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Preferences and Priorities of Recreational Beach Users in Wales, UK

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ABSTRACT

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Beach user preferences and priorities for 50 beach aspects were investigated via surveys at 23 beaches in Wales, UK. Results from 859 questionnaires showed that landscape/scenery was the most important single factor (11.3% of total), followed by bathing safety (8.3%) and a variety of factors associated with beach environmental quality such as bathing water quality, absence of sewage debris, litter and unpleasant odours. Various aspects concerning beach facilities were generally allotted a lower priority. Also, preference for the presence of many facilities could not be assumed, as in many cases significant proportions of beach users indicated that specific facilities should not be provided or should be limited in extent. There were many observed differences in beach user preferences and priorities according to the type of beach in terms of commercialisation, the user preferred to visit. A contrast was suggested between those wishing to enjoy the "natural characteristics" of a beach (*e.g.* scenery, absence of pollution in various guises, fauna), and others who preferred traditional "beach resort" qualities (hot, sunny weather, safe bathing, convenient facilities and ease of access). Such studies have potential value for beach management, planning and tourism promotion. More detailed work could provide a valuable resource for coastal management policy decisions on a local and regional basis, especially if combined with studies of other stakeholders such as residents, business owners, water sports groups and conservation bodies.

ADDITIONAL INDEX WORDS: *Beach users, preferences, priorities, coastal management, questionnaire surveys, perception, Welsh coast, tourism.*

INTRODUCTION

Since the 1970's, the use of natural areas has developed as a subject for geographic study, examining aspects such as demand for appropriate recreational areas and infrastructure for their use (*e.g.* COPPOCK *et al.*, 1974; MITCHELL, 1979). Other studies have estimated carrying capacities of the areas examined, beyond which level of use the site could not cope with impacts resulting from the level of use and still remain a sustainable resource (BROTHERTON, 1973; PEARCE, 1986). User opinions and preferences have occasionally been studied for policy development and to understand the behaviour of visitors with the aim of modifying certain aspects to minimise environmental impact and degradation of particular types of environment, *e.g.* rivers (HOUSE and SANGSTER, 1991; CHUBB and BAUMAN, 1977; LIME and FIELD, 1981), forests (KOCH and JENSEN, 1988; BOERWINKEL, 1992). However, beach user opinions and preferences have rarely been studied (*e.g.* HECOCK, 1983; BRETON, 1993), and have even more rarely been used as a contribution to management (*e.g.* JUNYENT *et al.*, 1995; BRETON *et al.*, 1996).

ANASTASSOVA (1996) enumerated 10 key factors for successful beach tourism development. Prominent among these was research into the needs and preferences of tourists. On a similar theme, commentators such as FABBRI (1996) and ORBACH (1996) have emphasised the need for development and utilisation of systems to engage the public in coastal zone management (CZM) policy and decision making processes. Until recently however, beach management has generally only taken account of user parameters in terms of estimation of the number of users in order to calculate amenity and service requirements. Studies have been carried out from time to time examining basic socio-demographic parameters of beach users (*e.g.* origin, accommodation, length of stay, planned expenditure, social class), while some (*e.g.* CUTTER *et al.*, 1979; WILLIAMS *et al.*, 1993a), have examined factors influencing beach selection. Very few studies (*e.g.* COFER-SHABICA *et al.*, 1990; EASTWOOD and CARTER, 1984; MORGAN *et al.*, 1993), have paid attention to such aspects as user's actual needs from the beach environment, what kind of beach they would like, or their preferences for facilities, level of development and control of beach usage/activities. These are facets which beach management should be aware of when evaluating measures to optimise the social and ecological functions of beaches. They also merit examination for the purpose of evaluating management measures already implemented and identifying remaining deficiencies.

Wales is part of the United Kingdom and has a population of approximately 2.8 million people (LOWSON, 1991). By far the most densely populated area is south-east Wales. This area has seen dramatic change in the last two decades with

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the decline of traditional heavy industries (such as coal and steel), and increased employment generated by services, light manufacturing industries and overseas investment, principally from the Far East. The only other area of dense population is a small part of north-east Wales. Almost all of the remainder of Wales has a population density of under 40 persons per km^2 (LOWSON, 1991), with employment heavily dependent on agriculture and tourism. The coastline of Wales, particularly in the south, is notable for large tidal ranges. These attain 14.8m in the Severn Estuary (second only to the Bay of Fundy, Canada) and exceed 10m at many tourist beaches. Much of the south Wales coast features a mixture of limestone cliffs (up to 90m in height) and pocket beaches, with two significant resorts in Barry and Porthcawl attracting mainly local visitors from the densely populated hinterland. The Gower peninsula and the coasts of mid and west Wales also feature cliffs and pocket beaches which attract large numbers of distant and even overseas visitors because of their cleanliness and scenic quality. The northern coast has many long sandy beaches backed by large resorts which attract large numbers of visitors from both Wales and England. In total there are over 200 beaches in Wales, with the majority being outside recognised tourist resorts. Many beaches are visited by relatively small numbers of people, yet taken together the relatively large numbers of such undeveloped beaches may constitute an important tourism resource.

Much of the Welsh coastline is of outstanding importance for conservation and this is recognised in terms of a variety of conservation designations. Heritage Coast definitions encompassed 496 km of the Welsh coastline (40% of the total; COUNTRYSIDE COUNCIL FOR WALES, 1995). Here, the management philosophy is to conserve the natural environment and coastal scenery while facilitating enjoyment by the public (WILLIAMS and SOTHERN, 1986). The UK's only coast based National Park—the Pembrokeshire Coast National Park—is in west Wales and accounts for approximately 400 km of coastline. Much of this is designated as Heritage Coast. There are 12 National Nature Reserves (NNR's) including coastline within their designated area, as well as a Marine Nature Reserve (Skomer) and numerous other designations such as Local Nature Reserves, Sites of Special Scientific Interest (SSSI's), Ramsar sites and Specially Protected Areas. There are also other reserve sites designated by a range of other conservation bodies (e.g. the Royal Society for the Protection of Birds). In total approximately 70% of the coastline now (1998) has some form of conservation or protection designation (SMITH *et al.*, 1995). This fact alone constitutes another reason for coastal managers to investigate the extent to which beach users desire development of access and commercial facilities, which may conflict with maintenance of environmental and scenic quality.

In the UK, Wales is the second most important tourism region with the industry employing 80,000 people (LOWSON, 1991). Communication links by road and rail to Wales from England and within Wales, run mainly from east to west; in south Wales, the M4 motorway and A40 trunk road; in mid Wales the A44 and A458; in north Wales the A55 and A5. Largely as a result of this, the origin of other UK domestic visitors to Wales varies from north to south. In north Wales, most visitors come from the north-west of England. Mid Wales sees a large proportion of visitors from the west Midlands of England, with some from the south-east and north-west. In south Wales, most incoming visitors are from the densely-populated south-east of England and most overseas visitors to Wales enter the UK via airports in this area rather than via Cardiff (Wales) airport. Differences in visitor origins influence the socio-demographic composition of visitors to different parts of Wales and also affect the character of the coastal resorts. North Wales receives a higher proportion of visitors from the lower social grades (semi-skilled and unskilled manual workers; WALES TOURIST BOARD, 1994), mainly originating from the less wealthy, northern areas of England. Possibly in connection with this, many large resorts in Wales such as Rhyl, Prestatyn and Llandudno on the north coast, have suffered from a "drift downmarket" (WALES TOURIST BOARD, 1992).

Tourism accommodation in Wales consists mainly of small hotel and guest house units, with a high proportion of unserviced accommodation in the form of static caravans and touring caravan/camping sites (approximately 75% of total capacity; WALES TOURIST BOARD, 1994), especially in north Wales. The few large Welsh coastal tourism resorts (Rhyl, Prestatyn, Llandudno, Barry, Porthcawl and Tenby), account for almost half of all the serviced coastal accommodation in Wales (WALES TOURIST BOARD, 1994). However, much of this accommodation is in need of modernisation to bring it up to the standards expected by more discerning holiday makers in the 1990's.

METHODOLOGY

Questionnaire Design

As part of research into the development of a novel, user-based beach rating system, a questionnaire was developed to assess the preferences and priorities of a representative sample of beach users on the coast of Wales, UK. Priorities of beach users were investigated with regard to all aspects which were considered to be of importance to the general user and which could be objectively assessed in a quantitative or semi-quantitative fashion. Fifty such factors were identified on the basis of previous beach user interview and survey programmes in Wales (*e.g.* MORGAN *et al.*, 1993), examination of previous beach checklists (CHAVERRI, 1987; WILLIAMS *et al.*, 1993b) and discussions with a range of Euro-Mediterranean academics involved in CZM. These factors are listed in Table 1. For prioritisation of these parameters, a 1 to 5 scale from "very important" to "not important" was used on the questionnaire.

Beach user preference was investigated for those aspects where preference could not be assumed for a particular status of the aspect (such as bathing water temperature, beach regulation, refreshment provision), and could be expected to vary from one beach user to another. Eighteen such aspects were identified (Table 2) and each was divided into a manageable number of categories (maximum 6), and given simple descriptions. For each aspect in Part 2 of the questionnaire, the beach user was asked to insert the digit "1" alongside their

Table 1. *50 factors for beach user prioritization.*

Access onto beach by path	Industrial noise	Strong currents
Alcohol availability	Insect pests	Submerged obstacles
Beach material	Landscape quality	Sunshine
Beach slope	Lifeguard provision	Thermal sensation
Beach material colour	Litter	Toilet provision
Beach exposure	Low tide beach width	Traffic fumes
Car park location	Odours from industry	Undertows (rip currents)
Chairs/sunbed availability	Odours from catering	Underwater beach slope
Cleanliness of toilets	Oil on beach	Vehicle noise
Dangerous animals in water	Rainfall	Vehicles on beach
Dangerous waves	Refreshment facilities	Washing/drinking water
Dangerous cliffs	Road access	Water sport management
Dog control	Rock pool fauna	Water clarity
Fishy/seaweed smells	Sea temperature	Water quality
Floating material	Seaweed on beach	Wave size
Flora	Sewage debris	Wind
High tide beach width	Showers	

first preference, "2" for the second preference and "3" (where applicable) for the third preference.

Beach users were also asked to select their preferred beach type in terms of level of commercialisation, on the basis that preferences and priorities would be likely to differ according to preferred beach type. A preliminary survey of beach development characteristics in Wales led to the recognition of 5 categories appropriate to the Welsh coast. These categories were, in gradations of increasing level of commercial development:

(1) Undeveloped beaches with no visitor facilities in the immediate vicinity;
(2) Beaches with only basic visitor facilities, *e.g.* a toilet, small refreshment kiosk and car parking;
(3) Beaches at small coastal resorts, generally having toilets, cafe(s) selling meals, drinks, ice-creams, etc. and a large car park.
(4) Beaches at medium sized resorts, generally with several cafes, one or more restaurants, fast food outlets, some other shops, washrooms and car parks in the vicinity.
(5) Beaches at large, highly developed resorts where there were many cafes, restaurants, shops and other attractions.

It was considered that landscape/scenic quality could not be defined in terms of presence or absence of individual attractions or detractors (MORGAN and WILLIAMS, with referees). Similarly, in the questionnaire it was considered inappropriate to ask beach users to weight individual components of landscape and scenic quality against the other beach factors. Instead, landscape/scenic quality was weighted relative to other questionnaire factors in an indirect fashion, via an additional questionnaire section (Part 4), as described below. Beach users were asked to put 5 major facets of the beach environment ("Facilities", "Sand and Water Quality", "Attractive Views and Landscape", "Bathing and Swimming Safety" and "Access and Parking"), in order of priority from 1 (most important) to 5 (least important). Four of these major facets (*i.e.* all except "Attractive Views and Landscape") each corresponded to a number of beach factors featured in Part 3 (priority rating section) of the final questionnaire (Table 3). The final questionnaire therefore consisted of 5 parts:

Part 1—A section of socio-demographic questions;
Part 2—Preference selection questions;
Part 3—Priority rating questions;
Part 4—Ranking of 5 major beach facets;
Part 5—Selection of preferred beach type.

Table 2. *Beach aspects selected for user preference selection in questionnaire.*

Beach material	Access onto beach
Beach material colour	Car park location
Sea temperature	Water sport management
Thermal sensation	Refreshment facilities
Beach exposure	Alcohol availability
Road access	Low tide beach width
Wave size	High tide beach width
Beach slope	Vehicles allowed on/banned from beach
Underwater beach slope	Dogs allowed on/banned from beach

Survey Design

In deciding which beaches to select for the questionnaire survey in order to obtain a representative sample of beach

Table 3. *Factors included in 4 major "beach facets" (part 4 of questionnaire).*

Facilities	Bathing and Swimming Safety
Washing/drinking water	Strong currents
Toilet provision	Undertows (rip currents)
Cleanliness of toilets	Dangerous waves
Showers	Underwater beach slope
Sunbed/chair availability	Lifeguard provision
Refreshment facilities	Dangerous animals in water
	Submerged obstacles
Sand and Water Quality	**Access and Parking**
Sewage debris	Road access
Water clarity	Car park location
Water quality	Access onto beach by path
Floating material	
Litter	
Oil on beach	

users, it was necessary to take into account the large variations in beach visitor numbers between beaches. Firstly, a list was drawn up of all beaches in Wales which might reasonably be considered for selection. This was compiled from the listing of Welsh beaches in the "Good Beach Guide—1994" (MARINE CONSERVATION SOCIETY, 1994), the list of beaches receiving the Tidy Britain Group's "Seaside Award" for beach quality in 1994, beaches in the National River Authority Bathing Water Report for 1993 (NATIONAL RIVERS AUTHORITY, 1994), and inspection of 1:50 000 scale Ordnance Survey maps of the Welsh coast. This produced a total of 202 beaches.

It was considered that beach users on at least 20 beaches should be surveyed using the questionnaire. Random selection from the 202 beaches listed would be likely to result in the selection of many beaches with few visitors at any one time during typical summer conditions and subsequent logistic difficulties, in terms of the amount of time required for the questionnaire survey to be completed. To reduce this problem the population of beaches was stratified by dividing into two categories; EC-identified bathing beaches (required to comply with the EC Bathing Waters Directive; 76/160/EEC), where bathing is traditionally practised by large numbers of bathers (COUNCIL OF THE EUROPEAN COMMUNITIES, 1976); and non-identified beaches. From the list of 50 EC-identified bathing beaches geographically within Wales at the commencement of the study (1994; NATIONAL RIVERS AUTHORITY, 1994), 14 beaches were randomly selected. A further 9 were randomly selected from the remaining non-identified beaches. These beaches are shown in Figure 1.

YEOMANS (1967) and the WELSH AGRICULTURAL COLLEGE (1992) estimated an approximate 2:1 ratio of weekend to weekday visitors to Welsh coastal and country leisure destinations. Sampling at each beach was balanced with the intention of reflecting this ratio. The aim was to obtain 34 questionnaire responses at weekends (Saturdays and Sundays) and 17 on weekdays (Monday to Friday, excluding Bank Holidays) at each beach to be surveyed using the questionnaire, so giving a total of 51 completed questionnaires per beach. Questionnaire survey work was carried out during July/August 1994 and June/July 1995 by staff of the Glamorgan Heritage Coast Project, the Ceredigion Heritage Coast and the Coastal Research Unit, School of Applied Sciences, University of Glamorgan. Sampling of beach users is fraught with difficulty in terms of obtaining a representative sample of the total beach using population (MORGAN *et al.*, 1993; WILLIAMS *et al.*, 1993a). At each beach, an approximation to a stratified sample was obtained by approaching groups, couples and individuals of a variety of ages and both sexes at various locations on the beach. Logistic difficulties and/or low user numbers depressed the number of beach users surveyed at some beaches to a figure below that originally desired, so that an eventual total of 1,004 questionnaires was obtained (Table 4). Reported refusal rate among beach users was <2%.

Questionnaire Data Processing

Following the questionnaire survey, questionnaires were carefully inspected to check that they had been completed in satisfactory fashion. A frequent problem was that Part 3 (priority rating on the 1 to 5 scale) had been filled in by habitually circling the same number for long sequences of questions, most commonly the numbers "1", "3" and "5" on the scale. While perhaps in a few cases this might indicate ambivalence toward these aspects by the beach user, it was felt that given the length of the questionnaire, fatigue would be a more common reason for this behaviour. On this basis, questionnaires where the same digit had been circled 10 or more times in succession were excluded. Similarly, those with 10 or more uncompleted questions in Part 3 were eliminated. Also eliminated were those where preferred beach type had not been stated and those where Part 4 (ranking of the 5 major facets of the beach environment), had not been completed. The total number of questionnaires excluded from preference/priority calculation was 145 out of the original 1,004 questionnaires. Eight hundred and fifty nine questionnaires were used for analysis (Table 4).

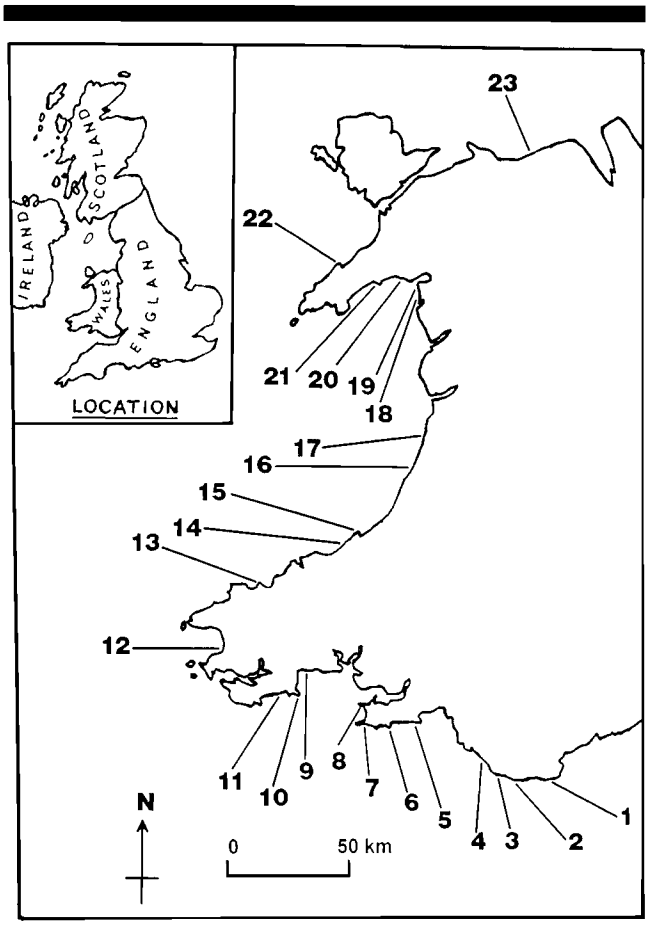

Figure 1. Questionnaire survey beaches in Wales, UK.

For responses in Part 2 of the questionnaire (preference selection), no account was taken of preferences lower than third. Digits entered on the questionnaire copies were converted so that aspects given highest preference by the beach user had the highest numerical value, while those given the lowest preference had a value of zero. The exact manner of

Table 4. *Number of questionnaires obtained per beach.*

No. in Fig. 1	Beach	No. of Questionnaires Accepted for Preference Analysis	√ = EC Identified Bathing Beach
1	Barry (Whitmore Bay)	37	√
2	Ffontagari	37	–
3	Nash	15	–
4	Southerndown	8	√
5	Limeslade	48	√
6	Port Eynon	46	√
7	Rhossili	41	√
8	Llangennith	48	–
9	Amroth	50	√
10	Saundersfoot	48	√
11	Manorbier	52	–
12	Broad Haven	50	√
13	Pwllgwaelod	5	–
14	Llangranog	41	–
15	New Quay	40	√
16	Aberaeron	42	–
17	Aberystwyth (South)	43	√
18	Llandanwg	41	√
19	Harlech	44	√
20	Morfa Bychan	42	√
21	Morfa Aberech	8	–
22	Morfa Nefyn	39	–
23	Kinmel Bay	34	√
	Total at EC-identified beaches	564	
	Total at non-EC beaches	295	
	Total	859	

this conversion depended on the number of preference options (ranging between 2 and 6), available for the question as shown in Table 5.

For priority scoring, responses on the 1 to 5 scale were converted so that "very important" counted as 4 points, grading down to "not important" counting as zero in terms of priority level. Corrections had to be made to the values of priority rating on each questionnaire to allow for the fact that some beach users tended to give mainly "high" prioritising scores, while other beach users tended to give mostly "low" prioritising scores. This was done by calculating for each questionnaire the mean priority score on the 1 to 5 scale for all 50 beach aspects, then dividing each of the priority scores in that questionnaire by the mean priority score. For those beach aspects where user preference was derived from questionnaire responses rather than assumed, the corrected priority scores were related to the appropriate preference scores. This produced a combined preference/priority score, calculated by multiplying the preference score for that aspects' category, by the corresponding priority score.

Table 5. *Recoding of questionnaire preference options.*

Number of Preference Options Available for Beach Aspect		
4, 5 or 6 Options	3 Options	2 Options
1 recoded to 1	1 recoded to 1	1 recoded to 1
2 recoded to 0.6666	2 recoded to 0.5	2 recoded to 0
3 recoded to 0.3333	3 recoded to 0	0 recoded to 0
4 recoded to 0	0 recoded to 0	
5 recoded to 0		
6 recoded to 0		
0 recoded to 0		

Estimation of Beach User Priority for Landscape/ Scenic Quality

For each completed questionnaire, beach user priority scores from Part 3 of the questionnaire were totalled for those aspects corresponding to each of the 5 major facets (Part 4 of the questionnaire). These totals were compared to the rankings from Part 4 of the questionnaire and allowed calibration to be made of the ranked facets (including "Attractive Views and Landscape") in terms of priority score, against totalled priority scores from Part 3. A beach user priority score for landscape/scenic beauty was calculated, which was halfway between those totalled priority scores for major facets ranked immediately above and below the "Attractive Views and Landscape" facet in Part 4. If the "Attractive Views and Landscape" facet had been given a ranking of one on a particular questionnaire, the difference between the totalled priority scores for the second and third ranked facets, was added to the score for the second ranked facet. The "Attractive Views and Landscape" facet was given this calculated score. Similarly, if the "Attractive Views and Landscape" facet was given a ranking of 5, the difference between the totalled priority scores for the third and fourth ranked facets was subtracted from the score for the fourth ranked facet. An example (Table 6), shows a case where "Attractive Views and Landscape" was ranked third of these 5 facets.

This methodology is a form of Guttmann scaling (STOUFFER, 1950), but in practice over a large sample size a perfect Guttmann scale is seldom obtained (BLALOCK, 1979). Six hundred and sixty two of the 859 questionnaires accepted for beach user preference/priority scoring were satisfactory in terms of the method described above. In the remaining 197

Table 6. *Example of calculation of priority score for "attractive views and landscape".*

Facet	Total Priority Score from Corresponding Questions in Part 3 of Questionnaire	Rank Given in Part 4 of Questionnaire
Sand and Water Quality	9.74	1
Bathing and Swimming Safety	8.05	2
Attractive Views and Landscape	—	3
Facilities	7.20	4
Access and Parking	4.23	5

The priority score for "Attractive Views and Landscape" for this case was calculated as: (8.05 + 7.20)/2 = 7.63.

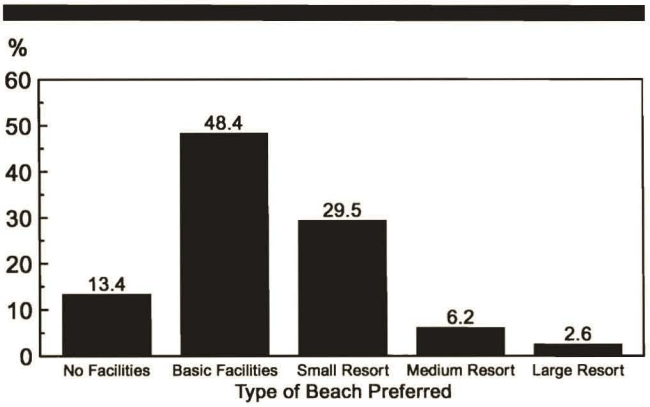

Figure 2. Beach users' stated preferred beach type.

cases, it was observed that the response patterns of individuals deviated from the ideal, *i.e.* the ranking order of the 5 facets in Part 4 of the questionnaire did not match the numeric order of the relevant totals from Part 3. The most common problem was that the sum of the totalled priority scores attributed to beach access and parking from Part 3 of the questionnaire, was the lowest of the 4 facets totalled from Part 3, but the rank given in Part 4 to "Good Access and Parking" was one higher than it should have been (*i.e.* "3" instead of "4", or "4" instead of "5"). When this occurred and the error was associated with the ranking of "Attractive Views and Landscape" in Part 4 of the questionnaire (where "Attractive Views and Landscape" was ranked directly above or directly below "Good Access and Parking"), the same priority score was given to "Attractive Views and Landscape" for that questionnaire, as the totalled priority given to beach access and parking. This procedure applied to 131 questionnaires. For the remaining 68 questionnaires an estimate was made of the priority score to be given to "Attractive Views and Landscape", from inspection of the ranking table from Part 4 of the questionnaire and the totalled priority scores derived from Part 3. Deciding the degree of error in Guttmann scales that can be tolerated is an arbitrary decision (BLALOCK, 1979). In view of the novel and exploratory nature of the study, in particular the attempt to attribute the percentage of total beach rating score which should be assigned to landscape quality, and the lack of an obvious alternative, the Guttmann scaling methodology was considered adequate for calculating the results of this study.

Finally, the mean value was calculated for each of these combined preference/priority scores, separately for each group of beach users who stated a preference for each of the five beach types.

RESULTS AND DISCUSSION

Just over half of those completing the questionnaire (53%), lived in Wales, with 45% originating from the remainder of the UK, overwhelmingly (44%) from England. Only 2% were from other EC countries, and a single beach user in the study lived outside the EC. These figures emphasise the importance of beach visitors from England to Welsh coastal tourism, while implying that overseas visitors have yet to be attracted in large numbers to Welsh beaches. More than half those interviewed were aged between 25 and 44 years. Five percent were under 18, with 1% under 16 years old. Four percent of interviewees were 65 or over (the oldest being 82 years old). The modal planned length of stay of beach users in this study was 4 hours, with a mean of 5.2 hours.

Preferred Type of Beach

Figure 2 shows the breakdown of beach users' stated preferred beach type, according to the descriptions given on the questionnaire. Surprisingly, only 2.6% (n = 22) of those interviewed stated a preference for visiting beaches at large resorts and only 6.2% (n = 53) for visiting beaches at medium-sized resorts. These numbers of beach users were so small that for further data processing/analysis purposes, these two categories of preferred beach type were combined. This produced a beach user grouping of 75 preferring beaches at medium or large resorts. By far the largest number (n = 416, 48.4%), said they would prefer to visit a beach with only basic facilities (toilet, refreshment kiosk, car parking). As can be seen from Figure 3, even people interviewed at large resort beaches often expressed preference for visiting beaches with only basic facilities or small resort character. Indeed, visiting a beach with basic facilities was the most common preference for people surveyed at any category of beach apart from large resorts, for whom it was the second most popular choice.

This raises the question of why people who state a preference for beaches with basic facilities are to be found at medium/large resort beaches. One can suggest that there may be a conflict between the preference of the person actually filling in the questionnaire and the perceived needs of their family and/or children with regard to resort facilities. This concept is supported by the findings of a pilot-scale study in Malta (MICALLEF *et al.*, in press). While the interviewee may wish to visit a beach with few facilities, they may feel (correctly or incorrectly), that their children or other companions desire more extensive commercial facilities that would not be present at such a beach. Knowledge of location and ease of access may be two further factors influencing this apparent conflict between actual beach choice and stated beach type preference. This aspect calls for elucidation by means of fur-

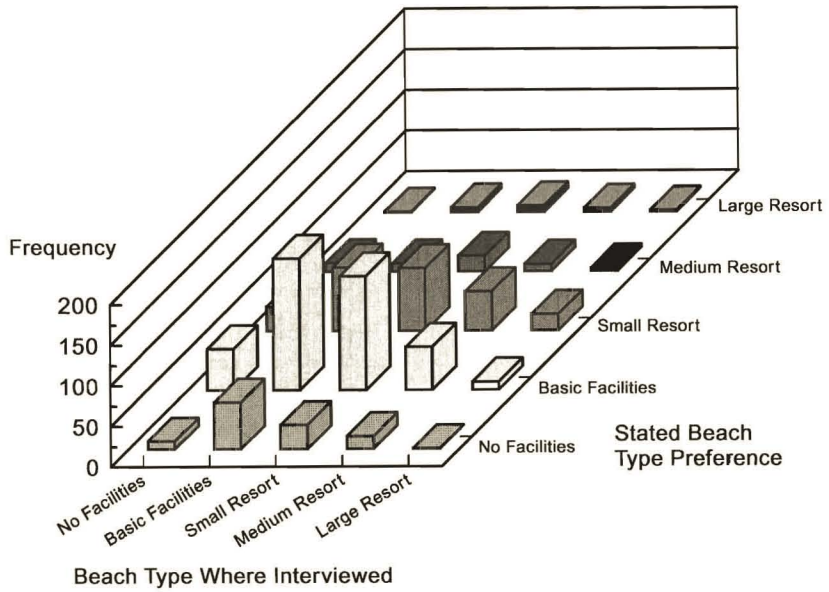

Figure 3. Comparison of preferred beach type against beach type where interviewed.

ther studies, the results of which could have important consequences for beach tourism promotion.

Beach User Priorities

By far the highest priority value was given to scenery/landscape quality (11.30% of total; Table 7), followed by beach safety (8.28%), water quality (3.12%), absence of sewage debris (3.04%), litter (3.04%), industrial odours (3.00%), oil (2.97%), industrial noise (2.76%) and traffic fumes (2.70%). Factors based on facilities were generally allotted a lower priority, e.g. chair/sunbed availability (0.96%), showers (1.03%). As expected, preference for the presence of many facilities was variable. In the questionnaire, the preference selection process (Part 2 of the questionnaire), often resulted in significant proportions of beach users stating that specific facilities should not be provided, or limited in extent.

The two most important UK beach award schemes, European Blue Flag and the Seaside Award (a UK beach award given by the Tidy Britain Group; WILLIAMS and MORGAN, 1995), stipulate the presence of particular facilities for beach users. The impression gained from the results of the study was that many beach users do not necessarily desire beaches to be "improved" by managers and planners, either in terms of supplementation of near-beach facilities (*e.g.* refreshments, car parking), or in terms of resort/area infrastructure development to ease access (wider access roads, constructed paths). Whether such apparent desires to limit development were directly the result of wishing to preserve a more pristine, uncommercialised beach environment, or a fear that such development could lead to increased visitor numbers resulting in crowding, increased noise and indirect reduction in enjoyment at the beach, was not clear. In view of the potential importance to beach managers of such preferences, further research is demanded to elucidate this aspect.

Multiple regression analysis was carried out to examine the statistical validity of trends in priority level with stated preferred beach type. Twenty six individually prioritised beach aspects from Part 3 of the questionnaire, were shown to be linked to beach type preference. Priority given to scenic/landscape quality, priority for beach safety aspects and ranking of "Facilities", "Sand and Water Quality" and "Access and Parking" (Part 4 of the questionnaire), were also shown by multiple regression analysis to be linked to beach type preference. A commercialised beach environment is in many ways synonymous with the presence of car parking, improved beach access, refreshments and sanitary facilities. In the questionnaire itself, this connection was made explicit by the descriptions included of the five beach categories from which users were asked to select their preferred type. Some of the aspects included in the descriptions (such as cafes, car parking), were among the factors which users were asked to priorities in Part 3 of the questionnaire. In contrast a beach without specific facilities for visitors generally implies a beach in a rural location which might be perceived (not necessarily correctly), as unlikely to suffer from a high level of pollution from human sources or scenic intrusion from built structures. Selection of preferred beach type, could therefore be regarded as an inevitable consequence of beach users' priorities in the beach environment.

Scenery/Landscape Quality

The conspicuous apparent link between preferred beach type and priority given to scenic/landscape quality (Figure 4), was confirmed by multiple regression analysis. Priority given to scenery/landscape quality ranged from 14.8% (as a percentage of the total for all beach aspects), for beach users preferring to visit beaches with no visitor facilities to 8.8% and 8.9% respectively for those wishing to visit small and

Table 7. *Overall beach user priority levels.*

Beach Factor	Priority (%)	Beach Factor	Priority (%)
Landscape Quality	11.30	*Sea Temperature*	*2.12*
Beach Safety	8.28	*Car Park Location*	*2.12*
Water Quality	3.12	Lifeguard Provision	2.12
Sewage Debris	3.04	Submerged Obstacles	2.10
Litter	3.04	Wind	2.10
Odours from Industry	3.00	*Alcohol Availability*	*2.01*
Oil on Beach	2.97	*Underwater Beach Slope*	*1.95*
Cleanliness of Toilets	2.97	*Access onto Beach by Path*	*1.93*
Industrial Noise	2.76	Rock Pool Fauna	1.93
Dangerous Cliffs	2.70	*Water Sport Management*	*1.90*
Traffic Fumes	2.70	Washing/Drinking Water	1.81
Toilet Provision	2.61	*Wave Size*	*1.80*
Vehicles on Beach	*2.61*	*Refreshment Facilities*	*1.73*
Beach Material	*2.57*	*Beach Slope*	*1.73*
Water Clarity	2.48	*High Tide Beach Width*	*1.73*
Floating Material	2.38	Odours from Catering	1.73
Rainfall	2.35	Flora	1.71
Thermal Sensation	*2.33*	*Beach Exposure*	*1.71*
Dangerous Animals in Water	2.31	*Road Access*	*1.58*
Beach Material Colour	*2.20*	*Low Tide Beach Width*	*1.58*
Vehicle Noise	2.20	Fishy/Seaweed Smells	1.48
Sunshine	2.16	Seaweed on Beach	1.39
Insect Pests	2.14	Showers	1.03
Dog Control	*2.14*	Chairs/Sunbed Availability	0.96

Those beach aspects for which preferred status was selected by beach users rather than assumed are shown in *italics*.

medium/large resort beaches. Beaches without visitor facilities generally have few built structures visible nearby. User preference for a commercial beach resort implies a different set of priorities, with emphasis on availability of resort facilities overriding desire for scenic beauty. In the UK, designations such as "Area of Outstanding Natural Beauty" (AONB, *e.g.* Gower), imply that control should be exercised over visually intrusive development (whether for provision of tourist facilities or for other reasons), in order to preserve high scenic quality and is also implicit or explicit with respect to other designations such as National Parks and Heritage Coasts. These findings also emphasise the importance of maintaining the pristine scenic quality of undeveloped beach areas, even when a temptation may be present to add commercially-based facilities to undeveloped beaches to enhance the local tourist economy.

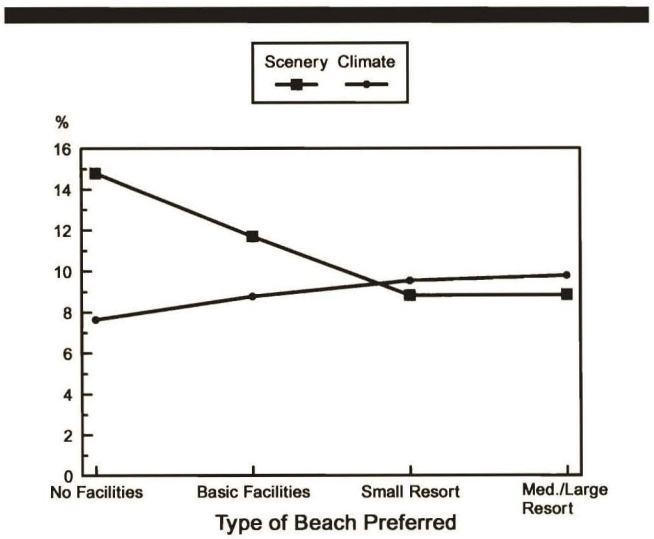

Figure 4. Priority for scenery and climate parameters according to preferred beach type.

Climatic Factors

Combined priority scores for the 4 climatic factors from Part 3 of the questionnaire (sunshine hours, wind, low rainfall, temperature sensation), were calculated for beach users preferring each beach type. The clear trend evident (Figure 4), was confirmed by multiple regression analysis. Users preferring resort beaches gave higher priority to climatic factors compared to those preferring undeveloped beaches. One might postulate a contrast between those who prefer to visit less commercialised beaches to enjoy the natural attributes of the beach environment and are less concerned about the climate, with those of a more commercial orientation who prefer a traditional "beach resort" with warmth, sunshine and abundant varied facilities to supplement their enjoyment.

Bathing Safety

Priority scores for beach safety aspects were shown by multiple regression analysis to be linked to preferred beach type, even though the trend was not readily apparent from examination of mean scores. Those preferring an uncommercialised, "natural" environment at the beach were less concerned with hazards associated with natural phenomena such as dangerous currents, large waves, etc. Those preferring more commercialised beaches, might be expected to have an image

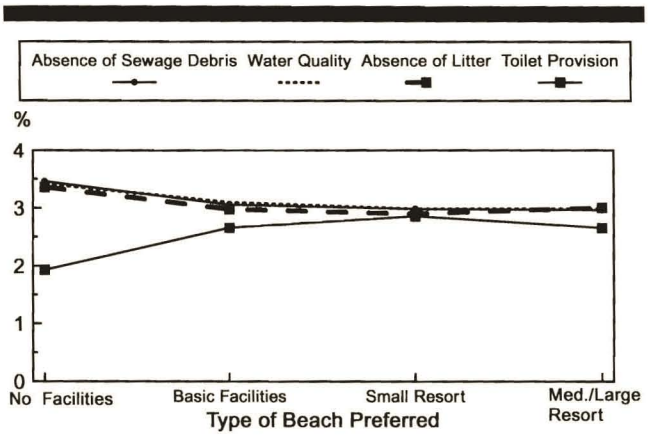

Figure 5. Priority for absence of sewage debris, water quality, absence of litter and toilet provision according to preferred beach type.

of a beach environment where both the on-shore aspects (facilities, management) and those off-shore (bathing hazards), are controlled for the purposes of human convenience with natural features taking a lower priority.

Absence of Sewage Debris

Those preferring less commercialised beaches gave higher priority to absence of sewage debris at the beach. The clearest difference in priority given to absence of sewage debris was between those preferring beaches with no facilities (3.46%) and the other groups (2.97 to 3.06%; Figure 5). The extent to which the beach using public actually recognise sewage debris when they see it, the connotations they attach to it and their perception of its possible significance as a water quality indicator are the subject of much current research (WILLIAMS and NELSON, in press). It has been suggested that the remains of sanitary towels and condoms are the forms of beach debris likely to cause most offence to users (WILLIAMS and NELSON, in press), although HOUSE and HERRING (1995), suggested that, unlike sanitary towels, condoms did not seem to have a strongly negative effect on perceived water quality.

Bathing Water Quality

Priority given to bathing water quality by users preferring different beach types is shown in Figure 5. The suggested trend for greater priority for this factor among those preferring less developed beaches, was confirmed by multiple regression analysis. As with priority for absence of sewage debris, the greatest distinction was between those stating a preference for undeveloped beaches (3.42%) and the other categories (2.99 to 3.10%). This supports the view that those preferring uncommercialised beaches have a greater wish for a pristine, unpolluted environment. However, compared to other beach factors, bathing water quality is still given a high priority by those wishing to visit more commercialised beach resorts, so bathing water quality standards may be seen as an important aspect of the beach visiting experience for a wide range of the beach using public.

Absence of Litter

A trend in priority level for litter absence with preferred beach type is not readily apparent from Figure 5. However, multiple regression analysis confirmed a significant correlation, with those preferring less commercialised beaches placing higher priority on absence of litter. Examination of public perception of beach litter contamination is becoming an important field of research in itself (SIMMONS and WILLIAMS, 1992; HOUSE and HERRING, 1995). Several workers and organisations (*e.g.* DINIUS, 1981; MARINE CONSERVATION SOCIETY, 1990), have emphasised the importance of beach contamination by litter in affecting perceived water quality and its detrimental effect on coastal recreation.

Other Aspects

Higher priority was given to absence of industrial smells/odours, absence of traffic/vehicle fumes, absence of noise from industry/commerce and absence of vehicle noise by those preferring undeveloped beaches. Multiple regression analysis demonstrated that those preferring undeveloped beaches tended to give higher priority to interesting beach flora and presence of rock pools. An interest in the natural features of the beach environment as opposed to a preference for visiting the man-influenced, developed resort beaches could be considered to be reflected in this trend. Water clarity and absence of oil contamination were also shown by multiple regression analysis to be related to preferred beach type, with those preferring undeveloped beaches giving higher priority to these factors. Such visitors also gave higher ranking in Part 4 of the questionnaire to "Sand and Water Quality" than those preferring more commercialised beaches. Availability of toilet facilities at the beach was given lowest priority by beach users stating a preference for visiting beaches with no visitor facilities (Figure 5; 1.93% compared to 2.66%–2.88%). For presence of lifeguards, the most distinct difference in priority level was between those preferring beaches with no visitor facilities (implying a desire for absence of human intervention), and the other categories (1.62% compared to 2.13%–2.40%).

Visitors stating a preference for visiting more developed beaches gave higher priority to toilets, availability of drinking water and washing facilities, shower facilities and availability of chairs/sunbeds (Figure 6). In Part 4 of the questionnaire, those preferring to visit more commercialised beaches gave higher rankings to "Facilities" and "Access and Parking". As mentioned above, the presence of facilities for beach visitor use is implicit in the concept of the commercialised beach resort and is also made explicit in the descriptions of beach types featured in the questionnaire.

Seaweed

In contrast to the trends for other (essentially man-made) smells/odours, lower priority for absence of seaweed/fishy smells was given by those preferring less developed beaches (Figure 7). Similarly, absence of seaweed on the beach was given lower priority by those preferring less commercialised beaches (Figure 7). A connection between this factor and ab-

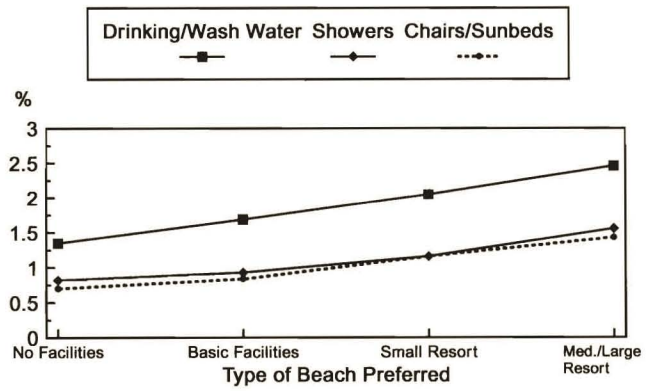

Figure 6. Priorities for provision of washing/drinking water, showers and chairs/sunbeds according to preferred beach type.

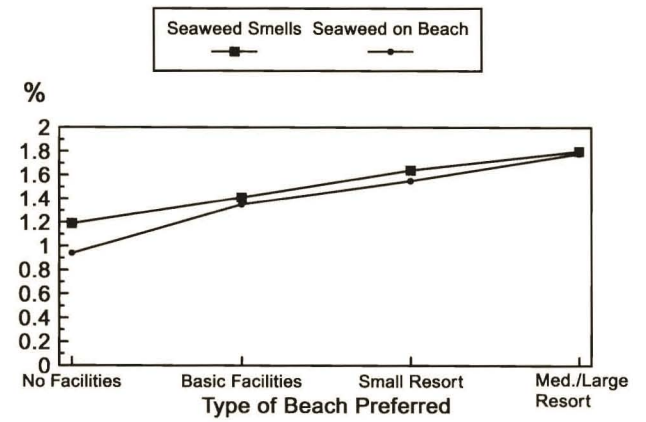

Figure 7. Priority for absence of seaweed smells and seaweed on the beach according to preferred beach type.

sence of seaweed/fishy smells, may be suggested in terms of considering both to be forms of "natural pollution" of the beach environment. Those preferring a less commercially developed, more pristine beach environment may consider the presence of seaweed and associated smells as a natural feature of the coastline, consider it inoffensive and perhaps even expect it to be present. Human-generated odours from industry, traffic, etc., could be perceived by such people in a very different way since they are indicators of industrial/commercial intervention into, and pollution of, the natural environment. In contrast, those preferring more commercialised beaches may consider that the presence of smell of seaweed detracts from their image of a "clean", neat and managed beach environment in a fashion not dissimilar to the presence of man-made beach debris and odours.

Potential Implications of Priority Variation According to Preferred Beach Type

The variations in priority scores according to preferred beach type described above suggest a contrast between those who choose to enjoy what might be termed the "natural attributes" of a beach and those who prefer traditional "beach resort" qualities. Higher priority was given to what might be loosely classified as "environment" based aspects by those stating a preference for uncommercialised beaches. Such aspects included scenery/landscape, beach flora and fauna (*e.g.* in rock pools), and absence of pollution in various guises such as beach litter, sewage debris, noise and unpleasant odours from industry and vehicles, oil contamination and bathing water pollution. These findings suggest the particular importance of maintaining high environmental standards with regard to these aspects, at less commercially developed beaches. Any development proposals in terms of improvement to existing amenities or provision of additional facilities at such beaches, should demand careful consideration of possible impacts on the beach features which currently seem to attract visitors to these sites. Additional investigations to examine in greater depth, the perceptions of beach visitors at undeveloped beaches should be undertaken to further elucidate the aspects described above, with the aim of guiding management of such beaches.

The beach aspects given higher priority by those stating preference for the more commercialised beach categories, could essentially be classified into four groups; climate at the beach/resort area, safety (including lifeguard provision), facilities, and access (including car parking). Climate is obviously outside the control of beach managers, but the fact that it is given higher priority by those preferring more commercialised beaches could be of importance to tourist authorities in terms of promoting beaches in their area. A possible implication is that tourist authorities responsible for areas with modest climatic attributes from the beach tourism point of view, should focus promotional activity on those potential beach users who have less interest in this aspect of the beach environment. In terms of climatic characteristics, this may be regarded as applying to the UK and other cool temperate coastlines. Obviously, climatic considerations may be a significant reason why a potential Welsh beach user (one who perhaps visits beaches in other countries), might not visit beaches in Wales. Such a person would not therefore be sampled in a beach-based survey of the type undertaken in this study. This emphasises the importance of including perception studies of *potential* as well as actual beach users, in further studies attempting to relate user perceptions to general beach management policy making.

Bathing water safety is an aspect which management can only impinge upon through the provision of lifeguards and by regulating access to the water at dangerous areas/times. Coastal management policies need to be cognisant of the relationship beach type, beach usage and risk to the public (SHORT and HOGAN, 1994). In the UK this has been addressed to some extent by the Royal Society for the Prevention of Accidents (ROSPA) and the Royal Life Saving Society (ROSPA, 1993). In this survey it was likely that beach users who spent a large proportion of the time bathing, swimming or engaged in water sports were seriously underrepresented. Other means of investigation of beach user perceptions would

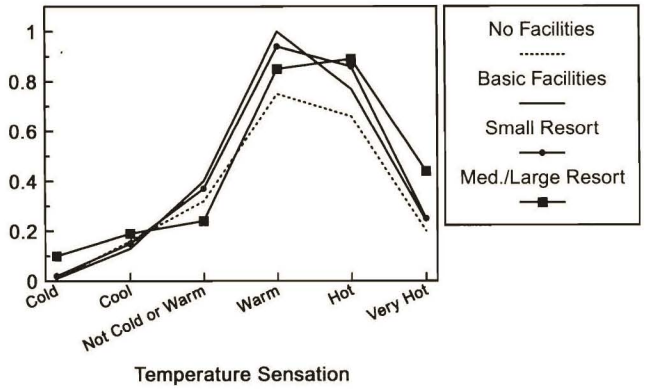

Figure 8. Preference levels for temperature sensation for each preferred beach type.

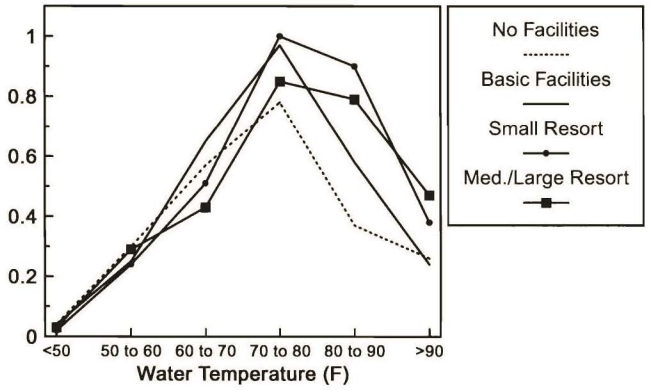

Figure 9. Preference levels for bathing water temperature for each preferred beach type.

need to be employed in future studies into bathing water safety, to correct this deficiency.

In terms of facility provision, a stated preference for a more commercialised beach environment implies a high priority for availability of constructed facilities and supplied services at the beach. Higher priorities for availability of toilets, showers, drinking water and sunbeds for hire were demonstrated for beach users stating a preference for visiting more commercial beaches. The beach facets "Facilities" and "Access and Parking" (from Part 4 of the questionnaire), were also given higher priority by these beach users, suggesting that some people may prefer such beaches on the basis of knowledge of location, ease of access and the assurance that should they require a particular facility or service, it is likely to be present. Plans for additions and/or alterations to facilities and services at particular beaches might benefit from further study of beach user priorities to assess which particular facilities (and of which type in terms of quantity/quality), existing and potential future users might require. The same considerations would apply to plans to modify access and parking arrangements.

Beach User Preferences

Beach Width and Material

Highest preference for low tide beach width was for 50–200 yards (approximately 50–200m). This preference could be associated with the distance beach users would need to walk from the drier sand at the rear edge of the beach to reach the water. This factor could also be important in terms of observing the safety of children bathing in the sea, even though interviewees might not wish to enter the water themselves. Highest preference for high tide beach width was for 20–50 yards (20–50m). It could be that user preferences accord with their experience of UK (and especially Welsh) beaches where beach widths decrease markedly at high tide. Unsurprisingly, the highest preference for beach material was for sand. This was the first preference choice for 97% of those interviewed.

Temperature Sensation and Bathing Water Temperature

Taking a mean of all beach users interviewed, the temperature sensation "warm" was the highest preference. However, there was a tendency for those preferring more commercialised beach types to prefer a hotter temperature sensation. For those preferring beaches at medium/large resorts, the highest score was given to the temperature sensation "hot" (Figure 8). Highest overall preference for bathing water temperature was 70–80°F (22–26°C). This most preferred water temperature was well outside the range likely to be encountered on the Welsh coastline, where inshore water temperatures peak at no more than 65°F (18°C). Those beach users preferring more developed resorts tended to give higher scores to even higher water temperatures (Figure 9). Again, the probable underrepresentation in the study of those who spent much time bathing, swimming or engaged in water sports should be taken into account. It would be interesting to discover how preference for bathing water temperature relates to actual water use at Welsh beaches (and others in cool temperate latitudes), and whether there are differences in preferred temperature according to water use. Low bathing water temperature may be seen as a discouragement to beach use in such climates. While this factor is outside management control, further investigation of such aspects could be of value in guiding the content of publicity material and assisting decision making regarding provision of other beach attractions.

Other Physical Beach Aspects

In terms of beach exposure, highest preference was for a beach that was "sheltered but with some breeze", for users preferring all beach types, followed by "sheltered from all breezes". "Very exposed" was given lowest preference. Highest overall preference for wave size was for 1 to 3 feet (30 cm–1m). However, those beach users preferring more commercialised beaches tended to prefer smaller breaking waves; the highest preference scores for those preferring to visit small and medium/large resorts, were for breaking wave sizes of 4 inches to 1 foot (10–30 cm; Figure 10). The results sug-

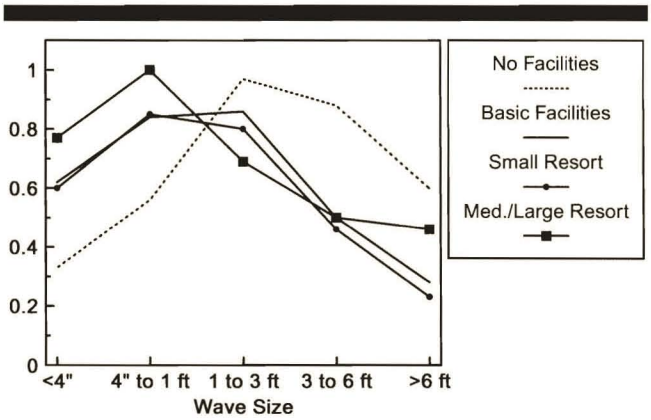

Figure 10. Preference levels for wave size for each preferred beach type.

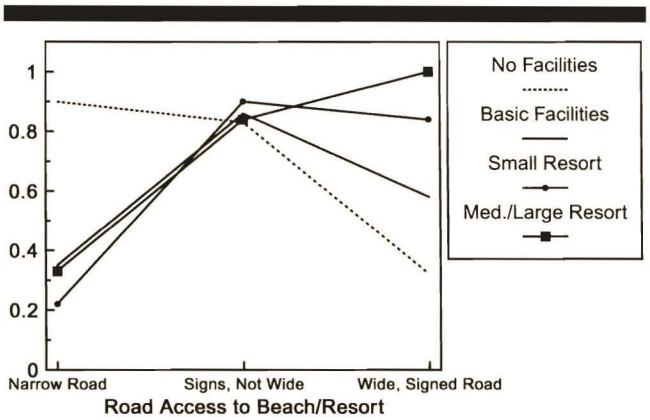

Figure 11. Preference levels for road access for each preferred beach type.

gested those preferring undeveloped beaches might like the spectacle of large, dramatic waves on the sea to complement the natural, wild beach environment. In contrast, those preferring resort beaches might wish for a calmer sea, not only suggesting a desire for safe bathing conditions, but also as an indicator of an environment less "wild" and more under the control and influence of man.

For beach slope above high water mark, highest preference overall was for a "gently sloping" beach and this was common across all beach type preferences. However, those preferring more commercialised beaches gave higher preference scores to "flat" beaches. Large resort beaches in Wales are more often of this type, in contrast to the pebble beaches seen at high tide level along much of the Welsh coast. For beach slope below the waterline, highest preference was for water up to an adult's waist after walking 10 yards into the sea. There were no notable differences in preferences between those preferring different beach types. Highest overall preference for sand colour was given to "light tan" coloured sand, although those preferring beaches with no facilities gave a slightly higher score to "white" sand. It may be that beach users preferring undeveloped beaches have a greater desire for the pristine natural environment suggested by white sand. "Grey" and "black" sand colours were low preferences.

Access and Parking

Preferences for road access to the beach/resort showed marked differences according to preferred beach type (Figure 11). For users preferring beaches with no facilities, highest preference was given to access by "a narrow road" with gradation to highest preference for access via a "wide, signposted road" for users preferring beaches at medium/large resorts. Such aspects should be kept in mind by planners when considering beach access improvements. It may be that those preferring undeveloped beaches would not wish to encourage increased beach visitor numbers to such beaches by improvement of access. Such improvement might encourage commercial development and destroy the very environment which they consider attractive. As noted earlier, many beach users stating a preference for undeveloped beaches were actually at other types of beaches at the time of the survey. It is possible that such people had a mental picture of what an undeveloped beach should be like in terms of access and perhaps many other factors, in terms of which access via a wide, signposted road would be incongruous.

User preferences for car park location also differed according to preferred beach type. In this case however, there was one "anomalous" category; those preferring beaches with no facilities. For these users, car parking "over 200 yards away but within ½ mile" (approximately 200m–1 km), was given highest preference and car parking "within 200 yards of the beach" was the lowest preference (Figure 12). For all other user groupings with regard to beach type preference, highest preference was given to car parking within 200m of the beach with little variation according to increasing commercialisation level. Again this is a factor which should be borne in mind by beach managers/planners, especially with regard to undeveloped beaches. Regarding access to the beach from the car park, there was a gradation in highest preference for access to the beach by "a rough path" for those preferring beaches with no facilities, to "a level path" for those preferring beaches at medium/large resorts (Figure 13). There were

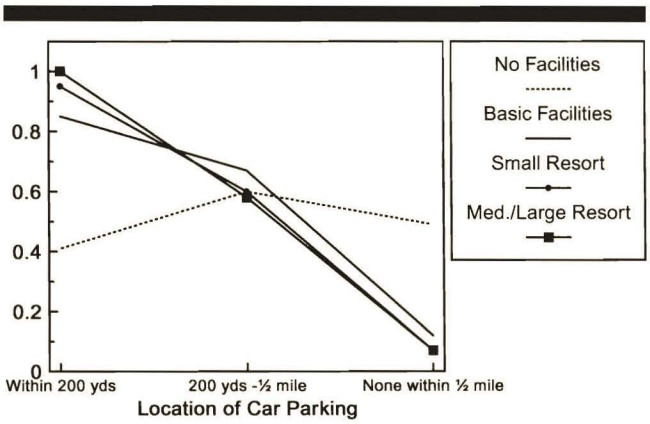

Figure 12. Preference levels for car parking location for each preferred beach type.

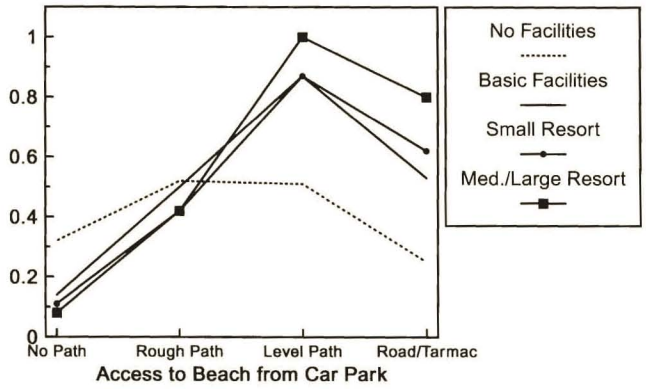

Figure 13. Preference levels for beach access for each preferred beach type.

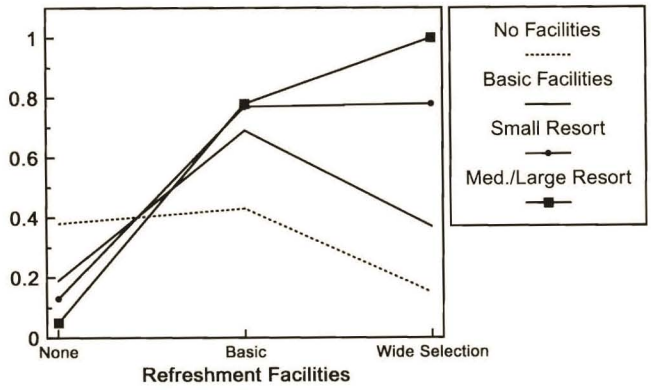

Figure 14. Preference levels for refreshment facilities for each preferred beach type.

corresponding increases in preference for "improved"/engineered beach access (level path/road/tarmac) in parallel with preference for more commercialised beaches. Again, those preferring beaches with no facilities appeared to constitute an "anomalous category" in terms of preference.

Refreshments/Cafes

As might be expected, preference for more comprehensive refreshment facilities increased with preference for visiting more commercialised beaches. Highest preference changed from "basic refreshments" for those preferring beaches with no facilities, to "cafes with a wide selection of food" for those preferring to visit small and medium/large resorts (Figure 14). Although the beach type category "beach with no facilities" implied and also actually specified that no refreshment facilities would be available at such a beach, the data indicated that a large proportion of visitors preferring such beaches would actually like some refreshment provision. Provision of refreshments is one of the most important commercial aspects for the coastal tourist industry, especially for beaches (such as many of those in Wales), depending heavily on day visitors. More detailed investigation of beach users preferences for such provision in terms of number of outlets, type/style of premises, choice, etc., for visitors preferring each beach type is an important requirement for greater understanding of this factor and as a contribution to the beach management/planning process.

Availability of Alcoholic Drinks

Overall, 39% of beach users wanted "a bar or cafe serving alcohol at the beach". However, the percentage varied from 27% for those preferring beaches with no facilities or basic facilities, to 67% for those preferring to visit medium/large resorts (Table 8).

Beach Regulation

For all preferred beach types, highest preference was for water sports to be allowed in one area only. No distinction was made in the questionnaire between motorised water sports (water-skiing, jet-skiing) and others such as surfing, sail-boarding, *etc.*, which are almost silent but could still constitute a hazard to swimmers. Further investigation of this aspect taking account of this possible distinction in user preferences is called for. The restriction of the questionnaire survey to users of the "dry" part of the beach environment effectively excluded most water sport participants from the study. Obviously, the desires of these users of the beach environment need to be investigated and taken into account by beach management when contemplating water sport restrictions. Seventy four point six percent of beach users overall, wanted dogs banned from the beach. This percentage increased from 64% for those preferring beaches with no facilities, to 79% for those preferring small resort beaches. Overall, only 11.3% of beach users wanted vehicles allowed onto the beach.

Potential Value of Beach User Preference/Priority Investigations

More detailed investigations of beach user perceptions, preferences and priorities, particularly with regard to those beach aspects which can be directly influenced by management, could provide a valuable resource for general policy decisions in CZM as pioneered by workers such as JUNYENT *et al.* (1995) and BRETON *et al.* (1996). Studies extended to include other interest groups such as local residents, business owners/managers/franchisees at beaches and other beach users not sampled by a simple beach survey could also be used to support individual management decisions and longer term planning at particular beaches. Surveys of larger samples of

Table 8. *Percentage of beach users wanting alcohol available (for each preferred beach type).*

Preferred Beach Type	Percentage Wanting "a Bar or Cafe Serving Alcohol at the Beach"
No facilities	27
Basic facilities	27
Beach at a small resort	47
Beach at a medium/large resort	67

beach users at an individual beach or number of beaches in a particular area, combined with studies taking into account opinions of other stakeholders could be employed for support of decision making at that particular beach/area. Input from beach users could therefore be "fed back" to the beach environment via management decisions, for the direct benefit of the users themselves. Hence beach users could be engaged in the decision making process as desired by ORBACH (1996), via a system which involved coastal researchers, policy makers and end users. Detailed information on the perceptions, preferences and priorities of visitors to different beaches in an area, of visitors from different areas/countries, and of different social classes, ages, etc., could also be invaluable for tourism promotion agencies.

CONCLUSION

A comprehensive beach user questionnaire was devised and used to determine beach user priorities for 50 beach aspects, as well as preferences for 18 beach aspects where preferred status could not be assumed. Beach users were sampled via the questionnaire at 23 Welsh beaches, generating 859 valid questionnaires. Overall, scenic quality was rated as the most important factor in the beach environment, with those preferring less developed beaches giving higher priority to this aspect. Bathing safety and a range of pollution related factors including bathing water quality, absence of sewage debris, litter and unpleasant odours were also highly prioritised. Various aspects concerning beach facilities were generally allotted a lower priority. Also, preference for the presence of many facilities could not be assumed, as in many cases significant proportions of beach users indicated that specific facilities should not be provided or should be limited in extent.

There were many observed differences in beach user preferences according to the type of beach in terms of commercialisation, the user preferred to visit. A contrast was suggested between those wishing to enjoy the "natural characteristics" of a beach (*e.g.* scenery, absence of pollution in various guises, fauna), and others who preferred traditional "beach resort" qualities (hot, sunny weather, safe bathing, convenient facilities and ease of access). The findings suggested the importance of maintaining high environmental quality at less developed beaches. However, bathing water quality was a relatively high priority for beach users preferring all beach types, emphasising the high level of public concern for this aspect.

Further studies in this field must recognise the shortcomings of questionnaire surveys on beaches, where sampling can be distorted by failure to include appropriate numbers of people involved in water recreation activities. In devising management policies, account also needs to be taken of the views and interests of other stakeholders in the tourist beach environment. However, further studies in the field of beach user perception offer the possibility of providing a valuable resource to help beach managers assess the needs of beach users, assist management in providing an improved service to tourists and help tourist authorities to promote their beaches to existing and desired future potential users.

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