# Fork length Newsletter

The Observer and Port Sampler Newsletter
for the Tuna Fisheries of the Western and Central Pacific Ocean — Issue #4 — September 2002

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A year has passed and a lot has changed. Since we last wrote, two new national observer programmes in the Fiji Islands and New Caledonia have started up, and five new observer coordinators have been recruited. Three of these new coordinators will be based at SPC: Siosifa Fukofuka (Observer and Port Sampler Trainer) and Peter Sharples (Observer and Port Sampler Manager) along with Geoffrey Bertrand (New Caledonia's new Observer Coordinator). All of these positions have been funded by the European Union. Meanwhile, due to the generosity of the Global Environment Facility (GEF) two new national observer coordinators have been recruited in Fiji Islands (Filipe Viala) and in Papua New Guinea (William Kewo). All of these coordinators have previously spent time out on the ocean waves recording fisheries data, so we hope the insights they have gained will help today's observers with their workload.

As we write, the weather patterns in the region are indicating a return to El Niño conditions for this December. El Niño has major impacts on water temperatures in the Pacific Ocean. Tuna are greatly affected by its arrival. Inside we have explained some of these impacts. Turtles are now listed as endangered by the IUCN (The World Conservation Union) and they need to be monitored carefully.

**William Kewo, from Papua New Guinea**

**Geoffrey Bertrand, from New Caledonia**

## Contents



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The NMFS Hawaiian Observer Programme has gone to great lengths to increase training and resource materials available to both observers and crew members, in an effort to minimise the stress on live turtles who come into contact with fishing vessels. We have outlined their recommendations and have enclosed a copy of SPC's new brochure *Tuna Longlining: The Bycatch Issue* if you want to do some further reading.

July was a busy month for observer programmes, with FFA's Fourth Workshop for Observer Coordinators in the Western and Central Pacific, directly followed by SPC's Standing Committee on Tuna and Billfish (SCTB). These meetings, held in Hawaii, contribute to the direction of the national and regional observer programmes. To keep you up-to-date we have highlighted some of the more interesting points inside.

Once you have read through this edition of ForkLength, you may be interested to know when the next edition will be. We don't expect it to take a whole year; it is likely you will see the fifth edition sometime in the new year. We will print the next issue of ForkLength after the SPC/FFA Data Collection Committee (DCC) meeting. The DCC meets every two years, to review the regional data forms. The next meeting is scheduled for December 2002. Now is the time to let your national observer coordinators know of any changes you would like made to the observer forms. We will publish a full list of the changes in our next edition.

Deirdre Brogan
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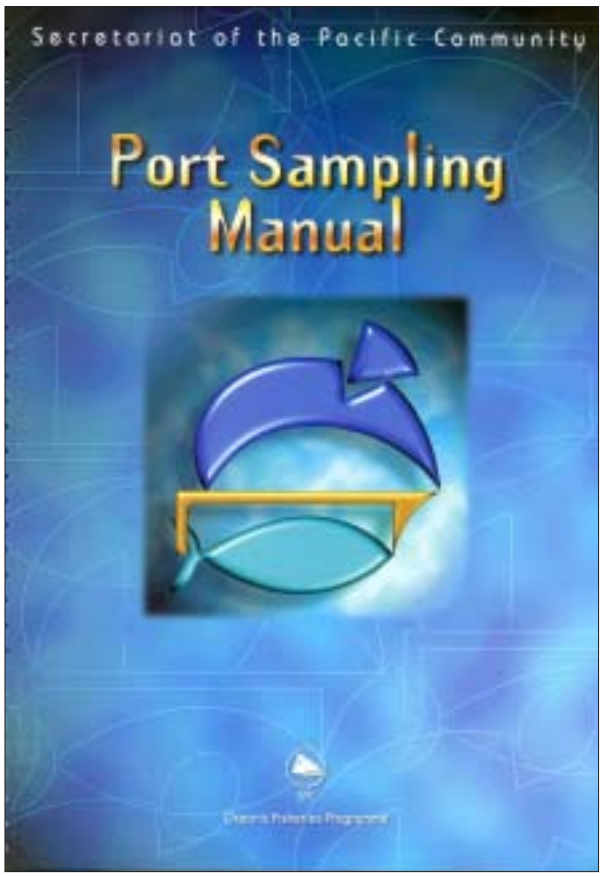
# Port Sampling Manual




Stationed in twenty-seven harbours in the region, port sampling officers often manage to sample all of the vessels that unloads into their harbour. Trained as fully certified fishery observers, they often measure more tuna in a month than any observer does. The publication of the new *Port Sampling Manual* should help these samplers, most of whom work in isolated harbours without any supervision. Port samplers are important members of any data collection team. The continuous stream of monthly data they collect is used directly in stock assessment analysis, providing scientists with an unbroken picture of the tuna stock's age.

One drawback of port sampling data, though, is that port samplers have limited access to the bycatch species, which have long since been discarded. Neither can they verify the fishing position of the catch, which an onboard observer can. Still, as the number of observers in the region is still relatively low and port samplers have access to more vessels per month than any observer, their data collection skills will continue to be an important part of the tuna fisheries data collection strategy.

Their constant presence in each harbour gives port samplers a unique insight into the movements of vessels and they are often the first point of contact a fishing vessel will have with the world of science and monitoring. For this reason, port samplers need to act in a diplomatic manner and act as information officers when questions

**Table 1. Summary of data collected by port samplers in the region during 2000 (Final)**

| Country | Port | Gear | Size Sampling | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Vessels | SKJ | YFT | BET | ALB | OTH | TOT |
| AMERICAN SAMOA | PAGO PAGO | L | 61 | 12 | 80 | 21 | 6,480 | 56 | 6,649 |
| FSM | CHUUK | L | 52 | 0 | 3,581 | 2,799 | 1 | 83 | 6,464 |
| | GUAM | L | 64 | 0 | 9,323 | 7,228 | 448 | 1,060 | 18,059 |
| | KOSRAE | L | 26 | 0 | 2,250 | 595 | 0 | 0 | 2,845 |
| | | S | 3 | 360 | 134 | 6 | 0 | 0 | 500 |
| | POHNPEI | L | 63 | 0 | 13,946 | 14,104 | 184 | 707 | 28,941 |
| | | S | 1 | 100 | 0 | 0 | 0 | 0 | 100 |
| | YAP | L | 2 | 0 | 9 | 21 | 0 | 11 | 41 |
| | **FSM Total** | | | **460** | **29,243** | **24,753** | **633** | **1,861** | **56,950** |
| FIJI | LEVUKA | L | 11 | 0 | 49 | 5 | 3,637 | 0 | 3,691 |
| | | S | 2 | 1,341 | 136 | 22 | 0 | 0 | 1,499 |
| | SUVA | L | 71 | 50 | 10,118 | 6,260 | 4,013 | 1,560 | 22,001 |
| | **Fiji Total** | | | **1,391** | **10,303** | **6,287** | **7,650** | **1,560** | **27,191** |
| MARSHALL ISLANDS | MAJURO | S | 48 | 72,762 | 22,473 | 1,232 | 0 | 15 | 96,482 |
| NAURU | NAURU | S | 1 | 368 | 177 | 0 | 0 | 0 | 545 |
| NEW CALEDONIA | NOUMEA | L | 13 | 0 | 11,779 | 3,893 | 27,248 | 7,117 | 50,037 |
| PALAU | KOROR | L | 140 | 0 | 26,932 | 29,758 | 2 | 6,752 | 63,444 |
| PNG | AT SEA | S | 2 | 562 | 304 | 19 | 0 | 0 | 885 |
| | KAVIENG | S | 4 | 1,927 | 453 | 96 | 0 | 0 | 2,476 |
| | LAE | S | 1 | 387 | 253 | 0 | 0 | 20 | 660 |
| | WEWAK | S | 6 | 973 | 344 | 33 | 0 | 0 | 1,350 |
| | **PNG Total** | | | **3,849** | **1,354** | **148** | **0** | **20** | **5,371** |
| SAMOA | APIA | L | 125 | 1,570 | 1,489 | 97 | 5,918 | 837 | 9,911 |
| | ASUA | L | 5 | 163 | 444 | 25 | 174 | 59 | 865 |
| | FAGASA | L | 6 | 308 | 576 | 18 | 183 | 109 | 1,194 |
| | **Samoa Total** | | | **2,041** | **2,041** | **2,041** | **2,041** | **2,041** | **2,041** |
| SOLOMON ISLANDS | HONIARA | L | 10 | 0 | 4,014 | 5,258 | 3 | 77 | 9,352 |
| | NORO | S | 3 | 918 | 847 | 10 | 0 | 3 | 1,778 |
| | TULAGI | S | 2 | 90 | 262 | 0 | 0 | 0 | 352 |
| | **Solomon Is. Total** | | | **1,008** | **5,123** | **5,268** | **3** | **80** | **11,482** |
| TONGA | NUKU'ALOFA | L | 16 | 124 | 3,605 | 2,548 | 10,582 | 3,312 | 20,171 |
| VANUATU | PORT VILA | L | 7 | 22 | 0 | 0 | 1,445 | 31 | 1,498 |
| **TOTAL** | | | **745** | **82,037** | **113,578** | **74,048** | **60,318** | **21,809** | **351,790** |

of tag recoveries, species identification, harbour pollution or national fisheries legislation arise. The manual gives a good overview of the broad spectrum of information needed by port samplers and provides some extra insights on sampling.

**Hard at work measuring tuna in the busy port of Pago Pago: Fernan Asalele and Paulo Matautia, two of the three port samplers based in American Samoa.**

A copy of the manual is now available on SPC's website at the following URL:

https://www.spc.int/oceanfish/Docs/Statistics/index.asp

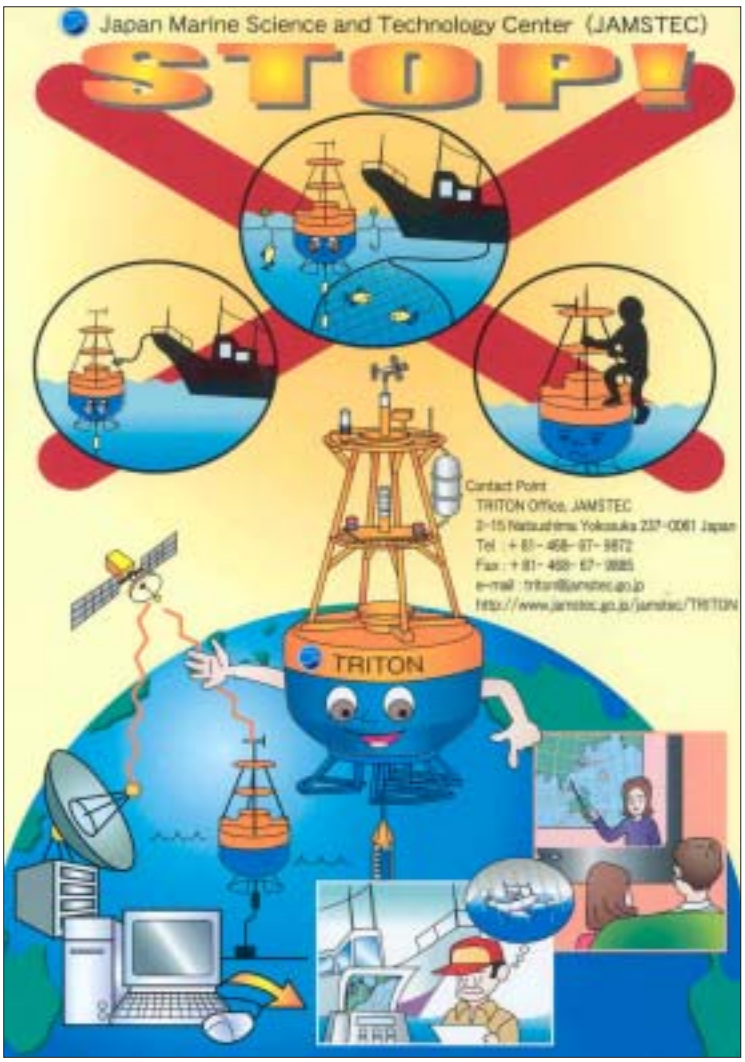
By reading the *Port Sampling Manual*, observers will gain some insights into the work of their port sampling colleagues and information which may help them in their own work.

# El Niño

Have you noticed a difference in the weather lately? The chances are you will have seen a lot less rain especially if you live in the western Pacific region. A reduction in rainfall in this region is one of the first signs for the return of El Niño. Scientists now predict that El Niño will return this December. Fishermen from Peru were the first to notice this weather pattern when they found the catch rates in the eastern Pacific plummeting in certain years, mostly around the month of December. El Niño also affects the tuna fishery in the WCPO, but as we will see, many of these effects are beneficial.

El Niño is a part of a normal weather pattern often occurring every few years. It produces widespread increases in Pacific Ocean water temperatures. El Niño is often followed by La Niña weather conditions, during which oceanic temperatures in the eastern Pacific cool considerably. These two weather conditions tend to occur every three to seven years. The trigger for the change between them is linked to the interaction between ocean and atmosphere.

El Niño is generated in the Pacific Ocean, but it has widespread effects on global weather patterns. It often leads to droughts and floods around the world. Predicting El Niño events helps many communities prepare and thus lessen the possible effects of these droughts and floods. The National Oceanic and Atmospheric Administration (NOAA) from the United States have deployed a large array of weather buoys to track the air, wind and sea temperatures across the Pacific (in conjunction with Japan's Marine Science and Technology Center). The information obtained helps scientists predict El Niño events.



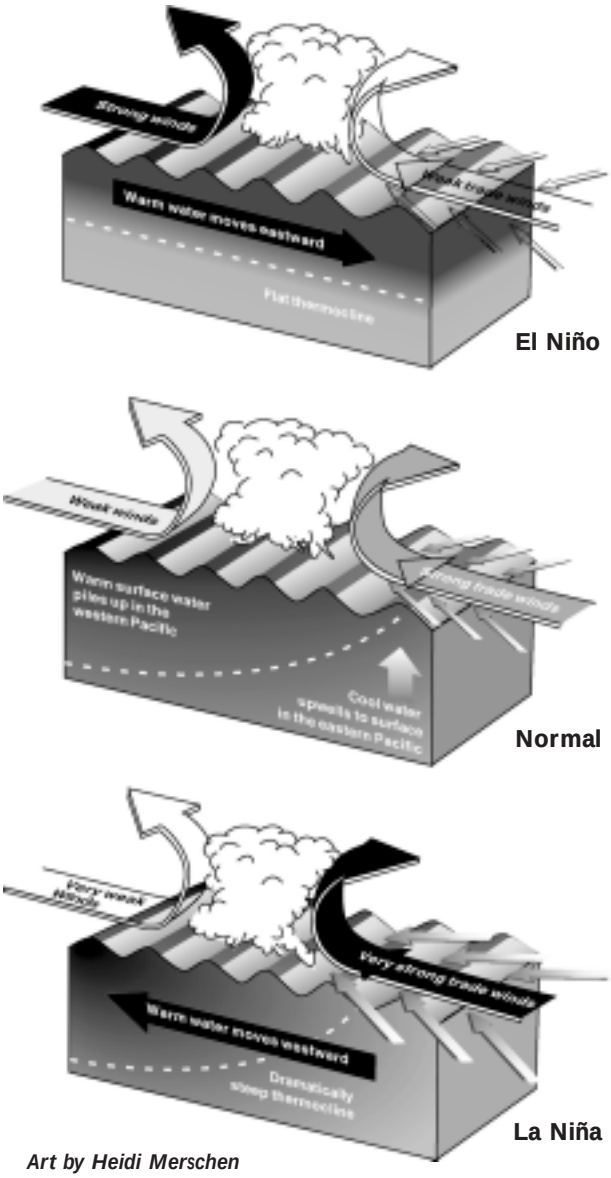

Some fishery observers may have seen these buoys already. Information brochures have been sent to the national observer programmes. They advise vessels to respect these buoys and not to use them as FADs or mooring devices.

In normal conditions the western Pacific supports a large area of warm water "the warm pool" —which has an average temperature of 29°C. Strong trade winds sweep across from the east towards the western Pacific. The effects of these regular strong winds can be better understood if you visualise the Pacific Ocean as a large saucer full of water. As these winds blow strongly to the west, they pile the water up higher in the western Pacific. One result is that the sea–level height can be as much as 60 cm higher at the coast of the Philippines than the sea level height off the coast of Panama.

During El Niño conditions, trade winds weaken and sea-surface waters are no longer pushed across the Pacific. Like water running down a hill, in the absence of strong trade winds the

warm sea-surface waters can spread across towards the central and eastern Pacific. The weaker trade winds and lower air pressure in the eastern Pacific also mean that previously strong upwelling currents, which provided essential nutrients to the eastern Pacific surface waters, slacken off and the primary contribution to the food chain is lost. With their nutrient–rich food supply cut off, the catches of small pelagics from the diverse fisheries off the eastern Pacific are considerably reduced. This was the phenomenon first noticed by fishermen in Peru.

The fisheries of the eastern Pacific may suffer under El Niño conditions—but is the reverse true for the western Pacific? It is no surprise that tuna are affected by the oceanographic changes that accompany El Niño. El Niño expands the amount of area in the Pacific Ocean with warm water temperatures. Also, while trade winds decrease in the central and eastern Pacific during El Niño, the wind is usually stronger in the western Pacific, allowing more nutrients to upwell into the surface waters.



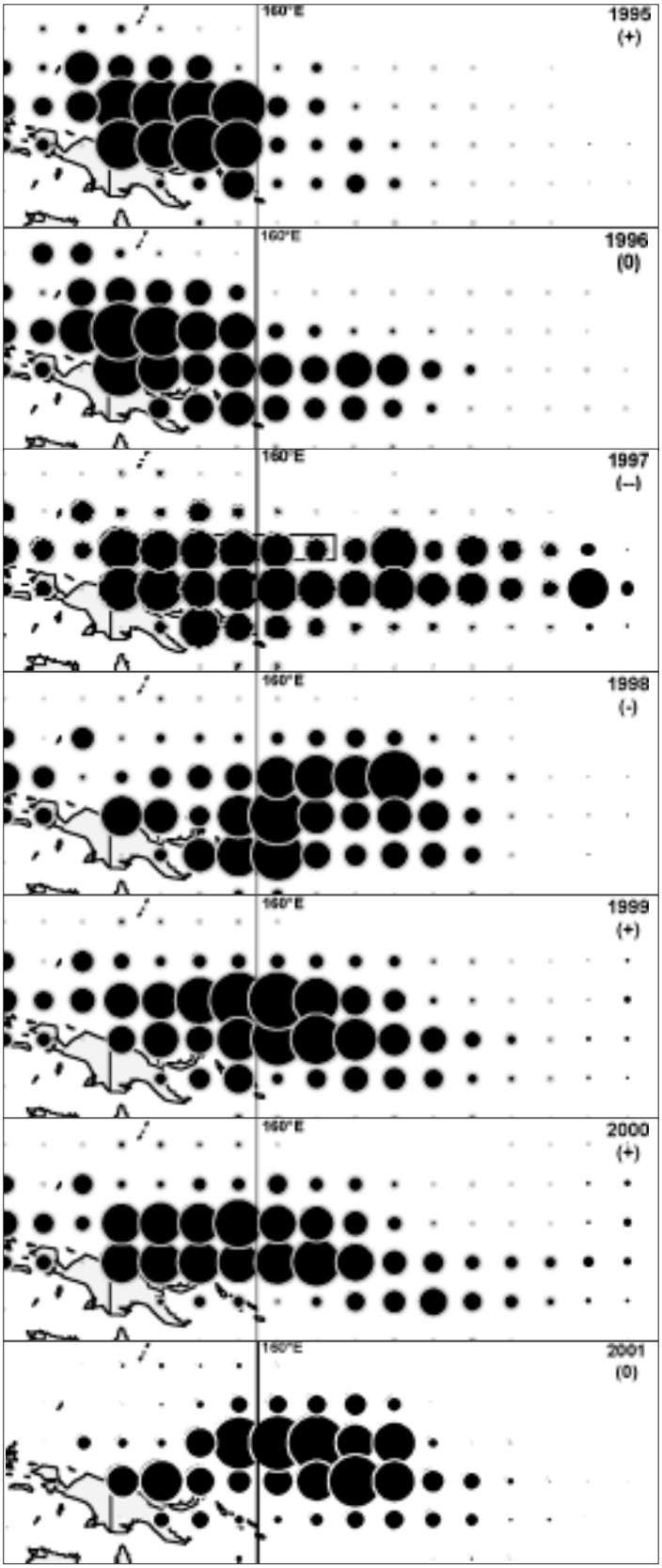

*Art by Heidi Merschen*

This ultimately increases the food supply for the fisheries in the western Pacific. Skipjack, which make up the majority of the WCPO catch, show a preference for waters above 28°C. Their main foraging and spawning grounds is the warm pool. During El Niño the warm pool not only increases in area but it benefits from an increase in nutrients. Skipjack growth is faster and reproduction is greater under these conditions. Yellowfin tuna also benefit. However, El Niño conditions do not favour albacore tuna. As their water temperature preferences are closer to 16°C and their main spawning and foraging grounds are normally outside the warm pool area, they find more benefits during the La Niña years.

Purse-seine vessels are affected by these alternating weather patterns. Their fishing areas are often influenced by the changes in the warm pool. Thus observer programmes may have fewer or greater numbers of purse-seine vessels visiting their harbours during El Niño years. The maps on page 6 show how climate fluctuations have affected purse-seine fishing areas in recent years. The effects are most noticeable in 1997. We can see during a La Niña year (1995) that the vessels concentrated their fishing in the warm pool of the western Pacific. Then, during the 1997 El Niño year, due to the extension of the warm pool, the vessels fished further to the east.

From 1998 onwards, the purse-seine fishing vessels increased their use of drifting FADs, allowing them to continue fishing in the central and eastern Pacific and therefore lessen the effects of these alternating weather patterns on their fishing areas.

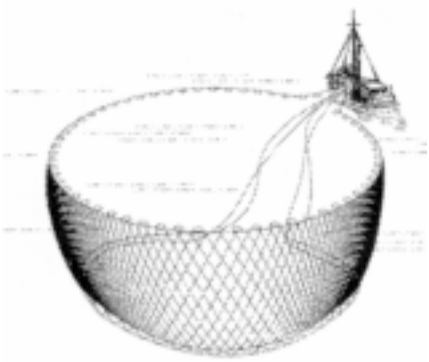
**Distribution of purse seine effort (all fleets), 1995–2001**




**La Niña**

**Normal**

**El Niño**



# National Coordinators Meeting

FFA's fourth Workshop for Observer Coordinator's in the WCPO was held in Hawaii in July. Participants attended from Australia, Cook Islands, FFA, Hawaii, Kiribati, Papua New Guinea, Solomon Islands, SPC and the United States. The meeting was held only two minutes away from the Hawaii Longline Observer Programme. They provided much of the necessary support and organisation skills for the meeting. After outlining each of their country's or agency's report, the participants discussed their common work tasks and goals. The meeting provided a good opportunity to increase cooperation between observer programmes.

The handful of observers who find themselves stranded in foreign countries benefit from this cooperation. Many are successfully routed home thanks to the network of Coordinator's. **Still, observers can make life easier for themselves and their national coordinators by never boarding a vessel without their passport**. You never know where you will end up!

After outlining the high number of observer training courses which were organised by FFA during the year, Karl Staisch noted how a select number of new observers are now being certified as Inter-American Tropical Tuna Commission (IATTC) observers. Purse-seine vessels in the eastern Pacific require 100% observer coverage, and any vessel leaving the western Pacific to return to the east Pacific must have an IATTC certified observer onboard.

By providing western Pacific observers for these occasional trips, vessels will no longer be delayed in port waiting for other observers to fly in. FFA's commissioned report on the best scenarios for the proposed regional observer programme was reviewed. The participants discussed the four proposed options, although it was noted that further in-depth discussions will take place on the proposed regional observer programme during this year's Prepcon meeting, which is scheduled for November. The workshop also reviewed the training and data sheets for the

**Fourth Observer Coordinators Meeting. Some of the early morning risers who managed a visit to Hawaii's Fish Auction (United Fish Market) before the workshop were, from left to right: Taua Tuumalo (American Samoa), Annarae (Fiji Islands), Raikaon Tumoa (Kiribati), George Boape (Solomon Islands), Lewis Vanfossen (NMFS), Peter Sharples (SPC), Karl Staisch (FFA), Wade Whitelaw (Australia), Vicky Cornish (NOAA) Valerie Allain (SPC), Apolosi Turaganivalu (Fiji), Siosifa Fukofuka (SPC)**

new stomach sampling programme, the quality of observer and port sampling data, the implications of any changes to fisheries management proposed by concerns over the interactions between the tuna fishery and protected species, and regional observer certification standards. A full report of the workshop will be available from FFA shortly.

# Standing Committee on Tuna and Billfish

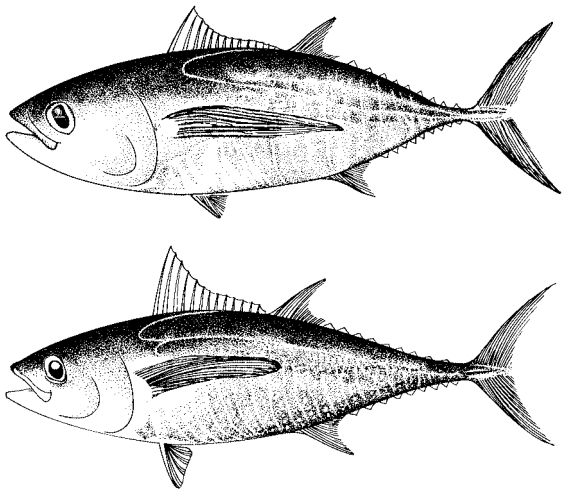
The Standing Committee on Tuna and Billfish (SCTB) is a meeting of fishery scientists which is held every year. This year's meeting, which was held in Hawaii, was the fifteenth.

The meeting opened with an overview of the state of tuna fishery in the WCPO during 2001. The provisional total catch of tunas in the WCPO was estimated at 1.9 million metric tons. This was slightly higher than the catch in 2000. It was the third highest catch ever recorded. This provisional 2001 tuna catch represents 75% of the estimated catch for the whole of the Pacific Ocean, and 49% of the estimated world tuna catch. Most species catches were slightly above the catch in 2000. Purse-seine vessels landed more than 1 million metric tonnes for the fourth year in a row. This was in spite of the fact that a number of vessels tied their vessels up voluntarily for a period of time, due to the low market prices. The number of sets on drifting FADs made by purse-seiners also continued to fall, with a corresponding rise in the number of free school sets. Longliner vessels had a record catch during 2001, while the pole-and-line and troll fleets showed a small rise compared to the catches in 2000.

Will these large catches of tuna affect the total tuna stock? The number of skipjack and albacore being caught is not causing concern but scientists are increasingly concerned about the number of bigeye and yellowfin landed, especially the juvenile sizes. **Scientists made strong and repetitive calls to increase the number of observers on vessels**. This will increase the amount of detailed data we have on the fishery. **They also asked for the quality of the observer and port sampling data to be improved**. One report in particular which analysed port sampling and observer data showed that some samplers in the region may have problems identifying the difference between the small bigeye and yellowfin. Do you know the difference? It is an essential skill for all samplers. If you are not sure of the difference take some time out to review your species identification guide. Ask your national observer coordinator or a colleague to help you if you are not sure.

*Check your identification skills*

***Which one is the bigeye? Use your species identification guide if you are not sure***.



The SCTB meeting also requested observer programmes to:

- Improve the amount and the quality of fisheries data collected;
- Create a standard design for observer programmes, including percentage coverage;
- Compile vessel structure and gear details;
- Improve data collection for turtles;
- Improve data collection for small bigeye and yellowfin tuna;
- Compile fishing depths for the Pacific Island vessels targeting albacore (using temperature depth recorders)

# Turtles

As a tuna observer working in the WCPO, it is likely that your vessel's target catch will be tuna and by the end of the trip you will have measured more tuna than any other species. While bycatch species may be less abundant on the decks of tuna vessels, their importance to the overall management of the tuna fisheries often outweighs their commercial value. The capture of any threatened species can result in the closure of a fishery, something we have recently seen with the Hawaiian swordfish fishery. Of the five species of turtles that are known to be caught by the tuna fisheries in the WCPO, all are listed as endangered by the World Conservation Union (IUCN). The five species are:

- Green turtle (*Chelonia mydas*) – **'endangered'**
- Olive ridley turtle (*Lepidochelys olivacea*) — **'endangered'**
- Loggerhead turtle (*Caretta caretta*) — **'endangered'**
- Hawksbill turtle (*Eretmochelys imbricata*) — **'critically endangered'**
- Leatherback turtle (*Dermochelys coriacea*) — **'critically endangered**'

Pacific Island communities have long benefited from turtle's meat, shells, eggs and oil. Culturally, turtles have always played a strong role in the life of Pacific Islanders and still do. Unfortunately, coastal development in many of these areas has interfered with nesting beaches and reduced feeding habitats, while the commercial exploitation of the turtles and their eggs has seen their numbers plummet drastically. Increasingly, scientists are becoming concerned about the interaction of marine turtles with fishing vessels. Recently the South Pacific Regional Environmental Programme (SPREP) commissioned SPC's Oceanic Fisheries Programme to do a study on the extent of the problem. This report was titled "A Review of Turtle by-catch in the Western and Central Pacific Ocean Tuna Fisheries". As there was little or no turtle catch data available from logsheets, the majority of the data outlined in the report was collected from observer trip reports.

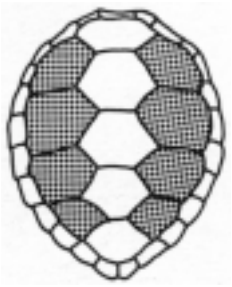
The biology and behaviour of turtles can leave them vulnerable to interaction with tuna fishing vessels. When it comes to water temperature, turtles like it hot! Preferring water above 20˚C, they are mostly found in the top 100 metres of the water column, although infrequent dives to 500 metres have been recorded. Water temperature preferences limit the areas where you are likely to find turtles in the Pacific. They are mostly found in the warm tropical waters (10˚N-10˚S), although seasonal increases in water temperature in the subtropical waters (10˚N/S to 35˚N/S ) may entice the turtles to these waters. Turtles have been hooked by fishing vessels in colder, temperate waters, but, as table 2 shows, to a much lesser extent.

**Table 2. Turtle encounters observed in WCPO longline sets (from observer data from 1990–2000)**

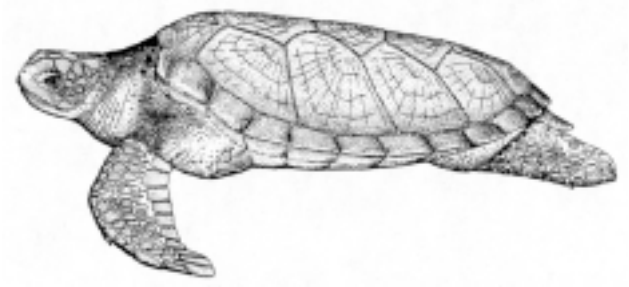
| Area | Observed sets | Turtles | Incidence (%) | Nominal CPUE | Mean CPUE | SE | CV |
|---|---|---|---|---|---|---|---|
| WTP (10¡N-10¡S) | 2,143 | 83 | 3.69% | 0.02633 | 0.0389656 | 0.004599 | 11.8% |
| WSP (10¡S-35¡S) | 2,502 | 12 | 0.48% | 0.00218 | 0.0031200 | 0.000943 | 30.2% |
| WTeP (south of 35¡S) | 5,908 | 7 | 0.12% | 0.00051 | 0.0006723 | 0.000263 | 39.1% |

Incidence –- percentage of sets encountering turtles
CPUE – number of marine turtles per 1,000 hooks
SE – standard error in the estimate of the mean CPUE
CV – the coefficient of variation

**Green Turtle** *Chelonia mydas* ***TUG***

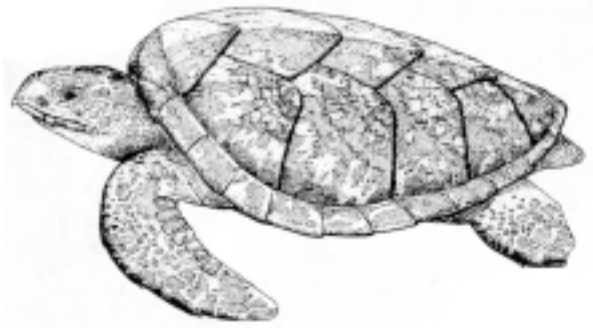


4 pairs of non overlapping costal scales



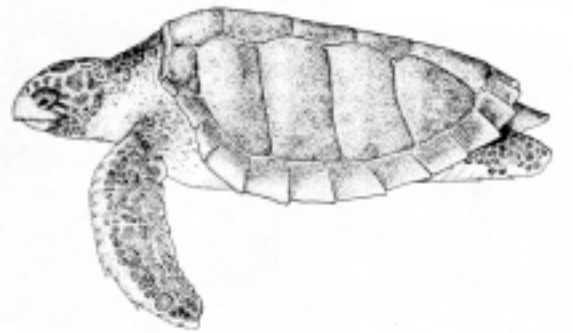
**Hawksbill Turtle** *Eretmochelys imbricata* ***TTH***

4 pairs of overlapping costal scales

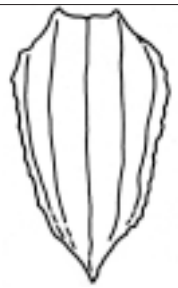


**Loggerhead Turtle** *Caretta caretta* ***TTL***

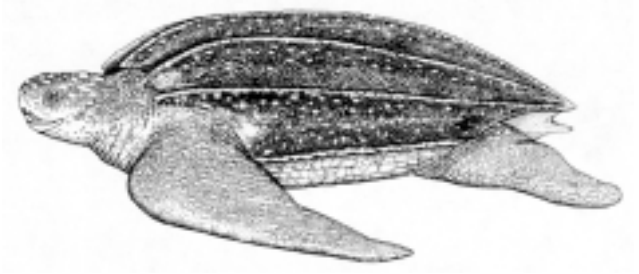
5 pairs (rarely 6) costal scales



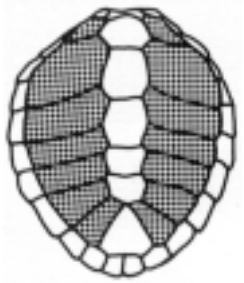
**Leatherback Turtle** *Dermochelys coriacea* ***LTB***



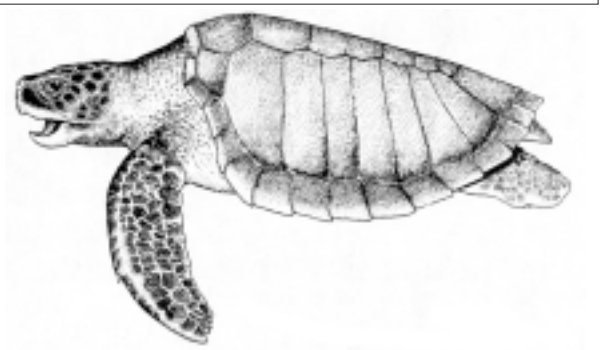
Carapace with 5 ridges (no scales)



**Olive Ridley Turtle** *Lepidochelys olivacea* ***LEO***



6 pairs or more costal scales (7 pairs in the picture on the left)



**Turtles Identification Sheet**

Turtle's preference for the top 100 metres leaves them vulnerable to capture by vessels that are fishing in shallow water. On longliners the number of hooks in a basket (the number of hooks between floats) will give an observer a good indication of the depth of the fishing line. Other setting specifications alter a line's fishing depth; for instance, the vessel and line setting speed, the length of the branchlines and the floatline length can all alter the depth of the fishing line. Still, as a rough guide we can say that vessels setting five hooks per basket are setting shallow with most of their hooks lying in water no deeper than 100 meters. When there are fifteen to twenty hooks in a basket the hooks will probably fish in depths of about 150–250 metres, while 30 hooks in a basket leaves the hooks in the 300–400 metres depth range.

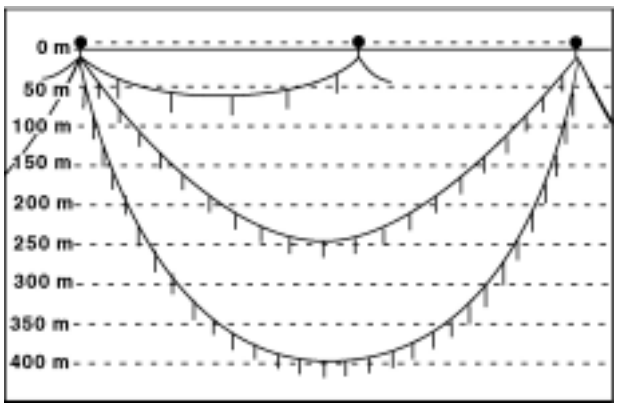



**Figure 1. Baskets with 5,20 and 30 hooks.**

The majority of Pacific longliners now target bigeye — or albacore if they are fishing in subtropical waters. Fortunately for marine turtles, both bigeye and albacore prefer deeper, colder waters (16˚C) and most longline fishing vessels target these depths. This offers the turtles some protection. Observer data shows that the majority of marine turtles landed are caught by shallow–set hooks. Unfortunately, some fleets that fish for bigeye tuna set shallow hooks, in an effort to catch the bigeye that move up into the shallower waters during the rise of the full moon. Turtles may also be hooked by the first and last few hooks in a basket which will always fish shallow. For instance in figure 1 we can see that for a 30–hook basket, hook numbers 1, 2 , 29 and 30 will lie in waters less than 100 metres.

Turtles caught by longline gear are mostly hooked or may become entangled by the fishing line, while turtles landed by purse seiners are entangled or trapped by the net. Observer data show that purse-seine sets made on drifting logs have the highest number of encounters with turtles. Surprisingly, drifting-FAD sets have much lower interactions with turtles. This could be due to the shorter time period drifting FADs spend in the water. Unassociated (free schools) and anchored FAD sets also encounter turtles.

The review did note however that the majority of turtles that are landed on-board fishing vessels are still alive. With proper crew and observer training many of these turtles can be returned to the sea safely. The Hawaiian observer programme (which went from 5% observer coverage to 20% after legal action by environmental groups wishing to protect sea turtles) has taken the lead in conducting much of this training and producing the resource materials needed to increase awareness among the Hawaii longline fleet.

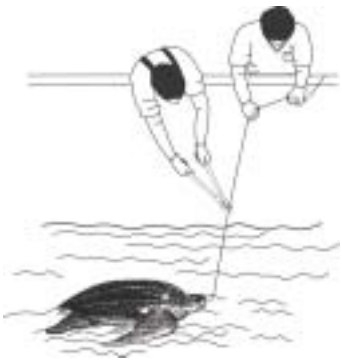
**Table 3. Marine turtles encountered in the WTP purse seine fishery (based on observer data 1990-2000)**

| School association | Observed sets | Turtles | Incidence (%) | Nominal CPUE | SE | CV |
|---|---|---|---|---|---|---|
| Unassociated/Feeding on Baitfish | 5,582 | 6 | 0.090% | 0.10749 | 0.05065 | 47.1% |
| Log | 2,107 | 17 | 0.807% | 0.80683 | 0.19494 | 24.2% |
| Drifting FAD | 2,975 | 2 | 0.067% | 0.06723 | 0.04753 | 70.7% |
| Anchored FAD | 325 | 2 | 0.615% | 0.61538 | 0.43447 | 70.6% |
| Animal-associated | 307 | 3 | 1.115% | 1.11524 | 0.64148 | 57.5% |

Incidence –- percentage of sets encountering turtles
CPUE – number of marine turtles per 1,000 hooks
SE – standard error in the estimate of the mean CPUE
CV – the coefficient of variation

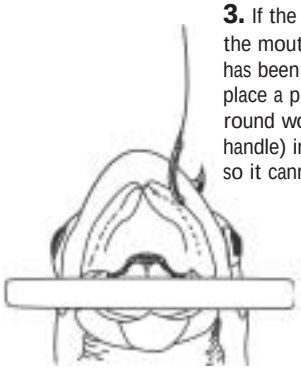
## RELEASING HOOKED TURTLES

The bycatch of sea turtles by pelagic longlining is an issue of great concern. The Hawaii-based longline fishery now requires all vessels to carry a long-handled dip net and long-handled clippers to help with the release of sea turtles. Fishermen from other Pacific Islands can use the techniques developed in Hawaii. If a turtle is caught, the following steps should be taken to give it the best possible chance of survival.

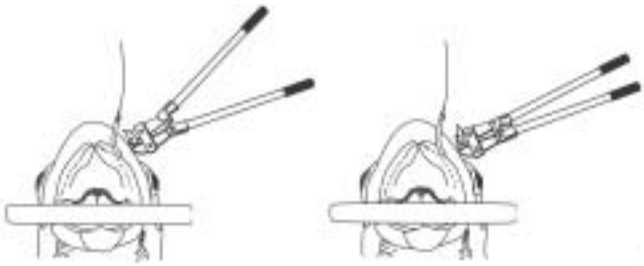


**1.** If the turtle is too large to bring on board, bring it as close to the boat as possible without putting too much strain on the line, then cut the line as close to the turtle as practical.

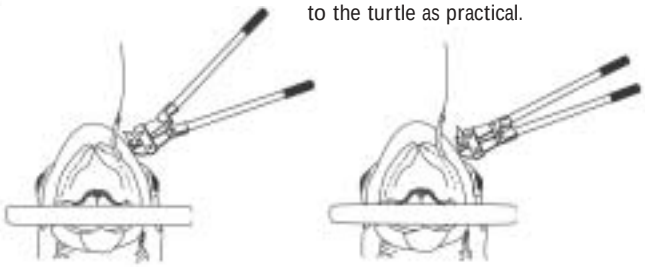
**2.** If the turtle is small, use a dip net to lift the animal on board. **DO NOT** use a gaff and **DO NOT** pull the line or grasp the eye sockets to bring the animal on board.



**3.** If the hook is in the mouth area or it has been swallowed, place a piece of round wood (broom handle) in its mouth so it cannot bite.

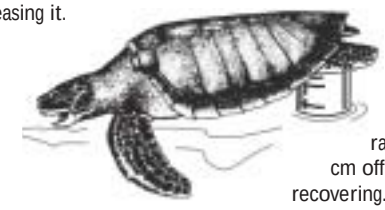


**4.** If the hook's barb is visible, use bolt cutters to cut the hook in half, and remove the two parts separately.



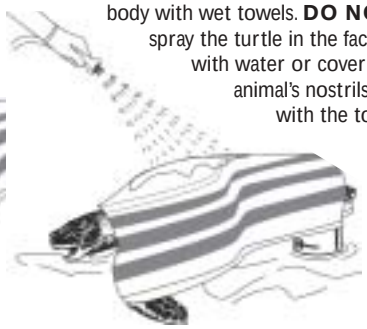
**5.** If the hook is not visible, remove as much line as possible without pulling too hard on the line, and cut it as close to the turtle as practical.

**6.** Assess the condition of a turtle that has been brought aboard before releasing it.



**7.** If the turtle is sluggish or not active when lifted on board, it may have water in its lungs. In this case the rear flippers should be raised and kept around 20 cm off the deck while it is recovering.

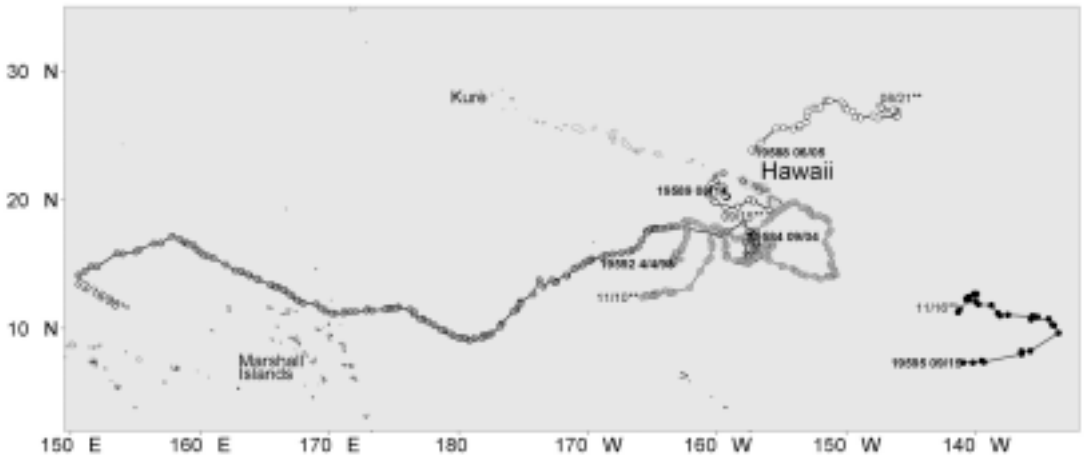
**8.** In all cases, place the turtle in a secure shaded location of the boat. Cover the turtle's body with wet towels. **DO NOT** spray the turtle in the face with water or cover the animal's nostrils with the towel.



**9.** Keep the turtle on board for a minimum of 4 hours, and up to 24 hours, depending on how lively the animal is.

**10.** Carefully return the turtle to the water headfirst while the vessel is **STOPPED** and the engine is **OUT OF GEAR**. Ensure the turtle is clear from the vessel before motoring off.

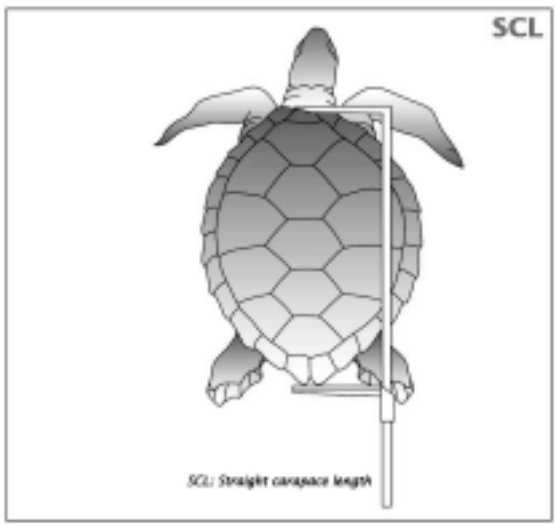
**11.** Record the interaction in your logbook, identifying the turtle species if possible and recording tag numbers if the turtle has tags on its flippers.




**Here is the result of some turtle tagging done by the Hawaiian longline observer programme. We can see that one turtle (Olive Ridley) tagged in September 1997 went all the way to the Marshall Islands, before its tag finally popped off in March 1998.**

The training video *Handling and Releasing Sea Turtles*, produced by NMFS Pacific Islands Area office, will be made available to all observer programmes in the near future.

Another frontier for the Hawaiian observer programme has been the deployment of tags on marine turtles. All Hawaiian observers are now trained to place pop-up survival tags on any live turtles which are hooked and landed while the observer is onboard. After cleaning and drying the shell of the live turtle, observers mix up a special marine glue—it's an exact science, as observers use their watch to wait 90 seconds before applying the glue to the bottom of the large tag base. This is glued to the turtle before it is released back into the water. The pop-up archival tags records information on location and the depth before 'popping off' the turtle at a certain pre-programmed depth (since a turtle going deeper than its normal depth range is presumed to have died). The information is relayed by satellite. The pop-up tag provides valuable information on a turtle's chances of survival if hooked and subsequently released by a vessel.




**How you can help!**

- **Know the five species of turtles that you are likely to encounte**r. Knowing the difference between the species is not too difficult if you have a copy of the species identification guide with you.

- **Record the hook number**. Make an effort to record the hook number the turtle was hooked on. If a number of other fish are hooked in the same fishing basket, give your full attention to recording the hook number for the turtle.

- **Record the condition status of the turtle**. Record whether the turtle was alive or dead when it was landed. The next edition of the observer forms will ask you to record if the turtle was hooked (internally or externally) or whether it was entangled by the line. On purse-seiners you should note if the turtle was entangled or just trapped by the net.

- **Record a length measurement for the turtle**. By paying special attention to marine turtles species, Pacific Island observers will go

a long way to ensuring that these animals survive, beyond the 21st century, and remain an integral part of cultural festivities for Pacific communities.

*With thanks to Korla Gore, Joe Arceneaux, Hawaiian Longline Observer Programme (NMFS)*

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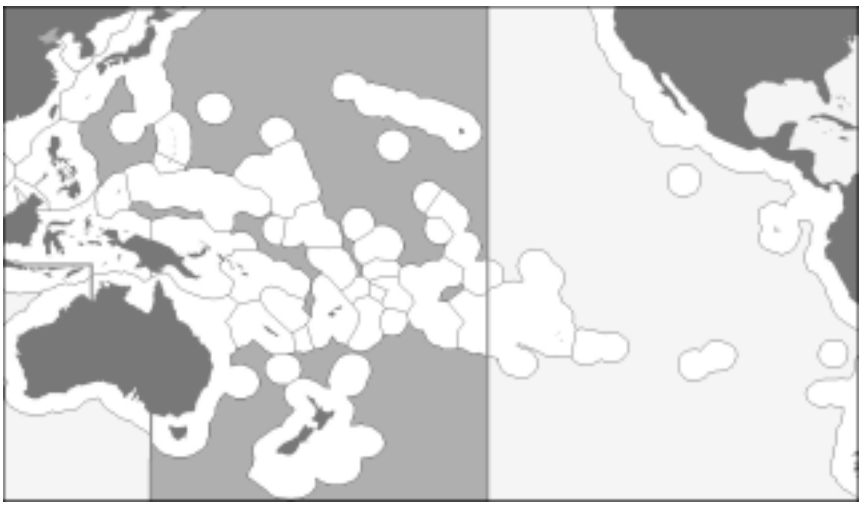
## Common acronyms for observers

**WCPO** – Western and Central Pacific Ocean
**FFA** – Forum Fisheries Agency
**SPC** – Secretariat of the Pacific Community
**SPREP** – South Pacific Regional Environmental Programme
**FAD** – Fish Aggregating Device
**NMFS** – National Marine Fishery Service
**Prepcon** – Preparatory Conference for the Convention on the Conservation and Management of the Highly Migratory Fish Stocks in the Western and Central Pacific



**WCPO: The Western and Central Pacific Ocean**

# New recruits

**Cook Islands February 2002**

**Front row: Teokotai Rio, Richard Henry, Nga Tereatoa, Dorn Douglas, John Trego, Kautai**
**Second row: Pamela, Karl Staisch, Ngere Tariu, Andrew Jones, Garth Anderson, Siosifa Fukofuka**
**Back row: Arama Teru, Baxter, Ian Bertram**

**Kiribati- Kiritimati Island April 2002**

**Sitting down: Raieta Teeman Iabeta Roboti, Ubaati Buaua, Nakala Kapon, Ataieta Uering, Tekoriri Takinoa**
**Standing: Karl Staisch (FFA), Anre Robati, Rikamati Naare, Ribati Williams, Kabwenea, Tangiroi, Teun Karati, Ierubaata Tarataake, Raikon Tumoa, Tebiri Etuati**
**Back row: Bosco Reo, Kaiea Eritaia, Angy B.**

**Fiji Island – June 2002**

**Front row: Eroni Vunisa, Timoci Tavusa, Osea Nagasau, Tabaitai Jikoduadua**
**Second row: Karl Staisch (FFA), Lino Terekiti, Jone Maiwelegi, Laiseni Tawalesu**
**Third row: Josese Raikuta, Mikaeli Peni, Harry Bola, Biu Waisake,**
**Jope Lesavua, Timoci Vakatovolea, Jone Amoe**
**Back Row: Sairusi Madigi, Nasoni Tora, Anare Rasumusumu, Wilson Buadromo,**
**Jone Ah Tong, Osea Golea**


## Conference Announcement

Registration is now open for the Third Biennial International Fisheries Observer Conference, to be held 18-21 November 2002, in New Orleans, Louisiana, USA. The objective of the conference is to bring together a broad representation from the U.S. and international fisheries and observer communities to address some of the key issues common to fisheries observer programs.

The conference sessions will focus on the role of observer programs as management, compliance, and scientific data collection programs, and the current applications, limitations, and future uses of observers at sea. The conference is being sponsored by the U.S. National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries), in cooperation with the Canada Department of Fish-eries and Oceans. For more information about the conference, including instructions and deadlines for submitting abstracts, program overviews, and registration information, go to the conference website at:

http://www.st.nmfs.gov/observerconference2002, or contact Vicki Cornish, Conference Chair, 1315 East-West Highway, Silver Spring, MD 20910; 301/713-2328; Vicki.Cornish@noaa.gov