

# Stone Fish Traps of the Bella Bella Region

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## Introduction

Underhill states that (1945:9) “. . . the richest people in North America were the Indians of the Northwest Coast. Not rich in gold and silver! Even had they been able to dig those metals from the rocks the way the white man finds them now, the Indians would have thought of them only as another ornament like bear's claw and abalone shell. To them, wealth was more than ornament. Wealth was something a man could eat, wear or use to shelter him from the weather.” Drucker adds (1963:35): “Fish-

ing was the basis of Northwest Coast economy. The rivers and the sea provided an abundance of foods. There are five species of Pacific salmon, some of which ‘run’ annually in every river and stream along the coast.” The subject of this paper is one of the methods of obtaining this extremely important food resource in the Bella Bella region of coastal British Columbia. This method was through the use of intertidal alignments of rock to trap fish.

## Distribution of Stone Fish Traps

Linear arrangements of stone used to trap fish have a very widespread distribution. Intertidal stone-walled fish traps were widely used in Polynesia (Gifford 1929:177; Hiroa 1932:159; Beaglehole 1938:159; Handy 1932:91-7; Summers 1964). Dr. N. B. Tindale (pers. comm.) reports that there are rock alignment fish traps in the Bentick Island area of northern Australia. The main differences are that the rows of rocks have been cemented together by coral and that they are not at the mouths of streams (as they generally are on the Northwest Coast), as they are not intended to trap anadromous fish. He also informed me that the present method of utilizing these traps is that when the tide has receded the men go into the traps and spear the large fish, after which the women go in and catch the remaining fish.

Stone fish weirs (*saputit*) play an important role in the fishing activities of the Netsilik (Netsilinqmiut) Eskimos of the northern Arctic coast (Balikci 1970). They are built across streams to catch seaward-bound salmon trout (arctic char). These traps

are built near the sea in July and further upstream in August, the time of greatest usage.

An exhaustive survey of the world distributions of stone fish traps is not intended; the preceding statements are given to point out that such devices are not limited in distribution to the Northwest Coast.

On the British Columbia coast stone fish weirs or traps are quite broadly distributed along the entire coast, although the central portion appears to have the highest density. Drucker (1950:166-7) lists the use of tidewater salmon traps by the Nootka, Kwakwaka'wakw, Tsimshian, Haida and Tlingit and the use of stone salmon traps by the Owikeno and Chilkat. Drucker earlier (1943:109-10) mentions stone tidal fish weirs, describing them as both unelaborate structures and elaborate ones constructed of low walls of sizeable beach boulders. Hobler (1970:82-3) states that stone fish traps in the Bella Coola region are limited to the western edge of the territory which he has surveyed, a zone which overlaps the Bella Bella survey area. Stone fish traps are found on

Vancouver Island (Boas 1909:462) and at various places on the shores of Georgia Strait. Mitchell's survey of the Johnstone Strait region (1972:22) produced out of 687 sites only eight sites classified as 'miscellaneous' which included isolated canoe runs, fish traps and rock cairns.

Stone fish traps are found in the Queen Charlotte Islands (Hobler, pers. comm.). Alexander (pers. comm.) reports that during his survey of Princess Royal Island he found only two stone fish traps. Simonsen (1973:31-2) mentions that in his 1969 survey of the Hecate Strait-Milbanke Sound area 40 fish traps were found out of a total of 108 sites. Simonsen's survey area, in effect, overlaps the Bella

Bella survey area; therefore the high concentration of this type of trap is not surprising. Simonsen refers to Barnett (1955:82), who briefly describes tidal traps on flats adjacent to the mouths of streams in Coast Salish areas. It is interesting to note that these traps were also used to catch seal and sturgeon as well as salmon. Simonsen also points out that de Laguna (1960:116) reports stone traps in the Tlingit territory. On the origin of semicircular stone tidal traps, Simonsen refers to Beynon (1948, vol. U.U.: 1): "Beynon has stated that the concept was originally used in the north by a Skeena River group and later adopted by groups farther south."

### Bella Bella Fish Traps

In 1968 a project was inaugurated by the University of Colorado, under the leadership of James J. Hester, to investigate the prehistory of the Bella Bella (northern Kwakiutl) people. Site survey was started under this project and then continued during the field seasons of 1969, 1970, 1971 and 1974, by the author. 438 sites were recorded including middens, fish traps, art (pictograph, petroglyph) and a few miscellaneous types such as canoe skids and recent cabins. I have divided the 109 fish trap sites into two major types and four subtypes (see Fig. 96). These types are rock alignments set *in the mouths* of streams or rivers (Fig. 97), and tidal traps *at the sides* of mouths of streams or rivers (Fig. 98). In some cases, where they are found by extremely small streams, it seems hard to believe that any salmon would be going up these streams: therefore either other species or salmon milling about in the area when the tide went out could have been trapped in these rock catchments.

The types of fish trap range from extremely large ones, generally semicircular to small traps of simple alignments of rocks across streams. Some large traps are 300 to 400 metres long and 50 metres deep from shore to trap (Fig. 99). The range of height of fish traps also varies considerably: the highest one we've recorded is about two and one-half metres, and has been silted in behind so we don't know whether the trap originally was this height on both sides or was just a built-up rock face with a low trap around the rim.

In addition to fish traps a number of mounds of rocks have been recorded either associated with midden sites or on beaches; the meaning of these is rather obscure. Some of these are small heaps of

rocks and some are complete circles of rocks. The mounds may very well be quite recent and be remnants of anchoring structures for wood pilings related to logging operations. The significance of the circular configurations is not known.

A number of rock alignments which are not at right angles to the stream, but are longitudinal (Fig. 97) probably served as foundations in which to place basket traps; that is, two or more lines of rocks parallel with the stream with a funnelling set of rocks at the upstream end. The fish would be caught in the baskets as they came down the stream, or at ebb tide. Boas (1909) and Drucker (1943) illustrate similar traps.

The largest number of traps is the single or simple variety, of which there are 65 surveyed for the Bella Bella region. The greatest density of this type is found in the survey units FbTb, FbTa and FaTb, and FaTa (Fig. 100). The present town of Bella Bella happens to fall almost in the centre of this concentration of sites. The highest density of multiple or complex fish traps (44) falls in the survey units EITa, EITb, FaTa, FcTa and FcSx.

One can predict fairly accurately where fish traps will be found. Almost every stream, small or large, has some type of stone fish trap associated with it. There are a number of situations where there is a combination of the various types of traps. There may be intricate semicircular traps on the sides of a stream as well as traps across the stream, and there may also be alignments of rocks parallel within the stream.

Where there is considerable beach area and it is quite flat, the larger and more complex traps are found. These traps are usually of the type consisting of a number of semicircular rock alignments (Fig. 99)

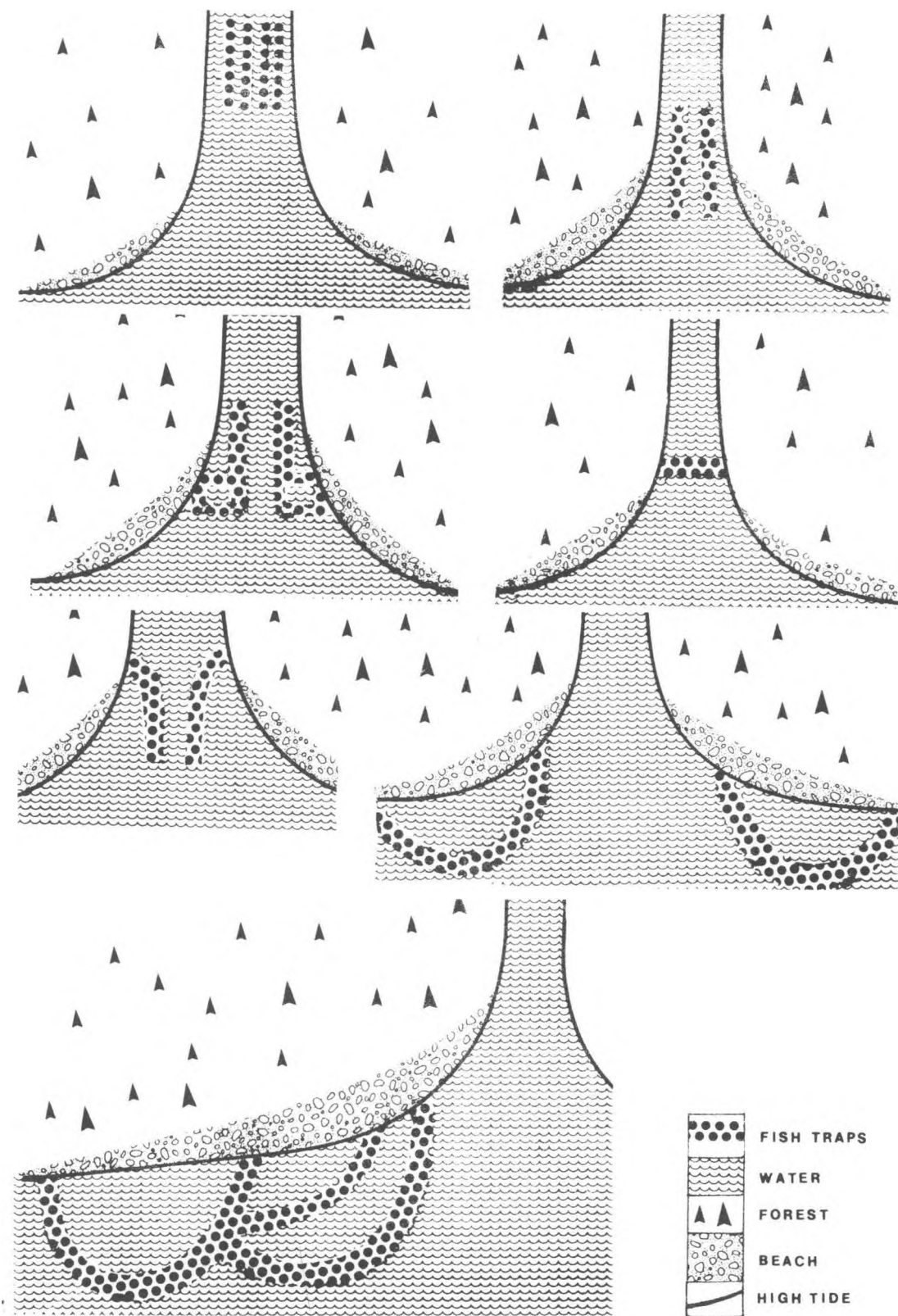


Fig. 96. Schematic diagrams of stone fish traps.

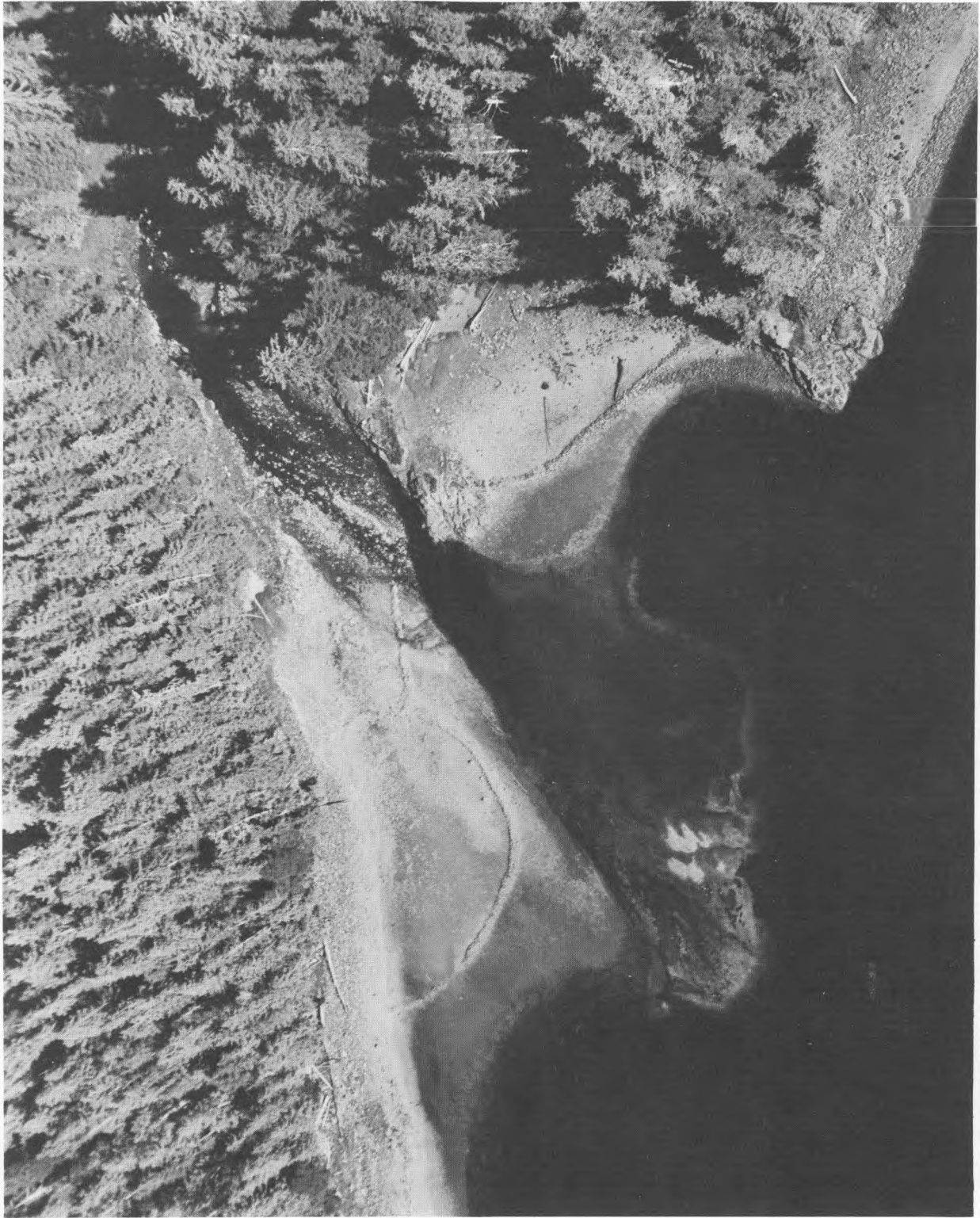


Fig. 97. Fish trap in Kildidt Lagoon (EITa 21).

connected together to form one large trap on one or both sides of the stream. These large traps are often associated with midden sites and with other lines of rock radiating from the higher beach out towards the deeper water (these are assumed to be the remnants of canoe skids and not fish traps): an example of this is the site at Troup Passage (FbSx 2) (Fig. 101). Fish trap survey data indicates no relation with pictographs.

The occurrence of the simple type of trap generally is at the mouths of small streams or estuaries. Generally the smaller streams with rocky beaches on either side have small traps, usually the type which just crosses the stream. They often are found at great distances from midden sites and quite far up in lagoons which meander for considerable distances in among the coastal islands. It is assumed that the Indians spent a great deal of time travelling these distances to collect various types of fish from the traps. Ethnographic information, particularly from Willy Gladstone of Bella Bella, indicates that the rock fish traps were used for not only salmon

but any species of fish which might be caught in them. One interesting lagoon is Kildidt Lagoon, on Hunter Island. This is a very long lagoon with meandering arms in the interior section. Wherever small streams enter it, small cross-stream traps are found. They usually, but not always, are just at the mouth of a stream, so that at ebb tide the trap is out of the water. The shape most often is slightly bowed, the concave side of the bowing towards the stream. Often these have fairly large piles of rocks at either end of the trap against the shore or are built utilizing large boulders which crop out at the shoreline. Natural topography is utilized to take advantage of large boulders or the narrower part of the stream bed. The amount of work involved in constructing these traps must have been considerable, as some of the stones in the traps often are quite large and would have had to be moved considerable distances. This indicates the importance of the traps to the people building them. I suspect that it would take more than a single individual to construct them — probably a family unit or perhaps a group of villagers. Ethno-



*Fig. 98. Complex intertidal trap flanking stream mouth at Yeo Bay (FbTb 13).*



*Fig. 99. Complex intertidal trap at Evans Inlet (FaSw 3).*

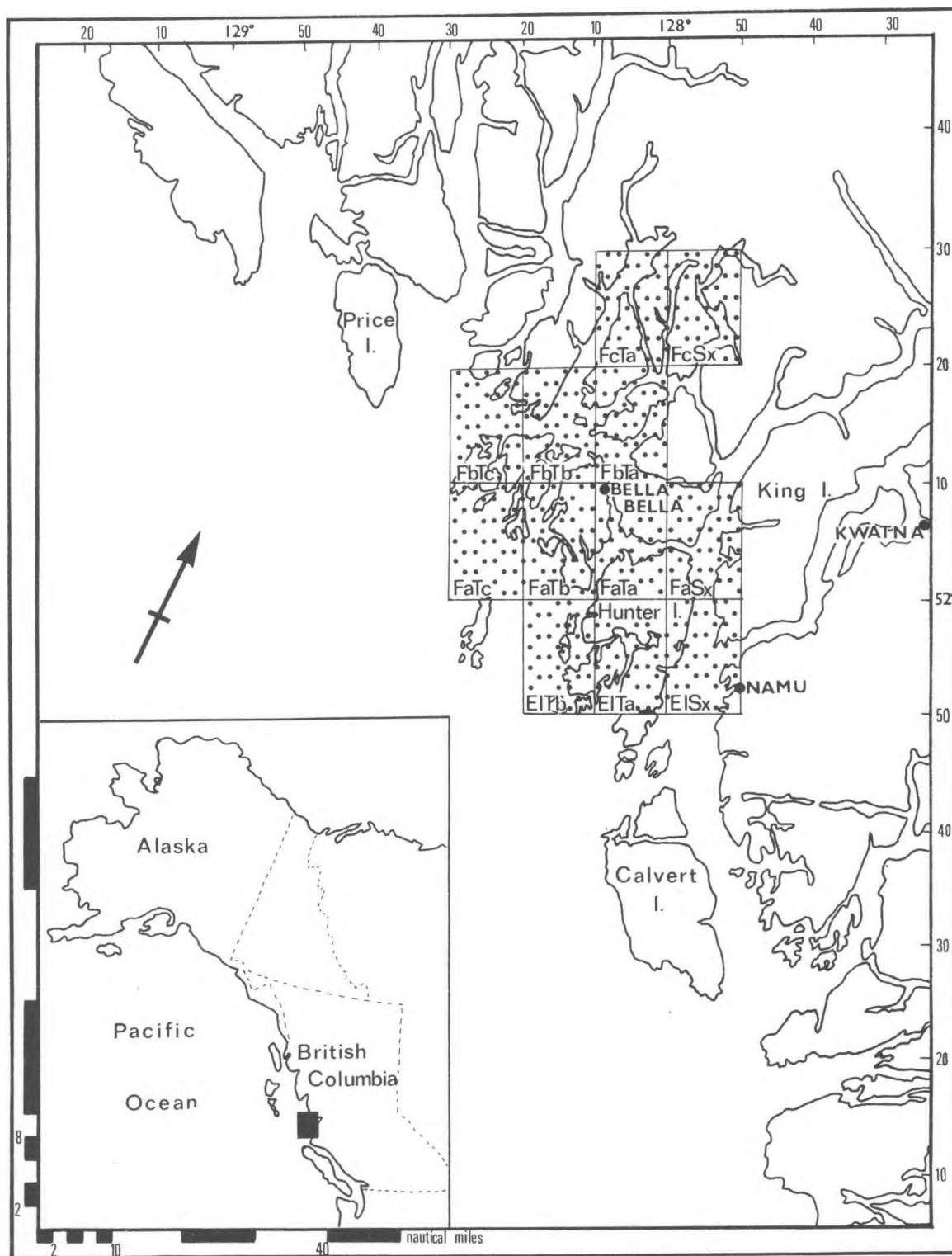


Fig. 100. Map of the Bella Bella region. Fish traps are found in the shaded grid squares in the following frequency: FcTa, 5; FcSx 5; FbTc, 3; FbTb, 10; FbTa, 7; FaTc, 4; FaTb, 15; FaTa, 10; EITb, 10; EITa, 14; EISx, 3.



Fig. 101. *Two views of the fish trap on Troup Passage (FbSx 2).*





graphic data suggest that the traps were owned and used by specific village groups and the use of a set of traps was probably respected and exclusive to the owners.

The ethnographic information that we've been able to obtain indicates that stone fish traps were used up until quite recently: as a matter of fact, some of them look as though they've been repaired and are still being used. It is my feeling that these traps have probably been used as long as the middens, at least those which are associated with them. Salmon remains from Namu (dated about 9100 B.P.) were

present in the lowest levels in a similar percentage as in the upper levels (Hester, pers. comm.). There are fish traps right below the Namu midden in the harbour and a good fish spawning stream going up to Namu Lake. These fish traps extend out into the harbour, though not directly in front of or beside the streams, suggesting that at low tide they caught fish milling about while waiting to go upstream. Sea levels have remained stable since 1000 B.C., according to current geomorphological information (Retherford 1970), and it is hypothetically possible that these traps are that old.

### Summary and Conclusions

The present survey data of Northwest Coast sites indicate that the greatest density of stone fish traps is found in the northern Kwakiutl region. These traps can be roughly classified into two major types and four subtypes. Of the two major types, the large and complex variety is generally found in association with the larger salmon spawning streams found in the eastern portion of the area. No really large salmon

streams are present in Bella Bella territory. The highest concentration of the other major type, the single or simple trap, is found in the western portion, particularly associated with quite small streams and lagoons of the outer islands. This device appears to have been essential to the successful adaptation of the Bella Bella peoples to this coastal habitat in which really large salmon streams are lacking.