

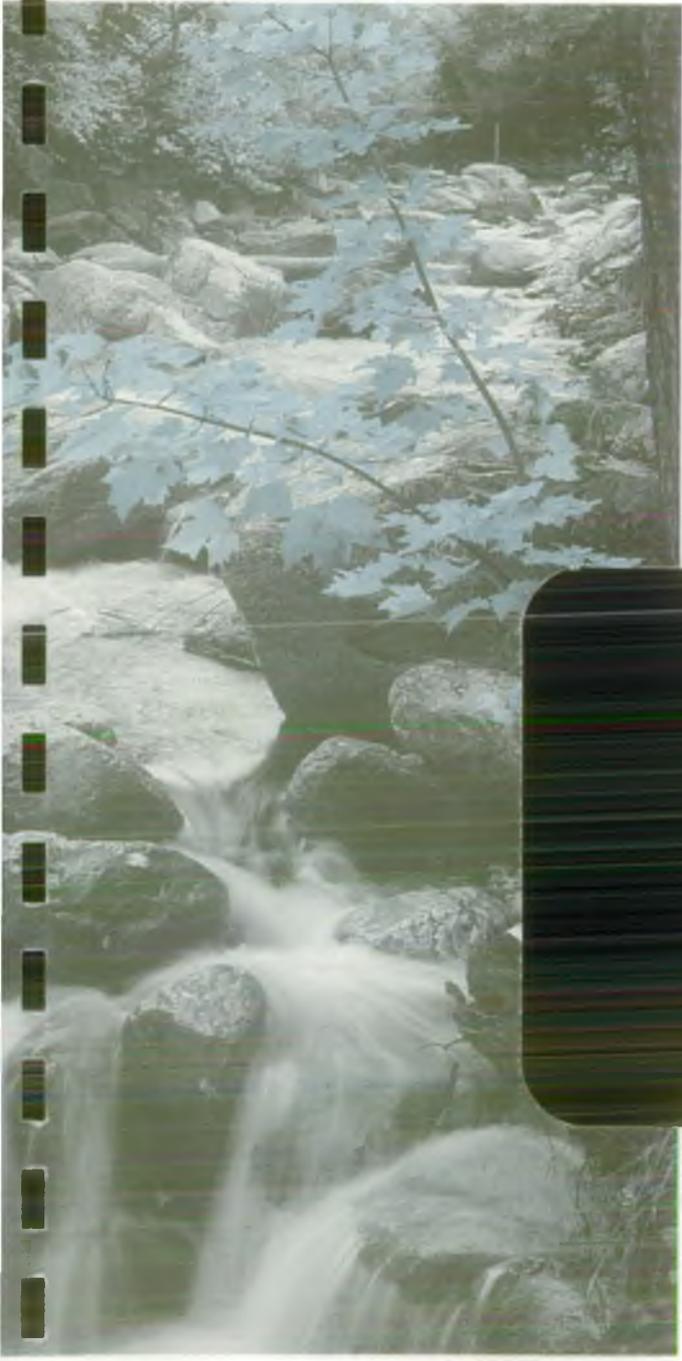
CIRCULATE EQ. (RFH)

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NRA

*National Rivers Authority
North West Region*



**GUARDIANS OF THE WATER
ENVIRONMENT**

NW:WAR:RFH:WQ:OIP 1991
NATIONAL RIVERS AUTHORITY,
Pollution prevention

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N.R.A. N.W. REGION

POLLUTION PREVENTION
LAKE WINDERMERE
BOAT USERS POLLUTION
PREVENTION SURVEY
1991

ENVIRONMENT AGENCY



135575

POLLUTION PREVENTION CAMPAIGN TARGETED AT

BOAT USERS ON LAKE WINDERMERE

INTRODUCTION

The need to prevent sanitary discharges from vessels on Lake Windermere was identified many years ago and legislated for in 1972. The problem of using existing legislation was in proving that an actual discharge had occurred. The Byelaw was made originally under Section 5 of Rivers (Prevention of Pollution) Act, 1951, and has been accommodated in subsequent Acts. This prevents the legal use of vessels on Lake Windermere if they can potentially discharge sanitary waste, i.e. vessels with sea toilets or any form of sewage outlet.

Predecessor Authorities enforced the Byelaws sporadically and at one time a person was employed for the summer months solely to check and seal, where appropriate, vessels on the lake.

The National Rivers Authority was formed in September, 1989. Little work was carried out on Byelaw enforcement in 1990, however, it was recognised that activity in this area required higher priority for 1991.

The importance of Lake Windermere and its Management in Water Quality terms added further weight to the justification for additional staff resources. Byelaw enforcement is only one aspect of protecting Lake Windermere and additional areas of Water Quality Management are continuing. Pollution Control staffing in the area which includes Lake Windermere was more than doubled at the end of October 1991.

South Lakeland District Council (S.L.D.C.) being the owners of the lake bed have a large interest in aspects of lake management. The Council lease up to 1,000 moorings on the lake and provide Wardens to enforce a series of Byelaws made by the Council. Public sewage disposal facilities are owned and maintained by S.L.D.C. with the exception of the pump out at Tower Wood which has been in a state of disrepair for some time and is owned by North West Water Limited.

It was decided early in 1991 that a market research exercise would assist both the N.R.A and S.L.D.C. in planning management strategy in each of the respective fields of responsibility.

A joint project was conducted and the results as interpreted by the N.R.A. are discussed in this report.

BYELAW ENFORCEMENT 1991

Inspection/Boat Sealing

Over the May Day and Spring Bank Holiday weekends 16 man days were spent checking and, where appropriate, sealing toilets on vessels. 6 man days were spent on the lake carrying out inspections on moored boats and 10 man days were taken up with shore based inspections. Results of this activity are as follows:-

Total Number of Vessels Inspected	119
Total Number with Holding Tanks	97
Number of which could discharge and were sealed	21
Total Number of Sea Toilets Sealed	13
Number of Vessels with Chemical Toilet	22

S.L.D.C. Wardens were unable to loan a vessel for inspection in 1991. A boat and Coxwain from Warrington were used for the May Day Bank Holiday. This gave logistical problems and the cost was high. Consideration is being given to the purchase of a Pollution Control vessel based near Lake Windermere.

An additional man day was spent on carrying out sealings and inspection at weekends at the request of the boat owners.

The attitude of most boat owners was generally good. Many were pleased to see the presence of the N.R.A., especially those who participated in immersion sports. A few felt that this was an unacceptable interruption to their valued leisure time and attempted to be obstructive. The most verbal comments received were in relation to the inadequacy of existing disposal facilities.

Over the two Bank Holiday weekends it transpired that one vessel had been inspected four times by different officers and had also been approached by SLDC to answer a questionnaire. The owner was initially co-operative but on the fourth time of being approached felt that he was being persecuted. This highlights the need for inspecting officers to have instant access to a paper or computer based database. This will facilitate the ability to check the previous inspection details of a vessel. A paper based system has been set up, however, if Psion Organisers are issued, as planned, to Pollution Control Staff, this will give greater flexibility and demonstrate a professional approach.

Previous to the 1991 inspections it was assumed that vessels with holding tanks complied with the Byelaws. Increasing the number of inspections and the greater degree of contact with owners has proved this not to be the case. Many vessels have a dual system, i.e. when on the lake wastes are held in a holding tank, but by turning a valve the contents can be discharged, this giving flexibility for inland waters and sea use. These vessels do not comply with the Byelaws as they can potentially discharge to the lake. Seals have been placed over the valve when this arrangement has been found.

The number of vessels that do not comply due to this dual system arrangement exceeds the number of vessels with a conventional sea toilet.

PUBLICITY

The Lake District Special Planning Board (L.D.S.P.B.) register all vessels on Lake Windermere annually.

L.D.S.P.B. agreed to include the N.R.A. 'loo overboard' leaflet with all registration documents. This arrangement was not in place when registration documents were being sent out in December 1990, therefore, not all boat owners received a copy. Attempts are being made to provide L.D.S.P.B. with copies of a reprinted version by early December, 1991.

In addition to this source of distribution copies were delivered to strategic sites around the lake, i.e. Wardens Office, Chandlers, Marinas etc.

Recipients of the publicity material sometimes appear to be left with the impression that the N.R.A. will remove sea toilets or permanently seal them with bungs or pipe disconnection. This is not the case.

The N.R.A. plastic seal is for enforcement purposes and does not physically prevent the use of illegal facilities. It merely informs an officer on a subsequent inspection that a discharge has been made.

The current leaflet does not appear to adequately convey the message that it is the owners responsibility to comply with the Byelaw and not the N.R.A.'s. Owners should be more actively encouraged to have discharge potential removed permanently if they intend staying on Lake Windermere.

These points and others are to be addressed in the reprinted version of the 'loo overboard' leaflets.

A live radio interview was given to Radio Cumbria on the 24th May to promote the enforcement work and on the 27th May to give feedback on the success of the weekend inspections.

MARKET RESEARCH

Approximately 10,000 boats are registered for use on Lake Windermere. A print-out of 2,000 randomly selected names and addresses was obtained from L.D.S.P.B. and an individual Questionnaire and pre-paid envelope was sent to each. Approximately 770 completed questionnaires were returned.

All responses were entered on a computer database and results presented from a graphics package.

DISCUSSION

1. Lake Usage

87% of Lake users are outside Cumbria (Fig. 1).

By far the highest number of vessels by class is the sports boat at 48% with the numbers of yachts, cruisers and dinghies being of a similar number. (Fig. 2).

Fig. 3 and 4 show the expected period of peak use, i.e. May to September inclusive. Of the vessels most likely to have toilet facilities, i.e. cruisers and yachts, a surprising number of 20 and 23% respectively are used all year round. (Fig. 5).

For all vessels (Fig. 6) and larger ones (Fig. 7) the Central Area of the lake is the most popular launching point. This is not surprising as most Chandlers/Boat yards and Slipways, including the public slipway at Ferry Nab, are in the Central Area.

Due to the high number of sports boats most vessels are kept off the lake, i.e. day boats (Fig. 8).

2. Byelaw

49% of lake users at minimum are aware of the Byelaw in outline only. 75% are at minimum aware it exists. (Fig. 9). Figure 10 shows that although widespread knowledge is not as good as it could be, the owners of vessel classes that are more likely to be affected have a better knowledge than others. The higher awareness of jet ski owners may be due to the fact that jet skis are likely to be a second vessel.

Figure 11 demonstrates the success of inclusion of Byelaw information in licensing documents. The number that became aware via oral contact is unsatisfactory. Incorrect information can easily be conveyed through this route. A direct approach from N.R.A. in all cases is required.

From the results shown in Fig. 12 the N.R.A. have not been successful in promoting the Authority as the body that enforce the Byelaw. The large number of respondents that believed S.L.D.C. to be the enforcers could have arisen due to widespread knowledge of S.L.D.C. speed restriction etc. Byelaws. The word Byelaw on Lake Windermere is usually associated with S.L.D.C.

3. Perception of Pollution

Figure 13 shows opinions on the water quality of Lake Windermere. 64% felt that this was satisfactory or very good and 32% felt water quality was unsatisfactory or grossly polluted.

Figures 14 and 15 show the perception of the cause of pollution. It is surprising that lake users condemn themselves in stating that sewage from boats is the greatest cause.

From Figure 16 it can be seen that most lake users would be willing to use more environmentally friendly products.

4. Fuel Purchases

Figures 17 and 18 show where owners purchase fuel for their vessels. 69% carry fuel in cans and 96% of these use cans manufactured to the appropriate British Standard (Fig. 19).

5. Sewage Disposal Facilities

Figures 20, 21 and 22 show the type of toilet facilities on each class of boat. Both cabin cruisers and yachts predominantly use chemical toilets and a higher percentage of yachts have no facilities at all compared to cabin cruisers. Holding tanks are more popular on cabin cruisers than on yachts. 91% of sports boats have no onboard facilities (Fig. 22).

Figures 23, 24 and 25 show the frequency of emptying tanks/toilets. There is difficulty in interpreting these results as these frequencies are not linked to boat use, i.e. Number of days use before emptying. The way the question was worded, a boat used one day per week may have a tank emptied once per week but this would be only one days use.

As expected figures 23 and 24 show that chemical toilets are emptied more frequently than holding tanks.

Of the users with sea toilets, one admitted regular usage. (Fig 25).

Figures 26 to 31 display users opinions on the existing facilities by class of vessel. The response from cabin cruiser and yacht owners was similar with the exception that yacht owners felt that public conveniences were adequate but with cabin cruiser owners there were as many felt that they were poor. On the whole both these classes felt that facilities on the lake are poor. ←

Slightly more sports boat owners felt that the number of public conveniences are adequate than those who thought they are poor.

The areas where lake users would use additional facilities is represented in Figure 32. Generally this reflects the balance between the number of day boats and larger boats which have onboard facilities. It is worthy of note that the main area where the manned public pump out point is situated is the Central Area. 98 respondents would use improved or extra facilities in this area. ←

The conclusion from the data represented in figures 33 to 38 is that more cabin cruiser and jet ski users would like additional facilities in the South Basin than other areas, however, more yacht and sports boat users would like to see additional facilities in the Central Area.

Users were asked to prioritise requirements to disposal points on Lake Windermere. (Fig. 39).

The highest score was improvement of existing facilities but there was no outstanding priority as the distribution was fairly even.

Figures 40 and 41 represent the results from two questions designed to canvass opinion on paying for improvements. Clearly the majority felt that full improvement should be made even if this is at the cost of users and it should be a pay as you use scheme. Again this is not surprising as most vessels on Windermere do not have any toilet facilities, therefore, there is less support for a blanket increase in registration fee as these owners would not benefit directly. ←

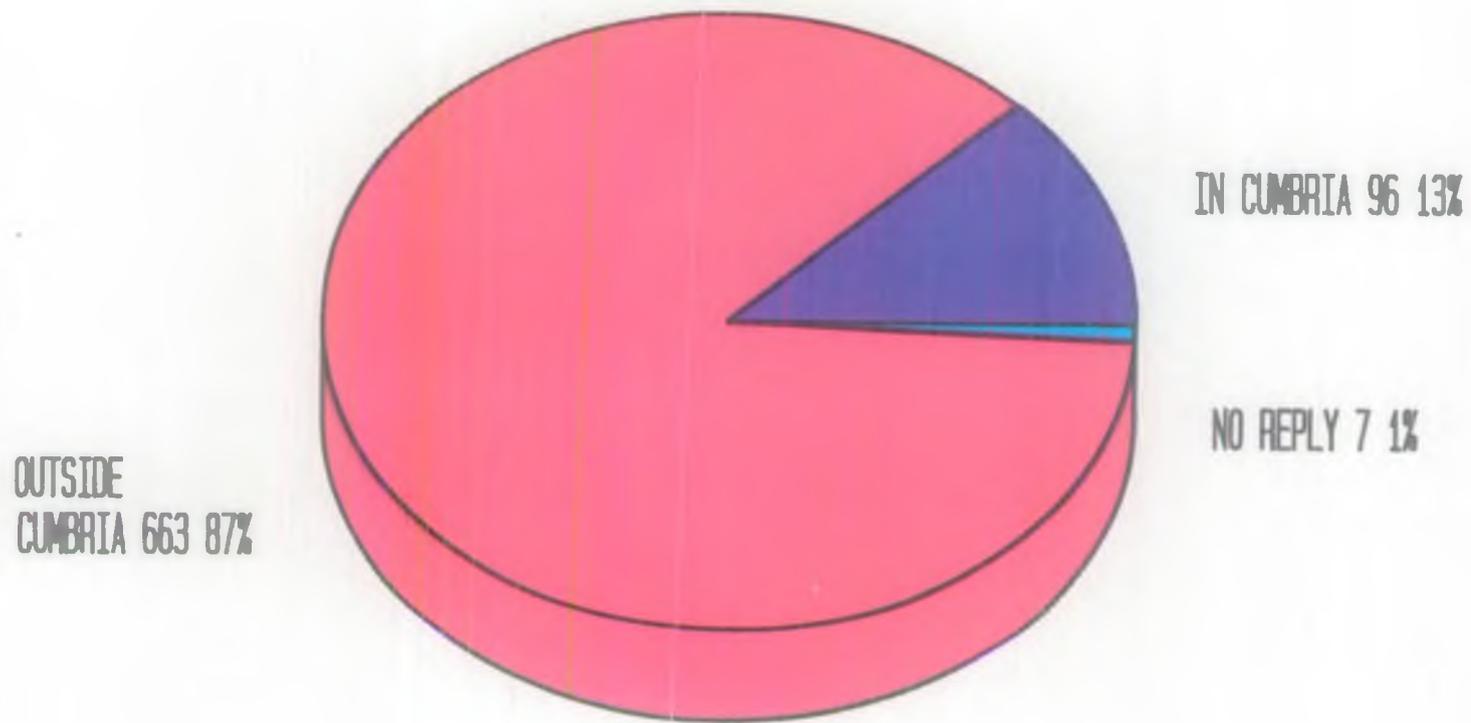
CONCLUSION

1. Availability of a craft for Pollution Control work on Windermere needs to be addressed. A report has been submitted to justify the purchase of a semi-rigid inflatable for this work. If this is not forthcoming, alternatives need to be investigated.
2. An up-to-date database of vessel details and inspections should be established on Psion Organisers. If these are unavailable the paper based system should continue.

3. The 'loo overboard' Byelaw leaflet requires updating to change emphasis and correct the sources of mis-interpretation by the public.
4. Byelaw publicity information should be included with all boat registration documents from L.D.S.P.B.
5. Attempts should be made to distinguish N.R.A. Byelaw from S.L.D.C. Byelaws in any publicity material the Council may produce.
6. Lake users with vessels fitted with holding tanks and the facility to discharge should be targeted in future work. It should be made clear in the reprinted leaflet that these vessels are in contravention of the Byelaw.
7. S.L.D.C. are to improve and extend facilities and N.W.W. will provide improved pump out and chemical toilet disposal at Tower Wood both in 1992. When this work is complete and all users have received the Byelaw leaflet N.R.A. will then be in a position to be more pro-active on Byelaw Enforcement.

Fig. 1

WHERE DO YOU LIVE?



NO. RESPONDED = 766

Fig. 2

TYPE OF VESSEL

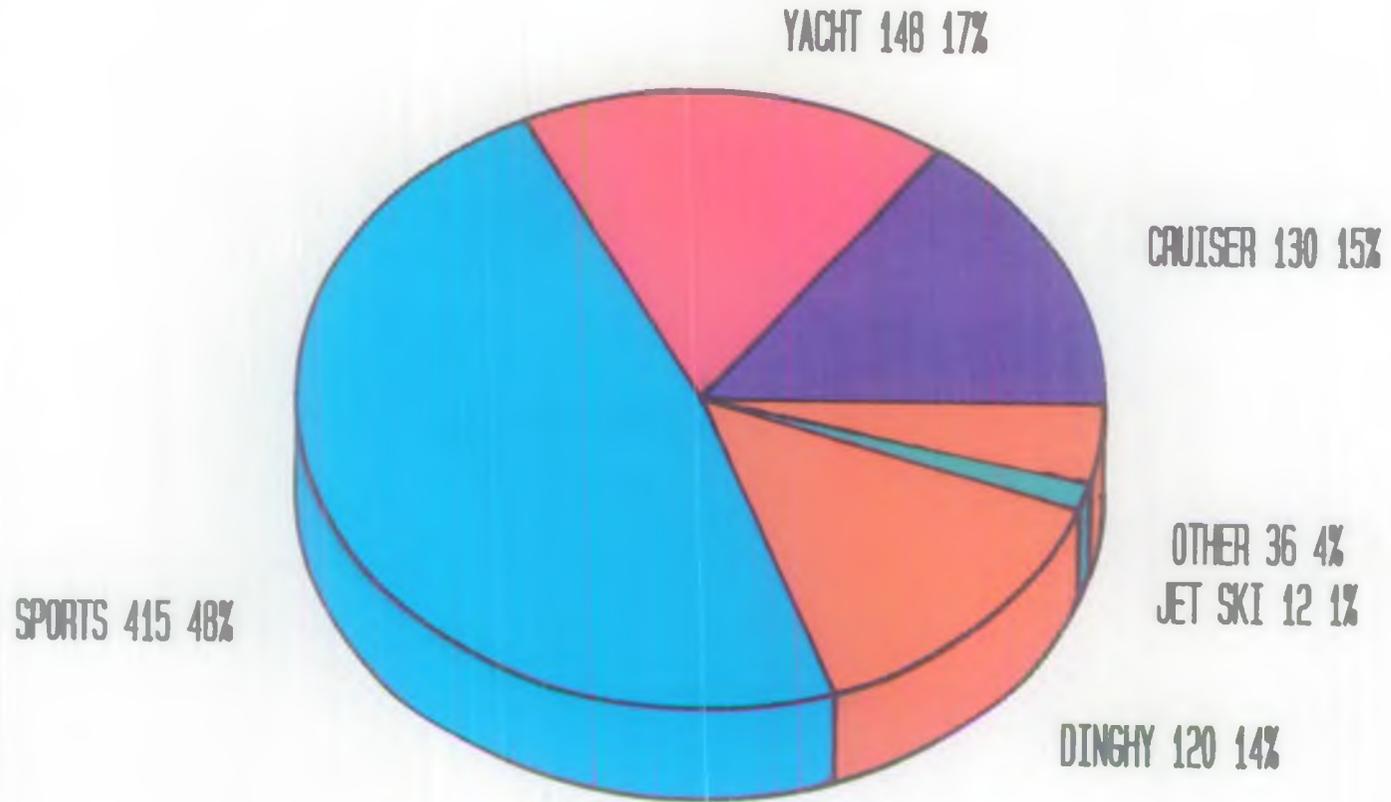


Fig. 3

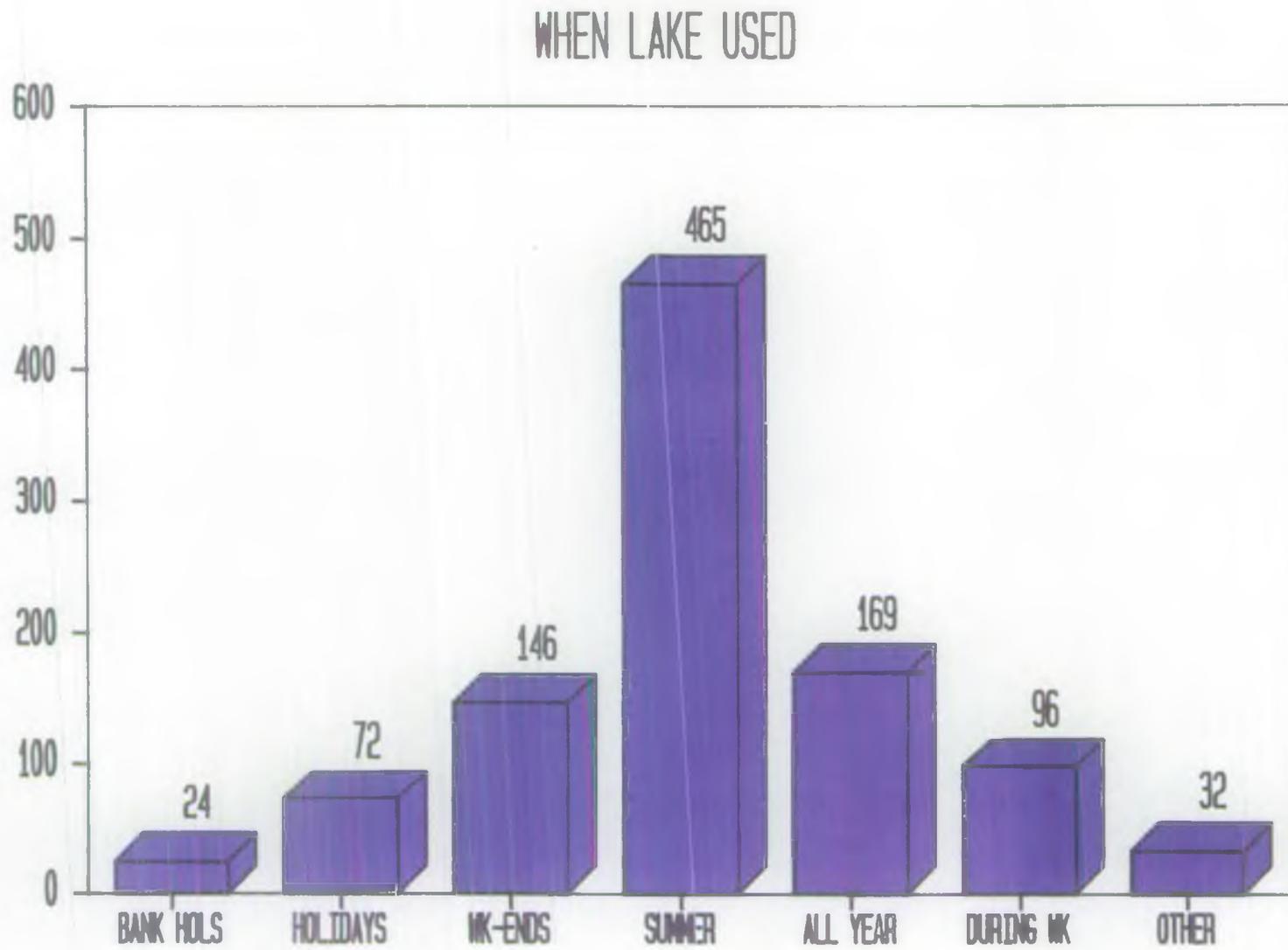
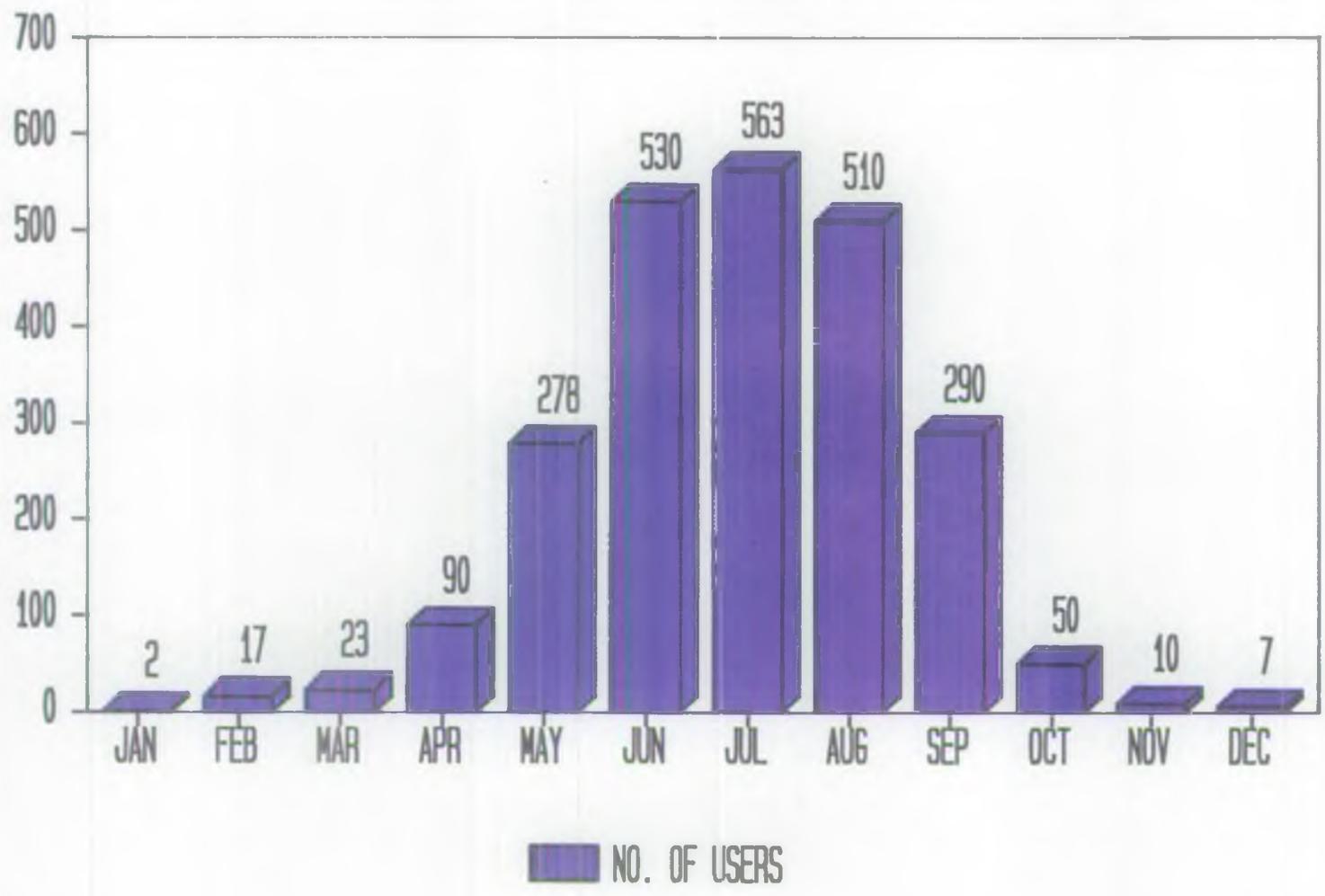


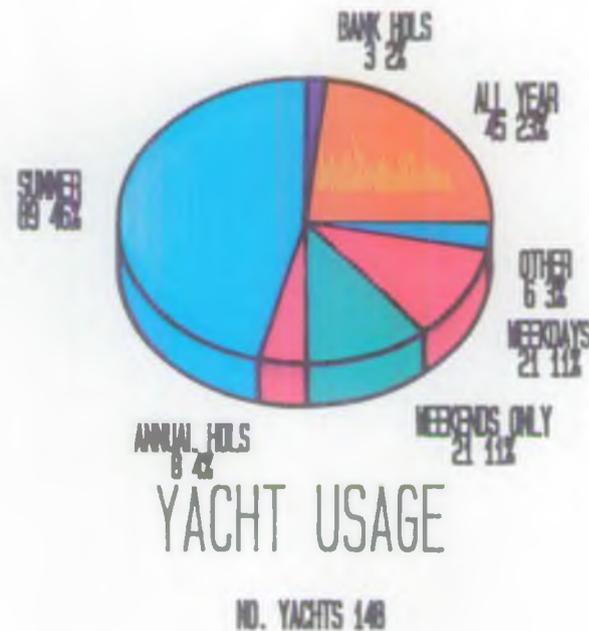
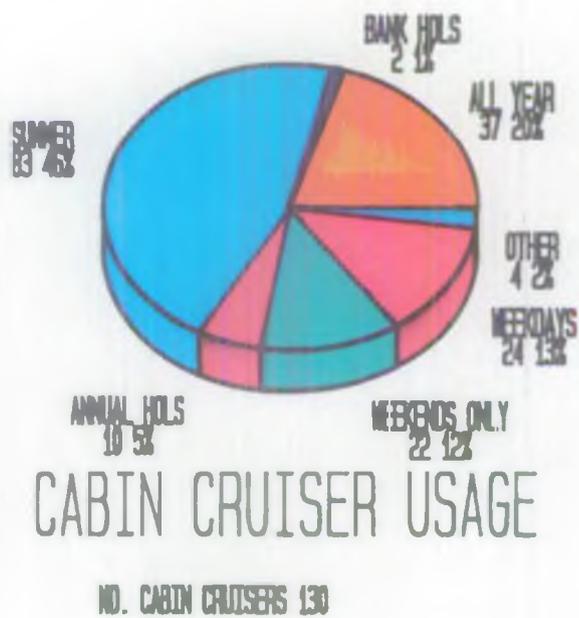
Fig. 4

LAKE USERS



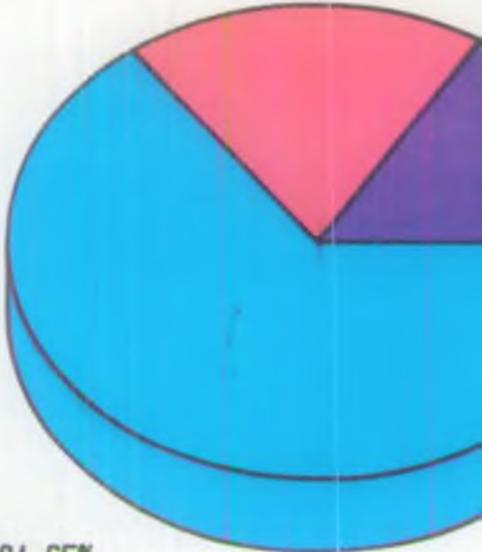
CABIN CRUISERS & YACHTS COMPARISON OF USAGE

Fig. 5



LAUNCHING POINT

SOUTH BASIN 141 19%



CENTRAL AREA 481 65%

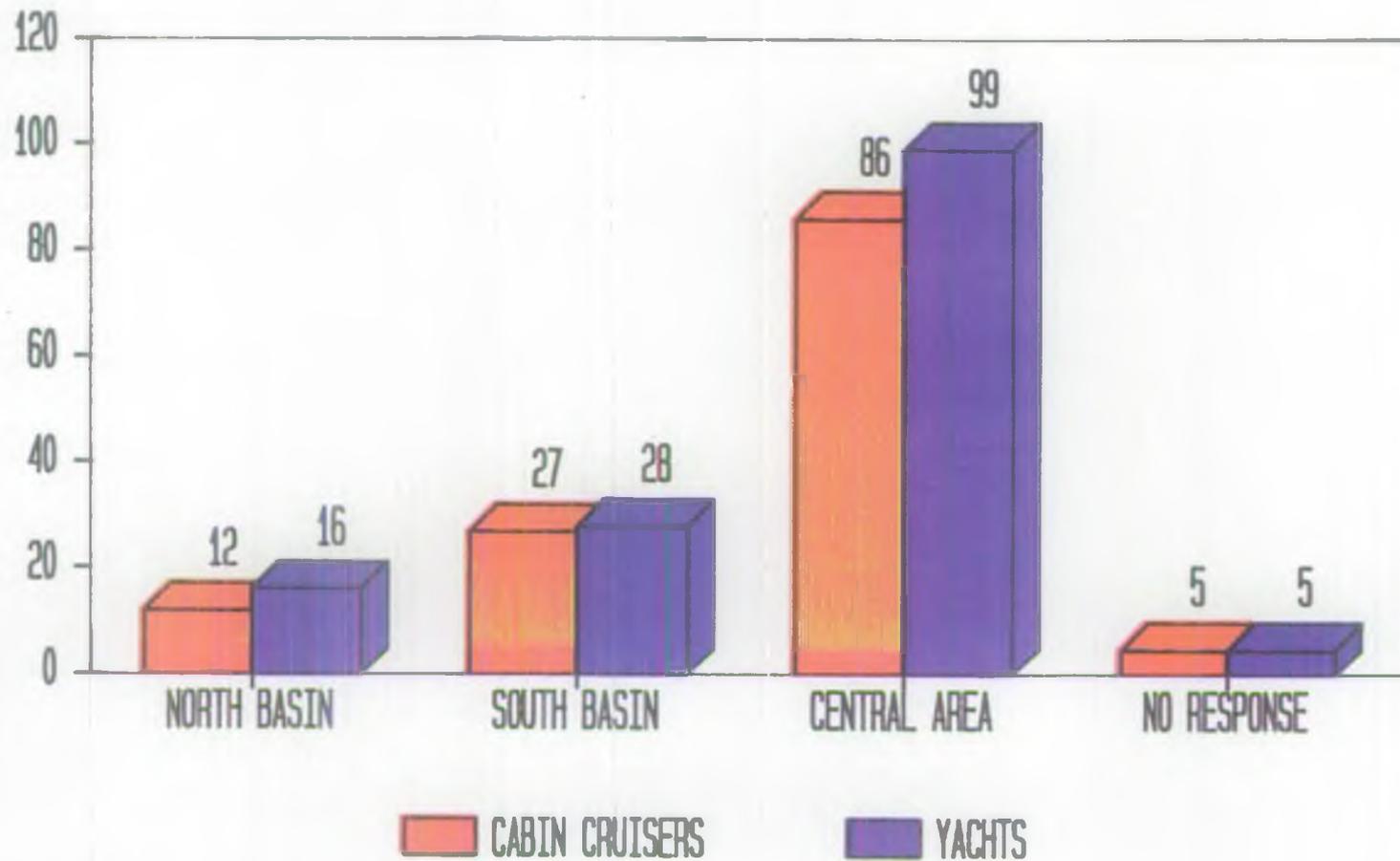
Fig. 6



NORTH BASIN 120 16%

CABIN CRUISERS & YACHTS COMPARISON OF LAUNCHING POINTS

Fig. 7



NO. CRUISERS 130/NO. YACHTS 148

02/6

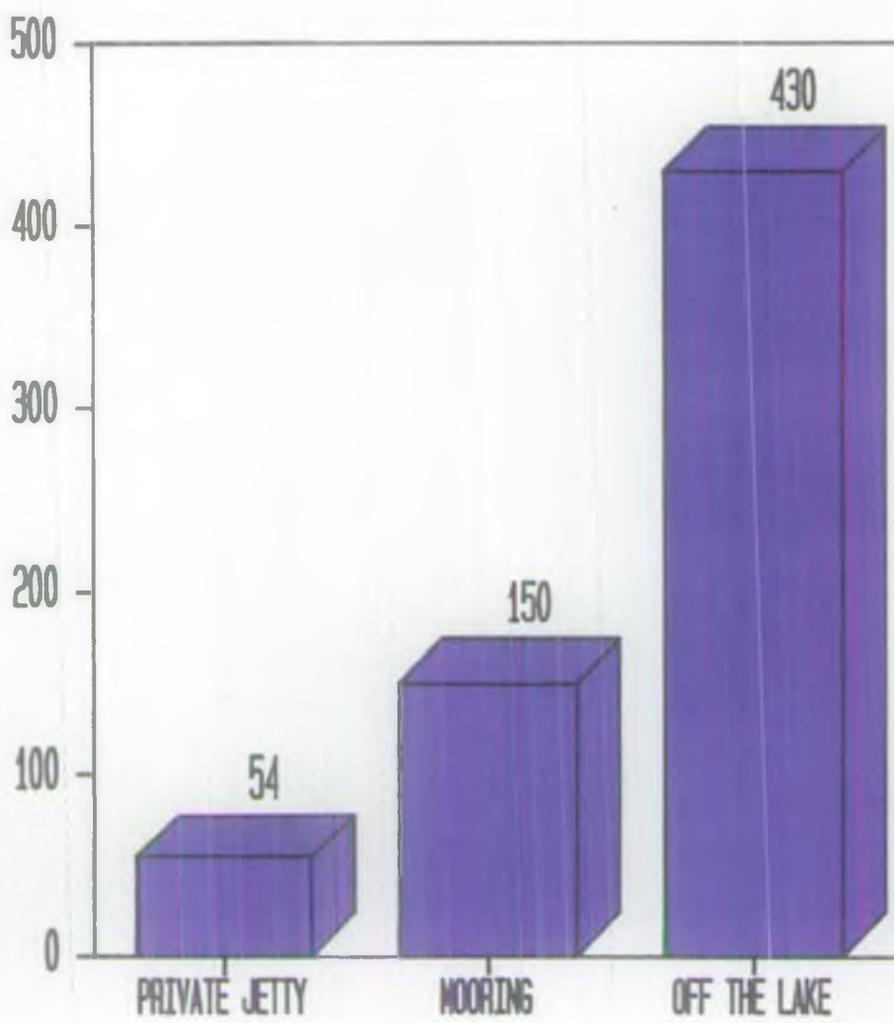
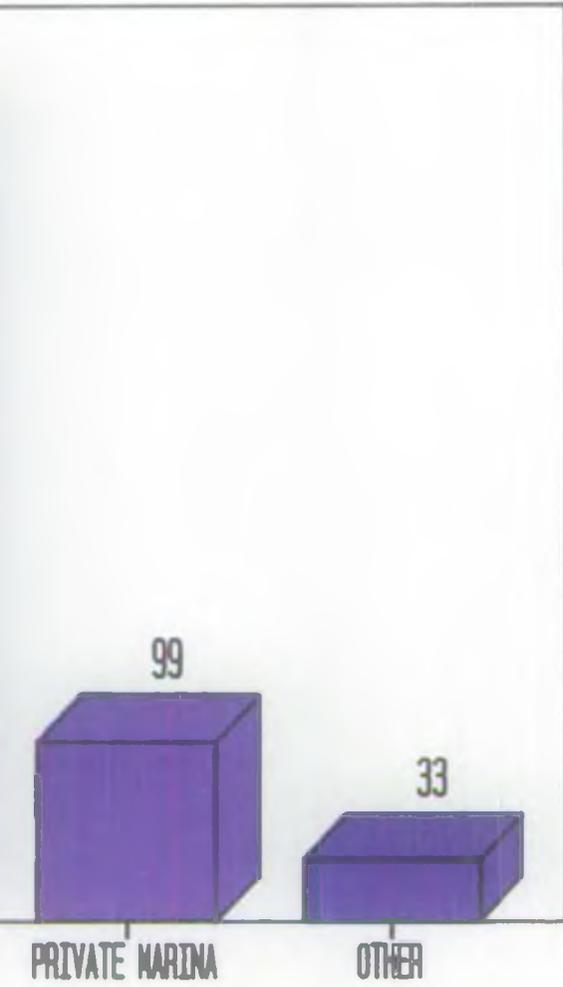
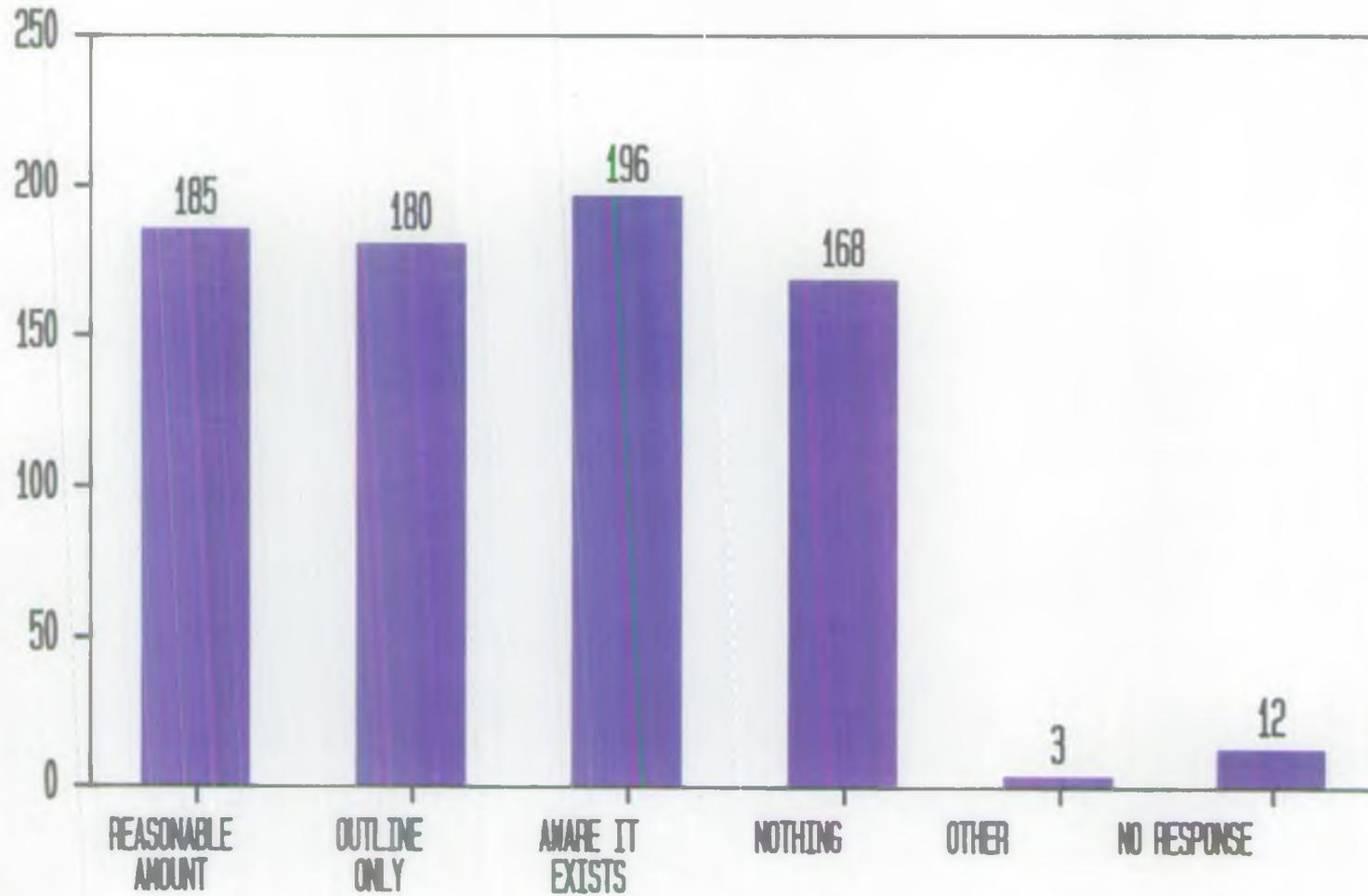


Fig. 8



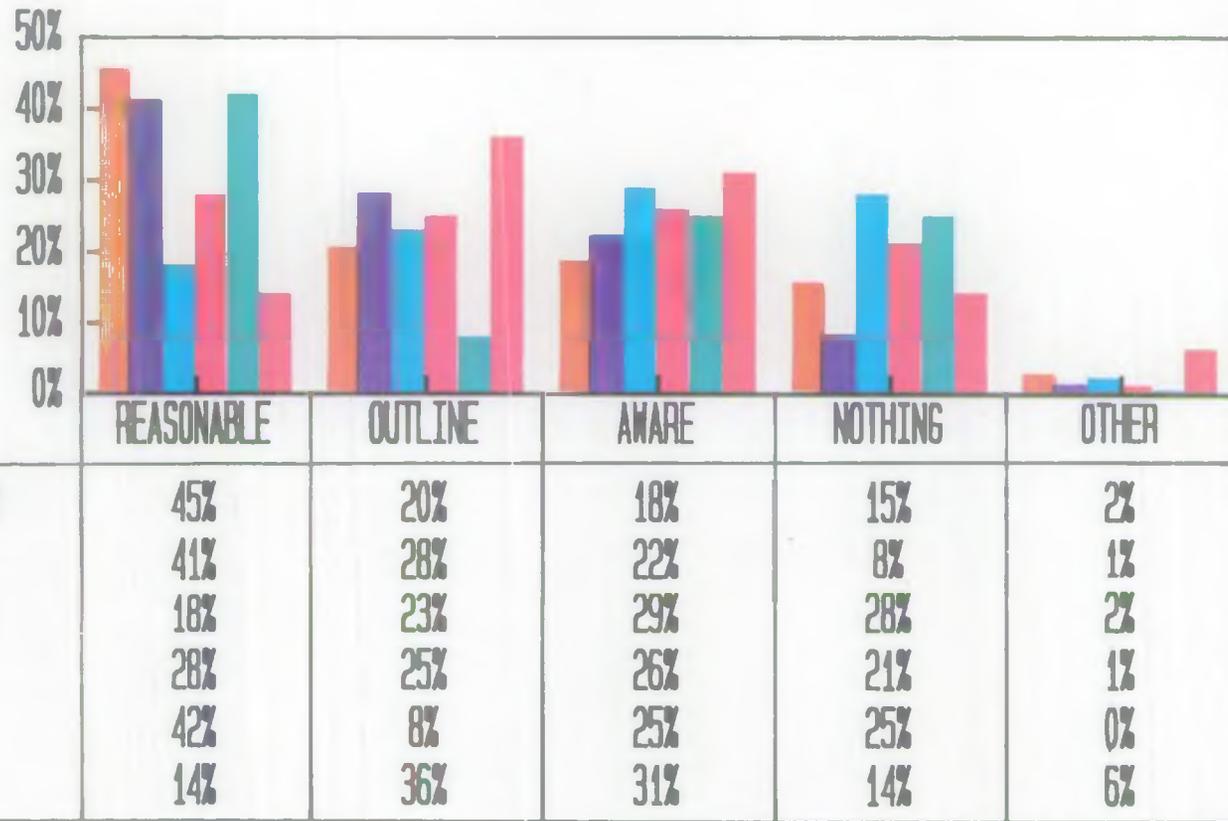
KNOWLEDGE OF BYE-LAW CREATED TO AVOID POLLUTION

Fig. 9



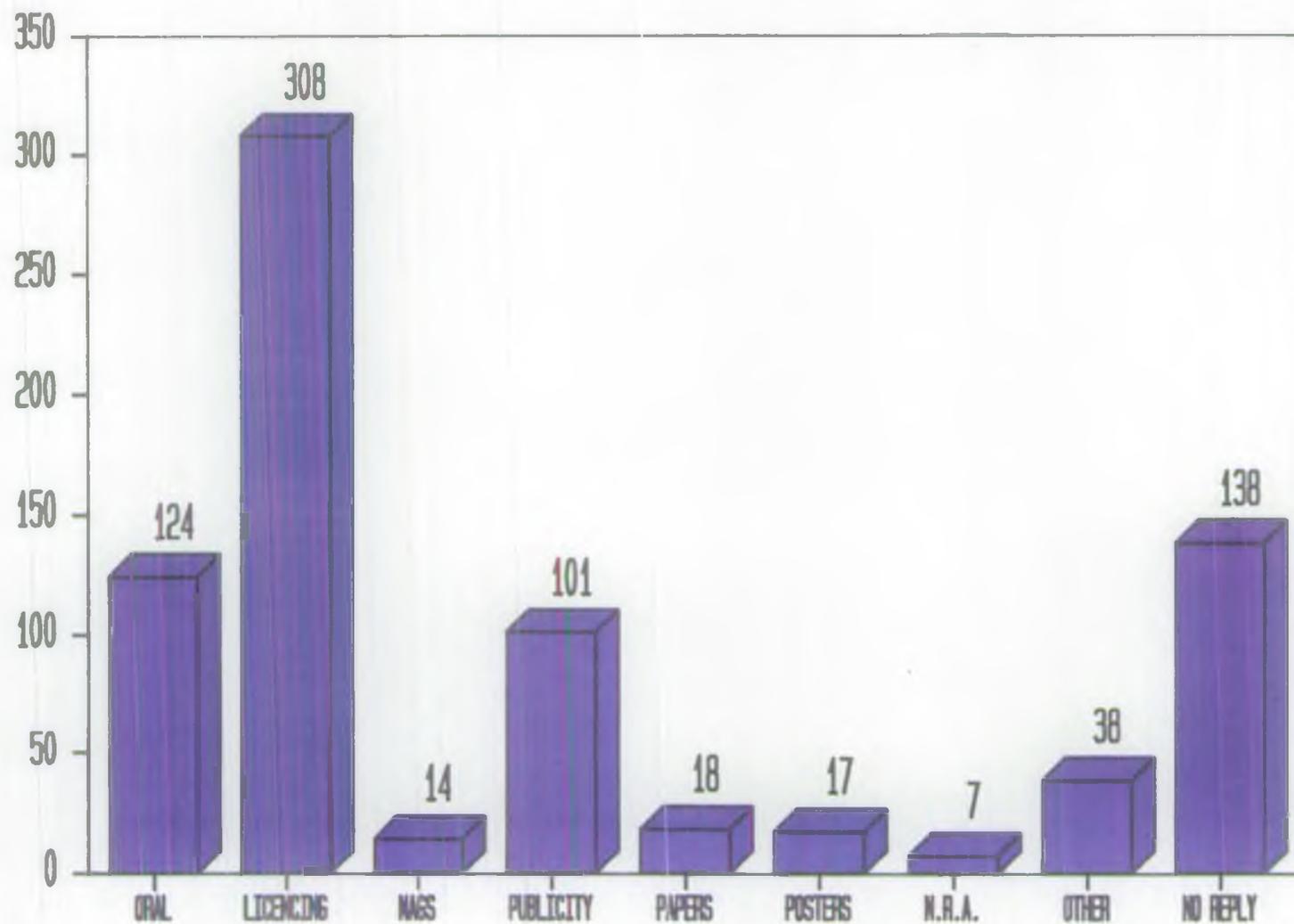
COMPARISON OF BYE-LAW KNOWLEDGE

Fig. 10



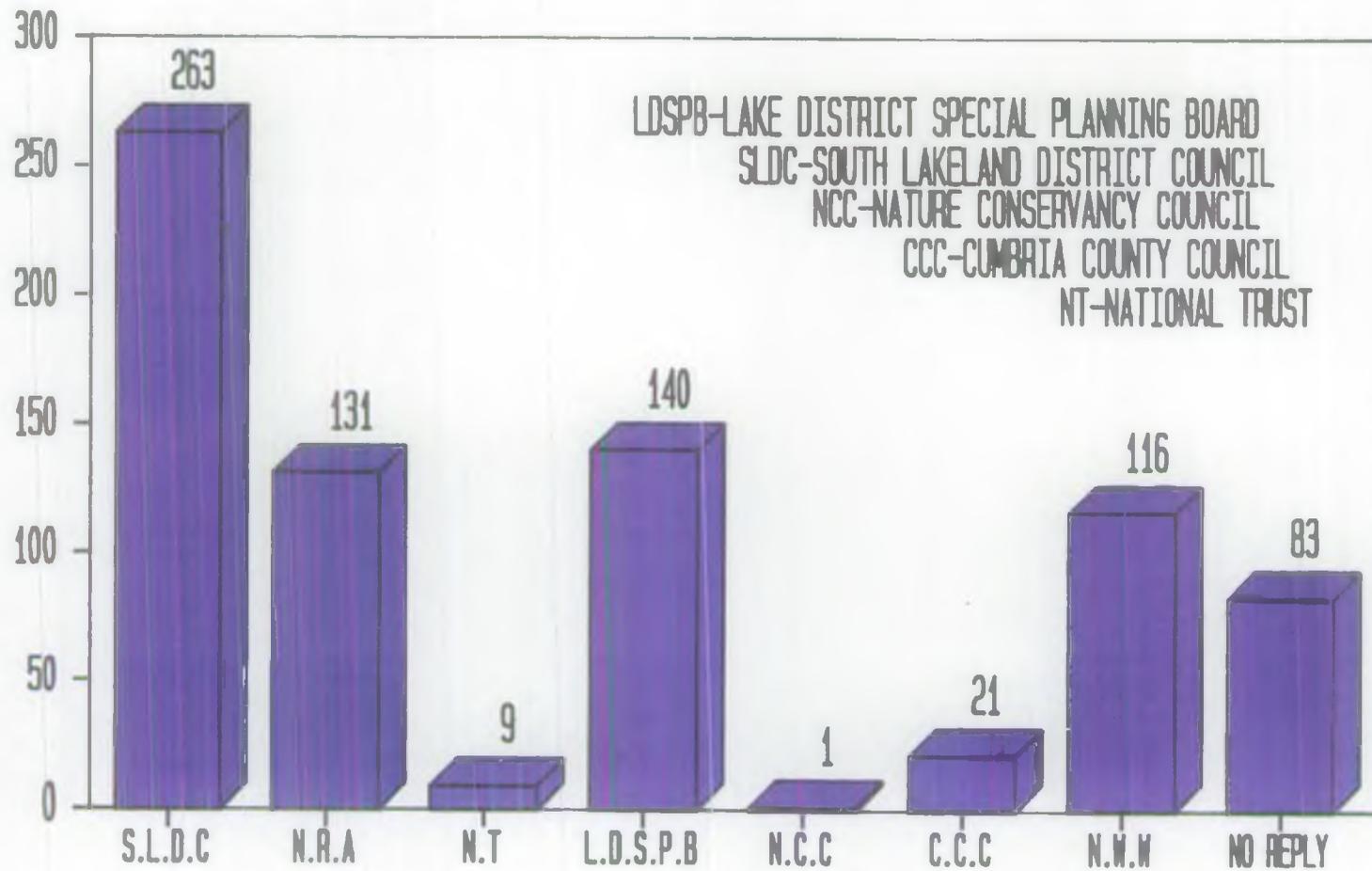
SOURCE OF AWARENESS TO BYE-LAW

Fig. 11



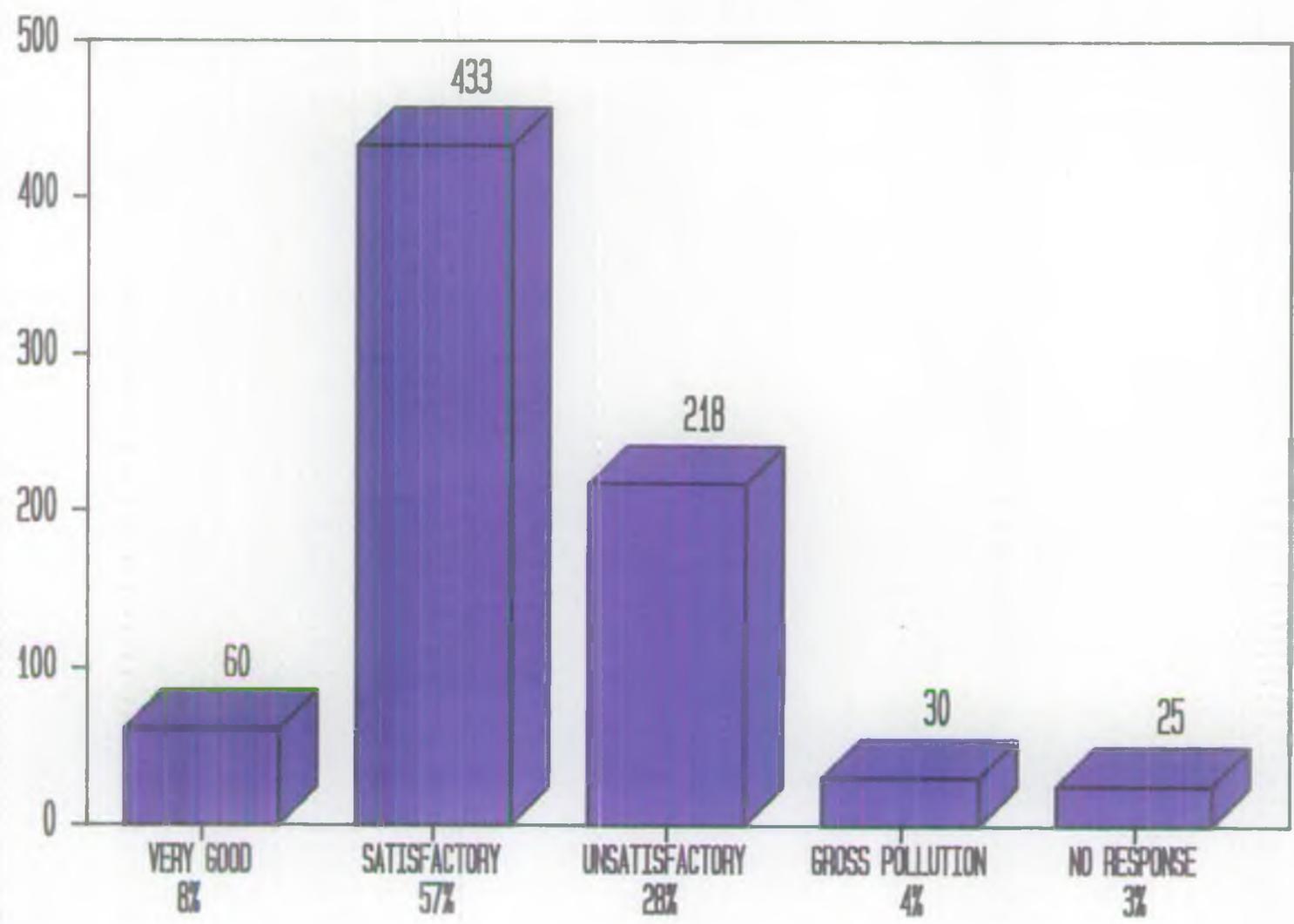
BYE-LAW ENFORCER WHO ENFORCES THIS BYE-LAW ?

Fig. 12

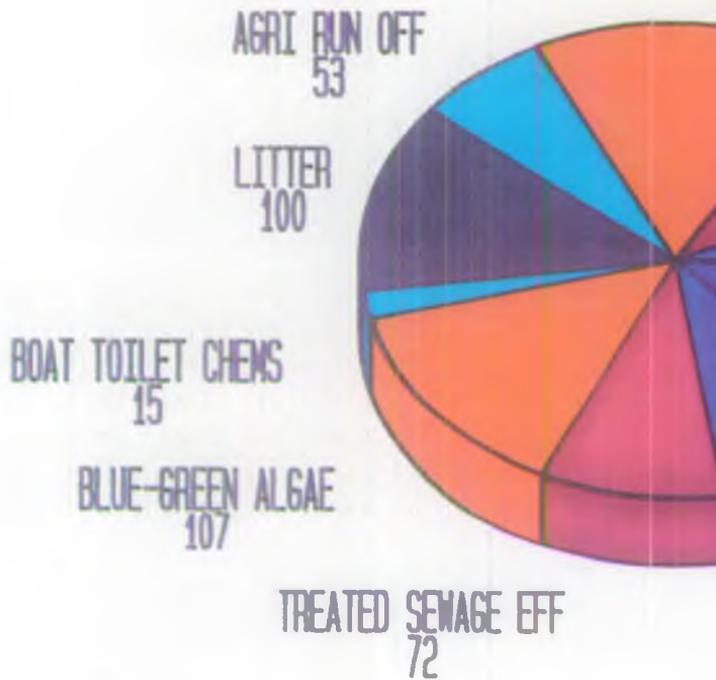


OPINIONS ON WATER QUALITY

Fig. 13

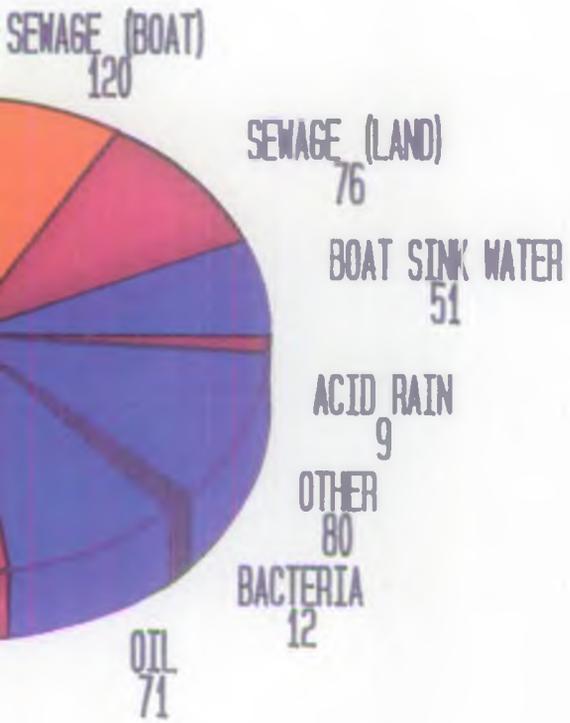


GREATEST CAUSE



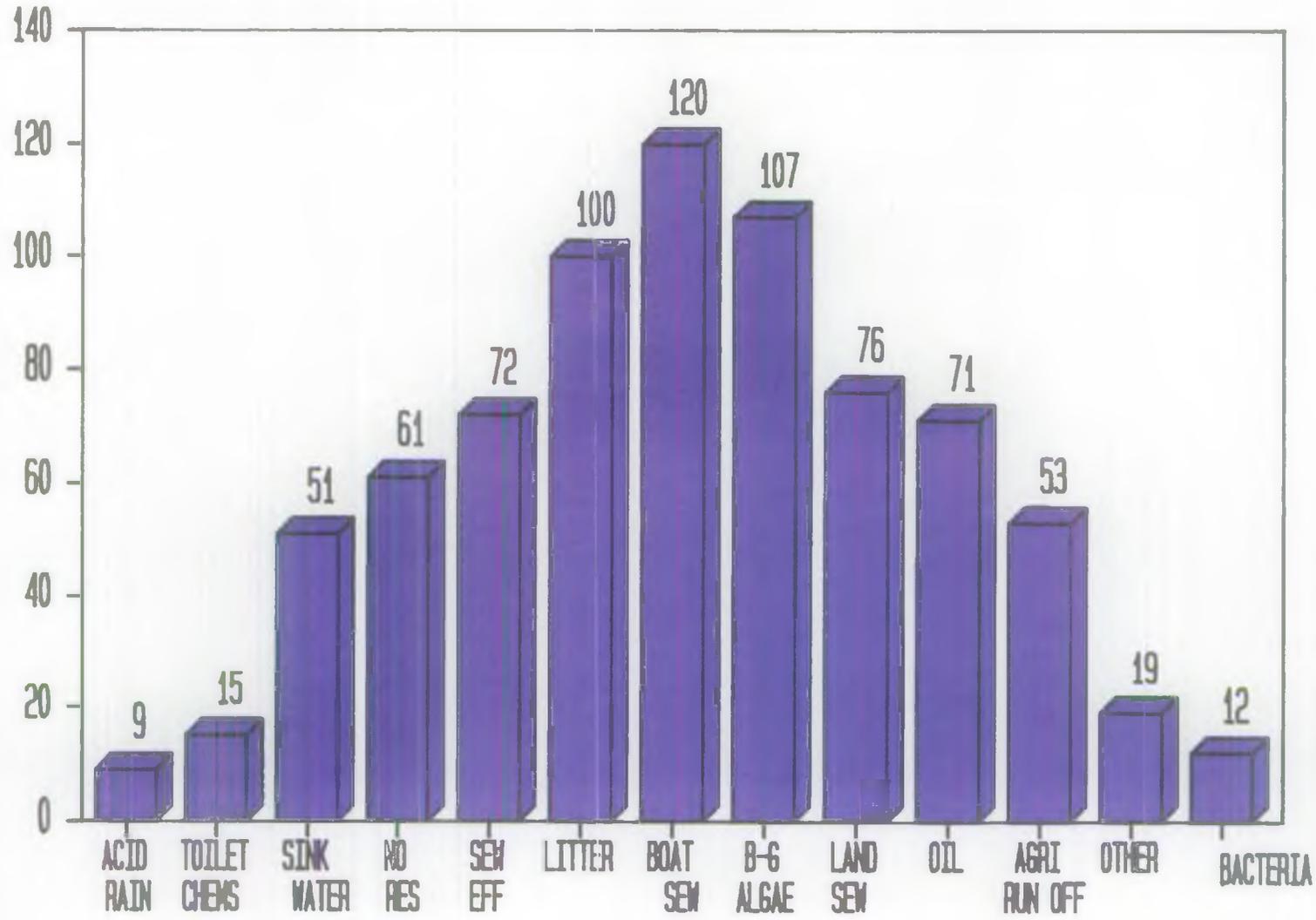
OF POLLUTION

Fig. 14



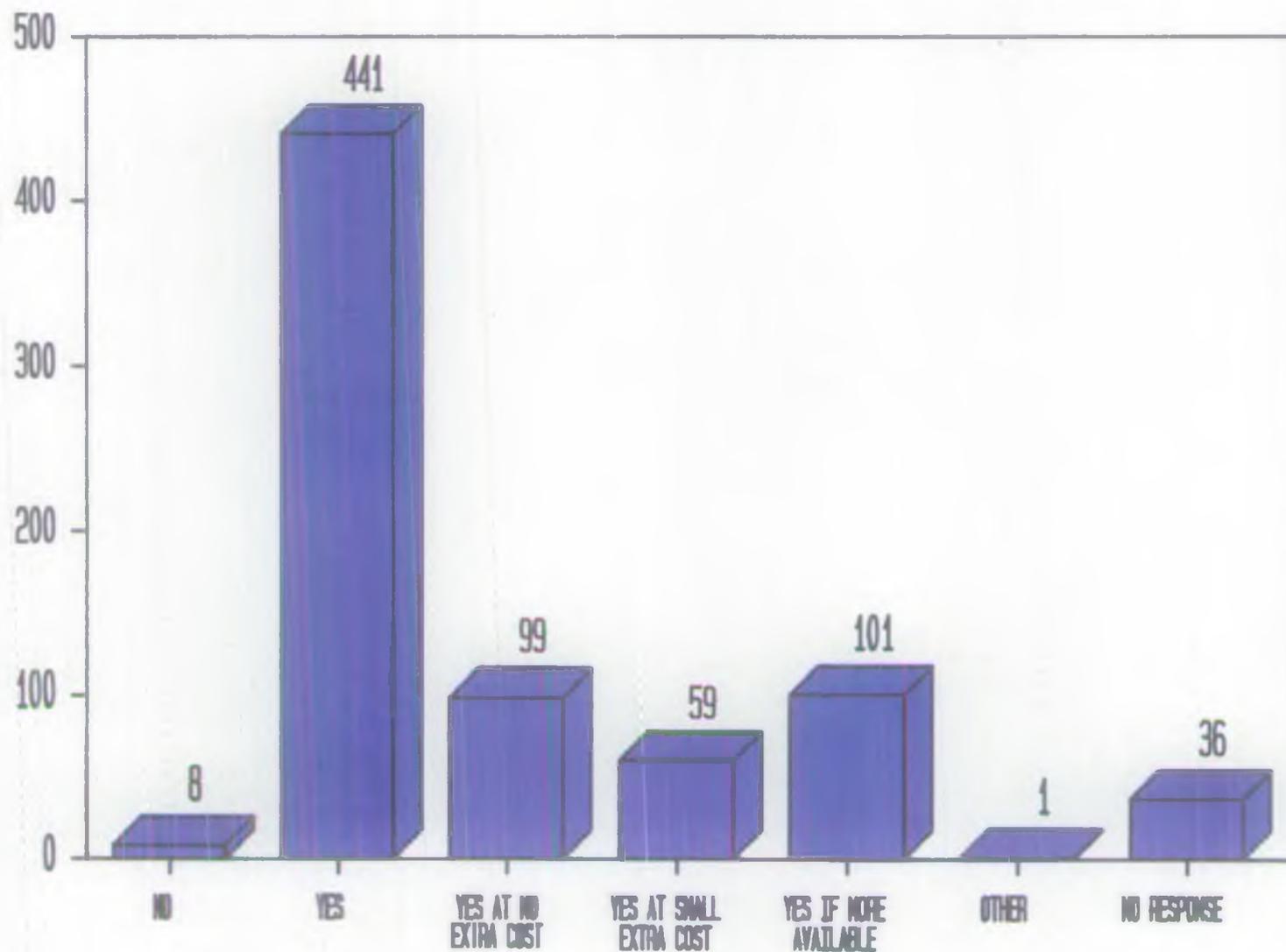
GREATEST CAUSE OF POLLUTION

Fig. 15



USE OF ENVIRONMENTALLY FRIENDLY PRODUCTS

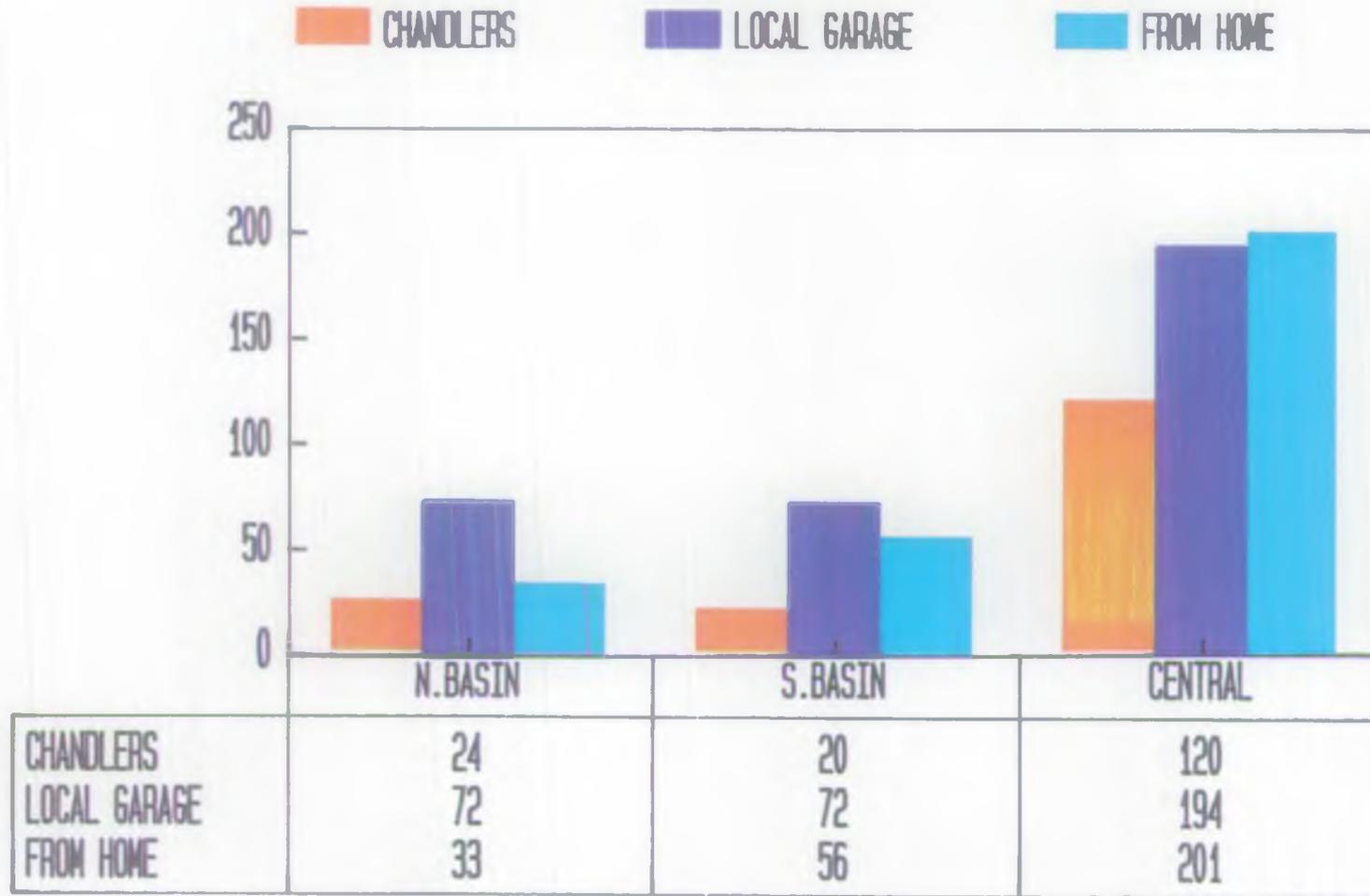
Fig. 16



Q12

WHERE DO YOU BUY FUEL

Fig. 17



FUEL PURCHASES

LOCAL GARAGE 345 44%

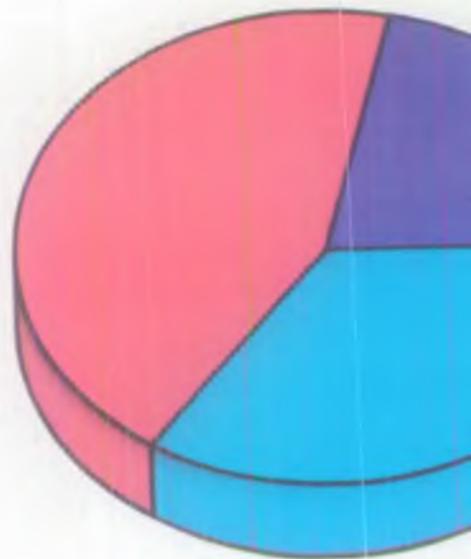
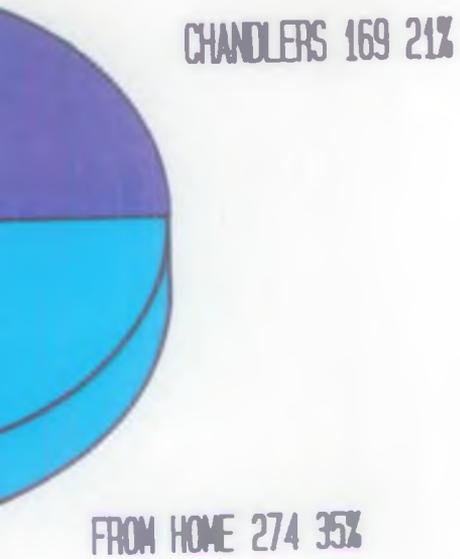
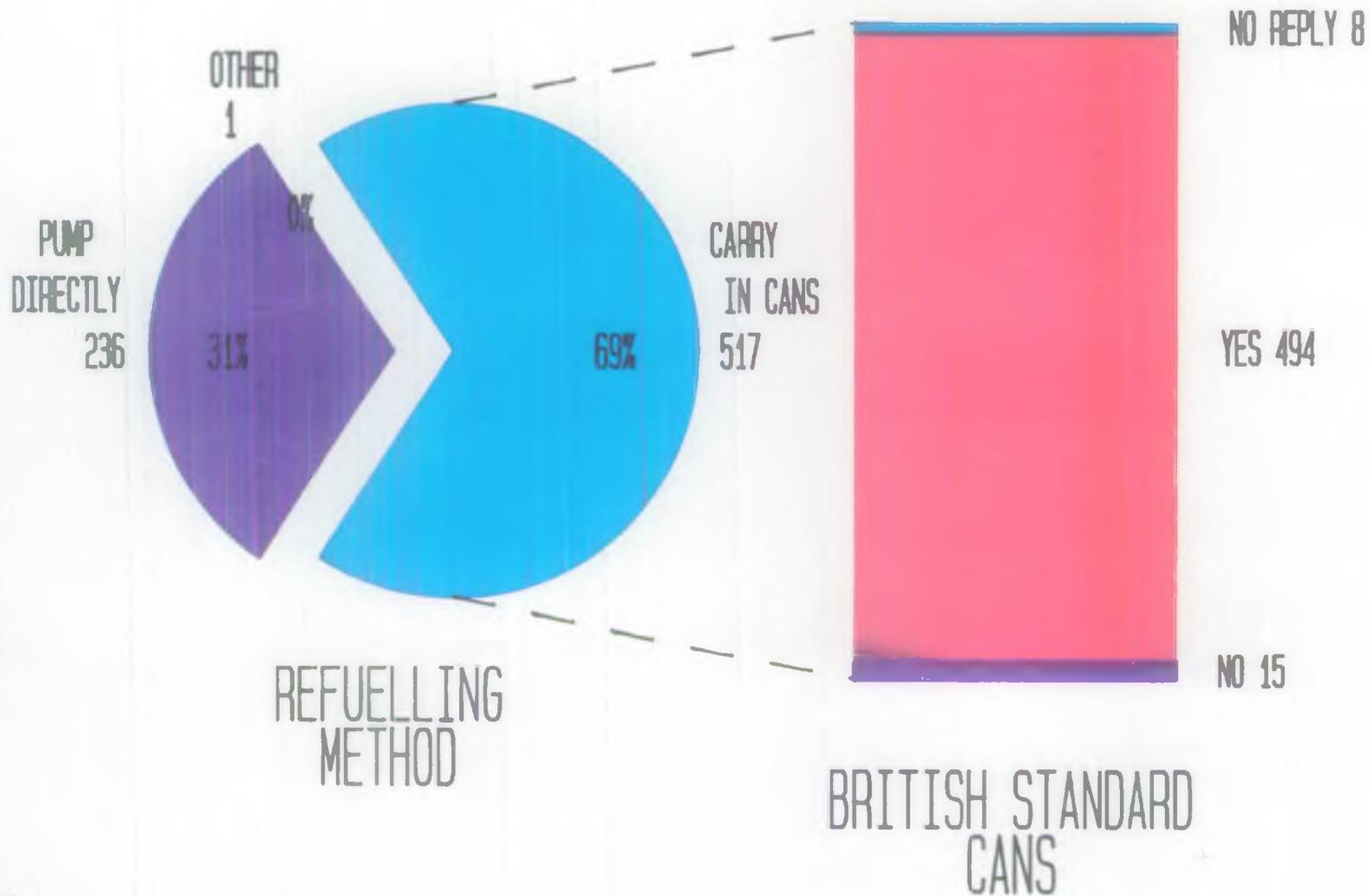


Fig. 18



FUEL PURCHASING ROUTINE

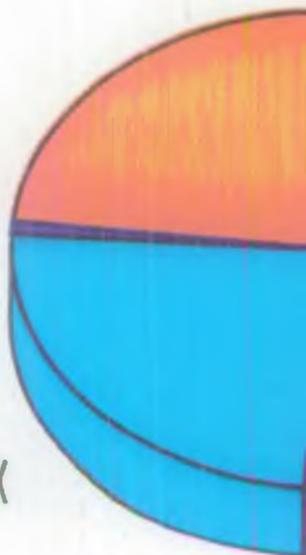
Fig. 19



CABIN CRUISER T

OTHER
1 1%

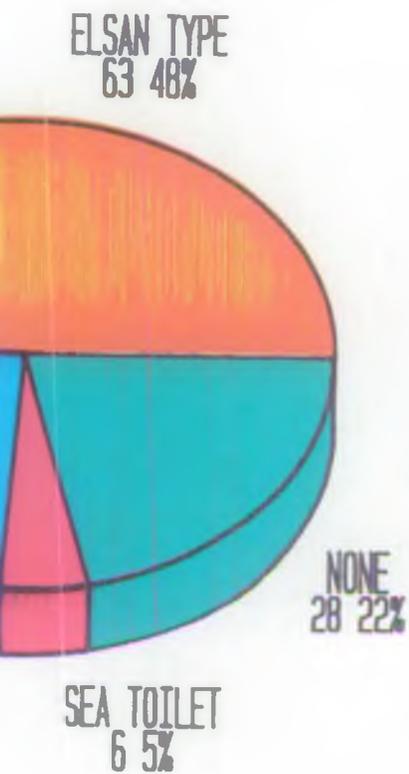
HOLDING TANK
32 25%



NO. CABIN CRUISERS 130

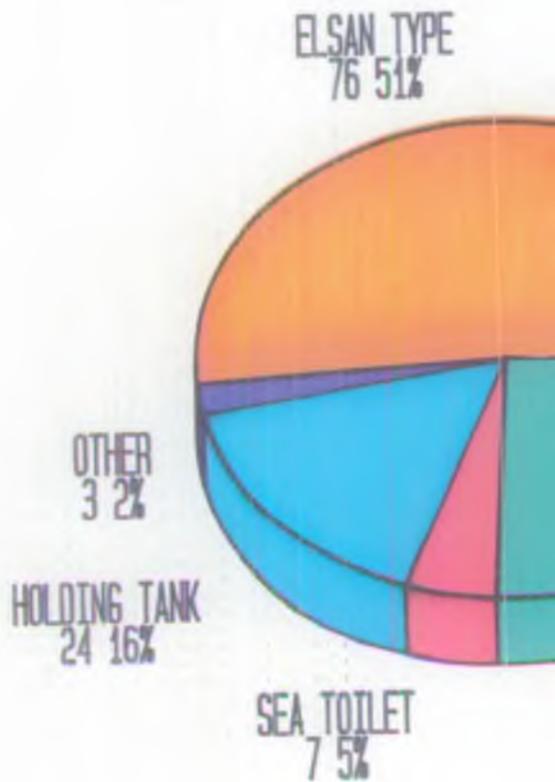
TOILET FACILITIES

Fig. 20



02a/9

YACHT TOILET



NO. YACHTS 148

FACILITIES

Fig. 21



026/9

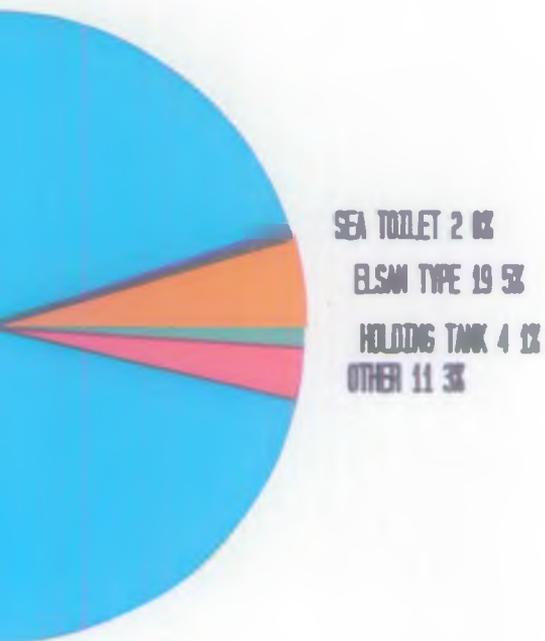
SPORTS BOAT TOI

NO. 379 918

NO. SPORTS BOATS 415

LET FACILITIES

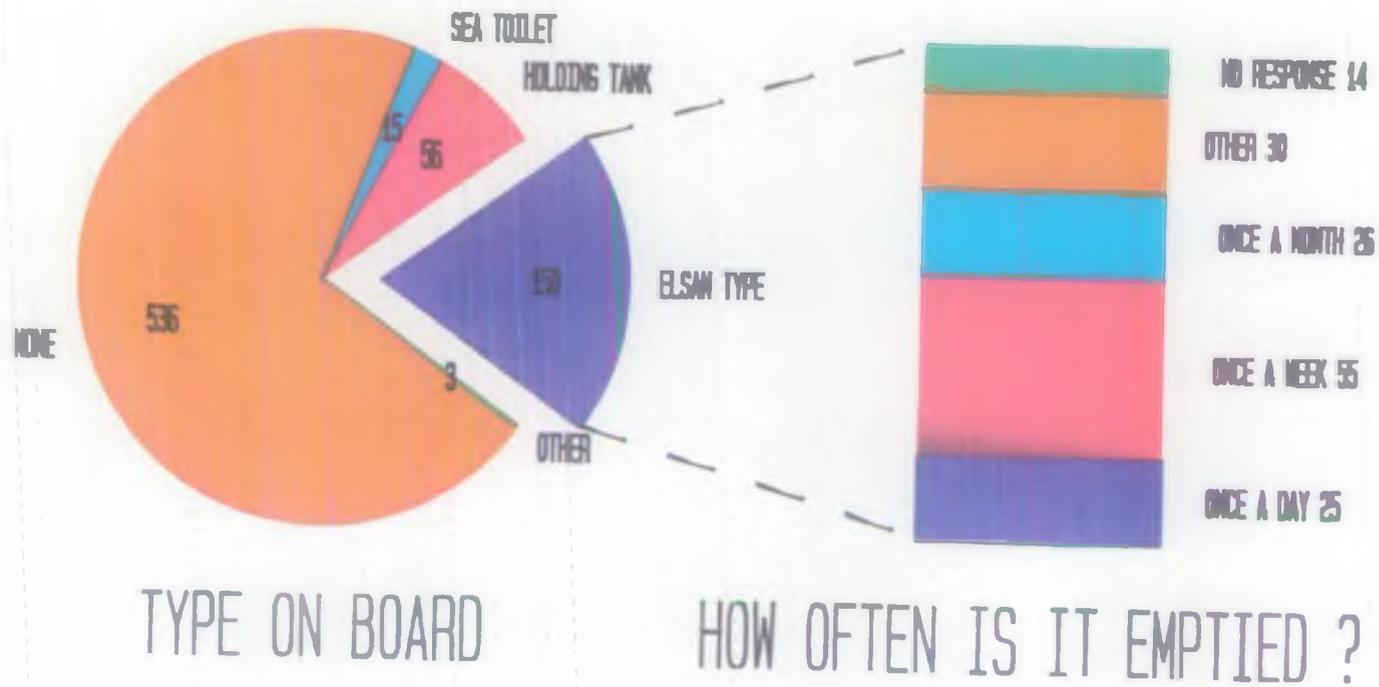
Fig. 22



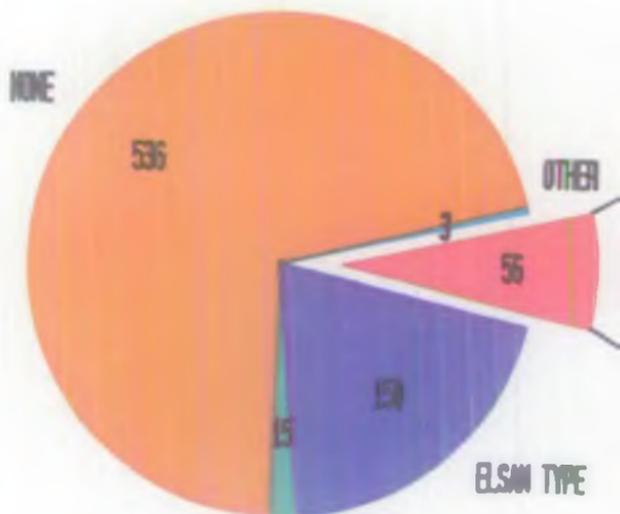
022/9

TOILET FACILITIES

Fig. 23



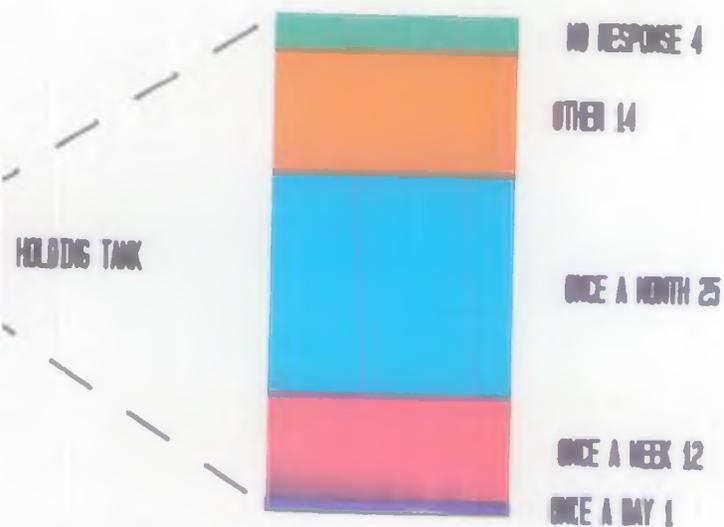
TOILET P



SEA TOILET
TYPE ON BOARD

FACILITIES

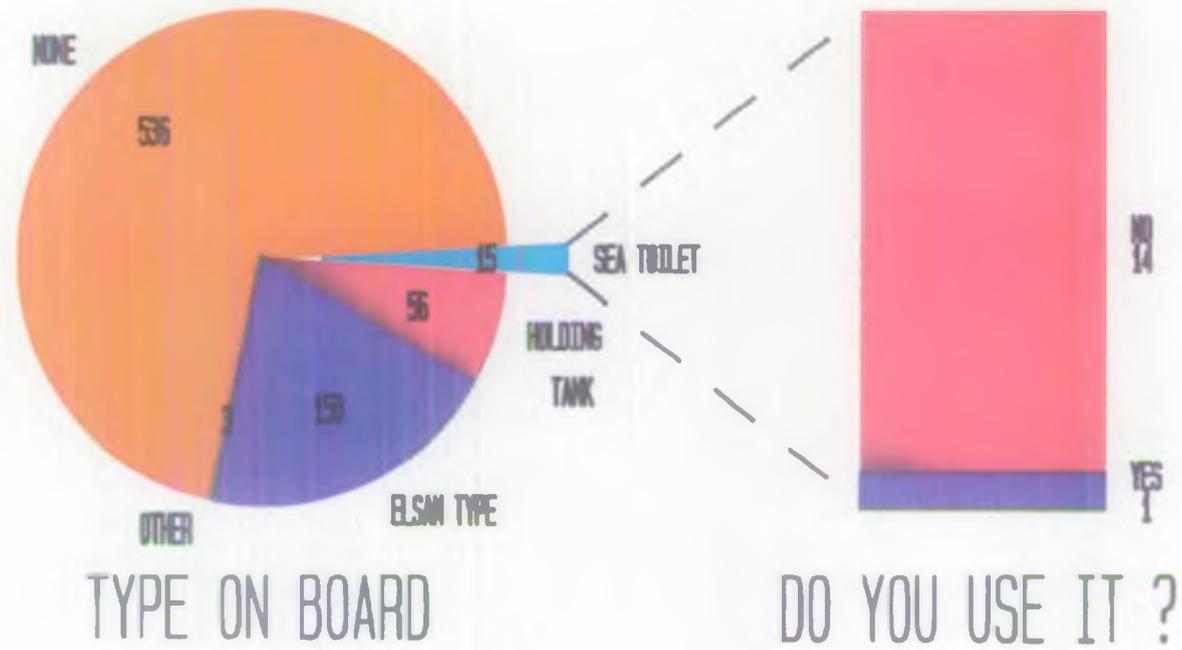
Fig. 24



HOW OFTEN IS IT EMPTIED ?

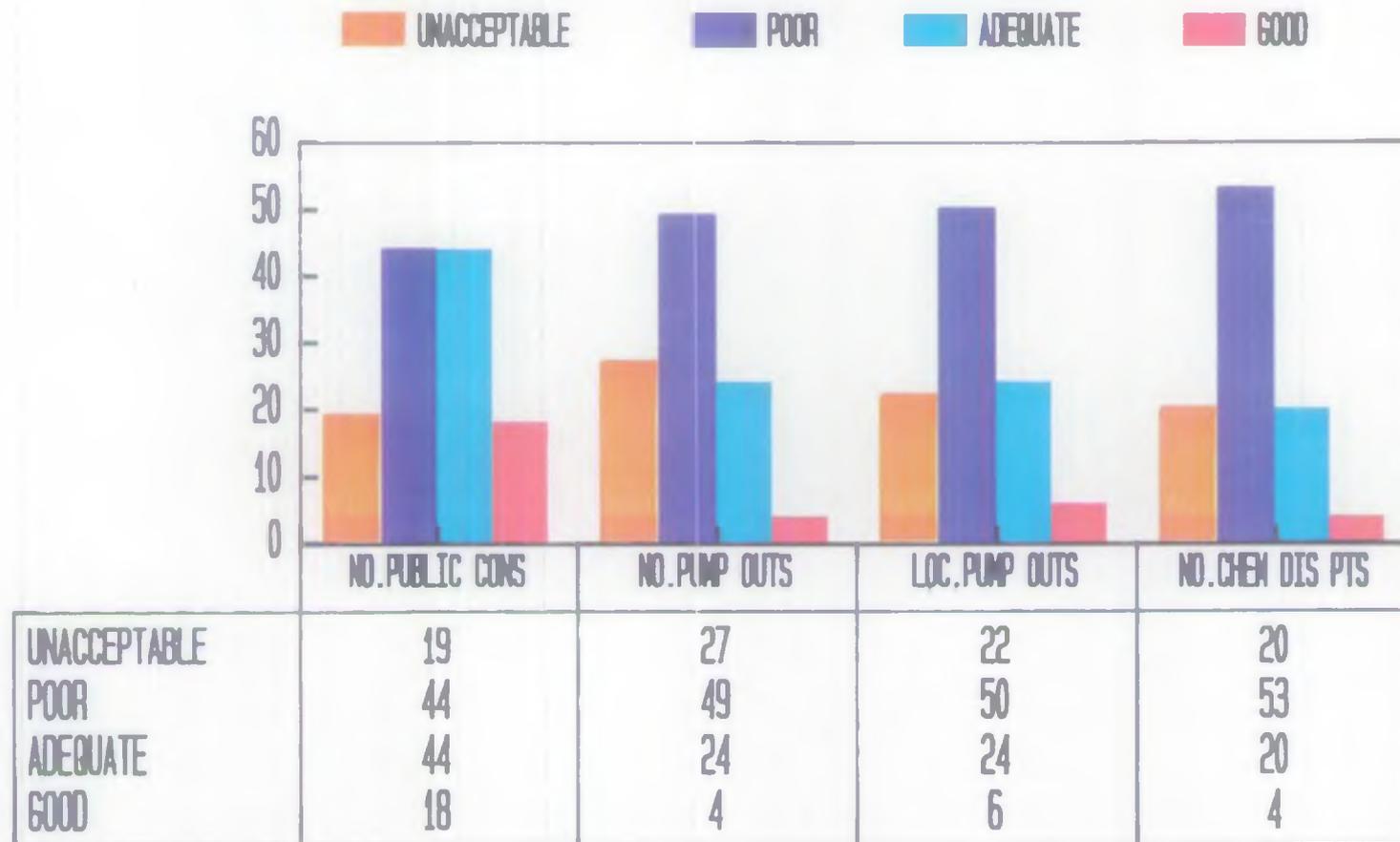
TOILET FACILITIES

Fig. 25



CABIN CRUISER USERS OPINIONS ON FACILITIES

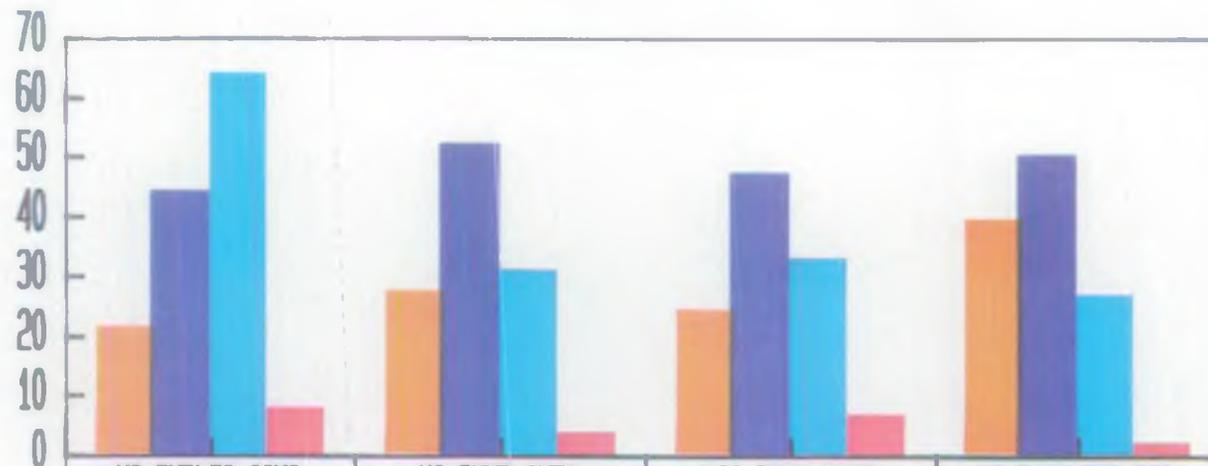
Fig. 26



YACHT USERS OPINIONS ON FACILITIES

Fig. 27

UNACCEPTABLE POOR ADEQUATE GOOD



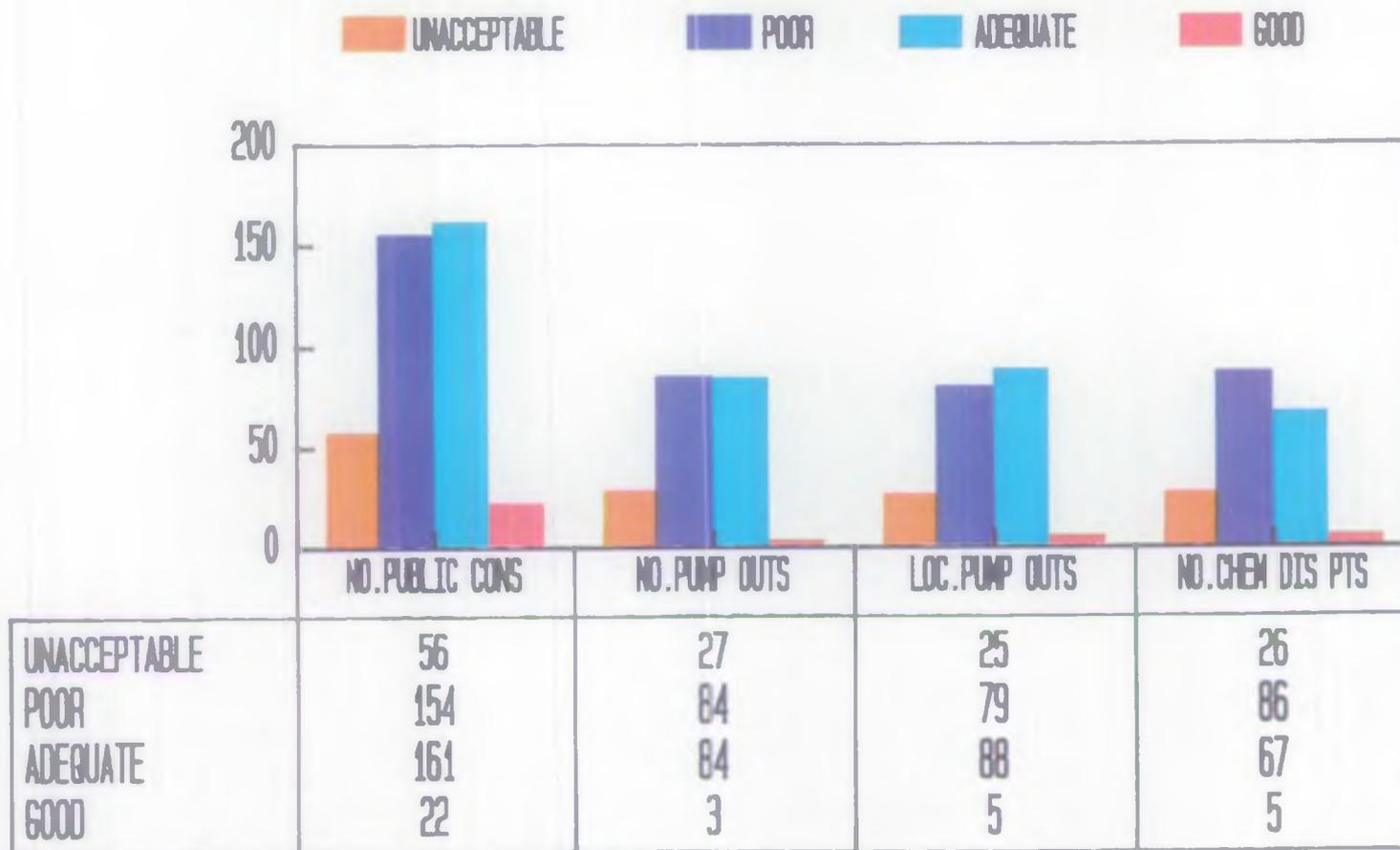
	NO. PUBLIC CONS	NO. PUMP OUTS	LOC. PUMP OUTS	NO. CHEM DIS PTS
UNACCEPTABLE	21	27	24	39
POOR	44	52	47	50
ADEQUATE	64	31	33	27
GOOD	8	4	7	2

NO. YACHTS 148

Q2b/17

SPORTS BOAT USERS OPINIONS ON FACILITIES

Fig. 28

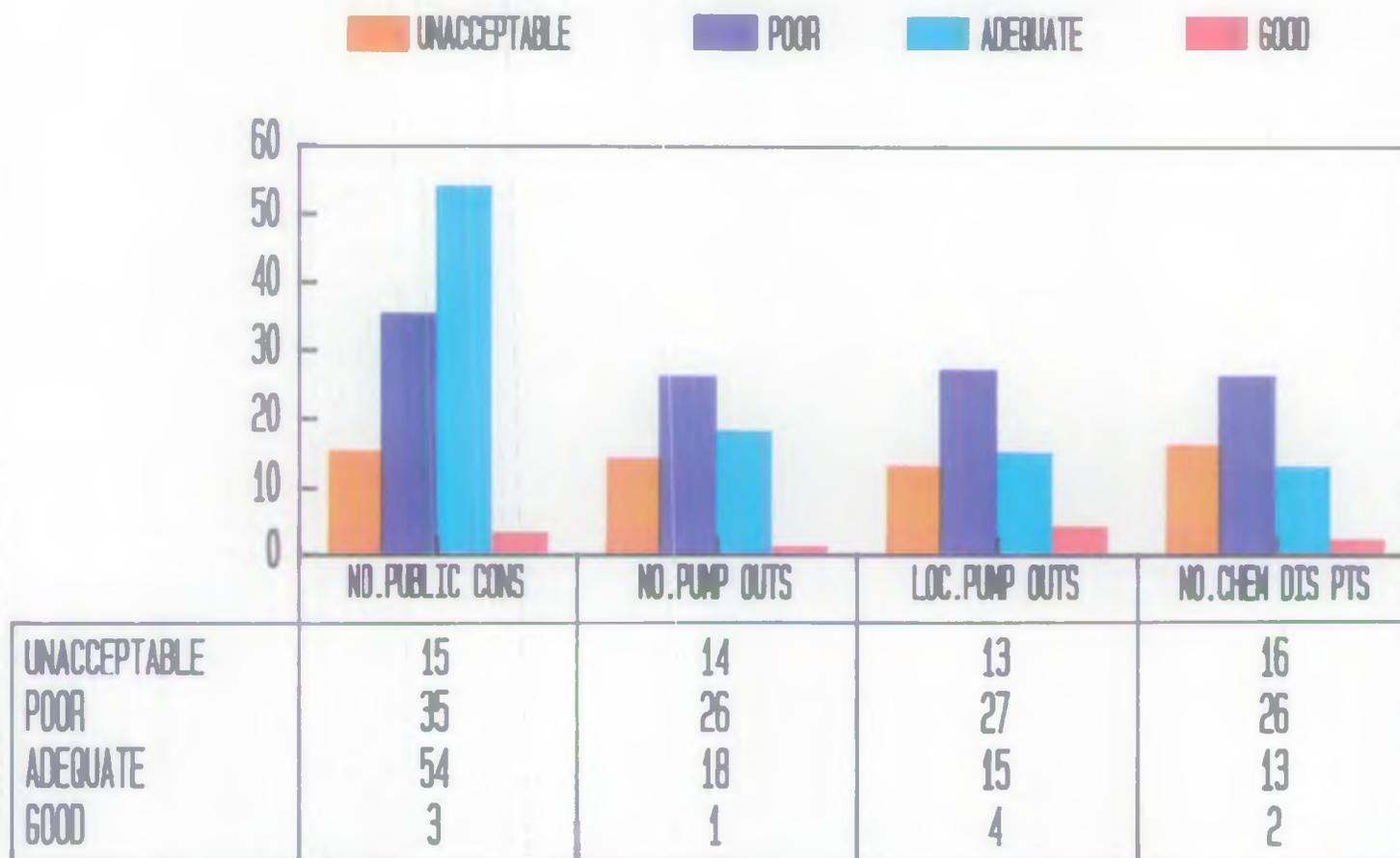


NO. SPORTS BOATS 415

2c/17

DINGHY USERS OPINIONS ON FACILITIES

Fig. 29

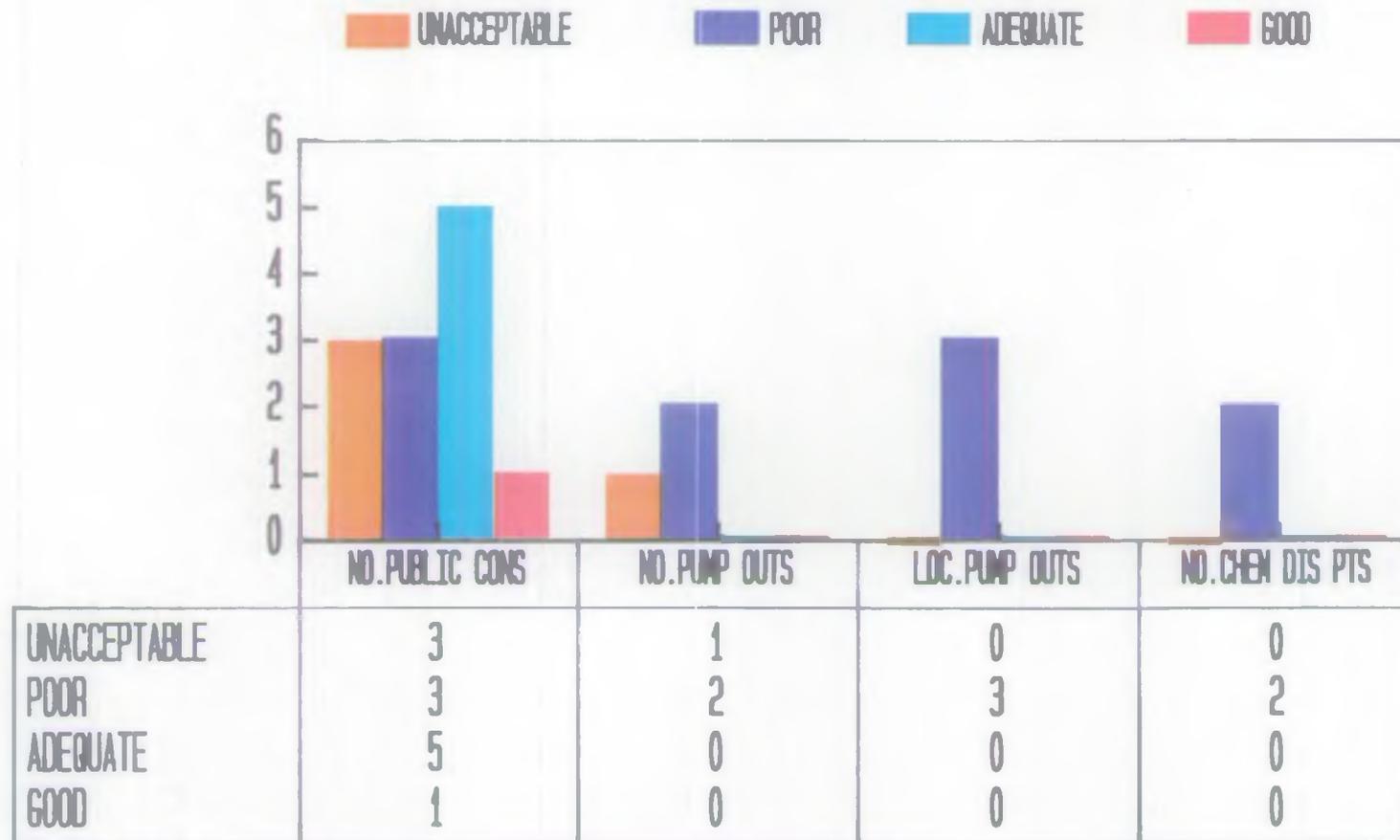


NO. DINGHYS 120

02d/17

JET SKI USERS OPINIONS ON FACILITIES

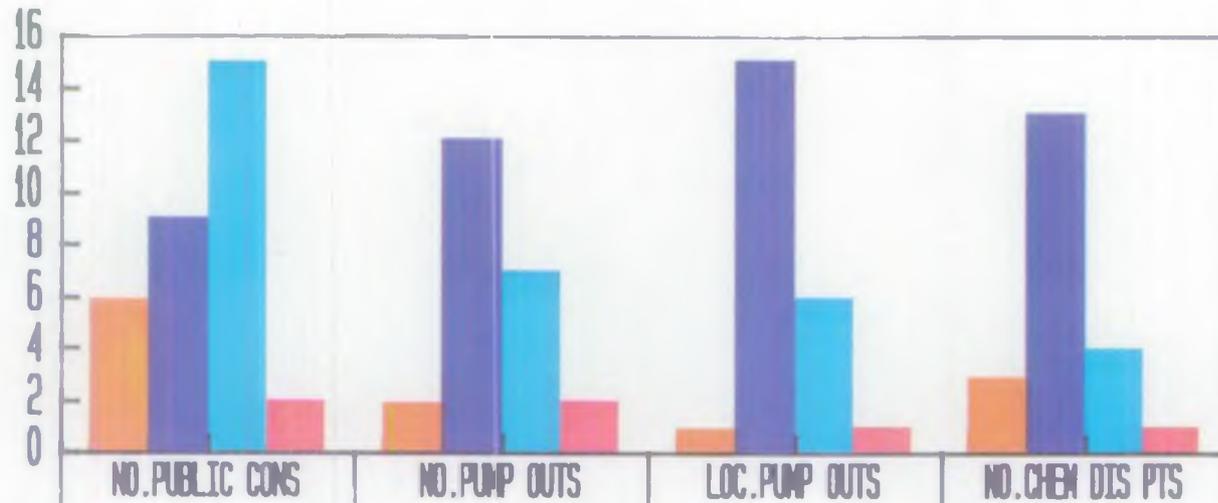
Fig. 30



OTHER USERS OPINIONS ON FACILITIES

Fig. 31

UNACCEPTABLE POOR ADEQUATE GOOD



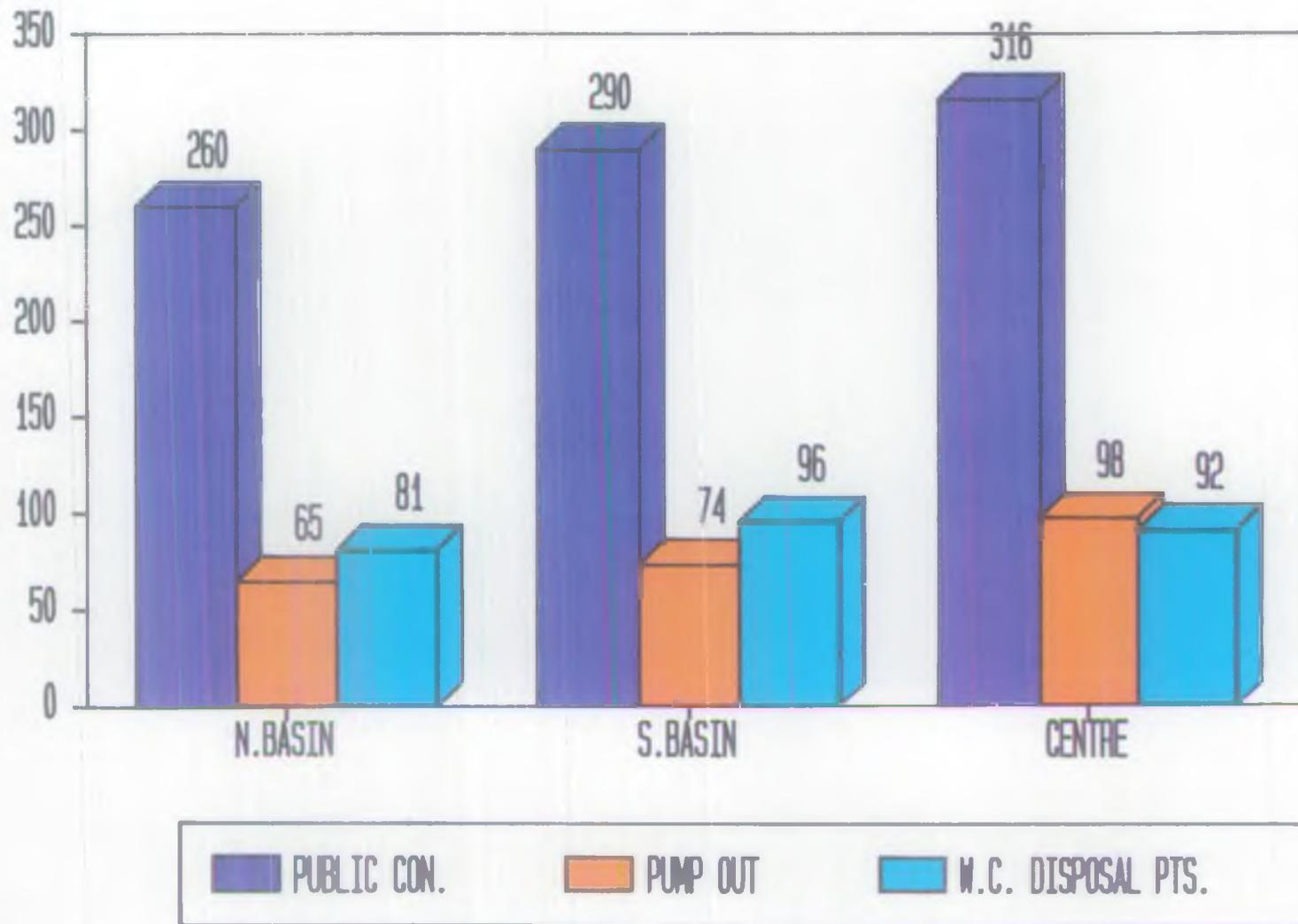
UNACCEPTABLE	6	2	1	3
POOR	9	12	15	13
ADEQUATE	15	7	6	4
GOOD	2	2	1	1

NO. USERS 36

Q2f/17

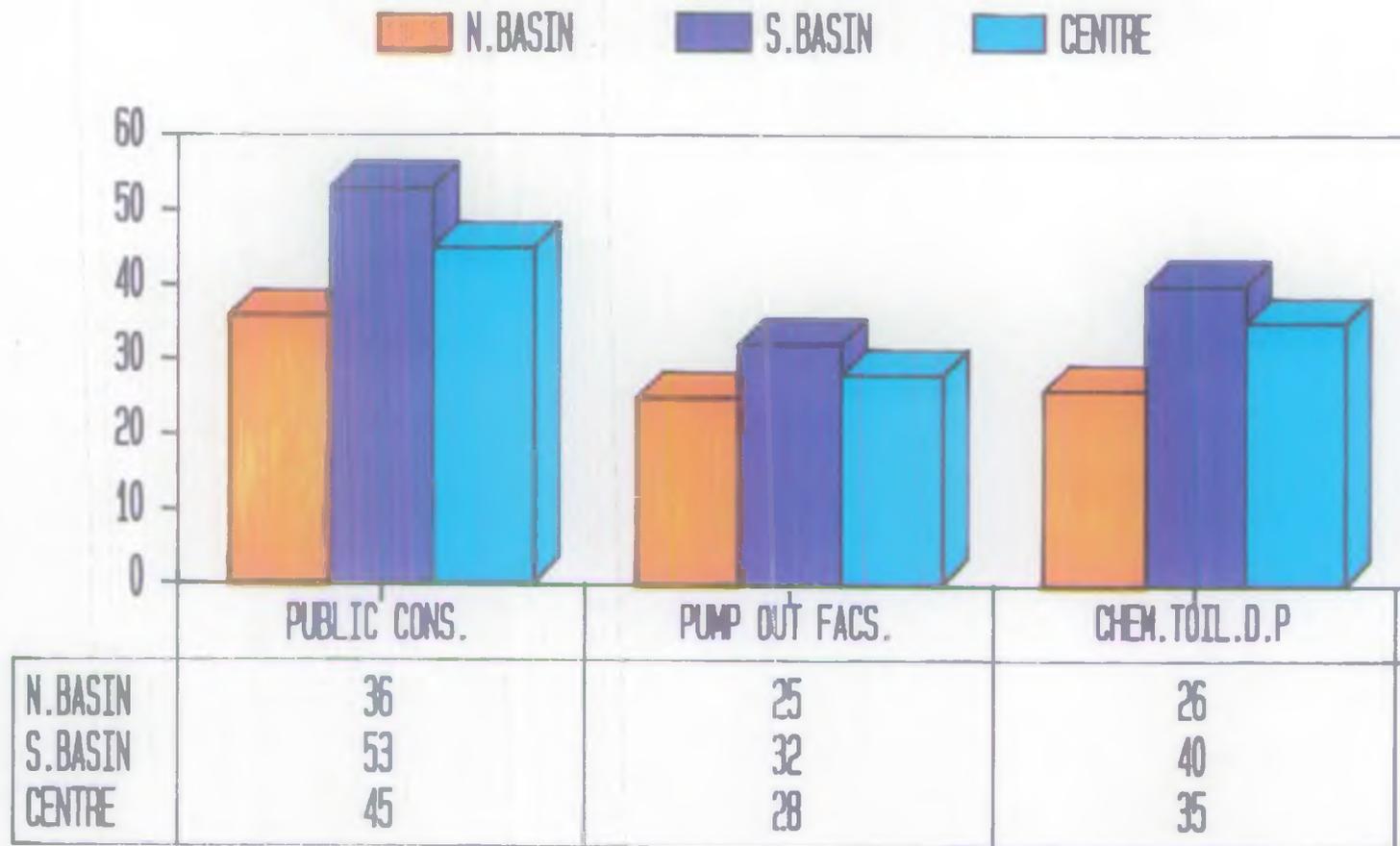
Fig. 32

WHERE WOULD YOU USE EXTRA FACILITIES IF PROVIDED ?



CABIN CRUISER USERS LOCATION FOR EXTRA FACILITIES

Fig. 33

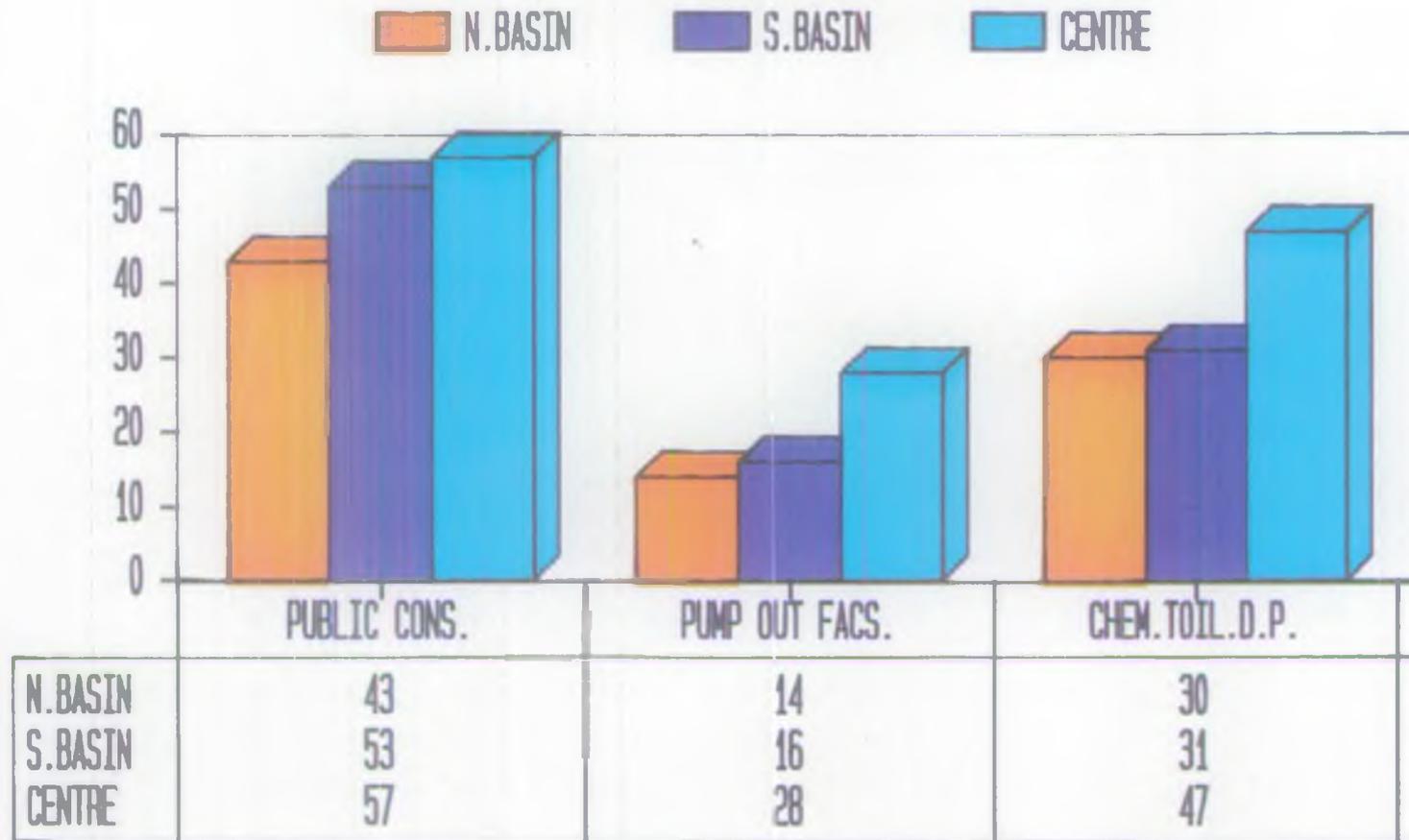


NO. CABIN CRUISERS 130

02a/18

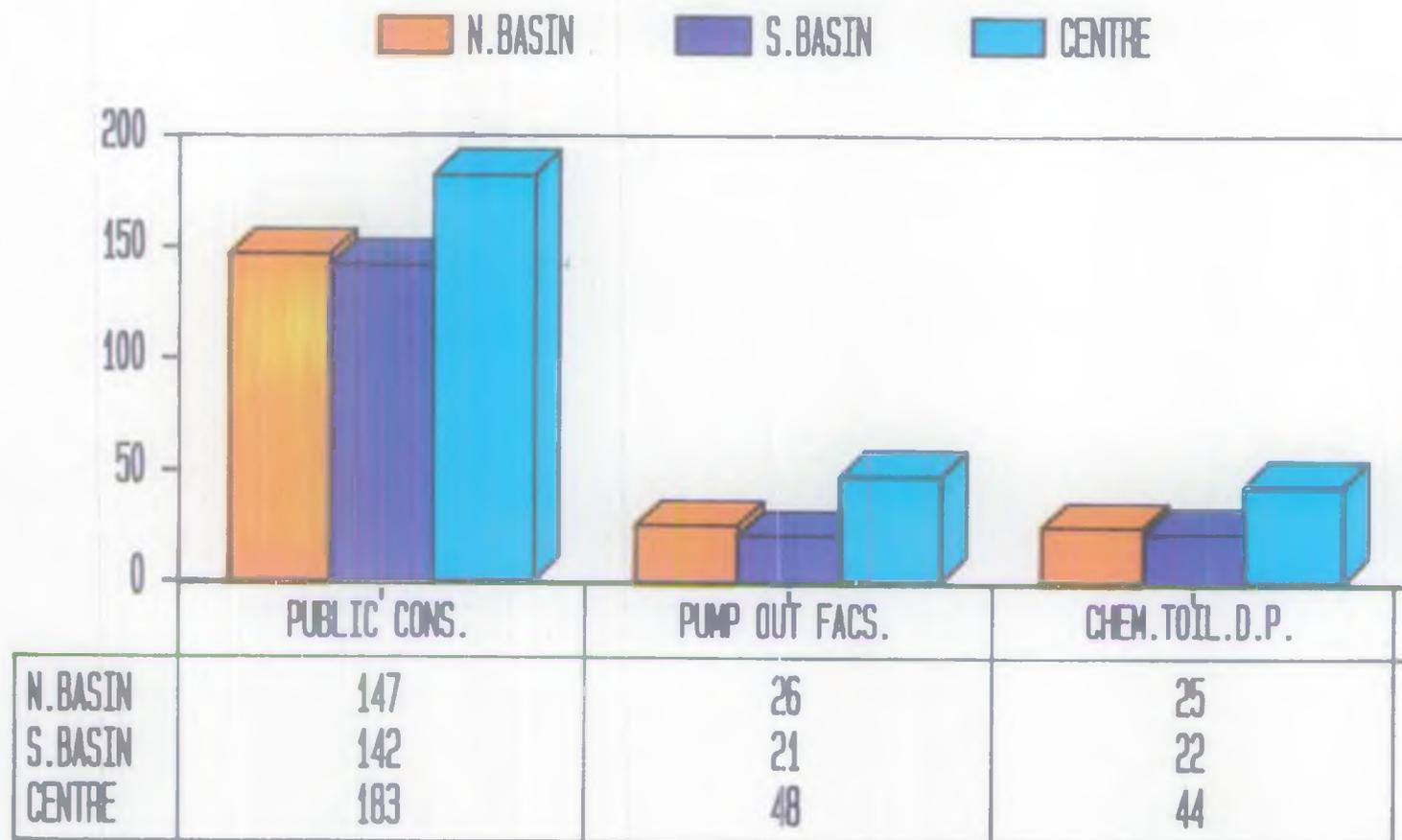
YACHT USERS LOCATION FOR EXTRA FACILITIES

Fig. 34



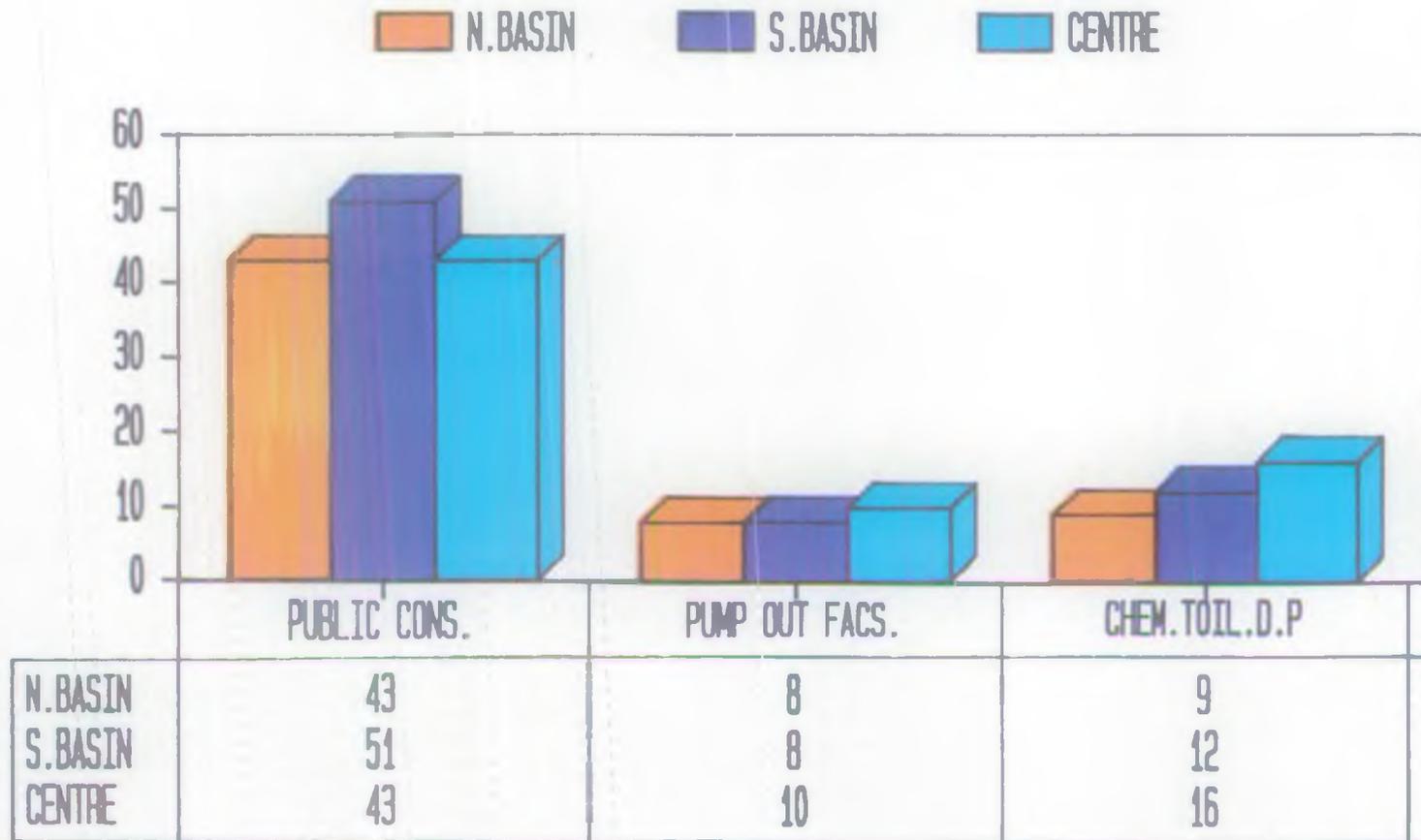
SPORTS BOAT USERS LOCATION FOR EXTRA FACILITIES

Fig. 35



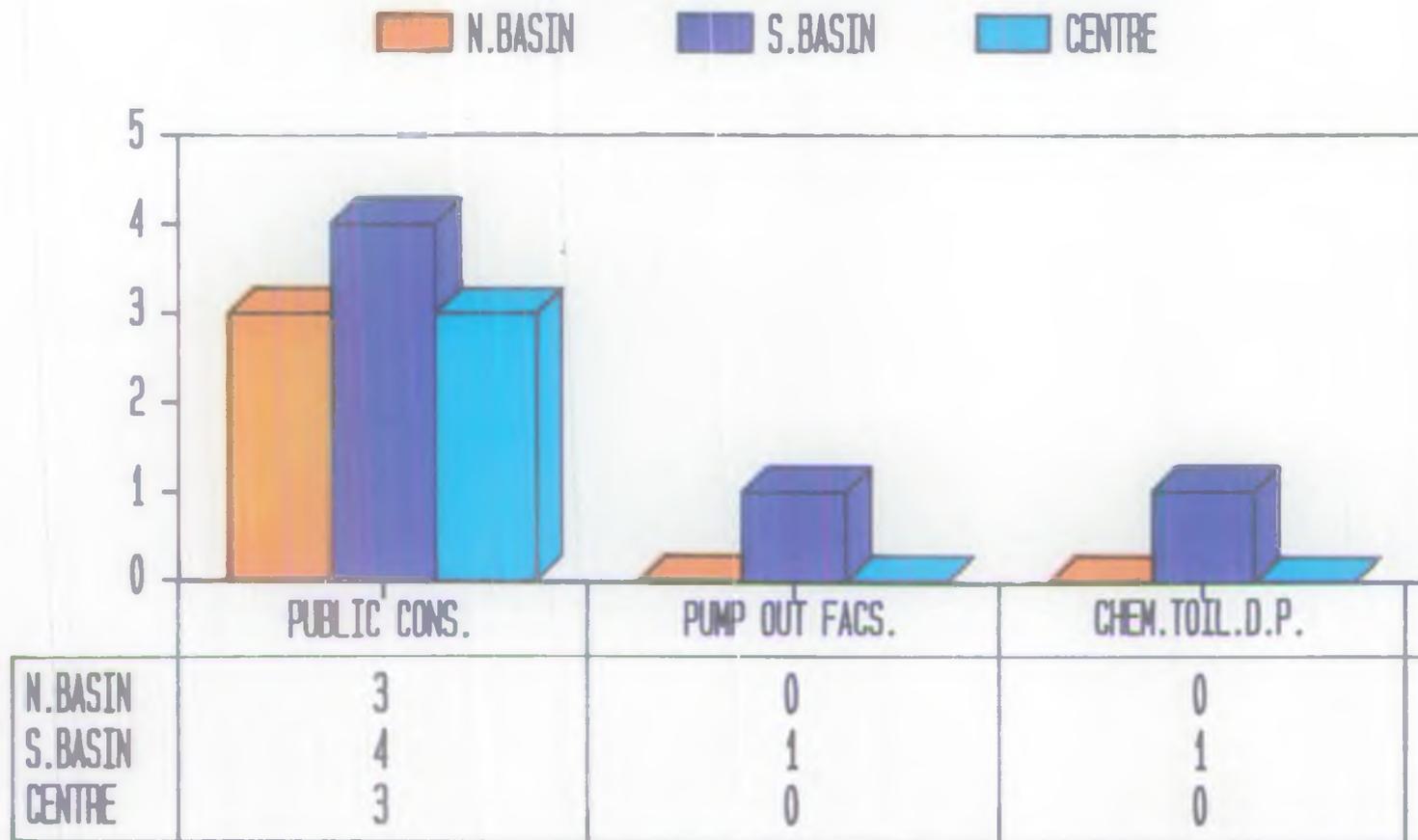
DINGHY USERS LOCATION FOR EXTRA FACILITIES

Fig. 36



JET SKI USERS LOCATION FOR EXTRA FACILITIES

Fig. 37

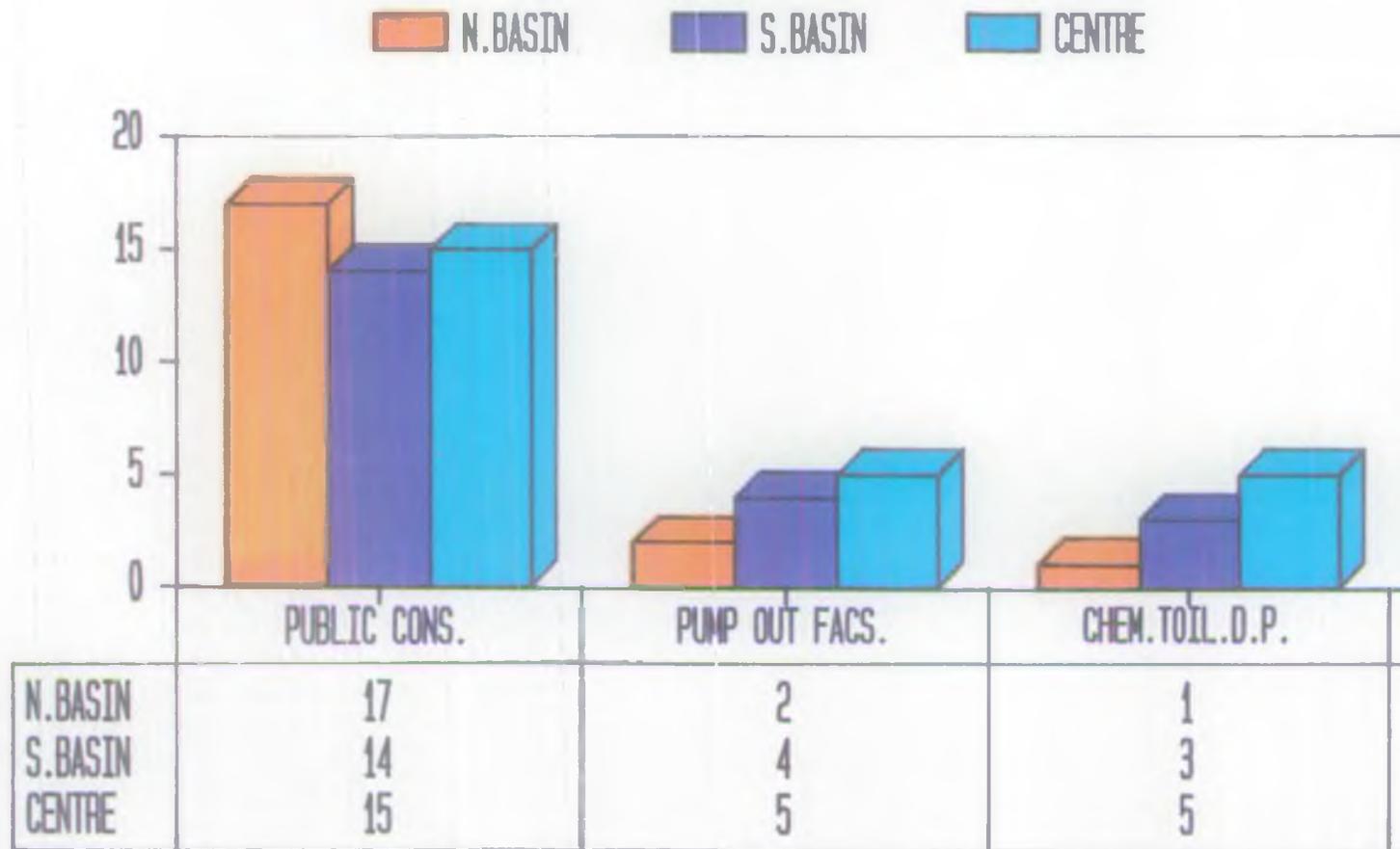


NO. JET SKIS

Q2e/18

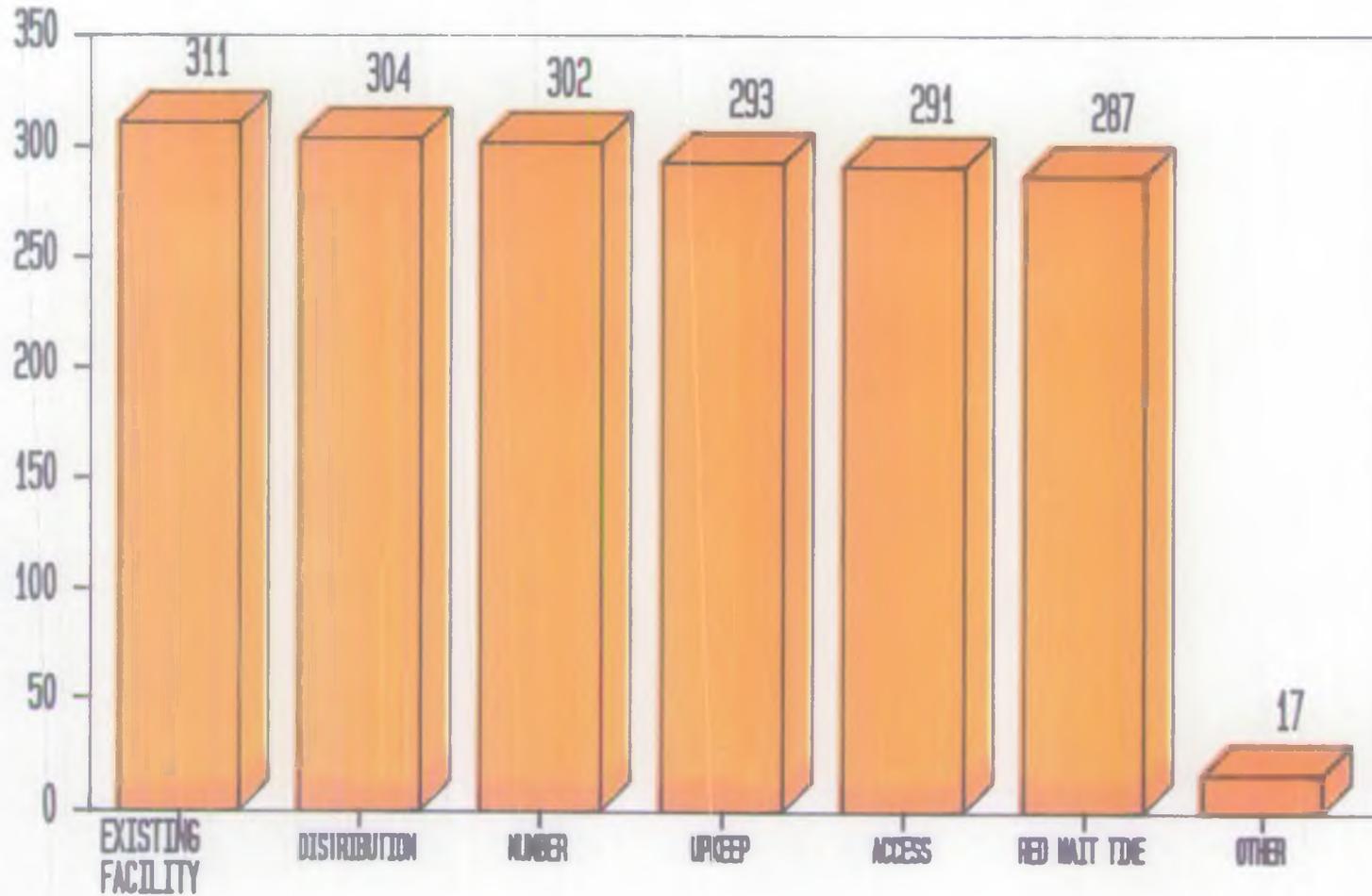
OTHER USERS LOCATION FOR EXTRA FACILITIES

Fig. 38



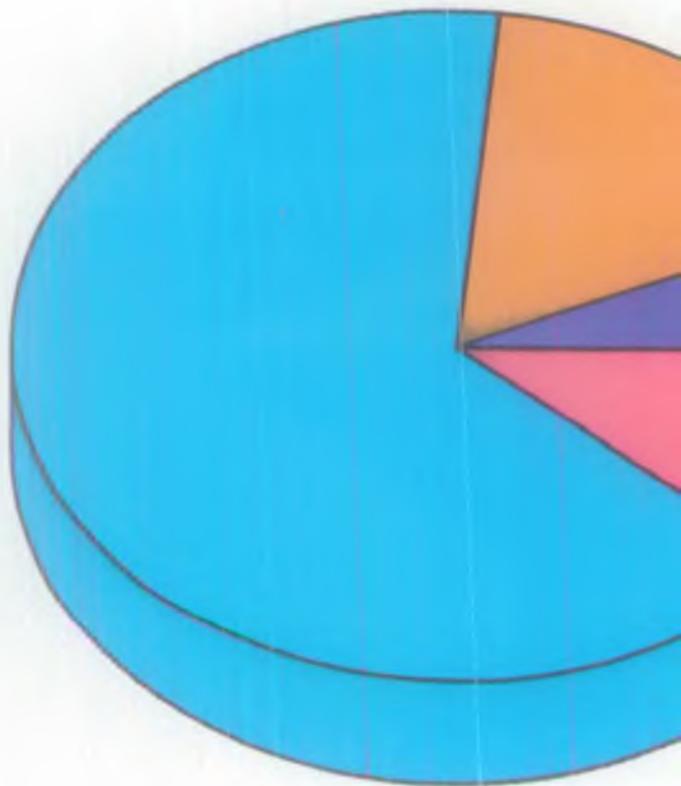
PRIORITY FOR IMPROVEMENTS AT DISPOSAL POINTS

Fig. 39



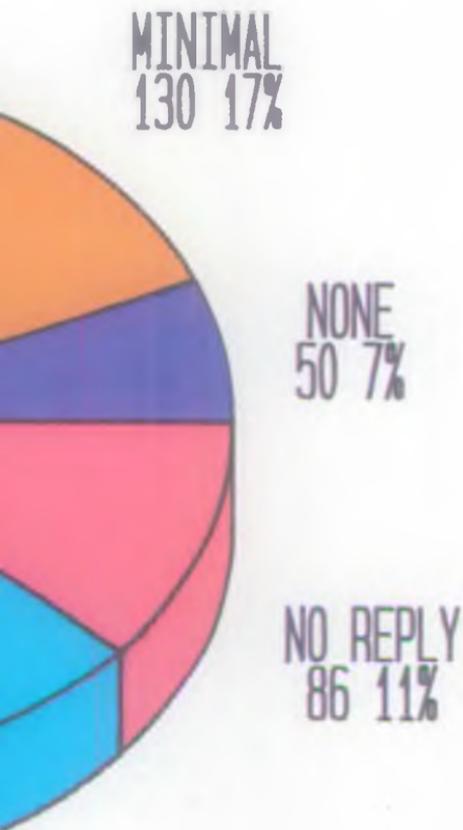
IMPROVEMENTS MADE TO SEWAGE IF COST IS TO BE MET BY

FULL
500 65%



E FACILITIES LAKE USERS

Fig. 40

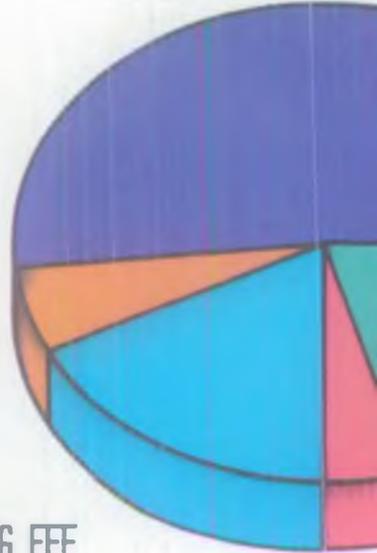


FAIREST WAY OF

PAY AS YOU USE
414 52%

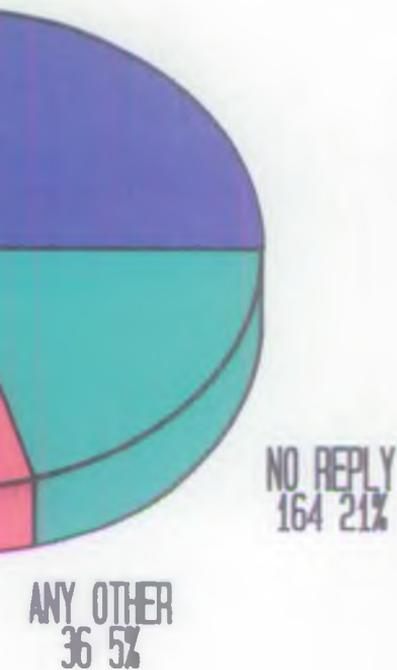
ANNUAL CHARGE
47 6%

INCLUSION IN REG FEE
139 17%



MEETING COST

Fig. 41



NW:WAR:RFH
:WQ:OIP 19
91

c. 1 aa



NRA

*National Rivers Authority
North West Region*