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CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE
AND NATURAL HABITATS

Standing Committee

42nd meeting
Strasbourg, 28 November – 2 December 2022

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Complaint on stand-by no. 2017/6: "Possible negative impact on Breiðafjörður Nature Reserve and its surroundings from new road infrastructure (Iceland)"

- REPORT OF THE ONLINE ADVISORY MISSION -

5-6 May 2022

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1. Main tasks and approach of the mission

1.1. Main tasks

According to the Terms of Reference (ToR)[1], the mission had three **main tasks:**

1. **To assess the proposed mitigation & compensatory measures and the monitoring plan for the route Þ-H, to propose possible changes and a timeline for their implementation;**
2. **To propose recommendations to the national authorities on ensuring the elaboration and immediate implementation of mitigation and compensatory measures to ensure the conservation of affected habitats and species;**
3. **To suggest actions that can strengthen the conservation of other parts of the Breiðafjörður Nature Reserve which may not be affected *directly* by the road project.**

1.2. Approach

The concrete approach was adapted to the context and time resources specified for the Mission:

- Research/preparation and online participation in virtual meetings with relevant stakeholders;
- *[If required]* On-site inspection of the Breiðafjörður Nature Reserve and its surroundings, the state of construction of the road, and meetings with stakeholders;
- Drafting of a written mission report of 20 pages, including recommendations to the national authorities and/or other stakeholders, in line with the Terms of Reference of the mission.

In practice, the Mission followed several steps:

1. A preliminary discussion was organised on 28th February 2022 with the representatives of the Icelandic Ministry for the Environment, Energy and Climate and complainant NGO Landvernd (hereafter "the parties") and other relevant stakeholders in order to discuss their expectations or concerns and to introduce the designated independent expert and his experience to the parties.

The complainant expressed concerns related to the effectiveness of the virtual set up of the mission, strongly suggesting in-person meetings and a visit in the field.

After presenting the former experience with an online mission which had led to positive results (Kresna Gorge case, Bulgaria, 2021), the parties agreed to a two-step approach: to conduct the virtual mission according to the ToR and to assess and decide afterwards on the need for a field visit.

2. Exchange of documents considered to be relevant for the case. Both parties kindly provided the expert with documents they considered to be relevant for the Mission, to complement the documents made available by the Secretariat. A summary translation in English was generally provided for Icelandic language documents.

3. A questionnaire was prepared by the expert (based on the information received) with the aim of collecting and structuring the most relevant information for the case and facilitating the discussions during the online meetings. The questionnaire (Annex II) was circulated to the parties with the kind request to them to synthetise the relevant information for the online meetings proposed to take place by the end of April. As the time was considered too short by the authorities to prepare the answers and as a series of questions arose related to the set-up of the calls, the agreement was to firstly organise an introductory common call before the online meetings which were thus rescheduled for the beginning of May.

[1] T-PVS/Files(2021)02rev: https://rm.coe.int/-2021-files02rev-2021-tor-iceland-breidafjordurnr-final/1680a5ed93

4. The introductory call with the parties was held on 26th April, with the aim to:

- Remind / clarify the purpose & approach of the Mission;
- Explain the structure of the agenda for the core online meetings of the Mission;
- Agree on the dates of the two online meetings of the Mission.

5. The two online meetings of the Mission with the parties were held on the 5th and 6th of May, and focused on **four themes:**

a) **Assessment of the mitigation and compensatory measures for the route Þ-H;**

b) **Detailed project database and assessment of the Monitoring Plan;**

c) **Actions that can strengthen the conservation of other parts of the Breiðafjörður Nature Reserve which may not be affected *directly* by the road project;**

d) **Legacy of the case.**

The themes, agreed with the parties, are further elaborated in this report based on the documents reviewed by the expert, on the data received from authorities as replies to the questionnaire and on the new information which emerged as a result of discussions during the online calls.

The discussions during the online meetings were structured in **eight sessions** (Annex II), consisting of:

- Information provided by the responsible authorities to the guiding questions;
- Feedback from the complainant;
- A working session to identify together further needs/next steps to support recommendations.

6. A Concluding meeting was held on the 16th of May with the representative of the parties. The expert and the Secretariat welcomed the contribution of the parties and their invited participants to the preparation of the meetings and to the fruitful discussions and both parties appreciated the organisation and the quality and usefulness of the online meetings. The expert, the authorities and the Secretariat considered that based on the information received and on the follow-ups to the draft report, organisation of a field visit would not bring a justifiable added value for the mission or development of the recommendations. However as a compromise for the complainant who did not agree, the expert offered extra time to be allocated for an online follow-up discussion of the recommendations, if the parties would consider this as useful.

7. The expert **drafted the report** by 4th July and it was circulated to the parties with the kind request to provide their feedback by 15th August 2022.

8. The final report was compiled by the end of October after the expert took note of the parties' feedback on the draft, on time to be published along with the Draft Recommendation for the attention of the 42nd Standing Committee.

2. Summary of main findings

As the detailed information gathered during the Mission is presented in **Annex I - Mission's main findings**, here we present a brief summary:

2.1. The overall context and updates on recent developments

a. Is the route Þ-H an exceptional case for Iceland?:

The Icelandic Road and Coastal Administration (**IRCA**) informed that it generally tries to avoid projects for which significant negative residual impacts are unavoidable and that clear preference is given to alternatives that do not have such impacts, therefore the whole project may be considered an exception, as all alternatives had significant negative residual impacts and would have required compensatory measures.

The **Complainant** did not agree with IRCA that this case is exceptional as in the complainant's view, IRCA has projects ongoing and planned where a route with very negative environmental impacts are chosen as decisions on road projects prioritise cost, highest possible speed, and road safety over environmental impact.

b. Was the status of Breiðafjörður Nature Reserve as an important conservation area (including prospective Emerald site) reflected in the final decision?:

The policy of **IRCA** is to minimise the impact on the ecological system, landscape, and natural and cultural factors for all aspects of its work in planning, designing, building and operation of the road network. Typically, EU framework/guidelines are used for cost benefit analysis of larger projects for the national transportation plan. Monetary value has not been put on protected species or habitats (but it is applied to carbon footprint, noise, traffic safety, accidents etc.) The status of the Nature Reserve was a specific criteria in the procedure of the Reykhólahreppur Municipality when deciding upon the permit for the road project.

In the **Complainant**'s view, in this case IRCA neither prioritised avoiding a negative impact nor adopted a precautionary approach as other options were available that would have had a less negative impact on the environment (the Þ-H route having the highest environmental impact, while all routes complied with security standards). Furthermore, the Icelandic authorities did not do a proper cost-benefit analysis as the cost of ecosystem degradation was not assessed nor included in the expenditure side of the equation.

c. Update on the status of the road construction:

There are three sections of the road in different construction stages: a section under construction since 2021, a section to be constructed starting in summer 2022, and a section where the construction has not started yet. Additionally, a side road has been under construction since Autumn 2021.

d. Update on the Emerald Network designation process, including for the Breiðafjörður Nature Reserve (NR):

The Icelandic nature conservation law has a provision regarding a national Nature Conservation Registry. The Icelandic Institute of Natural History (**IINH**) is responsible for suggesting which areas should be registered in the B-part[2] of that registry. In 2018, IINH suggested that 112 areas in Iceland should be registered in the B-part of the registry, as well as suggesting that those areas would be Iceland´s proposed areas to the Emerald Network.[3] These 112 areas have been under assessment by the

[2] Part B is the strategic plan of the Nature Conservation Register, i.e., a register of natural heritage sites that the Icelandic parliament has decided to prioritise for protection or designation as nature reserves within the next five years (https://www.ni.is/en/resources/nature-conservation-register)

[3] Five already protected areas have recently been suggested to become Emerald Network sites. The process is ongoing.

Ministry and the Environment Agency of Iceland. The assessment requires thorough cooperation with local municipalities, landowners and other stakeholders. When that process is finalised, the Minister for the Environment, Energy and Climate brings a Resolution to Parliament which goes through several discussion phases before it is voted on.

The **Authorities** informed that currently the Breiðafjörður NR is not in the process of becoming an Emerald Network site[4]. However, that could change, but a decision has not been taken by the authorities.

In the **Complainant**'s view, the nonexistence of Emerald Network sites in Iceland can only be seen as a total lack of interest from the Icelandic authorities in creating a network of protected habitats and associated species as they have only suggested five sites for the Emerald network that are more or less already protected. Regardless of what the Icelandic authorities decide to do regarding the possibility of the Breiðafjörður NR becoming an Emerald Network site, there is no scientific doubt that the Breiðafjörður area is one of the most important biological diversity areas in Iceland.

2.2. The mitigation and compensatory measures for the route Þ-H

a. If an official mitigation and monitoring plan exists and if it was discussed with relevant stakeholders:

The Monitoring- and mitigation plan was developed in 2020 and 2021 by the Nature Institute of the Westfjords which has been in non-formal collaboration with different institutions carrying out different aspects of the monitoring.

Not all interested stakeholders have been consulted (including the Complainant) and the Monitoring- and mitigation plan was not publicly available.

b. If the measures are addressing all impacts identified at the EIA stage:

The mitigation and compensatory measures are addressing the impacts identified at the EIA stage, however, a series of effects has been given less attention: landscape ecology and habitat fragmentation or fauna mortality (for terrestrial species).

c. If the measures are addressing all effects considered to be uncertain at the EIA stage:

The authorities performed due diligences by clarifying the effects considered uncertain at the EIA stage and by proposing adequate measures to mitigate their potential negative impacts.

A further discussion with all relevant stakeholders about the option of extending the bridge openings in Gufufjörður in order to minimise its impact on the fjord ecosystem (including mudflats and salt marshes) would be needed.

d. If the cumulative effects[5] have been assessed and addressed:

Although the EIA (2017)[6] discusses synergistic and cumulative impact with other road projects on protected areas, a detailed analysis on the cumulative effects of road construction in Breiðafjörður has not been conducted yet.

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[4] Due to Breiðafjörður already being protected by law it would automatically be listed in the A part of the Nature Conservation Registry.

[5] Cumulative effects - The increasing impacts resulting from the combination of effects from several projects or activities over a period of time. Their assessment is called cumulative effect assessment (CEA). Wildlife & Traffic - A European Handbook for Identifying Conflicts and Designing Solutions. Glossary (Updated version, 2021, in cooperation with the Horizon 2020 BISON project).

[6] https://www.skipulag.is/media/attachments/Umhverfismat/1211/201605060%20Vestfjar%C3%B0avegur%20milli%20Bjarkalundar%20og%20Sk%C3%A1laness%20-%20matssk%C3%BDrsla.pdf

e. The status of mitigation and compensatory measures' implementation and their effectiveness:

Several **mitigation measures** have been completed or are ongoing, such as mapping of archaeological relics and vegetation. Also, the authorities demonstrated their interest in further reducing the road impacts beyond the terms stipulated in the EIA, therefore the road design has been changed to reduce the impact on specific features (i.e., to bypass some cultural relics). Only archaeological-targeted measures have been assessed so far, the other measures have not been assessed and therefore no results are available.

At present, a detailed plan for **compensatory measures** does not exist and compensatory measures have not been implemented yet. Details related to concrete implementation, assessment of effectiveness of measures, traceability of decisions and collection of know-how are yet to be finalised, as they are expected to result from a consultation plan waiting to be agreed upon with the local government in Reykhólahreppur.

There is no detailed risk assessment and contingency plan in place, therefore there are no predefined procedures/solutions for the potential situation of sub-optimal results and there are no assigned responsibilities. The monitoring report (2021) includes a general set of measures in the case of revegetation.

2.3. The Monitoring Plan and the route Þ-H database

a. Standards and responsibility for monitoring:

The entity assigned by the responsible authority (IRCA) to conduct the monitoring is the Natural Science Institute of the Westfjords (NSIW). As there are no comprehensive standards for monitoring in place, NSIW did due diligences by developing the monitoring plan based on the relevant guidebooks and consulting with specialists.

b. The approach and design of the monitoring plan & monitoring methodologies:

NSIW designed the monitoring plan with the aim that the collected data would enable the quantification and comparison of species and habitat diversity as well as aspects of population dynamics over time using known statistical analysis methods. It is considered that the monitoring plan is the most complex one developed for a road project in Iceland.

c. Collaborative efforts on monitoring:

NSIW was engaged in non-formal collaboration with different institutions carrying out different aspects of the monitoring and scientists in these institutions were consulted during the process of making the monitoring protocols. There were no wider formal consultations with all interested parties.

d. Monitoring results (database) and decision-making procedures based on them:

The authorities are in the process of making the GIS data resulting from the monitoring publicly available. There is no predefined procedure for how to adjust solutions based on real time data provided by the monitoring results.

e. Lessons learnt and collecting the local know-how:

At present in the monitoring plan, there is no particular procedure on how to collect lessons learnt and to communicate the results transparently and in due time. However, IRCA will ask the Natural Science Institute of the Westfjords to draft a procedure that addresses these issues.

2.4. Actions that can strengthen the conservation of other parts of the Breiðafjörður Nature Reserve which may *not be affected directly* by the road project.

a. An overview of the conservation status for species, habitats, landscape features of the Breiðafjörður Nature Reserve:

- ***Legal status:***

The most important Conservation Act in place is the Breiðafjörður Conservation Act[7] (1995) which mentions the conservation of wildlife, landscape, cultural heritage etc. but does not specify certain habitats or species. The Act needs some strengthening, and this is being looked at at the moment.

Within the Breiðafjörður conservation area there are three islands that are protected according to the Icelandic Nature Conservation Act[8]. Also, a part of the Vatnsfjörður Nature Reserve is within the Breiðafjörður conservation area.

A number of habitats are under special protection under the Nature Conservation Act (mudflats, saltmarshes, hot springs, and wetlands on the islands within the bay). Species are under the protection of the Act for the Conservation and Hunting on Wild Animals and Mammals[9]. There is legislation on sea hunting and at the level of municipalities' planning as well.

- ***Data base:***

Synthetic information on species (birds, seals) and priority habitat types exists. In terms of accessibility, certain data is fully available to everyone: a geological map, habitat site map, map of important bird areas, and map of protected areas are accessible as GIS (downloadable web map) on the Icelandic Institute of Natural History website.[10] Environmental impact assessment data is also available.

However, a comprehensive and up-to-date database that could be used for decision-making for the entire Breiðafjörður area is not in place.

The **Complainant** considered that, although a lot of data has been gathered from many different sources, the main gap is the lack of systematic monitoring in the area, thus the need for a proper geomorphological study of the area and its landscapes was highlighted.

- ***Monitoring:***

The Icelandic Institute for Natural History (IINH) is responsible for coming up with a monitoring plan for Iceland. The process is ongoing - a first draft of a plan (mostly concerning birds and plant species and habitats) has been submitted by IINH to the Ministry.

Although the Breiðafjörður area should be a hotspot for monitoring and would benefit from the capacity of several nature agencies in the area, at present there is no monitoring plan in place for the area.

Currently, apart from the very good data on some bird species, most of the newest data comes from the monitoring of projects such as road building or other activities. Regarding the monitoring of different impacts, it is standard to collect baseline data whenever a project is being planned, but there are no set standards or procedures therefore the quality of the data could be debatable.

- ***Documented pressures, threats and their negative impacts:***

Several existing pressures (the road system and especially old fjord crossings) have to a varying degree impacted the nature reserve. Future threats may include another fjord crossing, two planned wind energy projects on the coast of the Breiðafjörður area or the idea of a hydro-electric power production facility in the Vatnsfjörður Nature Reserve.

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[7] https://ust.is/library/Skrar/Einstaklingar/Fridlyst-svaedi/Auglysingar/log_um_breidafjord_54_1995.pdf
[8] The Nature Conservation Act No. 44, 22 March 1999, revoked by the Act No. 60 of 2013.
[9] https://www.althingi.is/lagas/152c/1994064.html
[10] https://www.ni.is/en

There is a deep concern that the current protection status of the Breiðafjörður area will not be a strong enough instrument to efficiently address these new impacts.

b. Conservation objectives and management plan:

According to the Breiðafjörður Conservation Act, the objectives of the protection and corresponding conservation/management actions must be stated in the management plan. Although a management plan for Breiðafjörður exists (developed by the IINH), it includes rather a set of general recommendations than being a fully operational document for decision-making. The current management plan does not include a monitoring plan and concrete conservation needs are not available at this moment.

The **complainant** highlighted the need for an ecological restoration plan focusing at least on the old fjord crossings with known impacts on the marine environment and mudflats.

Both parties acknowledged that strengthening the Breiðafjörður Conservation Act and/or developing a proper management plan as an efficient tool to address current pressures and future threats (including those from outside the area[11]) would be needed.

There are good examples of management plans[12] in Iceland that could be followed as references for developing an efficient management plan for the Breiðafjörður area.

c. Relevant stakeholders and their collaboration:

A series of relevant stakeholders have been highlighted during the discussions - the Ministry for the Environment, Energy and Climate, Municipalities, the Breiðafjörður Committee[13], the Icelandic Institute for Natural History, scientific bodies, Committees and Agencies (including The Environment Agency, Cultural Heritage Agency of Iceland, the Nature Institute of the Westfjords), local and national NGOs and civil society (including the complainant).

A Steering Group was appointed with the aim of looking into the protection of Breiðafjörður and how it links/can link with regional development in the project "The future of Breiðafjörður", and a Consultation Group to the Steering Group is to be established.

All present parties agreed that functional collaboration between relevant institutions and stakeholders should become a priority, as better collaboration between them should be one of the main aims for the future conservation of the area.

[11] Management plans according to Icelandic law are valid within the boundaries of the relevant area. Projects and possible pressures outside a project area are dealt with in article no.54 in The Icelandic Nature Conservation Act.
[12] Hornstrandir Nature Reserve, Friðland að Fjallabaki Nature Reserve.
[13] The Breiðafjörður Committee, according to the Breiðafjörður Conservation Act, is advisory to the Minister on everything related to the implementation of the act. The committee consists of seven people , appointed by the minister for a four-year period. For more information on the Committee, see the detailed findings in Annex I.

3. Expert's conclusions and proposed procedural changes related to the mitigation & compensatory measures and monitoring plan in regard to this and future cases

3.1. Legacy of the case

The present case was generated by the situation of a (road named route Þ-H) project being approved despite being assessed as having significant negative environmental impacts and a series of other unknown effects. The argument for approval was based on the fact that all alternatives assessed during the EIA would have had significant negative impacts.

The question remains as to why further investigation of other alternatives irrespective of their potential higher building costs (including the tunnel alternative) was not conducted in order to better implement the mitigation hierarchy and to prioritise avoidance[14].

Having clearer requirements (not only recommendations) to prioritise the avoidance of the impacts on protected habitats, species, and landscape features (and by assigning them higher values compared with other criteria during the costs–benefits analysis, although this has not been the practice in Iceland) may have led to different conclusions during the EIA process and finally to the selection of an alternative with no (or less) significant negative residual impacts on protected habitats, species, and landscape features.

Although the authorities stated that the route Þ-H project should be considered as an exception, the danger is that it may create a precedent in the approval of projects with known significant negative impacts and/or unknown effects under the assumption that required compensation measures will be effective.

Following the approval of the project, it is apparent that the focus of the authorities was on the development of the mitigation/ compensatory measures for the route Þ-H. According to IRCA, "*Significant changes were made to the route Þ-H from original ideas [...]. Some mitigation measures were adopted in the EIA process and some through the process of applying to planning permits and construction permits. Some mitigation/compensation measures were adopted through negotiation with landowners. In general, the overall procedures have helped us to develop the project in a more sustainable way.*[15]"

This is in accordance with the principle that, in such exceptional cases, it is of paramount importance that the mitigation and compensation measures should be effective. Therefore, the dedication of the authorities to develop and to implement an adequate mitigation and compensatory plan is to be commended, especially as it is considered as a first for Iceland.

However, although the compensatory measures have been identified, a concrete detailed plan is yet to be discussed and approved despite the fact that good practice strongly recommends that a compensatory plan should be in effect prior to project implementation.

The fact that the project started without a finalised compensation plan in place is a major risk, especially as it is combined with the fact that the conservation status of species and habitats, their specific vulnerabilities, pressures / threats and impacts as well as concrete conservation objectives and requested actions are not adequately known in the Breiðafjörður area. In this respect, the support-data resulting from the Emerald designation process and / or from a management plan support-studies would have been extremely useful for the case.

Another critical aspect of the case to consider could be the apparent split between local and national interests in terms of decision-making. It was not the scope of the Mission to discuss these specific aspects, but it should be noted that in such situations, ensuring transparent communication and data-driven decisions are critical for harmonising different interests. Again, both the support-data and the process itself of the Emerald designation could have helped in terms of harmonising the legitimate

[14] Avoidance measures: measures such as project abandonment or infrastructure re-routing employed to avoid environmental impacts. Wildlife & Traffic - A European Handbook for Identifying Conflicts and Designing Solutions. Glossary (Updated version, 2021, in cooperation with the Horizon 2020 BISON project).

[15] Answers to the Bern Convention Complaint, Icelandic Road and Coastal Administration, May 2022.

sustainable development projects and local values of local communities/municipalities with national or international values that would have required special consideration and it would have highlighted the need of national support for their protection.

The clear dedication of all parties -authorities, scientific bodies, NGOs and local communities- not only to finding the best solution for the road but also to considering the overall Breiðafjörður area is to be highly commended and should become the real legacy of the case.

The worst-case scenario would be that despite all efforts, a controversial project could de actually approved and the consequences dealt with later. Whereas a good-case scenario should use the lessons learnt and the unique amount of data paired with a genuine and efficient collaborative effort of all interested stakeholders to turn the case into a referential, pivotal case for Iceland.

This would be beneficial not only for the Breiðafjörður area, but would create a significant precedent for harmonising local and national interests and by using the best-available know-how adapted to Iceland's specific conditions. Not least, it could be the start of transferring the Icelandic know-how to the European level in terms of nature and culture protection and in terms of finding technical solutions for mainstreaming biodiversity into the transport sector.

3.2. Conclusions and proposed procedural changes

a. If an official mitigation and monitoring plan exists and if it was discussed with relevant stakeholders;

a1. An official mitigation and monitoring plan exists, as well as follow-up reports.

a2. Although the plan was developed following existing guidelines and was based on (formal and non-formal) consultations with various specialists, it was acknowledged that the authorities could have done more in terms of presenting the plan, its supporting studies, and its subsequent results (i.e. monitoring reports) to ALL relevant stakeholders at local and national level (including the complainant).

Proposal #1: Authorities to include a consultation plan with ALL relevant stakeholders (at both local and national level) in the official mitigation and monitoring plan.

b. If the measures are addressing all impacts identified at the EIA stage;

b1. The mitigation and compensatory measures address impacts identified at the EIA stage, including, in accordance with European good-practices[16], the (primary, secondary) effects on nature, on landscape and local communities, and follow a logical framework from quantifying the identified impacts to proposed mitigation measures and from quantified residual impacts to corresponding compensatory measures.

b2. However, a series of effects has been given less attention: landscape ecology and habitat fragmentation or fauna mortality (for terrestrial species). Although this seems to be in-line with the current practice in Iceland, these important impacts need to be considered in relation to linear infrastructure projects.

Proposal #2: Authorities to include habitat fragmentation and fauna mortality for terrestrial species in the monitoring objectives of the official mitigation and monitoring plan.

b3. Related with loss and degradation of habitats, special attention should be given to the critical aspect of compensatory measures ensuring that new habitats are/will compensate for the loss / degradation of those impacted by the road in terms of size AND quality and ecological functions.

Proposal #3: Consider the habitats conservation status at the scale of Breiðafjörður Nature Reserve in order to identify the most appropriate measures to be included in the Compensation Plan to address the loss of quality and ecological functions (besides surface loss).

b4. Related with secondary effects on nature caused by land-use changes, their impacts need to be further (re)assessed based on the development scenarios expected to be produced by the Steering Group.

Proposal #4: Authorities to consider the secondary effects on nature related with land-use changes during the development scenarios analysis which will be suggested by the Steering Group.

c. If the measures are addressing all effects considered to be uncertain at the EIA stage;

c1. For the effects considered uncertain at the EIA stage, the authorities did due diligences by clarifying the potential impacts in order to propose adequate measures based on focused research and assessments.

[16] Wildlife & Traffic - A European Handbook for Identifying Conflicts and Designing Solutions. Glossary (Updated version, 2021, in cooperation with the Horizon 2020 BISON project).

c2. For the three fjord crossings, the existing knowledge and (including bad) experience was used to propose new designs and technical solutions. The technical specifications have been chosen based on their potential effects estimated using model calculations.

c3. Although the different bridge length analysis "showed limited performance" based on hydraulic and water quality model calculations, a further discussion on design adaptation to maximise the mitigation efficiency of multiple impacts (i.e. mudflats and salt marshes to be crossed over and not destroyed and fragmented by road fills) is strongly recommended for the Gufufjörður bridge. This would be in line with the precautionary approach AND would provide a real-life reference for future projects

Proposal #5: Consider as a high priority discussing with ALL relevant stakeholders the option of extending the bridge openings in Gufufjörður, especially as the authorities showed a clear interest in implementing the best possible technical solutions.

d. If the cumulative effects have been assessed and addressed;

d1. For nearly 20 years, it has been acknowledged by the authorities that the construction of the Westfjord road would have an impact on ecosystems of special protection status according to the Nature Protection Act (mudflats, beaches and baylands). Moreover, wetlands and the birch forest have been disturbed, whereas only Teigskógur is viewed as special and/or environmentally important.

d2. Although the EIA (2017) discusses synergistic and cumulative impact with other road projects on protected areas and IRCA considers that those impacts have not had a significant adverse effect on the Breiðafjörður ecosystem or landscape, a detailed analysis on the cumulative effects of road construction in Breiðafjörður has not been conducted yet.

d3. Even if individual projects have been evaluated correctly as not having individually significant negative impacts, without a cumulative effect assessment (CEA), finding the proper solutions to avoid / mitigate / compensate the potential impacts resulting from the combination of effects from several projects or activities over a period of time is not realistic.

d4. Even if the CEA approach is not necessarily typical for Iceland[17], such an approach would make the best use of data being gathered during the route Þ-H monitoring period AND would support an accurate assessment of other projects being envisaged in the area (infrastructure, windfarms etc.).

Proposal #6: Start development a cumulative effect assessment as a pilot-study in Breiðafjörður area using all relevant implemented projects and the current route Þ-H.

e. The status of mitigation and compensation measures' implementation and their effectiveness;

e1. The authorities demonstrated their interest **in further reducing the road impacts beyond the terms specified in the EIA**, therefore the road design has been changed to reduce the impact on specific features (i.e. to bypass some cultural relics), and the authorities informed that the new changes went through detailed consultations with selected stakeholders.

Proposal #7: Ensure and record that the decisions taken after the EIA will not impact on other natural features.

[17] The authorities informed that part of the current and future EIAs for specific projects would be to discuss potential cumulative impacts regarding important environmental factors, such as biodiversity and nature reserve areas, that would be in compliance with the new EIA Act of Iceland. There is a specific emphasis on cumulative effect assessment when making plans and policies and environmental assessments.

e2. Construction has started on one section of the route Þ-H and on the side road, and a series of mitigation measures are being either prepared for, being implemented or already completed (archaeological-, vegetation- and landscape-targeted, Þorskafjörður fjord crossing).

e3. Only archaeological-targeted mitigation measures have been assessed and reports on archaeological remains are under review by the Cultural Heritage Agency of Iceland.

e4. The compensatory measures address all the objectives set by the EIA (birch woodland, wetlands, mudflats, salt marshes habitats and cultural relics); these objectives are included in the monitoring plan and are reflected in the construction permit (2020).

e5. Details related to concrete implementation, assessment of effectiveness of measures, traceability of decisions and collection of know-how are yet to be finalised, as they are expected to result from a consultation plan waiting to be agreed upon with the local government in Reykhólahreppur.

Proposal #8: Ensure that the consultation plan on the status of mitigation and compensation measures' implementation and their effectiveness is shared with ALL relevant stakeholders (at both local and national level).

e6. There is no detailed risk assessment or contingency plan in place, therefore no predefined procedures/solutions has been agreed upon for the potential situation of sub-optimal results of mitigation and compensatory measures.

Proposal #9: Develop (as new sections of the official mitigation and monitoring plan) in consultation with the relevant (local and national) stakeholders, a detailed risk assessment and contingency plan with predefined procedures/solutions to be implemented for the potential situation where proposed mitigation and compensatory measures would lead to sub-optimal results.

Proposal #10: In the situation where a compensatory measure would be identified as not being effective, the detailed risk assessment and contingency plan should provide a clear and transparent procedure of stopping the construction until a proper solution will be agreed upon with all relevant stakeholders.

e7. Despite the fact that the construction has begun, the implementation of the compensatory measures is not complete or has not even started yet, therefore their real effectiveness is impossible to estimate at present. This is unfortunately in clear contradiction with best practices and European Commission guidance on the subject: "A site must not be irreversibly affected before compensation is in place".[18]

Proposal #11: The Authorities should ensure due diligences by finalising as soon as possible the detailed compensatory measures plan, in consultation with the relevant (local and national) stakeholders.

f. Standards and responsibility for monitoring; approach, design of the monitoring plan and monitoring methodologies;

f1. The entity assigned by the responsible authority (IRCA) to conduct the monitoring is the Natural Science Institute of the Westfjords (NSIW) which developed the monitoring plan according to the relevant Icelandic guidebook and using methods from peer reviewed studies and in close cooperation with scientists from various national institutions.

[18] EUROPEAN COMMISSION Brussels, 28.9.2021 C(2021) 6913 final Commission notice Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC

f2. The monitoring plan follows a sound logical framework and a before – after – control – impact approach, with the aim that the collected data will ensure quantification and comparison of species and habitat diversity as well as aspects of population dynamics over time using known statistical analysis methods. To monitor the potential negative impacts, NSIW will repeat the monitoring using the same exact methods as were used in the baseline studies, 1, 3, 6 and 9 years after construction will be completed.

f3. The monitoring design is in line with the current best practices, and the complexity of the current study is considered a first for Iceland.

g. Collaborative efforts on monitoring, monitoring results and supporting decision-making;

g1. NSIW was engaged in formal and non-formal collaboration with different institutions during the development of the monitoring plan. However, the monitoring plan and its results should be more widely presented and discussed with ALL relevant stakeholders, especially as the monitoring of such complexity is a first at national scale.

Proposal #12: The consultation plan should include regular presentations of the monitoring results, implications in the decision-making and should be used as a transferability of potential good practices at national scale (possibly supporting development of monitoring standards) and as a facilitation tool to include new monitoring feature/data suggested or provided by the stakeholders.

g2. IRCA is in the process of making this GIS data available, but at the time of the online meetings, the monitoring results were not available to stakeholders in a GIS form.

Proposal #13: IRCA to make the GIS data available as soon as possible; Authorities or the Breiðafjörður Committee to facilitate a working group dedicated to database development for the Breiðafjörður area aiming to harmonise data-collection and database structures in order to create a functional tool to support the decision-making process at the scale of the entire Breiðafjörður area.

g3. Although the most important objective of a monitoring plan is to gather data that should support efficient decision-making, unfortunately there is no predefined procedure in place for how to adjust initial mitigation/compensatory measures based on real time data provided by the monitoring results.

Proposal #14: Authorities to include in the monitoring plan success/failure indicators/thresholds for the proposed measures and predefined procedures on how to adjust initial solutions based on real time data provided by the monitoring results.

h. Lesson learnt and transferability of the local know-how;

h1. The monitoring plan does not include a procedure on how to collect lessons learnt and to communicate the results transparently and in due time. However, IRCA will ask the Natural Science Institute of the Westfjords to draft a procedure that addresses these issues.

Proposal #15: Considering that the mitigation and monitoring plan is a first for Iceland in terms of complexity, the monitoring plan should include a chapter of lessons learnt to facilitate the transferability of local knowledge being accumulated during the implementation of the plan.

4. Recommendations

The government of Iceland is recommended to:

1. Ensure an **inclusive and transparent consultation process with *all* relevant stakeholders** at both local and national level regarding the **route Þ-H project implementation (including monitoring, mitigation & compensatory plans)**.
2. **Finalise as soon as possible the detailed plan for compensatory measures for the route Þ-H**, in consultation with the relevant (local and national) stakeholders.
3. **Update the mitigation and monitoring plan for the route Þ-H** according to the following:
    a. add a **consultation plan** that should include regular updates on monitoring results and their implications in relation to decision-making; the consultation process should ensure collection of suggestions or data from interested stakeholders and could be used as a mechanism to transfer good practices at national level (possibly supporting development of national monitoring standards);
    b. add a **detailed risk assessment** and **contingency plan** with predefined procedures/solutions to be implemented in cases where the proposed mitigation and compensatory measures may lead to sub-optimal results;
    c. provide a **clear and transparent procedure** of stopping the construction until a proper solution will be agreed upon in the case where **a compensatory measure may be identified as not being effective;**
    d. include in the monitoring plan **success/failure indicators/thresholds for the proposed measures** and **predefined procedures for how to adapt technical solutions** based on the real time data provided by the monitoring results;
    e. add as **monitoring objectives the habitat fragmentation and fauna mortality in relation to terrestrial species;**
    f. **consider the secondary effects on nature** related with land-use changes during the **development scenarios analysis** once it is prepared by the Steering Group.
    g. add a chapter on **lessons learnt to facilitate the transferability of local knowledge** accumulation (considering that the mitigation and monitoring plan is a first for Iceland in terms of complexity).
    h. **consider as a high priority discussing with *all* relevant stakeholders the option of extending the bridge openings in Gufufjörður, especially as the authorities showed a clear interest in implementing the best possible technical solutions.**
    i. **document that the changes made** to reduce the impact on specific features beyond the terms stipulated in the EIA **have had no impact on other natural features**.
4. **Ensure that the GIS data related to the road project becomes available as soon as possible; the relevant authorities or Breiðafjörður Committee should facilitate a working group dedicated to** harmonising data-collection and database structures in order to create a functional tool to support the decision-making process at the scale of the entire Breiðafjörður area.
5. **Allocate sufficient resources** for adaptation and implementation of adequate mitigation / compensation measures and monitoring activities related to the road project, including a side fund that should be used to respond to possible sub-optimal results of the implemented measures, should it be the case.
6. Document the **overall costs being allocated to mitigation and compensatory measures for the route Þ-H and compare them with those of the alternative routes which prioritised avoidance** such as the tunnel solution, as part of the lesson-learning process.

7. Start the development of the **cumulative effect assessment as a pilot-study in the Breiðafjörður area** using all relevant implemented projects and the current route Þ-H.
8. **Support the overall conservation of the Breiðafjörður area and consider developing it as a relevant case study for Iceland** (by implementing the following suggested actions that could strengthen the conservation of other parts of the Breiðafjörður area:
    a. ensure that a Consultation Group to the Steering Group is set up as soon as possible, and that it will be inclusive and the process transparent;
    b. within the aforementioned groups, discuss the possibility of including the Breiðafjörður area on the candidate list of Emerald Network sites (especially as the current conservation act is considered compatible with the Emerald Network requirements), considering **Recommendation No. 157 (2011, revised 2019)** on the status of candidate Emerald sites and guidelines on the criteria for their nomination.
    c. strengthen the Breiðafjörður Conservation Act (1995);
    d. implement a sound overall monitoring plan for the Breiðafjörður area;
    e. start developing a comprehensive database as an efficient support for decision-making for the Breiðafjörður area;
    f. develop a model-management plan for the Breiðafjörður area which should harmonise the sustainable development needs with the conservation objectives of the conservation plan requested by law.

The relevant NGOs, scientific community, and civil society are invited to:

9. Follow the above recommendations with regard to **cooperation with the authorities**, including by sharing data, engaging in cooperation bodies and activities, and agreeing on a detailed time plan of next steps (inspired by the proposal in the mission report).

Provisional time plan of next steps

Milestones.	**Steps to be completed**
January 2023	• Initiate formal discussions with the complainant and other relevant stakeholders regarding the road project implementation (including monitoring, mitigation & compensatory plans).
First semester 2023	• Make the GIS data related with the road project available, including to the complainant.
First semester 2023	• Present the current compensatory measures to ALL relevant stakeholders, including the complainant.
First semester 2023	• Start updating the mitigation and monitoring plan.
Second semester 2023	• Start preliminary discussions on the cumulative effect assessment (CEA) as a pilot-study in the Breiðafjörður area
43rd Standing Committee-November/December 2023 (Interim progress may also be requested by the Bureau at one of its meetings during 2023)	• Present to the Bern Convention Standing Committee the progress of the above actions. (If feasible, the parties are invited to present a common report).

5. Suggested actions that can strengthen the conservation of other parts of the Breiðafjörður Nature Reserve which may not be affected *directly* by the road project

Following the online meetings, a series of actions have been identified as having had a positive impact on strengthening the conservation status of Breiðafjörður area:

a. Develop the Breiðafjörður area into a reference case-study for Iceland

Suggestion 1: Authorities to make the best use of the existing context to develop an approach that should harmonise the local sustainable development needs with the conservation goals in the Breiðafjörður area (aiming for a 'no net loss' solution for biodiversity) which should act as a reference case for Iceland.

b. An inclusive Consultation Group for the Breiðafjörður area

Suggestion 2: Authorities to facilitate an inclusive and transparent participatory approach in engaging ALL relevant stakeholders at local and national level on the development and implementation of a sustainable management in the Breiðafjörður area.

c. Strengthen the Breiðafjörður Conservation Act (1995)

Suggestion 3: The Environment Ministry to set up a working group (possibly using the Consultation Group linked with the Steering Group) including all relevant stakeholders to further discuss and update (if needed) the report produced by the Breiðafjörður Committee on proposed solution for improving the legal protection of the Breiðafjörður area;

Suggestion 4: Within the aforementioned groups, discuss the possibility of including the Breiðafjörður area on the candidate list of Emerald Network sites (especially as the current conservation act is considered compatible with the Emerald Network requirements), considering **Recommendation No. 157 (2011, revised 2011)** on the status of candidate Emerald sites and guidelines on the criteria for their nomination.

Suggestion 5: Within the working group to discuss the possibility and opportunities of designating the Breiðafjörður area as a RAMSAR site.

d. Implement a sound overall monitoring plan for the Breiðafjörður area

Suggestion 6: Engage all relevant stakeholders in developing the monitoring plan adapted to the area's needs and in harmonising existing monitoring protocols (including the ones used for the route Þ-H and, ideally, to support the future development of national standards).

e. Develop a comprehensive database as an efficient support for decision-making related to the Breiðafjörður area

Suggestion 7: Harmonise and collate existing data, develop data acquisition protocols in order to produce a functional data-base as a GIS tool for decision makings within the Breiðafjörður area.

Suggestion 8: Develop the Standard Data Form requested by the Emerald designation process for the Breiðafjörður area also as a mean to identify the biodiversity and cultural features that should be assigned with higher values during the multi-criterial analysis of impact assessments for future projects.

Suggestion 9: Implement new studies (i.e. the cumulative effect assessment) and develop new datasets for currently missing information (i.e. geomorphological features, connectivity/fragmentation maps etc.)

f. Develop a model-management plan for the Breiðafjörður area (ideally correlated with the work of the Steering Group / Consultation Group)

Suggestion 10: Use the existing good practice on management plans in Iceland to develop in a participatory manner a model-management plan that would harmonise the local communities/municipalities needs with the conservation objectives.

In order to respond to concrete needs and to function as a decision-making tool, the management plan should, at least:

- Identify and map the ecological characteristics and prioritise conservation values;
- Identify and map land-use and development scenarios considered by the local communities/municipalities;
- Assess risks and map existing pressures and estimate future threats;
- Include an action plan (with a logical framework linking objectives – measures – actions – priorities – responsible – timeline – success indicators);
- Include an ecological reconstruction/restoration plan;
- Include the monitoring plan, and adaptation protocols based on monitoring results;
- Include a stakeholder engagement plan with proposed facilitation and conflict mitigation solutions;
- Include a general communication plan;
- Quantify resources needed and identify funding sources and implementation responsibilities in the short, medium and long term.

Annex I - The mission's main findings

The mission's main findings are based on the information relevant for the case provided by the parties (as documents, replies to questionnaires or as results of the common discussions held during the online calls) and the Secretariat and a synthetic summary is presented below.

- **Authorities' response part 1**
- **Authorities' response part 2**
- **Complainant's response**

1. The overall context and updates on the recent developments.

To be able to put the tasks of the mission in the broader context of the case, we briefly discussed some key elements:

a. If the route Þ-H, an approved project with significant negative residual impacts after avoidance/mi–tigation measures, is or not an exceptional case for Iceland;

b. How the status of an important conservation area (including prospective Emerald site) was reflected in the final decision of approving the route Þ-H project;

c. Update on the road building status;

d. Update on the Emerald designation process, including for the Breiðafjörður Nature Reserve.

e. Is the route Þ-H an exceptional case for Iceland:

Although the objective of the Mission was not to discuss the EIA process, we discussed if it is customary for projects requiring compensatory measures (with significant negative residual impacts after avoidance/mitigation) to be accepted, or the route Þ-H is an exception?

Authorities (the Icelandic Road and Coastal Administration – **IRCA**) informed that, as generally IRCA tries to avoid projects for which significant negative residual impacts are unavoidable and that clear preference is given to alternatives that have not such impacts, the whole project may be considered an exception, as all alternatives had significant negative residual impacts and would have required compensatory measures.

According to IRCA significant changes were made to the route Þ-H from original ideas such as: length of bridges, the line was moved to mitigate impact on forest, impact of earth material use reduced and adjusted to the landscape. Several mitigation measures were adopted in the EIA process and some through the process of applying to planning permits and construction permits. Some mitigation/compensation measures were adopted through negotiation with landowners. In general, the IRCA considers that the overall procedure have helped them to develop the project in a more sustainable way.

IRCA reported that the route Þ-H in EIA 2017 has been changed compared with route B in EIA 2006: these changes were made to reduce disturbance in Teigskógur birch forest and especially in the oldest part of it. The main controversy at the time for route B was the disruption on Teigskógur forest, so the main effort was put on minimizing the impact on that area. Other changes were for example to move the road from protected areas around eagle nest and to lengthen bridges to reduce changes in flow velocity and the effect on sediment transport at bridge openings.

The **Complainant** does not agree with the IRCA that this case is exceptional regarding neither past nor planned projects. In the complainant's view, IRCA has projects ongoing and planned where a route with

a very negative environmental impacts are chosen (examples given by the complainant are Hornafjarðarvegur (past) and changes to road 1 by Vík í Mýrdal (planned) in the east and south of Iceland, resp. and a planned bridge in the Breiðafjörður area over Vatnsfjörður). In the complainant's view, IRCA's decisions on road projects prioritize cost, travel time (speed limit, highest possible speed) and road safety over environmental impact. Apparently, the environmental impact is only taken into consideration after finding the cheapest, shortest, and safest route with high speed limit. This goes against EFTA/EU regulation on EIA and the complainant has a case before the EFTA Surveillance authority regarding this. It is of concern that IRCA often choose to design roads for 90 km/hours speed limit with greater effect on nature instead of designing roads with lower speed limits with reduced environmental impact and same or even better road safety.

f. The status of Breiðafjörður Nature Reserve, an important conservation area (including prospective Emerald site), reflected in the final decision:

We further discussed how the status of an important conservation area (including prospective Emerald site) was reflected in the final decision: have been the impacts on protected habitats, species, and landscape features being given a higher weights during the multi-criteria analysis of costs–benefits? Moreover if the mitigation hierarchy has been used to avoid known negative impacts on them or/and to have a precautionary approach whenever a potential negative effect is not known?

IRCA states that generally there is a priority for avoiding negative impacts and precautionary approach is typically adopted. It is stated in the policy of IRCA that the aim is to minimize the impact on ecological system, landscape, and natural and cultural factors for all aspects of its work in planning, designing, building and operation the road network. Typically, the EU framework/guidelines are used for cost benefit analysis of larger projects for all prospective and future projects for the national transport plan. Monetary value has not been put on protected species or habitats (but is it applied to carbon footprint, noise, traffic safety, accidents etc.)

The **Authorities** informed that the status of Nature Reserve was a specific criteria in the procedure of Reykhólahreppur, when deciding upon the permit for the road project. For example the municipality got opinions from the Breiðafjarðarnefnd, Icelandic Institute of Natural History, and the Environment Agency of Iceland, before issuing the permit.

In the **Complainant**'s view, IRCA did neither, in this case, prioritize avoiding negative impact nor adopt a precautionary approach. Other options were available that would have had a less negative impact on the environment, options that IRCA rejected. IRCA insisted on building a road according to the route with the highest environmental impact, the Þ-H route, despite all routes complying with security standards. IRCA was not willing to change this position even after the Supreme Court of Iceland in 2009 had concluded that the process had not been conducted according to the law. IRCA' arguments before the Environmental and Natural Resources Compliance Committee were that this route has been chosen due to financing and road safety at high speed limits. Furthermore, the Icelandic authorities have not done a proper cost-benefit analysis as the cost of ecosystem degradation has not been assessed or included in the expenditure side of the equation.

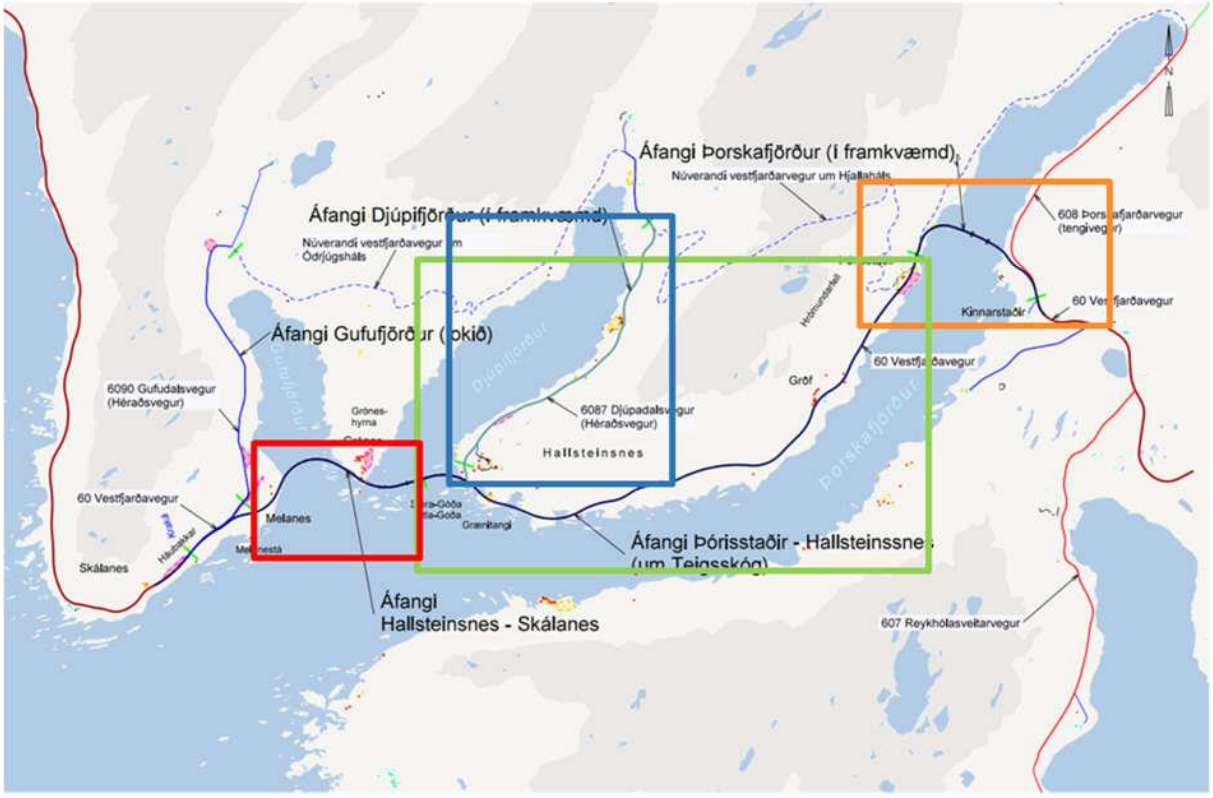
g. Update on the road building status:

As the latest information was that the road construction has begun, we discussed the up-to-date status of the construction phase.

IRCA informed that there are three sections of the road in different construction stages: a section under construction since 2021 (the section in the orange rectangle), a section to be constructed starting in summer 2022 (the section in the green rectangle), and a section where the construction has not started

yet (the section in red rectangle). Additionally, a side road is under construction since autumn of 2021 (marked in the blue rectangle).

Please see below the map provided by IRCA.



The construction area for route Þ-H. The orange rectangle marks the area that was the first section to go under construction one year ago. The green rectangle marks the area that is going under construction this summer. The red rectangle marks the area that constructions has not yet started. Blue area marks of area of a side road that is under construction since last fall (Source: IRCA)

h. Update on the Emerald designation process, including for the Breiðafjörður Nature Reserve:

General information provided by the **Authorities**: Icelandic nature conservation law has a provision regarding a national Nature Conservation Registry. The Icelandic Institute of Natural History (IINH) is responsible for suggesting what areas should be registered in the B-part of that registry. In 2018 IINH suggested that 112 areas in Iceland should be registered into the B-part the registry, as well as suggesting that those areas would be Iceland´s proposed areas to the Emerald Network.[19] These 112 areas have been under assessment by the ministry and the Environment Agency of Iceland. The assessment requires thorough cooperation with local municipalities, landowners and other stakeholders. When that process is finished, the Minister for the Environment brings a resolution to parliament which goes through several discussion phases before it is voted on.

Authorities informed that currently the Breiðafjörður Conservation is not in the process of becoming an Emerald site. However, that could change, but a decision has not been taken by the authorities.

[19] Five already protected areas have recently been suggested to become Emerald site. The process is ongoing.

In the **Complainant**'s view, the nonexistence of Emerald Network sites in Iceland can only be seen as the total lack of interest from the Icelandic authorities in creating a network of protected species and habitats. The Icelandic Institute of Natural History (IINH) has put forth, in 2018, a proposal of around 100 sites that would be a huge step in fulfilling the requirements for Emerald network sites in Iceland. The proposal was built on best available scientific research regarding protection of biological diversity. However, the Icelandic authorities have only suggested 5 sites that are more or less already protected, into the Emerald network. Regardless of what Icelandic authorities decide to do regarding the possibilities of the Breiðafjörður reserve to become an Emerald Network site, there is no scientific doubt about the Breiðafjörður area being one of the most important biological diversity areas in Iceland. Therefore, all precautionary measures should be taken in Breiðafjörður. The importance of biological diversity is in itself not a political issue and therefore the question whether a site is an accepted Emerald Network site by the Icelandic authorities or not should not, in practice, decide the fate or the favorable conservation status of the area although the acceptance of the area as Emerald Network site by the authorities is welcomed.

2. The mitigation and compensatory measures for the route Þ-H.

We explored the following key elements:

a. If an official mitigation and monitoring plan exists and if it was discussed with relevant stakeholders;

b. If the measures are addressing all impacts identified at the EIA stage;

c. If the measures are addressing all effects considered to be uncertain at the EIA stage;

d. If the cumulative effects have been assessed and addressed;

e. The status of mitigation measures' implementation;

f. The status of compensatory measures' implementation;

g. The effectiveness of already implemented measures, risk assessment and contingency plan;

h. Lesson learnt and collecting the local know-how.

a. If an official mitigation and monitoring plan is in place and it was discussed with relevant stakeholders:

The **Authorities** provided the Monitoring- and mitigation plan (developed in 2020 and 2021 by the Nature Institute of the Westfjords) as the reference document for the mission. However, as it was not clear if the Complainant was aware of this document, we asked the authorities to explain who was engaged in the development of the plan and who was consulted and informed about it.

The **Nature Institute of the Westfjords** (NIWF) informed that it has been in non-formal collaboration with different institutions carrying out different aspects of the monitoring as needed and scientists in these institutions were consulted during the process of making the monitoring protocol. In the monitoring report it is listed who formally reviewed the report or chapters in the report. The local government in Reykhólahreppur received the report for evaluation. The IRCA have regularly informed Reykhólahreppur on the status of the project, mitigation measures, research and the compliance to the terms of the permit.

The **Complainant** informed that Landvernd was not consulted, and the monitoring and mitigation plan was not publicly available. It is the opinion of Landvernd that the IINH and other relevant institutes and stakeholders should have been formally consulted. Informal consultation and private conversations with other parties such as the Forestry Service do not suffice and is not acceptable in a case of this impact.

b. If the measures are addressing all impacts identified at the EIA stage:

A synthesis of impacts identified at EIA stage (and, if the case, at a later stage) and their correspondence with measures proposed on the official monitoring and mitigation plan/report, was provided by the **Authorities**, showing that all impacts identified at the EIA stage have been taken into account.

The logframe of the synthetic table was provided to the authorities in order to also showcase **if the measures proposed took into consideration all recognized effects of transport infrastructure projects**:

- **Primary effects on nature**
  - Loss and degradation of habitats;
  - Habitat fragmentation / the barrier effect;
  - Fauna mortality;
  - Disturbance and pollution;
  - Creating new habitats, including favouring invasive species.
- **Secondary effects on nature**
  - Changes in land-use, human settlement patterns or industrial development induced by the construction of transport infrastructure;
- **Effects on landscape - historic and cultural values**.
- **Effects on local communities**

For each of the identified effect, the logframe includes the following information:

- **Identified impacts & quantification estimated *without* mitigation measure;**
- **Corresponding proposed Mitigation measure;**
- **Residual impact & quantification estimated *with* mitigation measures;**
- **Compensatory measures** (for significant negative residual impacts), and
- **Notes** (on cumulative impacts, measures already implemented etc.).

Based on the data provided by **IRCA**:

- For the **Loss and degradation of habitats**, impacts has been identified and quantified, mitigations objectives has been proposed but compensatory measures are yet to be agreed upon (in terms of where to be implemented or even if they are possible).
- For the **Habitat fragmentation / the barrier effect**, only the forest habitat (Teigsskógur) has been considered. The road will not be fenced. It has been mentioned that the effect of habitat fragmentation has been studied very little in Iceland.
- For the **Fauna mortality**, EIA considered the impact on bird and marine species to be insignificant. Terrestrial species are rare in Iceland (mammals - mice species and arctic fox; invertebrates). It was mentioned that estimated traffic levels are low (350 AADT / annual average daily traffic) and that the old road will be closed in winter and very little traffic will be there in summer.
- For the **Disturbance and pollution**, for the construction phase the contractor is implementing an action plan for pollution prevention and pollution accidents, in consultation with the health inspectorate. During the operation phase, it is expected that the risk of pollution to be reduced as the new road will be much safer than the current road. Traffic noise does not exceed the defined limits for residential and leisure buildings.
- For the **Creating new habitats, including favouring invasive species**, IRCA has developed a reclamation plan for local vegetation for the Teigskógur section (the birch forest) including the detailed mapping of the flora and a description and a seminar for the contractor

on how to manage the flora were done. Restoration of original habitats, monitoring of invasive species and their removal, if the case, are included in the plan.

- The **Secondary effects on nature, land use changes and human access changes has been assessed and the potential scenarios** (related to agriculture, seaweed harvesting, tourism and leisure, mobility) are not being considered negative for nature.

- For the **Effects on landscape (historic and cultural values) which were assessed as** significantly negative during EIA (effects on archeological remains, on the landscape), the plan includes mitigation and compensation measures and the collaboration with the Cultural Heritage Agency of Iceland for professional advice.

- Most of the **effects on local communities** are being foreseen as being positive (shorter and safer road, new tourism opportunities for the area), with the exception of the residents in Djúpidalur for whom the distance to Reykhólar will be longer.

The **Complainant** stated that the effects on landscape of the road project are very negative and irreversible and are not properly discussed in the Mission report. Compensatory measures for negative impact on landscape, for example when bridges change the landscape of a whole fjord, are not possible.

c. If the measures are addressing all effects considered to be uncertain at the EIA stage:

As a series of unknown effects have been highlighted during the EIA process, we discussed if these have been further investigated based on similar or comparable situations, if corresponding proposed measures on route Þ-H have been designed based on these good[20] or bad practices? Also if the precautionary approach has been adopted in designing the measures on route Þ-H?

Regarding the uncertain effect of the fjords´ crossing on physical aspects of the sea and its littoral and marine life underlined by National Planning Agency, **IRCA** considers that these were properly addressed in the monitoring and mitigation plan:

Following NPA's suggestion, the Road Administration contacted the Marine Research Institute and, as a result, several studies have been conducted by the Marine Research Institute regarding the flow measurements, on benthic invertebrates and smolts in the fjords. (Reports where presented in 2017). At the same time, grain samples were collected in numerous places in the fjords, and the assessment of the bottom disturbance on change in flow velocity and the possible effect on sediment transport was revised. In the past two years, The Natural Science Institute of the Westfjords has carried out more research on the ecosystem of the fjords and the Marine Research Institute on smolts in the fjords as part of the monitoring. These researches are discussed in the monitoring plans.

Regarding the technical solutions for the fjord crossings, **IRCA** informed that various researches has been carried out on other fjord crossings and existing experience and knowledge have been of use in the design of structures in Gufudalssveit:

A former technical solution for fjord crossing, the Gilsfjörður crossing, is often discussed in terms of bad practice. That technical solution has not been applied for the route Þ-H where the aim in other fjord crossing is to maintain the same volume of water flowing in and out the road section as before

[20] Good practice - A methodology, process or technique that represents an effective way of achieving a specific objective, one that has been proven to work well and produce expected results, and is therefore recommended as a model or as a useful example. Wildlife & Traffic - A European Handbook for Identifying Conflicts and Designing Solutions. Glossary (Updated version, 2021, in cooperation with the Horizon 2020 BISON project).

construction. (The assumption is that by maintaining the water exchange after construction, to prevent or minimize the effect on water quality - salinity, oxygen and retention time - , inside the fjord crossing).

For the route Þ-H, different technical specifications have been chosen and the potential impact has been estimated using model calculations. The bridges are lengthened to reduce the flow speed at the bridge opening and thereby reduce the effect on the bottom. This should further ensure water exchange of the fjords will remain unchanged.

- The effect of the fjord crossings in **Gufudalssveit** on physical elements of the sea is mainly on flow dynamic/current patterns and sediment transport. The effect is limited to the vicinity of the fjord crossings and in bridge openings. Results from model calculations show that the fjord crossings in Gufudalssveit have an insignificant effect on water exchange, oxygen, retention time and salinity (Vatnaskil, 2016).

- A further analysis of flows, current and the effect on the bottom was made after EIA, where different bridge lengths were considered. The results from that analysis showed that an additional bridge opening placed on west side of the crossing of **Djúpifjörður** would result in a more natural flow state. Further, the bridge on the east site on Djúpifjörður crossing will be one span over the main channel, which will result in a larger bridge opening in square meters, more natural flow state, less effect on the bottom and will have less effect in the construction phase.

- It was considered to change the design on bridge openings in **Gufufjörður** and **Þorskafjörður**, but analysis showed limited performance associated to the lengthening of these bridges. The bridge lengths that were analyzed were 15 % and 30 % bigger than was showed in the EIA.

The **Complainant** pointed out that the tidal flows in the fjords in question are asymmetrical. It is not clear if this has been considered in IRCA´s flow calculations on the effects of fjord crossings. Therefore, adverse effects on the fjords ecosystems may be more likely and a contingency plan and willingness to react is vital.

d. If the cumulative effects[21] have been assessed and addressed:

We discussed the identified cumulative impacts and how the measures proposed for the route Þ-H have been designed to mitigate/compensate them.

IRCA informed that improvements on the Westfjord road through the Barðastrandasýsla have been going on for nearly 20 years.
Improvements to Vestfjarðavegur in the sections Eyri-Vattarnes and Eiði-Þverá affected ecosystems that have special protection according to Article 61 of Nature Preservation Act No. 60/2013, i.e. **mudflats, beaches** and **saltmarshes** and thus they had an effect on the protected area. **Wetlands** and **birch forests** were also disturbed within area no. 304 on the Registry of Sites of Natural Interest, where the forest was not considered to be unique and/or ecologically important. Only **Teigskógur** seems to have that unique position on the northern side of Breiðafjörður.

However, **IRCA** considers that the disturbance caused to beaches, mudflats, baylands, wetlands and birch forests on area 304 on the Natural Heritage Register and the Breiðafjörður protected area due to construction of the Westfjord road in the last two decades has not had a significant adverse effect on the Breiðafjörður ecosystem or landscape.

[21] Cumulative effects - The increasing impacts resulting from the combination of effects from several projects or activities over a period of time. Their assessment is called cumulative effect assessment (CEA). Wildlife & Traffic - A European Handbook for Identifying Conflicts and Designing Solutions. Glossary (Updated version, 2021, in cooperation with the Horizon 2020 BISON project).

Chapter 6.13.5 in EIA (2017) discusses synergistic and cumulative impact with other road projects on protected area. **However, a detailed analysis on cumulative effect of road construction in Breiðafjörður has not been done.**

The **Complainant** states that cumulative effects have not been estimated, f.ex. of the Gilsfjörður landfill/bridge and other road projects in the Breiðafjörður area, therefore the complainant does not agree with the IRCA above statement that "the disturbance caused to beaches, mudflats, baylands, wetlands and birch forests on area 304 on the Natural Heritage Register and the Breiðafjörður protected area due to construction of the Westfjord road in the last two decades has not had a significant adverse effect on the Breiðafjörður ecosystem or landscape." Research is lacking and support data is not available, therefore such a claim cannot be made.
Furthermore, road construction in the Breiðafjörður area is divided in several smaller projects, which makes the impact assessment more difficult. Planning has not been properly assessed with regards to environmental impact although the EIA directive of the EU/EFTA regulation clearly states that this needs be done. This "salami slicing" of road construction in the Breiðafjörður area gradually degrades the ecosystems of the Breiðafjörður area.

e. The status of mitigation measures' implementation:

As the construction has started on one section of the route Þ-H and on the side road (see point 4.1.c.), we discussed if there any mitigation measures already being implemented in relation with the section of the route Þ-H that are under construction/finalized?

IRCA informed that several actions are being completed / ongoing:

- The mapping of archaeological relics is completed, and excavation is ongoing in Grónes.
- To make the construction area in Teigskógur as narrow as possible, the roadbed through the forest has been cleared as the Forestry Service instructed. Other reason to clear the roadbed was to map archaeological remains and it also makes reclamation of local vegetation later easier and hopefully more effective.
- The vegetation has been mapped in more detail since the EIA. Two seminars regarding handling of vegetation and reclamation in the construction area have been organized in collaboration with the Natural Science Institute of the Westfjords and the Agricultural University of Iceland.
- The roadbed has been moved aside in several places to avoid the disturbance of archaeological remains, and the road has been moved further away from habitation.
- Onsite landscaping has been done in collaboration with The Environment Agency of Iceland.
- In other respects, the constructions are not far in. Work on the Þorskafjörður crossing is currently under way along with construction of the Djúpidalur road.

f. The status of compensatory measures[22] implementation and their effectiveness:

[22] Compensatory measure - measure or action taken to compensate for a residual adverse ecological effect which cannot be satisfactorily mitigated. Wildlife & Traffic - A European Handbook for Identifying Conflicts and Designing Solutions. Glossary (Updated version, 2021, in cooperation with the Horizon 2020 BISON project).

We discussed if the compensatory measures for birch woodland, wetlands, mudflats or salt marshes, species under protection, cultural relics and landscape have been included in the official measure plan and agreed with all relevant stakeholders?

As presented by **IRCA** in a synthetic table, the compensatory measures are addressing all the objectives (birch woodland, wetlands, mudflats, salt marshes habitats and cultural relics) but their implementation is not complete or even has not yet started.

IRCA informed that the habitats of birch woodland, wetlands and mudflats are included in the monitoring plan and that the compensatory measure was highlighted for example in the condition for a construction permit issued by Reykhólahreppur (2020). A consultation plan is waiting to be agreed upon with the local government in Reyhólahreppur, with the purpose of ensuring that the necessary consultations take place, underpin better decisions, consultation is documented to promote traceability of decisions and contribute to learning of the implementation and effectiveness of mitigation measures.

Cultural relics have been mapped and documented according to instruction from The Cultural Heritage Agency of Iceland and the road design has been changed to bypass some cultural relics. A report on cultural relics came out at end of May 2022.

The **Complainant** pointed out that a program for compensatory measures does not exits and compensatory measures have not been implemented. Furthermore, as pointed out in the draft report, no contingency plan is in place if the results of monitoring indicate significantly adverse effects of the road building. Monitoring does not have much value if there are no contingency plans ready in case monitoring indicates serious impacts of the road construction on nature.

g. The effectiveness of already implemented measures, risk assessment and contingency plan:

We discussed how the implemented mitigation measures are being assessed in terms of their success/functionality and if there any reports / results available already.
*Moreover, if a risk assessment and a contingency plan are in place with clear procedures to be followed for the case when expected functionality of the measures are not being achieved for different reasons***.**

IRCA informed that:

- Only archeological-targeted measures have been assessed: the archaeological remains have been mapped and marked and excavations are in progress. IRCA has submitted several reports on archaeological remains (last one in end of May 2022) which has been reviewed by the Cultural Heritage Agency of Iceland and conditioned countermeasures.

- Other measures have not been assessed and therefore no results are available.

- There is no contingency plan in place, therefore no predefined procedures/solutions has been agreed for the potential situation of sub-optimal results. The monitoring report (2021) includes a general set of measures in the case of reclamation on vegetation:
"Measures will be taken if recovery plans are not met and will be assessed after each audit, but they will also improve knowledge to achieve the objectives of the revegetation. These measures can be, e.g.: fencing, protection, removal of invasive species, adding birch or thinning to reduce density or influence species composition."

The **Complainant** pointed out that responsible parties have not been assigned if monitoring indicates severe adverse effects of the road building. **Without a clearly assigned responsibility, action will not be taken to respond to the results of the monitoring**. A good recommendation to the Icelandic Authorities could be that the IRCA should set aside funds from all projects that should be used to respond

to sub-optimal results of monitoring. Currently, if sub-optimal results are obtained, the IRCA does not have the funds to respond.

3. The Monitoring Plan and the route Þ-H database;

We explored the following key elements:

a. Standards and responsibility for Monitoring;

b. The approach, design of the monitoring plan & monitoring methodologies;

c. Collaborative efforts on monitoring;

d. Monitoring results (data-base) and decision-making procedures based them.

f. Standards and responsibility for Monitoring:

The entity assigned by the responsible authority (IRCA) to conduct the monitoring is the Natural Science Institute of the Westfjords (NSIW).

NSIWF informed that, as there are no comprehensive standards for monitoring in place, NSIW referred to a draft (published 2019) of a new guidebook, Vatnaáætlun Íslands 2022-2027 (2022) when designing the sampling scheme for the physiochemical attributes of the marine aquatic ecosystems relevant for the project.

For the benthic marine and intertidal diversity, terrestrial vegetation, avian fauna etc., the monitoring plan does not follow a specific set of standards. However, it was designed using methods from numerous peer reviewed studies and in close cooperation with scientists from institutions such as the Icelandic Institute of Natural History, the Marine Research Institute of Iceland, the Soil Conservation Service of Iceland, several Icelandic Universities as well as the Icelandic Forestry Service. Part of the important terms of the permit is IRCA's consultation and collaborations with the municipality, Environment Agency and Icelandic Institute of Natural History.

The **Complainant** pointed out that the party that the developer (IRCA) has contracted to carry out monitoring can be financially dependent on the developer. To ensure credibility and enhance trust on the decision-making process when it comes to projects that have a negative impact on the environment, a clear set of rules on the methods used by the monitoring party are needed. Furthermore, transparency throughout the monitoring process is necessary for credibility. Also, a clear set of rules that demand the monitoring party to formally consult with independent third parties such as national institutions of relevant fields, NGOs and other experts, regarding monitoring plans, interpretation of results and the necessity of action based on monitoring results.

g. The approach, design of the monitoring plan & monitoring methodologies:

The general approach was to use known sampling protocols, to conduct thoroughly sampling in all habitat types with the aim of having a baseline such that statistical comparisons could be made to data collected in the exact same manner and locations in the future. The same methods will be used for sampling throughout the whole monitoring period.

NSIW designed the monitoring plan aiming that the collected data will ensure to quantify and compare species and habitat diversity as well as aspects of population dynamics through time using known statistical analysis methods.

The monitoring follows a before – after – control – impact design. NSIW informed that *assessing the state of biodiversity*

- *before construction,* mainly entails the following:

1. Assessment of the state of biodiversity by reviewing the available literature on studies in the area and elsewhere in similar habitats.
2. Sampling conducted prior to construction in 2020 and 2021.
3. Data was collected on:
    - species diversity and population dynamics of invertebrates and marine vegetation in the intertidal as well as the benthic marine habitat of all fjords in question.
    - species diversity and population dynamics of birds in all fjords in question and terrestrial vegetation in the forest Teigskógur and in all fjords in question.
    - the physiochemical and environmental attributes of the marine environment in all fjords in question.

Baseline data provided information regarding:

1. The location and timing of the arrival of all birds in the area
2. Maps of sea grass beds and rough maps of the intertidal zone of all fjords
3. Calculation of birch biomass
4. Maps of all habitat types in terrestrial vegetation

- *during construction* mainly entails the following:

1. preparing a plan for the reclamation of the wetlands (in preparation), birch forest (in preparation), agricultural land and local vegetation in the area (complete);
2. reclaiming wetlands on land and shore at the construction site (in preparation);
3. reclaiming birch at the construction site and its vicinity (are in preparation).

- *after construction*, mainly entails the following:

1. recording whether work is being carried out according to conditions, (counter)measures and intentions of the procedures according to the Road Administration's assessment report and the requirements of the municipal authorities' construction permit;
2. assessing differences in predicted environmental impacts resulting from the construction of Vestfjarðavegur and actual impacts;
3. assessing the effectiveness of mitigation measures as far as possible within the timeframe covered by follow-up.

To monitor the potential negative impacts, NSIW will repeat the monitoring using the same exact methods as were used in the baseline studies, after 1, 3, 6 and 9 years after construction will be completed. Statistical comparisons will then be made between years, locations and/or treatments. Comparisons will also be made to baseline areas following standards laid out by the water framework directive (Vatnáætlun Íslands 2022-2027, 2022).

NSIW informs that the methodologies are briefly explained in the monitoring plan document and that the detailed methods, for both data collection and statistical analysis, will be included in every report that will be produced.

NSIW provided synthetic tables with the monitoring targets (during the construction phase and for the operating phase), spatial and temporal scale of monitoring, corresponding objectives, general methodology how the effectiveness of mitigation measures will be evaluated.

The **Complainant** pointed out that the monitoring plan, reclamation plans, contingency plans, and monitoring methodology needs to be reviewed by a third party with relevant expertise (see comment on point 3a)

Regarding the *during construction* activities presented by NSIW, the **Complainant** pointed out that the plans for reclamation of wetlands and birch woodlands have not been completed (see #1). Therefore,

the statements of #2 and #3 are overstatements. The reclaiming can not be in preparation if a plan to reclaim is also only in preparation phase.

h. Collaborative efforts on monitoring:

We discussed if there is any collaborative agreements in place to involve relevant stakeholders in the monitoring process.

NSIW informed that it was engaged in non-formal collaboration with different institutions carrying out different aspects of the monitoring and that scientists in these institutions were consulted during the process of making the monitoring protocols.
IRCA stated that its consultation and collaboration plan is designed to ensure the participation of the main stakeholders.

The **Complainant** pointed out that the consultation needs to be formal, open, and transparent. Also, relevant institutions, experts and NGOs need to be consulted.

i. Monitoring results (data-base) and decision-making procedures based on them:

We discussed if the monitoring results are processed and available to stakeholders in a GIS form and if the results could be used efficiently for decision-making in due time.

IRCA informed that it is in the process of making this GIS data available.

NSIW informed that unfortunately there is no predefined procedure for how to adjust solutions based on real time data provided by the monitoring results.

j. Lesson learnt and collecting the local know-how:

Considering the exceptional circumstances of the case (the acknowledged significant negative impacts of the plan, the complexity of the mitigation and monitoring plan and the importance of the area), we discussed if the official monitoring and mitigation plan/report includes a procedure of collecting lessons learnt and of communicating transparently the results in due time to all the relevant stakeholders?

IRCA informed that in the monitoring plan there is no such a procedure on how to collect lessons learnt and to communicate the results transparently and in due time. However, IRCA will ask the Natural Science Institute of the Westfjords to draft a procedure that addresses these issues.

4. Actions that can strengthen the conservation of other parts of the Breiðafjörður Nature Reserve which may *not be affected directly* by the road project

In order to understand the current context, we explored the following key elements:

a. A short update on the designation process as Emerald site;

b. An overview of the conservation status for species, habitats, landscape features, connectivity of the Breiðafjörður Nature Reserve;

c. Conservation objectives and management plan;

d. Relevant stakeholders and their collaboration.

d. A short update on the designation process of the Breiðafjörður Nature Reserve as Emerald site[23]:

Authorities informed that currently the Breiðafjörður Conservation is not in the process of becoming an Emerald site. The Icelandic Institute of Natural History suggested that, along with 112 other areas, Breiðafjördur should be on the Nature Conservation Registry and become an Emerald site. However, a decision has not been made by the ministry yet.

The Emerald sites suggestions were based on scientific data (the best data available at that moment - April 2018). Although data exits, it was not structured as (draft) SDF and GIS support as for this a formal agreement form the Ministry would be required.

In **Complainant**'s opinion, Icelandic authorities have had several years to complete Emerald network site proposals. Work has been ongoing for more than 20 years and a "complete" selection based on thorough scientific research data has been available for 4 years. The delays regarding Emerald Network sites, for which the Ministry is responsible, is no excuse not to protect the Breiðafjörður area properly.

Further strengthening the Breiðafjörður area without including it in the Emerald network are also possible and indeed necessary. Establishing a national park would strengthen the protection of the area as would strengthening the special act on Breiðafjörður with management plans and stricter protection conditions. Furthermore, recording the Breiðafjörður area on the list of Ramsar sites would also strengthen biological diversity and habitat protection.

e. An overview of the conservation status for species, habitats, landscape features of the Breiðafjörður Nature Reserve:

- **Legal status:**

The **Authorities** informed that there are different types of conservation acts in place, the most important being the Breiðafjörður Conservation Act (1995).

The Breiðafjördur area is protected under a special act which mentions conservation of wildlife, landscape, cultural heritage etc. but does not specify certain habitats or species. The act needs some strengthening, and this is being looked at the moment, as the Breiðafjörður Committee has produced a report regarding the area and suggested to the Environment Ministry how it would be possible to strengthen the protection status. The ministry has appointed a steering group responsible for this task. The act for the conservation of Breiðafjörður emphasizes on cultural heritage as well, as a result the Breiðafjörður Committee was collecting place names during the last years.

Within the Breiðafjörður conservation area there are three islands that are protected according to the Icelandic Conservation Act. Also, a part of the Vatnsfjörður Nature Reserve is within the Breiðafjörður conservation area. A number of habitats are under special protection under the Nature Conservation Act (mudflats, saltmarshes, hot springs, and wetlands on the islands within the bay). Species are under the protection of the Act for the Conservation and Hunting on Wild Animals and Mammals. There is legislation on sea hunting and at the level of municipalities' planning as well.

[23] Breiðafjörður Committee has suggested in the management plan for the protected area that it should be nominated as a Ramsar site.

- **Data base:**

The **Natural History Institute** identified key bird-species and key habitats that need protection while suggesting the area to the Nature registry and as an Emerald site. All the data is available on the website in the published documents.

Authorities provided synthetic information on the species (sea birds breeding in Breiðafjörður and other bird species – population size per years and seasons, percentage of Icelandic populations and international importance; seal species – population lowest and highest values, highest and current percentages of Icelandic populations) and priority habitat types (EUNIS categories – surface and conservation value).

In terms of accessibility, certain data is fully available to everyone: a geological map, a habitat site map, map of important bird areas, map of protected areas are accessible as GIS (downloadable web map) on the Icelandic Institute of Natural History website.

Environmental impact assessment data are also available as well as different other information under public domain could be accessible.

However, a comprehensive and up-to-date data base that could be used for decision-making at the whole Breiðafjörður area is not in place.

The **Complainant** considers that, although a lot of data have been gathered from many different sources, the main gap is the lack of systematic monitoring in the area and highlighted the need for a proper geomorphological study of the area and its landscapes.

- **Monitoring:**

In the Nature Conservation Act there is an article that states that the Icelandic Institute for Natural History (IINH) should come up with a monitoring plan for Iceland. The process is ongoing - a first draft of a plan (mostly concerning birds and plant species and habitats) has been submitted by IINH to the Ministry. Breiðafjörður area should be a hotspot for monitoring and would benefit from the capacity of several nature centers in the area.

However, at present there is no monitoring plan in place for the Breiðafjörður area.

Currently, apart from the very good data on some bird species, most of newest data comes from monitoring of projects such as road building or other activities.

Regarding the monitoring of different impacts, it is accustomed to collect baseline data whenever a project would be planned, but there are no set standards or procedures therefore the quality of the data could be debatable. This is especially relevant for the littoral and tidal zones (the most biodiversity-rich zones of Breiðafjörður) as they are huge and also different from fjord to fjord.

- **Documented pressures, threats and their negative impacts:**

We discussed if the negative impacts of current pressures and of the potential future threats have been assessed and if concrete instruments to address the impacts have been agreed upon.

Several existing pressures (the road system and especially old fjord crossings) have to a varying degree impacted the nature reserve.

Future threats may include another fjord crossing, two planned wind energy projects on the coast of the Breiðafjörður area or the idea of a hydro-electric power production facility in the Vatnsfjörður Nature Reserve.

There is no overall view on how these new impacts may be efficiently addressed and moreover there is a strong concern that the current protection status of the Breiðafjörður area will not be a functional instrument for such a scope.

In terms of local knowledge (i.e. documented impacts and previous situations to be used as a reference for a potential restoration plan that could enhance the conservation status of the nature reserve), there is documented know-how on fjord crossings (both as bad and good practices) that are being used as a guiding tool by the IRCA.

f. Conservation objectives and management plan:

As the Breiðafjörður is a very important area from a biodiversity and cultural point of view, we discussed if conservation objectives are being set and if concrete actions that need to be implemented in order to ensure the favourable conservation status for natural and cultural values have been agreed upon (as a management or action plan)?

Authorities informed that according with the special Act on the Conservation of Breiðafjörður, the objective of the protection and corresponding conservation/management actions must be stated in the management plan. It also says that this plan should be approved by the minister and moreover that the Breiðafjörður committee[24] shall consult with local authorities such as the municipalities (including their nature conservation committees), the Environmental Agency of Iceland and Cultural Heritage Agency of Iceland.

Although a management plan for Breiðafjörður exists (developed by the Icelandic Institute for Natural History), it includes rather a set of general recommendations than being a fully operational document for decision-making. The current management plan does not include a monitoring plan and concrete conservation needs are not available at this moment. Moreover, the complainant highlighted the need for an ecological restoration plan focusing at least on the old fjord crossings with known impacts on marine environment and mudflats.

Both parties acknowledged that strengthening the Breiðafjörður conservation act and/or developing a proper management plan as an efficient tool to address current pressures and future threats (including those from outside the area[25]would be needed.

There are good examples of management plans[26] in Iceland that could be followed as references for developing an efficient management plan for the Breiðafjörður area.

g. Relevant stakeholders and their collaboration:

A series of relevant stakeholders have been pointed out during the discussions and the general agreement was that a better collaboration between them should be one of the main aims for the future conservation of the area.

The Breiðafjörður Committee, according to the Breiðafjörður Conservation Act, is advisory to the minister on everything related to the implementation of the act. The committee consists of seven people[27], appointed by the minister for a four-year period. The committee shall, in consultation with the local authorities, have a conservation plan drawn up that states how the objectives set for the protection of the area shall be achieved. This plan must be sent to the minister for confirmation.

[24] The committee is responsible for the management plan, the committee is advisory to the minister and is funded by state budget

[25] Management plans according to Icelandic law are valid within the boundaries of the relevant area. Projects and possible pressures outside a project area are dealt with in article no.54 in The Icelandic Nature Conservation Act

[26] Hornstrandir Nature Reserve, Friðland að Fjallabaki Nature Reserve.

[27] Municipalities adjacent to Breiðafjörður nominate four representatives in the manner determined by the minister in a regulation; The Natural History Institute of Iceland and nature centers in the West and Westfjords jointly nominate one, and one is designated by the National Heritage Board. The Minister for the Environment appoints one person to the committee without nomination and she/he shall be the chairman.

In its work, the committee shall ensure consultation with local governments, nature conservation committees, Icelandic Environment Agency, heritage custodians and national heritage preservation authorities. The committee shall report annually to the minister on its work. The committee has no employed staff, however it has a contract with the West Iceland Nature Research Centre that manages the committee´s work. The committee meets around six times a year and it has no real decision-making power. It has been able to fund only small research projects, not having financial resources to support monitoring activities, for example.

The Icelandic Institute for Natural History was developing the first management plan for Breiðafjörður area and it is responsible for developing a monitoring plan for Iceland.

Recently a Steering Group was appointed with the aim to look into the protection of Breiðafjörður and how it links/can link with regional development in the project "The future of Breiðafjörður". Representatives of the steering group come from Ministry of the Environment, Energy and Climate, Ministry of Culture and Business Affairs, Ministry of Food, Agriculture and Fisheries, Ministry of Infrastructure, Breiðafjörður Committee, Federation of Municipalities in West-Iceland, and Municipality Association of the Westfjords. The purpose of the project is to highlight the conservation value of the area and analyse its impact, opportunities and challenges on society, regional development and economy, and develop a proposal for the future of the Breiðafjörður conservation area. The goal of the project is that the protection of Breiðafjörður stands on stronger feet, as well as it contributing to the strengthening of regional development by creating opportunities in nature conservation, heritage conservation, tourism, outdoor activities, utilization of resources and marketing of products. The implementation of the project "The future of Breiðafjörður", based on the decisions of the steering group, is in the hands of The Federation of Municipalities in West-Iceland and Municipality Association of the Westfjords.

In addition, a Consultation Group to the Steering Group will be established which holds the representatives from the municipalities at Breiðafjörður. Consultation will be held with professional institutions of the ministries, and non-governmental organizations in the field of nature conservation, outdoor recreation, tourism and nature utilization in the area.

The Icelandic Environment Agency (IEA) is responsible (under the 2015 Nature Conservation Act) for developing the management plans for the 130 protected areas and currently a significant number of them are not finished. However, IEA is not responsible for the Breiðafjörður area because it is protected under a special act.

Municipalities in Iceland are very small, some of them comprising of less than 100 inhabitants, and they are responsible for decisions-making on permits for development project. The concerns of NGOs are that while considering local legitimate interests, the municipalities may not properly address important (biodiversity or cultural-wise) aspects of national or international relevance while making critical decisions.

A number of scientific bodies, Committees and Agencies (including The Environment Agency, Cultural Heritage Agency of Iceland, the Nature Institute of the Westfjords) have been mentioned as stakeholders consulted or responsible during the EIA processes.

Local and national NGOs and civil society (including the complainant) is actively engaged in overall conservation of the Breiðafjörður area and in relation with projects potentially impacting on the values of the area.

The Ministry for the Environment would have an important role in ensuring that while municipalities should maintain their important say on local values and development projects, national and international values (biodiversity, landscape protection and important geological structures) should be also properly considered. Apart for the formal engagement through the Consultation Portal, the Ministry for the Environment may also facilitate informal collaboration with ALL relevant stakeholders interested in the Breiðafjörður area.

All present parties agreed that functional collaboration between relevant institutions and stakeholders should become a priority.

Annex II - The programme of online meetings, list of stakeholders, and questionnaire

DRAFT PROGRAMME OF ONLINE MEETINGS

THURSDAY 5TH MAY

All times are indicative and given in Central European Summer Time (CEST).

Time (*CEST*)	Theme[28]
15:00-15:10	**Introduction**
15:10 – 16:00	**Session 1: Actions that can strengthen the conservation of other parts of the Breiðafjörður Nature Reserve which may not be affected directly by the road project**
16:00 – 17:00	**Session 2: A working session to identify and prioritise together potential actions to enhance the conservation status of the Breiðafjörður Nature Reserve**

FRIDAY 6TH MAY

All times are indicative and given in Central European Summer Time (CEST).

Time (*CEST*)	Theme
11.00 - 11.10	**Introduction**
11:10 – 11:45	**Session 3: General contextual and up-to-date information**
11:45 – 13:00	**Session 4: Assessment of the mitigation and compensatory measures for the route Þ-H**
13:00 – 14:00	**Session 5: A working session to identify together further needs/next steps/recommendations regarding mitigation and compensatory measures for the route Þ-H.**
14:00 – 15:00	*Lunch break*
15:00 – 15:50	**Session 6: Detailed project database and assessment of the Monitoring Plan**
15:50 – 16:40	**Session 7: A working session to identify together further needs/next steps/recommendations regarding the monitoring plan for the route Þ-H**
16:40 – 17:20	**Session 8: Legacy of the case**
17:20 – 18:00	**Concluding meeting with core parties**

[28] A detailed structure of the sessions is included on the following pages.

DETAILED STRUCTURE OF MEETING SESSIONS

DAY 1

SESSION 1: ACTIONS THAT CAN STRENGTHEN THE CONSERVATION OF OTHER PARTS OF THE BREIÐAFJÖRÐUR NATURE RESERVE WHICH MAY NOT BE AFFECTED DIRECTLY BY THE ROAD PROJECT

Authorities are kindly asked to provide a synthetic presentation pointing out the following / answering the following questions:

1. A short update on the designation process as an Emerald site.

2. An overview of the conservation status (species, habitats, landscape, connectivity) of the Breiðafjörður Nature Reserve – please provide a synthetic table.

3. Identified threats and pressures, assessed impacts on the Breiðafjörður Nature Reserve – have the indirect impacts of the route Þ-H been identified and assessed? – if the case, please provide a synthetic table.

4. Have impacts been assessed for other similar projects? (i.e. "three fjords in northern Breiðafjörður have been crossed, i.e. Gilsfjörður, Kjálkafjörður and Mjóifjörður and other parts of the road have been built in the littoral environment, e.g. by Múlaklif in Kollafjörður, at the bottom of Vattarfjörður and by Hörgsnes in Vatnsfjörður. These road projects have to a varying degree disrupted the Breiðafjörður nature reserve. Furthermore, the IRA has recently started working on an EIR for a new crossing of Vatnsfjörður, the westernmost fjord on the northern coast of Breiðafjörður.") – if the case, please provide a synthetic table.

5. Any existing specific conservation objectives, measures, management / action plan already in place?

Feedback from the complainant.

SESSION 2: A WORKING SESSION TO IDENTIFY AND PRIORITISE TOGETHER POTENTIAL ACTIONS TO ENHANCE THE CONSERVATION STATUS OF THE BREIÐAFJÖRÐUR NATURE RESERVE.

1. Aiming for a 'no net loss' solution for the Breiðafjörður Nature Reserve? / discussion

2. Potential action plan?: objective – measure – actions – responsible – timeline / discussion

3. Recommendation No. 208 (2019) of the Standing Committee on detecting, reporting, assessing and responding to changes in the ecological character of Emerald Network sites. / discussion

4. Next steps and recommendations.

DAY 2

SESSION 3: GENERAL CONTEXTUAL AND UP-TO-DATE INFO
Authorities are kindly asked to provide a synthetic presentation answering the following questions:

1. Are protected species, habitats, areas being given extra weight during the multi-criteria analysis of cost-benefits – i.e. priority for Avoiding negative impacts or/and to have a precautionary approach whenever a potential negative effect is not known?

2. For prospective Emerald sites, is it customary or mandatory to prioritise avoidance of negative impacts or/and to have a precautionary approach whenever a potential negative effect is not known?

3. Is it customary for projects requiring compensatory measures (i.e. with significant negative residual impacts after avoidance/mitigation) to be accepted, or the route Þ-H is an exception?

4. Has the uncertain effect of the fjords´ crossing on physical aspects of the sea and its littoral and marine life underlined by NPA been clarified through further research before the construction started and been included on the official monitoring and mitigation plan/report?

5. Was the official monitoring and mitigation plan/report presented to all relevant stakeholders, did they have the chance to contribute/comment? Please elaborate a bit on the procedures. (The monitoring- and mitigation report from the Nature Institute of the Westfjords.)

Feedback from the complainant.

SESSION 4: ASSESSMENT OF THE MITIGATION AND COMPENSATORY MEASURES FOR THE ROUTE Þ-H
Authorities are kindly asked to provide a synthetic presentation pointing out the following / answering the following questions:

1. A list with the impacts being avoided by the route Þ-H (based on EIA), if the case.

2. A synthesis of impacts identified at EIA stage (and, if the case, at a later stage - see q. C1-4) and their correspondence with measures proposed on the official monitoring and mitigation plan/report, please provide a table structured following the framework presented below, if possible

Effects:		Identified impacts & quantification estimated **without** mitigation measure ***For ALL relevant species and habitats, and per infrastructure development phases (construction and/or operating phase)***	Mitigation measure	Residual impact & quantification estimated **with** mitigation measures	Compensatory measures (for significant negative residual impacts)	Notes: (cumulative impacts, measures already implemented, ...)
1. Effects on nature						
1.1. Primary effects	**Loss and degradation of habitats**					
	Habitat fragmentation (the barrier effect)					
	Fauna mortality					
	Disturbance and pollution					
	Creating new habitats, including favoring invasive species					
	Other?					
1.2. Secondary effects: *Changes in landuse, human settlement patterns or industrial development induced by the construction of transport infrastructure*	One of the main secondary threats associated with infrastructure development is **the increased degree of human access and disturbance**.					
	Other?					
2. Effects on landscape - historic and cultural values						
3. Effects on local communities						

3. Please highlight the identified cumulative impacts and how the measures proposed for the route Þ-H have been designed to mitigate/compensate them (*could be done under notes or an extra column in the previous table*).

4. Have a series of identified impacts been highlighted by NPA as to potentially require compensatory measures (i.e. avoidance and mitigation of significant negative impacts are not possible for the route Þ-H); are the compensatory measures for birch woodland, wetlands, mudflats or salt marshes, species under protection, cultural relics and landscape (any other?) already included in the official measure plan and agreed with all relevant stakeholders?

5. For the unknown effects (fjords crossings, littoral alignments), have similar or comparable situations been assessed and are the proposed measures on route Þ-H designed based on these good or bad practices? Has a precautionary approach been adopted in designing the measures on route Þ-H? Please elaborate.

6. Which are the sections of the route Þ-H that already have been built/are under construction? – please provide a map.

7. Are there any mitigation and/or compensatory measures already being implemented in relation with the sections of the route Þ-H that are under construction/finalized?

8. If the case, how is the success/functionality of the measures being assessed? Are there any reports / results available already? Please detail.

9. Does the official monitoring and mitigation plan/report include a contingency plan? i.e. what are the predefined solutions if a certain measure is being assessed as not meeting its expected functionality?

10. Does the official monitoring and mitigation plan/report includes a procedure of collecting lessons learnt and of communicating transparently the results in due time?

Feedback from the complainant.

SESSION 5: A WORKING SESSION TO IDENTIFY TOGETHER FURTHER NEEDS/NEXT STEPS/RECOMMENDATIONS REGARDING MITIGATION AND COMPENSATORY MEASURES FOR THE ROUTE Þ-H

SESSION 6: DETAILED PROJECT DATABASE AND ASSESSMENT OF THE MONITORING PLAN

Authorities are kindly asked to provide a synthetic presentation pointing out the following / answering the following questions:

1. Standards and responsibility for monitoring.

2. An overview of the general approach on designing the monitoring plan related to:
   a. the state of biodiversity before, during construction, after putting the infrastructure into operation;
   b. monitoring negative effects;
   c. monitoring effectiveness of implemented measures.

3. A short overview of the data collection process before construction begun (baseline ecosystem conditions): objectives (or targets), selection of the spatial and temporal scale, the methodology, monitoring standards and functional data-base (considered to be completed and suitable for data-informed decisions?).

4. How was/are the baseline data being used to inform the monitoring plan and mitigating and compensatory measures? – i.e. what support-products have been produced (distribution maps and important zones for species and habitats, assessment of conservation status, migration routes intersected with existing and new barriers, impact maps etc.).

5. A synthetic table with the habitats and the (indicator) species targeted by the monitoring plan during the construction phase and for the operating phase of the route Þ-H and corresponding the monitoring objectives, selection of the spatial and temporal scale, the methodology used.

6. A synthetic table with the negative effects targeted by the monitoring plan during the construction phase and for the operating phase of the route Þ-H and corresponding the monitoring objectives, selection of the spatial and temporal scale, the methodology used.

7. A synthetic table with the monitoring effectiveness of implemented measures targeted by the monitoring plan during the construction phase and for the operating phase of the route Þ-H and corresponding the monitoring objectives, selection of the spatial and temporal scale, the methodology used.

8. Are data / monitoring records available to stakeholders in a GIS form? Are results of monitoring already available and being communicated to interested stakeholders?

9. Is there any set-up collaboration with relevant stakeholders for participation to the monitoring effort?

10. Is there a predefined procedure of adjusting the solutions based on the monitoring results?

Feedback from the complainant.

SESSION 7: A WORKING SESSION TO IDENTIFY TOGETHER FURTHER NEEDS/NEXT STEPS/RECOMMENDATIONS REGARDING THE MONITORING PLAN FOR THE ROUTE Þ-H.

SESSION 8: LEGACY OF THE CASE

Common discussions toward solution on:

1. Preventing similar situations;

2. Maximizing the functionality of mitigation and compensatory measures;

3. Documenting and transferring the lesson learnt;

4. Enhance collaboration between authorities and other stakeholders;

5. Emerald network designation and protection of biodiversity;

6. Input Iceland specifics to European knowledge base on transports and biodiversity;

7. Other.

CONCLUDING SESSION: With the core parties to receive feedback on the mission and discuss next steps.

LIST OF STAKEHOLDERS[29]

ICELAND

Ministry for the Environment and Natural Resources
Sigríður Svana Helgadóttir
Steinar Kaldal – Focal point to the Bern Convention
Guðríður Þorðvarðardóttir

Breiðafjörður Committee
Erla Friðriksdóttir - Chairperson

Vegagerðin - Icelandic Road Administration
Sigurþór Guðmundsson
Gudmundur Valur Gudmundsson

Skipulagsstofnun - The Icelandic Planning Agency
Ásdís Hlökk Theodórsdóttir - Director
Egill Þórarinsson

Reykhólar Municipality
Stefán Gunnar Thors - Consultant

Umhverfisstofnun - Icelandic Environment Agency
Sigrún Ágústsdóttir - Director
Axel Benediktsson
Eva B Solan
Þórdís Björt

The Natural Science Institute of the Westfjords
Sigurdur Halldor Árnason - director
Hulda Birna Albertssdóttir
Cristian Gallo

Náttúrufræðistofnun - The Icelandic Institute of Natural History
Eydís Líndal Finnbogadóttir - Director
Snorri Sigurðsson

Landvernd - Icelandic Environment Association
Auður Önnu Magnúsdóttir - General manager
Tryggvi Felixson - Chair of the board
Einar Þorleifsson - Member
Trausti Baldursson - Independent consultant on nature conservation

Náttúruverndarsamtök Íslands - Iceland Nature Conservation Association
Árni Finnsson - Director

Fuglavernd – BirdLife Iceland
Hólmfríður Arnardóttir - Director

Orkubú Vestfjarða – The Power Company of the region Westfjords
Elías Jónatansson, orkubússtjóri – Director

Landowner
Gunnlaugur Pétursson

[29] This includes stakeholders who may be unable to attend meetings, but may provide written contributions.

Katrín Theodórsdóttir - Legal advisor for the landowners that brought the case successfully to the High Court of Iceland in 2008

BERN CONVENTION MISSION TEAM
Radu Mot – International independent expert
Ursula Sticker – Secretary of the Bern Convention
Eoghan Kelly- Secretariat of the Bern Convention

Annex III - References

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