

Report on the ICOMOS / IUCN Advisory Mission to Vegaøyen -- The Vega Archipelago (C 1143)

19th to 23rd February 2017



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ACRONYMS AND ABBREVIATIONS

ABs	Advisory Bodies
EIA	Environmental Impact Assessment
Ha	Hectare
HIA	Heritage Impact Assessment
ICOMOS	International Council on Monuments and Sites
IUCN	International Union for Conservation of Nature
MAB	Maximum Allowed Biomass
OUV	Outstanding Universal Value
SEA	Strategic Environmental Assessment

ACKNOWLEDGEMENTS

The Advisory Mission is grateful to the Norwegian authorities for their hospitality, support, availability and assistance and would like to thank the officials of the National Institutions who joined the Mission and assisted it for the whole duration; in particular: Berit Halvorsen, Deputy Director-General at the Ministry of Climate and Environment; Ingunn Kvisterøy, Senior Advisor at the Ministry of Climate and Environment; Ragnhild Hoel, Senior Advisor at the Directorate for Cultural Heritage; Olav Nord-Varhaug, Head of Section at the Norwegian Environment Agency; and Rita Johansen, World Heritage Coordinator for Vega Archipelago, who assisted in organising the mission. They all participated in the working sessions and provided valuable information on the current situation of the World Heritage property.

The Advisory Mission is also grateful to André Møller, Mayor of Vega Municipality who received and welcomed the Mission and to members of the Vega Municipality Executive Council who participated in the site visit and provided welcome information during meetings.

Special thanks is due to Lisen Roll of ICOMOS Norway who received the mission in Oslo and provided useful information on Norwegian heritage, including an introduction to the history and key issues of the Vega Archipelago.

We would also like to warmly thank all those public officers within Vega Municipality, Nordland County Council and the Nordland County Governor's office who contributed to the Mission, as well as those who represented relevant Ministries and Directorates. Many individuals, local organisations that live or work within the Vega Archipelago World Heritage Site, or are engaged in its protection provided valuable insights into the key issues. In doing so they demonstrated their passion for these special islands, as well as underlining their personal commitment to the conservation of this valuable element of Norwegian heritage.

This Advisory Mission was arranged to very tight timescales by Regina Durighello and Tara Bushe of ICOMOS International Secretariat in Paris, and by Mizuki Murai and Christelle Perruchoud of IUCN. To these individuals, we extend our thanks.

EXECUTIVE SUMMARY AND LIST OF RECOMMENDATIONS

Nomination of Vega as a World Heritage property started as a local initiative led by the community of Vega. They viewed World Heritage status as an opportunity to protect the unique traditions and values of the area. In addition to safeguarding the site, it was felt that this could also lead to the creation of new employment opportunities and attract more visitors and inhabitants to a remote part of Norway that has been suffering depopulation for several decades. Vega Archipelago was inscribed on the World Heritage List in 2004.

Since inscription, there has been a resurgence in eider-tending (harvesting the down of wild eider ducks) and, in contrast to the wider European population decline (BirdLife International, 2015), the number of eider ducks has noticeably increased (World Heritage Foundation, 2017). The human population of Vega has continued to decline and employment from aquaculture, fish processing industry and small-scale tourism are seen by Vega Municipality as playing a potentially important role in the future of the community, following the decline in key industries such as commercial fisheries and oil and gas.

The Advisory Mission considered issues relating to the interaction between aquaculture and sustaining the Outstanding Universal Value (OUV) of the World Heritage property, and specifically the proposal for two new aquaculture facilities within the property. The Mission learned about these issues through a programme of presentations, site visits and meetings with a wide range of stakeholders. The Mission requested detailed documentation for the two development proposals but this had not been provided by the report deadline.

The Mission recognises that Atlantic salmon aquaculture is an important contributor to the economy of remote coastal communities, allowing access to employment opportunities for local people. The Mission considers it essential that a transparent, plan-led and evidence-based approach is adopted in order to take decisions on aquaculture development within the World Heritage property. It is clear that aquaculture developments should only be considered if decisions are based on a satisfactory understanding as to how these developments are likely to impact on the OUV of the property. This is not currently the case although useful steps forward are being made in some areas.

The Mission observed the following:

- At the time of inscription in 2004, the World Heritage Committee requested the development of a specific strategic plan for the World Heritage property that would contribute to the overall Master Plan for the archipelago and address the interface between conservation and sustainable development in respect of aquaculture. This has not been produced and the issue of spatial planning and aquaculture capacity within existing and emerging plans appears to be poorly addressed. The existing Vega Master Plan provides for consideration of aquaculture in most areas of Vega on an 'unplanned', case-by-case basis. An updated Vega Master Plan (part of the inter-municipal Kystplan for Helgeland) is being prepared. After objections on an initial version, a revised version seeks to

limit aquaculture development to two new locations within the World Heritage property – the two locations where aquaculture license applications are currently under consideration.

- The selection of the two potential aquaculture sites appears to be largely developer-led. In reality, before cultural heritage and environmental constraints are considered, the options for site selection within the property are constrained by a number of factors (such as proximity to traditional fishing grounds, transport routes, water depth, white areas for navigation, as well as proximity to other fish farms as a disease break). To demonstrate transparency, operators should be able to provide a clear statement describing the basis behind site selection within the property, together with a full and comprehensive assessment of alternative options.
- There is a need to develop baseline data and evidence in relation to potential impacts of aquaculture on key attributes of OUV. These primarily relate to impacts on the traditional practice of eider-tending and eider-down harvesting combined with traditional fishing, on fish, eider ducks and their habitats, the natural resource that underpins the cultural practices, and on visual aspects of this large open coastal landscape. Useful steps forward are beginning to be made through the Vega Archipelago Management Plan. A report commissioned by the Vega Archipelago World Heritage Foundation (SWECO, 2016) has considered one aspect - visual impacts. This concluded that industrial-scale aquaculture is incompatible with the World Heritage values including authenticity (subsistence on the shelf), and integrity (representation of characteristic elements in the cultural landscape of the strandflat). A second study, *'to build a knowledge base with the view to clarify whether fish farming in the World Heritage area will impact the eider duck husbandry'* is currently being undertaken by a working group. This group is due to report by the end of August 2017.
- The Mission asked specifically about two key areas: the impact of aquaculture on the cultural landscape and on birds (specifically eider, although this should extend to other high conservation-value bird species). These two must be seen as interrelated in terms of the way the supply of eider ducks underpins the traditional practices of down harvesting. The Mission agreed that the two proposed developments would be likely to have a visual impact, and that there may be other issues (e.g. noise) affecting appreciation of sense of place.
- In terms of the impact of aquaculture on the eider, the available scientific literature suggests that interactions (particularly in relation to disturbance and predation) may exist. This is supported by an extensive review carried out by NINA in 2015 (in Norwegian), which confirmed that no Norwegian literature is available which is able to definitively describe the effects of disturbance on eider from the establishment and operation of aquaculture plants, and that careful planning may allow operators to avoid the most disturbing activities, in the most vulnerable periods. Importantly, it also suggests that, where bird numbers have reduced to critical levels, consideration should be given to reduce human activities and disturbance. This implies that little is known about actual impacts, and that if a new farm is installed, then a detailed programme of monitoring will be required to assess the scale of any interaction. The need to be clear about the

potential for interaction between aquaculture and these important biological features is increased by the proximity of one of the installations to the Protected Area at Hysvær. The Mission suggests that the Norwegian authorities must consider the level of evidence required before any development (aquaculture or otherwise) is allowed to take place within the boundary of any Protected Area, and the mitigation or reversibility of any potential impact.

- The way in which local marine fish stocks are exploited is undergoing significant change, with small, low intensity craft being replaced by larger commercial vessels. The role that recreational fishermen play in exploiting the resource has also been described by local stakeholders as being significant and unsustainable. The Mission suggests that the State Party review the ways in which the marine fisheries resource is being exploited within the World Heritage property and develop a strategy for monitoring the impact of changing recreational and commercial (large and small scale) fisheries within it. Such a strategy should be developed regardless as to whether the planned aquaculture developments go ahead.
- The procedures relating to impact assessments for aquaculture do not currently appear to take adequate account of impacts to the OUV of the property. The process includes elements of Strategic Environmental Assessment (SEA) and Environmental Impact Assessments (EIA), which the Mission team found difficult to differentiate between. The assessment form used for aquaculture development in the Municipal Plan is based on a simple 'traffic light' system, providing only basic information, and actual detail was absent. The Mission was not provided with information on how EIA requirements for developments have been applied with regard to the two proposals within the World Heritage property. The Mission noted that Heritage Impact Assessments (HIA) do not appear to be required under national law and have not been used, either as standalone assessments or as a tool within wider impact assessment application, to assess impact of the two proposed aquaculture facilities on the attributes of OUV. Such HIAs need to be undertaken on the basis of clearly defined and agreed attributes of OUV. They need to evaluate impacts (beneficial and adverse), assess risk to the retention of OUV and the likelihood that the property may be in potential or actual danger, set out any heritage benefits arising from the proposals, provide clear guidance on how impacts can be mitigated or avoided, and include supporting evidence (for example survey data and use of photo-montages to demonstrate visual implications).

Additional impact assessments are thus necessary, through applying HIA, to determine how significant these various impacts would be and it is crucial that both cultural and related environmental impacts are fully considered before decisions are made. These decisions must be made on the basis of a clear definition of the attributes of OUV and the supporting environmental attributes of the property.

Should aquaculture subsequently be allowed within the World Heritage property, the Mission team suggests that this should conform to the highest management standards available, in order to reduce the potential for any adverse impacts and suggests that a continuous monitoring of attributes is considered. Adherence, for example, to the environmental and management standards required for the

Aquaculture Stewardship Scheme may be one way forward to reduce the potential for environmental impacts originating from Atlantic salmon fish farms. Other monitoring indicators would be needed for cultural attributes.

Recommendations for revisions of plans and planning policies relating to aquaculture

Recommendation 1: The State Party should consider what additional policy mechanisms are available to raise the profile of World Heritage within the Norwegian Planning System.

Recommendation 2: In finalising the Vega Municipal Plan, the relevant authorities should consider additional policies or supplementary guidance (such as locational guidelines) to ensure that aquaculture developments within the World Heritage property do not impact adversely on OUV. Possible policies could include requirements for Heritage Impact Assessments (HIAs)/aquaculture capacity assessments, as well as detailed Environmental Impact Assessments (EIAs) to inform site selection, and requirements to consider mitigation.

Recommendation 3: The State Party should review the way in which plans that affect World Heritage properties are assessed within the Strategic Environmental Assessment (SEA) context, and the adequacy of cultural and environmental impact assessment procedures for individual aquaculture developments within the property. If these are found to be deficient in considering impacts to defined attributes of the property's OUV, then an improvement programme should be initiated, on the basis of the ICOMOS Guidance on Heritage Impact Assessments for Cultural World Heritage Properties (2011). Guidance in Scotland for marine fish farming EIA (RPS 2007) may also be useful.

Specific recommendations in relation to the management of the property and aquaculture development

Recommendation 4: The State Party should not determine the two aquaculture licences until:

- The revised Vega Municipal Master Plan has been adopted with limitations on aquaculture in the World Heritage property - and with the clear need to ensure aquaculture does not impact on OUV;
- Adequate HIA and EIA have been undertaken, including an assessment of the potential for cumulative impacts to arise, in line with the ICOMOS Guidance on Heritage Impact Assessments for Cultural World Heritage Properties (2011) and the IUCN World Heritage Advice Note on Environmental Assessment, respectively;
- The findings of the Vega working group, set up to investigate the impact of aquaculture on eider-duck husbandry, which is due to report in August 2017, is available and can be used as part of the HIA process. The report of this working group should be peer-reviewed and made publicly available as part of the overall assessment processes.

Recommendation 5: If the HIA and EIA (including the report on eider duck husbandry) conclude that aquaculture development would impact adversely on the attributes of OUV and there are no options to avoid these impacts or mitigate them to a satisfactory extent, then the licences should not be approved.

Recommendation 6: Depending on the results of the current eider-aquaculture impact work, consideration should be given to further strategic studies to investigate this issue. Such a study could include a properly developed monitoring plan for eider – inside the boundary, and outside the boundary (control sites) of the property, and should focus on interactions between eider (and other bird species of high conservation value) with aquaculture sites. The aquaculture industry should be fully involved and opportunities should be explored for partnership funding, for example through the National Fund for Aquaculture. Monitoring the impact of changing recreational and commercial (large and small-scale) fisheries within the World Heritage property should also be considered, regardless as to whether the aquaculture developments go ahead.

Recommendation 7: The State Party should explore whether changes need to be made to the property Management Plan in order to allow it to address more actively the issues related to sustainable development. This should also explore what measures might be encouraged to strengthen the economy of local communities, how high-value organic produce associated with the World Heritage property might be developed; and whether and how aquaculture might contribute to sustaining the OUV of the property.

Recommendation 8: The State Party should continue to explore with relevant Municipality authorities, extension of the World Heritage property or its buffer zone to include adjacent islands and marine areas beyond the Vega Municipality and encourage opportunities to explore inter-municipal planning for aquaculture to reduce pressure on development within the existing property boundaries.

1) BACKGROUND TO THE MISSION

1.1 Inscription history

Vegaøyen -- The Vega Archipelago - was inscribed on the World Heritage List in July 2004 as a cultural landscape on the basis of cultural criterion v: *“to be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change”*¹.

The location of the site is shown in Map 1.

1.2 Criteria and Outstanding Universal Value

In 2014, the World Heritage Committee adopted a retrospective Statement of Outstanding Universal Value².

Brief synthesis

The Vega Archipelago is a shallow-water area just south of the Arctic Circle, on the western coast of Norway. It is an open seascape and coastal landscape which is made up of a myriad of islands, islets and skerries. A cluster of low islands, centred on the more mountainous islands of Vega and Sjøla, bear testimony of how people developed a distinctive, frugal way of life which is focused strongly on fishing, farming and the harvesting of eider down (the down of the eider duck) in an extremely exposed seascape. The property covers a cultural landscape of 103,710 ha, of which only 6,930 ha is land.

Fishermen and hunters have lived on the islands of Vega and Sjøla, where peaks tower to nearly 800 m, for more than 10,000 years. As numerous new islands gradually rose from the sea, the characteristic landscape became shaped by the interaction between fishermen-farmers and the bountiful nature in this exposed area. The Vega Archipelago now stands as a testimony to people who have developed unique, simple ways to live in and interact with nature.

Generations of Vegaøyen inhabitants lived as fishermen-farmers, making the tending of eider ducks the core element of their way of life. The local peoples also built shelters and nests for the wild eiders that came to the islands each spring. The birds were actively protected from any unnecessary disturbance throughout the breeding season. In return, the people could gather the valuable eider down when the birds left their nests with their chicks. As early as the 9th century, tending eiders was reported to be a way for people in Norway to make a living, and the Vega Archipelago was the core area for this tradition. Women played a key role in this lifestyle, and the World Heritage property of the Vega Archipelago also celebrates their contribution to the tending of eider ducks. The tradition remains alive today, albeit to a smaller extent.

The islands and islets are located either in groups, or as isolated landforms, spread across the 50 km broad strandflat which stretches from the mainland to the edge of the continental shelf. The outermost islands are barren and have just a thin, patchy soil cover, whereas those closer to the mainland feature more nutrient-rich

¹ 28 COM 14B.45

² 38 COM 8E

calcareous bedrock, are greener and show a farming-related biodiversity, linked to centuries of grazing and haymaking.

The rich maritime resources of the Vega Archipelago not only benefited local peoples, but also as many as 228 species of birds that can be observed in the archipelago. It is considered to be the most important wintering area for seabirds within the Nordic region.

Criterion (v): The Vega Archipelago reflects the way generations of fishermen-farmers have, over the past 1500 years, maintained a sustainable living in an inhospitable seascape near the Arctic Circle, based on the now unique practice of eider down harvesting, and it also celebrates women's contribution to the eider down process.

Integrity

The boundaries of the World Heritage property encompass 6,500 islands, islets and skerries, as well as the waters north and west of Vega and parts of that main island and its coastal strip. The rest of the island of Vega forms part of the buffer zone of the World Heritage property.

The World Heritage property showcases the diversity and interaction of the natural features and cultural heritage of the Vega Archipelago, forming a unique cultural landscape. This diversity ranges from the islets where eider down was gathered, to the fishing settlements and traditional farming complexes with characteristic field patterns. Together, these form a land use mosaic within the landscape. Most of the old buildings are intact, from dwellings to boathouses, warehouses and sheds, beacons and lights. Most of these have been renovated, making the area as a whole representative of settlements on the strandflat. Within the boundaries of the property, the interaction between characteristic natural and cultural elements of the cultural landscape allow for the long-term conservation of the area's Outstanding Universal Value.

In areas where grazing and haymaking are no longer practiced, and where no appropriate management strategies are in place, some of the cultural landscape is becoming overgrown or eroded. The bird life in the area is vulnerable to human disturbance in the breeding season, and the landscape may show signs of wear and tear if too many people visit the area. The large radio mast on Vega Island also has an impact on the main perspectives to and from the property.

Authenticity

The cultural landscape of the Vega Archipelago continues to be managed in a traditional manner, using time-honoured management techniques. The eider down tradition and the cultural landscape are taken care of by landowners and the local community in cooperation with the Vega Archipelago World Heritage Foundation and the management authorities. Bird tenders maintain the, more than 1,000-year-old, tradition of making houses and nests for the eiders on several of the 'down islets', protecting the birds through the breeding season, gathering the down and making it available for use or sale using traditional methods.

1.3 Examination of the State of Conservation by the World Heritage Committee

During the nomination process, technical evaluation reports produced by ICOMOS and IUCN in 2003 highlighted issues concerning aquaculture and conservation. The Advisory Bodies (ABs) concluded that aquaculture is a business that needs special attention in future planning to secure sustainable development that avoids cultural and environmental impacts, and is compatible with the World Heritage status of the property.

At its 28th session in Suzhou (July 2003), the World Heritage Committee, in inscribing the property 28 COM 14B.45, requested the State Party to develop a specific strategic plan for the World Heritage property that would contribute to the overall Master Plan for the archipelago and should include the interface between conservation and sustainable development in respect of aquaculture. Such a Strategic Plan has not been produced.

The Second Cycle Report by the Vega World Heritage Foundation to the World Heritage Committee in 2014 identified aquaculture as having the potential to have both positive and negative impacts on this property.

1.4 The Mission

On 25 October 2016, ICOMOS Norge wrote to the UNESCO World Heritage Centre to communicate its concerns regarding problems arising from the location of salmon farms “close to and even within the WH site”. Complaints were also submitted by Friends of the Earth Nordland, a private individual, and by the Norwegian Ornithological Society/Birdlife Norway, which commented that:

“[it is] incomprehensible that fish farming to this extent has been permitted and not already stopped by environmental authorities responsible for the national management of World Heritage Sites. We consider that fish farming, at a large scale, will have a considerable visual impact on the cultural landscape, and we understand that it will have serious consequences on the overall landscape, the traditional use, the nature and all living creatures in the marine ecosystem of the shallow waters of the site”.

In 2015, two applications for new fish farms within the Vega Archipelago World Heritage property had been submitted, and a regional plan for Helgeland that covers the area of the World Heritage Property was in the process of being finalised. The location of the proposed fish farms is provided in Map 2.

In order to guide national decision-making that takes into account the provisions in the *Operational Guidelines*, the requests of the World Heritage Committee and policies concerning Vegaøyen, the State Party of Norway invited ICOMOS and IUCN to undertake an Advisory Mission (hereafter referred to as ‘the Mission’).

The terms of reference for the Mission, the programme and Mission team are at [Annex III](#). The mission took place 19-23 February 2016. It comprised a meeting in Bodø with presentations on the management system and aquaculture applications, a site visit to Vega Archipelago and meetings with islanders (Map 3), a stakeholder

meeting in Vega attended by 21 members of the Vega community covering a wide cross-section of interests (see [Annex III](#)), and a meeting with members of the Municipal Executive of Vega Municipality.

2) NATIONAL POLICY FOR THE PRESERVATION AND MANAGEMENT OF THE WORLD HERITAGE PROPERTY

2.1 Protected Area legislation

In Norway, World Heritage properties are protected by the *Cultural Heritage Act*, the *Nature Diversity Act* and the *Planning and Building Act* and in some cases also by other sector acts.

Within the Vega Archipelago World Heritage property, the Cultural Heritage Act protects all pre-Reformation (i.e. pre AD1537) archaeological and historical monuments and sites. The Cultural Heritage Act 1978 extends protection automatically to buildings constructed between 1537 and 1650. Under this Act, later buildings and other structures and sites may also gain protection from individual protection orders and a Royal Decree may protect cultural environments as a group. Individual protection orders have been issued for 29 buildings in Skjærvær and for the Bremstein Lighthouse. Under the Nature Conservation Act 1970, five nature reserves and four bird sanctuaries have been designated and the Hysvær/Søla areas is recognised as a protected landscape. In all this amounts to 22% of the land surface of Vega Archipelago World Heritage Site.

2.2 Development planning and licensing

2.2.1 Planning system

The Planning and Building Act (2008) regulates spatial management and land use through a decentralised two-tier system of County Plans and Municipal Master Plans that covers land and sea to a distance of 'one nautical mile outside the baseline of the territorial sea'. The Ministry of Local Government and Modernisation develops policy and planning guidelines, and undertakes conflict resolution. The County and Municipal Planning Authorities in this case are, respectively, Nordland County Council and Vega Municipality.

The plan-making procedure involves early consultation, with public announcements and preliminary discussion with stakeholders taking place prior to the preparation of a draft plan and 'environmental impact assessment' of new/revised elements. Following further public inspection and consultation, objections can be lodged, before the plan is finalised. Consideration of the OUV of World Heritage properties is a relevant factor. Where there are objections, the County Governor mediates. Unless the objections are withdrawn or resolved during the final negotiations, the decision on the impact on national interests is made by the Minister of Local Government and Modernisation. This decision is final and is legally binding.

The plan of most relevance for regulation of aquaculture within the property is the Master Plan for Vega Municipality. The existing plan (2010-2017) – in place until a new plan is agreed, regardless of the published end date, states that new aquaculture development should only be restricted where these proposals overlap

with known fishery or nature conservation areas. Within nature conservation areas, the 2010-2017 Master Plan does, however, suggest that some development may, under exception, be possible in some types of nature conservation sites (e.g. Landscape Protection Areas). Other sea areas of Vega are considered to be 'unplanned' and applications for new aquaculture sites could be considered on a case-by-case basis.

At the time of the Mission, a new masterplan is under preparation by Vega Municipality in collaboration with Nordland County Council and a wide variety of other stakeholders. Once complete, this new Master Plan (the *Inter-Municipal Master Plan for the Coast of Helgeland*, or *KystPlan Helgeland*) will sit alongside 12 other Municipal Plans as part of a unified coastal plan for Helgeland. The first iteration of this plan would have allowed aquaculture development to take place within most areas of the Vega Archipelago World Heritage property. Following an objection by Nordland County Council and the County Governor, a revised version provides for continuation of the existing fish farm within the property at Skogsholmen, approved in 2011, and identifies only two potential aquaculture sites within the boundary of the property (the two current applications). This revised version also includes a position statement to preclude further aquaculture development within the Vega Archipelago World Heritage property. The revised plan will go to a second hearing (consultation) from 1 March (for six weeks). On the basis of the changes proposed, Nordland County Council intends to withdraw its objection to the plan. However, if Nordland County Council withdraws its objection, the Directorate for Cultural Heritage could still object if the advice from IUCN and ICOMOS confirms that the Master Plan is in conflict with the OUV of the World Heritage Site.

2.2.2 Cultural Heritage and Environmental Impact Assessments

There is no statutory requirement to undertake Heritage Impact Assessments (HIA) for World Heritage properties in Norway.

Norway is not part of the EU but as part of its obligations under the EEA Agreement it is required to comply with the requirements of EU Directives. These include the SEA (Strategic Environmental Assessment 2001/42/EC), EIA (Environmental Impact Assessment 85/337/EEC) and Water Framework Directive (2000/60/EC). This obligation does not extend as far as the Marine Strategy Framework Directive (2008/56/EC). The SEA and EIA Directives both require that environmental impact assessments are undertaken for all projects that may have 'significant environmental consequences' – at both a strategic and at a local level. Adherence to Water Framework Directive standards, set by WFD Technical Advisory Groups and agreed by intercalibration between the regulatory authorities of Member States provide the basis for applying consistent classification standards across European regions.

The responsibility for environmental policy in Norway lies with the Ministry of Climate and the Environment and this Ministry has the lead in the development of environmental legislation and guidelines. Environmental Impact Assessments have been a legal requirement in Norway since 1990, and in 1999 responsibility for managing the EIA process was devolved to local authorities. These adhere to the requirements of EU Directive 85/337/EEC.³

³ Subsequent amendments were made to the original Directive in 1997, 2003 and 2009. These were: a) Directive 97/11/EC - increased the types of projects covered, the number of projects requiring mandatory environmental

In terms of procedure, the requirements of the EIA Directive can be summarized as follows: 1) the developer may request the competent authority to say what should be covered by the EIA information to be provided by the developer (scoping stage); 2) the developer must provide information on the environmental impact in a properly structured EIA report; 3) the environmental authorities and the public (and other affected Member States if applicable) must be informed and consulted; 4) the competent authority decides whether an activity should take place, taking into consideration the results of EIA report and any consultations; and 5) the public is informed of the decision afterwards, and will be afforded the opportunity to challenge the decision before the courts.

In Norway, an Environmental Impact Assessment (EIA – assumed to be SEA although this is not a term which appears to be widely used) is undertaken for all national and regional policies and plans, and the Department for Climate and Environment provides guidance on what this should entail. Nordland County Council has undertaken an EIA (SEA) of revisions to the current Vega Municipal Plan (Vega Municipal Plan 2007-2020) covering any new or proposed changes to use of the area based on 'known' knowledge.

At individual development level, an EIA is required for certain aquaculture proposals although the Mission was informed that many developments are of a size (tonnage) which is below the threshold for which a formal EIA is required. The criteria for EIA and the content of EIA reports are set out in appendices to *The Regulations on Environmental Impact Assessment for plans pursuant to the Norwegian Planning and Building Act (2014)*. Both Slaski (2009) and Wilson *et al.* (2009), have reviewed EIA thresholds for marine Atlantic salmon farms in a range of European countries. Slaski (2009) suggests that a production biomass of 780/900 tonnes is large enough to trigger the EIA process in Norway, however Wilson *et al.* (2009) highlighted that installation volume, rather than biomass was the key criteria for identifying the need for an EIA. This is supported by Section 4 of the earlier *Regulations relating to Environmental Impact Assessment (1999)*, which lists the criteria for determining whether an environmental impact assessment is required for Appendix II projects. This states (under sub-section 3.2) that localities for floating/movable seawater rearing units with a volume of 48,000 m³ or more should be assessed. The competent authority pursuant for the delivery of EIAs in this context is the Directorate of Fisheries and it is used as a basis for planning decisions and/or permits issued pursuant to the Aquaculture Act (2005). It should be noted however, that under the World Heritage Convention, States Parties to the Convention are requested to undertake an impact assessment for any proposed activity or development projects that have the potential to impact the OUV of a property, and submit it to the World Heritage Centre for consideration by the ABs in accordance with paragraph 110 of the *Operational Guidelines*. Guidance notes by ICOMOS and IUCN are available for HIA and EIA/SEA, respectively.

impact assessment, introduction of new screening arrangements, the establishment of minimum information requirements, and brought legislation into line with the requirements of the UN ECE Espoo Convention on 'EIA in a Transboundary Context'; b) Directive 2003/35/EC aligned the legislation with the Aarhus Convention on public participation in decision-making and provided access to justice in environmental matters; and c) Directive 2009/31/EC amended the Annexes I and II of the EIA Directive, by adding projects related to the transport, capture and storage of carbon dioxide (CO₂). These were later codified, along with other amendments into Directive 2014/52/EU.

The primary focus in EIA and longer-term environmental monitoring of the impact of Atlantic salmon farms in the marine environment relates to the effects of organic waste on the benthic environment (Wilson *et al.*, 2009). This monitoring work is carried out in accordance with Norwegian Standards NS9410 and NS9423, and future monitoring frequency is set out by the County Governor. Norwegian Standard 9415 relates to the technical requirements and engineering standards for floating aquaculture structures. The robustness of each facility is assessed using the dynamic model 'ConMotion' to predict environmental (physical) pressures on cage infrastructure, and these data are required to obtain a three-year NYTEK Regulation Certificate from the Directorate of Fisheries prior to installation. This is seen as a necessary measure to reduce the incidence of Atlantic salmon escapes and genetic introgression with wild conspecifics.

Once established, data is collected in relation to sea lice (fortnightly counts) and benthos health/pollution. These 'environmental reports' are evaluated and compiled into a national report by the Directorate of Fisheries. If a fish farm is considered to have a negative impact of the environment, then it is usual in Norway to move production to another location. If this site is not optimal, then there is a risk that failure may re-occur. Research into the long-term impacts of aquaculture is not limited to Government or local authorities, and there are numerous examples of large-scale research programmes in this area (e.g. reviews by Thorstad *et al.*, 2008; 2015; Taranger *et al.* 2015).

The Regulations on Environmental Impact Assessment for plans pursuant to the Norwegian Planning and Building Act (2014) also state that, where relevant, any EIA should consider (sic):

- a) areas that are protected, temporarily protected or proposed protected pursuant to Chapter V of the Natural Diversity Act or Section 11 of the Act relating to natural areas in Oslo and nearby communities (Markaloven);
- b) cultural heritage or cultural environments that are protected, temporarily protected or proposed protected pursuant to the Cultural Heritage Act or protected pursuant to the Planning and Building Act, or where there are or there is a strong likelihood of finding, automatically protected cultural monuments that are part of a cultural environment that goes far back in time;
- c) salmon stocks in areas comprised by the scheme for national salmon water systems and national salmon fjords;
- d) existence of a selected or endangered habitat type, valuable habitat type, value A or B, endangered or prioritised species, or conflicting with an ecological function area for a prioritised species;
- e) natural areas that are particularly important for the pursuit of outdoor recreational activities; and
- f) particularly valuable landscapes, large continuous natural areas of an untouched nature or protected waterways.

2.2.3 Regulation of aquaculture development

The Norwegian Atlantic salmon farming industry is the biggest in the world, with a total production of ~ 1.2 million metric tonnes (Moe *et al.*, 2016) and an export value

of approximately €5 billion. Although the growth rate of the industry has been variable over the last year, (FAO, 2016) there is a realistic expectation that this industry will continue to grow, possibly at a rate of 3-5% per annum. This is largely due to a new flexible maximum allowed biomass (MAB) rule, which would allow fish farmers to leave Atlantic salmon in the water longer over the summer months. In terms of biomass, this could translate to an additional 50,000 metric tonnes of production from 2017 onwards. A White Paper presented to the Norwegian Parliament in 2015, outlined a government proposal for a new system for regulating growth in the Atlantic salmon-farming sector (Norwegian Government, 2015). It is unclear how these new regulations have been integrated into the planning system.

The Aquaculture Act (2005) requires licences for aquaculture, permitting production of certain species at certain sites. General conditions apply (for example, environmental responsibility; consideration of land-use; approval by various authorities on aspects such as food safety, navigation, fisheries, and pollution) before a licence can be granted. Nordland County Council administers licensing in waters around Vega. Vega Municipality announce the application and clarify the relationship to the Municipal Masterplan – as a general rule, applications must be consistent with this. The county council can attach specific conditions to individual licences (e.g. time limitations). Where there is an appeal, the Directorate of Fisheries makes a final decision and is responsible for monitoring. Figure 1 shows the application process for new fish farm developments.

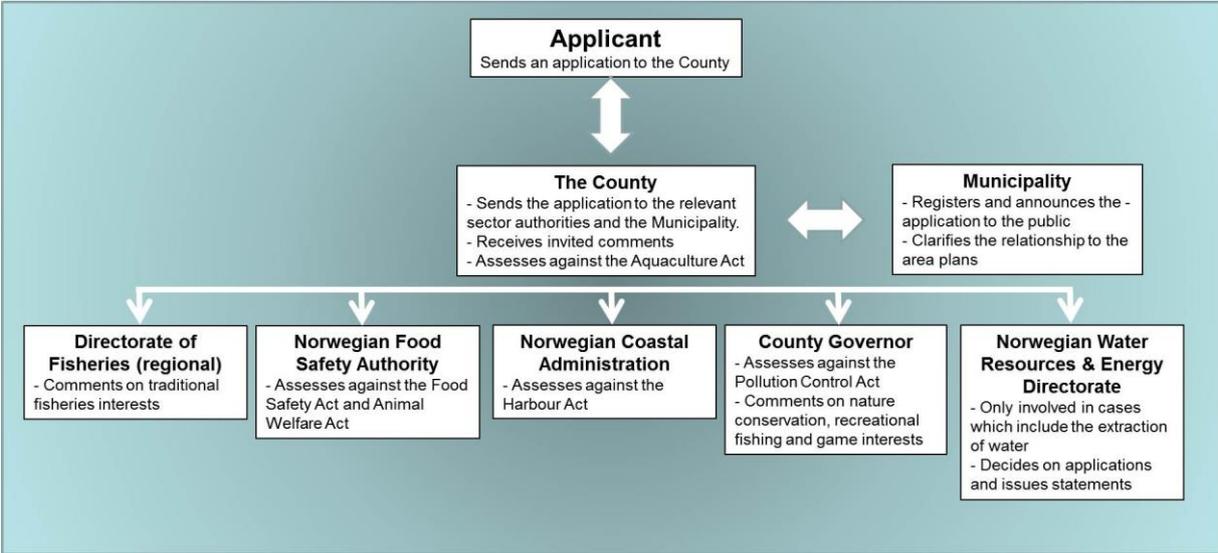


Figure 1: The assessment process for each new fish farming application

At the time of the Mission, Nordland County Council was processing two applications for Atlantic salmon fish farms within the boundary of the property:

1. by Vegalaks AS/Sjøfarm AS/Nova Sea AS (application received 17/06/2015) for a farm of 3,120 tonnes biomass at Hysvær. This site lies partially within the Hysvær-Sola Landscape Protection Area for wildlife but the Vega Protected Area Management Board has granted an exemption for the establishment of aquaculture facilities there, as it does not believe that the development will alter the landscape nature and character considerably.

2. by Marine Harvest Norway AS at Rørskjæran (application received 24/04/2015) for a fish farm of 3,120 tonnes biomass.

The locations of these proposals are provided in Figure 2. Neither of the two applications has undergone a full EIA (see above) although the risks have been documented.

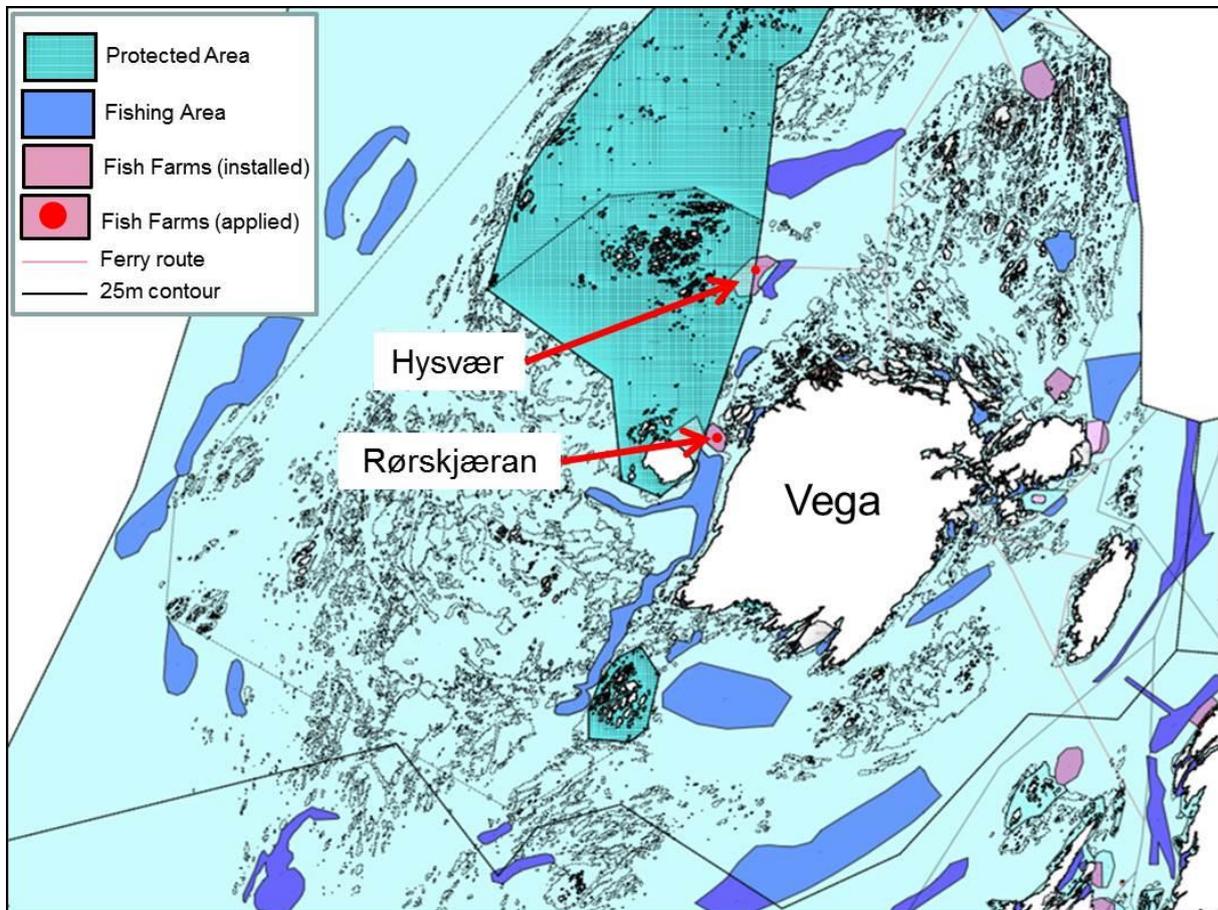


Figure 2: Location of the Vegalaks AS/Sjøfarm AS/Nova Sea AS application at Hysvær, and the Marine Harvest Norway AS at Rørskjæran. The key provided shows the position of these applications relative to the Protected Area at Hysvær, important marine fishing areas and transport routes

The Vega Municipality Board strongly supports both applications on the basis of their significance to the local economy and job creation in order to strengthen settlements within the Municipality. Processing has been completed by the sector agencies for Rørskjæran. For Hysvaer, the County Governor (responsible for nature management and pollution) has stated that they will wait for the Mission report from ICOMOS/IUCN before determining the outcome of the application.

2.3 Management framework

In Norway, cultural heritage management is integrated with environmental management. Hence, the Directorate for Cultural Heritage and the Norwegian Environment Agency are both directorates of the Ministry of Climate and Environment which leads implementation and coordination of the World Heritage Convention on

behalf of the Norwegian government and provides the secretariat for the Vega Archipelago World Heritage Council. At county level, cultural heritage management resides with the County Council (elected), and nature conservation with the County Governor (governmental).

Responsibility for management of Vega Archipelago World Heritage property rests with Vega Municipality for 78% of the area, and Vega Management Board for the Protected Areas, which comprise 22% of the site designated for nature conservation.

The Vega Archipelago World Heritage Foundation was established in 2005 by Vega Municipality to ensure the OUV of the property is safeguarded and to coordinate local activity. It is funded by a special grant from the Ministry of Climate and the Environment. Vega Archipelago has, as most of the other World Heritage property in Norway, a World Heritage Coordinator. The Coordinator is the cornerstone of local activity concerning the property. Members of the Foundation's board are drawn from national, regional and local authorities, the museum and the local cooperative council with 17 associations, NGOs and other institutions.

Further to this, a "Management Network" with the Nature Inspector, the Manager for the Protected Areas and the World Heritage Coordinator helps improve coordination of local management. Small landowners privately own almost the whole of the land part of the property and an inclusive approach seeks to ensure that they are an integral part of the management of the property.

2.4 Response to the recognition of values under international treaties and programmes (World Heritage, Biosphere Reserve designation)

Since inscription, there have been many positive initiatives which support the World Heritage OUV of Vega Archipelago: adoption of a revised Management Plan (2015-2022); partnership funding of 47million Norwegian krone between national, county and municipal governments for a new World Heritage Center, due to open in April 2018 at Gardsøya; a resurgence in eider-tending, particularly focussed around the island of Lånan 30 km northwest of the main island of Vega. Across the property, surveys suggest that eider numbers are increasing in contrast to other areas of Norway.

Investment in built heritage conservation by the Directorate for Cultural Heritage through grant-aid to Nordland County Council has funded 64 projects across the property at a total contribution value of 22 million Norwegian Krone (about 2,44 million Euro) for restoration of historic buildings, recording initiatives and training to develop skills for restoration of historic buildings. The Directorate has also funded a building conservation consultant (50%) from Helgeland Museum, based on Vega, to follow up existing projects and initiate new ones, and to provide training provision to develop skills. An overview of all potential objects for building protection is now completed and is the basis for further built heritage conservation. The Norwegian Agency for Environment supports activities at Vega with approximately 3.5 million Norwegian Krone annually, including funding for the salary of the World Heritage Coordinator.

The following actions are relevant in the context of UNESCO's requests to the State Party at the time of inscription (2004) for a strategic plan to address interactions between aquaculture and conservation in the Vega archipelago.

- In December 2011, the County Governor asked the County Council to delay issuing a licence to develop an Atlantic salmon farm of 3,120 tonnes biomass at Skogsholmen, within the boundary of the property until the Ministry of Environment had made clear the effects of aquaculture on the Outstanding Universal Value of the World Heritage property. Following discussions with ICOMOS staff, the Ministry of Environment confirmed to the county authorities in August 2012 that the fish farm would not be in conflict with the OUV of the World Heritage property. It is understood that this was mainly because of the reversible nature of a fish farm development. Officials from the Ministry of Climate & Environment confirmed that the relatively small visual impact of the fish farm was also a factor.
- The revised Vega municipal plan currently under consideration seeks to address aquaculture development within the World Heritage property. In addition to this, the Vega Archipelago Management Plan (2015-2022) states for aquaculture: *'The main goal is to develop an aquaculture industry that is sustainable in terms of the World Heritage values'*, with sub-goals *'to define the critical level between the World Heritage values and aquaculture'*; *'to ensure that children and young people are more fully informed of the aquaculture industry'*, and *'to work to promote education within fishing/aquaculture in the region of Sør-Helgeland'*. To achieve these, the action plan identifies two priority activities: *'to build a knowledge base with the view to clarify whether fish farming in the World Heritage area will impact the visual experience of the cultural landscape'*; and *'to build a knowledge base with the view to clarify whether fish farming in the World Heritage area will impact the eider duck husbandry'*. These goals are being implemented by the commissioning of a landscape assessment (SWEKO, 2016), and by the establishment of a working group to build a knowledge base to clarify whether fish farming in the World Heritage area will impact the eider duck husbandry. The SWEKO report has been completed while the working group is due to report by the end of August 2017.

3) IDENTIFICATION AND ASSESSMENT OF ISSUES

3.1 Management

3.1.1 Effectiveness of the legal and management system

The Norwegian Ministry for Climate and Environment's 2012-13 Report to the Storting (White Paper) (Chapter 4.8 of its relating to The Cultural Heritage Policy), states that the Norwegian Government would:

- give priority to the protection of existing World Heritage and the follow-up of nominations already initiated;

- define sector responsibilities and coordinate the governmental policy concerning World Heritage;
- ensure the flow of information between authorities and the local community;
- ensure that the Norwegian World Heritage sites have good management plans;
- ensure that Norwegian World Heritage properties have coordinated and holistic management plans;
- give priority to monitoring the World Heritage properties;
- ensure that information on World Heritage is easily accessible; and
- continue Norway's international commitment to and support of World Heritage.

To achieve protection for priority sites, the White Paper correctly identifies the need for well-defined responsibilities, co-ordinated policy, communication between stakeholders, comprehensive management plans and evidence (monitoring data) which is easily accessible.

The Mission observed that World Heritage appears to have a relatively low profile within the Norwegian planning system and particularly in relation to aquaculture consenting procedures, with assessment of impacts to OUV some way down the list of priorities. This may be a reflection on observations within the White Paper that “authorities, nationally, regionally and locally, should take greater responsibility in protecting World Heritage”, and that “until today, the Norwegian implementation of the Convention has not been sufficiently regulated” (Chapter 4.8)

3.1.2 The boundary of the Vega Archipelago World Heritage Site

It is understood that the State Party delineated the boundary and buffer zone of the Vega Archipelago World Heritage property, in part, to align with the boundaries of Vega Municipality. This may inadvertently be a factor in the pressures arising at the property. Decision (28 COM 14B.45) recommended that:

“...the State Party consider extending the World Heritage area - or its buffer zone - to include islands and marine areas to the north and northeast”

If combined with inter-municipal planning for aquaculture between Vega and the neighbouring municipalities, a larger buffer zone extending beyond Vega Municipality, may have reduced pressure to develop aquaculture sites within the Vega Archipelago World Heritage property, and increased number of employment opportunities available to the local population.

3.1.3 Spatial planning for aquaculture

The Mission observed that the development of aquaculture sites at Vega is taking place through a planning process which appears to be ‘development-led’, rather than one which is strategic and ‘plan-led’. Adopting a more strategic, plan-led approach would assist authorities to plan for aquaculture in a way that takes account of the OUV of Vega Archipelago.

The potential impact of an aquaculture site on the environment is due, in large part, to the physical characteristics of the area in which it is located and the biological sensitivity of the area (cultural elements may also be included). Identifying the most appropriate areas for development is therefore crucial, and this should be driven by a

spatial plan that identifies the key constraints, and opportunities, for the industry. Where World Heritage properties are concerned, the attributes which make up its OUV are a key element which needs to be considered carefully through the lens of a properly constructed impact assessment.

It is clear from Decision 28 COM 14B.45 that the need for clear strategic planning for aquaculture at Vega was identified by the World Heritage Committee well in advance of the drafting of the first Municipal Master Plan (2010-2017) and that this was communicated to the State Party. Twelve years after inscription, the Mission has observed that relatively little progress has been made until recently in developing a strategic plan to investigate the interaction between aquaculture and conservation, or to develop coherent spatial planning or aquaculture capacity policy for this industry within the confines of the World Heritage property boundary and its buffer zone.

Existing plans

The 2010-2017 Master Plan (under which all current aquaculture applications are being assessed) appears inadequate when considering the issue of aquaculture development that takes into account the OUV of Vega Archipelago.

The plan indicates that some development may, under exception, be possible in some types of nature conservation sites (e.g. Landscape Protection Areas). Other sea areas of Vega are considered to be 'un-planned' and applications for new aquaculture sites could be considered on a case-by-case basis. The rationale for deciding whether aquaculture developments should be allowed to take place within a World Heritage property or within Protected Areas, how these will be assessed in relation to OUV and the values of the protected sites are not clear. Nor is it clear whether more stringent conditions may be applied to the EIA process and how cultural heritage impacts are considered. It is the Mission's understanding that no additional data is required for applications of this type within a World Heritage property or a Protected Area beyond that which is normally gathered in support of a standard application. This is also surprising given the prominence of the Nature Diversity Act within the Norwegian planning system.

In areas where aquaculture conflicts have arisen in other parts of Europe (as they have in Scotland), the industry is guided by national locational guidelines (e.g. Marine Scotland Science, 2016) and these are used to help inform whether such developments can be accommodated within a local area. This approach is strengthened by the provision of guidance relating to the landscape/seascape capacity for aquaculture in sensitive localities (e.g. ASH design+assessment, 2011). Standalone strategies such as this do not appear to be available for this World Heritage property in respect of environmental issues nor are there any guidelines related to impact on cultural assets.

Revised Vega Municipal Plan within KystPlan Helgeland)

The developing (KystPlan Helgeland) Municipal Master Plan has undergone revisions to address the need to consider aquaculture development within the World Heritage property in a way that takes account of World Heritage Status through delineation of two locations for aquaculture - the sites at Hysvær and Rørskjæran - as the limit of what the World Heritage property can accommodate.

However, the Mission gained the impression that the plan has been written with the overall aim of accommodating two sites as no justification has been set out as to how the limit of two Atlantic salmon aquaculture sites was reached. Issues relating to how these sites have been identified are discussed further below.

In addition, the plan would benefit from a clearer expression of policies and strategies for the development of aquaculture within the World Heritage properties – for example locational guidelines, requirements on developers to undertake specific studies to underpin applications (e.g. heritage impact assessment; aquaculture capacity assessments).

The Vega Archipelago Management Plan

Inclusion of objectives and goals related to aquaculture within the property represents a constructive step forward and progress is beginning to be made through commissioning of the SWECO report and the setting up of the working group on impact on eider-down harvesting. These are useful building blocks but they need to be further developed in order to deliver the necessary scientific basis required for evidence based impact analysis and effective decision-making.

3.1.4 Site selection procedure

The process for selection of aquaculture sites is unclear and appears to be driven by the industry. Planners and decision-makers would benefit from a much more clearly set out options appraisal to demonstrate the reasons for selecting sites at Hysvær and Rørskjæran, and a clear evidence-based explanation as to why any other options within the buffer zone and less-sensitive north east of the area have been ruled out.

The Mission understands that the process followed by the companies involved: the creation of a buffer zone around existing fish farms (5km to avoid disease transmission between fish farms); selection of areas with significant water depth (much of the sea area of Vega Archipelago is too shallow), and with good tidal flow; observation of constraints imposed by issues such as known fishing grounds, fairway navigation (white areas⁴), and nature conservation. It is not clear how consideration of OUV has been factored into this site selection process, if at all. There is little doubt that these factors significantly reduce the number of locations available within Vega, but plan-makers appear to have accepted that few alternatives exist on the basis of assurances by industry – without any clear evidence (presented to the Mission) of how these decisions were made.

3.1.5 Cultural Heritage and Environmental Impact Assessments

The processes followed to develop impact assessments for aquaculture within Vega Archipelago World Heritage property, and the examples provided to the mission do not adequately demonstrate due consideration of the OUV of the World Heritage property.

As an observation in terms of overall process, the Mission found it confusing that there is no clear differentiation between environmental impact assessment of plans

⁴ White areas are areas which must remain clear to ensure visibility to lighthouses and other navigation aids.

and policies (what constitutes a Strategic Environmental Assessment), and development proposals (what constitutes Environmental Impact Assessment). Discussions with Nordland County Council, for example, refer to an Environmental Impact Assessment of the Vega Master Plan when this should actually be an SEA.

Currently there appears to be no requirement for Heritage Impact Assessments to be undertaken.

Environmental Impact Assessment of the Vega Master Plan

'Environmental Impact Assessments' have been carried out for the sites at Hysvær and Rørskjæran within the revised Vega Master Plan using a traffic light system. This allows the County Council to visually assess whether the information provided by the applicant is sufficient to allow a development to take place (see example provided for the development at Rørskjæran in Figure 3). The assessment for Hysvær is understood to be identical.

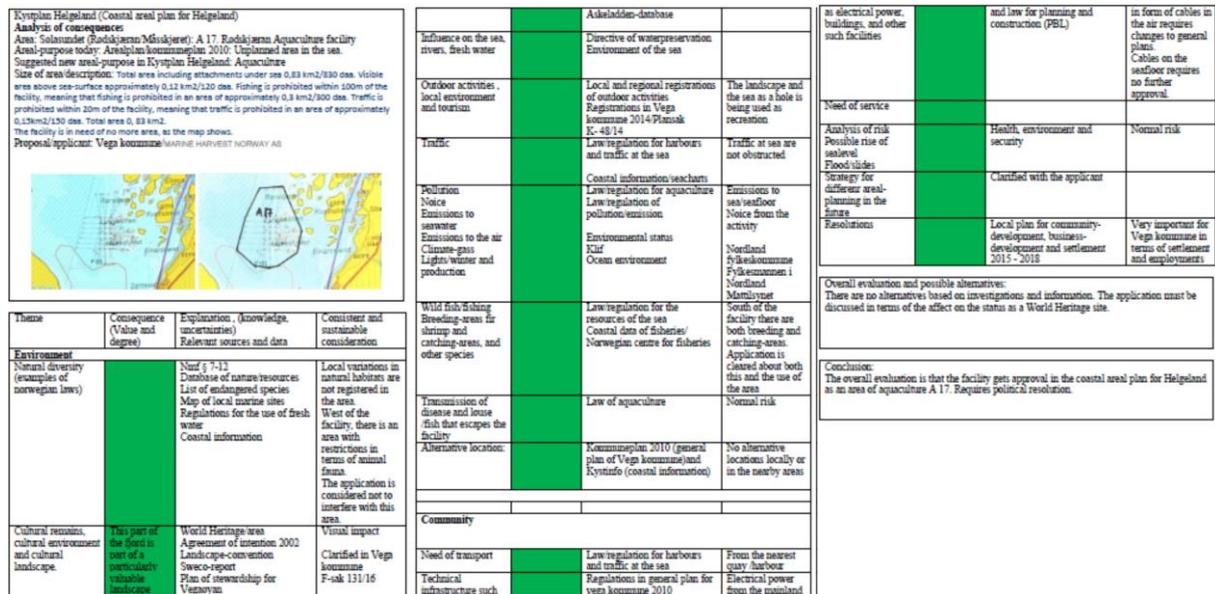


Figure 3. The EIA assessment for Rørskjæran translated into English, showing the traffic light assessment system. No survey information is provided. Source: Nordland County Council.

This identifies the World Heritage status of the property but does not consider individual attributes of OUV (for example on eider-tending) assessment process. Impacts on fisheries as a whole are, however, considered. The traffic light system used for local EIAs lack sufficient detail to allow external bodies to scrutinise the rationale behind the allocation of green, amber and red categorizations. EIAs carried out for aquaculture applications must be adequate to allow a determination of the effect of such developments on the status of the World Heritage property, and these assessments must be transparent. A similar (traffic light) approach was suggested in 2015 at a larger spatial scale (National) for future aquaculture development where: green areas will be open for growth, yellow categorisation means aquaculture production will be unchanged and areas listed as red will require a reduction in production. These categorizations were based largely on the ability of fish farmers to control sea lice burdens within Atlantic salmon marine sites.

Impact Assessments of development proposals

The Mission has not seen the individual development applications by AS/Sjøfarm AS/Nova Sea AS for the development at Hysvær or Marine Harvest A/S for their proposal at Rørskjæran, and was therefore unable to examine the data put forward relating to environmental risks and assess whether, indeed, the effect on the World Heritage property has been considered. Therefore, the Mission cannot confirm that these data, and all supporting information, have been adequately screened by all of the appropriate authorities to the standards required of them. However, officials confirmed, during the Mission, that the assessments did not include visual impact assessment using photo-montages, noise assessments, assessment of cumulative impacts of developments in addition to existing fish-farms, and in-combination impacts with other applications under consideration. Crucially, cultural attributes were not considered during the assessment process. As such, the procedures need to be improved to allow a satisfactory assessment of potential impacts to attributes which convey OUV such as eider tending and fishing, in relation to supportive environmental attributes, and in relation to noise/visual impacts on the cultural landscape.

3.1.6 Decision-making on aquaculture applications

In principle, the aquaculture consenting procedure for Atlantic salmon farms within Norway should have all the basic framework requirements in place to consider impact on the OUV of the property. However, the Mission has identified a number of issues relating to implementation:

- The planning approval processes are not as clear as they could be. A wide range of authorities are involved in the decision-making process (see Figure 1), and the distinction between local and national roles, appears slightly opaque to external observers;
- The two fish farm applications are being considered against the existing Vega Municipal Land Use Plan, while, as discussed above, being written into the revised plan. Taken together with the selection procedure for sites also discussed above, the impression is that the consent procedure is driving plan-making. A more logical approach would be to finalise the new Master Plan and then consider the applications under the revised framework;
- EIAs do not currently cover defined cultural attributes of OUV and there is currently no obligation to undertake Heritage Impact Assessments;
- Once the aquaculture installations are operational, the Mission understands that environmental monitoring will take place on an annual basis as part of the pollution control mechanisms. There is also understood to be a willingness on the part of the developers to invest in additional monitoring programmes as part of site operation. Whilst important, there must be concern as to whether a 'Deploy and Monitor approach' should be acceptable within a World Heritage Site. This is inconsistent with the precautionary principle, whereby evidence is gathered prior to development, with the effects continually monitored during operations.
- No mitigation of potential impact has so far been requested in respect of the two applications, although the Mission identified a willingness to consider this.

- Reversibility and time limitation for licences– The Mission understands that the Skogsholmen site was consented partially on the basis of the principle of ‘reversibility’. Over time, in principle, the impact of aquaculture on marine habitats can be reversed. The removal of any associated infrastructure would also remove any adverse landscape issues. But it is difficult to see how adverse changes to eider nurturing could necessarily be easily reversed if long-standing philopatric associations between eider and the islands are disrupted. From a socio-economic perspective, the removal of facilities which offer employment for local islanders may also be seen as politically unacceptable.

3.1.7 Other issues related to sustainable development

Plans for aquaculture within the Vega Archipelago World Heritage property need to be seen in context. Since inscription there has been a resurgence in eider-tending (harvesting the down of wild eider ducks) and the number of eider ducks has noticeably increased (Johansen, 2016). Eider tenders now receive compensation which enables them to stay on the islands during the breeding season and this has led to the recruitment of new tenders and the establishment of the Nordland Eider Duck Association. Despite this success, the overall human population of Vega is gradually declining. Employment from aquaculture, the fish-processing industry and small-scale tourism are seen by Vega Municipality as playing an increasingly important role in the future of the community following the decline in key industries such as commercial fisheries and oil and gas.

The municipality’s plan-making powers are limited within its municipal boundaries which align with the boundary of the World Heritage property. Tensions between the need for Vega Municipality to plan for a sustainable future, and the obligations to sustain the OUV of the property are beginning to surface with the issue of aquaculture developments tending to divide the community.

Vega Municipality considers sustainable development of aquaculture is consistent with the Declaration of Intent (1 December 2002) agreed between the Municipal and County authorities prior to nomination of the World Heritage property.

- “The reason for nominating the Vega Archipelago as a World Heritage site was to preserve the cultural and biological landscape
- The premise for these traditional businesses and other economic activity being preserved is that there is still a possibility for them to be run in a profitable way and that business activity can develop in the same pace as in the rest of the country. The same goes for new industries.
- The World Heritage area should be managed according to current national legislation. The purpose of the nomination was not to pass new laws and regulations that only apply to Vega. County authorities should work for a legislation that does not counteract the purpose of the nomination.
- Farming, aquaculture, fishing, tourism and other business activity should develop in cooperation and with mutual consideration and respect.”

There is a need to explore whether changes should be made to the Management Plan for the property to properly address the issue of sustainable development so that it considers for instance, what measures might be encouraged to strengthen economy of local communities, how high-value organic produce associated with the World Heritage property might be developed; and whether and how aquaculture might contribute to sustaining the OUV of the property. As a basis for this, there is a need to ensure that the attributes of OUV are clearly set out so that the traditional practices and the environmental factors that support them are a fundamental part of any development plans.

3.2 Factors affecting the property

Stakeholder concerns related to the installation and operation of industrial-scale aquaculture within the property have focussed on a number of factors which have the potential to damage the OUV of Vega Archipelago, including its conditions of integrity and authenticity. These concerns can be broadly categorised as:

- visual impacts on the farmer/fisherman cultural landscape;
- biological impacts, and through that, potential impacts on the eider-tending tradition and traditional fishing.

The Mission considered these concerns during the site visit, discussions with officials and other stakeholders. The Mission has not seen documentation for either application and given the limitations of impact assessments, as outlined above, it is not possible to state with certainty what the levels of impact will be or to advise as to whether these are likely to raise issues of national/international importance requiring intervention.

The following observations are however relevant:

Impacts on traditional eider-tending

The nature and extent of any impacts of aquaculture on traditional eider-tending seem likely to be closely linked to impacts to eider and the wider ecosystem, about which there is some uncertainty. Progressing with the developments without greater certainty was the key concern of eider down producer Utværret Lånan. The report of the Vega Working Group is therefore of key importance in this regard. An assessment of the potential interaction between eider and aquaculture is provided later in this report.

Impacts on traditional fishing

Aquaculture and traditional fishing have much in common. The need to provide safe harbour areas, transport links to processing facilities and the provision of staff who have the training and experience to work in harsh maritime environments are examples of factors common to both sectors. Discussions with the Vega Municipal Board during the Mission outlined the need to align both sectors and avoid potential conflicts, but at the same time recognise the changes which have taken place within the industry in recent decades, where small-scale vessels have been largely replaced by larger sea-going craft. Figure 2, which shows the location of the two proposed aquaculture sites relative to traditional fishing grounds, suggests that care has been

taken to avoid overlap. The capture of marine species, such as cod and halibut by inshore fishermen are therefore unlikely to be affected, as was also indicated by supportive representations on behalf of fishermen at the Mission stakeholder meeting. Nonetheless, the Mission team recommend that the performance of these local fisheries be monitored regardless as to whether the fish farm applications go ahead or not. The Mission team noted anecdotal concerns expressed by some stakeholders that the scale of recreational fisheries had increased in recent years and that exploitation of cod and halibut by this sector was becoming unacceptably high.

3.2.1 Visual impacts on the farmer/fisherman cultural landscape

The SWECO report on visual impact concludes that aquaculture development on an industrial scale is incompatible with the values of the property including authenticity (subsistence on the shelf), and integrity (representation of characteristic elements in the cultural landscape of the strandflat). In relation to allocations in the revised Municipal Plan, Nordland Council concluded that there would be minimal impact.

The Mission's observations are as follows:

Site 1 - Vegalaks AS/Sjøfarm AS/Nova Sea AS at Hysvær. The site lies to the east of the 200 low-lying islands that make up the community of Hysvær, partially within the Hysvær-Søla Landscape Protection Area for wildlife. Hysvær is the first station recorded in written sources and was important for down and eggs. Fishing was the primary way to earn a living during the early 20th century. Today, owners on the islands preserve the eider-tending tradition during spring and summer months. The location of industrial-scale fish farming would be likely to have a visual impact at Hysvær. For example, the installation would be visible from some of the islands, and, on quiet days, it may be possible to hear any generators used to supply power.

Site 2 - Marine Harvest Norway AS at Rørskjæran. The site lies close to the channel between the steep-faced west coast of Vega and the mountainous fishermen/farming island of Søla. The landscape characteristics differ from the low-lying islands of the strandflat, but a fish farm here will alter views from the main island of Vega out to the shelf.

While both sites raise issues in terms of visual impacts, on balance, the impacts may be greater with Site 1 where the development would be encroaching within a designated Landscape Protection Area. Cumulative impacts should also be assessed, as they are sufficiently close and within line of sight to be intervisible. The two installations in line would significantly alter the relationship between Vega and the island groups to the west, introducing industrialisation into the seascape and interrupting views of the outstanding characteristics of the shelf. The developments would be likely to be visible from the new World Heritage Centre at Gardsøya. Furthermore, visitors crossing by boat from Vega to the islands of Søla and Hysvær pass by the fish farms.

3.2.2 Biological impacts

The key impacts of Atlantic salmon aquaculture on the marine environment are well known, and include:

- the discharge of nutrient and other chemicals into the local environment leading to nutrient enrichment (eutrophication);
- the accumulation and bioaccumulation of chemicals used to prevent biofouling within sediments or benthic organisms;
- the accumulation and bioaccumulation of chemotherapeutants within benthic sediments and organisms;
- the potential for increased mortality of wild Atlantic salmon (and sea trout) through elevated numbers of sea lice *Lepeophtheirus salmonis* Krøyer;
- changes in the genetic characteristics of wild Atlantic salmon caused by introgression with farmed conspecifics.

In addition to the potential impact of fish farming itself, other issues, such as direct disturbance caused to sensitive species, through the production of noise, light and physical intrusion. Indirectly, fish farms can also attract opportunist predators, both mammals and birds. These impacts can be reduced through improved technology and good husbandry.

An overview of the history of the Norwegian Atlantic salmon farming industry, along with a review of the environmental impacts of Norwegian Atlantic salmon farming can be found in Taranger *et al.* (2015). Extensive literature reviews are also available in relation to the issues of Atlantic salmon escapes (Thorstad *et al.*, 2008), the impact of sea lice on migratory salmonids (Thorstad *et al.*, 2014). Forseth *et al.* (2017) reviews the impact of various factors, including aquaculture, on the survival of Atlantic salmon in the wild. In this analysis, fish farm escapes and sea lice are identified as key issues of concern. During discussions with stakeholders, the issue of Atlantic salmon farms on wild conspecifics was not widely raised as a major issue with the Mission team. Whether this was because wild Atlantic salmon do not support significant fisheries within the area, or it was thought that the scale of impact would be low relative to the benefits that aquaculture may bring, is unclear. It was surprising to note that the impact of aquaculture on wild Atlantic salmon (and possibly sea trout) did not feature at all on the example EIA provided (see Figure 3).

Potential interactions between aquaculture and eider

In November 2015 the status of the eider on the Global IUCN Red List changed from Least Concern (LC) to Near Threatened (NT) (Symes, 2015), predicated on the magnitude and scale of the recent declines (ongoing) in Europe (60% of global population), and the absence of increases elsewhere in its range. On the European Red List of Birds, the eider is listed as Vulnerable (VU) in the whole of Europe and as Endangered (EN) in the European Union (BirdLife International, 2015).

The role that eider and the local industry/culture, which it supports within the World Heritage Site, is well described by Næss & Johansen (2010). Within Vega Archipelago, the locations of the key eider areas are provided in Figure 4. These data confirm that the core eider areas, and areas where eider husbandry is practiced tend

to be located in the shallower rocky areas and skerries where aquaculture sites are unlikely to be located.

It is possible that an increase in boat traffic associated with nearby aquaculture sites, the generation of noise (either for electricity or generally) and light pollution, may lead to increased disturbance. This may force birds to move elsewhere or leave them more susceptible to predation.

Keller (1991) for example, found that eider ducklings were frequently disturbed by recreational activities, both when roosting on the shore and when feeding in the water. Disturbance affected the activity of eider crèches for up to 35 minutes, and the disturbance of small ducklings led to an increase in predator encounters. Similar disturbance effects were described by Stien & Ims (2016) for eider populations in northern Norway and by Ahlund & Gotmark (1989) for Swedish populations.

Predation by native predators is, of course, a natural event; though anthropogenic effects can clearly play an influential role in altering natural interactions between predators and prey.

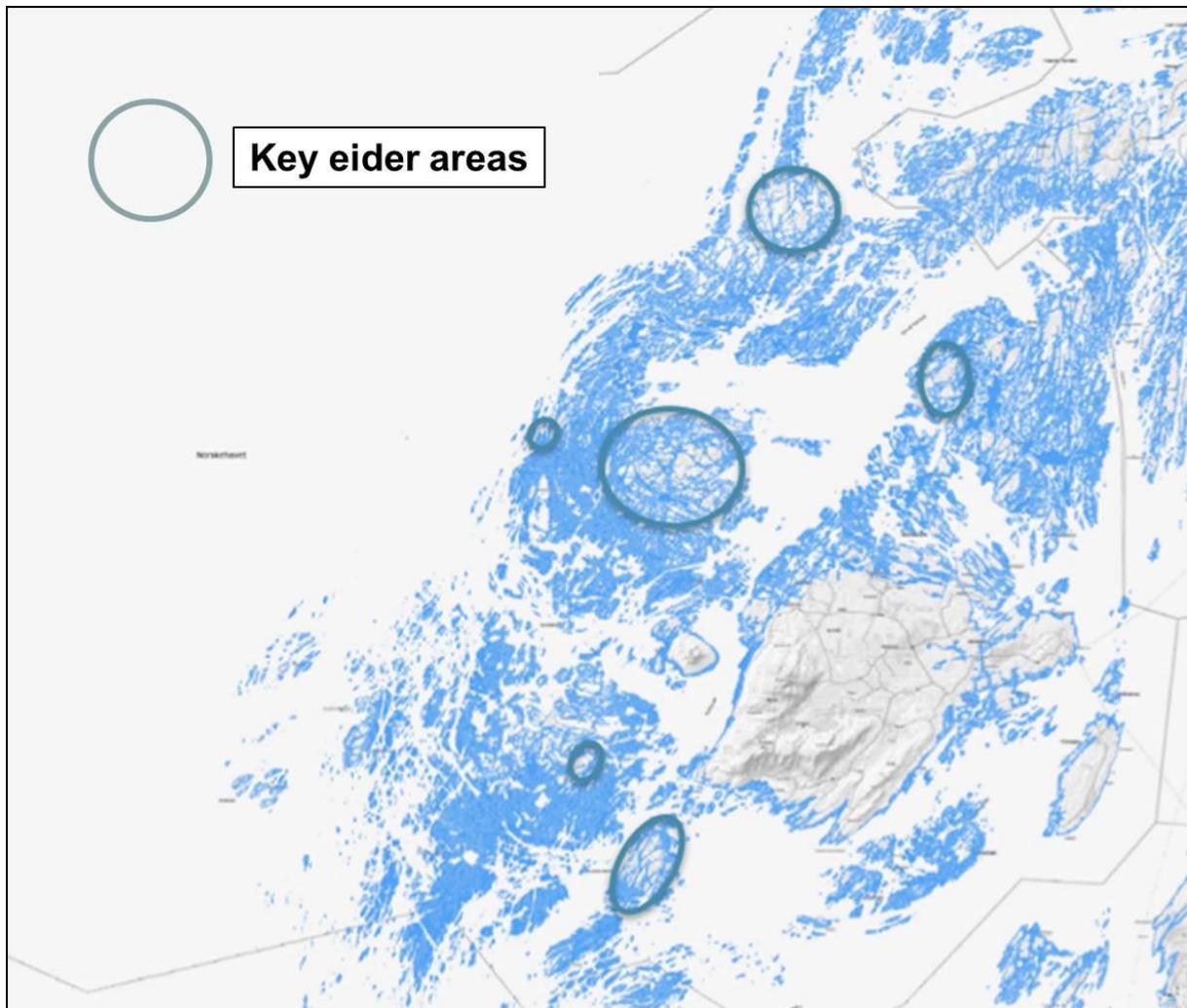


Figure 4: The location of key eider areas within the World Heritage Site and the wider geographical area (Source: Vega Municipal Executive Council).

Native predators mentioned in the literature (see Snoeken *et al.*, 2016) include white-tailed eagle, corvids, gulls, great and Arctic skua, and mammals such as red fox, brown rat, and mustelids. Corvids, gulls and Arctic skua only predate eggs and ducklings, while great skuas have been known to kill adult birds. Snoeken *et al.* (*op. cit.*) observed that predation pressure is largely on-land and once on sea they are relatively safe from these predators, except perhaps white-tailed eagle, or if close inshore, mustelids. Mustelids are, or have been, present on islands within the Vega Archipelago (*pers. comm.* Hildegunn Nordum).

Snoeken *et al.* (2016) reviewed the interaction between aquaculture and eider. The little data that are available relate largely to the interaction between eider and mussel farms. In this case, mussels are an important food source for eiders and commercial mussel farms often contain very high densities of mussels with a high ratio of flesh to shell. This makes these areas attractive to eider and other sea ducks (Varennnes *et al.*, 2013), bringing them into direct conflict. No comparable data is available in relation to the interaction between eider and Atlantic salmon farms, and it is possible that disturbance may be locally significant. This is supported by NINA Report 1199 (Follestad, 2015) which concluded that no Norwegian literature is available which is able to describe the effects of disturbance on eider from the establishment and operation of aquaculture plants, but that unpublished data demonstrated that moulting eider tend to swim away from approaching boats, at a distance of about 700 metres.

Follestad (*op. cit.*) suggest that the careful planning may allow operators to avoid the most disturbing activities, in the most vulnerable periods, to reduce the scale of any negative impacts from aquaculture. This may include, for example, choosing boat routes to and from the plants, which limit the interaction between boat traffic and sensitive eider areas. NINA Report 1199 concludes that our knowledge is inadequate in this area and recommends that further work be initiated to fill these knowledge gaps. It also suggests that, where bird numbers have reduced to critical levels, that consideration should be given to reduce human activities and disturbance.

The Mission would support the need to gather more evidence in relation to the impact of aquaculture developments on eider, generally, and within the World Heritage property in particular before decisions are made.

4) ASSESSMENT OF THE STATE OF CONSERVATION OF THE PROPERTY

4.1 Review whether the values on the basis of which the property was inscribed on the World Heritage List are being maintained

Notwithstanding issues addressed above related to future development pressure from aquaculture, the overall impression from the site visit is that the qualities recognised in the original citation of the World Heritage property do remain intact.

There has been much positive work undertaken by the many stakeholders at Vega, including restoration work to historic buildings, including the fishing station at

Skjærvær. The large harbour in front of the fishing station is largely unused, as a consequence of the decline of traditional fishing within the islands. Since inscription, there has been a growth in eider populations owing to the dedicated efforts of eider-tenders across the islands.

The site visit considered the existing fish farm site at Skogsholmen, towards the north-eastern boundary of the property. This has introduced an industrial dimension to the landscape, but has also brought benefits (for example it secured the electricity supply to neighbouring communities). The tall communications mast on Vega remains in its original location and is highly visible from across the property. However, these developments alone are not considered to have had a significant impact on the Outstanding Universal Value of this very special place.

5) CONCLUSIONS AND RECOMMENDATIONS

The inscription in 2004 of the Vega Archipelago as a World Heritage property was much welcomed by the local community who viewed World Heritage status as an opportunity to safeguard the unique traditions and values of the area at the same time as it could lead to new activities, jobs and more inhabitants in a remote part of Norway that has been suffering depopulation for several decades.

Since inscription although there has been a resurgence in eider-tending (harvesting the down of wild eider ducks) and the number of eider ducks has noticeably increased, the human population of Vega has continued to decline. Employment from aquaculture, the fish-processing industry and small-scale tourism are seen by Vega Municipality as playing a potentially important role in the future of the community, following the decline in key industries such as commercial fisheries and oil and gas.

Since 2004, there have been very few management issues and many success stories. However, tensions relating to the interaction between aquaculture and sustaining the Outstanding Universal Value (OUV) of the World Heritage property, which first arose at the time of the Skogsholmen fish farm application in 2011, have re-surfaced and are dividing the community of Vega.

The Mission recognises that aquaculture is an important contributor to the economy of remote coastal communities, allowing access to employment opportunities for local people. The Mission considers it essential that a transparent, plan-led, evidence-based approach is adopted in order to take decisions on aquaculture developments, based on a satisfactory understanding as to how these developments are likely to impact on the OUV of the property. This is not currently the case although useful steps forward are being made in some areas. The Mission observed the slow progress made in developing a strategic plan for aquaculture within the property; inadequate account taken through impact assessment procedures relating to aquaculture of impacts to the OUV of the property; and a need to further develop baseline data and evidence in relation to potential impacts of aquaculture on key attributes of OUV.

The following recommendations seek to address some of the underlying issues identified by the Mission, and to provide guidance on the current situation.

Recommendations for revisions of plans and planning policies relating to aquaculture

Recommendation 1: The State Party should consider what additional policy mechanisms are available to raise the profile of World Heritage within the Norwegian Planning System.

Recommendation 2: In finalising the Vega Municipal Plan, the relevant authorities should consider additional policies or supplementary guidance (such as locational guidelines) to ensure that aquaculture developments within the World Heritage Site do not impact adversely on OUV. Possible policies could include requirement for Heritage Impact Assessments/aquaculture capacity assessments as well as EIAs to inform site selection) and requirement to consider mitigation.

Recommendation 3: The State Party should review the way in which plans that affect World Heritage properties are assessed within the Strategic Environmental Assessment (SEA) context, and the adequacy of cultural and environmental impact assessment procedures for individual aquaculture developments within the property. If these are found to be deficient in considering impacts to defined attributes of the property's OUV, then an improvement programme should be initiated, on the basis of the ICOMOS Guidance on Heritage Impact Assessments for Cultural World Heritage Properties (2011). Guidance in Scotland for marine fish farming EIA (RPS 2007) may also be useful.

Specific recommendations in relation to the management of the site and aquaculture development

Recommendation 4: The State Party should not determine the two aquaculture licences until:

- The revised Vega Municipal Master Plan has been adopted with limitations on aquaculture in the World Heritage Property, and with the clear need to ensure aquaculture does not impact on OUV.
- Adequate HIA and EIA have been undertaken, in line with the ICOMOS Guidance on Heritage Impact Assessments for Cultural World Heritage Properties (2011) and the IUCN World Heritage Advice Note on Environmental Assessment, respectively.
- The findings of the Vega working group set up to investigate the impact of aquaculture on eider-duck husbandry, which is due to report in August 2017, is available and can be used as part of the HIA process. The report of this working group should be peer-reviewed and made publicly available as part of the overall assessment processes.

Recommendation 5: If the HIA and EIA (including the report on eider duck husbandry) conclude that aquaculture development would impact adversely on the attributes of OUV and there are no options to avoid these impacts or mitigate them to a satisfactory extent, then the licences should not be approved.

Recommendation 6: Depending on the results of the current eider-aquaculture impact work, consideration should be given to further strategic studies to investigate this issue. Such a study could include a properly developed monitoring plan for eider – inside the boundary, and outside the boundary (control sites) of the property, and should focus on interactions between eider (and other bird species of high conservation value) with aquaculture sites. The aquaculture industry should be fully involved and opportunities should be explored for partnership funding, for example through the National Fund for Aquaculture. Monitoring the impact of changing recreational and commercial (large and small scale) fisheries within the World Heritage property should also be considered, regardless as to whether the aquaculture developments go ahead.

Recommendation 7: The State Party should explore whether changes need to be made to the property Management plan in order to allow it to address more actively issues related to sustainable development. This should explore what measures might be encouraged to strengthen the economy of local communities, how high value organic produce associated with the World Heritage property might be developed; and whether and how aquaculture might contribute to sustaining the OUV of the property.

Recommendation 8: The State Party should continue to explore with relevant Municipality authorities, extension of the World Heritage area or its buffer zone to include adjacent islands and marine areas beyond the Vega Municipality and encourage opportunities to explore inter-municipal planning for aquaculture to reduce pressure on development within the existing property boundaries.

6) REFERENCES

Ahlund, M., & Gotmark, F. (1989). Gull predation on eider ducklings *Somateria mollissima*: Effects of human disturbance. *Biological Conservation*, **48**, 115-127.

ASH design + assessment (2011). Landscape/seascape capacity for aquaculture: Outer Hebrides pilot study. Scottish Natural Heritage Commissioned Report No.460. http://www.snh.org.uk/pdfs/publications/commissioned_reports/460.pdf

BirdLife International. (2015). European Red List of Birds. Luxemburg: Office for Official Publications of the European Communities.

BirdLife International (2016). *Somateria mollissima*. The IUCN Red List of Threatened Species 2016: e.T22680405A92861620. <http://dx.doi.org/10.2305/IUCN.UK.2016-3.RLTS.T22680405A92861620.en>. [Accessed on 26 February 2017]

Keller, V.E. (1991). Effects of human disturbance on eider ducklings *somateria-mollissima* in an estuarine habitat in Scotland. *Biological Conservation*, **58**, 213-228.

FAO (2016). Globefish Highlights - A quarterly update on world seafood markets. <http://www.fishtech.com/UNGlobefish2016.pdf> [Accessed 5 March 2017]

Follestad, A. (2015). *Effekter av forstyrrelser på fugl og pattedyr fra ak-vakulturanlegg i sjø - en litteraturstudie*. - NINA Rapport 1199. 44 s. [Abstract available in English only]

Forseth, T., Barlaup, B.T., Finstad, B., Fiske, P., Gjøsæter, H., Falkegård, M., Hindar, A., Mo, T.A., Rikardsen, A.H., Thorstad, E.B., Vøllestad, L.A. & Wennevik, V. (2017). The major threats to Atlantic salmon in Norway. *ICES Journal of Marine Science* (early view), doi:10.1093/icesjms/fsx020

ICOMOS (2011). Guidance on Heritage Impact Assessments for Cultural World Heritage Properties. https://www.icomos.org/world_heritage/HIA_20110201.pdf.

IUCN (2013). IUCN World Heritage Advice Note on Environmental Assessment. https://cmsdata.iucn.org/downloads/iucn_advice_note_environmental_assessment_18_11_13_iucn_template.pdf.

Johansen, R. (2017). Vega Archipelago World Heritage Site: A landscape shaped in interplay between man and nature - challenges and possibilities. Vega World Heritage Foundation Report to UNESCO.

Marine Scotland Science (2016). *Locational Guidelines for the Authorisation of Marine Fish Farms in Scottish Waters*. Scottish Government, Edinburgh <http://www.gov.scot/Resource/0051/00512199.pdf> [Accessed 26 February 2017]

Moe, K., Næsje, T.F., Thron O. Haugen, T.O., Ulvan, E.M., Aronsen, T., Sandnes, T. & Thorstad, E.B. (2016). Area use and movement patterns of wild and escaped

farmed Atlantic salmon before and during spawning in a large Norwegian river. *Aquaculture Environment Interactions*, **8**, 77–88.

Næss, I.E. & Johansen, R. (2010). *The Vega Archipelago: A World Heritage Site. A cultural history and travel guide*. Orkana Publishers, Stamsund. 210pp.

Norwegian Ministry for Climate and Environment. (2012). Report to the Storting (White Paper) 2012-2013. Cultural Heritage Policy (Chapter 4.8 World Heritage).

Norwegian Government. (2015). Report No.16 (2014-16) to Parliament.

RPS Consulting. (2007). Environmental Impact Assessment Practical Guidelines Toolkit for Marine Fish Farming. <http://www.sarf.org.uk/Project%20Final%20Reports/SARF024%20-%20Final%20Reports%20and%20Templates/EIA%20Guidelines%20FINAL+%20Templates.pdf> [Accessed 28 February 2017].

Scottish Natural Heritage (2011). *The siting and design of aquaculture in the landscape: visual and landscape considerations*. <http://www.snh.org.uk/pdfs/publications/heritagemanagement/marineaquaculture.pdf> [Accessed 26 February 2017]

Skov, H., Heinänen, S., Žydelis, R., Bellebaum, J., Bzoma, S., Dagys, M., Durinck, J., Garthe, S., Grishanov, G., Hario, M., Kieckbusch, J.J., Kube, J., Kuresoo, A., Larsson, K., Luigujoe, L., Meissner, W., Nehls, H.W., Nilsson, L., Petersen, I.K., Roos, M.M., Pihl, S., Sonntag, N., Stock, A., Stipniece, A. & Wahl, W. (2011). *Waterbird Populations and Pressures in the Baltic Sea*. Report to Nordic Council of Ministers, København. <http://www.diva-portal.org/smash/get/diva2:701707/FULLTEXT01.pdf> [Accessed 26 February 2017]

Slaski, R.J. (2009) *Environmental Impact Assessment (EIA) Thresholds For Marine Fish Farms*. Report commissioned by the Scottish Aquaculture Research Forum, 60pp. <http://www.sarf.org.uk/cms-assets/documents/28816-136993.sarf040a.pdf> [Accessed 26 February 2017]

Snoeken, P., Crawford, R., Hancock, M.H., Evans, R.J. & Eerbeek, J.V. (2016). A review of UK seaduck species: populations, distributions, threats and conservation action. Research Report 56. RSPB Centre for Conservation Science, Glasgow

Stein, J. & Ims, R.A. (2016). Absence from the nest due to human disturbance induces higher nest predation risk than natural recesses in Common Eiders *Somateria mollissima*. *Ibis*, **158**, 249- 260.

SWECO (2016). *The Vega Archipelago World Heritage – Visual Characteristics*. The Vega Archipelago Landscape Analysis.

Symes, A. (2015). Global IUCN Red List for birds- 2015 changes. Retrieved from Birdlife.org: <http://www.birdlife.org/globally-threatened-bird-forums/2015/10/global-iucn-red-list-for-birds-2015-changes/>

Taranger, G.L., Karlsen, Ø., Bannister, R.J., Glover, K.A., Husa, V., Karlsbakk, E., Kvamme, B.O., Boxaspen, K.K., Bjørn, P.A., Finstad, B., Madhun, A.S., Morton, H.C. & Sva˚sand, T. (2015). Risk assessment of the environmental impact of Norwegian Atlantic salmon farming. *ICES Journal of Marine Science*, **72**, 997–1021.

Thorstad, E.B., Fleming, I.A., McGinnity, P., Soto, D., Wennevik, V. & Whoriskey, F. (2008). *Incidence and impacts of escaped farmed Atlantic salmon *Salmo salar* in nature*. NINA Special Report 36. 110 pp.

Thorstad, E.B., Todd, C.D., Bjørn, P.A., Gargan, P.G., Vollset, K.W., Halttunen, E., Kålås, S., Uglem, I., Berg, M. & Finstad, B. 2014. *Effects of salmon lice on sea trout - a literature review*. NINA Report 1044, 1-162.

Varenes, E., Hanssen, S. A., Bonardelli, J. & Guillemette, M. (2013). Sea duck predation in mussel farms: the best nets for excluding common eiders safely and efficiently. *Aquaculture Environment Interactions*, **4**, 31-39.

Wilson, A., Magill, S. & Black, K.D. 2009. Review of environmental impact assessment and monitoring in salmon aquaculture. In FAO. *Environmental impact assessment and monitoring in aquaculture*. FAO Fisheries and Aquaculture Technical Paper. No. 527. Rome, FAO. pp. 455–535.

Annex I - Terms of reference

The terms of reference for the joint ICOMOS/IUCN Advisory Mission are to undertake the following tasks:

- Review the current regulations on aquaculture in the property and its buffer zone within the Master Plan for Vega, the draft Region Strategic Land-Use Plan and other relevant plans, such as the requested strategic plan for the property and the Management Plan;
- Consider how the constraints in these plans have been implemented in request of aquaculture applications and approvals and overall how the legal framework and management system performs;
- Assess the processes used to reach decisions on aquaculture applications (e.g. licences) in relation to the attributes of property's Outstanding Universal Value (OUV), including the use of Heritage Impact Assessments;
- Make recommendations on any necessary revisions of plans and planning policies in relation to aquaculture;
- Review Heritage Impact Assessments and whether the attributes of OUV are clearly defined in respect of eider duck farming and the necessary environmental conditions needed to support it, and traditional fishing;
- Assess the potential impact of the two proposed fish farms within the Vega Archipelago cultural landscape on the OUV of the World Heritage property, including its conditions of integrity and authenticity;
- Provide guidance on any other relevant sustainable development issues.

Advice will be given on the basis of Advisory Bodies' expertise, knowledge and understanding of adequate World Heritage management, available/assessable written information about the specific case in question, and presentations given during the field visit.

The Mission will prepare a concise joint ICOMOS/IUCN Mission report no later than 10 days after end of the field visit, in the format agreed between the Advisory Bodies and the State Party.

Annex II - Itinerary and programme

Time	Sunday 19 February 2017		
Arrival (13:30)	Arrival in Oslo - Walk to Hotel Radisson Park Inn Stay overnight	Oslo Gardermoen Airport Address: Henrik Ibsens veg, 2060 Gardermoen	
1600	Meeting with Lisen Roll, ICOMOS Norway	Oslo centre.	
	Monday 20 February		
	Breakfast at hotel		
06:30	Meet up with Ingunn Kvisterøy, walk to departure hall at Gardermoen Airport	Hotel reception	
07:00 – 08:00	Introductions/meeting at the airport gate	Ministry of Climate and Environment Directorate for Cultural Heritage	Berit Halvorsen Ingunn Kvisterøy Ragnhild Hoel
08:35 – 10:00	Flight Oslo Gardermoen – Bodø		
10:00 – 10:15	Transfer Bodø Airport – Skagen Hotel	Address: Nyholmsgata 11, 8005 Bodø	
11:00	Meeting at Skagen Hotel in Bodø with responsible management authorities/parties		
11:00- 11:20	Welcome The management system in Norway	Ministry of Climate and Environment, Department for Cultural Heritage Management	Berit Halvorsen
11:20- 11:40	The Aquaculture Act	Nordland County Council, Department of Economic Development	Ann Helen Haubakk Ketil Olsen
11:40- 11:55	Presentation of Vega Municipality	Vega Municipality	André Møller
11:55- 12:25	Management plan for the Vega Archipelago World Heritage Property	Vega Archipelago World Heritage Foundation	Rita Johansen
12:25- 13:00	Municipal Master Plan for Vega - Coastal Zone Plan for Vega - Proposed revised Master Plan for sea areas in Vega (incl status process)	Vega Municipality	André Møller
13:00	Lunch	Skagen Hotel	
14:00- 14:30	Presentation of two applications for aquaculture, incl. EIAs	Vega Municipality	Brit Skjevling
14:30- 15:00	Assessment of - The Master Plan proposal - The two applications (Natural Heritage Impact Assessment)	County Governor of Nordland Department for Environment Protection	Sveinung Råheim

Time	Monday 20 February		
15:00-15:30	Assessment of - The Master Plan proposal (Cultural Heritage Impact Assessment) - The two applications	Nordland County Council - Department for Culture, Environment and Public Health - Department for Economic Development	Geir Davidsen Ann Helen Haubakk Ketil Olsen
15:30-16:00	Report on the Vega Archipelago World Heritage – Visual Characteristics	SWECO Norge AS	Marius Fiskevold
16:00 – 17:00	Break (and drinks/snacks)		
17:00 – 18:00	Time for experts to discuss and write notes/reports	Room at Skagen Hotel	Colin Bean Philip Robertson
18:00 – 18:15	Transfer Bodø – airport	(one may walk)	
19:20 – 19:55	Flight to Sandnessjøen		
19:55 – 20:15	Transfer airport – hotel		
	Hotel Scandic Seven Sisters	Address: Torolv Kveldulvs gate 16	Experts Ministry Directorates WH Coordinator Nordland County Council County Governor of Nordland Vega Protected Areas Management Board
20:30	Dinner at Hotel Scandic Seven Sisters		Experts Ministry Directorates WH Coordinator Nordland County Council County Governor of Nordland Vega Protected Areas Management Board

Times	Tuesday 21 February		
07:30	Breakfast		
08:30	Transfer hotel – harbour	Hotel located next to the harbour	
09:00	Survey by boat trough Vega Archipelago WH		
	Herøy	Neighboring municipality Seascape with aquaculture	
	Skogsholmen	Existing fish farm within the World Heritage Property	
	Lånan	Visiting eider duck tenders	Hildegunn Nordum
	Skjærvær		
	Hysvær (Lunch)	Local fisherman/eider duck tender/lunch for tourists Planned location for new fish farm	Øystein Ludvigsen Snefrid Jakobsen
	Søla	Planned location for new fish farm	
	Igerøy	Existing fish farms within the buffer zone	
17:00 – 17:30	Transfer to Vega Havhotell Check-in	Address: Viksås, 8980 Vega	Experts Ministry Directorates WH Coordinator Nordland County Council County Governor of Nordland Vega Protected Areas Management Board
18.00 – 19:30	Time for experts to discuss and write notes/reports	At Vega Havhotell	Colin Bean Philip Robertson
20:00	Dinner at Vega Havhotell	At Vega Havhotell (hosts and owners Anne and Jon Aga)	Experts Ministry Directorates WH Coordinator Municipality Nordland County Council County Governor of Nordland
Wednesday 22 February			
07:30	Breakfast at Vega Havhotell		
09:00 – 11:00	Meeting with other stakeholders at Vega Havhotell	Representatives of advisers to the Vega Archipelago World Heritage Foundation and others	Separate list at Annex III
11:00	Transfer to the Town Hall	The Town Hall is located at the center of Vega island, at Gladstad	
12:00- 13:30	Meeting with Vega Municipality Discussion/dialogue on issues that have been presented or on new topics or questions, presented by the experts or by the municipality	Politicians – the Municipal Executive Council Administration	
14:00 – 15:30	Lunch		

Time	Wednesday 22 February		
15:00 – 16:30	Time for experts to discuss and write notes/reports	ICOMOS IUCN	Philip Robertson Colin Bean
17:00	Summing up with the governmental authorities	ICOMOS IUCN Ministry of Climate and Environment Directorate for Cultural Heritage Norwegian Environment Agency	Philip Robertson Colin Bean Berit Halvorsen and Ingunn Kvisterøy Ragnhild Hoel Olav Nord-Varhaug
17.45 – 18:05	Transfer to catamaran Catamaran Vega - Brønnøysund	ICOMOS IUCN Ministry Directorate for Cultural Heritage Norwegian Environment Agency	Philip Robertson Colin Bean Berit Halvorsen and Ingunn Kvisterøy Ragnhild Hoel Olav Nord-Varhaug
18:05 – 19:00	Opening for media/questions	Media is informed that the experts do not answer any questions regarding their evaluation	
20:05- 20:48	Flight Brønnøysund – Trondheim Walk to airport hotel	Hotel Radisson Blu Trondheim Airport	Philip Robertson Colin Bean Berit Halvorsen and Ingunn Kvisterøy Ragnhild Hoel <i>(Olav Nord-Varhaug leaves us arriving in Trondheim airport Værnes)</i>
21:00	Dinner	ICOMOS IUCN Ministry Directorate for Cultural Heritage	Philip Robertson Colin Bean Berit Halvorsen and Ingunn Kvisterøy Ragnhild Hoel
Time	Thursday 23 February		
06:30	Breakfast at hotel		
08:00	Flight to Oslo	ICOMOS IUCN Ministry Directorate for Cultural Heritage	Philip Robertson Colin Bean Berit Halvorsen and Ingunn Kvisterøy Ragnhild Hoel
10:30	Flight Oslo - Edinburgh	IUCN and ICOMOS	Colin Bean and Philip Robertson

Annex III - Mission team

Representing ICOMOS: Philip Robertson, BA Hons; M.Litt; McIFA; FSA Scot
 Representing IUCN: Professor Colin Bean, BSc Hons; PhD; MIFM.

Attendees at participants' stakeholder meeting in Vega, 22 February 2017

<i>Stakeholders</i>	
Arnliot Arntsen	Vega Sea Farm
Gunvald Eilertsen	Hysvær Landowner's Association
Kato Fredriksen	Vega Delikatesser/Vega Seafarm
Arnstein Hansen/Jarle Ulriksen	Vega Fishermen's Association
Heidi Kvaløy	Vega Coastal Association
Einar Moen	Friends of the Vega Archipelago
Ove Mortensen	Visit Vega/Active Vega
Hildegunn Nordum	Utværet Lånan (eiderdown producer)
Bjørnar Nilsen	The Nordland Eider Tending Association
Turid Næss	Nes Development Project /Vega Coastal Farm
Per-Anton Nesjan	Vega Farmer's and Smallholder's Association
Roy Skogsholm	Skogsholmen Resident's Association
Gunnar Solrud	Vega Farmer's Association
Erling Solvang	Friends of the Earth Nordland
Margrethe Wika	Vega Municipality, adviser environment
<i>Officials</i>	
Colin Bean	IUCN
Philip Robertson	ICOMOS
Berit Halvorsen	Ministry of Climate and Environment
Ingunn Kvisterøy	Ministry of Climate and Environment
Ragnhild Hoel	Directorate for Cultural Heritage
Olav Nord-Varhaug	Norwegian Environment Agency
Geir Davidsen	Nordland County Council
Ann Helen Haubakk	Nordland County Council
Ketil Olsen	Nordland County Council
Sveinung Råheim	County Governor Nordland
André Møller	Mayor, Vega Municipality
Brit Skjevling	Vega Municipality
Jannike Wika	Vega Board for the Protected Areas
Rita Johansen	Vega World Heritage Coordinator
Berit Martinussen	Vega World Heritage Centre
Ina Andreassen	Vega World Heritage Centre

Annex IV - Maps

VEGAØYAN - The Vega Archipelago

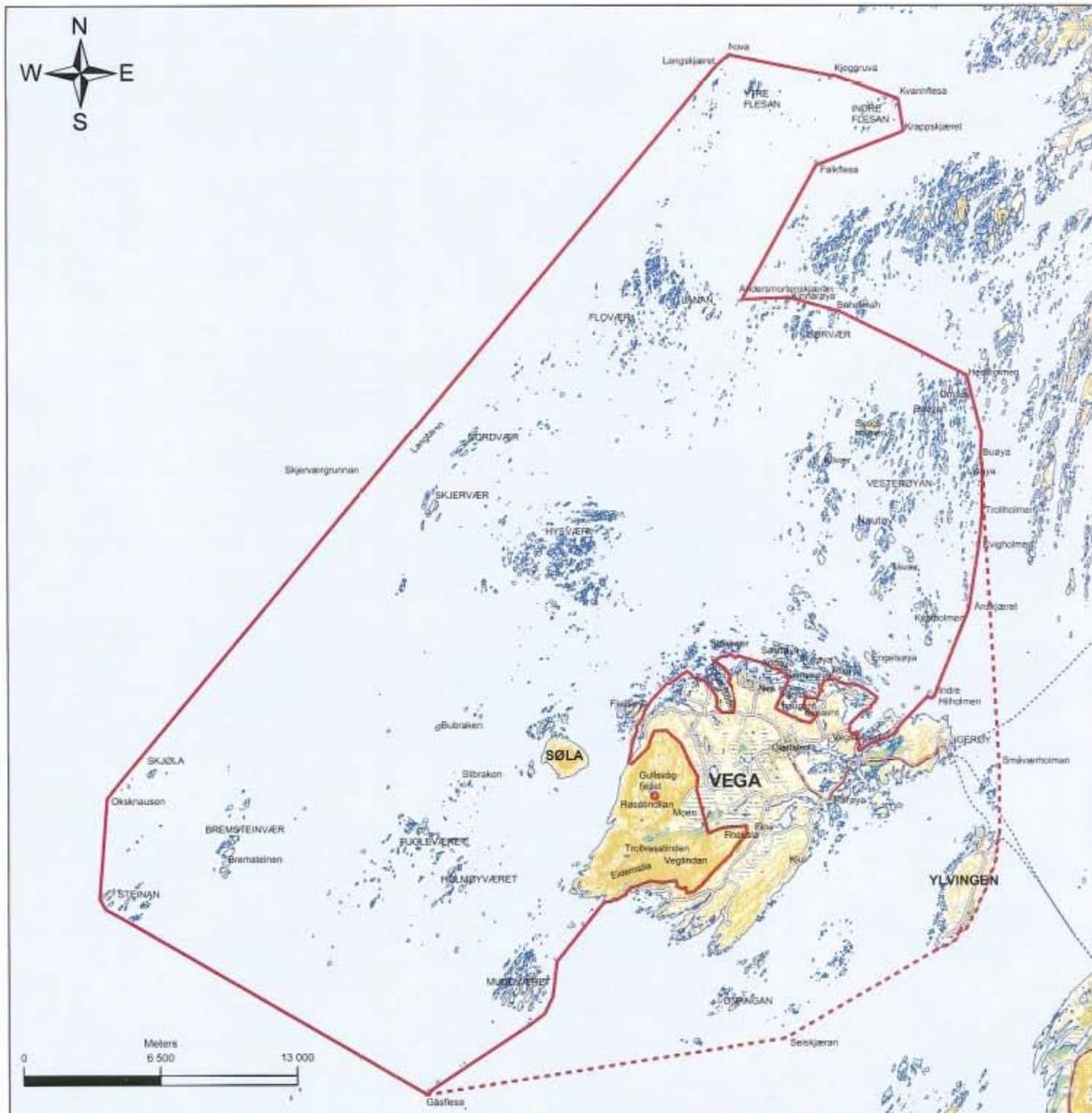
Norwegian Nomination 2003 - World Heritage List



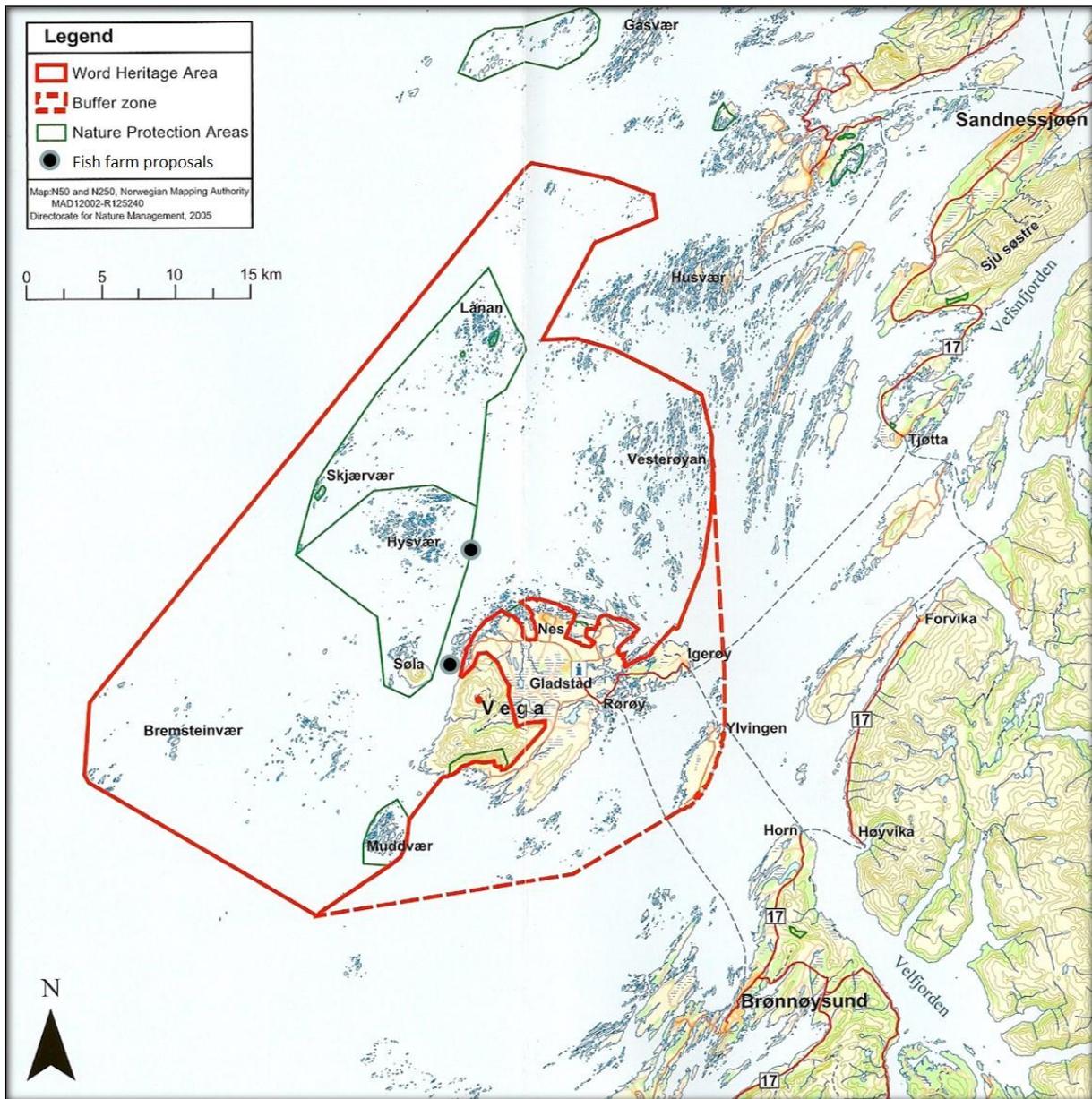
Directorate for
Nature Management

- Boundary of nominated area
- - - - - Boundary of proposed buffer zone

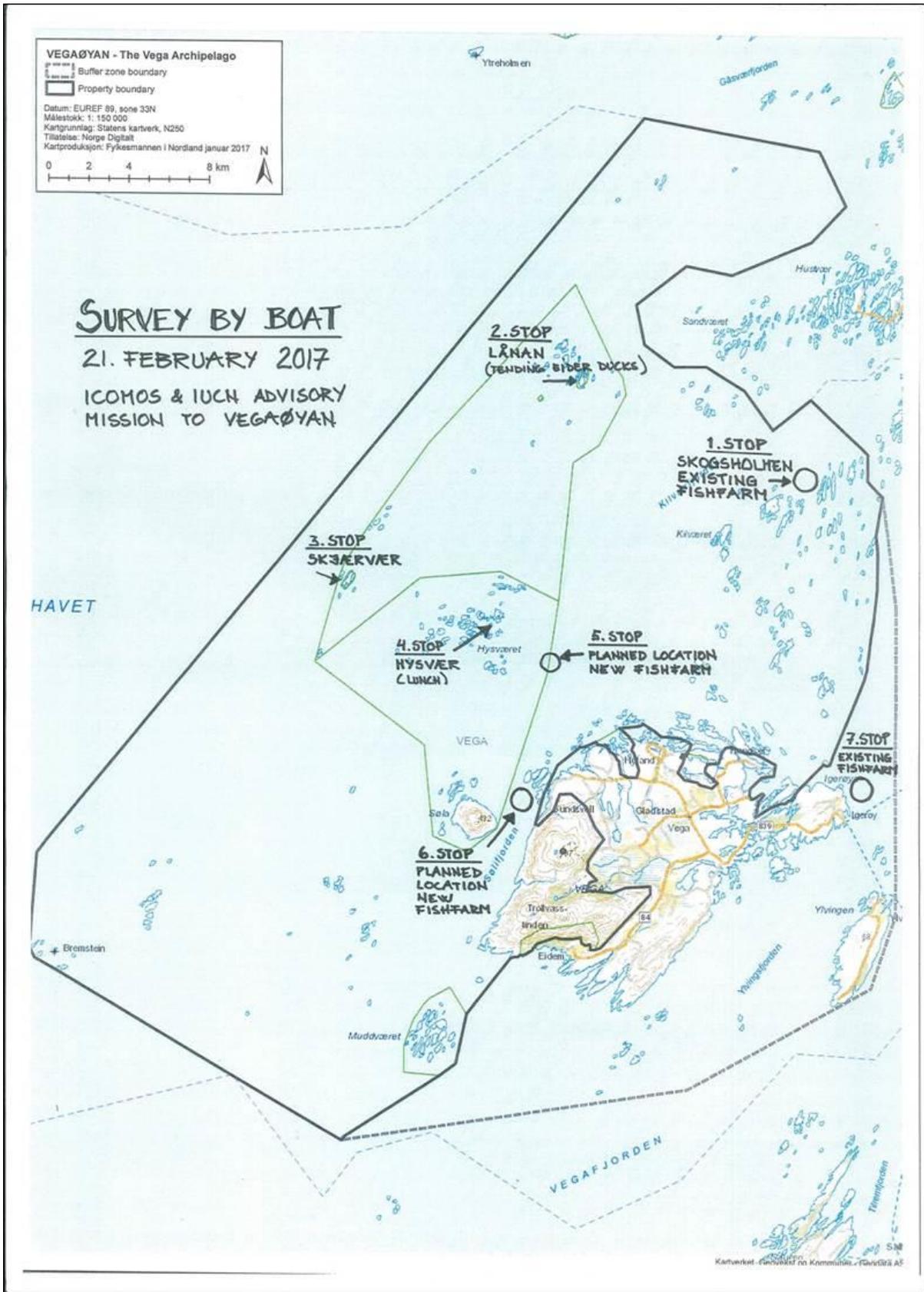
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Map 1: The Vega Archipelago World Heritage Site and buffer zone. Source: Norwegian Directorate for Nature Management.



Map 2: The Vega Archipelago World Heritage Site and buffer zone, showing the position of Protected Areas relative to the two proposed Atlantic salmon farms at Hysvær and Rørskjæran



Map 3: The Vega Archipelago World Heritage Site and buffer zone, showing the location of areas visited by the Mission on 21 February 2017.

Annex V - Photographs



Meeting with Government Ministries – The SWECO presentation - Skagen Hotel, Bodø 20 February 2017 ©IUCN/Colin Bean



Meeting with Government Ministries – The County Council planners explained how the aquaculture applications were assessed Bodø 20 February 2017 ©IUCN/Colin Bean



The Marine Harvest processing plant near Sandnessjøen provides local employment in the area - 21 February 2017 ©IUCN/Colin Bean



Support vessels at the Atlantic salmon farm at Skogsholmen 21 February 2017 ©ICOMOS/Philip Robertson



Marine Atlantic salmon farm at Skogsholmen 21 February 2017
©ICOMOS/Philip Robertson



Vega Mayor André Møller discusses Atlantic Salmon Farming with Planning Authorities at Skogsholmen 21 February 2017 ©IUCN/Colin Bean



Looking north as the Mission approaches Lånan from the east - 21 February 2017
©ICOMOS/Philip Robertson



Approaching Lånan from the east 21 February 2017 ©ICOMOS/Philip Robertson



ICOMOS/IUCN, Ministry, Municipality and World Heritage Site representatives at Lånan 21 February 2017 ©IUCN/Colin Bean



Humans aren't the only inhabitants in Lånan. Tell-tale otter tracks show that these animals are still active during the winter – 21 February 2017 ©IUCN/Colin Bean



Hildegunn Nordum, an eider tender, traces her families association with Lånan through the generations and has created a space to pass on information about the traditional way of life to visitors - 21 February 2017 ©IUCN/Colin Bean



Eider huts took on a variety of shapes and sizes in Lånan 21 February 2017 ©ICOMOS/Philip Robertson



The eider huts in Lånan are built to last and are located around islanders' dwelling areas 21 February 2017 ©ICOMOS/Philip Robertson



Mains electricity is not available on most islands and solar panels are frequently used on placed like Lånan - 21 February 2017 ©IUCN/Colin Bean



Lånan is a key Protected Area within the World Heritage property - 21 February 2017 ©IUCN/Colin Bean



Lånan is a component of a much larger Protected Area within the World Heritage property and this also includes Skævær and Hysvær - 21 February 2017 ©IUCN/Colin Bean



Skævær has benefitted from the creation of a breakwater and harbour to protect its fleet and main jetty, but this is underused during the winter months - 21 February 2017 ©IUCN/Colin Bean



The World Heritage Site was opened in Hysvær and information is provided at the landing site - 21 February 2017 ©IUCN/Colin Bean



Traditional fishing is still in evidence in islands like Hysvær, but small vessels are being replaced with bigger boats- 21 February 2017 ©IUCN/Colin Bean



Traditional fishing nets lie in wait for use in places like Lånan, Skævær and Hysvær once the winter subsides - 21 February 2017 ©IUCN/Colin Bean



The Mission spoke to islanders in Hysvær - Øystein Ludvigsen has diversified to other activities, such as tourism - 21 February 2017 ©IUCN/Colin Bean



Hysvær, looking south from the World Heritage monument - 21 February 2017 ©IUCN/Colin Bean



Hysvær, looking north west from the World Heritage monument - 21 February 2017 ©IUCN/Colin Bean



Looking east from Hysvær towards the proposed AS/Sjøfarm AS/Nova Sea AS Atlantic salmon fish farming site - 21 February 2017 ©IUCN/Colin Bean



Travelling south of Hysvaer towards the second proposed fish farm site at Marine Harvest Norway AS at Rørskjæran (Solifjorden). The island of Søla is on the right - 21 February 2017 ©IUCN/Colin Bean



Looking east from the second proposed fish farm site at Marine Harvest Norway AS at Rørskjæran (Solifjorden) - 21 February 2017 ©IUCN/Colin Bean



An existing fish farm within the World Heritage property buffer zone at Igerøy - 21 February 2017 ©IUCN/Colin Bean



The fish processing plant at Igerøy is a significant local employer on Vega and is located close to the new World Heritage Center, due to open in April 2018 at Gardsøya - 21 February 2017 ©IUCN/Colin Bean



The Vega Islander Stakeholders Group meeting was facilitated by the Mission team and the Ministry of Climate and Environment. The event was constructive and all views were heard - 22 February 2017 ©IUCN/Colin Bean



The Mission ended with a meeting with Vega Municipal Executive Council at the Town Hall in Gladstad. Here, the Mayor of Vega, André Møller, talks about the importance of aquaculture production to the Vega community and the need to halt emigration from the area - 22 February 2017 ©IUCN/Colin Bean