

25.1 Volumes and Values of Fish Harvests in Pitcairn

Coastal Commercial Catches in Pitcairn

Dalzell et al. (1996) indicated that Pitcairn's annual commercial fisheries production was zero in the early 1990s. Gillett (2009) considered fish sales by Pitcairn residents to cruise ships, the bartering of fish for goods from merchant ships, yachts, and fishing vessels, and the per capita consumption of fish on the island. The study concluded that, on Pitcairn, there was an annual coastal commercial catch in the mid-2000s of 5 mt, worth NZ\$51,000, and a coastal subsistence catch of 7 mt, worth NZ\$50,000.

A description of coastal commercial fishing and the sale/bartering of fish is provided in Box 25-1.

Box 25-1: Coastal Fishing on Pitcairn Island

The Pitcairn community fishes regularly for subsistence as well as for sale to passing cruise vessels and to the island's restaurant, which tends to be open just once a week when tourists are on the island. The cruise ships, visiting yachts and the few tourists who come to the island, provide the only opportunity currently for the Pitcairners to sell or trade their marine resources, mainly in the form of fresh fish (caught in the immediately preceding days and refrigerated) or live lobsters. Most of the island households eat fish, with several families having two to three fish meals a week.

Although a lot of fishing is undertaken from the rocky shores, many households own small wooden boats or skiffs fitted with an outboard motor to enable access to nearshore rocky and coral reefs to catch their favoured species, or for trolling for pelagic species. Most of the reef and shore fishing is conducted using handlines although some fishers use rod and line. A small number of islanders are scuba divers and catch fish through spear fishing or collect spiny lobsters by hand. On fine days, when the sea is calm and public duties have been completed, one of the longboats may be launched and a party of islanders will go fishing for an afternoon. On these occasions, all the fish caught by the party are divided up equally by household and shared out irrespective of individual catch size.

Fishing activities are significantly increased prior to the arrival of a visiting cruise ship, where there is a possibility of a commercial sale of fish and lobster. The Island's Provisions Officer (currently Steve Christian) coordinates orders, sales and share of returns among local fishers and maintains the records. The Pitcairn community is generally aware of the estimated time of arrival of most of the scheduled tourist vessels through a cruise ship calendar published online by the Pitcairn Islands Study Center. Up to 12 cruise ships visit Pitcairn each year during the cruising season (approximately December to April), although not all of these will purchase seafood due to their requirement for food safety certification. On average about 50 kg of tuna, 50 kg of wahoo and 50 kg of reef fish (mainly coral trout, grouper and parrotfish) are requested by each of four cruise ships (although these orders are not always fully met, being dependent upon weather conditions) and about 400 kg of lobsters in total are sold each year. Lobsters are rarely targeted for personal consumption, but in the weeks leading up to a cruise ship visit an intensive lobster fishing effort is undertaken.

Source: Irving and Dawson (2012)

In September 2011 an SPC fisheries officer visited Pitcairn (M. Blanc, per. com. August 2015) and collected many types of fisheries information. Subsequent to the visit SPC carried out some economic analysis of fisheries development options. The report of the analysis (Sharp 2011) contains information on the sale of fish:

In terms of trade, Pitcairn Islanders make cash sales of tuna, wahoo, grouper and lobster to approximately 4 (of the 8) cruise ships that visit the Pitcairn Islands annually. This trade amounts to approximately 150 kg of fish and 100 kg of lobster per ship, at a price of US\$8–10/kg and US\$20/kg respectively (i.e. total revenue of approximately US\$3,200 per ship or US\$12,800 per annum). The only other form of export involves barter trade with passing transport vessels, which occurs 3 to 4 times annually. On average, 60 kg of mixed species are traded for various goods, including meat... By combining what is consumed domestically and what is traded on an annual basis, we gain an estimate of the total production of the fishery. Based on a domestic consumption of 7.84 mt per annum and annual cruise ship sales of 1 mt and transport vessel trade of 0.24 mt, we estimate an annual production of 9.08 mt per annum.

Additional information that may be useful for estimating Pitcairn's annual coastal fisheries production follows:

- In 2014 the resident population of Pitcairn consisted of 42 locals and 7 expatriates. (M. Christian, per. com. January 2016)
- In late 2011 there were 10 privately owned wooden fishing boats and two long boats used for transshipment of cargo and passengers. (M. Blanc, per. com. August 2015)
- There are no full-time fishers, but there are eight part-time commercial fishers (seven men and one woman). (Blanc 2011, citing S. Christian)
- In addition to the eight commercial fishers, there are about 15 non-commercial fishers. (Sharp 2011)
- Possibly one-third of the catch of the eight commercial fishers is personally consumed, one-third is traded, and one-third is given away. (Blanc 2011, citing S. Christian)
- A study of social welfare on Pitcairn (Weil and Gardener 2013) indicated that household earnings from fishing were NZ\$1,000 annually for the 23 households on the island.
- In an economic analysis of the proposed Pitcairn marine reserve (Dickie et al. 2012) it is stated that fishing is an important source of income and food for Pitcairn Islanders. Nanwi (Grey Sea Chub), red snapper (black tip grouper), fafaya (lunar-tail grouper), tunny (yellowfin tuna), and wahoo are the main species caught by Pitcairn Islanders. The catch

of fish is currently divided into three parts: personal consumption (by the fisher), trading and free distribution (to other islanders). Catches are sold on Pitcairn Island for approximately NZ\$2 per kg.

- The occasional on-island sale of fish (NZ\$2/kg) is predominantly for cat food at times when catches are abundant; e.g. during the wahoo season (Blanc 2011).

Selectively using the above information (and placing high credibility on the SPC work), the 2014 coastal commercial catch is judged to be 9 mt, comprising 3 mt of coastal commercial (worth NZ\$18,000 to fishers) and 6 mt of coastal subsistence (worth NZ\$12,000 to fishers).

Coastal Subsistence Catches

Dalzell et al. (1996) indicate that Pitcairn's annual subsistence fisheries production was 8 mt in the early 1990s. Gillett (2009) estimated a coastal subsistence catch of 7 mt, worth NZ\$50,000. He based the value on the price for fish sales to visiting vessels, discounted by 30%.

Following the logic in the above section on coastal commercial fisheries, it is judged that the 2014 Pitcairn Island coastal subsistence catch was 6 mt. Valuing that catch according to the price of the limited amount of domestic fish sales on the island (NZ\$2/kg), it was worth NZ\$12,000 to fishers.

Locally Based Offshore Catches

There is no locally based offshore fishing in Pitcairn.

Foreign-Based Offshore Catches

There is currently no authorised foreign-based offshore fishing in the Pitcairn zone.

Two reports give some background of past offshore fishing in the Pitcairn zone:

- In a report by SPC's Ocean Fisheries Programme (Adams and Langley 2005) it was stated that, since 1990, longline fishing activity in the vicinity of the Pitcairn Islands zone has been dominated by the Taiwanese distant-water fleet. There was also limited fishing activity by Japan, Korea, French Polynesia and, more recently, China, in the late 1990s. In subsequent years the fishery has been dominated by the Taiwanese longline fleet.

- A report on the Marine Environment of Pitcairn Islands (Irving and Dawson 2012) states that, in December 2006, a single, one-off licensing agreement was made to a Spanish-registered longliner by the Commissioner for the Pitcairn Islands, for a flat fee of US\$1,000, although only a few days of fishing took place due to a poor harvest. Sporadic illegal fishing within Pitcairn waters is suspected by Pitcairn Islanders, who have sighted foreign vessels in the vicinity of the islands that do not respond to any radio contact.

An important issue for future offshore fishing in the Pitcairn zone is the establishment of a large marine protected area. A Pitcairn Island economic review (Solomon and Burnett 2014) states that, in 2011, the Pitcairn Island Council voted in favour of investigating the possibility of creating a Marine Reserve within Pitcairn waters. The purpose of the proposed Pitcairn Islands Marine Reserve is to fully protect the special marine environment and to provide a world-class, fully protected marine reserve to attract scientific research, non-consumptive tourism and other non-extractive economic uses, as well as favourable global recognition for Pitcairn. The Marine Reserve proposal allows for the zone between Pitcairn Island's mean low water, and extending to 12 nautical miles offshore, to be excluded from the marine reserve, to allow Pitcairn Islanders to continue to use the area around the island for fishing and other activities in the same way as they do now.

According to an Auckland-based official of the Pitcairn Islands Office, the Pitcairn Islands Marine Reserve has been ratified by the British government (E. Dunn, per. com. January 2016). According to the Pitcairn-based Environmental, Conservation and Natural Resources Division Manager of the Government of Pitcairn Islands, Pitcairn will receive the official notification of the establishment of the marine reserve in late 2016.

Freshwater Catches

There are no freshwater fisheries in Pitcairn.

Aquaculture Harvests

There are no aquaculture activities in Pitcairn.

Summary of Harvests

A crude approximation of the annual volumes and values of the fishery harvests in 2014 can be made from the above sections (Table 25-1).

Table 25-1: Annual Fisheries and Aquaculture Harvest in Pitcairn, 2014

Harvest Sector	Volume (mt)	Value (NZ\$)
Coastal Commercial	3	18,000
Coastal Subsistence	6	12,000
Offshore Locally based	0	0
Offshore Foreign-based	0	0
Freshwater	0	0
Aquaculture	0	0
Total	9	30,000

Figures 25-1 and 25-2 show the volumes and values of the 2014 Pitcairn fisheries production.

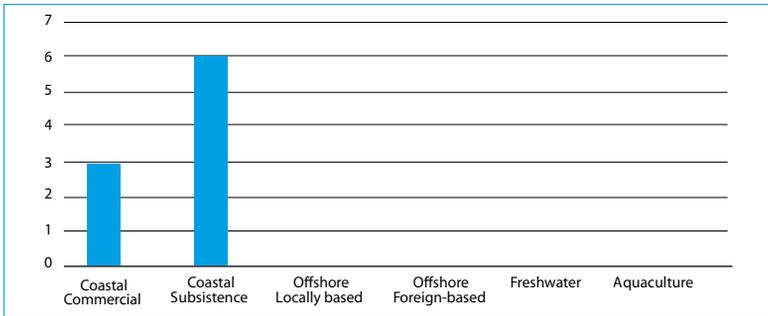


Figure 25-1: Pitcairn Fisheries Production by Volume (mt), 2014

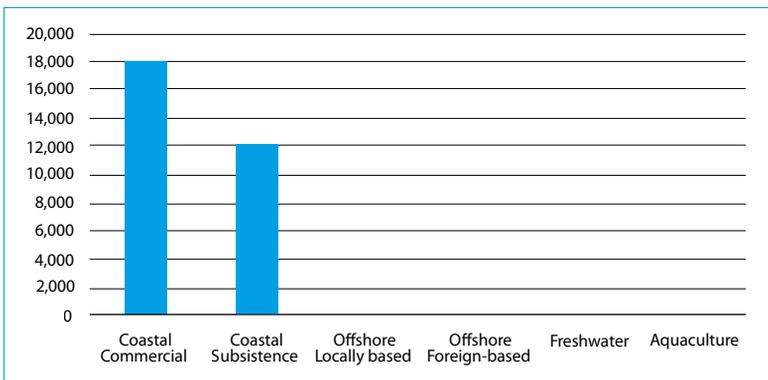


Figure 25-2: Pitcairn Fisheries Production by Value (NZ\$), 2014

Past Estimates of Fishery Production Levels by the Benefish Studies

Similar studies of the benefits to Pacific Island countries and territories from fisheries (“Benefish” studies) have been carried out in the past. Gillett and Lightfoot (2001) focused on the year 1999, Gillett (2009) focused on 2007, and the present study focuses on 2014. The earliest Benefish Study, Gillett and Lightfoot (2001), did not include the non-independent territories; hence Pitcairn was not included. Table 25-2 compares the results of the two studies that included Pitcairn.

Table 25-2: The Results of the Benefish Studies for Pitcairn

Harvest Sector	Volume (mt)	Value (NZ\$)
Coastal Commercial 2007	5	51,000
Coastal Commercial 2014	3	18,000
Coastal Subsistence 2007	7	50,000
Coastal Subsistence 2014	6	12,000

From the above table it can be seen the volumes of production are fairly similar between the years, with the 2014 amount probably being more accurate due to a dedicated trip to Pitcairn for an SPC study (Blanc 2011) from which the 2014 estimates were made. The values are lower for 2014 because the unit price of fish for 2014 was based on information in the SPC study, which showed a fairly low fish price when domestic sales occur on the island. The 2007 values were based on the misconception that the only commercial fish transactions were the sales to visiting vessels, for which the fish prices are relatively high.

25.2 Contribution of Fishing to GDP

Current Official Contribution

Official macroeconomic indicators, such as GDP or GNI, are not produced for Pitcairn.

Method Used to Calculate the Official Fishing Contribution to GDP

As there is no GDP estimate, there is no method for calculating the fishing contribution.

Estimate of Fishing Contribution to GDP

Table 25-3, below, represents one option for estimating fishing contribution to GDP in Pitcairn. It is a simplistic production approach that takes the values of five types of fishing/aquaculture activities for which production values were determined in Section 25.1 above (summarised in Table 25-1), and determines the value added by using value added ratios (VARs) that are characteristic of the type of fishing concerned. Those VARs were determined through knowledge of the fisheries sector, and by using specialised studies (Appendix 3).

Table 25-3: Fishing Contribution to Pitcairn GDP in 2014

Harvest Sector	Gross Value of Production (NZ\$, from Table 25-1)	VAR	Value Added (NZ\$)
Coastal Commercial	18,000	0.65	11,700
Coastal Subsistence	12,000	0.95	11,400
Offshore Locally based	0	0	0
Freshwater	0	0	0
Aquaculture	0	0	0
Total			23,100

25.3 Exports of Fishery Production

The only exports of fishery products from Pitcairn is the catch that is sold to visiting vessels (cruise ships, merchant ship, yachts and fishing vessels).

An SPC study (Sharp 2011) provides information on that trade:

Pitcairn Islanders make cash sales of tuna, wahoo, grouper and lobster to approximately 4 (of the 8) cruise ships that visit the Pitcairn Islands annually. This trade amounts to approximately 150kg of fish and 100kg of lobster per ship, at a price of US \$8–10/kg and US \$20/kg respectively (i.e. total revenue of approximately US \$3,200 per ship or \$12,800 per annum). The only other form of export involves barter trade with passing transport vessels, which occurs 3 to 4 times annually. On average, 60 kg of mixed species are traded for various goods, including meat.

The major exports of Pitcairn are fruits, vegetables, curios and stamps.¹ The total value of all exports from Pitcairn is not readily available.

¹ http://www.theodora.com/wfbccurrent/pitcairn_islands/pitcairn_islands_economy.htm

25.4 Government Revenue from Fisheries

Access Fees for Foreign Fishing

There is no authorised foreign fishing in the Pitcairn zone.

The last time access fees were paid for fishing in the Pitcairn zone was in December 2006 (E. Dunn, per. com. January 2016). At that time a single, one-off licensing agreement was made with a Spanish-registered longliner by the Commissioner for the Pitcairn Islands, for a flat fee of US\$1,000 (Irving and Dawson 2012).

Other Government Revenue from Fisheries

No information is available on other forms of government revenue from the fisheries sector.

25.5 Fisheries-Related Employment

Sharples (1994) provides a detailed account of the involvement of Pitcairn Islanders with fishing:

- There are eight or nine “hard-core fishers” on the island, with another three or four who also fish fairly regularly. Ron, Charles, Randy, Steve, Len, Dave, Claris, Paul and Terry are considered hard-core fishers, with Jay, Brian, Olive and Merelda being regulars.
- On any fine day that is not booked out for some public duty or communal task or activity, at least six and often up to nine skiffs are out fishing most with one fisher but a couple with two aboard.
- Women and men fish regularly from the rocks, mainly for a fish locally called nanwi, for the evening meal.
- If a large vessel is expected (in particular a cruise vessel) then fishing effort increases and the hard-core could be out fishing from dawn to dusk

Some more recent summary information is available on participation in fisheries on Pitcairn, as follows:

- There are no full-time fishers, but there are eight part-time commercial fishers: seven men and one woman (Blanc 2011, citing S. Christian).

- In addition to the eight commercial fishers, there are about 15 non-commercial fishers (Sharp 2011).
- A study of social welfare on Pitcairn (Weil and Gardener 2013) indicated that total household earnings from fishing in 2012 were NZ\$1,000 (across the 23 households on the island).

25.6 Levels of Fishery Resource Consumption

Gillett and Preston (1997) estimated that the production from coastal fisheries in Pitcairn in the early 1990s equated to an annual per capita fish supply of 80 kg. However, that estimate was erroneously based on a population size of 100 people. The 1992 population of Pitcairn was 54 (Pitcairn Islands Study Center, 2008). Using the revised population, the annual per capita fish supply would have been 148 kg.

The present study estimates 2014 coastal commercial fisheries production of 3 mt, and coastal subsistence production of 6 mt. If it is assumed that all of the subsistence production and 1.5 mt of the coastal commercial production is eaten by the humans of Pitcairn (i.e. not used as cat food or sold to visiting vessels), then average annual per capita consumption is about 153 kg for the 49 residents.

25.7 Exchange Rates

Pitcairn uses the New Zealand dollar (NZ\$). The average yearly exchange rates (NZ\$ to the US dollar) used in this book are as follows:

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
1.51	1.42	1.54	1.36	1.32	1.39	1.30	1.29	1.21	1.22	1.28