Loch Bracadale

Aquaculture Framework Plan

October 2002

The Highland Council
Comhairle na Gaidhealtachd
SERVING The Highland Community

Produced by The Planning and Development Service,
The Highland Council

FOREWORD

Fish Farming Framework Plans were introduced by the former Highland Regional Council in the late 1980's as a key part of its development and control strategy for aquaculture. Their purpose is to guide aquaculture development to appropriate locations and to help minimise conflicts of interest. The Bracadale plan is one of a second generation of aquaculture plans designed by the Highland Council for the current decade. Like its predecessors, the plan's status is at present advisory rather than statutory. However, the Crown Estate's planning role is in the process of being transferred to local authorities. Marine aquaculture installations are therefore likely to come within the scope of statutory planning control during the anticipated lifetime of this plan.

Another key change is that the EU's Environmental Assessment regulations, updated in March 1999, now embrace aquaculture developments to a much greater extent than before. The plan can help guide prospective developers who are required to submit EA's as to the specific issues which their assessments should address. Although at the time of writing shellfish farming was exempt from EA regulations, larger scale installations may come within the scope of the legislation within the lifetime of the plan.

As the drive towards sustainable use of inshore waters gathers momentum, aquaculture framework plans should be seen as one component of an increasingly comprehensive and integrated coastal planning system. This system will ultimately also embrace area access agreements for inshore fishing and seabed harvesting, management plans for marine nature reserves, the coastal policy elements of Local Plans and Structure Plans, and coastal zone management (CZM) strategies at sub-regional level and above.

This document has been prepared after consultation with a wide range of interestests (see Appendix 3). A full report of the public consultation on the draft plan has also been prepared, copies of which can be obtained from the Planning and Development Service. The Framework Plan now supplements the statutory guidance for the terrestrial area contained in the Highland Structure Plan (2001) and the Skye and Lochalsh Local Plan (1999). Collectively these form the policy background against which the Council will assess all aquaculture proposals in Loch Bracadale.

To help ensure that the Framework Plan remains responsive to changing circumstances the Council will monitor the Plan's progress and update as necessary.

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Cover Photo: Harlosh Island from Harlosh Point

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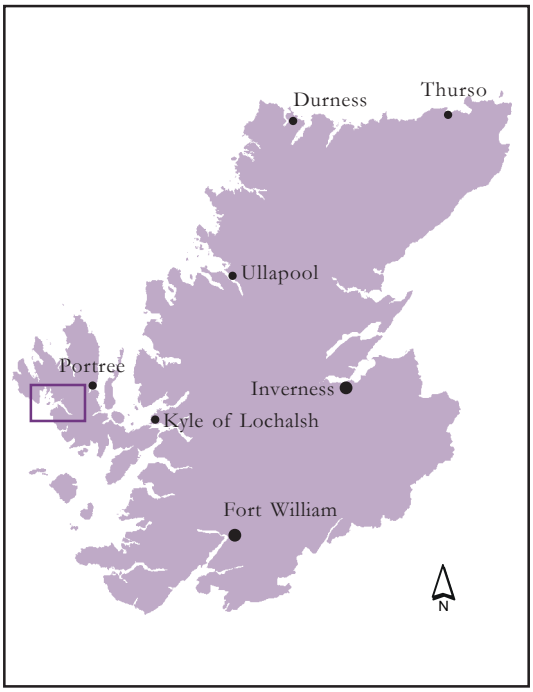
Introduction

❖ Why produce a plan for Loch Bracadale?

1. Loch Bracadale and its associated inner lochs - Harport, Vatten, Caroy, Bharcasaig, na Faolinn and Loch Beag - form one of the largest areas of semi-enclosed inshore waters around the Skye coast. It is an area with a distinctive and varied scenic character. Because of its breadth and open-ness to the southwest, much of it is exposed to the prevailing wind. However, it has various sheltered niches in its inner parts which have good aquaculture potential. It is the area of Skye's inshore waters which has seen the most pressure for new aquaculture developments in recent years, and although the installations are not extensive this has sometimes been controversial because of the range of other interests here. The coastal scenery in particular and also the varied wildlife of the area attracts both tourists and residents. There is therefore a need to ensure that in encouraging aquaculture development these qualities are not compromised and the interests of others, such as fishermen, local residents, and recreational users of the area, are taken into account.

Figure 1: Location of Framework Plan Area



2. Aquaculture generates a significant number of jobs in this area and is one of the main local sources of employment as detailed in paragraph 19 below. The sustainable development of this sector is important in light of the limited range of alternative employment opportunities available. Effective strategic guidance is one of the keys to this sustainable development. There is pressure to expand and diversify existing salmon farms and to accommodate new shellfish farms. There may also be demand for new finfish sites to take advantage of new technology which can make more exposed sites viable. These development scenarios have to be weighed against the conservation value of the loch.

3. The loch has no statutory designations at present. However, it is regarded as an area of high scenic value and is identified as part of a proposed Area of Great Landscape Value (AGLV) in the Highland Structure Plan. Its landscape types range from dramatic headlands to small, intimate sandy bays and there are good panoramic sea views from various points. It is therefore a popular stopping point for tourists seeking short coastal walks. Numerous important habitats and species have been identified which are recognised at a national level as being important. The loch also has inshore fishing throughout much of its area, and a limited amount of game fishing on the Rivers Ose and Drynoch.

❖ Planning Policy Background

4. The 1999 national planning guidance for marine fish farms classifies the Scottish coast into three basic categories according to their perceived sensitivity to new or expanded aquaculture developments. This classification takes into account the present level of aquaculture development, the natural flushing characteristics of individual sea lochs, and wider environmental considerations. Category 1 is the highest sensitivity rating and has been applied to only a few small and already heavily developed sea lochs in Highland. Most of the sea lochs on the mainland west coast which have a significant aquaculture presence are classed as Category 2. The remainder of the coast, including Loch Bracadale is classed as Category 3. Such areas are defined as those "where there appear to be better prospects of satisfying environmental requirements, although the detailed circumstances will always need to be examined carefully." Indeed, the national guidance acknowledges that within this broad classification there may be local areas of higher sensitivity. Framework plans such as this one help to provide this local level of detail.

5. Environmental Impact Assessments (EIA) are now required under European law for virtually all proposals for new finfish farms and for significant modifications to existing ones. As yet however this

provision does not apply to shellfish farms. The national planning guidance states that in Category 3 areas "all proposals will be subject to the normal screening procedures provided for in the EIA regulations". More detail on the national policy categories and thresholds for environmental assessment is given in Appendix 4.

6. The coastal area around Skye and the adjacent mainland was the subject of a pilot Coastal Zone Management study by the Council in the 1990's and a report was published in 1998. This provided the basis for a multi-sectoral strategy at regional or sub-regional level which could be taken forward in the future as a partnership exercise. The first of its kind in Highland, this exploratory exercise was prompted by the growing pressure on inshore waters from an increasing range of interests, including aquaculture.

7. The Framework Plan for Loch Bracadale is more local and specialised in focus and provides supplementary guidance to the Skye & Lochalsh Local Plan, adopted by the Council in March 1999. Overall, the Local Plan seeks to maximise the economic benefit derived from the environment of Skye & Lochalsh without compromising its quality. It identifies the need for improved piers at Caroy and Struan and a generally improved tourism infrastructure. It also identifies Pool Roag and the Harlosh reedbed as Local Nature Conservation Areas.

OBJECTIVES

8. The objectives of the framework plan for Loch Bracadale are to:

- identify opportunities for aquaculture development compatible with other interests;
- safeguard the natural heritage interest of the area - its scenic qualities, key wildlife habitats and species;
- raise public awareness of the multi-faceted resources of Loch Bracadale and its environs;
- identify infrastructure needs to support the sustainable development of aquaculture;
- maximise the general economic and recreational value of the loch

Figure 2: Finfish cages - Rubha Ban, Loch Harport

FEATURES OF THE LOCH BRACADALE AREA

❖ Topographic setting

9. The setting of Loch Bracadale is characterised by high headlands in its outer reaches, a prominent group of islands in the centre, and a series of lower-lying peninsulas and inlets in its inner areas. Although crofting settlements overlook much of the loch, the coastline is mainly rocky and the loch is surrounded by mainly rugged terrain. In some respects it is more akin to the voes of the Northern Isles than the sea lochs of the mainland. However, the surrounding topography is diverse and the loch is framed between the distinctive forms of the Minginish Hills to the southeast and Macleod's Tables to the northwest.

10. For the purposes of description, the loch can be divided into three broad areas: the more sheltered and populated southern part, which includes Loch Harport and the coast around Fiskavaig and Portnalong; the central part between Ullinish and Harlosh Point; and the western part of Loch Bracadale - from Loch Vatten round to Idrigill Point. In the south, the more enclosed and linear Loch Harport contrasts with the other inlets of Loch Bracadale and is only inhabited on its south side. West of Ardtreck Point the southern coastline becomes more exposed and there are steep cliffs between Fiskavaig and the southern plan boundary at Rubha nan Clach.

11. The central part of the loch is characterised by rocky peninsulas, islands and various skerries. This area receives full exposure to the southwesterly winds

which arrive across a large fetch from the Sea of the Hebrides and northwest Ireland. A number of small crofting townships are spread along the coast here but the islands are uninhabited.

12. The area between Harlosh and Idrigill Point is similarly exposed to the south rather than the southwesterly winds but in its outer reaches near Idrigill it is open to the north and easterly winds also. The coastline south of Loch Bharcasaig is uninhabited and dominated by a dramatic cliff edge that includes sea stacks, caves and a natural arch. This is in contrast to the inner areas which include the low peninsula of Roag Island and a number of small shallow inlets and skerries.

❖ Settlements and Access

13. The Loch Bracadale area has the largest concentration of population on Skye's west coast which mostly tends to be thinly populated because of its exposure and remoteness. The plan area has a population of around 900, mainly concentrated in the villages of Carbost, Fiskavaig, Portnalong, and Struan. However this figure will increase in the tourist season as the 1991 Census indicates that 21% of the houses in this part of Skye were second or holiday homes. Employment in Skye is generally dominated by the service sector and particularly by tourism-related businesses such as hotels, restaurants and visitor attractions.

14. The A863 skirts the east side of the loch and is the area's main transport artery, linking it to the rest of Skye and the mainland. Local township roads such as the B8009 in turn connect the coastal settlements to the main road. Local aquaculture operators rely on these small roads for day-to-day servicing needs, however they tend to be narrow and mainly single track. Both the operators and the Council recognise that this is a significant constraint on the size of fish farm operations and this situation has encouraged investment in new, high-capacity feed barges which can be periodically restocked by boats working from further afield.

❖ Hydrography

15. Loch Bracadale is a broad and mainly open loch, with a wide entrance to the southwest. It is quite a large system (about 60 square kilometres in surface area at high tide), and complex in form though it has no pronounced sills. The main peninsulas and islands divide it into three main basins: Loch Harport and the channel between Oronsay and Ardtreck, Loch Caroy, and the area west of Harlosh. These are shown in cross section in the bathymetric profiles overleaf. The maximum depth of 65m is found near the mouth of the loch between Idrigill Point and the island of Wiay.

16. Water circulation in the loch is generally good due to the lack of sills but the exposure factor means that development opportunities for aquaculture tend to be restricted to the more sheltered inner reaches. Loch Harport contains the most sheltered sites, with limited protection being afforded elsewhere in Loch Bracadale on account of the southwest orientation of Lochs Caroy and Vatten.

Figure 3: Head of Loch Harport

Figure 4: Hydrography of Framework Plan Area showing lines of hydrographic profile

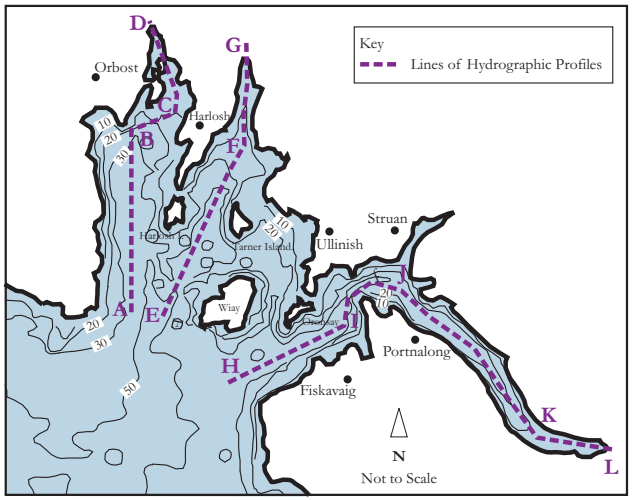
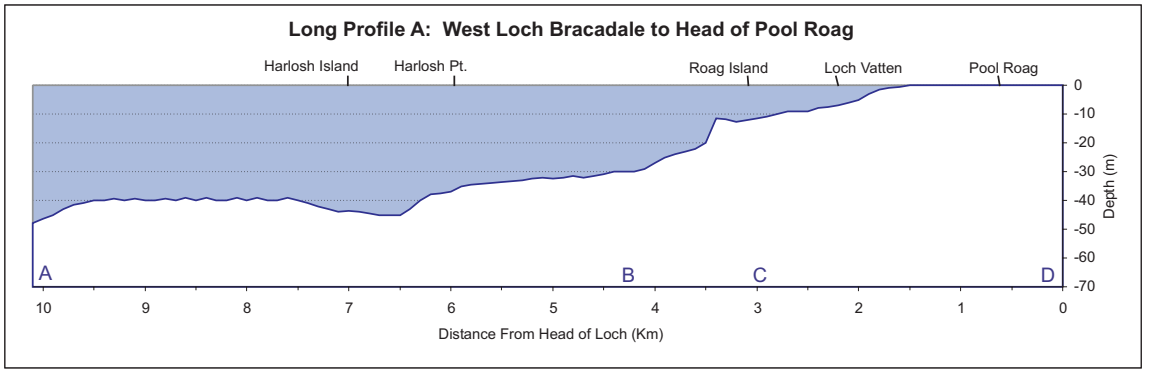
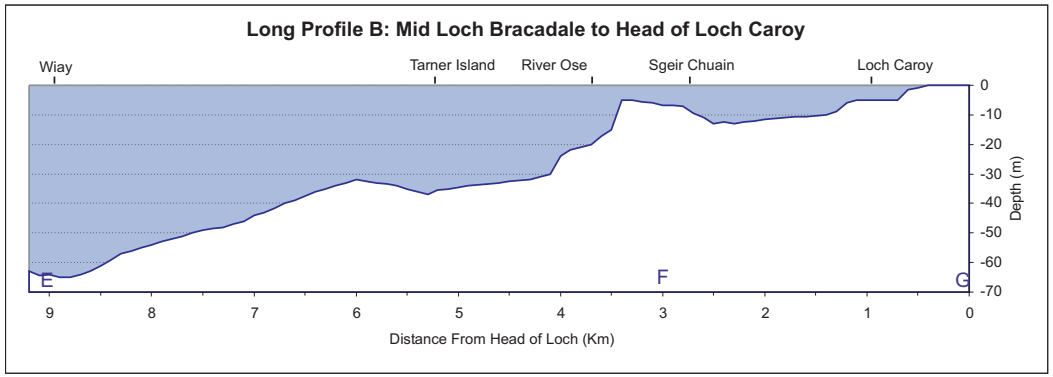


Figure 5: Hydrographic Long Profiles of Loch Bracadale





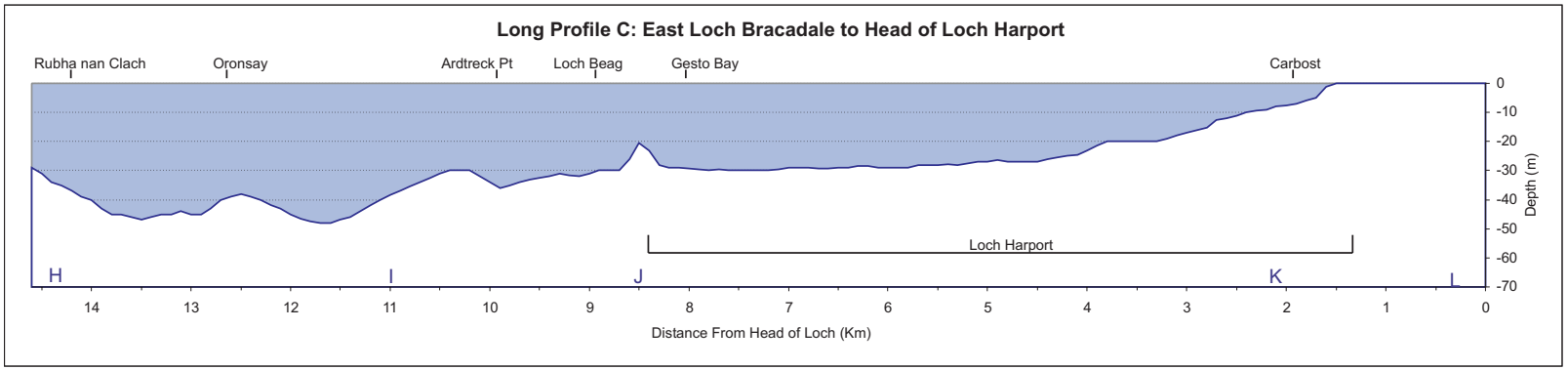
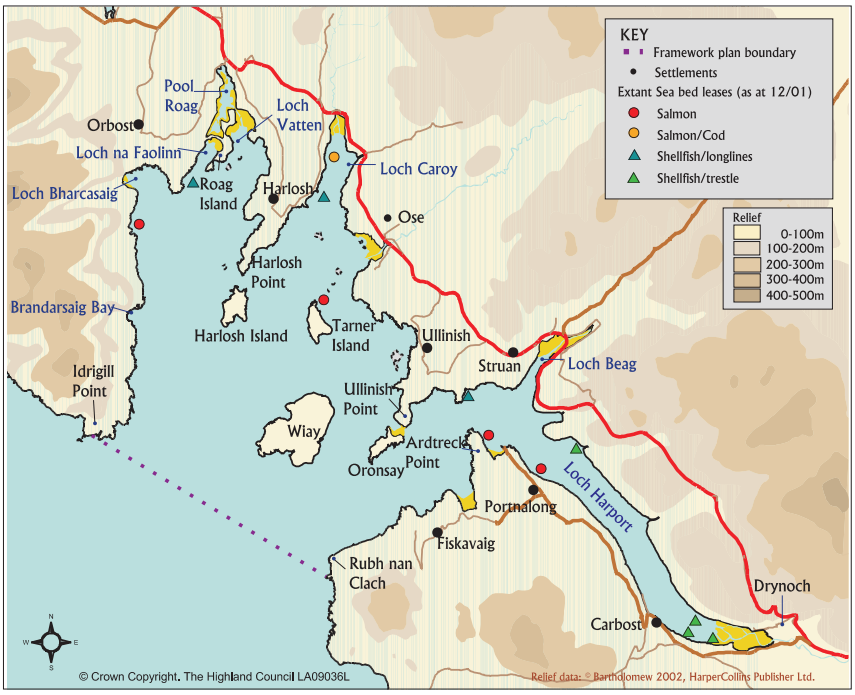


Figure 6: Extant sea bed leases



SCALE OF AQUACULTURE DEVELOPMENT AND POTENTIAL

❖ Present level of development

17. Twelve sites were leased for aquaculture in the plan area at the time of writing: five for finfish farms, three for shellfish farms using longlines, and four for growing oysters and clams using trestles. The majority of these have gear on site. The positions of the leased areas are shown on the accompanying policy map and the permitted gear for each is summarised in Appendix 1. The farms are all located towards the loch's inner reaches, exploiting the combination of shelter, reasonable water circulation and accessibility.

Finfish Farming

18. The finfish sites are operated by three companies and employ approximately 29 full time employees. At December 2001 the total consented biomass in the plan area was 3374 tonnes for salmon and 25 tonnes for cod per annum. The two main operators work from shorebases at Harlosh and Ardtreck. The Harlosh base manages the sites in west Loch Bracadale and at Tarner Island. The Ardtreck base manages the sites at the mouth of Loch Harport. There is a smaller operation in Loch Caroy which has been experimenting with cod, though production on a commercial basis has yet to begin.

Shellfish Farming

19. Loch Bracadale has three sites leased for growing oysters and clams using trestles in the intertidal area. These are located on the east side and in the inner reaches of Loch Harport. Three areas are also leased for mussel longline culture at the time of writing - at Bracadale Point, Loch Caroy, and Meall Greepa. Most of the holders of shellfish leases in the plan area are based in Skye.

20. The longline sites use double headed lines supported by rows of purpose-made floats. Mussel spat is collected by allowing natural settlement onto pegged dropper ropes and when the mussels reach market size they are harvested and cleaned on the loch before being transported to the shore for depuration.

❖ Future prospects for Aquaculture Development

21. From a broad coastal management perspective the most suitable and generally acceptable sites in the area for large-scale aquaculture operations with current technology have now been taken up and in terms of compatibility with other interests are fully developed. Proposals for further expansion of the main sites are therefore unlikely to be favoured. The main opportunities in the Loch Bracadale area are

therefore for small, discreet installations or for innovative technical solutions which can overcome the main constraints on development. These constraints are exposure to the prevailing southwest winds and landscape/amenity considerations in an area which is valued for its seaward views. Other activities in the loch such as its use for commercial fishing and recreation and navigation may also constrain aquaculture development.

22. The proximity of any proposed aquaculture development to other existing leases also has to be taken in to consideration. In order to guide developers and regulators in this regard the Crown Estate has produced indicative guidance on the minimum separation distances that should exist between aquaculture installations. This guidance was developed in the late 1980's and was included in the Scottish Executive's national planning guidance for marine fish farms published in 1999. The guidance provides for an indicative separation distance of 8km between finfish farms. Between a finfish farm and a shellfish farm the separation distance is 3km and between two shellfish farms 1.5km. The guidance advises that closer siting may be possible between small scale farms and in large loch systems or open water.

23. Advances in technology such as more robust gear and automated feeding systems could, within the lifetime of this plan, make it feasible to moor cages at more exposed and isolated locations. This could open up new sites for the industry and also improve the economic viability of servicing the sites by sea, but could also conflict with the area's landscape and fishing interests. Particular care would be required in locating such developments, in minimising the amount and visual impact of surface gear, and in the specification and positioning of navigation markers. Amenity issues associated with the use of automated feeders such as visual and noise impacts would also need to be taken in to consideration. Further information and advice on cage installations may be found in the SNH publication ' Marine Aquaculture and the Landscape :the siting and design of marine aquaculture developments in the landscape' (SNH 2000). Some operators elsewhere in Scotland are already using land-based tanks at coastal locations, and this is an aspect the industry could further develop. Such developments would, however come under the control of the statutory planning system. It is also likely that it would be more economically viable to site tank-based installations closer to the main markets.

Figure 7: Shellfish longlines - Loch Caroy

24. After many years of dependence on salmon, there is increasing interest in farming alternative finfish species such as cod, halibut and haddock. New species do however present new challenges for the industry and one of the main hurdles to be overcome is sourcing the supply of juvenile fish to stock sea cages for ongrowing. Each species also has its own specific equipment requirements. The site and gear requirements for cod are similar to that of salmon although it is unlikely that cod will be able to tolerate some of the more exposed sites. However halibut farming requires considerably more shelter and could be more difficult to accommodate in this area. This is due to the fact that as flat fish, halibut spend considerable periods on the floor of the cages which makes them prone to abrasion if there is too much swell. Also, as with salmon, potential interactions with wild sea fish stocks have to be taken into account if new species are to be farmed. This is particularly important as sea lochs are important nursery areas for juvenile wild fish stocks.

25. In the future it may become viable to farm other marine species in the Highland sea lochs. To this end the Council has helped to fund a number of projects in recent years aimed at determining the feasibility of farming new species and the techniques that would be required. Species include haddock, lumpsuckers, abalone and the green sea urchin *Psammechinus miliaris*. A continental and far eastern market exists for the mature roe of this species and it has the potential to be cultivated in trays or lantern nets suspended on subsurface longlines and may prove to be an important aquaculture species in the future. The use of subsurface longlines would also result in reduced surface gear and therefore less visual impact.

26. Interest is also increasing in the potential for polyculture. This might involve growing a species

such as mussels or certain seaweeds on the same site as finfish. The main argument for this type of aquaculture is that one species may have the potential to use some of the waste nutrients produced by the other, leading to less dissolved organic matter entering the water column. At the time of writing the Council is part-funding research into finfish/seaweed polyculture. The future introduction of such techniques on a commercial scale would require changes in legislation and indicative separation distances to allow more than one species to be grown on a site.

27. To date, no empirical research has been carried out in the Loch Bracadale area to establish its biological carrying capacity for finfish or shellfish aquaculture and the Council does not have the resources or modelling capability to estimate this. In the absence of such information the Council considers it prudent to take a cautious approach in relation to developing new sites to ensure that as far as possible the biological carrying capacity of the loch is not exceeded and fish health and growth rates are maintained. In the absence of empirical data modelling work by SEPA is used to determine the maximum permissible biomass on a site-by-site basis.

PLANNING ISSUES

❖ Economic Development

28. In population terms, Skye has been one of the fastest growing areas in Highland due to in-migration and this growth is forecast to continue. However, the main flow of in-migrants involves people in the later stages of their working lives or at retirement age. Skye's peripheral location also means that the local economy has to cope with distance from markets, relatively high transport costs, and a more limited range of development options than other more populated parts of Scotland. Unemployment, in line, with the rest of Highland has been declining since 1993 but shows a seasonal trend which reflects the area's dependence on tourism-related industries.

29. Decline in the value of sheep and beef in recent years has underlined the importance of aquaculture as an alternative or supplementary source of employment in coastal areas. For example, in 2001 , seven of the eight employees on the Loch Harport salmon farm were crofters. Such employment helps to sustain remote settlements and services which otherwise might be on the margin of viability. Downstream jobs generated by aquaculture, such as those in processing, cage manufacture and site maintenance, are also important to remote areas. The development of aquaculture is therefore a useful buttress for the rural economy and a source of jobs which can help attract or hold younger people in the area. However, to deliver maximum benefit, aquaculture also needs to be environmentally sustainable and in reasonable harmony with other interests in the area.

Figure 8: Wiay Island and Macleod's Tables

30. The purchase of the Orbost Estate by HIE in conjunction with Skye & Lochalsh Enterprise in 1997 was part of an initiative to broaden the base of Skye's economy. The aim here has been "to encourage rural resettlement which would act as an innovative model for the sustainable development of rural communities in the Highlands & Islands in the 21st Century". It is hoped this can be achieved through a phased development comprising small business creation and new housing.

❖ Landscape and visual amenity

31. Loch Bracadale has a landscape character which sets it apart from most others on the Highland west coast. It does not conform to the usual linear pattern of sea lochs other than in its subsidiary inlet of Loch Harport. The main loch is broad with an open outlook to seaward and different types of topography on all three sides. Also, unlike the other sea lochs on the west coast of Skye, it does not broaden progressively towards the sea. Its widest point is well inside the mouth of the loch. This combined with the fact that the terrain near the mouth of the loch is higher and more rugged than that around its inner reaches adds to the sense of broad enclosure. The various subsidiary inlets and headlands in its inner reaches also give it intimacy and a variety of perspectives. The islands add interest and character to the seaward views and the surrounding flat-topped hills and bands of cliffs are distinctive to western Skye because of its geology.

32. The loch is most often viewed from the east, by travellers on the main road between Dunvegan and Glen Drynoch. This road gives a range of good sea views which tend to emphasise the loch's complexity, with the eye being drawn to the various headlands, islands and skerries. However the headlands, which are mainly accessible only by foot, provide good viewpoints in themselves, allowing closer inspection of the islands and other coastal features.

33. Crofting townships are scattered along the coast and many houses have clear views of the water. Proposals for new aquaculture development which encroach on these views may sometimes therefore encounter local opposition. In landscape terms the best and most discreet sites for surface aquaculture installations are now occupied and if new sites are to be developed there will be greater constraints on their location. The challenge will be to design installations which are in harmony with the landscape qualities of the area.

34. Marine litter also impacts on visual amenity and local concerns have been expressed with regard to longline buoys, ropes, oil drums and pallets washing ashore. A significant proportion of this waste has been aquaculture-related. Operators should ensure that their sites are regularly inspected and properly maintained to prevent floatation from breaking off. They should also make proper provision for the disposal or recycling of waste packaging.

❖ Inshore fishing

35. Loch Bracadale is used extensively by a mainly local fishing fleet, with a minimum of seven active boats. These are based at Carbost and Struan, where local fishermen have formed the Struan Jetty Users Association which owns Struan jetty and holds a small works licence. The prevailing weather tends to dictate the areas fished, and in the winter months particularly,

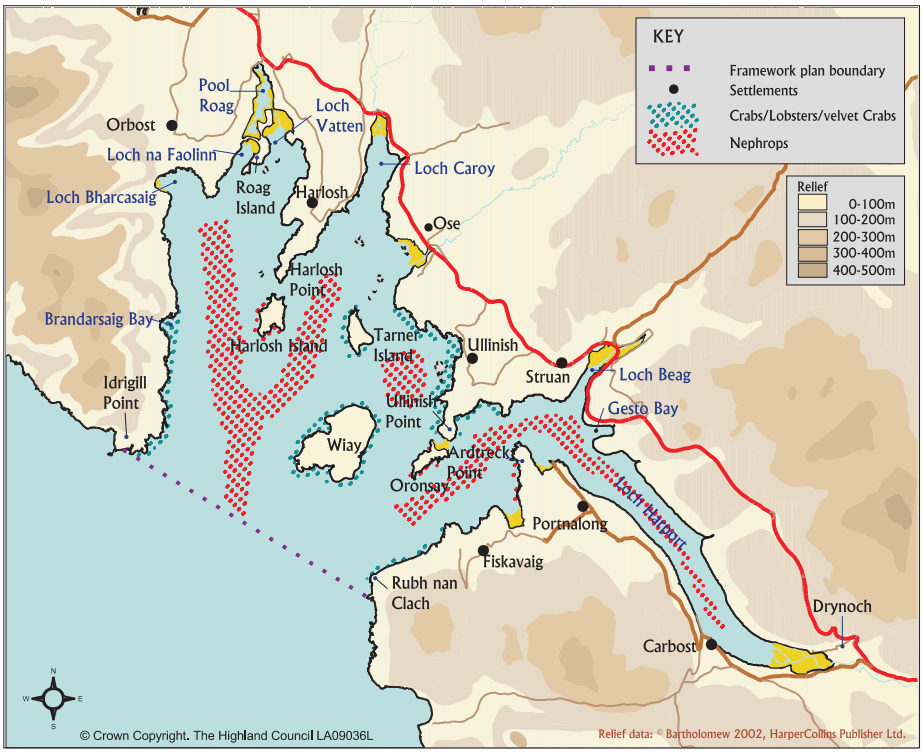


Figure 9: Main fishing areas

activity is restricted to the inner areas of the loch. Figure 9 indicates the areas of the loch which local fishermen regard as most important for their activity. In line with the general trend within the UK there has been a decline in the number and variety of fish caught in the loch in recent years.

36. The exposed rocky coastlines are targeted for lobsters, squat lobsters, brown crabs and velvet crabs. In the muddy basins whelks and nephrops are captured using creels. Scallop divers and dredgers also work in the loch on occasions. The catch is transported to locations such as Broadford or the crab processing plant at Eabost. Opposition to some of the more recent applications for seabed leases for shellfish farming indicates growing competition for space in the loch between aquaculture interests and inshore fisherman. However, in area terms the take up by aquaculture developments is still as yet relatively small.

❖ Nature conservation

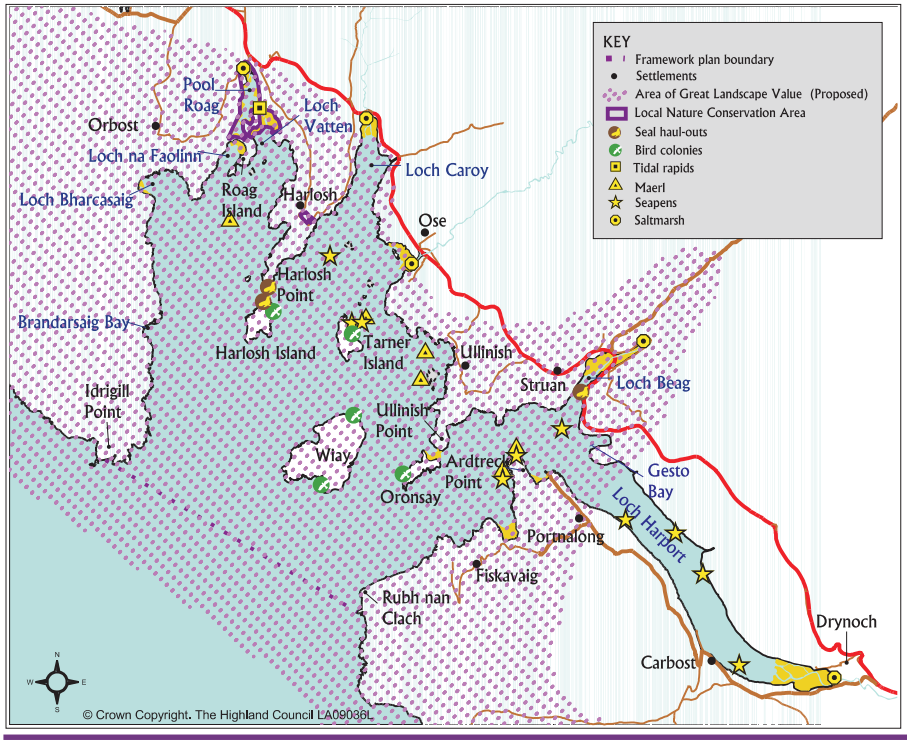
37. The size and diversity of the Loch Bracadale area makes for a rich variety of wildlife habitats and species - both in the marine environment itself and adjacent to the loch. The marine habitats range from those in the outer area characteristic of a high level of wave exposure to those in the sheltered inner areas which are more typical of low energy environments.

38. Surveys of the loch by the Marine Nature Conservation Review indicated the presence of a number of habitats and species listed in the UK Biodiversity Action Plan, these are shown in Figure 10 and detailled in appendix 5 Mearl a type of corraline algae which is also listed in the EC Habitats and Species Directive, was found at several locations in the inner loch, including the mouth of Loch Harport. It is fairly scattered though some areas may be of sufficient depth to qualify as 'beds'.

39. The sheltered waters of Loch Harport contain mud habitats in some of the deeper areas. These are characterised by the presence of species such as sea pen (delicate colonial animals related to anemones), particularly *Virgularia mirabilis* and the phosphorescent sea pen *Pennatula phosphorea*. These species favour areas of soft mud and muddy sand with low water movement. As the level of water movement increases, deep water mud habitats may give way to sublittoral sand and gravel habitats. These extend through the inner Loch Bracadale area and into the mouth of Loch Harport.

40. Lagoon and tidal rapid habitats are also found in the loch. The shores of Pool Roag, a long narrow lagoon connected to Loch Vatten by a tidal rapid, are dominated by fucoid seaweeds (wracks). Of particular interest here is a variation of the knotted or egg wrack *Ascophyllum nodosum*. In particular conditions of extreme shelter and regularly fluctuating salinity, detached fragments of this species can grow into unattached masses at upper or mid-tide levels - the variant ecad *mackaii*. The main British (and world) populations of this are confined to extremely sheltered shores in Scottish sea lochs. *Ascophyllum nodosum* ecad. *mackaii* is a Biodiversity Action Plan (BAP) species. The tidal rapid supports a typical community with encrusting coralline red algae, sponges, hydroids and bryozoans. Saltmarshes are present at the heads of Loch Beag, Loch Caroy, Loch Harport and Pool Roag, with the latter two being the most sizeable. Care needs to be taken to protect these habitats and species when any development proposals are being considered.

Figure 10: Landscape and nature conservation designations



41. The Skye and Lochalsh Local Plan identifies Pool Roag and Harlosh Reed Bed as Local Nature Conservation areas. As such these can be described as areas in which the Council will have specific regard to the nature conservation value when considering proposals for development or interpretation.

42. The four main islands in Loch Bracadale are uninhabited, providing havens for wildlife, particularly seals, otters and birds. Wiay and Tarner Island in particular have large seabird colonies of Shag, Fulmar and Black Guillemot. There is also a breeding pair of 'Schedule 1' birds present in the area.

43. Many areas around the loch are likely to be used regularly by otters as breeding and feeding grounds, especially where there are shallow waters with beds of kelp, such as around the islands. Otter breeding holts are sensitive to disturbance. Potential impacts on otters should therefore be taken into account in any development proposals for the loch. Otters are a protected species under the EC Habitats Directive, wherever they occur. However they are often sighted in close proximity to feed barges, cages and shellfish longlines in other sea lochs and are apparently able to adapt to the presence of such installations.

44. The Sea Mammal Research Unit recorded about 100 Common Seals at various haul-outs throughout Loch Bracadale in 1992. These represented approximately 3.5% of the regional total and were concentrated mainly around the islands in the loch. Future development of aquaculture should take into account the presence of seals and locate well away from their haul outs. The preferred means of preventing fish losses as a result of seal predation would be to use tensioned cage netting, or additional anti-predator netting. Acoustic seal scarers are also available but SNH advise that these should only be used as part of an anti-predator strategy, providing that the source power level does not exceed 150 decibels. There is however, increasing concern and scientific evidence to suggest that acoustic scarers may have an adverse effect on non-target species such as dolphins and porpoises. Although the option of shooting rogue seals may be available to the fish farmer this should only be used as a last resort.

❖ Water quality

45. All aquaculture activities rely on high water quality and a certain amount of water movement. In the case of shellfish longline culture, water movement is necessary to supply planktonic feed to the culture site. For finfish farming, water movement is necessary to ensure adequate flushing.

46. Because much of Loch Bracadale is quite exposed and there are no significant sills to impede tidal flow, the water quality overall is generally good. Local fishermen have expressed concern from time to time that discharges from fish farms have an adverse impact on inshore fisheries in the vicinity of the installations. The Council is not in a position to refute or substantiate this claim. There has been a decline in inshore fisheries in general in recent years for a number of reasons and there may be localised effects close to fish farms. However, considering the overall size of the loch, the area devoted to aquaculture development is likely to remain relatively small, and with good separation between operations any impact should be minimal.

Figure 11: Tarner Island

47. At the time of writing Scottish Water have consents for three wastewater discharges into the loch: at Carbost, Portnalong and Struan. Given the number of leases in Loch Harport, particularly shellfish, any proposed increase in, or intensification of these discharges would need to be carefully assessed. Water quality within Loch Harport may be improved in the future by planned improvements to the discharge at Carbost which may also see additional areas being connected to mains sewerage. There are also a number of individual private discharges into the marine environment the most significant of which is probably the Talisker Distillery at Carbost. It is important that the location of these discharges is taken into account in any detailed site selection process.

48. Live shellfish for market must by law meet strict criteria in terms of hygiene. For this purpose shellfish harvesting areas are classified according to the presence in the water and shellfish samples of certain

types of bacteria. Harvesting classifications are species and area-specific and in Highland are usually classified as 'A' or 'B' grade. Shellfish landed from 'A' classification areas can go direct to market for human consumption - there is no legal requirement for any processing other than washing providing that shellfish placed on the market conform to the published end product standards. When the classification is 'B', shellfish must be either depurated, heat treated, or re-laid in an 'A' class area to meet the category 'A' requirements and end product standards. These classifications are subject to ongoing monitoring carried out by the Food Standards Agency Scotland (FSAS) and are published, and subject to change annually.

49. In addition to the statutory requirements, volume buyers of farmed shellfish may require other criteria to be met. For example, they may request that mussels are depurated year-round to ensure a high quality product reaches the market place. They may also stipulate that mussels should not be supplied during periods in which fish medicines have been used on nearby finfish sites. It is not therefore in the interests of the shellfish farming industry to be in close proximity to finfish farms and this serves to illustrate the importance of effective separation distances as outlined in paragraph 23. This is an issue which the industry and regulators will need to discuss and research further if the polyculture of shellfish on finfish sites is to be feasible.

50. Shellfish production can be affected by the presence in the water column of certain harmful but naturally occurring algae. When these algae occur in high concentrations they can cause the accumulation of toxic compounds within filter-feeding bivalves. This can lead to fisheries and aquaculture operations being temporarily closed on public health grounds. Closures of this nature for Diarrhetic Shellfish Poisoning (DSP), Paralytic Shellfish Poisoning (PSP) and Amnesic Shellfish Poisoning (ASP) are not uncommon in Scottish waters during summer months. Monitoring for toxins in shellfish and for the specific algae causing them is the responsibility of FSAS who subcontract this work to Marine Lab Aberdeen. In the event that elevated toxin levels are detected by the monitoring programme a closure on food safety grounds may be necessary. FSAS contacts the Highland Council Protective Services Officer for the area who then has responsibility for informing the grower or harvester of the closure, and putting up posters to inform the general public.

51. Finfish production may also be adversely effected by algal blooms. Certain species of algae may cause damage to the gills of fish which results in fish mortalities in the worst cases. Fish are also susceptible to blooms of zooplankton, such as juvenile jellyfish.

Figure 12: Loch Bharcasaig

❖ Recreation and tourism

52. Much of the Loch Bracadale area is visible from the west coast route to and from Dunvegan and its castle so it sees many passing visitors (almost 100,000 people visited the castle in 2000 for example). Talisker Distillery at Carbost also attracts many tourists (40,000 a year at a recent count). Some visitors may stop only briefly at roadside viewpoints (e.g. above Struan) to take photographs and enjoy the seaward views, while others stay longer to explore some of the side roads or picnic by the shore. However the loch is also visited in its own right by both tourists and Skye residents who are attracted by its possibilities for coastal walks, yachting, canoeing, and diving. Wildlife watching is often an integral part of these activities. Carbost, Fiskavaig and Portnalong are popular places for overnight stops and provide bases for exploration of the area.

53. Popular short walks include the route from Ullinish out to the island of Oronsay, and from Ardmore out to Harlosh Point. Also popular is the longer and more challenging route from Orbost out to Idrigill Point and MacLeod's Maidens. Whilst the first part of the walk out towards Idrigill Point is within a conifer plantation, there are good views across the loch from further along. The sheltered and attractive inlet of Loch Bharcasaig is also popular as a picnic spot. In addition, there is a circular walk from Sumardale to Inver Meadale which takes in part of the north side of Loch Harport.

54. Loch Bracadale's exposure to the prevailing southwesterly winds tends to limit its potential for watersports. However, yachts can find a good sheltered anchorage at Carbost and to a lesser extent at Struan. There is also an important refuge anchorage at Bharcasaig Bay. As these refuges may be needed in conditions of poor weather and limited visibility it is important that all aquaculture installations on the approaches to these anchorages and in proximity to the navigational channels are appropriately marked with illuminated navigation buoys.

55. The islands and inlets of Loch Bracadale lend themselves to short excursions by sea kayak, especially when sea conditions preclude visits to the more open coastline of western Skye. Walkers and climbers, who are frequently diverted from the Cuillins by low cloud conditions, also value this area as an alternative for low-level walks.

56. The main recreational diving interest tends to be in more exposed locations in the loch, e.g. around the southwest end of Wiay, near Idrigill, and southwest of Harlosh point, so this activity also tends to be very weather-dependent. The quality of diving in the outer and western part of the loch (and just outside the loch at An Dubh Sgeir) is however sufficient to attract parties of divers to the area from time to time, mainly from the diving centre in Waternish. This type of activity could become more popular in Loch Bracadale if the currently substandard slip at Balmore near Harlosh were to be upgraded.

❖ Infrastructure

Roads

57. The Loch Bracadale area is served by a network of minor roads which connect the area's crofting townships to the A863. Access to landing facilities for all the aquaculture sites rely on these minor roads, the majority of which are single track and therefore tend to be narrow and unsuited to large loads. Loch Harport and the southern half of Loch Bracadale is served by the B8009 which is a single-track road, narrow in places and with some sharp bends. This has led the fish farm operator to opt for an automated feeding system, with sea servicing from Kyle and Kishorn.

58. Western areas of Loch Bracadale are served by two minor loop roads, one of which links Harlosh to the A863 and another which links Orbost and Ardroag to this main road. The Harlosh road is single track throughout and in places substandard relative to the demands put on it. This road is vital for servicing the finfish farm sites in this part of the loch system. The expansion of the Harlosh-based finfish farming operations in recent years has led to the planning consent for the shore base stipulating a maximum of

Figure 13: Fishfarm pontoon jetty - Ardtreck

three lorries per week with maximum gross vehicle weight not exceeding 15 tons. This was to due to concern at the risk of damage to the road from large loads and lack of Council resources for upgrading. A sea-serviced, automated feedbarge has been installed on the west Loch Bracadale site to overcome this difficulty.

59. Given the poor quality of road access to the shore bases in the area, the Council would regard servicing by sea as a pre-requisite to consideration of any proposal for expansion of finfish farming in the plan area. This would include smolt and feed deliveries as well as harvesting. However, feed supply by sea involves the use of automated feed barges and feeding systems which may sometimes have adverse effects in terms of visual and noise impact. These effects may be mitigated to a certain extent through good design the use of sympathetic colour schemes and silenced plant. For a given level of production, more efficient feeding systems have the potential to reduce the amount of waste feed entering the environment.

Landing Facilities

60. Landing facilities within the plan area vary greatly in quality with the better examples tending to be dominated by existing aquaculture operations. All three finfish operators have their own slip or jetty for servicing their sites - at Camas Bàn near Harlosh, Feorlig on the west side of Loch Caroy, and at Ardtreck near Portnalong. There is also a public pier at Ardtreck and a public slipway on the east side of Loch Caroy. Carbost and Struan have well-established, privately owned jetties, however future access to the former, currently owned by the Talisker distillery, is uncertain. Use of the latter is administered by the Struan Jetty Users Association. A good jetty for public use is lacking in west Loch Bracadale, however at the time of writing Macleod Estates were investigating options for such a jetty at Camas Bàn south of the Harlosh shore base.

❖ Native fish stocks/game fisheries

61. Three small rivers flow into the Loch Bracadale system: the Drynoch which runs into the head of Loch Harport, the Ose which flows into the sea near Tarner Island, and the Caroy which flows into the head of Loch Caroy. The principal native fish species of these rivers are salmonids, specifically Atlantic salmon and sea trout, both of which are dependent on the marine environment for part of their life cycle.

Figure 14: Macleod's Maidens and Idrigill Point

Brown trout are also present in small numbers within the catchments of these rivers. The Drynoch has traditionally been regarded as one of the four most important salmon rivers on Skye and tends to run clearer than the Ose and Caroy which drain peatier catchments. However all three are spate rivers - little more than streams under normal flow conditions, but with considerable variations in flow level.

62. In common with many West Highland rivers, the stocks of wild salmon and sea trout in this area appear to have declined significantly in recent times. Anecdotal evidence from local estates suggests that the catches of sea trout and salmon have declined in the years since fish farming has been developed. Circumstantial evidence over a wider area also increasingly suggests a link. However, it is likely that interactions with finfish aquaculture are just one factor in the decline of wild salmonids. Scottish Executive statistics show that catches of wild salmon and sea trout have been in decline for the last 50 years. Overfishing in the rivers, inshore trawling, the increase in seal numbers, poaching and global climate changes may all have played a part to a greater or lesser extent in the decline of wild fish stocks. Whilst these factors are poorly understood there is a clear need for research into the cause of this decline so that steps may be taken to reverse the situation.

63. Game fishing has traditionally generated income locally via the estates and hotels. But the current fragility of the native stocks means that particular care must now be taken to prevent their further depletion and if possible to rebuild them. Potentially adverse interactions between intensive fish farming operations and the remaining wild stocks need to be carefully controlled, for example through the management of sea-lice and fish escapes.

64. Salmon farming companies now recognise that they must work to reduce lice numbers on the farmed fish particularly at times when wild fish are running past the cages. The Tripartite Working Group (TWG) which involves the Scottish Executive, Scottish Quality Salmon, and wild fisheries interests, has recommended that area management agreements (AMA) should be drawn up between all fish farm operators in a given loch system and the freshwater fisheries interests in the area. The aims of the AMA should be to mitigate or eliminate threats to wild salmonids through:

i) a target of zero egg-bearing sea lice on farms
ii) improved fallowing strategies
iii) effective single-bay management
iv) robust contingency plans for escapes
v) free exchange of relevant information

65. The TWG and the Joint Government-Industry Working Group on ISA (Infectious Salmon Anaemia) have recommended that the Loch Bracadale system should, along with the open coast between Neist Point and Stac a' Mheadais (south of Talisker Bay), be considered as a single area for the purposes of managing sea lice and fish disease. It is therefore recommended that one AMA should be prepared and maintained for this area. In common with recommended practice elsewhere, this management agreement should include:

- synchronised stocking of smolts throughout all sites in the area
- strategic and co-ordinated sea lice treatments
- the development of integrated pest management strategies
- synchronised fallowing across all sites for at least six weeks at the end of the growing cycle

66. As far as possible a robust AMA should be in place prior to any modification of the existing finfish farm sites in the Loch Bracadale plan area.

67. Both the Atlantic salmon and the freshwater pearl mussel are listed as a species requiring protection under the EU Habitats and Species Directive. The freshwater pearl mussel requires migratory salmonid hosts for its early life stages. Viable wild salmonid populations are therefore essential for it to survive. Suitable habitat for these mussels is likely to exist in the rivers flowing into Loch Bracadale and they would have to be considered if their presence was confirmed.

Figure 15: Ardtreck Point with the steep cliffs of Rubha nan Clach beyond

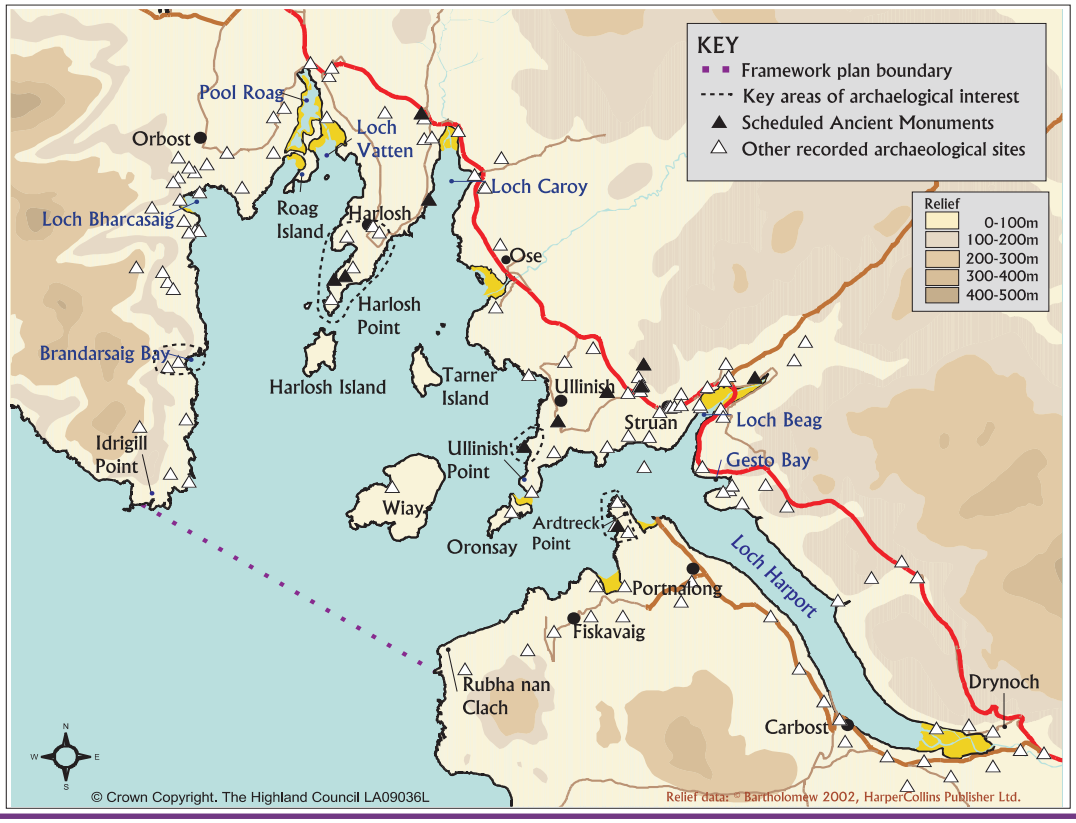
❖ Archaeology

68. The Loch Bracadale area is rich in archaeological remains which include land-based, intertidal, and underwater sites. These range from prehistoric remains such as chambered cairns, brochs and duns, to more recent remains such as deserted townships and their associated shieling huts. Many of these artefacts are found near the coast because people in earlier times needed to take advantage of the flatter land for agriculture, the food resources offered by the sea, or the sea transportation networks which pre-dated the development of roads in the area. At the time of writing there were 67 sites listed in the Council's Sites and Monuments Record for the zone within 500m of the coast in this area. However, there has been a lack of archaeological survey here and more remains may still be discovered. The need for better information on areas of archaeological sensitivity on and around the coast was identified as a key issue in the Council's CZM pilot study which was completed in 1998.

69. The significance of the listed sites ranges from local to the national level. Some of the nationally important sites are Scheduled Ancient Monuments. Others may not be scheduled as yet, but are recognised as candidates for scheduling in the near future. In relation to aquaculture developments, the main concerns for safeguarding of archaeological interests involve the landscape settings of brochs, chambered cairns, duns/forts, and some deserted townships on the coast. The contemporary significance of the last of these should not be underestimated as they are sometimes sought and visited by far-flung descendants of the original township dwellers. There also may be the remains of old fish traps in intertidal areas, particularly near the heads of lochs where rivers run into them. Care needs to be taken with the location of shellfish trestles in such an instance. Wrecks in inshore waters may also be adversely affected by the siting of finfish farms nearby, either through the establishment of moorings or deposition of waste from cages. The key areas of archaeological interest on or near the coast in the Loch Bracadale area, taking into account the above, are around Harlosh Point, Ullinish, the west side of Ardtreck Point, and Brandarsaig Bay (see Figure 16).

70. Proposals for new shorebases, shellfish farms in the intertidal area, or fish farms offshore should try to ensure that they avoid any adverse impacts on archaeological remains. The Highland Council Archaeology Unit can provide advice and recommend mitigation strategies where necessary. In certain circumstances it may request pre-development surveys.

Figure 16: Archaeology



STRATEGY AND AREA POLICIES

71. In light of the various considerations above, the broad strategy for Loch Bracadale has the following main elements. It:

- supports continued finfish and shellfish farming activity in the areas currently used for this purpose provided due regard is given to other users of the loch and the environmental sensitivity of the loch and its surroundings;

- seeks to contain finfish farming broadly at its current level but allows for some expansion of shellfish farming via small to medium scale installations in appropriate sites;

- directs new aquaculture development towards suitable areas in the inner and middle reaches of the loch and away from the outer margins of the loch on account of their exposure, visual amenity, fishing interests, and wild land value;

- safeguards the key seaward views, coastal landscape features, and wildlife havens of the loch (eg the headlands and islands);

- encourages sea servicing for aquaculture sites wherever possible to limit the impact of heavy goods vehicles on minor roads in the area;

- safeguards navigational access and safety of passage to recognised anchorages and landing places

72. For more detailed policy purposes the loch has been divided into a series of zones labelled 'A' to 'P' which are indicated on the policy map at the rear of the document. These broadly follow the coastline round from Rubha nan Clach, the headland at the south side of the mouth of the loch, to Idrigill Point on the northwest side. They also include the four main islands, Wiay, Oronsay, Tarner and Harlosh. The policy guidelines for each zone, along with a brief description of its key characteristics and constraints, are given in the accompanying table.

73. The policy map also includes a range of relevant background information on infrastructure and other interests in and around the loch which will be taken into account in assessing aquaculture proposals.

74. A policy indicating a presumption in favour of aquaculture development within a zone where there are already finfish and shellfish farm leases means support for continuation of this use. It is not meant to imply a presumption in favour of expansion of existing installations because further expansion may not be compatible with other interests.

❖ Other guidance

75. The Council will consider development proposals for aquaculture on their individual merits with reference to the policies set out below. It will also take into account guidance issued by the Scottish Executive and other relevant authorities. A list of relevant documents at the time of writing is given in Appendix 2. In this regard, reference should be made to the indicative guidance on separation distances between aquaculture installations described in paragraph 22 .

76. Oyster farms, requiring the siting of trestles in the intertidal area may require planning permission. Applicants should contact the Area Planning and Building Control Manager in Portree for further advice in this regard.

AREA POLICIES

Zone	Characteristics/Constraints	Area Policy
A	**Mouth of Loch Bracadale: south side** (Rubha nan Clach to Gob na h-Oa) A dramatic stretch of exposed coastline, dominated by high, steep cliffs. Inaccessible except by foot or boat and thus relatively wild. The cliffs have a number of attractive features such as waterfalls and caves. It is difficult to view this area at close quarters other than by boat, though the grassy knoll at the western end of Fiskavaig provides a good vantage point over the outer loch.	The exposure of this area to the prevailing west and southwesterly winds and swell militates against aquaculture development on technical grounds. The landscape and wild land qualities of this headland area are however such that there should be a precautionary presumption against aquaculture development.
B	**Fiskavaig Bay** (Gob na h-Oa to Ardtreck Point) An intimate stretch of coast interspersed with attractive sandy inlets, the largest of which is the sheltered Fiskavaig Bay. Ardtreck Point, with its lighthouse, is a dominant feature at the eastern end of the area. The crofting settlement of Fiskavaig lies close to this section of coast, and the amenity of local residents will therefore be an important consideration. A number of significant marine habitats and species have been identified on the west side of Ardtreck point, including maerl beds and sea pens, and the area is a favoured creel fishing ground. Also Dun Ardtreck is one of the key archaeological sites overlooking Loch Bracadale. These factors, coupled with the visual importance of the point and the role of Fiskavaig Bay as an anchorage, indicate the sensitivity of eastern parts of this policy area.	Limited scope for shellfish farming which should be compatible with the nature conservation value of this area and give due regard to other interests. Presumption against finfish farming on grounds of the nature conservation interests, likely impact on local visual amenity, and inshore fishing interests.

Zone	Characteristics/Constraints	Area Policy
C	**Mouth of Loch Harport, south side** (Ardtreck Point to Rubha Ban) This sheltered bay provides an anchorage for fishing boats and has good access to the water. The area contains a public slip and the pontoon jetty and shorebase for the finfish farm sites nearby. It is therefore fairly heavily used and is quite an industrial setting but the bay's enclosed nature and limited scenic value suit it to this level of activity. Good site management here is important, particularly so that other users of the pier and bay are not affected.	Presumption in favour of small to medium scale finfish or shellfish farming on the east side of Ardtreck Point which is compatible with other user interests in the bay. Care should be taken to safeguard public access to the slip and anchorage.
D	**Loch Harport: west side** (Rubha Ban - Carbost pier) Loch Harport has a distinctive linear character and its relatively enclosed and uniform appearance is in contrast to the rest of Loch Bracadale. It has the advantage of good shelter but this is offset by relatively poor water circulation in its upper reaches. The west side of the loch is most often viewed from the head of the loch because the convex slopes make it difficult to see from the road which runs nearby. However, it is overlooked in some places by houses. Much of this area is also a favoured fishing ground locally for nephrops and sea pens are commonly found on the seabed here.	Presumption in favour of small to medium scale shellfish and finfish farming compatible with other interests, particularly inshore fishing grounds. Limited water circulation is a key constraint on finfish development in the inner loch.
E	**The head of Loch Harport** Water depth and proximity to the mouth of the Drynoch river tends to preclude finfish farming in this area. However, the intertidal area is extensively used for trestle farming of oysters. The area is overlooked from the B8009 and by the communities of Carbost, Merkadale, and Drynoch. It has a sheltered anchorage on the Carbost side near the Talisker distillery, which is often used by yachts during the summer season.	Presumption in favour of shellfish farming with trestles in the intertidal area at a scale and location compatible with other interests. Any development should not impinge on access to the anchorage or the pier at Carbost. Presumption against finfish farming on account of poor water quality, water depth and visual amenity.

Zone	Characteristics/Constraints	Area Policy
F	**Loch Harport: east side** In contrast to the west side of Loch Harport, this eastern side is uninhabited, more open, and has less tree cover. It is overlooked, though not at close range, from the B8009 road and the houses adjacent to it. There is also a popular circular walk between Sumardale and Inver meadale which overlooks this section of the loch. The coast here has a strong linear character, as well as being visually exposed, which would tend to exaggerate the visual impact of any surface installations. Loch Harport is also locally important for prawn and nephrops fishing and this activity would be restricted by any installations which extended into the deeper water.	Presumption in favour of trestle farming in the intertidal area. Small to medium scale shellfish farms which are well spaced and use longline systems may also be acceptable. However, adequate separation between installations will be important and also the views of the local community should be taken into account in the design and location of such farms. Presumption against finfish farming to safeguard visual amenity and the water quality for shellfish growing.
G	**Gesto Bay - Loch Beag - Bracadale Point** The small inlet of Loch Beag and its approaches is an intimate stretch of coast which is overlooked at close quarters for much of its length by the A863 road. Loch Beag itself provides a sheltered anchorage for boats operating out from Struan jetty. There is a popular roadside viewpoint between Loch Beag and Gesto Bay which gives good seaward views across to Ardtreck Point, Oronsay, and beyond. The south side of Gesto Bay, which is also an anchorage, has striking landscape character due to its volcanic geology. Best aquaculture opportunities are to the east of Bracadale Point but development elsewhere in this zone is constrained by amenity considerations, access to the jetty, the presence of recognised anchorages and limited water depth. SNH has indicated that Loch Beag provides a seal haul-out.	Limited scope for small to medium scale development of shellfish or finfish farming in the eastern lee of Bracadale Point. Elsewhere in this zone, key constraints are the need to safeguard access to the anchorage and jetty in Loch Beag, the proximity of the existing finfish lease areas at Portnalong, landscape character, and sea views. Presumption in favour of trestle farms at a scale and location compatible with other interests. Presumption against the location of finfish farms or shellfish farms in the sub-tidal area of Loch Beag or Gesto Bay.

Zone	Characteristics/Constraints	Area Policy
H	**Bracadale Point - Ose Point** Ullinish Point, together with the prominent island of Oronsay adjacent, is one of Loch Bracadale's key landscape features. This headland area is also a popular short walk, giving commanding views of the loch and its islands. Safeguard of its amenity is therefore important. The physical potential for aquaculture developments in the area to the north of Ullinish Point is limited by the fact that it is exposed to the prevailing southwesterly winds and water depths near the shore tend to be shallow. Amenity considerations are also a factor here because of the open seaward views from houses on this stretch of coast. Much of this stretch of coastline is favoured creeling ground. Development of finfish farming at the northern end would also be constrained by proximity to the mouth of the River Ose, which is locally important for migratory fish stocks. There is an occasional anchorage between Oronsay and Ullinish Point.	Most of this zone tends to be too exposed for aquaculture but a precautionary presumption against development is necessary to safeguard amenity and seaward views, favoured commercial fishing grounds, and game fishing interests on the River Ose.
I	**Wiay Island** The largest of Loch Bracadale's islands, Wiay is one of its key landscape features, dominating the middle ground in views from many points around the loch. Exposed on all sides, uninhabited and little visited, the island itself has little economic value other than for rough grazing. However, it has locally important creeling grounds around it, recognised dive sites off the southwest tip, seabird colonies, and it is often visited by seals. Exposure alone is likely to preclude aquaculture development in this area. However, surface installations would also tend to diminish its value as a wild land reserve.	Technically unsuitable for aquaculture because of exposure. Precautionary presumption against development because of the likely impact on favoured fishing grounds and wild land qualities.

Zone	Characteristics/Constraints	Area Policy
J	**Tarner Island** Because of its relatively high relief and steep cliffs on the west side, Tarner Island is one of the most important landscape features in the loch. It is too exposed for aquaculture on the west and south side. However, the east side is more sheltered and provides a well-flushed site. This broadly coincides with a listed anchorage and seabed areas where maerl beds and seapens have been recorded.	Presumption in favour of small to medium scale finfish or shellfish farming at the northeast corner (continued use of existing lease), provided this does not block access to the anchorage and is of an appropriate scale. It is important for landscape reasons that the scale of the island is not diminished by any installation which is too large.
K	**Loch Caroy** Loch Caroy is a relatively accessible inlet notable for the richness of its surrounding crofting landscape and good seaward views to the south. There is a public slip on the east side of the loch and an anchorage adjacent, though this tends to be exposed to the south. Both finfish and shellfish farming have developed here because of the easy access to the shore from the road. However, they have to be fairly small scale because of restricted water circulation and to respect the intimacy of the surroundings. There are houses on both sides of the loch, with most having clear views over the water. The public road on the west side of the loch and the approach to the public slip on the east side are both narrow and unsuitable for large lorries.	Presumption in favour of small to medium scale finfish farming, subject to adequate flushing and separation between installations. Care should also be taken to maintain a reasonable distance between fish farm cages and the mouth of the River Caroy. Shellfish lines or rafts are also acceptable if kept small in scale, close to the shore (maximum of three lines), and a reasonable distance from any finfish site. Safeguard of the seaward views to Harlosh and Tarner Islands is important.

Zone	Characteristics/Constraints	Area Policy
L	**Harlosh Point and Harlosh Island** (Crossnish Point to Camas Bàn) The Ardmore/Harlosh peninsula is the most westerly of Loch Bracadale's distinct headlands and together with Harlosh Island is an important landscape feature locally with archaeological interest. The orientation of the headland means however that much of this area is very exposed to the prevailing south and southwest wind so the physical scope for development is limited. The headland commands good seaward views with the attractive beach on the north shore of Harlosh Island at close range and the Cuillins as a southern backdrop. It is therefore popular for short walks and canoe trips. There are also recognised dive sites off the west side of both the headland and the island. The narrows between the island and the point is the route by which the finfish farm at Tarner island is serviced from Harlosh. The area around the point and Harlosh Island itself also are both natural haul-outs for seals.	Presumption against aquaculture development on landscape and amenity grounds.
M	**Camas Bàn - Meall Greepa** (Loch Vatten, Pool Roag & Loch na Faolinn) An intricate stretch of coastline with various small inlets. Generally open to the southwest except in the northernmost reaches of Loch Vatten and Pool Roag which are too shallow to be suitable for most forms of aquaculture other than shellfish trestles in the intertidal area. The area around Loch Vatten and Pool Roag is low-lying and while most of the houses are set quite well back from the shore, many overlook the water. There is an anchorage in Loch Vatten and Pool Roag has saltmarsh and tidal rapids which have nature conservation value. The small inlet of Loch na Faolinn is more secluded but also tends to be shallow and in its inner part houses overlook it at close quarters. These factors, combined with its exposure to the southwest, are likely to preclude aquaculture development. The headland of Meall Greepa however affords a degree of shelter from such winds at the mouth of this small loch.	Limited scope for small-scale shellfish development compatible with other interests, particularly nature conservation, landscape and navigation. There is scope for small-scale shellfish farming with longlines on the northeast side of Meall Greepa and possibly to the west of Harlosh. The anchorage and shore base in Camas Bàn is the main servicing point for the western side of Loch Bracadale. However, roads in this area are unsuitable for large lorries. Servicing by sea is therefore the preferred option for delivery of feed to finfish farms in this part of the loch.

Zone	Characteristics/Constraints	Area Policy
N	**Loch Bharcasaig** Loch Bharcasaig is an intimate and attractive bay, mainly south-facing and sheltered in its inner reaches, which provides a small anchorage that is important as a refuge in poor weather. The beach at the western end of the bay is one of the few on Skye and unusual because of its grey patterned sand and close forest backdrop. It also has an impressive outlook across the islands of Loch Bracadale to the Cuillins. The western part of the bay has a low-lying rocky shore which is also attractive. Though the access track from Orbost is in poor condition for vehicles, the area is popular as a walking destination and picnicking spot.	Presumption against aquaculture development on grounds of visual amenity and landscape character. Loch Bharcasaig's proximity to the area leased for finfish farming immediately to the south makes it vulnerable to pressure for development as a shorebase or storage area. However this pressure should be resisted in the interests of amenity and every effort should be made to locate ancillary equipment outwith the environs of the bay.
O	**Loch Bharcasaig - Beinn na Moine** The stretch of coast south of Loch Bharcasaig is relatively unindented and rocky, rising to cliffs over 70m high under Beinn na Moine. It is also largely forest covered. The general orientation of the coast here gives good shelter from the prevailing westerly winds but tends to be exposed if the wind swings round to the south or east. Robust equipment is therefore required but the forested backdrop and the distance at which this stretch of coast is normally viewed means that aquaculture installations can be fairly unobtrusive provided their scale is not excessive. Because this coast is uninhabited and rarely visited on foot it serves as a refuge for wildlife and there are some special bird interests here which need to be safeguarded.	Presumption in favour of shellfish and finfish development which can be accommodated without prejudice to the wildlife interest, landscape character, and interests of other users of the coast.

Zone	Characteristics/Constraints	Area Policy
P	**Brandarsaig Bay - Idrigill Point** Inaccessible except by foot or boat, this is a rugged and attractive stretch of wild coast. It is exposed to winds from the south and east and is dominated by high cliffs and natural features such as the impressive natural caves and arches north and south of Ard Beag. The heritage value of this remote area is an important constraint on development and it includes two deserted crofting settlements in attractive settings - at Brandarsaig Bay and Idrigill. The footpath to Idrigill point runs through this area. Most of the waters close inshore here are favoured local creeling grounds.	Presumption against aquaculture development due to scenic and wild land quality, wildlife interests, and proximity to fishing grounds

NB: "Small" and "medium" scale are relative terms. However as a guide for the purpose of this plan, a finfish farm of up to about 2000 sq.m. cage area would be regarded as "small" and one of up to 4000 sq.m. would be regarded as "medium". A "small" shellfish farm using the longline system would employ lines of up to 200m length to a maximum of 4 lines. A "medium" shellfish farm would employ up to 8 lines of 200m length each, up to 5 lines 300m each, or up to 4 lines 400m each. All other things being equal, the longer lengths of lines are harder to accommodate successfully in the landscape. A "small" shellfish farm using rafts would employ up to 4 rafts each 10m square, and a "medium" one would have up to 4 rafts each 20m square.

APPENDIX 1 - EXTANT SEABED LEASES FOR AQUACULTURE AS AT OCTOBER 2002

CEC lease reference	Location & Species	Permitted gear	Lease expiry date
IN6-63-5	Inner Loch Caroy *Salmon/Cod*	8 cages, each 16m x 16m	May 2010
IN6-63-6	Outer Loch Caroy *Mussels*	6 longlines, each 300m	June 2011
IN6-62-4	Meal Greepa *Mussels*	4 longlines, each 220m	August 2011
IN6-70-1	West Loch Bracadale & Tarner Island *Salmon*	11 cages, each 70m in circumference and 12 cages, each 60m in circumference	November 2004
IN6-79-13	Loch Harport *Mussels*	6 longlines, each 220 metres	March 2013
IN6-79-2	Ardtreck Point & Rubha Ban *Salmon*	20 cages, each 16m x 16m 40 cages, each 16m x 16m	September 2007
IN6-79-9	Outer Loch Harport *Pacific Oysters and Clams*	10 trestles, each 10m x 1m x 0.5m 20 trestles, each 3m x 1m x 0.5m	June 2008
IN6-85-1	Inner Loch Harport *Pacific Oysters and Clams*	180 trestles, each 4.8m x 1m over three sites	December 2007

APPENDIX 2 - BIBLIOGRAPHY

Clyde Cruising Club (1997): Sailing Directions and Anchorages: Part 3 Ardnamurchan to Cape Wrath

Crown Estate (2000): Environmental Assessment Guidance Manual for Marine Salmon Farmers

Highland Council (1997): Coastal Zone Management Pilot Study: Key Findings and Strategy

Mills, D., and Graesser, N., (1981): The Salmon Rivers of Scotland (Cassell, London)

Ridley,G. (1995): Dive Northwest Scotland

Scottish Executive Rural Affairs Department (1999): Locational Guidelines for the authorisation of Marine Fish Farms in Scottish Waters: Policy Guidance Note

Scottish Executive, (2001): European Protected Species, Development Sites and the Planning System

Scottish Natural Heritage (1996): Skye and Lochalsh Landscape Character Assessment

Scottish Natural Heritage (2000): Marine Aquaculture and the Landscape: the Siting and Design of Marine Aquaculture Developments in the Landscape.

Skye & Lochalsh Enterprise (2000): Orbost Estate Development Plan

Westbrook, S & Brian Burns Associates (1999): The Economic Impact of the Operations of Marine Harvest McConnell in the Highlands of Scotland

UK Biodiversity Group (1999): Tranche 2 Action Plans, Volume 5 - Maritime Species and Habitats

In addition the following Guidance will be taken into account when determining applications for marine fish farms in Highland:

Scottish Executive (2000): Final Report of the Joint Government / Industry Working Group on Infectious Salmon Anaemia (ISA)

SERAD, ASFB, BTA, FRS, SQS, (2000) Report of the Working Group on Farmed Fish Escapes.

This list is not intended to be exhaustive and the Council accepts that additional recommendations are likely to be made in relation to the siting of marine aquaculture installations during the lifetime of this plan.

APPENDIX 3 - ORGANISATIONS CONSULTED IN PREPARATION OF THE PLAN

Aquascot
Association of District Fishery Boards
Association of Salmon Fisheries Boards
Association of Scottish Shellfish Growers
Association of West Coast Fisheries Trusts
Association for Protection of Rural Scotland
Atlantic Salmon Trust
British Marine Finfish Association
Coillore Farm
Crofters Commission
Crown Estate
Dunstaffnage Marine Laboratory
Dunvegan & District Community Council
Dunvegan Estate
Federation of Highlands & Islands Fishermen
Greshornish Shellfish
Highlands & Islands Fisherman's Association (Stattic Gear)
Highlands and Islands Enterprise
Highlands of Scotland Tourist Board
HM Naval Base Clyde
Mallaig & North West Fisherman's Association
Marine Harvest (Scotland) Ltd
Maritime and Coastguard Agency
Meadale Farm
Minginish Community Council
North of Scotland Water Authority (now Scottish Water)
Northern Lighthouse Board
Royal Society for the Protection of Birds
Royal Yachting Association (Scotland)
Scottish Anglers National Association
Scottish Crofters Union
Scottish Environment Link
Scottish Environment Protection Agency
Scottish Executive:
    Environment and Rural Affairs Department
    Scottish Fisheries Protection Agency
    Shipping Services Branch
Scottish Landowners Federation
Scottish Natural Heritage
Scottish Natural Heritage - Maritime Branch
Scottish Quality Salmon
Scottish Wildlife Trust
Sea Fish Industry Authority - Aquaculture Unit
Skye & Lochalsh Enterprise
Skye District Salmon Fishery Board
Sport Scotland
Stolt Sea Farms (UK) Ltd
Struan Community Council
Struan Jetty Users Association
Sumardale Farm
Talisker Distillery
West Highland Anchorages & Mooring Association
West of Scotland Fish Producers Organisation

In addition, the following individuals submitted comments:

Mr Neil Campbell
Mr J. D. Cox
Mr J. E. Marchington
Mr P. Paget

APPENDIX 4: NATIONAL PLANNING GUIDANCE FOR AQUACULTURE - AREA POLICY CATEGORIES AND THRESHOLDS FOR ENVIRONMENTAL ASSESSMENT

The information below is extracted from the Scottish Executive's "Locational Guidelines for the Authorisation of Marine Fish Farms in Scottish Waters" (1999). The paragraph numbers given here relate to those of the full document. It is important to note that this national guidance is under review as indicated in the text of paragraph 21 below and may change within the anticipated lifetime of the Bracadale framework plan. The information below is reproduced with the permission of SEERAD.

Introduction

3. The purpose of this Policy Guidance Note is

- *to provide guidance on the factors to be taken into account when considering proposals for new marine fish farms or modifications to existing operations; and*
- *to establish the national context for the preparation by planning authorities of non?statutory marine fishfarming framework plans for guiding the location of future marine fish farms;*
- *having regard to the particular needs and safeguards for a successful industry.*

Locational guidelines

4. This guidance builds on earlier guidance prepared by the CEC which introduced, amongst other things, the concept of very sensitive areas. In addition the CEC agreed with the Nature Conservancy Council (NCC)/Scottish Natural Heritage (SNH) to introduce Marine Consultation Areas to help in focusing liaison arrangements. Also, some planning authorities prepared non?statutory framework plans aimed at influencing the location and expansion of the aquaculture industry. This earlier guidance has been revised and extended covering all areas of the Scottish coastline where aquaculture takes place and drawing on the latest available information on Scotland's coastal environment. …

Constrained areas

5. In order to provide a positive framework for the location of new developments while safeguarding the environment, now protected under a number of national and international designations, and other interests, Scottish Ministers consider that it is necessary to identify those areas which are likely to be particularly environmentally sensitive to new or expanded developments and in which stringent criteria should be required to be fully met before consent might be given.

8. Consistent with the approach described above and in addition to the presumption against further development on the east and north coasts, Scottish Ministers propose three categories.

***Category 1 -** where the development of new or the expansion of existing marine fish farms will only be acceptable in exceptional circumstances. These are only likely to arise where it can be demonstrated conclusively, by the applicant, that the development will not have a significant adverse effect on the environmental qualities of the area. See Annex A.*

***Category 2 -** where the prospects for further substantial developments are likely to be limited although there may be potential for modifications of existing operations or limited expansion of existing sites particularly where proposals will result in an overall reduction in environmental effect, so enhancing the qualities of the area and hydrological conditions. See Annex B.*

Category 3 - *where there appear to be better prospects of satisfying environmental requirements, although the detailed circumstances will always need to be examined carefully.*

Criteria for categorisation

9. A combination of factors were taken into account in deriving the categories including natural heritage interests, physical attributes, hydrographical characteristics as well as existing levels of development. As a result there will be areas within category 3 which are or could be sensitive to aquaculture development but have not been specifically highlighted as they do not contain significant aquaculture development at the moment. This approach underlines the importance of the review mechanism (see paragraph 21).

Environmental assessment

12. Marine fish farming falls within the types of projects listed in Annex II to the EC Directive on Environmental Assessment (851337/EC) as amended by Directive 97/11IEC. The Environmental Impact Assessment (Fish Farming in Marine Waters) Regulations 1999 bring the amended Directive into force and supersede the Environmental Assessment (Salmon Farming in Marine Waters) Regulations 1988 with effect from 14 March 1999. Such developments must therefore, be subject to EIA whenever they are likely to have significant effects on the environment. This includes changes or extensions to existing developments that may have significant adverse effects on the environment even where the original development was not subject to EIA. The Regulations also apply to renewal of existing leases.

13. The Regulations apply to applications received on or after 14 March 1999 and where:

(a) any part of the proposed development is to be carried out in a sensitive area, or
(b) the proposed development is designed to hold a biomass of 100 tonnes or greater, or
(c) the proposed development will extend to 0.1 hectare or more of the surface area of the marine waters, including any proposed structures or excavations.

14. Applications which trigger any of these thresholds must be subject to a formal determination (referred to as a screening opinion in the Regulations) by the relevant competent authority as to whether EIA is required or not. Until such time as the proposed legislation is in place transferring responsibility for the authorisation of marine fish farming to Scottish local authorities, the "competent authority" for the purposes of the EIA Regulations remains the Crown Estate Commissioners.… For the interim period, the Crown Estate will have regard to the views of the Local Authorities and other statutory consultees on the need for EIA in specific cases.

… for the purposes of this Policy Guidance Note, the indicative criteria which will determine the need for EIA, using the categorisation set out in paragraph 8, is set out below

Category 1 Areas

- all proposals for new sites or modifications to existing marine fish farm sites or equipment

Category 2 Areas

- all proposals for new fish farm sites or significant modifications at existing sites. For the purposes of the indicative criteria, a "significant modification" is any single or cumulative increase of more than 25% in biomass or equipment which would result in development designed to hold a biomass of 250 tonnes or more, or a cage area of more than 2000 square metres.

Category 3 Areas

This will include sea lochs and other enclosed inshore areas along with open sea areas within 2 Km of the coast which are not within category 1 or 2

- all proposals will be subject to the normal screening procedures provided for in the EIA Regulations.

If in any doubt as to the need for EIA, applicants are encouraged to seek a screening opinion from the appropriate competent authority at a very early stage in developing proposals for new sites or expansions to existing sites.

Action required

Non-statutory Framework Plans

17. It has been the practice of some local authorities to prepare non?statutory framework plans for marine fish farms to guide their consideration of proposals. In the light of the policy guidance in this note and in the National Planning Policy Guideline (NPPG's) on "Coastal Planning", "Natural Heritage" and "Rural Development", in those areas where the potential for new or expanded fin and shell fish farms is recognised,

- *planning authorities should consider the revision (or preparation) of non-statutory Marine Fish Farm Framework Plans.*

The involvement of the industry as well as local and environmental interests, including District Salmon Fishery Boards and Fisheries Trusts, in the preparation of these framework plans is essential. In drawing up Framework Plans authorities will wish to bear in mind that there are likely to be areas which are not listed within Category 1 and 2 which might be considered 'sensitive' but are not designated because they currently contain no aquaculture development. In addition, authorities will wish to consider identifying some areas which should remain undeveloped.

Assessment of applications

18. In seeking to reconcile marine fish farming, with its prospects for local employment and other economic benefits, with other interests as well as environmental and conservation considerations, the following factors are particularly relevant and will be a material consideration, along with national and local policy, when assessing individual proposals. They should be addressed, where appropriate, in the environmental assessment and conditions attached to leases:

- *landscape and visual impact,*
- *effect on recreation and tourism,*
- *effect on fishing and navigation,*
- *aspects of pollution, disease and carrying capacity,*
- *nature conservation interests, including wild fish populations,*
- *access and infrastructure requirements, and*
- *methods of operation (e.g. lighting impacts, associated noise etc).*

Decisions will require a balanced judgement on each application taking into account development plan policies, the applicant's case for the proposed development, the environmental implications of carrying it out and other material considerations.

19. Where there are sound objections to a particular proposal, the applicant will be required to demonstrate that these can either be overcome or how any significant detrimental environmental effects can be adequately mitigated before a lease can be granted. Material arguments which might outweigh objections to the proposed development could include matters such as environmental benefits arising from the restructuring of existing operations.

Review of guidance

21. This guidance has been prepared on the basis of the best information currently available. It will be kept under review in the light of work currently underway by the Joint Industry/Government Working Group on ISA and the Tripartite Industry/Wild Fish Interest/Government Working Group on west coast stocks and more generally in the light of advances in scientific understanding of the coastal environment and changes in technology, husbandry practice and the pattern of site demand. It will also be reviewed in the light of the proposed legislative changes when approved by the Scottish Parliament.

APPENDIX 5: UK BIODIVERSITY ACTION PLAN HABITATS AND SPECIES RELEVANT TO THE LOCH BRACADALE AREA.

UK BAP Habitats:
Wave exposure within the Loch Bracadale system ranges from very exposed to very sheltered, and this combined with the presence of various types of substrata has resulted in an extensive range of habitats. A number of these are designated as priority habitats in the United Kingdom Biodiversity Action Plan (UK BAP), and are characterised as follows:

- **Mud habitats in deep water** - These are largely confined to Loch Harport, although there is some evidence to suggest that limited areas may exist at the mouth of Loch Caroy. The seapens *Virgularia mirabilis* and *Pennatula phosphorea* are present within mud habitats but are not confined to them and are commonly found on the coarser sediments throughout Loch Bracadale. Conversely, records of the Norway lobster *Nephrops norvegicus* have only come from the mud habitats of Loch Harport. The Admiralty chart gives some indication that this habitat is likely to be found in depths over 50m at the mouth of the loch, i.e. seaward beyond Wiay.

- **Sublittoral sand and gravels** - Sand and gravel habitats are common throughout the inner Loch Bracadale area and extend into the mouth of Loch Harport.

- **Maerl beds -** Maerl is present on a variety of substrates within the inner confines of Loch Bracadale. In general, it is reported to be patchy and scattered, but some areas may be of a sufficient density to qualify as 'beds'.

- **Lagoon** - Pool Roag is a long narrow lagoon connecting to Loch Vatten in the north-west of Loch Bracadale. the shores of the lagoon are dominated by fucoid algae (including *Ascophyllum nodosum* ecad *mackaii*) pebble and cobble with periwinkles and barnacles. The mid- to lower shore becomes increasingly muddier with burrowing bivalves, and abundant lugworms *Arenicola marina*. The shallow bottom of the lagoon is composed of mud with abundant lugworms and occasional cobbles supporting the serrated wrack *Fucus serratus*.

- **Tidal Rapids** - The rapid flowing between Pool Roag and Loch Vatten supports a typical community with encrusting coralline red algae, sponges hydroids and bryozoans. A narrow, shallow rapid flowing over a dense mussel bed is also noted at the head of Loch Beag.

- **Coastal Saltmarsh** - Surveyed saltmarshes are present at the heads of Loch Harport (16.2 ha), Loch Beag (3.4 ha), Ose (0.2 ha), Loch Caroy (1 ha), and Pool Roag (11.5 ha).

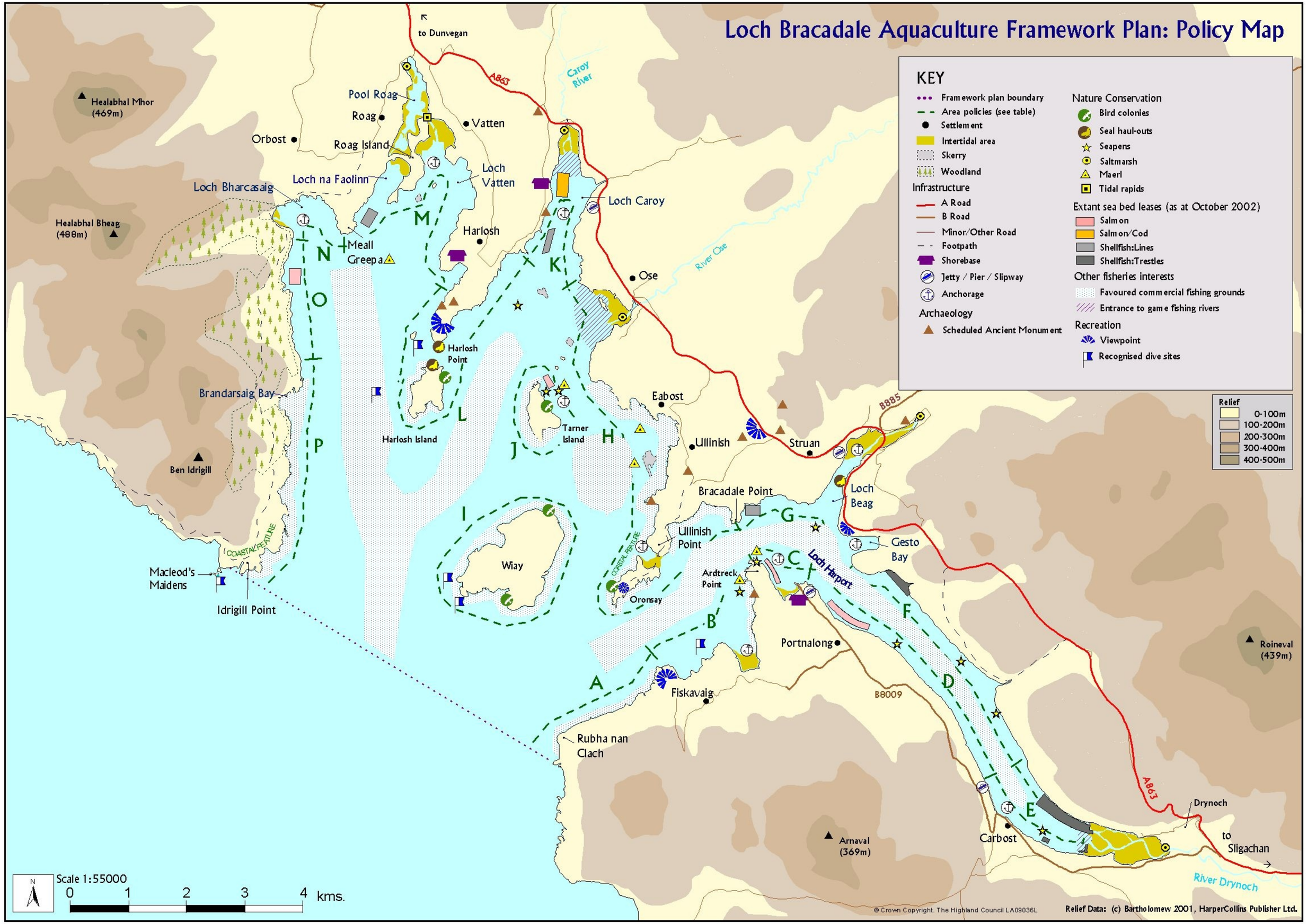
UK BAP Species:
The United Kingdom Biodiversity Action Plan also list a number of nationally important 'priority' species including a number of species of whales, dolphins and fish, mammals such as otters and some seabirds. Whilst the majority of these are either mobile or are protected under UK legislation there is one outstanding species not protected by law which occurs in Loch Bracadale.

Ascophyllum nodosum* ecad. *mackaii –(See Paragraph 40) This species is restricted to very wave-sheltered locations. In the UK, this species is only found in a small number of sealochs. Two locations have been recorded for Loch Bracadale.

The presence of UKBAP habitats and species must be taken into account when developing aquaculture sites.

In addition to the UKBAP species and habitats, local authorities throughout the UK have embarked upon a process of identifying important species and habitats specific to their areas. A Local Biodiversity Action Plan for Skye and Lochalsh is in the early stages of preparation and is due for completion within the expected lifetime of this Aquaculture Framework Plan.

Loch Bracadale Aquaculture Framework Plan: Policy Map



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