

Kosi, fish, gillnetting, resources

Nhlange Gillnetting Project.

Kosi Bay Nature Reserve.

Annual report 1993.

Robert Kyle

Resources Research Officer.

P.O.Box 43

KwaNgwanase 3973.

February 1994.

1. Introduction:

The aim of this project was to exploit some of the fish resources of the Kosi system which were thought to be able to sustain greater utilisation by man. The method of fishing, intensity and area of operation was to be decided by the Department of Nature Conservation while the implementation was to be carried out with the local community and the Community Authority would decide who obtained the permits.

As this scheme was the first of its kind in a Nature Reserve in Southern Africa care was taken at each step to ensure that the relevant staff, community members and media were aware of progress.

The scheme started off small and grew as it is better to approach sustainable limits from below than to overexploit and then reduce effort. At all stages meetings were held with local residents and the Community Authority in order to maintain their support for the project. Management staff attended all meetings so that they too were fully aware of all aspects of the project.

This report serves to supply the catch results of the project and report on progress and problems during 1993.

2. Background:

A report was written by the Fisheries Research Officer in August 1990 summarising the results of an extensive Gillnetting experiment. It recommended that limited Gillnetting be permitted in some of the reedy margins of Nhlange lake where results indicated that about ninety percent of the catch should be of species little used by man at Kosi.

In April 1992 five permits were issued in the KwaDapha area (Bhanga neck), each for thirty metres of net. This was another experimental phase to test, on a larger scale, the results of the earlier netting and the reaction and level of co-operation of the local community. Netting candidates were chosen by the community through the Community Authority and Induna.

A report on this phase, dated November 1992, recommended expanding the scheme into two other areas and increasing the number of permits to eight in each area. This was approved by the Department in May 1993 and then discussed with the Community Authority who approved the netting in July 1993. The scheme was gradually enlarged and by late November 1993 all twenty-four permits were in operation.

From the beginning the ethic of the project was to try to benefit as many local residents as possible, on a sustainable basis, and to involve them in the management of the resource. For this reason it was decided by the community and the Department that the length of each net should be kept short to allow many subsistence netters in place of a few commercial operators.

It was up to the community to decide who obtained the permits and as it happened the three areas evolved different methods of selection. In KwaDapha the local Induna initially supplied the names of candidates and they held the permits until he and the community decided to change any of them. In KwaGeorge the Induna completed a list of candidates monthly while in KwaMazambane the Induna handed the selection to a local committee and a co-ordinator supplied a list of names each month.

Although only eight permits were issued by the Department for each area they were transferable and so on a monthly basis they could be rotated amongst those chosen for them.

Although the principal of the project was simple it took a large number of meetings and discussions to adequately explain the scheme to the locals, many of whom had been involved in illegal netting. There was also a degree of suspicion and resistance to working with the conservation authority.

It was a condition of the scheme that all catches were monitored and candidates for this work were selected by the community. This meant that there was a direct financial benefit to the community concerned on top of the food produced. The monitoring of catches was a problem as the netters had to spend time and effort daily bringing catches to a central point.

3. Results:

Appendix one gives the results in detail while the relevant statistics are summarised in Table one.

Table 1.

	Number.(Fish)	Mass.(Kg.)
Target.	9 455	3 885
Non Target.	1 104	916
% on target	89.5	80.9
Actual net settings	1 672	
Possible net settings	2 650	
% of netting capacity	63.1	
Mean catch	6.3	2.9

Figure one gives further information on the catch breakdown in graphic form.

Catch composition, Nhlange Gillnetting. Target, non target breakdown.

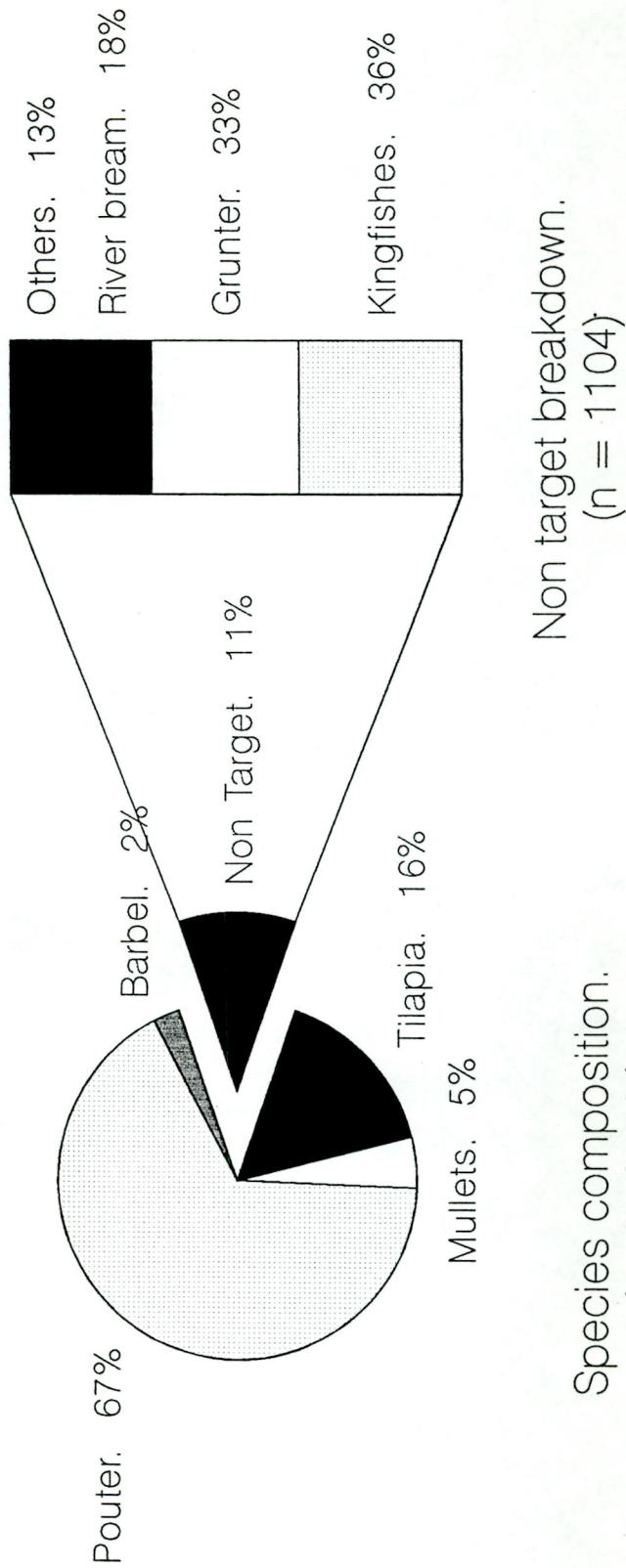


Figure 1.

4. Discussion on results:

The principal aim of the project was to exploit fish species perceived to be little exploited by man at Kosi. These were designated the "target" species and earlier experiments indicated a possible catch of 90% of this group. In 1993 over ten thousand fish were caught and, despite monthly fluctuations, virtually 90% by number were of target species. This statistic will fluctuate as fish species abundance undergoes normal changes but results for 1993 were very promising.

The aim of the scheme was to produce food on a sustainable basis to people around the Nature Reserve. A mean catch of 2.9 Kg. provides the average family in the area with adequate protein while on good days the excess can be sold. A length of thirty metres of net thus seems appropriate for the scheme at present.

Netting could not be carried out each day as strong winds make netting difficult and occasionally netters are ill or out of the area. In spite of this an overall netting effort of 63 percent is low and the scheme could produce more fish. Either people are not recording catches or they are not netting intensively. It appears that few people net on an everyday basis but rather when they choose.

Steps are being taken to reduce evasion of monitoring and to give the permits to those who will use them regularly.

During 1993 netting was carried out in KwaDapha only for most of the year and results for the other areas show a different species composition. Catches also change markedly, in terms of species composition, from month to month but pouter was the fish most commonly caught throughout.

Netting catches in turbid waters are probably density dependent and thus will reflect changes in species abundance. This can be seen as perch reduce in catches in late summer while they are at Kosi mouth spawning. This factor will mitigate against this method of fishing markedly reducing stocks as any species abundance declines.

The number of small kingfishes caught reflect an abundance of this genus in the lakes in the 1992/3 and 1993/4 seasons and, as with the fishtraps, the nets will probably catch a similar proportion of each species annually.

To put the 1 104 gamefishes (kingfishes, grunter, etc.) caught by legal nets into perspective the traps caught about 18 000 while the tourists caught about 9 500. Together this is estimated to amount to about seven percent of stocks annually. The present Gillnetting scheme is not a threat to other fisheries or fish populations.

5. General Discussion:

The reaction and level of co-operation of the local residents was of critical importance to the success of the project. Throughout the year there were minor communication problems in some areas and some attempts to politicise the project. There was opposition to people co-operating with the Department and threats to those taking part. Many meetings were held and the matter was discussed in several fora in the area. The result has been that the scheme is more widely supported and understood than it was twelve months ago.

Local residents are more aware of the project and willing to discuss it. Local pressure is now to increase the number of netters and area of operation rather than to stop the project. The project was discussed with several local groupings and some, such as the KwaNgwanase Youth Organisation, voluntarily endorsed it.

The perception locally is that the project will succeed and the pressure is now to make it as advantageous to local residents as possible. This is a positive development.

6. Problems encountered:

Some problems encountered during the year are as follows.....

1. Theft of nets. At least five legal nets were reported stolen in 1993. Not only is this a problem for the netters it means that a "legal" tag is in the hands of an illegal netter. Net theft is a serious problem for netters and strict control of all netting would benefit the netters.
2. Netters not recording catches. In KwaDapha the monitoring of catches necessitates a walk of up to two kilometres and understandably this is unpopular. Monitoring is essential and a condition of the permit.
3. The rotating of permits. Giving different people permits each month necessitates retrieving permits from those losing them. This is very difficult. It was found to be much easier to issue modified monthly permits. The net tags were still a problem.
4. "Legal" netters breaking the conditions of the permits. Several legal netters were arrested for illegal netting and received harsher sentences than other illegal netters. One netter attached 120 metres of net to his legal net and put it into Makawulani lake. Other legal netters showed no sympathy for them and the permits were immediately withdrawn and issued to other candidates.
5. Crocodile bites. One legal netter was badly bitten by a crocodile in south Nhlange. He was bitten at 22h00 and it was suggested that, as a legal netter, he could operate his net exclusively in daylight.
6. Loss and damage to permits. The permits were put into plastic envelopes but even so they soon became almost unreadable. The issue of monthly permits in plastic envelopes improved this.

7. Netters setting nets outside the reedy margins. There is a perception that netting out in the lake catches more fish and only constant patrolling by management will stop the netters from setting their nets where they want them put.

7. Advantages:

1. Already this method is third in terms of legal food production from the Kosi lakes and by next year may well catch almost as many fish as the traps.
2. There has been a marked improvement in relations between the Department and some of the people of the area, particularly in KwaDapha and KwaMazambane.
3. The success of the project and the careful monitoring of catches and documentation of its development could lead to its replication in other areas both inside and outside KwaZulu.
4. It can be seen by the public that the Department took the initiative to investigate an illegal and unwise fishing method and modified and controlled it to become part of the wise, sustainable and appropriate use of an important Nature Reserve and wetland of international importance. This was only achieved through the full co-operation of the user group and local Authority and community.

8. Concluding remarks :

Progress in 1993 was erratic but in the end satisfactory. Despite delays caused by the Department's policy of only working through the Community Authority this approach was justified by the acceptance of the project by the people of the area. There were many technical hitches and logistical problems but none were of a fundamental nature. Both the fishermen and managers of the reserve showed a willingness to resolve problems and work together. Bearing in mind that nearly all the legal netters came from the ranks of the "poachers" this was an important aspect.

Many of the problems cannot easily be resolved until there is better control of access to the reserve but this control will be of benefit to the netters as well as the managers. Already there is a perception developing amongst netters that stricter control is necessary to prevent overfishing and theft of legal nets. For the first time some netters are beginning to regard Game Scouts as possible allies who protect the resources for them and others to use wisely. The results of the enlarged project are due to be evaluated shortly and recommendations on the future of the project will be made.

Appendix 1.

Results of catch monitoring of the Nhlange Gillnetting project.

Species.	Number.	Mass.
1. Pouter.	7 050	2 115
2. Tilapia.	1 670	1 169
3. Barbel.	254	241
4. F.H. Mullet.	449	337
5. D.B. Mullet.	7	10
6. F.W. Mullet.	5	4
7. Kite fish.	6	1
8. Milkfish.	8	8
9. Crab.	6	5
10. Perch.	201	64
11. Grunter.	359	424
12. Stumpnose.	64	19
13. Rock salmon.	75	112
14. Kingfishes.	398	159
15. Sea pike.	3	3
16. Springer.	4	6
Total.	10 559	4 677
Target.	9 455	3 890
Non-Target.	1 104	787
% On Target.	89.54	83.35