



Fishing for drummerfish (Kyphosidae) with termites and spider webs on the weather coast of Guadalcanal, Solomon Islands

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Introduction

In the last century, many coastal communities in the South Pacific have discarded traditional fishing methods in favour of more efficient western technologies (Johannes 1981; Ruddle et al. 1992; Dalzell et al. 1996). Although western fishing technologies such as nylon gill nets and spear guns have allowed far greater fishing efficiency, they have come at an ecological, social and cultural price. A shift to western fishing technologies is frequently implicated in unsustainable subsistence fishing practices (e.g. Dalzell et al. 1996; Hamilton 2003), and when knowledge of traditional fishing methods are lost, so too is local knowledge, customs and social structures associated with these traditional techniques (Johannes 1981; Johannes et al. 1993; Hviding 1996). For instance, in traditional Pacific cultures, a person's ability to catch fish and feed the people in his community is highly esteemed. In many cases, the *mana* (blessing) and knowledge required to catch certain kinds of fish is sacred and is only passed on to a close and trusted relative. But when highly specialized traditional technologies are replaced with easily used and generalized methods such as gill nets, then the traditional recognition of special status and commemorations of fishing catches are often ignored.

Recognition of all of the above-mentioned factors has led many authors to call for the documentation of traditional fishing methods and associated local knowledge and customs before this information is lost from oral cultures (e.g. Johannes 1981; Ruddle et al. 1992; Lalonde and Akhtar 1994). In this paper I describe a unique traditional fishing method called *bulukochi* which was used by my forefathers to capture drummerfish (Kyphosidae) at Sukiki community on the weather coast of Guadalcanal, Solomon Islands. This traditional fishing method was used for many generations,

but in recent decades has become less and less widely practiced. Today the only individual who knows of this method and the associated customs is my elderly uncle. With the passing of my uncle the techniques and intricate customs associated with this method will be lost forever. To preserve this knowledge and culture I decided to document aspects of this information² and present them in a written format.

Environmental and cultural setting

The Solomon Islands consists of two roughly parallel island chains, with six major island groups: Choiseul, Isabel and Malaita are found in the northern group while New Georgia, Guadalcanal and Makira are in the south. Rennell and Bellona, and the Temotu Province islands lie to the south and east respectively of these main island groups (Fig. 1). The largest of the main islands is Guadalcanal, which is 6475 km² in size. Guadalcanal is characterized by a rugged interior with high mountains and ridges. These high mountains intercept the prevailing southeast trade winds and create two distinctive climates. The southern part that bears the brunt of these trade winds is called the weather coast because it can be rough and treacherous. At times, huge waves tumble ashore, destroying entire villages. The people along the southern coast of Guadalcanal call this part of the island *tasimauroi*, which literally means the sea that is alive. Conversely, the northern side of the island is known as *tasimate* which means the sea that is dead. On the weather coast the sea is a symbol of unity and cultural identity, and the communities on the coast share common myths and legends about the sea. The sea is so much an integral part of life that the status of a man in society is often determined by his ability to make seaworthy canoes and his fishing skills. Indeed, a man's ability to make a canoe and capture plenty of fish is often used as a mark to separate man-

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2. The traditional chants that are used when preparing this fishing method are very sacred so I have not included them in this paper.

hood from boyhood, and individuals who are highly skilled in either of these practices earn special status in their society.

Sukiki village is located on the southeast coast of Guadalcanal between Marau to the east and Avuavu to the west (Fig. 1). The village is remote and is accessible from Honiara only by boat. This Seventh-Day Adventist community is still largely subsistence based, with its population dependant on subsistence agriculture and the harvesting of marine resources. Although marine resources form the dominant source of protein (there is limited chicken husbandry), fish are the only resource exploited, as crustaceans, molluscs, eels, turtles, dugongs, stingrays and sharks are not eaten due to religious beliefs. Fish resources are relatively hard to obtain at Sukiki in comparison with many regions of the Solomon Islands. Pelagic fish such as tuna and rainbow runner can be captured in the open sea but rough weather frequently limits this type of fishing on this exposed coast. Moreover, the total amount of exploitable reef fish is low as there is only a limited amount of reef directly outside of the village. Indeed, much of the weather coast has no nearby reef at all.

The *lagui* (Kyphosids)

The kyphosids, drummers or sea chubs as they are commonly known, are an herbivorous family of fish, common in the tropical Indo-Pacific region (Randall et al. 1990). Known locally as *lagui* at Sukiki, different size classes are given individual names. The smallest sizes of drummers are called *verovero*, the next size class is called *ighahau*, and the largest size class is called *pasiae*. Fishers count their catches of drummers in multiples of ten known as *paga*. If 10 are caught then it is called *chika paga*. If, however, 20 are caught, then it is called *ruka paga*. At times, the catches of *lagui* may be as much as 100. If someone catches many *lagui* then he is expected to make a special customary pudding either from yam or taro depending on the season, which is called *lakengo*. In this instance, all the other fishers contribute their catch to the person who has caught the most *lagui*, and the whole community is fed. However, this is not expected every time one goes out fishing for drummers. In the past, people from other villages brought the bait for drummers (known as *kochi*) to my grandfather and asked him to fish for them. All the catches from the provided *kochi* were sent to the owner of the *kochi*,

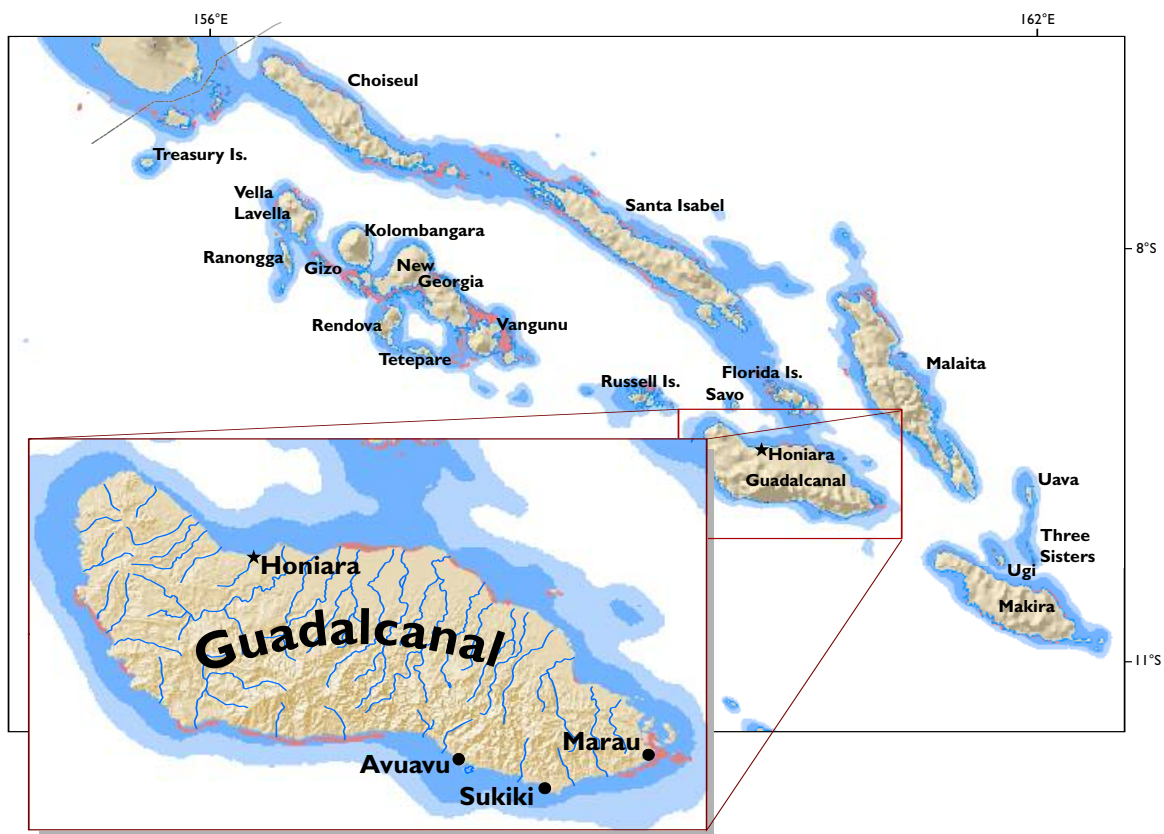


Figure 1. Solomon Islands, with the enlarged portion showing the location of the Sukiki community on Guadalcanal.

but no payments were required for the fishing effort. This was a very important aspect in the community because a person who could catch and distribute *lagui* had a high status and was widely respected. *Kochi* that was sent from orphans or widows was traditionally treated with priority, since these individuals do not have male family members to fish for them.

Indigenous ecological knowledge of the seasonality of drummers

On the weather coast the yearly season determines the kind of fish that can be caught and the fishing techniques and gears that are used. Year round, the seasons for fishing and planting are determined by the phases of the moon, the winds, the flowering, shedding and the re-growth of the leaves of certain plants. From January to April the westerly wind, which we called *tavalosi*, blows. These months correspond to the harvesting of certain root crops such as yams and *tavalosi* (sugarcane-like plant that grows in clusters). Then, from May to August, the easterly winds, which we called *ara*, blow. From September through December is the calmest time on the weather coast, and is called *odu*. The *odu* is characterised by fine weather when people can go out for long fishing trips in dugout canoes.

Drummers (*lagui*) can be caught year round on the weather coast which makes them an especially important source of protein. Drummerfish usually travel with floating debris (or what we call *chali*) that is brought by either the easterly or westerly winds from reefs far away. The drummerfish travel with the debris, feeding on the algae and plankton associated with the *chali*. When the *chali* is thrown ashore by the waves, the drummerfish often congregate near the shore so that they can continue to feed on the *chali*. At other times the drummers aggregate near river mouths, feeding from the *chali* (leaves and sediments) that is washed into the sea. At nightfall, the drummerfish move farther out toward the breakers where there are no currents, feeding on debris in the foam that is made by the waves. As dawn approaches the fish go to deeper depths and again look for feeding places near the seashore and river mouths. The drummerfish are usually caught in the morning and in the late afternoon. Fishing is best when the tides are high and the seas are neither too smooth nor too rough. The seas are often quite smooth during *odu*, and at this time the mouth of the river is the ideal place for *bulukochi* fishing.

The origins of the *bulukochi* fishing method

According to legend, there was once a man who went out fishing and on his arrival back at shore

he began to gut the fish he caught. It happened that one of the fish was a drummer. He noticed that the stomach contents included termites and algae. The following day the fisherman went into the bush to find termites, to see if he could use them as bait to capture drummerfish. He collected some termites that are known as *ane*. The fisherman attached the termites to a traditional fishing hook called *alovinavinatu*, made out of a vine. The *alovinavinatu* was then attached to a traditional fishing line called *ghachigho*, made out of bush rope. One end of the *ghachigho* was then tied onto a bamboo pole. The fisherman tried this method and saw that the drummers were attracted to it but that the termites were quickly washed off the hook by the sea water, making it difficult for the drummerfish to be caught.

While he was fishing, he noticed that algae were in abundance near the seashore and that the drummerfish were feeding on them. It was *odu* season at this time and as he was looking at the algae it reminded him of a spider web (known as *laotaetaera*) that was greenish in colour. The next day he collected some *laotaetaera* and tied it on to the *alovinavinatu*, and he was then able to attach some termites to the sticky spider web. He tried this method, but to his disappointment the school of drummerfish quickly disappeared since the swallowed termites (*ane*) had bitten their stomachs.

These happenings made him increasingly curious about trying to find a solution to catch the drummerfish. He then noticed that the algae that were exposed to the sunlight during low tide were brownish-yellow in colour, which reminded him of another type of spider known as *laobulu* and another type of termite called *kochi*. The next day, when he tied the *laobulu* and the *kochi* onto the *alovinavinatu*, he found that the drummerfish were attracted to his bait and did not go away. He was able to catch some drummers that day and since then he earned himself the name *Kochi*.

Drummer fishing today at Sukiki

Since *Kochi* first discovered how to capture drummerfish, the *bulukochi* method has remained largely unchanged, although nylon fishing line and steel hooks replaced *ghachigho* and *alovinavinatu* in the 1900s. Below, is a detailed description of the *bulukochi* fishing method.

In preparation for *bulukochi*, the termites and spider web are usually prepared a day or two ahead of the actual fishing day. Looking for *kochi* in the bush takes skill and practice, as termite nests are relatively rare and often obscured under a log or are located in trees. The *alana* (termite pathways)

always lead to the termite nest. Once the *kochi* is located, the leaves of a customary plant are beaten against the *kochi*, and while doing this a special chant is muttered. This is done to ask an evil female spirit to leave the *kochi* so that it can be safely removed. The *kochi* is removed (Fig. 2) and then wrapped in leaves and taken home and dangled on a stand over water to prevent the termites from escaping from their nest. A *laobulu* spider web is then sought, and when it is found the web is removed with dry hands (Fig. 3). This is to prevent the web from sticking together. The spider web is kept in a leaf and is stored in a dry place in the house. You can be certain that you will always find a new spider web at the same site a week or so later.

The next stage is the preparation of the bamboo pole. When tying the fishing line to the top of the bamboo pole, a shoot of a special leaf is rubbed over the pole, starting from the top of the bamboo pole and working down to the bottom. Traditional chants are muttered during this process, and once this process is complete the leaf must be thrown away. Rubbing the leaf onto the bamboo is a means of casting off any omens that might be on the bamboo and thus alluring the drummers towards your fishing line. Once this is done the bamboo pole must then always be kept standing to prevent people stepping over it. The reason for this is that our feet carry us to many different places, not all of which are desirable locations. If people step over the pole the drummerfish may

sense where the people have been, which will in turn make them refuse the bait. To this day the bamboo pole is a sanctified fishing gear and is always kept in a special place in an upright position. It is usually placed in front of the sleeping house after every fishing trip.

When all these things are ready then it is time to get the *kochi* out of their nests. The nest is cut into small pieces, and then a small piece is taken in one hand. The other hand is then used to constantly hit the wrist of the hand holding the termite nest, which causes the termites to fall on to a leaf (Fig. 4). While doing this, customary chants are also muttered, calling the drummers from both directions to come together at the location where one is about to fish.

All of the termites are then placed in a bag and mashed into a paste. The next step is to prepare the



Figure 2. Penrick Selino holding up a *kochi* that was found under a rotting tree stump in the forest.



Figure 3. Joseph Mage removing a *laobaulu* spider web.



Figure 4. Joseph Mage knocking the termites out of their nest and onto a taro leaf.

hook, which involves wrapping the *laobaulu* spider web around the hook until the entire hook is tightly enclosed in spider web (Fig. 5).

Once this is done the hook is attached to 4–5 metres of fishing line, which is attached to the bamboo fishing pole. One is now ready to go fishing. In accordance with local custom, a fisherman who wishes to go *bulukochi* fishing must abstain from eating bananas (*vuchi*) and cutnut (*vala*) during all stages of *bulukochi* preparation. It is believed that when you eat this food it adds more weight to the drummerfish, which in turn makes it difficult for

them to swim elegantly in the waves, and they therefore will not be able to catch your lure.

Once a fisherman has arrived at his designated fishing spot, he begins by throwing handfuls of *kochi* into the sea to attract the drummers nearby (Fig. 6). Once a school of drummerfish is aggregated nearby, the fisher puts *kochi* all over the hook. The stickiness of the *laobaulu* spider web holds the *kochi* to the hook. He then casts his hook into the school of *lagui* (Fig. 7). As drummerfish have small mouths and will not swallow a baited hook, special skills are required to capture them. The fisherman keeps a careful eye on his baited hook, and when he sees a drummerfish just about to bite at the *kochi*, he flicks his bamboo pole upwards so that the hook becomes lodged in the drummerfish's mouth. Drummers that bite at the *kochi* also send slight distinctive vibrations up the bamboo pole. If the sea is very calm the vibrations can be felt, and inform the fisherman when to jerk his bamboo pole. During this entire time that he is fishing he must be careful not to allow his feet to enter the sea or this will cause the drummers to flee.

Discussion

The *bulukochi* fishing method described in this paper is a highly skilled and sacred fishing method that is an important component of Solomon Island cultural heritage. The chants, local knowledge and skill required to capture the highly esteemed drummers were held by a select few and these individuals gained special respect and recognition in their community. With this *mana* also came social responsibilities and obligations, with highly skilled *bulukochi* fishermen often being called on to capture drummerfish for individuals and families both within and outside of their communities.



Figure 5. Wrapping the *laobaulu* around a fishing hook.



Figure 6. Throwing *kochi* into the sea to attract drummerfish.



Figure 7. A fisherman about to throw the baited hook and line into the sea.

Over the last century, modern fishing techniques such as nylon nets and spear fishing have become increasingly popular in the Sukiki community and the wider Guadalcanal as a whole. These highly effective methods have enabled anyone who has access to these technologies to capture a wide variety and substantial amount of fish at any one time. Large quantities of drummerfish are also captured by nets or spear fishing and neither of these methods require particularly special skills. The ease with which drummerfish can now be captured by nets and spearguns has effectively destroyed both the *bulukochi* fishing method and the *mana* and special recognition that the *bulukochi* fishers traditionally received.

The demise of *bulukochi* fishing is resulting in a loss of culture heritage. Today, very few young people understand how *bulukochi* fishing was done, why it was important, the social status of *bulukochi* fishermen, or the customary chants and beliefs associated with this method. The last person in my village who knows the sacred chants associated with this fishing method is my uncle and he has passed this knowledge on to me. The sacredness of these chants prevents me from including them in this publication, but I have documented the general details of the *bulukochi* fishing method in this paper so that there is a written record for future generations. It is the author's opinion that the loss of traditional fishing techniques and customs described in this paper is typical of what is happening all over the entire Solomon Islands, where traditional fishing techniques and associated customs that have been acquired and maintained by our ancestors for centuries are being lost in one or two generations. Clearly there is an urgent need to document this cultural information quickly before more of it is lost from oral culture.

The final point I wish to make in this paper is that the abandonment of many traditional fishing technologies such as *bulukochi* have also had ecological consequences on the weather coast of Guadalcanal. Over the past decades around Sukiki there have been dramatic reductions in the catch rates of both reef and associated fishes, with spearfishing (particularly night spearfishing) and gill nets thought to be the main culprits. In widespread recognition of this, and in an attempt to rectify this situation, the Sukiki community banned gill nets and spearfishing over all of its nearshore reefs in 2002. Since 2002, only hook-and-line fishing has been allowed. This ban is strictly enforced and adhered to by customary measures and it already appears to be having a positive effect on fish abundances in this region. A full description of the locally managed marine protected areas around Sukiki and the pro-

cess involved in developing them will be provided in a separate publication.

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