

# Opinions and Perceptions of England and Wales Heritage Coast Beach Users: Some Management Implications from the Glamorgan Heritage Coast, Wales

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## ABSTRACT

MORGAN, R., JONES, T.C., and WILLIAMS, A.T., 1993. Opinions and perceptions of England and Wales Heritage Coast users: Some management implications from the Glamorgan Heritage Coast, Wales. *Journal of Coastal Research*, 9(4), 1083-1093. Fort Lauderdale (Florida), ISSN 0749-0208.

Beach users at four intensively zoned "honeypot" areas at the Glamorgan Heritage Coast (GHC), Wales, were questioned with regard to their opinions and perceptions of the beach environment. These were assessed in the light of scoring on anxiety state/trait characteristics and responses to the Eysenck Personality Inventory of the interviewees. Nash Point beach tended to have older, more introverted beach users ( $p < 0.05$ ), apparently attracted to an uncommercialized beach to enjoy wildlife, scenery and solitude. In contrast, Southerndown appealed to the younger, more extrovert beach user ( $p < 0.05$ ), who perceived this beach to be safer and better for swimming. The level of refreshment and other facilities provided at Llantwit was well-appreciated by beach users ( $p < 0.05$ ). Water quality was perceived to be worse at Ogmere than at other study beaches, and it was considered that the presence of beach litter and a potential pollution source in the form of a nearby sewage treatment works, may have contributed to this perception. A close link ( $p < 0.000$ ) was suggested between water quality and beach suitability for swimming. The opinion of the Countryside Commission (whose role in Wales was taken over by the Countryside Council for Wales (CCW) in 1991) that all intensively used Heritage Coast beaches should be identified as bathing beaches within the meaning of the EC Bathing Waters Directive was judged to have been supported by the study results. GHC awareness amongst adults ( $n = 197$ ), was 74%, with notable differences existing between beaches. Few changes should be made to the general level of facilities at the study beaches, but a number of management recommendations (e.g. increasing Heritage Coast awareness, improving sign-posting, litter clearance) are suggested.

**ADDITIONAL INDEX WORDS:** Beach, heritage coast, pollution, water quality, control management

## INTRODUCTION

The Glamorgan Heritage Coast (GHC) is situated on the northern fringe of the Bristol Channel, U.K. (Figure 1) within the counties of Mid and South Glamorgan and extends for approximately 22 km.

Heritage Coast status was granted in 1973 as one of three pilot schemes involving a new approach to coastal management in England and Wales. The Heritage Coast approach is now recognised internationally as an efficient and effective way of managing coastlines (WILLIAMS and HOWDEN, 1985). Forty five Heritage Coasts are now (August 1992) established in England and Wales (WILLIAMS, 1992). The key to management has been the establishment of a close relationship with farmers, landowners, residents and visitors

with emphasis on voluntary agreements and persuasion. There is provision for compulsory purchase to bring areas into public ownership, but this has been invoked on only one occasion for the GHC. Invariably the management authority does not own or want to own the land for which it takes responsibility.

Guidelines for managing Heritage Coasts were originally set out in 'The Coastal Heritage' (COUNTRYSIDE COMMISSION, 1970), and updated in 'Heritage Coasts: Policies and Priorities' (COUNTRYSIDE COMMISSION, 1991). In the latter, particular concern was expressed for the environmental health of the coastline and the social effects of tourism. The Countryside Council for Wales will be producing its own policy statement for the Welsh coastline in due course and will probably retain the environmental health objectives. The primary management aim at the GHC has been to conserve the quality of coastal scenery

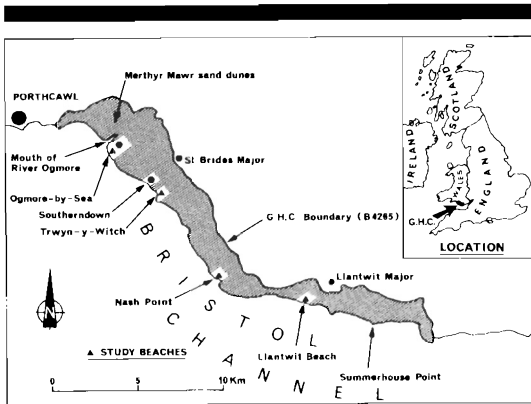


Figure 1. Location map of the Glamorgan Heritage Coast.

while facilitating recreational activities where they are in accord with the primary aim. However, in practice, a balance has to be struck between recreation and conservation.

The management philosophy recognises zones subject to different intensities of usage. The GHC management plan statement issued in 1976 recognised four locations zoned for intensive usage termed "honeypots"; these were the sites of the four study beaches (Southerndown, Nash, Ogmore and Llantwit; Figure 1). Facilities such as car parking, refreshments and toilets are provided, but with the intention of having the minimum effect on the beauty of the GHC (WILLIAMS and LAVALLE, 1990). At these sites, in particular, increasing usage has required regulation of the man/environment interaction by means of management policy (WILLIAMS and SOTHERN, 1986).

In spite of a vast literature on landscape evaluation, few have attempted by means of a checklist to evaluate beach aesthetics in a semi-quantitative fashion. However, it appears that few people have tried to gauge the opinions of beach users themselves and assess what they regard as important and desirable features of the beach environment (CUTTER *et al.*, 1979).

This paper is a case study of the Glamorgan Heritage Coast which would perhaps be an atypical Heritage Coast. Visitors are basically local (Mid and South Glamorgan) while most other Heritage Coasts tend to have visitors (*i.e.*, holiday makers and tourists rather than day visitors) from outside the local region. WILLIAMS and MORGAN (*in preparation*), have argued this case for the Ceredigion Heritage Coast.

This study aimed to assess opinions and perceptions of a representative sample of beach users at the four "honeypot" sites within the GHC with regard to a wide range of aspects of the beach environment. It was hoped that this would enable the appropriateness of current GHC management policies and practices to be gauged and so discover what changes (if any) would be advisable to increase user satisfaction with the beach environment while still maintaining the quality of the natural features of the Heritage Coast.

## PHYSICAL BACKGROUND

The GHC area is dominated by Lias limestone cliffs which outcrop at Aberthaw, rising to some 80 m in the west. Outcrops of Carboniferous limestone also occur, forming a series of headlands along the coast. The cliff structure of alternating limestone and shale beds or strata is inherently unstable and has been highlighted as a danger to beach users along much of the GHC (WILLIAMS and DAVIES, 1980, 1984, 1987; DAVIES and WILLIAMS, 1991; DAVIES *et al.*, 1991). In the context of this study, unstable cliffs were present at three of the four study beaches; *i.e.*, Southerndown, Nash and Llantwit (Figure 1). At the western extremity of the GHC between the mouth of the Ogmore river and Porthcawl lies the 360 Ha Merthyr Mawr dune system designated an SSSI in 1953. Running through the coastal plain are a number of small incised valleys which provide access routes for many local beaches.

The Severn Estuary has the second highest tidal range in the world (14.8 m at Avonmouth), although the range for the study beaches is generally less than this (about 6 m at Llantwit). The GHC coastal environment is amongst the most dynamic in the temperate zones with a high wave energy and a fetch of some 5,000 km to the southwest (GRIMES, 1986).

Llantwit beach consists of a wave cut platform with a thin sand veneer backed by low Lias cliffs. Nash beach consists of a wave-cut platform which has a small amount of sand derived from the Nash sandbank offshore, culminating in a large pebble ridge adjacent to the cliff line. Southerndown is a pocket beach bounded by Lias and Carboniferous limestone cliffs which encloses a wide expanse of sand, backed by a large cobble storm beach. At Ogmore, the extensive sand beach is derived from the Merthyr Mawr dunes, the Ogmore river and offshore sources.

## METHODOLOGY

The study was conducted in three stages. Interviews with beach users were first conducted to ascertain their likes and dislikes of beaches in general and the beach they were using in particular. These views were used to compile a questionnaire for a pilot survey, followed by the main survey at the four study beaches using the final, modified questionnaire.

The study posed several methodological difficulties. Firstly, it was considered that the questionnaire would cause an unacceptable inconvenience to people who were eating or sleeping, and it was thought impractical to present questionnaires to people actually in the sea. Secondly, there was the problem of selecting a random sample from the population of beach users in terms of the parameters of age, sex, socio-economic group, extroversion, *etc.* Due to the difficulties of working in an often busy and mobile beach situation, the use of random number tables and grids for selecting interviewees was deemed impractical, so a quota sample was utilised.

These problems and drawbacks should be constantly borne in mind while considering the results; but due to their largely unavoidable nature and the pioneering nature of this work, the results obtained must still be considered to have reasonable validity, certainly within the GHC study area. Further work is currently being carried out for other Welsh beaches.

## INTERVIEWS

A tape recorder was taken to the four beaches to be surveyed, to seek beach users' opinions on beaches in general, and also on the particular beach they were using at that time. Interviews were conducted on days of ok weather, when reasonably large numbers of beach users were present. Six to eight adults or family groups and one or two children (8–14 years) were interviewed at each beach. The questions asked were as shown in Table 1.

## MAIN SURVEY

From the responses obtained in the interviews, a questionnaire was produced for use in the main survey (Table 2). A large section of questions was added to determine the anxiety states and anxiety traits of each client (SPIELBERGER *et al.*, 1970). The Eysenck Personality Inventory (EYSENCK and EYSENCK, 1975) was also added to complete the final composite questionnaire for the main survey.

Table 1. Questions put to beach users in face-to-face interviews.

1	What do you like about visiting beaches in general?
2	Why have you come to this beach in particular?
3	What do you like and dislike about this particular beach?
4	Do you think the beach is lacking in facilities?
5	Do you think that there are any unnecessary facilities or developments at this beach?
6	What do you think that children want from a visit to the beach?

Surveying took place during a period of warm, very fine weather (Monday 26 August to Friday 30 August, 1991), with 50 persons surveyed at each of the four beaches and 21 children (aged 10–15 years) at Southerndown. Values for the Eysenck Personality Inventory parameters of E (extroversion), P (psychoticism), N (neuroticism) and L (lying) and also values for "state" (a measure of current level of anxiety) and "trait" (susceptibility to anxiety) determined by SPIELBERGER *et al.* (1970) were calculated for each client.

Data were processed to test for significant correlations between a wide range of client parameters, both at individual beaches and for all beaches grouped together. Non-parametric tests were performed to examine the significance of differences in data values obtained for all parameters between the four study beaches, between males and females, and other selected groupings.

## RESULTS AND DISCUSSION

A strong local awareness of the 'community factor' of this Heritage Coast—which differs for example from the Ceredigion Heritage Coast—was indicated by the fact that 74% of 197 adults were aware that the beach they were on was part of the Heritage Coast, compared to the figure for the Ceredigion Heritage Coast of 32% (WILLIAMS and MORGAN, *in preparation*). The figures for individual beaches are shown in Table 3, and show that significantly more interviewees at Nash than Ogmore and Llantwit were aware of Heritage Coast status (Nash and Ogmore,  $p = 0.003$ ; Nash and Llantwit  $p = 0.003$ ). In this regard, the work of WILLIAMS and SOTHERN (1986) provides a useful comparison with this study. At Southerndown, 76% of interviewees in this study (1991) claimed awareness of the Heritage Coast, compared to 68% found by WILLIAMS and SOTHERN (1986). The figures for Llantwit were 64% and 46%, respectively. However, it should be noted that this study

Table 2. Questionnaire.

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Age \_\_\_\_\_ Sex \_\_\_\_\_

Occupation \_\_\_\_\_

How far have you travelled today (in miles)? \_\_\_\_\_

How long do you intend staying on the beach (in hours)? \_\_\_\_\_

Did you know this beach was part of the Heritage Coast? Yes No

Please circle the number next to each of the following sets of statements that best indicates the way you feel about this particular beach.

This beach is:

too quiet	1	2	3	4	5	6	7	8	9	very noisy
too few people	1	2	3	4	5	6	7	8	9	too many people
too many rock pools	1	2	3	4	5	6	7	8	9	too few rock pools
overabundance of sand	1	2	3	4	5	6	7	8	9	insufficient amount of sand
too great an expanse of sand	1	2	3	4	5	6	7	8	9	insufficient expanse of sand
sand is too soft	1	2	3	4	5	6	7	8	9	sand is very harsh
too great an expanse of grass	1	2	3	4	5	6	7	8	9	insufficient expanse of grass
tidal range too high	1	2	3	4	5	6	7	8	9	tidal range not high enough
too open/exposed/public	1	2	3	4	5	6	7	8	9	too closed/secluded/isolated
too much shelter from wind	1	2	3	4	5	6	7	8	9	too little shelter from wind
beach area is too commercialised	1	2	3	4	5	6	7	8	9	beach area is not commercialised enough
beach area has too many facilities	1	2	3	4	5	6	7	8	9	beach area does not have enough facilities

What does commercialisation mean to you? \_\_\_\_\_

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This beach has:

very attractive beach relief	1	2	3	4	5	6	7	8	9	very unattractive relief
very pleasing odours/smells	1	2	3	4	5	6	7	8	9	very unpleasant odours/smells
adequate number of toilets	1	2	3	4	5	6	7	8	9	not enough toilets
exceptionally clean toilets	1	2	3	4	5	6	7	8	9	extremely filthy toilets
adequate disabled toilet facility	1	2	3	4	5	6	7	8	9	no disabled toilet facility
excellent beach access	1	2	3	4	5	6	7	8	9	difficult/poor beach access
good disabled beach access	1	2	3	4	5	6	7	8	9	difficult/poor disabled beach access
sufficient easy access walks	1	2	3	4	5	6	7	8	9	inadequate easy access walks
walks/footpaths have very good views	1	2	3	4	5	6	7	8	9	walks/footpaths have no views
walks/footpaths are interesting	1	2	3	4	5	6	7	8	9	walks/footpaths are uninteresting
very good refreshment facilities	1	2	3	4	5	6	7	8	9	very poor refreshment facilities
excellent car parking facility	1	2	3	4	5	6	7	8	9	very poor car parking facilities
excellent seating facilities provided	1	2	3	4	5	6	7	8	9	no seating facilities provided
exceptionally clean water	1	2	3	4	5	6	7	8	9	exceptionally filthy water
water is in pristine condition	1	2	3	4	5	6	7	8	9	water is extremely polluted
excellent beach for swimming	1	2	3	4	5	6	7	8	9	appalling beach for swimming

Why? \_\_\_\_\_

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exceptionally safe waters	1	2	3	4	5	6	7	8	9	exceptionally dangerous waters
exceptionally safe playing	1	2	3	4	5	6	7	8	9	exceptionally unsafe playing areas
excellent lifeguard protection	1	2	3	4	5	6	7	8	9	no lifeguard protection

Why? \_\_\_\_\_

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Table 2. *Continued.*

no threat of crime on the beach	1	2	3	4	5	6	7	8	9	enormous threat of crime on the beach
no litter on the beach	1	2	3	4	5	6	7	8	9	great amount of litter on the beach
no animal waste on the beach	1	2	3	4	5	6	7	8	9	great amount of animal waste on the beach
extensive amount/variety of wildlife	1	2	3	4	5	6	7	8	9	no wildlife present in beach area
extensive variety of plant life	1	2	3	4	5	6	7	8	9	no plant life present in beach area
no irritation from pests (flies <i>etc.</i> )	1	2	3	4	5	6	7	8	9	great irritation from pests (flies <i>etc.</i> )

What, in your opinion, is the best beach you have ever visited?

Why?

What, in your opinion, is the worst beach you have ever visited?

Why?

We would like to know how this beach compares with those which you have identified above.

This beach is similar in quality to:

the best beach I have ever visited    1    2    3    4    5    6    7    8    9    the worst beach I have ever visited

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE

took place during weekdays in August whereas that of WILLIAMS and SOTHERN (1986) took place over a full 7 day week during school term time so that direct comparison is less straightforward. Even so, the figures for Llantwit were disappointing, possibly because this beach lies towards the eastern end of the GHC with a high proportion of visitors from the Cardiff conurbation, who may have had little exposure to information and publicity concerning the GHC. There was no statistically significant difference between males and females in this regard and no significant correlations existed between Heritage Coast awareness and socio-economic class or any of the personality parameters.

Compared to other visitors, those aware of the GHC were more interested in the views from the paths ( $p = 0.049$ ), considered walks and footpaths to be more interesting ( $p = 0.007$ ), were less concerned about shortage of car parking ( $p = 0.034$ ), and perceived a greater variety of wildlife ( $p = 0.013$ ) and plant life ( $p = 0.003$ ). These differences suggest that people aware of the Heritage Coast may be more in sympathy with the management aims of controlling access (*e.g.*, by limiting car-parking), and limiting impact on the beach en-

vironment and more aware of flora, fauna, paths, *etc.*

Younger visitors tended to be more extroverted than older visitors ( $p = 0.000$ ), but there were no significant correlations between age and other personality parameters, or between the personality parameters and socio-economic group. Extroverted visitors tended to plan a longer stay at the beach ( $p = 0.000$ ), and were more likely to consider refreshment facilities to be good ( $p = 0.035$ ). Such visitors were also likely to consider

Table 3. *Heritage Coast awareness at the study beaches.*

Beach	No. of Interviewees Aware of GHC (no. of interviewees responding)	Percentage Aware of GHC
Southerndown	38 (50)	76%
Nash	44 (49)	90%
Ogmore	31 (48)	65%
Llantwit	32 (50)	64%
Southerndown (children)	9 (18)	50%

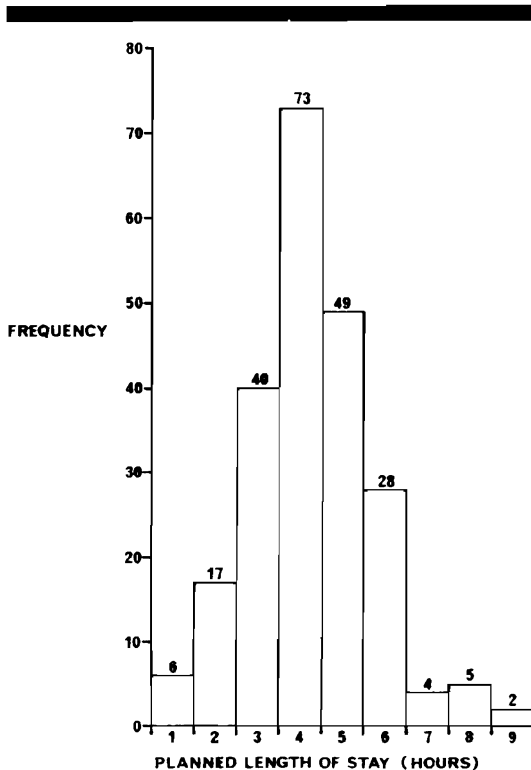


Figure 2. Planned length of stay of visitors.

the waters safer ( $p = 0.033$ ) and lifeguard protection better ( $p = 0.038$ ), but tended to rate the beach they were on less highly ( $p = 0.035$ ). Females were found to have higher scores for neuroticism than males, supporting the findings of EYSENCK and EYSENCK (1975).

Nash visitors were more likely to be introverted, and have higher scores for the 'trait' parameter than those at the other beaches. The typical introvert has been described (EYSENCK and EYSENCK, 1975), as quiet and not especially fond of other's company. Those with high "trait" scores tend to react to a wide range of situations as dangerous or threatening (SPIELBERGER *et al.*, 1970), so might be expected to avoid situations (such as a crowded beach), which might lead to feelings of tension or apprehension. This can be considered in accord with the usual beach environment at Nash, where beach user density and noise levels tend to be low. Nash visitors also tended to plan a shorter stay at the beach than those at the other beaches, which would again be in keeping with the high "trait" score, as people with higher scores

Table 4. Socio-economic groupings of visitors to the study beaches.

	Southern-down	Nash	Ogmore	Llantwit	Total
I	2	2	1	1	6
II	10	18	9	10	47
III	11	13	16	9	49
IV	8	1	1	5	15
V	1	3	1	1	6
(6)	6	6	2	2	16
(7)	11	6	15	17	49
(8)	1	2	4	5	12
Total	50	51	49	50	200

Key:

- I Professional occupations
- II Intermediate occupations
- III Skilled occupations
- IV Partly skilled occupations
- V Unskilled occupations
- (6) Students
- (7) Housewives and unemployed
- (8) Retired

tend to be restless and regularly changing from one activity and location to another.

At Llantwit, the study showed a similar spread of employed visitors across socio-economic groups (Table 4), to that found by WILLIAMS and SOTHERN (1986). However, WILLIAMS and SOTHERN (1986), found that 70% of visitors stayed for less than 2 hours, whereas in this study only 3 out of 49 interviewees responding said they planned to stay for 2 hours or less. Possibly the improvement in site facilities carried out under the auspices of the GHC has encouraged visitors to plan a longer stay. A similar change was seen at Southerndown where WILLIAMS and SOTHERN (1986), found 59% of visitors planning to stay for less than 2 hours whereas in this study no interviewee said that they planned to stay for less than this time. A breakdown of planned length of stay for visitors is shown in Figure 2.

In contrast to Llantwit, a change in socio-economic grouping was seen at Southerndown, with all but 3 out of 32 employed interviewees in groups II, III and IV, whereas WILLIAMS and SOTHERN (1986) found 21 out of 106 persons in group I. WILLIAMS and SOTHERN (1986) found 88% of visitors to Southerndown to be from either Mid or South Glamorgan and the pattern was similar in this study.

Several other significant differences between beaches were considered to be of interest. Visitors at Southerndown tended to be in a lower socio-

economic group than those at Nash ( $p = 0.027$ ), who also tended to be older (Table 5) than those at the other beaches. Views from paths and beach relief were perceived to be most attractive at Nash and least attractive at Ogmores, but access was judged to be worst at Nash where there is a steep, eroded path to be negotiated. Refreshment facilities were judged to be best at Llantwit and worst at Ogmores where they were provided by mobile vendors. Car parking and seating facilities at Llantwit were also well regarded. This suggests that beach users at Llantwit appreciate the level of facilities provided at the beach and do not feel that they intrude too much into the enjoyment of the beach environment. It would seem that the level of commercialization currently present at this beach is one which is appropriate to the expectations and desires of its clientele. Nash was considered the least safe beach for children's play, and this could be accounted for by the dangerous cliffs. More wildlife was observed by visitors at Nash and Southerndown than at the other beaches. At Southerndown, children had a higher regard for the refreshment facilities than did adults ( $p = 0.033$ ).

Irritation from insect pests were severe at Ogmores and Southerndown at the time of the study. At Ogmores, this may have been connected with the litter present at the mouth of the River Ogmores. The water at Southerndown was judged to be significantly safer and better for swimming than at the other three beaches. Lifeguard protection was also judged to be significantly better at Southerndown and worst at Nash where no lifeguard protection was observed.

There were striking correlations between several parameters relevant to swimming. There were positive correlations of  $p = 0.000$  between parameters measuring perceived water cleanliness, absence of pollution and quality of the beach for swimming, suggesting a close link between perceived water quality and suitability for swimming. There was also a positive correlation ( $p = 0.000$ ), between perceived quality for swimming and overall beach quality rating. Interestingly, no close correlation ( $p = 0.594$ ) was observed between perceived quality of the beach for swimming and overall beach quality amongst children at Southerndown suggesting that children did not closely associate the parameters in the same way as adults.

Visitors in higher socio-economic groups tended to perceive poorer water quality than those in lower groups (water pollution,  $p = 0.024$ ; water

Table 5. Age breakdown of visitors to study beaches.

	Southern- down	Nash	Ogmores	Llant- wit	Total
Under 25 years	14	3	9	3	29
25-40 years	20	24	27	25	96
41-59 years	15	14	10	16	55
60 years and over	1	10	4	7	22
Total	50	51	50	51	202
Mean age (years)	34.7	41.7	36.1	40.4	

cleanliness,  $p = 0.069$ ) possibly reflecting a greater awareness of and concern about water pollution. In particular, results indicated great concern about perceived bathing water quality and levels of pollution and litter at Ogmores. Ogmores was perceived to have significantly poorer water quality and more litter than the other beaches (Figures 3, 4, 5). The open-response question 'what is the worst beach you have visited and why?' produced 212 responses (54.4%) relating to litter, sewage, polluted water or sand. On the other hand, good water quality, clean beaches and sand, and absence of litter was mentioned in 42% of responses to the question 'what is the best beach you have visited and why?'

At three of the beaches, objective water quality measurements could be compared to the perceptions of users. Of the study beaches, Southerndown was the only one identified by the U.K. Government as falling within the scope of the EC Bathing Waters Directive 76/160/EEC (COUNCIL OF THE EUROPEAN COMMUNITIES, 1976) with which it complied in 1991 (NATIONAL RIVERS AUTHORITY (NRA), 1991). The beach was subject to regular monitoring of a wide range of water quality parameters. Llantwit and Ogmores were listed as non-identified bathing beaches; *i.e.*, not within the scope of the Directive but still subject to regular water monitoring by the National Rivers Authority. Both would have failed to comply with the Directive in 1991 had it applied to them, but the margin of failure would have been narrow and not necessarily indicative of grossly inadequate water quality (NATIONAL RIVERS AUTHORITY, 1991).

However, it is doubtful if a large proportion of beach users questioned in this study were aware of the results of the analyses performed by the NRA, so we may still ask: how does the beach user build up his/her opinion of water quality and pollution levels? According to SMITH *et al.* (1991) research into the perception of water quality has

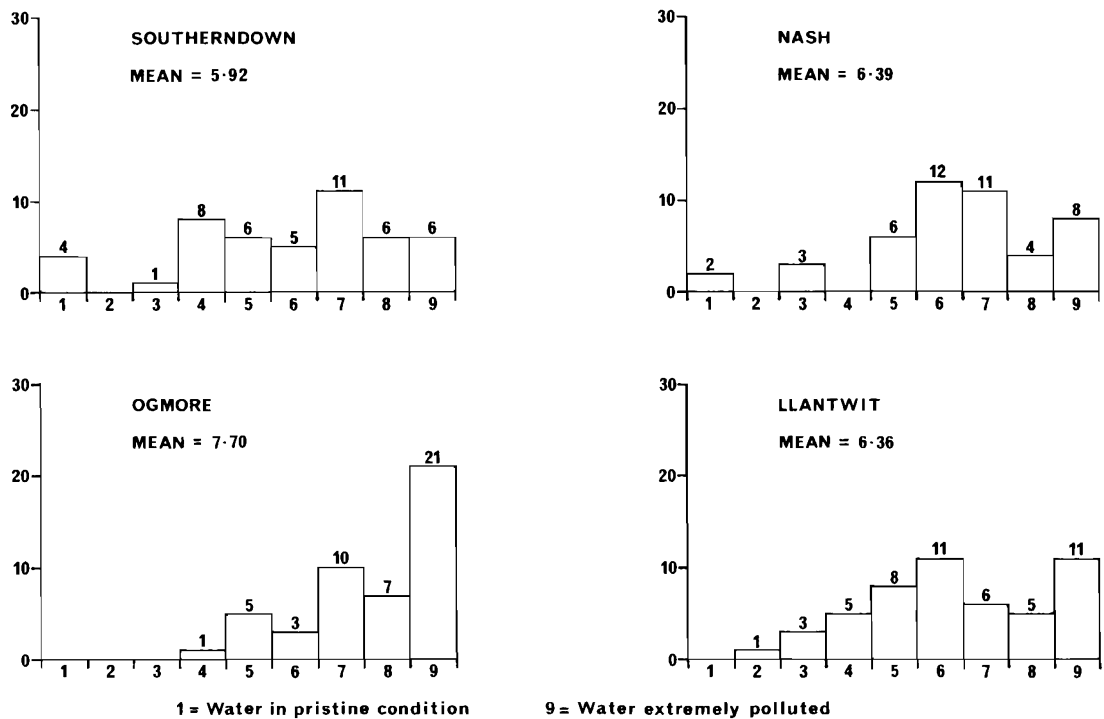


Figure 3. Perceived water pollution.

shown that the public use many factors when forming opinions about water quality, but that visual factors predominate. DINIUS (1981) found that increases in water discolouration and the quantity of litter were viewed as increases in the level of pollution. Also, laymen not only evaluated visually polluted sites lower for leisure activities, but also evaluated the actual water quality as lower. Such an association of litter with water quality may help to explain why in this study Ogmore, which was perceived to have the most litter in the beach area, was also perceived to have the poorest water quality. As a result of this relationship, DINIUS (1981) has argued that if a bathing beach is kept free of litter, less concern may be expressed about water with a marginal quality. Additionally, the fact that a sewage treatment works was nearby may have led some visitors to conclude that the water must be polluted as a result. A similar explanation was suggested by SMITH *et al.* (1991) for their observations relating to urban and rural lakes in New Zealand. SMITH *et al.* (1991) stated that surroundings also played a key part in overall

site perception. Thus, at Ogmore, the proximity of a sewage treatment works, the unexciting beach scenery and possibly also recollection of previously poor water quality, may have combined to produce a lower overall evaluation of the quality of this beach. It may be suggested that where an obvious potential (or perceived) source of pollution is present in the vicinity of a beach, the appropriate authorities should make every effort to reassure visitors that the water quality is appropriate for bathing. Only Southerndown of the study beaches had an information board giving an indication of water quality (as recommended at an identified bathing beach), but such information could also be provided at Ogmore and Llantwit.

It was considered that the findings gave weight to the opinion of the COUNTRYSIDE COMMISSION (1991) that all intensively used beaches on Heritage Coasts should be designated as 'bathing beaches' with the intention of complying with the EC Bathing Waters Directive (76/160/EEC). Such a designation might help to reassure beach users



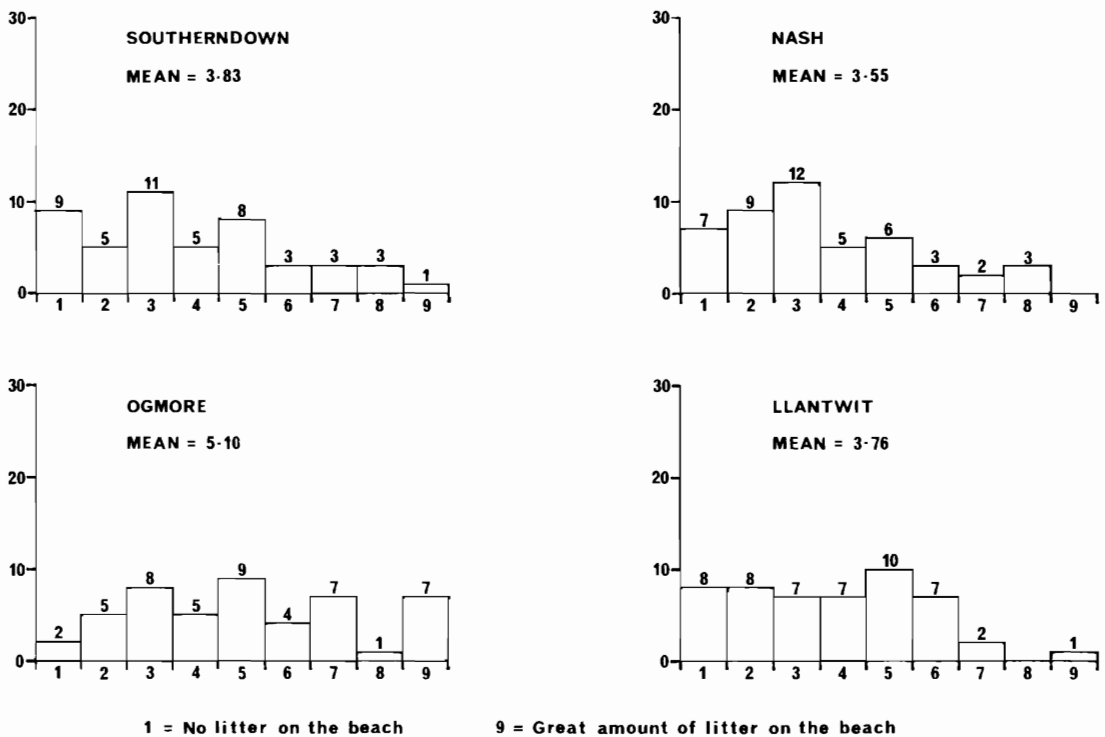


Figure 4. Perceived beach litter.

that water quality at all such beaches was not unsatisfactory.

### CONCLUSIONS

The beach at Nash appeared to attract an older, introverted clientele who appeared interested in aspects of a comparatively undeveloped beach area, such as wildlife, cliff scenery, quiet and solitude. Possibly such visitors would appreciate the provision of one or more information boards briefly describing the GHC management scheme and the flora, fauna and geology of the immediate area. Beach users seemed satisfied with the limited facilities available, but considered access to need improvement.

The car parking, seating and refreshment facilities at Llantwit were well appreciated and considered appropriate by the beach users there. Awareness of the Heritage Coast at Llantwit was 64%, so GHC management should consider methods of better publicising its activities and management philosophies at this beach. On a national scale, this could be a high cost, but no research has been carried out in this regard.

Southerndown appeared to attract the younger, more extrovert beach user, planning a longer stay at the beach. It was considered significantly safer and better for swimming than the other study beaches. Awareness of the Heritage Coast scheme might increase with better signposting of the GHC Headquarters and Information Centre.

It appeared (from the limited sample obtained at Southerndown) that children were less concerned with the sea and swimming when visiting the beach and more interested in other beach activities.

Overall, apart from possibly at Ogmore (where refreshment facilities were poorly regarded), it was concluded that beach users considered the facilities and level of commercialization currently existing to be appropriate at each site.

A close link was suggested between water quality (in terms of perceived level of pollution) and suitability of the beach for swimming. Perceived water quality was markedly worse at Ogmore than at the other three study beaches, possibly due to the presence of litter and a potential pollution source (a sewage treatment works). Thus, the ap-

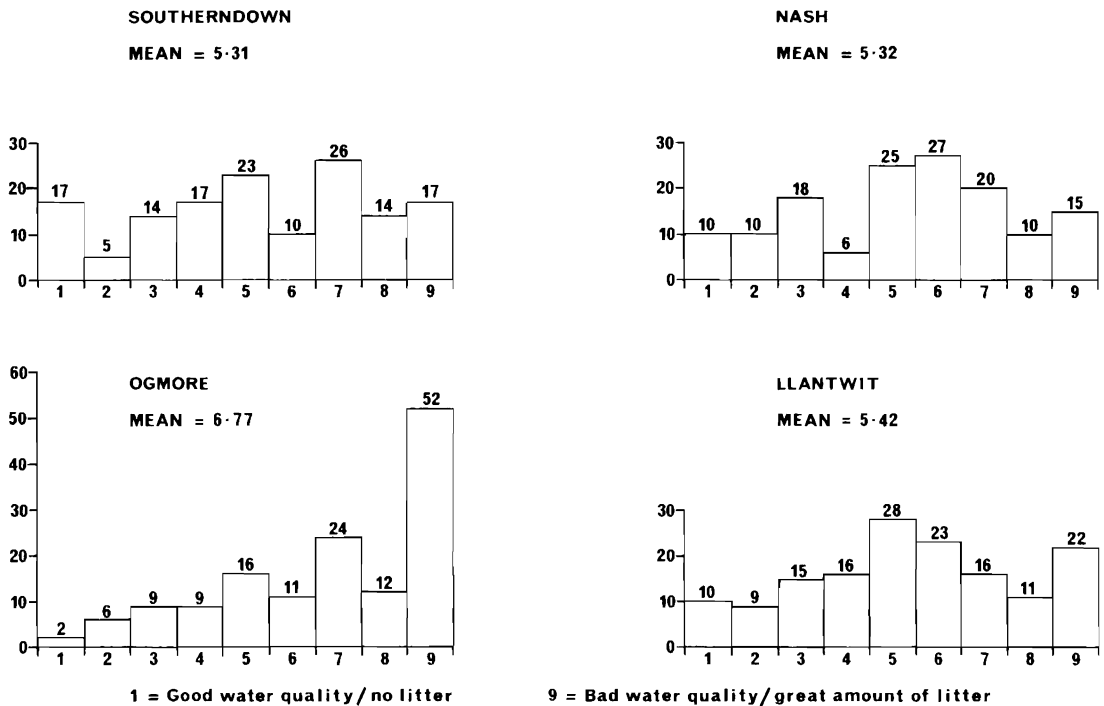


Figure 5. Perceived water quality and litter amount.

appropriate authorities should keep beach areas (and particularly the Ogmore beach area) as free as reasonably possible of litter and debris in order to improve perceived water quality. In this regard, Williams has highlighted the problems of research into beach debris, and the importance of dealing with litter at its source. It was felt that the GHC management should attempt to assure beach users at Ogmore and Llantwit that water quality is not unsuitable for swimming and other water-based activities.

It was considered that as far as the GHC is concerned, the findings of the study supported the opinion of the COUNTRYSIDE COMMISSION (1991) that all intensively used beaches on Heritage Coasts should be designated as 'bathing beaches', as defined by the EC Bathing Waters Directive. The situation at other Heritage Coasts awaits further investigation.

In order to improve Heritage Coast awareness, signs bearing a distinctive Heritage Coast symbol and short message to the effect that the area being entered is being managed by the GHC could, in consultation with landowners, be situated at appropriate points of pedestrian access to the GHC

area and its beaches. At selected sites, these could be combined with notice boards briefly indicating the GHC management philosophy and improvements previously carried out.

Education of potential visitors should also be attempted in their home areas, although, this will be difficult. Promotion of the Heritage Coast philosophy to young visitors should be considered, possibly via the preparation and distribution to schools in the region of a video tape simply and briefly describing the GHC.

Promotion of the Heritage Coast concept of conserving the environment while maintaining the recreational quality of the coast (WILLIAMS, 1992) could facilitate soliciting the aid of the visiting public in preserving the quality of the environment and help to ensure continued good visitor behaviour as numbers increase. This might help to encourage what BUTLER (1991), called non-destructive and 'environmentally sympathetic' tourism.

#### ACKNOWLEDGEMENTS

The authors wish to thank the National Rivers Authority Welsh Division for providing infor-

mation on bathing water quality and local sewage outfalls. Also, Sarah Simmons, Alan Lole and Nicola Morgan of the Environmental Research Unit, and all others who helped with the beach survey work.

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