1990: 136)	Tucker (1989: 31) Martin (1990: 136)	Tucker (1989: 31) Martin (1990: 136)
Common Dolphin *Delphinus delphis*	Tucker (1989: 32) Martin (1990: 146)	Tucker (1989: 32) Martin (1990: 146)	Tucker (1989: 32) Martin (1990: 146)
Indopacific Humpback Dolphin *Sousa chinensis*	Tucker (1989: 33) Martin (1990: 132)	Tucker (1989: 33) Martin (1990: 132)	Tucker (1989: 33) Martin (1990: 132)
Irrawaddy Dolphin *Orcaella brevirostris*	Tucker (1989: 34) Martin (1990: 99)	Tucker (1989: 34) Martin (1990: 99)	Tucker (1989: 34) Martin (1990: 99)
Spinner Dolphin *Stenella longirostris*	Tucker (1989: 35) Martin (1990: 142)	Tucker (1989: 35) Martin (1990: 142)	Tucker (1989: 35) Martin (1990: 142)
Right-toothed Dolphin *Stenella attenuata*	Martin (1990: 140)	Martin (1990: 140)	Martin (1990: 140)
Striped Dolphin *Stenella coeruleoalba*	Tucker (1989: 36) Martin (1990: 138)	Tucker (1989: 36) Martin (1990: 138)	Tucker (1989: 36) Martin (1990: 138)
Risso's Dolphin *Grampus griseus*	Tucker (1989: 37) Martin (1990: 166)	Tucker (1989: 37) Martin (1990: 166)	Tucker (1989: 37) Martin (1990: 166)
Right-toothed Dolphin *Steno bredanensis*	Martin (1990: 134)	Martin (1990: 134)	Martin (1990: 134)
Marine Turtles			
Loggerhead Turtle *Caretta caretta*	Johannes & MacFarlane (1991: 53)	Johannes & MacFarlane (1991: 53)	Cogger (2000: 178)
Green Turtle *Chelonia mydas*	Johannes & MacFarlane (1991: 53)	Johannes & MacFarlane (1991: 53)	Ingram & Raven (1991: 47) Cogger (2000: 180)
Hawksbill Turtle *Eretmochelys imbricata*	Johannes & MacFarlane (1991: 53)	Johannes & MacFarlane (1991: 53) Ingram & Raven (1991: 48)	Cogger (2000: 182)
Pacific Ridley Turtle *Lepidochelys olivacea*	Johannes & MacFarlane (1991: 53)	Johannes & MacFarlane (1991: 53)	Cogger (2000: 183)
Flatback Turtle *Natator depressus*	Johannes & MacFarlane (1991: 53)	Johannes & MacFarlane (1991: 53) Ingram & Raven (1991: 48)	Cogger (2000: 183)
Leatherback Turtle *Dermochelys coriacea*	Johannes & MacFarlane (1991: 53)	Johannes & MacFarlane (1991: 53)	Cogger (2000: 185)
Saltwater Crocodiles			
Saltwater Crocodile *Crocodylus prosus*	Johannes & MacFarlane (1991: 162)	Johannes & MacFarlane (1991: 162)	Ingram & Raven (1991: 47) Cogger (2000: 175)

APPENDIX 3
Terrestrial and marine foods eaten by Torres Strait Islanders

Information on contemporary terrestrial and marine animal hunting (e.g., mammals, birds, reptiles and amphibians) is mostly from Johannes & MacFarlane (1991) where it is stated explicitly that species are either 'eaten' and/or caught. Information on historical hunting is based primarily on Haddon (1912) and Ray (1907). Archaeological information on hunting is restricted primarily to faunal data from St Pauls Middens 2 & 4 on Mua Island (Harris et al., 1985).
Information on contemporary fishing is mostly from Johannes & MacFarlane (1991: 211-226) and Harris et al. (1995: Appendix 10) where it is stated explicitly that species are either 'eaten' and/or caught. Information on historical fishing is based on specific references to fish caught in Haddon (1912) and the list of fish names in Ray (1907). Following Ghaleb (1990, 1998), we agree that it is likely that most, if not all, of the fish species mentioned by Ray (1907) were sources of food. In contrast to other animals listed by Ray (1907) such as birds, fish need to be caught from the sea (presumably for food) to be observed and classified. Allen (1997), FishBase (2002), Grant (1995), McCulloch (1929-30), Munro (1967) and Stead (1906) were used to update Ray's (1907) taxonomic classifications. Martin Gommon (Melbourne Museum) also updated some fish names. Archaeological information on fishing is available only for the Western Group (i.e., Gumu Midden on Mabuiag – Ghaleb 1990, 1998; Tigershark Rockshelter on Pulu Islet – this paper; and St Pauls Middens 2 & 4 on Mua Island – Harris et al., 1985).
Information on contemporary consumption of shellfish, crustaceans and other molluscs is based on anthropological work with the Meriam in the Murray Island Group (Bird & Bliege Bird, 1997; Bird et al., 2000) and the more general survey data of Harris et al. (1995: appendix 10) and Johannes & MacFarlane (1991: 211-226) – again, where it is stated explicitly that the species is 'eaten'. In contrast to fishing, shell names listed by Ray (1907) were not automatically listed as foods as many may have been collected as raw materials for material culture. Names from Ray (1907) are only used where he states explicitly that the shell species was eaten and/or where other evidence indicates the species was consumed. Archaeological information on shellfish and crustacean consumption is restricted to detailed lists available for the Top Western Group (i.e., Woam Midden on Saibai – Barham & Harris, 1985), Western Group (i.e., Gumu Midden on Mabuiag – Ghaleb 1990; and St Pauls Middens 2 & 4 on Mua Island – Harris et al., 1985), Central Group (midden on Naghir – Rowland, 1985) and Eastern Group (Murray Island middens – Carter et al., this volume). All identified shellfish species in middens are seen as potential food sources. The only exception that is not listed is the Nautilus shell (*Nautilus pompilius*). It is a deep-sea species and is only ever found as an empty shell on beaches.
Species names in brackets represent recently obsolete nomenclature. Islander (language) names listed only where available (spellings as in referenced source).

Food	Islander name(s) W = Western Language E = Eastern Language (where available)	References to consumption		
		Archaeological	Historical	Contemporary
Terrestrial Animals				
MACROPODIDAE (Wallabies, Kangaroos, etc) Agile Wallaby *Macropus agilis*	-	Harris et al. (1985: 16) David et al. (in press)	-	-
?Common Wallaroo ?*Macropus robustus*	-	Harris et al. (1985: 16)	-	-
TACHYGLOSSIDAE (Echindas) Short-beaked Echidna *Tachyglossus aculeatus*	*Kuik,* W.	-	-	John Manas, Mua Island (pers. comm., 2002)
PERAMELIDAE (Bandicoots)	-	-	-	John Manas, Mua Island (pers. comm., 2002)
SUIDAE (Pigs) *Sus scrofa*	*Burum*, W. *Borom*, E.	-	Ray (1907: 93, 137) Haddon (1912: 137; 1935: 302)	Singe (1979: 158) Bliege Bird et al. (1995: 5-6)
PTEROPODIDAE (Flying Foxes) Flying Fox *Pteropus* sp.	*Sapur*, W. *Saper*, E.	-	Ray (1907: 121, 159) Haddon (1912: 137)	John Manas, Mua Island (pers. comm., 2002)
Lizard	-	McNiven (2002)	-	-
Goanna *Varanus* sp.	*Karum(a)/Ngaru*, W. *Karom*, E.	Rowland (1985: 129)	Ray (1907: 104, 115, 147) Haddon (1912: 138)	Bliege Bird et al. (1995: 5)
Snakes	*Tabu*, W. *Tabu/Tabo/Waruwa*, E.	-	Ray (1907: 122, 161, 164) Haddon (1912: 138; 1935: 175, 303)	-
Frogs	*Kang-gu*/*Katak*, W. *Pereg/Goai*, E.	-	Ray (1907: 104, 157) Haddon (1912: 139; 1935: 303)	-
Longicorn beetle larvae & pupae	-	-	Haddon (1912: 139)	-
Locust	-	-	Haddon (1912: 139)	-

Food	Islander name(s) W = Western Language E = Eastern Language (where available)	References to consumption		
		Archaeological	Historical	Contemporary
Birds				
Bird	-	McNiven (2002)	-	-
Torres Strait Pigeon *Ducula spilorrhoa*	*Gainau/Goinau*, W. *Daumer/DeomerGaino*, E.	-	Ray (1907: 96, 138, 142) Haddon (1912: 138)	Johannes & MacFarlane (1991: 127) Bliege Bird et al. (1995: 5)
Orange-footed Scrubfowl eggs *Megapodius reinwardt*	*Surka*, W. *Surka/Moroko*, E.	-	Ray (1907: 122, 154, 160) Haddon (1912: 138)	Limpus et al. (1989: 519)
Caspian Tern *Hydroprone caspia*	*Baugai,* W.	-	-	Johannes & MacFarlane (1991: 212)
Sooty Tern (+ eggs) *Sterna fuscata*	-	-	-	Johannes & MacFarlane (1991: 103)
Bridled Tern *Sterna anaethetus*	*Kangan*, W.	-	-	Johannes & MacFarlane (1991: 214)
Crested Tern (+ eggs) *Sterna bergii*	*Sera*, W. *Sirar/Serar*, E.	-	Ray (1907: 160) Haddon (1912: 154; 1935: 150)	Bliege Bird et al. (1995: 5, 11)
Lesser Crested Tern *Sterna bengalensis*	Sara/Sarar, W. *Nor Serar*, E.	-	-	Johannes & MacFarlane (1991: 217, 224)
Australian Pelican *Pelecanus conspicillatus*	*Away/Auwi,* W. *Gawei*, E.	-	-	Johannes & MacFarlane (1991: 211, 222)
White Ibis *Threskiornis molucca*	*Bukare,* W.	-	-	Johannes & MacFarlane (1991: 212)
Great Egret *Egretta alba*	*Tapor,* W.	-	-	Johannes & MacFarlane (1991: 174)
Brown Booby (+ eggs) *Sula leucogaster*	*Dabai,* W. *Beugar/Beuger*, E.	-	Haddon (1935: 150) Johannes & MacFarlane (1991: 221)	Johannes & MacFarlane (1991: 103, 212, 221) Bliege Bird et al. (1995: 11)
Black Noddy (+ eggs) *Anous minutus*	*Dua,* W. *Dikri/Deo*, E.	-	-	Johannes & MacFarlane (1991: 103, 212, 221)
Common Noddy (+ eggs) *Anous stolidus*	*Deo*, E.	-	-	Johannes & MacFarlane (1991: 102, 107, 221)
Pied Heron *Ardes picata*	*Posem*, E.	-	-	Johannes & MacFarlane (1991: 98-9)
Rufous Night Heron *Nycticorax caledonicus*	*Cow*, E.	-	-	Johannes & MacFarlane (1991: 98-9
Striated Heron *Butorides striatus*	*Gaut/Gauti,* W.	-	-	Johannes & MacFarlane (1991: 213)
Curlews	*Kalu,* W.	-	-	Johannes & MacFarlane (1991: 214)
Whimbrels *Numerius* spp.	*Kalu,* W.	-	-	Johannes & MacFarlane (1991: 214)
Masked Plover *Vanellus miles*	*Kerker,* W.	-	Johannes & MacFarlane (1991: 214)	-
Ducks	*Tat,* W.	-	-	Johannes & MacFarlane (1991: 218)
Great Frigatebird *Fregata minor*	*Waumer/Womar,*, W.	-	-	Johannes & MacFarlane (1991: 98-9, 219)
Least Frigatebird *Fregata ariel*	*Mimi/Wada Wada,* E.	-	-	Johannes & MacFarlane (1991: 98-9)
Marine Mammals & Reptiles				
SIRENIA (Dugongs) Dugong *Dugong dugon*	*Dangal*, W. *Deger/Dager*, E.	Harris et al. (1985: 16)	Ray (1907: 94, 137-38) Haddon (1912: 137; 1935: 351-55)	Johannes & MacFarlane (1991: 23-51)
CETACEA (Whales)	*Matu*, W. *Galbol*, E.	-	Ray (1907: 111, 142) (Cygnet Repu, Mabuiag, pers. comm., 2001)	-
DELPHINIDAE (Porpoises)	*Bidu/Bid*, W. *Bid/Galbol*, E.	-	Ray (1907: 92, 136, 142) Haddon (1912: 137)	-
CHELONIDAE Sea Turtles	-	Carter et al. (this volume)	Haddon (1912: 138; 1935: 192)	Johannes & MacFarlane (1991: 53-71)
Sea Turtles' eggs	*Wer sor/Wersor*, E.	-	Ray (1907: 164) Haddon (1912: 138; 1935: 192)	Bliege Bird et al. (1995: 6)

Food	Islander name(s) W = Western Language E = Eastern Language (where available)	References to consumption		
		Archaeological	Historical	Contemporary
Green Turtle (+ eggs) *Chelonia mydas*	*Waru/Gamu*, W. *Waru/Siruar/Nam/Uris/ Nam*, E.	Harris et al. (1985: 16)	Ray (1907: 129, 154, 160, 163) Haddon (1912: 138)	Johannes & MacFarlane (1991: 53-4, 70, 219, 224)
Hawksbill Turtle (+ eggs) *Eretmochelys imbricata*	*Wanawa/Unewa*, W. *KesurBang/Kesur*, E.	-	Ray (1907: 129, 148) Haddon (1908: 227; 1912: 138)	Johannes & MacFarlane (1991: 55, 69-70, 219-20, 223)
Flatback Turtle (+ eggs) *Natator depressus*	*Gapu Waru/Wume*, W.	-	Moore (1979: 226)	Johannes & MacFarlane (1991: 58, 70, 220) Limpus et al. (1989)
Loggerhead Turtle *Caretta caretta*	*Maiwa/Urza/Wanawa*, W. *Uris*, E.	-	Ray (1907: 129) Haddon (1935)	Johannes & MacFarlane (1991: 59, 215, 219, 225)
CROCODYLIDAE (Crocodiles) Saltwater Crocodile *Crocodylus porosus*	*Kodal/Kadal/Ibara*, W. *Kodal/Kadak*, E	-	Ray (1907: 101, 105, 148 Haddon (1935: 369) Johannes & MacFarlane (1991: 214)	-
Sharks				
HEMISCYLLIIDA (Longtail Carpet Sharks) Cat Shark *Chiloscyllium*/ *Hemiscyllium* spp.	*Itar*, W. *Im*, E.	-	Ray (1907: 102, 145)	-
Epaulette Shark *Hemiscyllium ocellatum*	*Itar*, W. *Kamusan*, E.	-	Johannes & MacFarlane (1991: 214, 222)	Bird et al. (2000: 33)
BRACHAELURIDA (Blind Sharks) Blind Shark *Brachaelurus colcloughi*	*Kamusar*, W. *Ea*, E.	-	Johannes & MacFarlane (1991: 221)	Johannes & MacFarlane (1991: 214)
CARCHARHINIDAE (Whaler Sharks)		This paper	-	-
Spot-tail Shark *Carcharhinus sorrah*	-	-	-	Harris et al. (1995: 12)
Blacktip Shark *Carcharhinus limbatus*	-	-	-	Harris et al. (1995: 12)
Blackspot Shark *Carcharhinus sealei*	-	-	-	Harris et al. (1995: 12)
Blacktip Reef Shark *Carcharhinus melanopterus*	*Kus Kus*, E. *Tup Beizam*, E.	This paper	-	Harris et al. (1995: 12)
Graceful Shark *Carcharhinus amblyrhynchoides*	*Tup Beizam*, E.	This paper	-	-
Australian Blacktip Shark *Carcharhinus tilstoni*	-	This paper	-	-
Silky Shark *Carcharhinus* cf. *falciformis*	-	This paper	-	-
Lemon Shark *Negaprion acutidens*	-	This paper	-	-
Tiger Shark *Galeocerdo cuvier*	-	This paper	-	Harris et al. (1995: 12)
SPHYRNIDA (Hammerhead Shark)	*Kursi*, W. *Irwapap*, W.	This paper	Ray (1907: 107, 145)	-
ORECTOLOBIDAE (Wobbegongs)	*Im/Ime*, W.	This paper	Ray (1907: 102) Haddon (1912: 139)	-
Banded Wobbegong *Orectolobus ornatus*	*Kamusar*, W. *Im*, E.	-	-	Johannes & MacFarlane (1991: 214, 222)
ODONTASPIDIDAE (Grey Nurse Sharks) Grey Nurse Shark *Carcharias taurus*	-	This paper	-	-
Rays				
DASYATIDAE (Stingrays)	*Gwiar/Guier/Kwier/* Taimer/Tapi, W. *Goar/Gwar/Tapim*, E.	Ghaleb (1998) This paper	Ray (1907: 100, 108, 123, 44, 161)	Harris et al. (1995: 12)
Butterfly Ray *Gymnura* sp.	*Pukai*, W.	-	Ray (1907: 119)	-

Food	Islander name(s) W = Western Language E = Eastern Language (where available)	References to consumption		
		Archaeological	Historical	Contemporary
Blue-spotted Stingray *Dasyatis kuhlii*	-	-	-	Johannes & MacFarlane (1991: 126) Harris et al. (1995: 12) Bird et al. (2000: 35)
Painted Maskray *Dasyatis leylandi*	-	-	-	Harris et al. (1995: 12)
Reticulate Whipray *Himantura uarnak*	*Naurar/Pelkab*, W. *Guar*, E.	-	-	Johannes & MacFarlane (1991: 216-17, 222)
Cowtail Whipray *Himantura sephen*	*Guer/Tulup*, W. *Tupmur*, E.	-	-	Johannes & MacFarlane (1991: 213, 218, 225)
Blue-Spotted Fantail Ray *Taeniura lymna*	*Aun*, W. *At*, E.	-	-	Johannes & MacFarlane (1991: 211, 220) Harris et al. (1995: 12)
Porcupine Ray *Urogymnus asperrimus*	*Tapim(u)/Tupamur/ Tupmul/Tupmur*, W.	This paper	Ray (1907: 123)	Johannes & MacFarlane (1991: 218)
PRISTIDAE (Sawfishes) Sawfish *Pristis* sp.	*Apad/Brug/Waiitutu/ Gabara*, W. *Bologor*, E.	-	Ray (1907: 90, 93, 128, 137)	Johannes & MacFarlane (1991: 213)
MYLIOBATIDIDAE (Eagle Rays) White-spotted Eagle Ray *Aetobatus narinari*	*Pouka/Pukay/Purkai*, W. *Kataka/Pabrisor/ Peibri Sor/Mekmek*, E *Diamon pis* (Creole)	-	Johannes & MacFarlane (1991: 224)	Johannes & MacFarlane (1991: 212, 217, 222) Bliege Bird et al. (1995: 6) Harris et al. (1995: 12)
RHINOBATIDAE (Shovelnose Ray)	*Kaigas/Waitut*, W. *Wer pirupiru*, E.	-	Ray (1907: 164) Haddon (1912: 139)	Johannes & MacFarlane (1991: 214, 219) Harris et al. (1995: 12)
Giant Shovelnose Ray *Rhinobatos typus*	*Kaigas*, W.	-	Ray (1907: 103)	-
Whitespotted Shovelnose Ray *Rhynchobatus djiddensis*	*Kaigas*, W. *Bopor/Irir/Wer pirupiru*, E.	-	-	Johannes & MacFarlane (1991: 126) Harris et al. (1995: 12) Bird et al. (2000: 35)
UROLOPHIDAE (Stingaree)	-	-	-	Harris et al. (1995: 12)
Marine Fishes				
ELOPIDAE (Herring) Torres Strait Herring *Elops hawaiensis*	*Kube*, W.	-	-	Johannes & MacFarlane (1991: 215)
MEGALOPIDAE (Herring) Oxeye Herring / Tarpon *Megalops cyprinoides*	*Iam/Yamo/Yamu*, W.	-	Ray (1907: 100)	Johannes & MacFarlane (1991: 220) Harris et al. (1995: 12)
ALBULIDAE (Bonefish) *Albula vulpes*	-	-	-	Harris et al. (1995: 12)
MURAENIDAE (Moray eels) *Gymnothorax s*pp.	-	-	-	Harris et al. (1995: 13)
CLUPEIDAE (Pilchards)	-	-	-	Harris et al. (1995: 13)
Murray Island Sardine *Herklotsichthys quadrimaculatus*	*Tup/Areare/Kos/ Merdud/Areare/Ariari*, E.	-	Haddon (1912: 139, 155)	Johannes & MacFarlane (1991: 97, 220) Bliege Bird et al. (1995: 6-7) Gladstone (1995: 55) Harris et al. (1992: 11) Harris et al. (1995: 13)
Spotted Herring *Herklotsichthys koningsbergi*	-	-	-	Harris et al. (1995: 13)
Ditchelee Herring *Pelona ditchela*	-	-	-	Harris et al. (1995: 13)
Tembang *Sardinella gibbosa*	-	-	-	Harris et al. (1995: 13)
Bony Bream *Nematolosa come*	-	-	-	Harris et al. (1995: 13)
ENGRAULIDAE (Anchovy) *Stolephorus indicus*	-	-	-	Harris et al. (1995: 13)

Food	Islander name(s) W = Western Language E = Eastern Language (where available)	References to consumption		
		Archaeological	Historical	Contemporary
CHIROCENTRIDAE (Wolf Herring) *Chirocentrus dorab*	-	-	-	Harris et al. (1995: 13)
ARIIDAE (Catfish)	-	-	-	Harris et al. (1995: 13)
Giant Salmon Catfish *Arius thallassinus*	-	-	-	Harris et al. (1995: 13)
Blue Catfish *Arius graefei*	-	-	-	Harris et al. (1995: 13)
SYNODONTIDAE (Lizardfish) Variegated Lizardfish *Synodus variegatus*	*Bezar*, E.	-	-	Bird et al. (2000: 33)
CHANIDAE (Milkfish) *Chanos chanos*	*Saur/Kube*, W.	-	Ray (1907: 121)	Johannes & MacFarlane (1991: 215) Harris et al. (1995: 13)
SILURIDAE (Catfish)	*Buk/Waroi/Bug*, W. *Soroi*, E.	-	Ray (1907: 93, 129, 160)	Johannes & MacFarlane (1991: 212)
PLOTOSIDAE (Eel-tailed Catfishes)	*Dagai/Wakiskas*, W.	-	-	Johannes & MacFarlane (1991: 212, 219) Harris et al. (1995: 13)
Striped Catfish Eel *Plotosus anguillaris*	*Wals/Waroi*, W. *Warwai*, E.	-	-	Johannes & MacFarlane (1991: 219, 226)
Catfish Eel *Plotosus lineatus*	-	-	-	Harris et al. (1995: 13)
Longtailed Catfish Eel *Euristhmus lepturus*	-	-	-	Harris et al. (1995: 13)
BATRACHOIDIDAE (Frogfish) *Halophyrne ocellatus*	-	-	-	Harris et al. (1995: 13)
BELONIDAE (Long-toms) *Tylosaurus* spp.	*Bayag*, W. *Eg/Paris*, E.	-	-	Johannes & MacFarlane (1991: 212, 221, 224) Harris et al. (1995: 13)
Crocodilian Long-tom *Tylosurus crocodilus*	*Paris*, E.	-	-	Bliege Bird et al. (1995: 6) Harris et al. (1995: 13)
Long-tom *Strongylura leiura*	-	-	-	Harris et al. (1995: 13)
HEMIRAMPHIDAE (Garfish)	*Zab*, E.	-	-	Johannes & MacFarlane (1991: 226) Harris et al. (1995: 13)
Black-Barred Garfish *Hemiramphus far*	*Kubimaidal-pitai/ Pitai/Zaber/ Tatal Zaber*, W. *Paris/Warib/Zub*, E.	-	Ray (1907: 106, 130, 157) Haddon (1912: 158)	Johannes & MacFarlane (1991: 102, 218, 220, 226) Harris et al. (1995: 13)
Garfish *Hemiramphus affinis*	-	-	-	Harris et al. (1995: 13)
Shortnosed Garfish *Hemiramphus quoyi*	-	-	-	Harris et al. (1995: 13)
Three-by-Two Garfish *Hemiramphus robustus*	-	-	-	Harris et al. (1995: 13)
Dussumier's Garfish *Hyporhamphus dussumieri*	*Zab*, E.	-	-	Bird et al. (2000: 35)
Snub-nosed Garfish *Arramphus sclerolepis*	*Medud/Zaber*, W.	-	-	Johannes & MacFarlane (1991: 220) Harris et al. (1995: 13)
EXOCOETIDAE (Flying-fish)	*Pokan-wapi/Peukal Wap/ Puwi/Sigae*, W. *Se/See*, E.	-	Ray (1907: 118, 120, 159) Johannes & MacFarlane (1991: 217)	-
ATHERINIDAE (Hardyheads)	-	-	-	Harris et al. (1995: 13)
Hardyhead *Atherinomorus endrachtensis*	-	-	-	Harris et al. (1995: 13)
Hardyhead Silverside *Atherinomorus lacunosus*	*Kos*, E.	-	-	Bird et al. (2000: 33)

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		Archaeological	Historical	Contemporary
Common Hardyhead *Atherinomorus ogilbyi*	*Tup/Thup/Was*, W. *Tup/Kos*, E	-	Ray (1907: 162) Haddon (1912: 139, 155)	Johannes & MacFarlane (1991: 97, 218-19) Bliege Bird et al. (1995: 6-7) Harris et al. (1995: 13)
FISTULARIIDAE (Flutemouths) Deepsea Flutemouth *Fistularia petimba*	*Dunur*, W.	-	Ray (1907: 96)	-
SYNGNATHINAE (Pipefish & Seahorses) Double-Ended Pipefish *Syngnathoides biaculeatus*	*Damu-kodal/ Dam Kodal,* W. *Masaibri*, E.	-	Ray (1907: 94, 152, 159)	-
CENTRISCIDAE (Razorfish) Grooved Razorfish *Centriscus scutatus*	*Dam Kodal*, W.	-	Ray (1907: 105)	-
SYNANCEIIDAE (Stonefish, etc) Reef Stonefish *Synanceia verrucosa*	*Gib*, E.	-	Johannes & MacFarlane (1991: 222)	-
Stonefishes *Synanceia* spp.	*Urzi/Uzi*, W.	-	Johannes & MacFarlane (1991: 219)	-
Estaurine Stonefish *Synanceia horrida*	*Uzi*, W.	-	Ray (1907: 127) Haddon (1912: 139)	-
PLATYCEPHALIDAE (Flatheads)	*Tubu*, W.	-	-	Johannes & MacFarlane (1991: 218) Harris et al. (1995: 14)
Flathead *Cymbacephalus stagier*	*Tubu*, W.	-	Ray (1907: 125)	-
CENTRISCIDAE (Spinefishes) Longspine Spinefish *Macroramphosus scolopax*	*Kegor*, E.	-	Ray (1907: 147)	-
LABRIDAE (Wrasse, Tusk-fish etc)	-	-	-	Harris et al. (1995: 17)
Wrasse or Tusk-fish *Choerodon* sp.	*Kukupay*, W.	Harris et al. (1985: 16) Rowland (1985: 129) Ghaleb (1998)	-	-
Venus Tusk-fish *Choerodon venustus*	*Dangal wap/Iril/Una*, W. *Workep*, E.	-	-	Johannes & MacFarlane (1991: 219, 226)
Blue Tusk-fish *Choerodon cyanodus*	*Bila/Billa*, W. *Bila/Irir*, E.	-	Ray (1907: 92)	Johannes & MacFarlane (1991: 212, 221-22) Harris et al. (1992: 11) Gladstone (1995: 55) Harris et al. (1995: 17)
Purple Tusk-fish *Choerodon cephalotes*	*Keaupai*, E.	-	Ray (1907: 147)	Harris et al. (1995: 17)
Black-spotted Tusk-fish *Choerodon schoenleinii*	*Dangal wap/Una/ Wanakuboy*, W. *Irir/Kar/Zialar*, E. *Bluepis* (Creole)	-	-	Johannes & MacFarlane (1991: 127, 212, 219, 222, 226) Harris et al. (1995: 17)
Sharp-nosed Wrasse *Cheilio inermis*	*Berar*, E.	-	-	Bird et al. (2000: 33)
Yellow-Dotted Maori Wrasse *Cheilinus chlororus*	*Nedu Nedu*, E.	-	-	Johannes & MacFarlane (1991: 224)
Tripletail Maori Wrasse *Cheilinus trilobatus*	*Nedu Nedu*, E.	-	-	Johannes & MacFarlane (1991: 127, 224) Harris et al. (1995: 17)
Double-headed Maori Wrasse *Cheilinus undulatus*	*Ab*, E.	-	-	Bird et al. (2000: 33)
Violet-lined Maori Wrasse *Cheilinus diagrammus*		-	-	Johannes & MacFarlane (1991: 127)
Scarlet-Breasted Maori Wrasse *Cheilinus fasciatus*	*Parama*, W.	-	Ray (1907: 117)	Johannes & MacFarlane (1991: 127)
Thicklipped Wrasse *Hemigymnus melapterus*	*Kokapper*, E.	-	-	Johannes & MacFarlane (1991: 223)

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Rainbowfish *Halichoeres* sp.	-	-	-	Johannes & MacFarlane (1991: 127)
Nebulous Wrasse *Halichoeres nebulosus*	-	-	-	Bird et al. (2000: 34)
Zigzag Wrasse *Halichoeres scapularis*	-	-	-	Bird et al. (2000: 34)
Threespot Wrasse *Halichoeres trimaculatus*	*Zazer-parpar neur*, E.	-	-	Bird et al. (2000: 35)
Six-banded Wrasse *Thalassoma hardwickei*	*Parpar neur*, E.	-	-	Bird et al. (2000: 34)
Wrasse *Thalassoma* sp.	*Poamal birubiru*, W. *Esekaup*, E.	-	Ray (1907: 118, 141)	-
Moon Wrasse *Thalassoma lunare*	*Papaneaut*, E.	-	Ray (1907: 157)	Harris et al. (1995: 17)
Cleanerfish *Labroides* sp.	*Pupu*, E.	-	Ray (1907: 158)	-
Cleanerfish *Labroides* sp.	*Weswes lar*, E.	-	Ray (1907: 165)	-
SCARIDAE (Parrotfish)	-	-	-	Harris et al. (1995: 17)
Parrotfish *Scarus* sp.	*Kal/Kala/Urdum*, W. *Urdum*, E.	Harris et al. (1985: 16) Rowland (1985: 129) Ghaleb (1998) This paper	-	Johannes & MacFarlane (1991: 127, 214, 219) Bird et al. (2000: 34)
Blue-barred Parrotfish *Scarus ghobban*	*Urdum/Udhum*, W. *Urdum*, E.	-	-	Johannes & MacFarlane (1991: 127, 219, 222, 225) Harris et al. (1995: 17)
Violet-lined Parrotfish *Scarus globiceps*	*Kar*, E.	-	-	-
Parrotfish *Scarus cameleon*	-	-	-	Harris et al. (1995: 17)
Steephead Parrotfish *Scarus microhinos*	-	-	-	Bird et al. (2000: 33)
Parrotfish *Scarus sordidus*	*Urdum/Udhum*, W.	-	-	Johannes & MacFarlane (1991: 219)
Six-banded Parrotfish *Scarus sexvittatus/frenatus*	*Urdum/Udhum*, W.	-	-	Johannes & MacFarlane (1991: 219) Harris et al. (1995: 17)
Surf Parrotfish *Scarus rivulatus*	*Kal/Kala*, W. *Kalu* (female), W. *Udum/Wer kep* (male), W. *Kar*, E.	-	Ray (1907: 103, 126, 164)	Johannes & MacFarlane (1991: 214, 219) Bliege Bird et al. (1995: 6) Harris et al. (1995: 17)
Parrotfish *Scarus dimidiatus*	-	-	-	Harris et al. (1995: 17)
LETHRINIDAE (Sweetlip)	-	-	-	Harris et al. (1995: 16)
Sweetlip *Lethrinius* spp.	*Gwalar/Gualar*, E.	Harris et al. (1985: 16) Ghaleb (1998)	-	Bliege Bird et al. (1995: 7)
Yellow-tailed Emperor *Lethrinus atkinsoni*	*Kobi*, E.	-	-	Bird et al. (2000: 33)
Long-nosed Emperor *Lethrinius olivaceus*	*Poad/Poadi*, W.	-	Haddon (1912: 157) Ray (1907: 118)	-
Yellow Sweetlip *Lethrinus nebulosus*	*Paiad/Pouad*, W.	-	-	Johannes & MacFarlane (1991: 126) Harris et al. (1995: 16)
Pink-eared Sweetlip *Lethrinus lentjan*	*Kobi*, E.	-	-	Johannes & MacFarlane (1991: 126) Bliege Bird et al. (1995: 7) Harris et al. (1995: 16)
Grass Sweetlip *Lethrinus laticaudis*	*Paiad/Pouad/Poeyad*, W.	-	-	Harris et al. (1992: 11) Gladstone (1995: 55) Harris et al. (1995: 16)
Sweetlip *Lethrinus fraenatus*	-	-	-	Johannes & MacFarlane (1991: 126)
Yellow-tailed Sweetlip *Lethrinus mahsena*	-	-	-	Johannes & MacFarlane (1991: 126)
Yellow-striped Sweetlip *Lethrinus ornatus*	-	-	-	Johannes & MacFarlane (1991: 126) Harris et al. (1995: 16)

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Long-Nosed Sweetlip *Lethrinus miniatus*	-	-	-	Harris et al. (1995: 16)
Sweetlip *Lethrinus microdon*	-	-	-	Harris et al. (1995: 16)
Sweetlip *Lethrinus erythropterus*	-	-	-	Harris et al. (1995: 16)
Orange-Striped Sweetlip *Lethrinus ramak*	-	-	-	Harris et al. (1995: 16)
LUTJANIDAE (Snaper, Perch)	-	-	-	Harris et al. (1995: 15)
Sea Perch *Lutjanus* sp.	-	Ghaleb (1998)	-	-
Striped Sea-Perch *Lutjanus vitta*	-	-	-	Harris et al. (1995: 15)
Striped Sea-Perch *Lutjanus vitta*	-	-	-	Harris et al. (1995: 15)
Black Spot Sea-Perch *Lutjanus fulviflamma*	*Teneb*, E.	-	-	Harris et al. (1995: 15) Bird et al. (2000: 34)
Stripey *Lutjanus carponotatus*	*Teunab/Teur/Thanab*, W. *Teur*, E.	-	-	Johannes & MacFarlane (1991: 126, 218, 225) Gladstone (1995: 55) Harris et al. (1995: 15)
Red Bass *Lutjanus bohar*	*Pakor*, E.	-	-	Johannes & MacFarlane (1991: 224) Bliege Bird et al. (1995: 7)
Blue-Striped Sea-Perch *Lutjanus kasmira*	*Koikumak*, W. *Maizeb/Kopuli*, E.	-	-	Johannes & MacFarlane (1991: 215, 223) Bird et al. (2000: 33)
Red Emperor *Lutjanus sebae*	*Parama*, W. *Ubar*, E.	-	-	Johannes & MacFarlane (1991: 126, 217, 225) Harris et al. (1995: 15)
Large-Mouth Sea-Perch *Lutjanus malabaricus*	*Parama*, W. *Ubar*, E.	-	-	Johannes & MacFarlane (1991: 217, 225) Harris et al. (1995: 15)
Five-lined Sea-Perch *Lutjanus quinquelineatus*	*Kopuli*, E.	-	-	Bird et al. (2000: 33)
Moses Perch *Lutjanus russelli*	*Tanik/Thanik*, W. *Teneb*, E.	-	-	Johannes & MacFarlane (1991: 126, 218, 225) Bliege Bird et al. (1995: 7) Harris et al. (1995: 15)
Green Job-Fish *Aprion virescens*	*Mad/Muris*, W.	-	-	Johannes & MacFarlane (1991: 215-16)
Chinaman-Fish *Symphorus nematophorus*	*Patu*, E.	-	Johannes & MacFarlane (1991: 224)	-
SERRANIDAE (Coral Trout, Cod, Gropers)	-	-	-	Harris et al. (1995: 13)
Coral Trout *Plectropomus* spp.	*Witi/Withi*, W. *Mamamlar*, E.	Ghaleb (1998)	-	Johannes & MacFarlane (1991: 219, 223) Bliege Bird et al. (1995: 7)
Coral Trout *Plectropomus leopardus*	*Witi/Withi*, W. *Mamamlar/Koit*, E.	-	-	Johannes & MacFarlane (1991: 126, 219, 223) Bliege Bird et al. (1995: 7) Harris et al. (1995: 14)
Tiger Trout *Plectropomus laevis*	*Neud*, E.	-	-	Johannes & MacFarlane (1991: 224)
Trout *Plectropomus areolatus*	-	-	-	Harris et al. (1995: 14)
Bar-cheeked Trout *Plectropomus maculatus*	-	-	-	Johannes & MacFarlane (1991: 126) Harris et al. (1995: 14)
Trout *Plectropomus pessuliferus*	-	-	-	Harris et al. (1995: 14)
Cod *Epinephelus* spp.	*Kurup*, W. *Garom/Siar*, E.	Ghaleb (1998)	Haddon (1912: 158)	Johannes & MacFarlane (1991: 126, 215, 221, 224)
Malabar Groper *Epinephelus malabaricus*	*Kurup (Krup)*, W.	Ghaleb (1998)	Ray (1907: 107)	-

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Blacktip Cod *Epinephelus fasciatus*	*Pelith*, W. *Pilet*, E. *Redpis* (Creole)	-	-	Johannes & MacFarlane (1991: 126, 224) Harris et al. (1995: 14)
Long-finned Rockcod *Epinephelus quoyanus*	*Garom*, E.	-	Haddon (1912: 158)	Bliege Bird et al. (1995: 7) Harris et al. (1995: 14)
Birdwire Cod *Epinephelus merra*	*Takan*, W. *Garom*, E.	-	Haddon (1912: 158)	Johannes & MacFarlane (1991: 126, 218) Bliege Bird et al. (1995: 7) Harris et al. (1995: 14)
Rock Cod *Epinephelus megachir*	*Takan*, W.	-	-	Johannes & MacFarlane (1991: 126, 218)
Morgan's Cod *Epinephelus malabaricus*	-	-	-	Johannes & MacFarlane (1991: 126)
Speckled-finned Rockcod *Epinephelus summana*	-	-	-	Johannes & MacFarlane (1991: 126)
Groper *Epinephelus lanceolatus*	*Win*, W. *Iz/Tekei*, E.	-	Ray (1907: 130)	McNiven (pers. obs., Tudu, 1999) Bird et al. (2000: 34)
Reef Cod *Epinephelus tauvina*	-	-	-	Harris et al. (1995: 13)
Flowery Cod *Epinephelus fuscoguttatus*	-	-	-	Harris et al. (1995: 13)
Orange-Spotted Cod *Epinephelus coioides*	-	-	-	Harris et al. (1995: 13)
Barramundi Cod *Cromileptes altivelis*	*Garum*, W. *Gorom*, E.	-	-	Johannes & MacFarlane (1991: 126, 213, 222) Harris et al. (1995: 14)
Coronation Trout *Variola louti*	*Mamamlar*, E.	-	-	Johannes & MacFarlane (1991: 223)
Coral-Trout Cod *Cephalopholis miniata*	*Siar*, E.	-	-	Harris et al. (1995: 14) Bird et al. (2000: 34)
Brown-Banded Rockcod *Cephalopholis boenack*	*Teke*, E.	-	-	Hitchcock (pers. obs. 2002)
Tomato Cod *Cephalopholis sonnerati*	-	-	-	Harris et al. (1995: 14)
Peacock Cod *Cephalopholis argus*	-	-	-	Johannes & MacFarlane (1991: 126)
Bluespot Cod *Cephalopholis cyanostigma*	*Siar*, E.	-	-	Johannes & MacFarlane (1991: 126) Bliege Bird et al. (1995: 7)
White-lined Rockcod *Anyperodon leucogrammicus*	-	-	-	Johannes & MacFarlane (1991: 126)
CENTROPOMIDAE (Sand Bass, Barramundi) Sand Bass *Psammoperca* sp.	*Moien*, W. *Naytay pis* (Creole)	Ghaleb (1998)	-	Johannes & MacFarlane (1991: 216)
Sand Bass / Nightfish *Psammoperca waigiensis*	*Eiar*, W.	-	-	Johannes & MacFarlane (1991: 126, 213) Harris et al. (1995: 14)
Barramundi *Lates calcarifer*	*Moian/Maian/Batha/ Iar*, W.	-	Ray (1907: 112)	Johannes & MacFarlane (1991: 211, 213, 215) Harris et al. (1995: 14)
Sailfin Perchlet *Ambassis interruptus*	-	-	-	Harris et al. (1995: 14)
PRIACANTHIDAE (Bigeyes) Lunar-Tailed Bigeye *Priacanthus hamrur*	*Ubar*, E.	-	-	Bird et al. (2000: 34)
CARANGIDAE (Trevally, Dart)	-	-	-	Harris et al. (1995: 15)
Trevally *Caranx* or *Gnathanodon* spp.	-	Rowland (1985: 129) Ghaleb (1998)	-	-

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Giant Trevally *Caranx ignobilis*	*Mathai/Gaigee,* W. *Geigi*, E.	-	-	Johannes & MacFarlane (1991: 126) Bliege Bird et al. (1995: 7) Gladstone (1995: 55) Harris et al. (1995: 15)
Blue-Finned Trevally *Caranx melampygus*	*Gaygay/Geigi/ Geigi ubal*, W.	-	-	Johannes & MacFarlane (1991: 213)
Blue-Finned Trevally *Caranx melampygus*	*Gaygay/Geigi/ Geigi ubal*, W.	-	-	Johannes & MacFarlane (1991: 213)
Papuan Trevally *Caranx sansun papuensis*	*Pori Pori*, E.	-	-	Johannes & MacFarlane (1991: 224) Harris et al. (1995: 15)
Turrum *Caranx fulvoguttatus/emburyi*	*Aremewar/Bigobigo/ Dugei/Pau Dugei/Geigi*, E.	-	-	Johannes & MacFarlane (1991: 126, 220-22, 224)
Blue-spotted Trevally *Carax bucculentus*	*Mekmek*, E.	-	-	Bliege Bird et al. (1995: 6) Harris et al. (1995: 15)
Big-eye Trevally *Caranx sexfasciatus*	-	-	-	Harris et al. (1995: 15)
Trevally *Caranx tille*	-	-	-	Harris et al. (1995: 15)
Golden Trevally *Gnathodon speciosus*	*Kusa/Bezam/Mathai/ Ngur Kub/Zurmoie*, W. *Igerkukikuki Maiu/ Maiu*, E. *Waytpis* (Creole)	-	Ray (1907: 107)	Johannes & MacFarlane (1991: 126, 212, 215-16, 219, 220, 222-23) Harris et al. (1995: 15)
Bludger Trevally *Carangoides gymnostethus*	*Sase*, E.	-	-	Johannes & MacFarlane (1991: 225) Harris et al. (1995: 15)
Gold-spotted Trevally *Carangoides fulvoguttatus*	*Dugei*, E.	-	-	Bliege Bird et al. (1995: 7) Harris et al. (1995: 15)
Bump-nosed Trevally *Carangoides hedlandensis*	*Dad*, E.	-	-	Bird et al. (2000: 33)
Trevally *Carangoides humerosus*	*Dugei*, E.	-	-	Bliege Bird et al. (1995: 7) Harris et al. (1995: 15)
Diamond Trevally *Selene gallus*	*Ialai-wapi/Yali Dad/ Yali Wap/Yali Wapi/ Yelay/Wapi*, W. *Baker Mog/Isor*, E.	-	Ray (1907: 100, 135)	Johannes & MacFarlane (1991: 220, 222)
Rainbow Runner *Elegatis bipunnulata*	*Irgar*, E.	-	-	Bird et al. (2000: 33)
Dart *Trachinotus* sp.	*Gebai*, E.	-	-	Johannes & MacFarlane (1991: 222)
Snubnosed Dart *Trachinotus blochi*	*Padal Wap*, W. *Bakir/Bakir-mog*, E.	-	-	Johannes & MacFarlane (1991: 126, 216, 221) Harris et al. (1995: 15) Bird et al. (2000: 33)
Common Dart *Trachinotus botla*	*Isor*, E.	-	-	Bliege Bird et al. (1995: 6) Harris et al. (1995: 15)
Giant Dart/Queenfish *Scomberoides commersonianus*	*Kabar*, W. *Arus/Papei*, E.	-	-	Johannes & MacFarlane (1991: 126, 214, 220, 224) Harris et al. (1995: 15)
Queenfish *Scomberoides lysan*	*Kabar*, W.	-	Ray (1907: 103)	Harris et al. (1995: 15)
Rainbow Runner *Elagatis bipinnulatus*	*Irgar*, E.	-	-	Johannes & MacFarlane (1991: 222)
Trevally *Alepes* spp.	-	-	-	Harris et al. (1995: 15)
Fringe-finned Trevally *Absalom radiatus*	*Gobai Gobai/Suli*, W. *Matei*, E.	-	Ray (1907: 98, 122, 152)	-
Silver Trevally *Pseudocaranx dentex*	*Gaigai-ubal*, W.	-	Ray (1907: 96)	-
Smooth-Tailed Trevally *Selaroides leptolepis*	-	-	-	Harris et al. (1995: 15)
Purse-eyed Scad *Selar crumenthalmops*	*Merdud*, E.	-	-	Harris et al. (1995: 15) Bird et al. (2000: 34)
Mackeral Scad *Decapterus macarellus*	*Keskes*, E.	-	-	Harris et al. (1995: 15) Bird et al. (2000: 33)

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Pennantfish *Alectis ciliaris*	*Dad*, E.	-	-	Harris et al. (1995: 15) Bird et al. (2000: 33)
POMACENTRIDAE (Anemonefish, Damselfish etc) Anemonefish *Amphiprion* sp.	*Grusa-wapi*, W. *Geresgeres werem*, E.	-	Ray (1907: 99)	-
Clark's Anemonefish *Amphiprion clarkii*	*Susul-pagazi*, W.	-	Ray (1907: 122, 143)	-
Sergeant-Major *Abudefduf* spp.	-	-	-	Harris et al. (1995: 17)
Sergeant-Major *Abudefduf vaigiensis*	-	-	-	Harris et al. (1995: 17)
Five-banded Sergeant-Major *Abudefduf saxatilis*	*Aukoskir*, E.	-	-	Bird et al. (2000: 33)
Sergeant-Major *Abudefduf sexfasciatus*	-	-	-	Harris et al. (1995: 17)
Damselfish *Amblyglyphidodon curacao*	-	-	-	Harris et al. (1995: 17)
Puller *Chromis weberi*	-	-	-	Harris et al. (1995: 17)
CIRRHIDAE (Hawkfish) Ring-eyed Hawkfish *Paracirrhites arcatus*	-	-	-	Harris et al. (1995: 17)
APOGONIDAE (Cardinalfish) *Apogon fraenatus*	-	-	-	Harris et al. (1995: 14)
GOBIIDAE (Mudscippers, Gobies) *Periophthalmus* sp.	*Gepuai/Kewe/Dawgy/ Kunu*, W. *Gas*, E.	-	Ray (1907: 97, 105, 142)	Johannes & MacFarlane (1991: 215)
ACANTHURIDAE (Surgeonfish etc) Ring-Tailed Surgeonfish *Acanthurus xanthopterus*	*Ebei*, W. *Ebei/U(mu)*, E.	-	-	Johannes & MacFarlane (1991: 213, 221, 225)
Surgeonfish *Acanthurus grammoptilusi*	-	-	-	Harris et al. (1995: 18)
Surgeonfish *Acanthurus mata*	-	-	-	Harris et al. (1995: 18)
Unicornfish *Naso tuberosus*	-	-	-	Harris et al. (1995: 18)
Unicornfish *Naso fageni*	-	-	-	Harris et al. (1995: 18)
Brown Unicornfish *Naso unicornis*	*Sabei*, E.	-	-	Johannes & MacFarlane (1991: 107, 225)
ISTIOPHORIDAE (Billfish) Black Marlin *Makaira indica*		-	-	Bird et al. (2000: 33)
Indo-Pacific Sailfish *Istiophorus platypterus*	*Bei*, E.	-	-	Bird et al. (2000: 33)
SCOMBRIDAE (Mackerel, Tuna, Bonito) Shark Mackerel *Grammatorcynus bicarinatus*	*Kaper*, E.	-	-	Johannes & MacFarlane (1991: 112, 127, 222) Harris et al. (1995: 18)
Mackerel Tuna *Euthynnus affinis*	-	-	-	Johannes & MacFarlane (1991: 127)
Mackerel *Scomberomorus* spp.	*Mugarir*, W.	-	Ray (1907: 112)	Harris et al. (1995: 18)
Spanish Mackerel *Scomberomorus commerson*	*Gaigai/Dabor/Dhubo/ Dabu/Debu/Dubai, W. Geigi/Dabor/Argi Dabor*, E.	-	Ray (1907: 93, 95-6, 137, 143)	Johannes & MacFarlane (1991: 121, 127) Bliege Bird et al. (1995: 7) Gladstone (1995: 55) Harris et al. (1995: 18)
Oriental Bonito *Sarda orientalis*	-	-	-	Johannes & MacFarlane (1991: 127)
Yellowfin Tuna *Thunnus albacares*	*Bumbum-kodkod/Malo uap*, E.	-	-	Johannes & MacFarlane (1991: 127) Bird et al. (2000: 33)

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		Archaeological	Historical	Contemporary
Northern Bluefin Tuna *Thunnus tonggol*	*Malouap*, E.	-	-	Bird et al. (2000: 34)
Dog Toothed Tuna *Gymnosarda unicolour*	-	-	-	Harris et al. (1995: 18)
SIGANIDAE (Rabbitfish, Spinefoot, etc)	-	-	-	Harris et al. (1995: 16)
Spinfoot *Siganus* sp.	-	Harris et al. (1985: 16)	-	-
Spinefoot *Siganus fuscescens*	-	-	-	Harris et al. (1995: 18)
Golden Spinefoot *Siganus guttatus*	*Azam*, W. *Erar*, E.	-	-	Johannes & MacFarlane (1991: 211, 221) Bliege Bird et al. (1995: 6)
Golden-lined Spinefoot *Siganus lineatus*	*Parsa/Passar*, W. *Erar*, E.	-	-	Johannes & MacFarlane (1991: 110, 127, 217) Harris et al. (1995: 18) Bird et al. (2000: 33)
Smudgespot Spinefoot *Siganus canaliculatus*	-	-	-	Johannes & MacFarlane (1991: 127) Harris et al. (1995: 18)
Spotted Spinefoot *Siganus punctatus*	*Bodo*, E.	-	-	Johannes & MacFarlane (1991: 127) Harris et al. (1995: 18) Bird et al. (2000: 33)
Black Spinefoot *Siganus spinus*	*Kibim/Kebom*, W. *Mabal*, E.	-	-	Johannes & MacFarlane (1991: 110, 214, 223) Harris et al. (1995: 18)
Vermiculate Spinefoot *Siganus vermiculatus*	*Mabal*, E.	-	-	Bird et al. (2000: 33)
Gold-Spot Spinefoot *Siganus chrysospilos*	*Kibim/Urzag*, W. *Bodo*, E.	-	-	Johannes & MacFarlane (1991: 214-15, 219, 221)
Barred Spinefoot *Siganus doliatus*	*Gagaral/Gagarar/ Parsa/Passar*, W. *Gegedar*, E.	-	-	Johannes & MacFarlane (1991: 127, 213, 217, 222) Harris et al. (1995: 18)
BLENNIIDAE (Blennies)	*Wad*, W. *Bozer*, E.	-	Ray (1907: 127) Haddon (1912: 157)	-
HAEMULIDAE (Blubber-Lips, Grunts, etc)	-	-	-	Harris et al. (1995: 16)
Blubber-Lips *Plectorhynchus* sp.	-	Harris et al. (1985: 16)	-	-
Dotted Blubber-Lips *Plectorhynchus picus*	*Perkudum/Peuk*, W. *Pik*, E.	-	-	Johannes & MacFarlane (1991: 217, 224)
Lined Blubber-Lips *Plectorhynchus goldmanni*	*Koikumak*, W. *Maizab*, E.	-	-	Johannes & MacFarlane (1991: 215, 223) Bliege Bird et al. (1995: 7)
Gold-Spot Blubber-Lips *Plectorhynchus flavomaculatus*	*Koikumak/Kuykumak*, W.	-	-	Johannes & MacFarlane (1991: 126, 215) Harris et al. (1995: 16)
Brown Blubber-Lips *Plectorhynchus gibbosus*	-	-	-	Harris et al. (1995: 16)
Blubber-Lips *Plectorhynchus celebicus*	-	-	-	Harris et al. (1995: 16)
Blubber-Lips *Plectorhynchus multivittatum*	-	-	-	Harris et al. (1995: 16)
Sombre Blubber-Lips *Plectorhynchus schotaf*	-	-	-	Harris et al. (1995: 16)
Blackall *Diagramma pictum*	-	-	-	Johannes & MacFarlane (1991: 126) Harris et al. (1995: 16)
Javelinfish *Pomadasys kaakan*	*Buz*, W. *Taur*, E.	-	Ray (1907: 93, 161)	Harris et al. (1995: 16)
Lined Javelinfish *Hapalogenys kishinouyei*	-	-	-	Harris et al. (1995: 16)
POMACANTHIDAE (Angelfish)	-	-	-	Harris et al. (1995: 16)
Six-Banded Angelfish *Pomacanthus sexstriatus*	-	-	-	Harris et al. (1995: 16)

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SPARIDAE (Snapper/Squire, Bream) Long-spined Snapper *Argyrops spinifer*	*Purkalwapi*, W. *Dad*, E.	-	Ray (1907: 119, 137)	-
MULLIDAE (Goatfish) Cardinal Goatfish *Parupeneus ciliatus*	*Zogar*, E.	-	-	Bird et al. (2000: 35)
NEMIPTERIDAE (Whiptails, Spinecheeks) *Pentapodus* sp.	-	-	-	Johannes & MacFarlane (1991: 126)
Barred-Face Spinecheek *Scolopsis monogramma*	-	-	-	Harris et al. (1995: 15)
SILLAGINIDAE (Whiting)	*Kopuru*, W.	-	Ray (1907: 106)	Harris et al. (1995: 14)
Sand Whiting *Sillago ciliata*	*Kupur*, W.	-	Ray (1907: 107)	-
Golden-lined Whiting *Sillago analis*	-	-	-	Harris et al. (1995: 14)
Trumpeter Whiting *Sillago maculata burrus*	-	-	-	Harris et al. (1995: 14)
Northern Whiting *Sillago sihama*	*Kupur*, W.	-	-	Johannes & MacFarlane (1991: 215) Harris et al. (1995: 14)
EPHIPPIDAE (Batfish & Sicklefish) *Platax* sp.	*Kauli/Lee*, W. *Masao*, E.	-	-	Johannes & MacFarlane (1991: 214-15, 223)
Long-Finned Batfish *Platax pinnatus*	*Mur*, W.	-	-	Johannes & MacFarlane (1991: 216)
Teira Batfish *Platax teira*	*Masao*, E.	-	-	Bliege Bird et al. (1995: 6)
Hump-Headed Batfish *Platax batavianus*	-	-	-	Harris et al. (1995: 16)
Short-Finned Batfish *Platax novaemaculatas*	-	-	-	Harris et al. (1995: 16)
Sicklefish *Drepane punctata*	*Warka*, W.	-	Ray (1907: 129)	Harris et al. (1995: 16)
CHAETODONTIDAE (Butterfly Fish) *Chaetodon* sp.	*Keupai*, E.	-	-	Bird et al. (2000: 33)
MUGILIDAE (Mullet)	*Piwer/Gamer/Maker*, W. *Wiri*, E. *Mallet* (Creole)	-	Ray (1907: 118)	Johannes & MacFarlane (1991: 213, 216, 226) Harris et al. (1995: 17)
Flathead Mullet *Mugil cephalus*	*Maker/Makerr*, W. *Wiri*, E. *Mallet* (Creole)	-	-	Johannes & MacFarlane (1991: 110, 127) Bliege Bird (1995: 6) Gladstone (1995: 55) Harris et al. (1995: 17)
Fantail Mullet *Mugil georgii*	*Murgudlai,* W.	-	-	Gladstone (1995: 55)
Bluetail Mullet *Valamugil buchanani*	-	-	-	Harris et al. (1992: 11) Harris et al. (1995: 17)
Diamond-Scale Mullet *Liza vaigiensis*	*Muragudal*, W. *Kum*, E.	-	Ray (1907: 112)	Johannes & MacFarlane (1991: 110, 127, 223) Harris et al. (1995: 17)
Tiger Mullet *Liza argentea*	-	-	-	Harris et al. (1995: 17)
SPHYRAENIDAE (Barracuda, Sea-Pike)	-	-	-	Harris et al. (1995: 17)
Great Barracuda *Sphyraena barracuda*	*Mugara/Mygare/ Mugurar*, W. *Areg/Moga/Nor Keudi*, E.	-	-	Johannes & MacFarlane (1991: 127, 216, 220, 224) Harris et al. (1995: 17)
Giant Seapike / Barracuda *Sphyraena jello*	-	-	-	Harris et al. (1992: 11) Harris et al. (1995: 17)

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POLYNEMIDAE (Threadfin) Blue Threadfin *Eleutheronema tetradactylum*	*Kuti*, W. *Tredpis* (Creole)	-	-	Johannes & MacFarlane (1991: 215, 218) Harris et al. (1995: 17)
King Threadfin *Polynemys sheridani*	*Sor/Zogi*, W. *Tredpis* (Creole)	-	-	Johannes & MacFarlane (1991: 218, 220) Harris et al. (1995: 17)
MUGILOIDIDAE (Weevers/Grubfish) *Parapercis* sp.	-	-	-	Harris et al. (1995: 17)
KYPHOSIDAE (Drummer etc) Low-Finned Drummer *Kyphosus vaigiensis*	*Mewap*, W. *Niwap*, E.	-	-	Johannes & MacFarlane (1991: 126, 216, 224) Bliege Bird et al. (1995: 6) Harris et al. (1995: 16)
TERAPONIDAE (Trumpeters & Grunter) Banded Trumpeter *Terapon theraps*	*But/Butalug/ Taural Wapi*, W. *Komzazer*, E.	-	-	Johannes & MacFarlane (1991: 212, 218, 223)
Trumpeter *Terapon jarbua*	-	-	-	Harris et al. (1995: 14)
Trumpeter *Pelates* sp.	*Zaram*, W.	-	Ray (1907: 130)	-
Trumpeter *Pelates quadrilineatus*	*But/Butalug*, W.	-	-	Johannes & MacFarlane (1991: 212)
Bar-Tailed Grunter *Amniataba caudavittatus*	*Zaram*, W.	-	-	Johannes & MacFarlane (1991: 220) Harris et al. (1995: 14)
CAESIONIDAE (Fusiliers)	*Buri Buri*, E.	-	-	Johannes & MacFarlane (1991: 218)
Red-Bellied Fusilier/ Yellowfish *Caesio cuning*	*Sule*, W. *Tailar*, E.	-	-	Johannes & MacFarlane (1991: 126) Harris et al. (1995: 15) Bird et al. (2000: 34)
NEMIPTERIDAE (Threadfin & Whiptail Bream) Butterfly Whiptail *Pentapodus setosus*	*Tailar*, E.	-	-	Bird et al. (2000: 34)
GERREIDAE (Silver Biddy)	-	-	-	Johannes & MacFarlane (1991: 126) Harris et al. (1995: 16)
Common Silver Biddy *Gerres oyena*	*Gebai*, E.	-	-	Bliege Bird et al. (1995: 6) Harris et al. (1995: 16)
Silver Biddy *Gerres subfasciatus*	-	-	-	Harris et al. (1995: 16)
PSEUDOCHROMIDAE (Dottybacks) Queensland Dottyback *Ogilbyina queenslandiae*	*Parama*, W.	-	Ray (1907: 117)	-
Lined Dottyback *Labracinus lineatus*	-	-	-	Harris et al. (1995: 14)
SCATOPHAGIDAE (Butterfish) Striped Butterfish *Selenotoca multifasciata*	*Karamoi/Karmoi/ Karmulay/Karmuyual*, W.	-	-	Johannes & MacFarlane (1991: 214) Harris et al. (1995: 16)
Butterfish *Scatophagus* sp.	*Karmoi*, W.	-	Ray (1907: 104)	-
Spotted Butterfish *Scatophagus argus*	*Karamoi/Karmoi/ Karmulay/Karmuyual*, W. *Aiwer*, E.	-	-	Johannes & MacFarlane (1991: 214, 220) Harris et al. (1995: 16)
RACHYCENTRIDAE (Black Kingfish / Cobia) *Rachycentron canadus*	*Dubu*, W. *Gabor Marau*, E.	-	-	Johannes & MacFarlane (1991: 126, 212, 221) Harris et al. (1995: 14)
ECHENEIDAE (Suckerfish, Remora) Slender Sucker-fish *Echeneis naucrates*	*Gapu*, W. *Gep*, E.	-	Ray (1907: 97, 143) Moore (1979: 168)	Harris et al. (1995: 14)

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Remora *Remora remora*	*Gap/Gapu,* W. *Gep*, E.	-	Moore (1979: 168)	Johannes & MacFarlane (1991: 213, 222)
LEIOGNATHIDAE (Ponyfish) Ponyfish *Leiognathus fasciatus*	-	-	-	Harris et al. (1995: 15)
URANOSCOPIDAE (Stargazers) Northern Stargazer *Ichthyscopus lebeck*	*Badar/Badat*, W.	-	-	Johannes & MacFarlane (1991: 211)
STROMATEIDAE (Pomfret) Black Pomfret *Parastromateus niger*	*Ialal-dad*, W. *Baker mog*, E.	-	Ray (1907: 100, 135)	-
MONODACTYLIDAE (Butter-Bream) *Monodactylus argenteus*	-	-	-	Harris et al. (1995: 16)
PLEURONECTIDAE & CYNOGLOSSIDAE (Soles/Flounders)	*Mulpal*/*Melpal*, W. *Ubar*, E.	-	Ray (1907: 112, 163)	Johannes & MacFarlane (1991: 216)
BALISTIDAE (Leather-jackets, Triggerfish)	*Imulu/Milu*, W. *Nageg*, E.	-	Ray (1907: 102, 154)	-
Starry Triggerfish *Abalistes stellaris*	-	-	-	Johannes & MacFarlane (1991: 127)
Red-lined Triggerfish *Balistapus undulates*	*Nageg*, E.	-	-	Bird et al. (2000: 34)
White-barred Triggerfish *Rhinecanthus aculeatus*	*Gesgar nageg*, E.	-	-	Bird et al. (2000: 33)
TETRAODONTIDAE (Toadfish)	*Badar*, W.	-	Ray (1907: 91)	-
OSTRACIIDAE (Cowfish & Boxfish)	-	-	-	Harris et al. (1995: 18)
Boxfishes *Ostracion* spp.	*Kworanga*/*Unia*, W.	-	Ray (1907: 108)	Johannes & MacFarlane (1991: 219)
Blue-Spotted Boxfish *Ostracion cubicus/tuberculatus*	*Unia*, W. *Uni*, E.	-	-	Johannes & MacFarlane (1991: 219, 225) Harris et al. (1995: 18)
Boxfish *Rhynchostracion rhinorhynchus*	-	-	-	Harris et al. (1995: 18)
Boxfish *Rhynchostracion nasus*	-	-	-	Harris et al. (1995: 18)
DIODONTIDAE (Porcupine fish) Three-Bar Porcupinefish *Dicotylichthys punctulatus*	*Potalai*, W.	-	-	Johannes & MacFarlane (1991: 217)
TRIACANTHIDAE (Tripod-Fish) *Triacanthus* spp.	*Emuru*, W.	-	-	Johannes & MacFarlane (1991: 213)
MOLIDAE (Sunfish) *Mola mola*	*Petoam*, E.	-	Ray (1907: 157)	-
Marine Molluscs (Bivalves)				
PTERIIDAE (Pearlshells) *Pinctada* sp.	-	Rowland (1985: 128)	-	-
Blacklip Pearlshell *Pinctada margaritifera*	*Maub*, E.	Harris et al. (1985: 17) Barham & Harris (1987: 22) Ghaleb (1990: 188)	-	Johannes & MacFarlane (1991: 223) Bird & Bliege Bird (1997: 41) Harris et al. (1995: 19)
Golden Pearlshell *Pinctada maxima*	-	Barham & Harris (1987: 22) Ghaleb (1990: 188)	-	Harris et al. (1992: 10) Harris et al. (1995: 19)
TRIDACNIDAE (Clams) *Tridacna* sp.	-	Carter et al. (this volume)	-	-
Boring Clam *Tridacna crocea*	*Maiwa/Adadhuy*, W. *Terpar*, E.	Barham & Harris (1987: 22) Ghaleb (1990: 188)	-	Johannes & MacFarlane (1991: 101, 225) Bird & Bliege Bird (1997: 41)

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Elongated Clam *Tridacna maxima*	*Maiwa*, W.	Barham & Harris (1987: 22) Ghaleb (1990: 188) Bird et al. (2002: 461)	-	Johannes & MacFarlane (1991: 127) Bird & Bliege Bird (1997: 41)
Fluted Clam *Tridacna squamosa*	*Maiwa*, W. *Wagmi*, E.	Bird et al. (2002: 461)	-	Johannes & MacFarlane (1991: 226) Bird & Bliege Bird (1997: 41)
Large Clam *Tridacna derasa*	*Kim Kim/Beizam-mi*, E.	-	-	Johannes & MacFarlane (1991: 223)
Giant Clam *Tridacna gigas*	*Maiwa/MikarMi*, W. *Kim Kim*, E.	Bird et al. (2002: 461)	Haddon (1935: 87)	Johannes & MacFarlane (1991: 127, 224) Bird & Bliege Bird (1997: 41)
Horse's Hoof Clam *Hippopus hippopus*	*Bazam Mi/Mi*, E.	Barham & Harris (1987: 22) Ghaleb (1990: 188) Carter et al. (this volume)	-	Johannes & MacFarlane (1991: 127, 221) Bird & Bliege Bird (1997: 41)
ARCIDAE (Mud Arks) *Anadara* sp.	*Mudu*, W.	Harris et al. (1985: 17) Rowland (1985: 127) Barham & Harris (1987: 21)	-	Harris et al. (1995: 18)
Mud Ark *Anadara antiquata*	-	Barham & Harris (1985: 266; 1987: 22) Ghaleb (1990: 188) Carter et al. (this volume)	-	Johannes & MacFarlane (1991: 167)
Mud Ark *Anadara granosa*	-	Barham & Harris (1985: 266; 1987: 22) Ghaleb (1990: 189)	-	Johannes & MacFarlane (1991: 112)
CHAMIDAE (Chamas) *Chama* sp.	*Eat*, W.	Harris et al. (1985: 17)	-	-
Leafy Chama *Chama pulchalla*	-	Barham & Harris (1987: 21) Ghaleb (1990: 188)	-	-
Chama *Chama iostoma*	*It,* W.	Barham & Harris (1987: 21) Ghaleb (1990: 188)	Ray (1907: 102)	-
TELLINIDAE (Tellins) *Tellina* sp.	-	Harris et al. (1985: 17)	-	-
Paddle Tellen *Tellina remies*	-	Barham & Harris (1987: 21) Ghaleb (1990: 188)	-	-
Tellen *Tellina crucigera*	-	Barham & Harris (1987: 21) Ghaleb (1990: 188)	-	-
Rough Tellen *Tellina (Quidnipagus) palatum*	-	Barham & Harris (1987: 21) Ghaleb (1990: 188)	-	-
Rasp Tellen *Tellina (Scutarcopagia) scobinata*	-	Barham & Harris (1987: 21) Ghaleb (1990: 188)	-	-
Tellen *Tellina urgata*	-	-	-	Bird et al. (2000: 35)
OSTREIDAE (Oysters) Rock Oyster *Saccostrea* sp.	*Gein*, W.	-	-	Bliege Bird et al. (1995: 8)
Rock Oyster *Saccostrea cucullata*	*It*, W. *Gein*, E.	Barham & Harris (1985: 266)	Ray (1907: 102)	Bird et al. (2000: 35)
Rock Oyster *Saccostrea echinata*	-	Barham & Harris (1987: 21) Ghaleb (1990: 188)	-	-
Comb Oyster *Lopha cristagalli*	*Gein*, E.	-	-	Bird et al. (2000: 35)
SPONDYLIDAE (Thorny Oysters) Northern Thorny Oyster *Spondylus nicobaricus*	-	Barham & Harris (1987: 21) Ghaleb (1990: 188)	-	-
Thorny Oyster *Spondylus ducalis*	*Gein*, E.	Barham & Harris (1987: 21) Ghaleb (1990: 188)	-	Bird et al. (2000: 35)
MESODESMATIDAE (Clams) *Paphies (Mesodesma)* sp.	-	Rowland (1985: 128)	-	-

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Wedge Clam *Paphies (Mesodesma) striata*	*Seelel/Silel*, W.	Harris et al. (1985: 17) Barham & Harris (1987: 21) Ghaleb (1990: 188)	-	Fuary (1991: 149)
CARDIIDAE (Cockles) *Acrosterigma (Cardium)* sp.	-	-	-	Harris et al., (1995: 18)
Cockle *Acrosterigma elongatum*	-	Barham & Harris (1987: 21) Ghaleb (1990: 188)	-	-
Cockle *Acrosterigma rugosa*	-	Ghaleb (1990: 188)	-	-
CARDIIDAE (Cockles) *Acrosterigma elongatum*	-	Barham & Harris (1987: 21)	-	-
Cockle *Acrosterigma rugosa*	-	Barham & Harris (1987: 21)	-	-
VENERIDAE (Gafrarines) *Gafrarium tumidum*	-	Barham & Harris (1987: 21) Ghaleb (1990: 188)	-	-
Tapetine *Paphia glabrata*	*Selel*, W.	-	Ray (1907: 121)	-
CORBICULIDAE (Clams) Mangrove Clam *Polymesoda erosa* (Syn. *Geloina coaxans*)	*Akul*, W.	Harris et al. (1985: 17) Barham & Harris (1985: 266; 1987: 22) Ghaleb (1990: 189) Carter et al. (this volume)	-	Johannes & MacFarlane (1991: 167, 211) Barham & Harris (1985: 252)
MACTRIDAE (Trough Shells) *Mactra alta*	-	Barham & Harris (1987: 21) Ghaleb (1990: 188)	-	-
FIMBRIIDAE (Cockles) *Fimbria fimbriata*	-	Ghaleb (1990: 188) Barham & Harris (1987: 21)	-	-
LUCINIDAE (Platter Shells) *Codakia tigerina*	*Warkid Id*, W.	Ghaleb (1990: 188) Barham & Harris (1987: 21)	-	Bird et al. (2000: 35)
PSAMNOBIIDAE (Sunset Shells) *Asaphis violascens*	*Kaip*, E.	Barham & Harris (1987: 21) Ghaleb (1990: 188) Bird et al. (2002: 466)	-	Bliege Bird et al. (1995: 8)
VULSELLIDAE (Hammer Oysters) *Malleus malleus*	-	-	-	Bird & Bliege Bird (1997: 41)
BIVALIA (Bivalves) Species?	*Silel*, W.	-	-	Johannes & MacFarlane (1991: 218)
Marine Molluscs (Gastropods)				
VOLUTIDAE (Baler Shells) *Melo amphora*	*Aloop/Alup*, W.	Harris et al. (1985: 17) Barham & Harris (1987: 22) Ghaleb (1990: 189)	Haddon (1935: 87)	Johannes & MacFarlane (1991: 127, 211) Bird & Bliege Bird (1997: 41)
Baler Shell *Melo umbilicatus*	-	Barham & Harris (1987: 22) Ghaleb (1990: 189)	-	Harris et al. (1995: 18)
STROMBIDAE (Strombs) Red Mouthed Stromb *Strombus luhuanus*	*Kirith Kirth*, W. *Keret/Kerit*, E.	Barham & Harris (1987: 21) Ghaleb (1990: 188) Carter et al. (this volume)	Haddon (1935: 141)	Johannes & MacFarlane (1991: 127, 215, 223) Bird & Bliege Bird (1997: 41)
Common Spider Shell *Lambis lambis*	*Eetie/Ieta/Ithay*, W. *Asor*, E.	Harris et al. (1985: 17) Barham & Harris (1987: 22) Ghaleb (1990: 189) Carter et al. (this volume)	Haddon (1935: 154)	Johannes & MacFarlane (1991: 127, 214, 220) Bird & Bliege Bird (1997: 41) Harris et al. (1995: 18)
Seba's Spider Conch *Lambis truncata*	*Neasor*, E.	-	-	Bird et al. (2000: 35)
TROCHIDAE (Trochus shells) Button Trochus *Trochus niloticus*	*Cabarr*, W. *Nasi/Nasir/Nazir*, E.	Harris et al. (1985: 17) Barham & Harris (1987: 22) Ghaleb (1990: 189) Carter et al. (this volume)	-	Johannes & MacFarlane (1991: 127, 214, 224) Bird & Bliege Bird (1997: 41) Harris et al. (1995: 18)
Pyramid Trochus *Trochus pyramis*	-	Barham & Harris (1987: 22) Ghaleb (1990: 189)	-	Harris et al. (1992: 11)

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		Archaeological	Historical	Contemporary
Top Shell *Monodonta labio*	-	Barham & Harris (1987: 21) Ghaleb (1990: 188)	-	-
Lacinate Dolphin Shell *Angaria delphinus*	-	Barham & Harris (1987: 22) Ghaleb (1990: 189)	-	-
TURBINIDAE (Turbos) Turban *Turbo* spp.	*Baton sel*, W. *Seskip/Dierdier/ Edwak*, E.	Barham & Harris (1985: 266) Harris et al. (1985: 17) Carter et al. (this volume)	-	-
Turban *Turbo cinereus*	-	Barham & Harris (1987: 22) Ghaleb (1990: 189)	-	-
Squamose Turban *Turbo squamosus*	-	Barham & Harris (1987: 22) Ghaleb (1990: 189)	-	-
Little Burnt Turban *Turbo bruneus*	-	Barham & Harris (1987: 22) Ghaleb (1990: 189)	-	-
Cat's Eye Turban *Turbo petholatus*	*Dierdier*, E.	-	-	Bird & Bliege Bird (1997: 41)
NERITIDAE (Nerites) *Nerita* spp.	*Cookie*, W. *Kuk/Dierdier/Edwak*, E.	Harris et al. (1985: 17)	-	Bliege Bird et al. (1995: 8)
Lined Nerite *Nerita lineata*	*Kuki*, W.	Bird et al. (2002: 461)	-	Johannes & MacFarlane (1991: 215)
White Mouthed Nerite *Nerita albicilla*	*Zikuk*, E.	Barham & Harris (1987: 21) Ghaleb (1990: 188) Bird et al. (2002: 461)	-	Bird et al. (2000: 35)
Bleeding Nerite *Nerita polita*	-	Barham & Harris (1987: 21) Ghaleb (1990: 188)	-	-
Plicate Nerite *Nerita plicata*	-	Barham & Harris (1987: 21) Ghaleb (1990: 188)	-	-
Wavy Nerite *Nerita undata*	*Kuk*, E.	Barham & Harris (1987: 21) Ghaleb (1990: 188) Bird et al. (2002: 461)	-	Bird et al. (2000: 35)
Nerite *Nerita planospira*	-	Barham & Harris (1985: 266; 1987: 22) Ghaleb (1990: 189)	-	-
Nerite *Nerita squamulata*	-	Barham & Harris (1985: 266; 1987: 22)	-	-
CYPRAEIDAE (Cowries) *Cypraea* sp.	-	Harris et al. (1985: 17)	-	-
Money Cowrie *Cypraea moneta*	-	Barham & Harris (1987: 22) Ghaleb (1990: 189)	-	-
Ringed Money Cowrie *Cypraea annulus*	-	Barham & Harris (1987: 22) Ghaleb (1990: 189)	-	-
Tiger Cowrie *Cypraea tigris*	*Bubuam aza*, W. *Mokepu/Bubuam aza*, E	Carter et al. (this volume)	-	Bird & Bliege Bird (1997: 41)
POTAMIDIDAE (Mud Creepers) Sulcate Mud Creeper *Terebralia sulcata*	-	Harris et al. (1985: 35) Barham & Harris (1987: 22) Ghaleb (1990: 189)	-	-
Telescope Mud Creeper *Telescopium telescopium*	*Bedebu*, W.	Harris et al. (1985: 35) Barham & Harris (1987: 22) Ghaleb (1990: 189)	-	Johannes & MacFarlane (1991: 167, 212) Barham & Harris (1985: 252)
CERITHIDAE (Creepers) Ribbed Creeper *Rhinoclavis vertagus*	-	Barham & Harris (1987: 21) Ghaleb (1990: 188)	-	-
Nodulose Coral Creeper *Cerithium nodulosum*	-	Barham & Harris (1987: 21) Ghaleb (1990: 188)	-	-
Pillar Creeper *Cerithium columna*	-	Barham & Harris (1987: 21) Ghaleb (1990: 188)	-	-
Coral Creeper *Cerithium aluco*	-	Barham & Harris (1987: 21) Ghaleb (1990: 188)	-	-
Blunt Creeper *Cerithium obtusa*	*Waiag*, W.	-	-	Johannes & MacFarlane (1991: 219)

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NATICIDAE (Sand Snails) Tumid Sand Snail *Polinices tumidus*	-	Barham & Harris (1987: 21) Ghaleb (1990: 188)	-	-
Sand Snail *Polinices flemingiana*	-	Barham & Harris (1987: 21) Ghaleb (1990: 188)	-	-
MURICIDAE (Murex shells) Burnt Murex *Chicoreus brunneus*	-	Barham & Harris (1987: 22) Ghaleb (1990: 189)	-	-
Murex *Chicoreus permaestus*	-	Barham & Harris (1987: 22) Ghaleb (1990: 189)	-	-
Mangrove Murex *Chicoreus (Naquetia) capucina*	-	Barham & Harris (1987: 22)	-	-
Grained Vitularia *Vitularia miliaris*	-	Barham & Harris (1987: 22) Ghaleb (1990: 189)	-	-
ELLOBIIDAE (Ear Shells) Judas Ear Shell *Ellobium aurisjudae*	-	Barham & Harris (1985: 266)	-	-
Angular Ear Shell *Cassidula angulifera*	-	Barham & Harris (1985: 266)	-	-
HALIOTIDAE (Abalones) *Haliotis* sp.	*Sepir*, E.	-	Ray (1907: 159)	-
Variable Abalone *Haliotis varia*	-	-	-	Bird & Bliege Bird (1997: 41)
NASSARIIDAE (Dog Whelks) *Nassarius olivaceus*	-	Barham & Harris (1985: 266)	-	-
MELONGENIDAE (Trumpet Shells) *Syrinx aruanus*	*Bu*, W. *Bu/Bu Bu*, E.	Barham & Harris (1987: 22) Ghaleb (1990: 189)	-	Bird & Bliege Bird (1997: 41)
CONIDAE (Cone Shells) *Conus* spp.	-	-	Haddon (1935: 154)	Johannes & MacFarlane (1991: 112, 127)
TURBINELLIDAE (Vase Shells) Knobby Vase Shell *Vasum tubinellus*	*Seskip*, E.	-	-	Bird & Bliege Bird (1997: 41)
PLANAXIDAE (Clusterwinks) Furrowed Clusterwink *Planaxis sulcatus*	-	Barham & Harris (1987: 21) Ghaleb (1990: 188)	-	-
LITTORINIDAE (Australwinks) Mangrove Australwink *Littorina scabra*	*Budi*, W.	-	-	Johannes & MacFarlane (1991: 212)
FASCIOLARIIDAE (Spindle Shells) Filamented Spindle Shell *Pleuroploca filamentosa*	-	Barham & Harris (1987: 22) Ghaleb (1990: 189)	-	-
OTHER Mangrove Gastropod (Type?)	*Kapra*, W.	-	-	Johannes & MacFarlane (1991: 214)
Marine Molluscs (Other)				
ISCHNOCHITONIDAE (Chitons) *Lorica* sp.	-	Harris et al. (1985: 17)	-	-
Chiton *Chiton* sp.	*Net*, E.	-	-	Bird et al. (2000: 35)
OCTOPODIDAE (Octopus) *Octopus* spp.	*Ati/Sugu*, W. *Ati/Sugu/Arti*, E.	-	-	Johannes & MacFarlane (1991: 98, 218, 220) Bird & Bliege Bird (1997: 41) Harris et al. (1995: 19)
Octopus *Octopus vulgaris*	*Arti*, E.	-	-	Bliege Bird et al. (1995: 12)
SEPIIDAE (Cuttlefish)	*Elum/Bidai*, E.	-	-	Johannes & MacFarlane (1991: 221)

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LOLIGINIDAE (Squid)	*Bidhay/Bidai*, W. *Goli*, E.	-	-	Fitzpatrick (1991: 343) Harris et al. (1992: 10) Harris et al. (1995: 19) Bird et al. (2000: 35)
Marine Crustaceans				
PALINURIDAE (Crayfish) Ornate Rock Lobster/ Crayfish *Panulirus ornatus*	*Kaia/Kayar/Kaiar*, W. *Kaier/Kaiti/Kayar*, E.	-	Haddon (1912: 154; 1935: 154)	Johannes & MacFarlane (1991: 127, 214, 222) Gladstone (1995: 55) Harris et al. (1995: 12)
Painted Rock Lobster/ Crayfish Panulirus versicolor	*Sup Keiar*, E.	-	-	Johannes & MacFarlane (1991: 225) Harris et al. (1995: 12)
Crayfish *Panulirus femoristriga*	-	-	-	Harris et al. (1995: 12)
PENAEIDAE (Prawns)	*Duman/Kagoi*, W.	-	-	Johannes & MacFarlane (1991: 214)
Prawn *Penaeus monodon*	-	-	-	Harris et al. (1995: 15)
Prawn *Metapenaeopsis wells*	-	-	-	Harris et al. (1995: 15)
STOMATOPODA (Mantis Shrimps) *Squilla interrupta*	*Kid Kid/Ked Ked*, E.	-	-	Johannes & MacFarlane (1991: 223) Bird et al. (2000: 35)
BRACHYURA (Crabs)	-	Harris et al. (1985: 17) This paper	-	-
PORTUNIDAE (Crabs) Mud Crab *Scylla serrata*	*Nugu/Githalay/Gitalai*, W.	-	-	Johannes & MacFarlane (1991: 213, 216) Gladstone (1995: 55) Harris et al. (1995: 19)
Sand Crab *Portunus pelagicus*	*Ey ey tadu/Malu Sai/ Tadu*, W. *Gi Tadu*, E.	-	-	Johannes & MacFarlane (1991: 127, 212, 216, 218, 222)
Hairy-backed Crab *Charybdis natator*	*Garba*, W.	-	Johannes & MacFarlane (1991: 213)	-
OCYPODIDAE (Ghost Crabs, etc) *Ocypode* sp.	-	-	-	Harris et al. (1992: 10) Harris et al. (1995: 19)
BALANIDAE (Barnacles) *Balanus* sp.	-	Harris et al. (1985: 17)	-	-
Freshwater Fish, Crustaceans & Molluscs				
HYRIIDAE (Freshwater Mussels) *Hyridella misoolensis*	-	-	-	Garrick Hitchcock (pers. obs., 2002)
ANGUILLIDAE (Eels) *Anguilla* sp.	*Gaur*, W.	-	-	Johannes & MacFarlane (1991: 174)
PARASTACIDAE (Yabbies) *Cherax* sp.	*Kaga/Kagi*, W.	-	-	Johannes & MacFarlane (1991: 176, 214)
PALAEMONIDAE (Prawns) *?Macrobrachium* sp.	-	-	-	Johannes & MacFarlane (1991: 176)