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NATIONAL FISHERIES AUTHORITY

FISHERIES MANAGEMENT ACT 1998

GULF OF PAPUA PRAWN MANAGEMENT PLAN

THE National Fisheries Authority, by virtue of the powers conferred by Section 28 of the *Fisheries Management Act 1998* hereby draws up the Gulf of Papua Prawn Management Plan. This plan supersedes any previous plans and takes effect from the date of notification in the *National Gazette*.

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*Fisheries Management Act 1998***GULF OF PAPUA PRAWN FISHERY MANAGEMENT PLAN**

THE NATIONAL FISHERIES AUTHORITY, by virtue of the powers conferred by Section 28 of the *Fisheries Management Act 1998* and all other powers it enabling, hereby draws up the following Fisheries Management Plan to supersede the previous plan gazetted on 15th October, 1999, Gazette No. G142 under *Fisheries Act 1994* and take effect on and from the date approved by the Minister.

1. CITATIONS

This Management Plan shall be cited as 'The Gulf of Papua Prawn Fishery Management Plan' (Plan).

2. APPLICATION OF THE PLAN

(i) This geographical area covered in the fishery Management Plan is the sea area that is bounded as follows:

- (a) In the north: the coastline to Papua New Guinea from Parama Island (at the southern limit to the estuary of Fly River) to the border of Central and Gulf Provinces.
- (b) In the east: shall be the border of Central and Gulf Province extending seaward to the intersection with latitude 9° parallel south.
- (c) In the south: shall be the line of latitude 9° parallel south, which passes through Parama Island in the west and meets the border of Central and Gulf Provinces in the east.

(ii) Species

This fishery plan shall cover all species of the Family Penaeidae including: the principle species white banana prawn (*Penaeus merguensis*); the Indian banana prawn (*Penaeus indicus*); the (giant) black tiger prawn (*Penaeus monodon*); the brown tiger prawn (*Penaeus semisulcatus*); and including the lesser value endeavour species, *Metapenaeus* spp.

(iii) Method

The fishery plan covers the method of single vessel otter trawl fishing and the method of beam-trawl by dory or dinghy. Other methods are prohibited under this plan.

3. INTERPRETATION

This Management Plan, unless the contrary intention applies;

"Fishery Management Area" means the specified area to which the fishery plan relates.

"Growth Over-fishing" means over-fishing of prawns entering the fishing grounds for the first time by offshore migration from estuary nursery areas are taken at an early stage before they have had sufficient time to growth and increase in volume to full market price.

"Industrial Fishery" refers to the fishery outside of the three-mile zone, other than dories and dinghies, where vessels operates twin or quad rigged otter trawl gear.

"Juvenile Recruitment" means the offshore migration of juvenile prawns from estuarine nursery area (mangroves and sea grass) into the trawl (fishing) grounds, where they are liable to industry harvest for the first time.

"Small-scale Fishery" refers to the small-scale prawn trawling operation employing dories and dinghies, which tow a beam trawl. This shall be the type of operation to be allowed within the three-mile zone.

"Three-mile Zone" refers to sea area, which extends from the mean high water mark seaward by three nautical miles (as per the *National Seas Act*). Industrial trawling is prohibited within three-mile zone.

"Three mile limit" is the seaward boundary of the three-mile zone and extends from Parama Island to the border of the Gulf and Central Provinces.

"Timed Area Closure" means that a specified area is closed to fishing for a specific time.

"Traditional Resource Owner" means families with fishermen or single fishermen who have fished for both prawn and finfish in near shore coastal waters and are recognized by their people as having traditional ownership rights to the coastal prawn and finfish resources.

4. DESCRIPTION OF THE GULF OF PAPUA PRAWN FISHERY

- (a) The first survey was carried out in 1955 by then the Department of Agriculture, Stock and Fisheries. In 1965 the same Department carried out further surveys. These surveys established commercial quantities of prawns in the Gulf of Papua.

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- (b) In 1969, three companies were granted survey licenses. These companies were Torres Shipping Co, Gulf Fisheries and Territory Fisheries. Further licenses were issued to other operators. Certain areas within the three miles zone were reserved for small vessels and to protect local fishermen. In 1977, a joint venture company was formed between Pacific Seafoods (this company began operation in 1973) and the Gulf of Marine (business arm of the Gulf Provincial Government). This company was called Gulf Sohbu and was granted special inshore licenses to operate two trawlers inside the three mile zone.
- (c) The fishing grounds in the Gulf of Papua run from the Fly River mouth in the south-west to the village of Iokea in the south-east. The fishing grounds extend seaward to approximately 40 meter depth contour.
- (d) The main fishing grounds of Kerema Bay and Orokolo Bay are about 18-20 hours steaming from Port Moresby. The lack of harbour facilities adjacent to the fishing grounds and poor communication facilities in the area forced the prawn companies to establish bases in Port Moresby. All vessels have freezers and on-board licenced processing facilities and storage.
- (e) The vessels remain at sea for extended period of time (about four to five weeks). The fishing takes place on a 24 hours basis for about 200 days per year during the eight months open season. They may spend 4-5 days in port for unloading, provisioning and refueling.
- (f) Most vessels are twin-rigged with 12 fathoms (24m) (footrope), except three vessels that are quad-rigged. "Twin-rigged" means towing two main nets, and "quad-rigged" means towing four main nets. The total width of the swept area is 60 metres, and this may be having two large main nets or four smaller size main nets. It has been shown that quad-rigged nets are more efficient over heavy silted bottom.
- (g) Trawling takes place mostly along the depth contour of 10-35 metres. Commercial quantities of prawns are searched and checked by a smaller net known as the "try net" across a certain depth range. This net is towed from the mid-ship and is checked about every 15 minutes. When the try net brings up good catch, the vessel trawls back and forth along the depth contour until no more prawn show up on the try net or the Captain has estimated that there is a good size catch in his main nets. The duration per main net shot is about four hours, but varies according to the abundance of banana prawns. If the catch is high, the duration is reduced to about two hours. Trawling speed is at an average of 3 knots. All sorting, grading, processing, packing and freezing is done onboard. When the product landed in Port Moresby, is ready for export.
- (h) In general, the efficiency of fishing has increased with the experience gained by captains and crew of the vessels, some of whom have been with the fishery for over twenty years. All the vessels are equipped with modern navigational aids such as GPS, echo sounder and rader.
- (i) The fishery is now fully developed with 15 licensed prawn trawlers. A total of eight nationally owned prawn companies operate in the Gulf of Papua prawn fishery. Out of the total, two are the main companies, with three to four trawlers. The other six are small, each with one or two vessel.
- (j) Production from the Gulf of Papua varies from 400 to 1,300 (all species) tonnes per year. About 50-60 % consists of the banana prawn (*Penaeus merguensis*, *P. indicus*), 10-15% tiger prawns (*Penaeus monodon*, *Penaeus semisulcatus*), 15-20% endeavour prawns (*Metapenaeus ensis*, *M. endeavouri*, and *M. demani*). The rest is mostly packed as mixed grades, consisting of broken tails and soft shells of all species.
- (k) In 1987, annual harvests of prawn (all species) were worth K9.3 million is export alone. The industry was overcapitalized and after strict controls on fishing effort introduced in 1989, the value of exports declined to about K7 million in 1994 to 1997. Although, there is a decline in the value, in reality, the fishery is profitable.

5. OBJECTIVE

The broad objective of this Fishery Management Plan is to reinforce and give effect to the fisheries management principle in the *Fisheries Management Act 1998*, and specifically:

- (a) To manage the fishery in the management area so that the size of the stocks tends towards one that will give the Maximum Economic Yield (MEY), chiefly through control of fishing effort;
- (b) Provision of sustainable economic benefit through prevention of growth over fishing on the principle species, the banana and tiger prawns, in order to maximize economic returns;
- (c) Conservation of stocks of demersal fish species caught as by-catch;

Gulf of Papua Prawn Fishery Management Plan—continued

- (d) Promotion of sustainable fisheries development practices;
- (e) Development of controlled sustainable small-scale fishery development of the prawn and associated fin-fish resources within selected areas of the three mile zone, for the participation and benefit of the traditional resources owners; and
- (f) To manage the fishery with a precautionary approach.

6. PRECAUTIONARY APPROACH TO PRAWN MANAGEMENT

Consistent with the regional and international management principles, precautionary approaches shall apply for the Gulf of Papua Prawn Fishery in accordance with the following provisions:

- (a) In the absence of adequate scientific data, the National Fisheries Authority may take into account the uncertainties with respect to the size and productivity of the stock, to other management reference points such as maximum sustainable yield, the level and distribution of fishing mortality, and the impact of fishing activities on associated and dependent species, and including climatic, oceanic, environmental and socio-economic conditions;
- (b) In managing the Prawn fishery, the Authority may consider the associated ecosystems on reefs within the Management Area. The Authority may develop data collection and research projects to assess the impact of fishing on non-target species and their environment, adopt plans as necessary to ensure the conservation of non-target species and consider the protection of habitats of special concern.
- (c) The absence of adequate scientific information may not be used as a reason for postponing or failing to make measures to protect the target and non-target species in the Gulf of Papua Prawn Fishery.

7. MANAGEMENT MEASURES

The following management measures, which are to realize the objectives in Section 4, are to take effect immediately:

(1) Licensing

- (i) The number of licenses for the industrial fishery shall be maintained at less(<) than 10.
- (ii) The license shall be renewed after every 5 years.
- (iii) Preference shall be given to license applications from resources owners for new licenses. Non-citizen companies shall not be granted licenses.
- (iv) Prawn trawlers of the PNG Torres Strait fishery based out of Daru, Western Province, may be endorsed to operate in the Fly/Bamu fishing zone. Specifications for these vessels shall be in accordance with the PNG Torres Strait Prawn Fishery Plan.
- (v) License shall be required for any dory or dinghy operating a beam trawls in the shore small-scale fishery.
- (vi) There shall be a maximum of ten (10) licenses for small-scale commercial dories or dinghies fishing by beam trawl operating in the inshore small-scale fishery. The target inshore catch shall remain at less (<) than 20 tonnes annually. Catch greater than this will impose high risks to the off-shore fishery.
- (vii) There shall be a mandatory license condition that observers be placed onboard the vessels as NFA directs.

(2) Fishing Restrictions

- (i) The gear restrictions for the industrial fishery shall be as follows;
 - (a) The taking of penaeid prawn is prohibited at all times;
 - ~ by boats owned by non-citizen companies;
 - ~ by foreign registered vessels;
 - ~ by boats exceeding 30 meters overall (LOA) according to Papua New Guinea registered survey length;

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- ~ by boats with main engines with shaft power exceeding 410 kilowatts or 550 horse power, as wet out in the manufacturers specifications;
 - ~ by method of more than four (4) main nets and one (1) try net towed at the same time;
 - ~ by a method whereby the aggregate head rope (with mesh attached) for the main nets exceeds 60 meters and one (1) try net exceeds 6 meters head line;
 - ~ by a method whereby the head line of any one single main net exceeds 30 meters;
 - ~ by method whereby the meshes for all nets, when measured diagonally stretched from knots to knots are less than 50 millimeters both on the body and cod end;
 - ~ by method using an otter board that is more than five (5) square meters in area, per board; and
 - ~ by beam trawl of greater than six (6) meters beam length.
- (ii) The fishing vessels shall be installed with By-catch Reduction Devices (BRDs) and Turtle Exclusion Device (TED's) to improve prawn quality and also for conservation measures.
- (iii) The gear restriction for small-scale fishery employing beam trawl towed by dory or dinghy shall be as follows:
- (b) The taking of penaeid prawns is prohibited at all time;
 - ~ by method where the width of all beam trawls exceeds four (4) meters; and
 - ~ by methods whereby the meshes of all nets when measured from knots to knots, are less than 50 millimeters (2.0 inches); and
 - ~ by method of beam trawl that does not incorporate a fish escape panel at the neck of the cod-end, consisting of one (1) meter wide panel of net of 50 millimeters (2.0 inches) mesh laid crosswise and which forms the body of the net at the neck of the cod-end.
- (3) Performance Target
- (a) The Maximum Economic Yield (MEY) for banana prawns shall be 580 tonnes and the black tiger with 110-120 tonnes. That should correspond with approximately 3,705 days of fishing effort. Banana catch greater than 580 tonnes should result in trimming of the season length the following year.
 - (b) The Maximum Economic Yield (MEY) target shall be reviewed and updated every three (3) years, depending on the prices and costs.
- (4) Times Area Closure
- The trawl grounds from Iokea to Cape Blackwood shall be closed from 01st December to 31st March. Refer to Schedule 1 for designated boundaries for the close area.
- (5) Industrial fishing is prohibited within the three-mile zone from Parama Island to the border of Gulf and Central Provinces, except on special arrangement in which prawn vessels shall fish up to 2 nautical miles (nm) with high compliance and observer coverage and submission to NFA of as signed joint venture agreement with the Local Level Governments (LLG's). Having these arrangements in place, the following conditions shall apply;
- (a) The 2 nautical mile shall only be accessed from 01st July to 01st December annually. Prior to 01st July each year, the current 3 nautical mile exclusion zone shall remains.
 - (b) The fees for accessing the 2 nm shall be paid to NFA to keep in trust for coastal inhabitants who the companies have entered into agreements with.
 - (c) There shall be a seasonal spatial closure from 01st December to 31st December annually;
 - (d) The seasonal closures shall apply to all licensed vessels.
- (6) Marketing standards shall continue to be based on the standards established by the relevant authorities.

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- (7) The prawn operators shall be required to do the following;
- (a) Report and submit to National Fisheries Authority all catch and effort data on by-catch including non-fish species;
 - (b) Return all mammals and turtles to the sea;
 - (c) The non removal of sharks fin and returning them to sea alive;
- (8) Vessel Tracking System and Surveillance
- (a) All prawn fishing vessels shall be required to carry vessel tracking devices, to facilitate the fishery plan and increase safety in navigation.
 - (b) Observers of the National Fisheries Authority and the Gulf Province Division of Fisheries shall be placed at random on board licensed prawn trawlers to undertake surveillance and research.

8. MONITORING

- (a) In accordance with Section 29 of the *Fisheries Management Act* 1998, licensed operators are required to submit data on catch and effort, as well as marketing data, for the purpose of this fishery plan.
- (b) A scientific observer/research programme mutually agreed to by the industry and NFA may be set up to monitor the fishery and to make recommendations for any relevant changes for improvement of the fishery plan to achieve logistic support and other form of assistance to implement the research programme in relation to prawns as well as other alternate fishery resources in the Gulf of Papua.
- (c) If there are indications of low recruitment through monitoring of reference limits, the National Fisheries Authority shall convene a consultative meeting with the industry to determine control management measures to control effort.
- (d) The monitoring reference limits are;
 - (i) That the catch per unit effort (CPUE) for the banana prawn shall be at 7.0 kg/hr and,
 - (ii) That the species composition of the banana prawn shall not be less than 45% of the commercial catches by weight and,
 - (iii) That the size composition of commercial grades of 51, 61 and 71 of banana prawn shall not exceed 25% of the catches by weight.

9. SPECIAL CONSIDERATION FOR TRADITIONAL RESOURCE OWNERS

- (a) Special consideration should be given to the need to avoid adverse impact on subsistence and small-scale commercial fisheries.
- (b) Ownership of the near-shore fisheries resources (i.e. resources inside the three mile limit) by traditional resource owners is recognised.
- (c) Where possible, effort shall be made to document and promote traditional conservation and management measures in the three-mile zone where small-scale prawn trawling operations may be developed, in order to enhance the conservation and management practices of the fisheries resources within the traditional waters.
- (d) Preference will be given to license application from traditional resources owners, both for fishing by method of traditional resources owners, both for fishing by method of industrial trawling and by method of beam trawl by dory or dinghy.
- (e) The National Fisheries Authority in collaboration with the industry and provincial authority shall work towards facilitation and establishment of small-scale fisheries development of the prawn and associated finfish resources within certain parts of the three-mile zone.

Gulf of Papua Prawn Fishery Management Plan—continued

10. RESEARCH PLAN

There shall be a research plan with research programmes jointly developed with the industries to monitor the fishery and carry out stock assessment.

11. AMENDMENTS

- (1) This arrangement plan shall be kept under review by the Authority as new information is obtained as to meet its objectives.
- (2) Any amendment to this Management Plan shall be endorsed by the Board; and submitted to the Minister for approval and notified in the *National Gazette*.

SCHEDULE 1

Boundaries for the Closed Area

Western Boundary

The western boundary shall be in the line 145 degrees 10 minutes 00 seconds east ($145^{\circ} 10' 00''\text{E}$) extending north to south from Cape Blackwood to the Latitude 8 degree 24 minutes 42 seconds south ($08^{\circ} 24' 42''\text{S}$).

Southern Boundary

The southern boundary shall be the line latitude 8 degrees 24 minutes 42 seconds south ($08^{\circ} 24' 42''\text{S}$) extending west to east from the termination of the western boundary to the coast at the village of Iokea.

Northern and Eastern Boundary

The northern and eastern boundary shall be the coast from the southern point of Cape Blackwood to Iokea village in the east.

Endorsed this 5th day of December, 2008.

T. VALI,
Chairman,
National Fisheries Board.

Approved this 5th day of December, 2008.

Hon. Ben Semri,
Minister for Fisheries.