

THE SOUTH PACIFIC ISLANDS FISHERIES NEWSLETTER

No. 6

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September 1972

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EDITORIAL

The third meeting of the SPIFDA Consultative Committee took place in August and the nucleus of the report appears on pages 2 to 10. Some of the shadows cast over SPIFDA operations during the past six months have been cleared and we now know a little more clearly where we stand; the work programme already planned can now go forward in part (funds for the Koror project are still held in abeyance) within the limit of finance available. But the future of SPIFDA after 1973 remains uncertain.

It has been eloquently shown that a project such as SPIFDA has a vital role to play in promoting the utilization and management of marine resources in the Pacific. However, an expressed need is not automatically followed by provision of the hard cash to achieve realization; no UNDP funds will be available to such a project during 1973 or the greater part of 1974 as all monies have already been allocated to other projects. The order of priority of these projects in relation to regional requirements will come up for discussion at the forthcoming annual meeting of the South Pacific Commission - the South Pacific Conference - at Apia; representatives to that Conference can help to ensure a future for the Agency by direct voting of funds, by re-assessing the priorities accorded to the various UNDP projects in their region and/or wresting promises of funding from other sources.

You will also see in the report of the CONCOM meeting a reference to the Newsletter and the desirability of continuing this channel of disseminating news, not only of SPIFDA activities but of matters of allied interest. Although not possible to envisage the issue of a monthly Newsletter efforts will be made to produce one every two months.

We have just heard confirmation of the appointment by the South Pacific Commission of a Fisheries Officer to replace Mr Val Hinds who left last December. Under the SPIFDA Plan of Operation the SPC Fisheries Officer's primary role is that of Project Co-Manager of SPIFDA and it is very welcome news that we will now benefit from a Co-Manager who will be employed full-time on SPIFDA activities. The post is to be filled by Mr R.H. Baird, a marine biologist who has made a special study of oyster and mollusc culture and who - as reported in Newsletters No. 3 & 4 and No. 5 - was to have come to New Caledonia earlier as FAO consultant to the various SPIFDA projects; however, when this appointment was held up indefinitely, the SPC stepped in to secure his services. Although 'wearing another hat' his delayed arrival in October will be the more welcome.

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REPORT OF THE THIRD MEETING OF
SPIFDA CONSULTATIVE COMMITTEE

The Third Meeting of the SPIFDA Consultative Committee was convened at SPC Headquarters, Noumea, 7-11 August 1972. Representatives of nine countries/territories, three international organizations and four non-governmental agencies attended.

REPORT OF THE PROJECT MANAGER

Professor François Doumenge presented a report of the work done by the project since the last meeting in October 1971. He stated that the reports of all the consultants had been completed and that copies of those not yet circulated would be available soon. Progress had been made in the establishment of aquaculture centres in New Caledonia and Koror. Assistance was provided for the study of marine turtles. The fishing boat consultant had given useful assistance to a number of territorial governments in their boat-building programmes.

SPIFDA PROGRAMME REVIEW

The meeting then undertook a general review of the SPIFDA project and of the means of overcoming financial and other problems which were presently causing difficulties in implementing this programme.

It was noted with regret that the experimental work started by the project had to be suspended due to the review undertaken by UNDP and that as a result useful time had been lost. The Consultative Committee hoped that no further delays of this nature would occur in the implementation of the work of the project and that the necessary funds and services would be made available as soon as feasible. The Consultative Committee is convinced of the need for completing the pilot-scale studies and demonstrations and providing technical assistance for the application of the results in the various territories to increase fishery production.

The UNDP representative, Mr William Hussey, said that the temporary suspension of the SPIFDA work programme whilst a special study of the project was undertaken had now been lifted and the work programme as recommended by the Second Meeting of the Consultative Committee in October 1971, as subsequently approved by FAO and UNDP, could now proceed within the limits of funds available to the project.*

The Consultative Committee discussed the question of provision of aid to American Samoa, Trust Territory of the Pacific Islands, New Caledonia and French Polynesia under the SPIFDA Plan of Operation. Although there had earlier been

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Mr Hussey subsequently (September 1972) advised that funds for the TTPI project are still being withheld pending a decision by UNDP, New York.

some doubts, it was clarified that these territories could participate fully in SPIFDA activities on the same basis as all other Pacific Island territories.

THE ROLE OF SPIFDA IN REGIONAL FISHERIES DEVELOPMENT

As questions had been raised regarding the priority to be accorded to fishery development in the region and the role of SPIFDA as an effective agency for the development of marine resources, the Chairman called on the representatives of the participating governments to express their views on this matter. As was evident from the statements of the delegates and the discussions that ensued there was full agreement that fishery development had a very high priority in the development plans of the islands and that SPIFDA had a vital role to play in promoting the utilisation and management of marine resources of the region. The Consultative Committee therefore unanimously recommended that SPIFDA should be continued until it had achieved its objectives.

It was clear that by the end of the current phase of the project the work of the three major aquaculture sub-projects would have reached a stage where considerable effort and money would have been expended but the results in terms of developing and testing techniques would be incomplete. It was therefore strongly recommended that these should be continued for a further period of 24 months in order that the full benefit from the investment in these sub-projects could be gained.

FUTURE PROGRAMME OF WORK

A. With available funds:

The Consultative Committee then considered the priorities to be accorded to the various sub-projects proposed, with special reference to the recommendations of the Croker Report and of the Second Meeting of the Consultative Committee. The discussions related to the sub-projects that could be implemented with the funds available during the remaining period of SPIFDA and those projects that the Committee considered to be of high priority and for which funds had to be sought from UNDP or other sources.

The Consultative Committee agreed with the recommendation of the Croker Report that demonstration of aquaculture should be initiated with the funds already available. It was, however, felt that the two centres recommended by Mr Croker would not meet the full requirements of the region and that an additional centre in Koror should be established during this period as recommended by the Second Meeting of the Consultative Committee. In fact, work on this centre had already made considerable progress and with some expert assistance from SPIFDA could serve as a valuable demonstration centre for the Western Pacific. The problem of transport mentioned by Mr Croker is not a major handicap for the operation of this sub-project since this centre would function primarily as a demonstration centre for the adjacent territories.

During discussions regarding the proposed sub-project on development of fisheries in mangrove areas, it emerged that this activity was not of high priority in a regional programme in view of the fact that the studies required could be undertaken within national fishery programmes.

It was agreed by the Consultative Committee that the post of Fishing Boat Adviser should be extended for a period of two months as proposed by the Croker Report.

After discussions with the territories concerned a programme of work was decided upon for the remainder of the assignment.

There was a general consensus that the major requirement in relation to those sub-projects was the provision of experts working on an integrated team basis as far as practicable. In many cases it would be beneficial if such experts could operate as a team. It was agreed that the bulk of the equipment and other services would be provided as counterpart contributions by the host territories in view of the extreme shortage of funds from UNDP sources.

Since the requirements for fellowships would be less than originally envisaged until the end of the current phase of the project, a reduction in this allocation was considered feasible. It was also recognized that some of the territories might be able to find funds for the travel and subsistence of their trainees.

The Consultative Committee noted that the South Pacific Commission had agreed to bear the expenditure for the publication of the bêche-de-mer handbook and also to find the necessary funds for turtle tagging.

The Consultative Committee recommended that the South Pacific Commission should also consider the publication of a turtle handbook.

Estimates for these items were included in the report of the Second Meeting of the Consultative Committee.

In the light of these discussions, the allocation of funds proposed in the Croker Report was revised as follows:

| <u>Sub-project</u> | <u>Man/months</u> | <u>Equipment</u> <u>US \$</u> |
|---|-------------------|----------------------------------|
| Demonstration centres for aquaculture in Fiji, New Caledonia and Koror | 42 | 17,000 |
| Fishing boat adviser | 2 | - |
| Fellowships | - | 7,700 |
| Bêche-de-mer handbook (PSC) | - | - |
| Turtle tagging programme and handbook (SPC) | - | - |
| | <u>44</u> | <u>\$24,700</u> |

The Consultative Committee noted that the Croker Report had recommended the publication of the SPIFDA Newsletter at monthly intervals. The Project Manager informed the Committee of the lack of secretarial and translation

assistance required for the publication of the Newsletter at such frequent intervals in two languages. Discussions on the subject clearly indicated that such a Newsletter is essential but that with existing facilities it would not be feasible to make it a monthly publication. The representative of the South Pacific Commission agreed to provide secretarial and translation services to permit the timely publication of the Newsletter in the future. It was also agreed that the SPC Fisheries Officer, when appointed, would take over the major responsibility for the preparation of the manuscripts.

There was general agreement that the scope of the Newsletter should remain as it is now and that territorial representatives should co-operate more fully by responding promptly to requests for contributions to the Newsletter.

B. Future work with additional funds:

The Consultative Committee then proceeded to discuss the programme of the follow-up work to be undertaken by SPC/FDA and in this connection reviewed in detail the sub-projects in categories I and II proposed at the Second Meeting of the Consultative Committee and recommended in the Croker Report. As it was clear that the pilot-scale studies and demonstrations initiated during the first phase of the project could not be completed by July 1973, there was an obvious need to continue this work and to initiate studies on Macrobrachium culture in French Polynesia on a high-priority basis. As the pilot-scale studies in aquaculture should have made considerable progress by then it would be necessary to accord high priority to the training of personnel during this period.

Another priority programme of work during this phase would be the development of outer reef fishing. The possibility of obtaining assistance of boat-building and fishing experts through the UNDP country programmes of some of the territories in the region was pointed out and it was recognised that co-operation between the territories could be developed in using such assistance. Nevertheless it is believed that some assistance towards this programme should be provided through SPC/FDA and provision for this has been made in the following table.

The Consultative Committee was of the view that continuing assistance as indicated below is essential to achieve useful results. Without such assistance the effort and money already invested in the project will be wasted. The Committee therefore recommended that action should be taken by UNDP and FAO to secure the necessary funds from bilateral and multi-lateral sources as might be possible. The Governments of the territories were urged to give the necessary support for the extension of the project.

Follow-up activities after the current phase of the project

| <u>Sub-projects</u> | <u>Man/months</u> | <u>Equipment, supplies, etc.</u> US \$ |
|--|-------------------|---|
| 1. Completion of aquaculture studies and demonstration | | |
| in Fiji | 24 | 30,000 |
| in New Caledonia | 24 | 20,000 |
| in Koror | 24 | - |
| 2. <u>Macrobrachium</u> culture in French Polynesia | 3 | - |
| 3. Fellowships for inter-island training programme | | 60,000 |
| 4. Outer reef fishing - American Samoa, Cook Islands, Fiji, Gilbert and Ellice Islands Colony, Tonga and Western Samoa | 30 | 67,500 |
| | <u>105</u> | <u>\$177,500</u> |

*Do not create
30,000 per ?*

COUNTERPART CONTRIBUTIONS FOR THE CURRENT PROGRAMME

The Consultative Committee considered in some detail the question of counterpart contribution required for the successful operation of the sub-projects during the remaining part of the current phase of the project. It was agreed that the bulk of the counterpart contribution should be provided by the host territories. The necessary support for the operation of SPIFDA headquarters would be provided by the South Pacific Commission. However, there were a small number of items of expenditure in the field of a regional character for which no suitable sources of funding had been identified, as indicated in the tabular statement below. It was recommended that the South Pacific Commission should consider providing this additional support to the project from available savings or from future budgetary provision.

| | <u>US \$</u> |
|---|------------------|
| <u>Fiji aquaculture programme until end 1972:</u> | |
| Personnel - | |
| 2 biologists | 7,000 |
| 2 senior technicians | 5,000 |
| 2 fisheries assistants | 2,000 |
| | <u>14,000</u> |
| Equipment and supplies - | |
| Culture equipment and supplies | 90,000 |
| Transport | 10,000 |
| Running expenses | 7,000 |
| | <u>\$107,000</u> |

Funding for 1973 is shown later.

| | <u>US \$</u> |
|--|------------------|
| <u>St. Vincent Bay aquaculture centre</u> | |
| Territorial counterpart funding for 1972 (already committed): | 130,000 |
| Territorial counter funding for 1973: | |
| Development breeding centre | 50,000 |
| Transport and boats | 5,000 |
| Purchase breeding stock | 5,000 |
| Purchase natural and artificial foodstuffs | 5,000 |
| Purchase fuel and manure | 5,000 |
| Personnel | 40,000 |
| | <u>\$240,000</u> |

Palau aquaculture centre for 1973:

| | |
|---|---------------|
| Personnel - | |
| 5 biologists | 68,000 |
| 16 technicians and administrative staff | 54,000 |
| Equipment - | |
| Buildings, laboratories, shelters | 20,000 |
| Ponds and fencing | 20,000 |
| Pumps and hydraulic installation | 15,000 |
| Electricity | 15,000 |
| Culture equipment and feeding stuff | 5,000 |
| Transport | 10,000 |
| | <u>85,000</u> |
| TOTAL FUNDING: | \$ 207,000 |

Recommended SPC Counterpart for 1973:

| | |
|--------------------------------|-----------------|
| Laboratory assistant | 10,000 |
| Equipment, etc. | 3,000 |
| Temporary housing for trainees | 3,500 |
| | <u>\$16,500</u> |

The proposed laboratory assistant, although based on the Baie de Saint-Vincent, would be available for requirements of a regional nature. Some savings would be achieved if a Volunteer could be recruited for this post. The amount proposed for equipment was to permit purchases of necessary equipment for field projects of regional significance which are not specifically provided for from UNDP or other sources. This will facilitate experimental and development work on these projects.

The amount of \$3,000 for mobile housing is required to assist the provision of accommodation for trainees from other territories visiting the St. Vincent Bay centre. It was suggested that a two-berth mobile housing unit be considered or, alternatively, the transfer of temporary housing from other locations.

COUNTERPART CONTRIBUTIONS FOR THE TWO-YEAR FOLLOW-UP PROGRAMME (1973-1974)

The Consultative Committee made an assessment of the counterpart funds required, as shown below, to be contributed by the host territorial governments for the implementation of the sub-projects to be continued or initiated after the current phase of the project is completed.

| <u>Continuation of Fiji aquaculture programme</u> | <u>US \$</u> |
|---|---------------|
| Personnel - | |
| 2 biologists | 14,000 |
| 2 senior technicians | 10,000 |
| 2 fisheries assistants | <u>4,000</u> |
| | 28,000 |
| Equipment, etc. - | |
| Culture materials and equipment | 72,000 |
| Transport | 11,000 |
| Running expenses | <u>10,000</u> |
| | \$93,000 |

Continuation of St. Vincent Bay aquaculture centre

| | |
|--------------------------------|---------------|
| Personnel - | |
| 1 biologist | 36,000 |
| 1 technician | 24,000 |
| Others | <u>12,000</u> |
| | 72,000 |
| Equipment, etc. - | |
| Maintenance of installations | 20,000 |
| New constructions - housing | 20,000 |
| - breeding centre | 40,000 |
| Culture materials and supplies | 20,000 |
| Field equipment and furniture | <u>20,000</u> |
| | \$120,000 |

Continuation of Palau aquaculture centre

| | |
|--------------------------------|----------------|
| - Personnel - | |
| 5 biologists | 140,000 |
| 16 technicians and other staff | <u>110,000</u> |
| | 250,000 |
| Equipment, etc. - | |
| Holding pens | 20,000 |
| Boats and rafts | 20,000 |
| Field and laboratory equipment | 20,000 |
| Feed, etc. | <u>10,000</u> |
| | \$70,000 |

Macrobrachium culture in French PolynesiaUS \$

Personnel -

| | |
|---------------|----------------|
| 1 biologist | 36,000 |
| 2 technicians | 48,000 |
| Others | 24,000 |
| | <u>108,000</u> |

Equipment, supplies, etc. -

| | |
|------------------------|-----------------|
| Culture material, etc. | 25,000 |
| Transport | 10,000 |
| | <u>\$35,000</u> |

Fellowships for inter-island training programme

- nil -

Outer reef fishingA. FijiDeepwater snapper fishing

| | |
|------------------------------------|----------------|
| Vessel 50 foot, steel | 77,000 |
| Gear | 5,000 |
| Crew - 6 men x 24 man/months | 15,000 |
| Senior technicians - 12 man/months | 2,500 |
| Running expenses | 15,000 |
| Administrative support | 5,000 |
| | <u>119,500</u> |

Pearl shell lure fishing

| | |
|---------------------------------|----------------|
| 3 x 27 foot fishing boats | 74,000 |
| Gear | 2,500 |
| Crew - 6 men x 24 man/months | 15,000 |
| Senior technician 12 man/months | 2,500 |
| Running expenses | 15,000 |
| Administrative support | 5,000 |
| | <u>114,000</u> |

B. Western SamoaDeepwater (vertical longline) fishing

| | |
|-----------------------------------|---------------|
| Vessel 40 foot ferro-cement | 30,000 |
| 2 x 24 foot dories | 10,000 |
| Crew - 10 men x 24 man/months | 20,000 |
| Senior technician - 12 man/months | 2,000 |
| Running expenses | 16,000 |
| Administrative support | 4,000 |
| | <u>82,000</u> |

Pearl shell: other artificial lures fishing

| | |
|-----------------------------------|--------------|
| Vessel 2 x 24 foot dories | 10,000 |
| Gear | 8,000 |
| Crew | 12,000 |
| Senior technician - 12 man/months | 2,000 |
| Running expenses | 12,000 |
| Administrative support | <u>4,000</u> |
| | 48,000 |

Crayfish pot and tangle net fishing

| | |
|-----------------------------------|--------------|
| Vessel 1 x 40 foot ferro-cement | 30,000 |
| 1 x 24 foot dory | 5,000 |
| Crew - 8 men x 24 man/months | 16,000 |
| Senior technician - 12 man/months | 2,000 |
| Running expenses | 12,000 |
| Administrative support | <u>4,000</u> |
| | \$69,000 |

Counterpart contributions from Tonga, American Samoa, Cook Islands and Gilbert and Ellice Islands will be specified and collated later.

RECOMMENDATION OF ELEVENTH SOUTH PACIFIC CONFERENCE

The Consultative Committee considered the recommendation of the Eleventh South Pacific Conference (1971) and indicated that the actions reported by the Consultative Committee at its Second and Third Meetings showed that there had been a commendable advance in the fulfillment of the purpose for which the Agency had been established. Recommendations were made by the Consultative Committee which, if approved by the responsible authorities, would still further improve the general situation.

The Programme Director (Economic) of the South Pacific Commission was asked to set out these actions and recommendations in a paper which the SPC Secretariat would present to the Twelfth South Pacific Conference.

NEXT MEETING

It was proposed that, subject to the agreement of the Government of Fiji, the next meeting of the Consultative Committee be held early in June 1973 in Suva, the precise date to be decided by the Project Manager and the South Pacific Commission in consultation.

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OBSERVATIONS ON THE EARLY-STAGE FORMATION OF
RABBITFISH - SIGANUS FUSCESCENS

at

PALAU MARICULTURE DEMONSTRATION CENTRE

by

James P. McVey, Ph.D.

De
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Siganus fuscescens was found to spawn five to seven days after the new moon during the months of February - June. Peak spawning occurred in April and May. Juveniles appeared in schools of 50 to 1,000 individuals and could be found in the shallow channels on grass flats at low tide.

Over 1,000 juvenile rabbitfish were caught on April 17 and they were measured and weighed as a preliminary for growth studies. They were placed into a long, flat ferro-cement tank with dividers. However, due to the tendency for these fish to swim through small cracks in partitions, it was impossible to keep the juveniles separated with the materials at hand.

The rabbitfish were then divided and placed into several pens and ponds in order to test growth rate under different conditions. Four floating pens were constructed and placed at the demonstration centre and 50 juvenile rabbitfish were placed in each of the pens. Approximately 100 juveniles were kept in the rectangular ferro-cement tank and 100 individuals were placed in a circular ferro-cement tank which also contained 50 immature turtles.

Two floating pens (inside pens) were placed in the inside bay of the demonstration centre where the water circulation is poor and two pens (outside pens) were placed in the outer bay where there is a good exchange of water. The fish in one of each pair of pens receives prepared trout chow and the others must depend on algae growing on the net. The growth rate varies with diet and environmental conditions.

The fish located in pens where there is good water circulation grow faster than those where water circulation is poor. Those that receive trout chow grow faster than those that do not. However, those with the algal diet appear healthy and are growing. The fish in with the turtles receive benefit from the enriched water created by the turtles and presence of tuna scraps. The fish in the flat tank have been fed a controlled amount of prepared trout chow and a close check of their weight gain has been recorded.

The greatest advance with rabbitfish has been the successful spawning of Siganus fuscescens in captivity. Several adult specimens were caught in March prior to the main spawning season. These were fed a diet of tuna and naturally occurring algae. In July these fish were noticed to be extremely fat and they were transferred from a circular tank (3 feet of water) to the flat, rectangular tank (7 to 9 inches of water). Spawning began immediately with the six individuals involved and the four females and two males went through elaborate spawning behaviour. Females would nudge the abdomen of males to encourage release of milt and as soon as the males responded the females would release their eggs. In nature Siganus fuscescens spawns in the surf zone and the wave action tends to mix the eggs and sperm together. We stirred the water vigorously to simulate this condition.

After the eggs were released most settled to the bottom of the tank, although a few could be seen floating in the tank. After 28 hours the first larvae could be seen in the tank. Closer examination revealed that eggs on the bottom were slowly rising to the surface and as they rose they could be seen to rupture and the larval rabbitfish swam free of the eggs. The larval fish floated freely but there was a tendency to aggregate about $2\frac{1}{2}$ inches under the surface and around the water inflow jets. The juveniles survived for about 36 to 40 hours, after that the yolk sac was used up and apparently appropriate larval food was not present in the spawning tank. Several larvae had been removed to aquaria but they disappeared about one day later than those in the spawning tank. It is assumed that they did not use up the yolk as fast because the water temperature of the aquaria was 4°C lower (27°C vs. 31°C) than the spawning tank. The larvae were quite small range (.03 - .05 inches) and the mouth was not visible during the yolk sac stage.

Average weights of Siganus fuscescens caught April 17
(Initial weight .35 grams)

| ENCLOSURE | DIET | WEIGHT - JULY 21 |
|------------------|---------------------------|--------------------|
| Rectangular tank | Trout chow | 8.9 grams |
| Circular tank | Algae (abundant) and tuna | 15.2 grams |
| Inside pen | Trout chow | 9.1 grams |
| Inside pen | Algae | 4.1 grams |
| Outside pen | Trout chow | 13.5 grams |
| Outside pen | Algae | Fish lost-torn net |

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LOBSTER FISHING TRIALS OFF THE ISLAND OF
RAPA IN THE AUSTRAL SEAMOUNT CHAIN, FRENCH POLYNESIA

Rapa, in the Austral Chain, is the most southerly of the islands of French Polynesia (27°36 south - 114°18 west). The isolation, the cool and rainy climate and the exiguity of the island do not make for an easy existence for the population which despite emigration is increasing rapidly: 279 habitants in 1956, 342 in 1962 and 384 in 1971. In an effort to explore new resources, lobster fishing trials were conducted from 29 March to 10 April 1972, and for this purpose the French Polynesian administration chartered the New Zealand vessel PICTON equipped for lobster pot fishing.

Metal mesh traps 120 cm x 20 cm x 40 cm were used, of 5 cm mesh, the main opening being 30 cm x 40 cm.

Four varieties of crustacean were caught - two well-known species, the Panulirus penicillatus lobster and the mantis shrimp (Scyllare) Parribacus antarcticus, and two other species which have not yet been identified, a lobster which may be Panulirus lalandii and a scyllaridae which would appear to be a new species.

The fishing catch was poor in spite of particularly good weather. About 300 crustaceans were caught, the female lobsters measuring between 17 and 31.5 cm (an average of 21 cm) and the male lobsters between 15.7 and 39 cm (an average of 29 cm). Apparently the fishing trials took place at a period unfavourable to the use of lobster traps, a large percentage of lobsters being in spawn or in moult.

Bait seemingly most practical for use with the traps was the flesh of shark and Japanese saury (Cololabis saira). No catch was made when using New Zealand sea perch, Polyprion maeone, or blue cod, (Parapercis colias). Fishing trials off the isles of Bass (Marotiri), 27°55 south, 143°26 west, produced no results.

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No catch?
Water traps?

CAPTURE OF TURTLES TAGGED BY THE
FISHERIES SERVICE OF FRENCH POLYNESIA
UNDER SPIFDA AUSPICES

The last issue of the Newsletter (No. 5 of May 1972) made reference on pages 21 and 22 to the tagging of sixty-seven female green turtles (Chelonia mydas) which were then released on 31 March 1972 by the Fisheries Department of French Polynesia off Scilly Atoll (Fenua Ura) to the west of the Leeward Islands in the Society island group (16°30 south - 154°40 west).

One of these turtles, bearing tag no. 26, was caught on 28 July 1972 off the Fiji islands in the vicinity of Savu Savu (Vanua Lava island), 16°49 south - 179°15 east. In 120 days this green turtle had therefore travelled about 1,800 nautical miles (3,300 kilometres).

Another was captured in the Vavau Islands (Tonga) on 9 August 1972, representing a movement of about 2,091 kilometres over 130 days.

These long-distance recoveries are the first ever to be reported from the South Pacific and point to the value of tagging programmes.

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EXPERIMENT IN DEVELOPMENT OF MARINE CULTURE,
CHATHAM ISLANDS

News has been received from Val Hinds, Deputy Director of the Fisheries Division of New Zealand (late SPC Fisheries Officer and SPLFDA Co-Manager) who, towards the end of July 1972, was at the Chatham Islands to study the potential of marine culture off these islands, sited some 470 miles west of the South Island of New Zealand.

Five sacks of dredge oysters, Ostrea lutaria, from the Bluff oyster fishery were planted in the area. Two buoyed rope square rafts were constructed and launched with vertical hanging ropes, each bearing a number of plastic cones carrying oysters, cockles and mussels of different varieties. One of the rafts was moored in a sea water inlet and the other in slightly brackish lagoon conditions. The oysters are due to spat in September and it will subsequently be possible to study the rate of survival and propagation.

The rapid expansion of lobster fishing enjoyed by the Chatham Islands was followed by a sudden decline due to over-fishing; however, other potential exists and, apart from the introduced cultivation of oysters and mussels, there are opportunities for eel and abalone fishing as well as trout rearing.

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"SHADOWS BEFORE"

| <u>1972</u> | | <u>Language</u> |
|---------------------|--|-----------------|
| Sept. 19 - Sept. 29 | SPC: Twelfth South Pacific Conference Apia, Western Samoa | E/F |
| Oct. 4 - Oct. 9 | Japanese Management Association: Second International Ocean Development Conference and Exhibition Tokyo, Japan | E |
| Oct. 5 - Oct. 6 | FAO: IOFC Committee on the Management of Indian Ocean Tuna, 3rd session and IPFC Special Committee on Management of Indo-Pacific Tuna, 2nd session Colombo, Ceylon | E/F E/F |
| Oct. 9 - Oct. 13 | FAO: Seminar on Design and Construction of Ferro-Cement Fishing Vessels Wellington, New Zealand | E/F |
| Oct. 14 - Oct. 17 | FAO: IPFC Working Party on Coastal Aquaculture and Environment Wellington, New Zealand | E |
| Oct. 17 and Oct. 28 | FAO: IPFC Executive Committee 49th session Wellington, New Zealand | E |
| Oct. 18 - Oct. 27 | FAO: Indo-Pacific Fisheries Council (IPFC) 15th session Wellington, New Zealand | E/F |

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