

**WAT-G-047**

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**EASR Guidance:**

**Assessing the significance of impacts – social, economic and environmental**

Contents

[Purpose 4](#_Toc193727332)

[How do we undertake the balancing test? 4](#_Toc193727333)

[Step 1: Identifying likely effects 5](#_Toc193727334)

[What sort of negative effects do we need to consider? 5](#_Toc193727335)

[How do we account for the negative effects of preventing achievement of good status? 6](#_Toc193727336)

[What sort of positive effects do we need to consider? 7](#_Toc193727337)

[What effects are most likely to result from controlled activities? 8](#_Toc193727338)

[What sources of information will we use? 9](#_Toc193727339)

[Step 2: Assess the magnitude of each effect 10](#_Toc193727340)

[Step 3: Assess the importance of each affected factor 12](#_Toc193727341)

[Step 4: Assess the significance of each effect 12](#_Toc193727342)

[Step 5: Weigh up positive and negative effects 13](#_Toc193727343)

[How we decide where the balance between positive and negative effects lies? 13](#_Toc193727344)

[How do we take account of any uncertainties in deciding where the balance lies? 14](#_Toc193727345)

[Appendices: Guide to assessing scale and importance in relation to some of the potential effects of EASR activities 16](#_Toc193727346)

[Appendix A: Effects on biodiversity 16](#_Toc193727347)

[What effects on biodiversity do we consider? 16](#_Toc193727348)

[What importance do we give to effects on biodiversity? 16](#_Toc193727349)

[Examples 17](#_Toc193727350)

[How do we assess the scale of an effect on biodiversity? 24](#_Toc193727351)

[Important 28](#_Toc193727352)

[How do we work out the significance of an effect on biodiversity? 29](#_Toc193727353)

[Appendix B: Effects on the economy 29](#_Toc193727354)

[What economic effects do we consider? 29](#_Toc193727355)

[What importance do we give to economic effects? 29](#_Toc193727356)

[How do we assess the scale of economic effects? 29](#_Toc193727357)

[How do we estimate the scale of the economic benefit of flood defence schemes? 32](#_Toc193727358)

[How do we estimate the scale of potential economic effects on angling? 33](#_Toc193727359)

[How do we work out the significance of the economic effect? 33](#_Toc193727360)

[Appendix C: Effects on well-being 34](#_Toc193727361)

[C.1 Effects on health and safety 34](#_Toc193727362)

[What effects on human health and safety should I consider? 34](#_Toc193727363)

[What importance should we give to effects on health and safety? 35](#_Toc193727364)

[How do we assess the scale of effects on health and safety 37](#_Toc193727365)

[How do we work out the significance of an effect on human health and safety? 38](#_Toc193727366)

[C.2 Effects on recreation 38](#_Toc193727367)

[What effects on recreation do we consider? 38](#_Toc193727368)

[What importance should we give to effects on recreation? 39](#_Toc193727369)

[How do we assess the scale of effects on recreation? 41](#_Toc193727370)

[How do we work out the significance of an effect on recreation? 44](#_Toc193727371)

[C.3 Effects on visual amenity and landscapes 44](#_Toc193727372)

[What effects on visual amenity & landscape character should I consider? 44](#_Toc193727373)

[What importance should we give to effects on visual amenity and landscapes? 45](#_Toc193727374)

[How do we assess the scale of an effect on visual amenity & landscapes? 49](#_Toc193727375)

[Assessing the scale of effects on the visual amenity provided by waterfalls and similar water features 52](#_Toc193727376)

[How do we work out the significance of an effect on visual amenity? 54](#_Toc193727377)

[C.4 Effects on economic opportunities for disadvantaged groups 54](#_Toc193727378)

[What effects on the economic opportunities of disadvantaged groups should we consider? 54](#_Toc193727379)

[What importance should we give to effects on the economic opportunities of disadvantaged groups? 54](#_Toc193727380)

[How do we assess the scale of an effect on the economic opportunities of a disadvantaged group? 55](#_Toc193727381)

[How do I work out the significance of an effect on the economic opportunities of a disadvantaged group? 56](#_Toc193727382)

[Appendix D: Effects on natural resource use 56](#_Toc193727383)

[D.1 Effects on climate change 56](#_Toc193727384)

[What climate change effects should we consider? 56](#_Toc193727385)

[What importance should we give to climate change effects? 57](#_Toc193727386)

[How do we assess the scale of climate change effects? 57](#_Toc193727387)

[How to work out the significance of a climate change effect? 58](#_Toc193727388)

[Disclaimer 58](#_Toc193727389)

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# Purpose

This guidance explains how SEPA will determine whether or not to authorise an EASR water activity that would breach environmental standards or compromise the achievement of an improvement target set in a river basin management plan. The guidance explains how we will weigh up the positive and negative effects of such proposals.

We will use this guidance alongside internal guidance on Derogation Determination – Adverse Impacts on the Water Environment when making the judgements required to apply “Derogation Test C”. This balancing test requires a decision on whether or not the benefits to the environment and society of:

* protecting the water environment from deterioration; and
* achieving a relevant river basin management plan improvement objective

are outweighed by the benefits of a proposal to one or more of the following:

* human health;
* the maintenance of human safety; or
* sustainable development.

We will also use this guidance to help decide whether or not the benefits of improving the status of a water body are disproportionately expensive. We may need to make this judgement as part of a licence review process. Further information on how to do so is available in [WAT-G-041: Derogation Determination –](http://stir-app-qpl01/QPulseDocumentService/Documents.svc/documents/active/attachment?number=WAT-RM-41) Improvements to the Water Environment[.](http://stir-app-qpl01/QPulseDocumentService/Documents.svc/documents/active/attachment?number=WAT-RM-41)

## How do we undertake the balancing test?

To undertake the balancing test, we will carry out the following steps:

**Step 1**: Identify the positive and negative economic, social and environmental effects likely to result from the proposal.

**Step 2**: Assess the magnitude of each identified effect.

**Step 3**: Assess the importance of each affected economic, social and environmental factor.

**Step 4**: Taking account of the results of steps 2 and 3, assess the significance of each identified effect.

**Step 5**: Weigh up all the significant positive and negative effects.

# Step 1: Identifying likely effects

## What sort of negative effects do we need to consider?

Negative effects are benefits likely to be foregone as a result of a proposal’s impact on the water environment. These benefits include:

* the social, environmental and economic benefits that would no longer be provided by the affected part of the water environment in cases where a proposal would result in deterioration of the water environment; and
* the social, environmental[[1]](#footnote-2) and economic benefits that would result if a water body were restored to its target objective (normally good status or good ecological potential) in cases where a proposal would prevent such restoration.

Negative effects include:

* direct effects of controlled activities on the condition of the water environment, in particular on biodiversity; and
* any consequent negative social, environmental and economic effects likely to result from the direct effects on the water environment, including negative effects for other users of the water environment.

We will only consider negative effects resulting from the changes to the water environment caused by the controlled activity.

We **will not** take account of any other potentially negative effects of other aspects of a development project (ie effects not resulting directly or indirectly from a controlled activity), such as the effects on the landscape of any roads, buildings and other new infrastructure involved in the project. These effects should be taken into account by the relevant local planning authority.

Construction phases of development projects often pose a risk of pollution, in particular by soil and other fine sediments. These risks should be controlled by appropriate authorisation conditions and hence are not relevant to the balancing test.

## How do we account for the negative effects of preventing achievement of good status?

We must ensure that the loss of the benefits of improving the water environment is properly accounted for. We will do this by assessing the negative effects of a proposal as if the affected water body was at its **target restoration objective**. For example, where a water body is at moderate ecological status and has an objective of restoration to good ecological status, we must assess the proposal’s negative effects on the basis that, in the absence of the proposal proceeding, the water body would be restored to good ecological status. If the proposal would cause deterioration to poor status, we will assess the impact as if it were deterioration from good to poor status rather than from moderate to poor status.

The **target restoration objective** for the vast majority of water bodies, at least in the long-term, is good status or, for heavily modified and artificial water bodies, good ecological potential. There are differences in the timescales over which these objectives are planned to be achieved for different water bodies. Consideration of timescales is important if a proposal is not expected to have a long-term impact on the water environment. In such cases, the achievement of the target objective may not be compromised by the proposal or may only be delayed. If the latter, we must still take account of the length of time during which the benefits of achieving the target restoration objective would be forgone.

## What sort of positive effects do we need to consider?

Positive effects of proposals include:

* direct social, economic or environmental benefits flowing directly from, and which are reliant on, the proposed activity; and
* indirect social, economic and environmental benefits likely to result from those direct benefits.

For example, a controlled activity (such as water abstraction) may enable a development (eg drink manufacture) that has a direct economic benefit through the sale of a product (drinks) and the employment it generates in the business concerned. This may lead to indirect economic benefits via the purchase of goods from suppliers (eg drink ingredients) and from the money spent by employees in the economy. It may also have significant indirect social benefits if, for example, the economic beneficiaries of the development (employees or shareholders) are from deprived or disadvantaged communities.

The positive effects that we can consider are those connected with, and stemming from, the water activity, including the products that the activity enables the developer to produce. For example, we will **not** treat the following as benefits of a proposed controlled activity:

* any benefit resulting from the way in which a developer might decide (or propose) to use the financial resources available to them, including the profits of the development. For example, this includes benefits that may arise from investments by a developer in local environmental or social projects (ie “planning gain” type benefits); and
* any benefit resulting from part of a development project that is not directly dependent on the water activity and could, in principle, be delivered without the water activity.

**Examples**

1. We are considering a proposed abstraction to dewater part of the water environment. The developer is offering to build a community park in the nearby village if authorisation is granted. We will not consider the park to be a benefit of the proposed water activity.
2. A developer is proposing to abstract water to provide a geothermal heating system for a community swimming pool. We will take account of the economic benefit, climate change mitigation benefit and potential social benefit to the community of the proposal.
3. A developer is proposing to damage the water environment as part of a development and then restore it to a better condition than it is in currently. We will take account of the social, economic and environmental benefits of the improved condition of the water environment where:
* the effects on the water environment of the water activity are expected to facilitate the subsequent restoration in some way; and
* the river basin management plan does not require the water body’s restoration earlier than is being proposed.

If there is a significantly less damaging way of achieving the restoration target than that proposed, our assessment must determine whether the negative effects of the additional damage are offset by other benefits, such as earlier achievement of the restoration target.

## What effects are most likely to result from controlled activities?

The types of social, economic and environmental effects most likely to result from controlled activities are listed below. You can find information on how we assess these in the appendices to this guide. However, some proposals may have types of effects that are not covered. We must consider such effects if they are potentially significant.

[Appendix A: Effects on biodiversity](#_Appendix_A:_Effects).

[Appendix B: Effects on the economy.](#_Appendix_B:_Effects)

[Appendix C: Effects on well-being.](#_Appendix_C:_Effects)

[C.1 Effects on health and safety](#_C.1_Effects_on)

[C.2 Effects on recreation](#_C.2_Effects_on)

[C.3 Effects on visual amenity and landscapes](#_C.3_Effects_on)

[C.4 Effects on economic opportunities for disadvantaged groups](#_C.4_Effects_on)

[Appendix D: Effects on natural resource use](#_Appendix_D:_Effects)

[D.1 Effects on climate change](#_D.1_Effects_on)

## What sources of information will we use?

Most proposals that adversely affect the condition of the water environment will have a significant effect on only a few social, economic and environmental factors. To help identify the relevant factors, we will take account of the following sources of information:

* the information accompanying the application, including any subsequent information provided by the applicant in response to requests for further information;
* responses from any relevant public bodies that we have consulted about the proposal;
* representations from the wider public;
* any environmental impact assessment that has been undertaken with respect to the proposal (eg in support of an associated planning application); and
* any relevant information SEPA already holds or any relevant in-house expertise.

We will always consult **other public bodies** if they may have an interest in the proposal and we will do so in any case where we think their advice could help improve our judgement about the significance of any effect.

# Step 2: Assess the magnitude of each effect

The magnitude of an effect reflects its **scale** and **duration**. An effect of a particular scale will be of greater magnitude if it is long-lasting than if it is only short-term. Similarly, a beneficial effect that will be produced in due course by other means will be of greater magnitude than it would otherwise be if it happens earlier as a result of the proposed activity.

Before we can assess the magnitude of an effect, we need to decide on its scale. To do so, we need to consider both the quantity/extent and degree of the effect. For example, all else being equal, the effect on river biodiversity of a proposal damaging 1 kilometre of a river is smaller in terms of its extent than that of a proposal damaging 2 kilometres; and the degree of an effect that causes deterioration from good to bad is greater than that of an effect that causes deterioration from good to moderate.

Guidance on assessing the scale of a range of effects is provided in the appendix to this guide. Once we have assessed the scale of the effect, we will use the indicative guide in Table 1 to judge the magnitude of the effect.

**Table 1: Indicative guide to assessing the magnitude of an effect**

| **Duration of effect** | **Very small scale** | **Small scale** | **Medium scale** | **Large Scale** | **Very large scale** |
| --- | --- | --- | --- | --- | --- |
| Only lasts up to around 1 year | VS | VS | VS | S | M |
| Only lasts up to around years 6 years | VS | VS | S | M | L |
| Lasts significantly more than 6 years | VS | S | M | L | VL |
| Starts up to around 2 to 3 years earlier\* | VS | S | M | L | VL |
| Starts up to 3 to 12 years earlier | VL | S-M | M-L | L | VL |
| Starts more than 12 years earlier | S | M | L | L-VL | VL |

Key: VS = very small; S = small; M = medium; L = large; VL = very large.

Notes:

We will use these rows in the table when we are assessing a benefit that is already expected to be delivered through the implementation of the river basin management plan (RBMP) but which is expected to be realised sooner as a result of the proposal (ie the proposal will enable the early achievement of an RBMP improvement objective).

If the scale of the effect is considered to be negligible, we will not consider that effect further in the assessment.

# Step 3: Assess the importance of each affected factor

The importance of a factor refers to its relative social, economic or environmental value to society. An effect on a very important factor (eg one of national importance) will be of much greater significance than the same magnitude of effect on a factor of limited importance (eg one of only local value).

Guidance on assessing the importance of a range of social, economic and environmental factors is provided in the appendix to this guide.

# Step 4: Assess the significance of each effect

The significance of an effect (whether positive or negative) is a combination of the **importance** of the factor that is affected and the **magnitude** of the effect on the factor.

Once we have worked out the magnitude of an effect and the importance of the affected factor, we will use Table 2 to help judge the significance of the effect.

**Table 2: Indicative guide to assessing the significance of an effect by magnitude**

| **Importance of affected factor** | **Negligible** | **Very small** | **Small** | **Medium** | **Large** | **Very large** |
| --- | --- | --- | --- | --- | --- | --- |
| Very low/negligible | N | N | N | N | N | N |
| Low | N | VL | VL | L | M | M-H |
| Medium | N | VL | L | M | M-H | H |
| High | N | VL-L | M | H | H-VH | VH |
| Very High | N | L | M-H | H-VH | VH | VH |

Key: N = negligible significance; VL = very low significance; L = low significance; M = moderate significance; H = high significance; VH = very high significance.

# Step 5: Weigh up positive and negative effects

## How we decide where the balance between positive and negative effects lies?

Ultimately, SEPA has to make a judgment about where the balance of positive and negative effects lies. It will make this judgement through its normal scheme of delegation. However, SEPA’s judgement will be based on the determining officers recommendation.

We will use the indicative guide below to help make the recommendation. When considering the benefits of a proposal to sustainable development, we must also take account of the guidance on sustainable development in our internal guidance on Derogation Determination – Adverse Impacts on the Water Environment “Derogation Test C”.

In making a recommendation, we must set out the reasoning behind our judgment on the balance of positive and negative effects.

**Indicative guide to determining the overall balance of the positive and negative effects**

a Is there a clear difference between the highest significance positive effect and the highest

significance negative effect?

b If (a) is not decisive, is there a clear difference in the number of the highest

significance positive effects and the number of the highest significance negative effects?

c If neither (a) or (b) is decisive, is there a clear difference between the number

of positive and negative effects at the next lowest significance category?

d If neither (a), (b) or (c) is decisive, can the balance of positive and negative effects

be distinguished by considering where each effect lies within its significance category? For example, if there are two positives and two negative effects in the same significance

category, is one or both of the positive effects clearly towards the top end of the

significance category whilst both the negative effects are clearly towards the bottom end

of the significance category?

e If the balance remains unclear, is one or more of the factors positively impacted

clearly of more importance than any of the factors that are negatively impacted

or vice versa?

## How do we take account of any uncertainties in deciding where the balance lies?

Unless it is clear that the balance lies with the positive effects of the proposal, we would conclude that the proposal has not passed the test, and its benefits do not outweigh those of protecting the water environment.

We would always carry out a **sensitivity analysis** before finalising our recommendation. The analysis is an important part of our determination. It enables us to understand the robustness of the judgement and identify where to focus our efforts in improving and double-checking parts of the assessment. It is particularly important when the proposal is contentious or the interests of other users of the water environment could be significantly affected.

A sensitivity analysis simply involves assessing the implications for our recommendation if the effect or effects about which we are uncertain turn out to be more or less significant than our best estimate. To carry out a sensitivity analysis, we would re-run the test assigning a significance to effect or effects based on best case and worst-case assumptions in relation to aspects of those effects about which we are uncertain.

If the balance of positive and negative impacts is the same under the different assumptions, we can conclude that our recommendation is insensitive to uncertainties. If the balance differs depending on the assumptions, it means our recommendation is sensitive to uncertainties. If this is the case, we would make sure we:

* have got the best evidence we can on which to base our judgements about the impacts to which the decision is sensitive; and
* detail in our decision document how we decided on the significance assigned to the impacts, given the uncertainties.

We would always describe the outcome of our sensitivity analysis when setting out the reasons for our judgement on the balance of positive and negative effects.

# Appendices: Guide to assessing scale and importance in relation to some of the potential effects of EASR activities

# Appendix A: Effects on biodiversity

## What effects on biodiversity do we consider?

Scotland’s water environment supports a rich and varied diversity of life. That diversity has been shaped by the differing habitat characteristics of our many rivers, streams, lochs, estuaries and coastal waters.

We would consider the effects on biodiversity of proposals that would:

* result in deterioration of the condition of rivers, lochs, estuaries or coastal waters; or
* lead to deterioration of wetlands that are dependent on groundwater, rivers, lochs, estuaries or coastal waters.

In doing so, we would consider effects on all species that depend on the water environment not just those species used as indicators of ecosystem health by SEPA to classify the status of water bodies. For example, some birds and mammals depend on the water environment but their condition is not used as an indicator of the status of water bodies.

Some proposals may result in impacts on the biodiversity of the land adjacent to the water environment. For example, a proposal to create a new reservoir may inundate important terrestrial wildlife habitats. We would take account of such impacts as well as those on the biodiversity of the water environment.

## What importance do we give to effects on biodiversity?

The importance of an effect on biodiversity depends on:

* the relative rarity of the wildlife species or assemblage of species that would be affected; and
* the role played by the affected part of the water environment in the functioning of the wider ecosystem.

To assess the relative rarity of wildlife species or assemblage of species, we would consider:

* whether the site supports species recognised as requiring special protection because of their conservation status (referred to in Table 4 below as a “high biodiversity interest site”); and
* the relative rarity of the characteristics of the part of the water environment concerned and hence the likely rarity of the particular assemblage of species it supports.

We would use the guides in Table 3 and Table 4 to help assess the importance of effects on biodiversity. When using Table 3, we only treat the water environment as important in terms of its high biodiversity interest if the proposed activity is likely to have a significant impact on that interest. We would then only use that importance for assessing the significance of impacts on the biodiversity interest concerned. We would not use it in assessing impacts on any other components of the affected part of the water environment’s biodiversity.

### Examples

1. The biodiversity of the part of the water environment concerned is of low importance based solely on its type and status but of high biodiversity interest by reason of being part of a river designated as a special area of conservation for Atlantic salmon. We conclude that a proposed activity is not likely to have a significant impact on salmon populations in the SAC. Because the proposal will not affect the high biodiversity interest, we only have to consider the proposal’s effects on other elements of the waters’ biodiversity. We would assess the significance of these effects based on that biodiversity being of low importance.
2. A proposal will affect a part of the water environment that is of medium importance in relation to a species of high biodiversity interest but, for other elements of biodiversity, is of low importance based on its type and status. The magnitude of the proposal’s impact on the high biodiversity interest is small and hence of low significance whereas the magnitude of the impact on other elements of biodiversity is large and hence of medium significance.

**Table 3: Indicative guide to assessing importance of an effect on biodiversity**

| **Scale** | **Effect on biodiversity** |
| --- | --- |
| Low Importance | The part of the water environment concerned is:* a loch that is locally rare or otherwise locally important based on its type and condition. To assess this, we would consider the frequency (locally, regionally and nationally) of lochs of the same or similar type and status to the loch concerned; or
* a river or stream of low importance as identified according to Table 5 based on its type and condition; or
* a high biodiversity interest site designated as a [Local nature reserve](https://www.snh.scot/professional-advice/safeguarding-protected-areas-and-species/protected-areas/local-designations/local-nature-reserves) or a [Local nature conservation site.](https://www.snh.scot/professional-advice/safeguarding-protected-areas-and-species/protected-areas/local-designations/local-nature-conservation-sites)
 |
| Medium Importance | The part of the water environment concerned is:* a loch that is regionally rare or otherwise regionally important based on its type and condition. To assess this, we would consider the frequency (locally, regionally and nationally) of lochs of the same or similar type and status to the loch concerned; or
* a river or stream of medium importance as identified according to Table 5 based on its type and condition; or
* a high biodiversity interest site because it plays an ecologically significant role in maintaining the ecological health of a large (regional-scale) river basin; or
* a high biodiversity interest site because it supports a significant proportion of a habitat or a significant population of a species on the [Scottish Biodiversity List.](http://www.biodiversityscotland.gov.uk/advice-and-resources/scottish-biodiversity-list/) or;
* a high biodiversity interest site because it supports a significant population of a species for which there is an [ICES](http://www.ices.dk/) emergency plan (eg European eel).
 |
| High Importance | The part of the water environment concerned is:* a loch that is nationally rare or otherwise nationally important based on its type and condition. To assess this, we would consider the frequency (locally, regionally and nationally) of lochs of the same or similar type and status to the loch concerned; or
* a river of high importance as identified according to Table 5 based on its type and condition; or
* a high biodiversity interest site designated as such (eg [Sites of Special Scientific Interest;](https://www.snh.scot/professional-advice/safeguarding-protected-areas-and-species/protected-areas/national-designations/sites-special-scientific-interest) [National Nature Reserves)](https://www.snh.scot/professional-advice/safeguarding-protected-areas-and-species/protected-areas/national-designations/national-nature-reserves)because of its national importance for the conservation of a species it supports; a habitat it contains; or the rarity or quality of its geomorphological characteristics; or;
* a high biodiversity interest site because it supports a nationally important assemblage of [Oceanic bryophytes](https://www.snh.scot/professional-advice/planning-and-development/renewable-energy-development/types-renewable-technologies/hydroelectric-power/hydroelectric-development).
 |
| Very High Importance | The part of the water environment concerned is:* a high biodiversity interest site designated as such because of its international importance for the conservation of a species it supports or a habitat it contains (ie [Special Areas of Conservation,](https://www.snh.scot/professional-advice/safeguarding-protected-areas-and-species/protected-areas/international-designations/natura-sites/special-areas-conservation-sacs) [Special Protection Areas](https://www.snh.scot/professional-advice/safeguarding-protected-areas-and-species/protected-areas/international-designations/natura-sites/special-protection-areas-spas) or [Ramsar sites)](https://www.snh.scot/professional-advice/safeguarding-protected-areas-and-species/protected-areas/international-designations/ramsar-sites); or
* a high biodiversity interest site because it supports a significant population of a globally threatened species (ie an [IUCN Red List of Threatened Species](http://www.iucnredlist.org/) such as freshwater pearl mussel); or
* a high biodiversity interest site because it supports an internationally important assemblage of [Oceanic bryophytes.](https://www.snh.scot/professional-advice/planning-and-development/renewable-energy-development/types-renewable-technologies/hydroelectric-power/hydroelectric-development)
 |

**Notes:**

Parts of the water environment not meeting any of the criteria in the table 3 should be treated as of very low importance.

We will find some, but not all the high biodiversity interest sites referred to above on SEPA’s GIS. Sites at which species on the Scottish Biodiversity List are known to be present can be found on the National Biodiversity Network website[[2]](#footnote-3).

**Table 4: Indicative guide to assessing the importance of a river type dependent on the current ecological status of the river\*\***

| **River Type** | **High** | **Good** | **Moderate** | **Poor/bad** |
| --- | --- | --- | --- | --- |
| Part of a river with a catchment area of < 5 km2 | Very low | Very low | Very low | Very low |
| Part of a watercourse with a catchment area of 5 to < 10 km2 | Low | Low | Very low | Very low |
| Small, low alkalinity, dominant morphological type = braided/wandering/plane-riffle | Medium | Low  | Negligible (Low if type locally rare) | Negligible |
| Small, low alkalinity, dominant morphological type = step pool/plane-bed | Medium | Low | Low | Negligible |
| Small, low alkalinity, dominant morphological type = bedrock cascade | Medium | Low | Low | Negligible |
| Small, high alkalinity, dominant morphological type = braided/wandering/plane-riffle | Medium (high if altitude > 200 metres) | Medium (high if altitude > 200 metres) | Medium | Low |
| Medium, low alkalinity, dominant morphological type = braided/wandering/plane-riffle | High | Medium | Medium  | Low |
| Small, high alkalinity, dominant morphological type = step-pool/plane-bed | Medium (high if altitude > 200 metres) | Medium (high if altitude > 200 metres) | Medium | Low |
| Medium, high alkalinity, dominant morphological type = braided/wandering/plane-riffle | High | High | Medium | Medium |
| Small, high alkalinity, dominant morphological type = bedrock cascade | High | Medium (high if altitude> 200 metres) | Medium | Medium |
| Medium, low alkalinity, bedrock cascade | High | High | Medium | Medium |
| Medium, low alkalinity, dominant morphological type = meandering | High | High | High  | Medium |
| Large, low alkalinity, braided/wandering/plane-riffle | High | High | High  | Medium |
| Medium, low alkalinity, dominant morphological type = step-pool/plane-bed | High | High | High  | Medium |
| Small, low alkalinity, dominant morphological type = meandering | High | High | High  | High |
| Large, high alkalinity, dominant morphological type = meandering | High | High | High  | High |
| Medium, high alkalinity, dominant morphological type = meandering | High | High | High  | High |
| Large, low alkalinity, dominant morphological type = meandering | High | High | High  | High |
| Small, high alkalinity, dominant morphological type = meandering | High | High | High  | High |
| Medium, high alkalinity, dominant morphological type = bedrock cascade | High | High | High  | High |
| Medium, high alkalinity, dominant morphological type = step-pool/plane-bed | High | High | High  | High |

**Notes**

“small” means rivers with a catchment area of 10 – 100 km2.

“Medium” means rivers with a catchment area of >10 – 1,000 km2.

“Large” means rivers with a catchment area of >1,000 km2.

“Low alkalinity” means <50 mg/l CaCO3.

“High alkalinity” means ≥50mg/l CaCO3.

\*\*For heavily modified water bodies, we would consider the ecological status that the water body would have if it were not designated as heavily modified (rather than its ecological potential).

## How do we assess the scale of an effect on biodiversity?

The scale of an effect on biodiversity depends on the:

* the severity of the impact on the plants and animals that are directly affected;
* the spatial extent over which this direct impact occurs; and
* the consequences of the direct impact for the wider conservation of the affected species or assemblage of species.

For example, the scale of the effect on biodiversity of modifications to a small length of a river could be large if that length is critical for the conservation of a species or assemblage of species. We can use the guide in Table 5 to help categorise the scale of effects on the biodiversity of watercourses and Table 6 for effects on freshwater lochs.

In all cases, we would apply the relevant environmental standards as normal to help we assess the scale of the direct effect of a proposal on water environment biodiversity.

**Table 5: Indicative guide to assessing the scale of an effect on the biodiversity of watercourse**

| **Length of watercourse affect (km)** | **Extent of any relevant habitat or species population affected as a proportion of the total relevant habitat or species population of the “high biodiversity interest site” (%)** | **Minor or slight change in condition:****H to G** | **Slight or moderate change in condition:****P to B or B to P****M to P or P to M****G to M or M to G****H to M** | **Major change in condition:****G to P or P to G****H to P** | **Major or severe change in condition:****M to B or B to M****G to B or B to G****H to B** |
| --- | --- | --- | --- | --- | --- |
| <0.1 | <0.1 | N | N | N | N – VS |
| 0.1 to <0.5 | 0.1 to < 1 | N | N – VS | VS | VS – S |
| 0.5 to <1.5 | 1 to < 2 | VS | VS – S | S | S – M |
| 1.5 to < 5 | 2 to < 10 | VS – S | S – M | M | M – L |
| 5 to < 10 | 10 to < 20 | S - M | M | M – L | L |
| 10 to < 20 | 20 to < 30 | M | M – L | L – VL | L – VL |
| ≥ 20 | ≥ 30 | M – L | L | L - VL | VL |

Notes

“High biodiversity interest site” means one of such sites referred to in Table 3.

To assess the likely change in condition, we would apply the appropriate environmental standards. In this context, “change in condition” includes changes that do not affect the status of the water body as a whole (eg because the spatial extent over which the change occurs is too limited, etc).

The scale of an effect on a high biodiversity interest site should only be assessed if the change in condition is expected to affect the particular biodiversity interest of that site. Where the particular interest is likely to be affected, we would assess the likely change in its condition. This scale of change in its condition may differ substantially from that of other aspects of the ecological quality of the affected part of the watercourse.

N = negligible; VS = very small; S = small; M = medium; L = large; and VL = very large H = high; G = good; M = moderate; P = poor; and B = bad.

**Table 6: Indicative guide to assessing the scale of an effect on the biodiversity of freshwater lochs**

| **Area of loch affected (ha)** | **Length of Loch Shore affected (km)** | **Extent of any relevant habitat or species population affected as a proportion of the total relevant habitat or species population of the “high biodiversity interest site” (%)** | **Minor or slight change in condition:****H to G** | **Slight or moderate change in condition:****P to B or B to P****M to P or P to M****G to M or M to G** | **Major change in condition:****H to M****G to P or P to G****H to P** | **Major or severe change in condition:****M to B or B to M****G to B or B to G****H to B** |
| --- | --- | --- | --- | --- | --- | --- |
| <0.5 | <0.1 | <0.1 | N | N | N | N – VS |
| 0.5 to < 2.5 | 0.1 to < 0.5 | 0.1 to < 1 | N | N – VS | VS | VS – S |
| 2.5 to < 7.5 | 1 to <2 | 1 to < 2 | VS | VS – S | S | S – M |
| 7.5 to < 50 | 2 to <10 | 2 to < 10 | VS – S | S – M | M | M – L |
| 50 to < 100 | 10 to < 20 | 10 to < 20 | S - M | M | M – L | L |
| 100 to < 500 | 20 to < 30 | 20 to < 30 | M | M – L | L – VL | L – VL |
| ≥ 500 | ≥ 30 | ≥ 30 | M – L | L | L - VL | VL |

**Notes**

Depending on the proposed activity, the effects may be concentrated along the shore of the loch or extend across the body of the loch. We would refer to the most relevant of the first two rows of the table when assessing the scale of the effect.

“High biodiversity interest site” means one of such sites referred to in Table 3.

To assess the likely change in condition, we would apply the appropriate environmental standards. In this context, “change in condition” includes changes that do not affect the status of the water body as a whole (eg because the spatial extent over which the change occurs is too limited, etc).

The scale of an effect on a high biodiversity interest site should only be assessed if the change in condition is expected to affect the particular biodiversity interest of that site. Where the particular interest is likely to be affected, we would assess the likely change in its condition. This scale of change in its condition may differ substantially from that of other aspects of the ecological quality of the affected part of the watercourse.

N = negligible; VS = very small; S = small; M = medium; L = large; and VL = very large H = high; G = good; M = moderate; P = poor; and B = bad.

A proposal may affect a number of different parts of the water environment. If this is the case, our assessment will reflect the cumulative scale of the proposal’s effect on biodiversity.

## Important

All the indicative guides in this document, including the guides above on assessing the scale of an effect on biodiversity, are ONLY guides. They are designed to help us make the judgements required but we would not use them blindly. For example, in assessing the scale of an impact on biodiversity, we need to think about:

* ·Is the scale of the effect close to one or other end of a scale category?
* ·How bad will the deterioration be? Is it likely to be just into the lower status class or right to the bottom of that lower class?
* ·Will mitigation mean that impacts on some elements of biodiversity (eg fish) will be significantly less than on impacts on others?

Suppose a proposal would cause flows in a river to deteriorate from high to moderate. Mitigation designed to protect migratory fish means that, for around one third of the year, flows will be no worse than good. The length of river affected would be 3.5 km. However, some recovery from run-off from the surrounding land is expected such that flows in the last 600 metres are likely to be good for most of the time. Table 6 indicates that a high to moderate deterioration in over 3.5 km of river would be a small to medium scale impact. The length affected (3.5 km) appears in the upper half of the scale category, which might suggest a medium scale impact. However, taking account of the recovery and the mitigation, the scale of the impact is more likely to be small or even very small, given that the mitigation may be enough to keep biodiversity in a good condition or, at worst, at the top end of moderate.

## How do we work out the significance of an effect on biodiversity?

Once we have an estimate of the scale of an effect on biodiversity and of the importance of the affected part of the water environment to biodiversity, we would use the guide in the main part of the guidance to assess the magnitude and significance of the effect.

Where the proposal would affect different parts of the water environment and those parts are not of equivalent importance for biodiversity, we would consider how the effects on the different parts contribute to the overall significance of the proposal’s effect. The combined significance will never be less than the significance of the individually most significant effect. However, it may be greater. For example, if the significance of an effect on one part of the water environment is close to the upper end of moderate significance and an effect on another part is of moderate significance, we may consider that the overall significance is high.

# Appendix B: Effects on the economy

## What economic effects do we consider?

We would assess economic effects of a proposal on the Scottish economy, taking into account:

* the direct effects of the sale of products and of the employment generated by a new development;
* the effects from the purchase of inputs and supplies by the new development; and
* the effects of employees spending money in the Scottish economy.

## What importance do we give to economic effects?

Economic growth is a key national priority. We would treat positive economic effects on the Scottish economy as of national (ie high) importance.

## How do we assess the scale of economic effects?

To assess the scale of economic effects, we need to work out the Gross Value Added (GVA) contributed by the proposed activity. GVA is a measure of Gross Domestic Product (GDP) at basic prices without taking taxes or subsidies into account. Scottish GVA was £130 billion in the financial year, 2015/16[[3]](#footnote-4). To estimate the scale of a proposal’s contribution to GVA, we would:

1. Estimate the direct economic effects (GVA in £/year) of the proposed activity. The information in Table 7 will normally be sufficient to enable us to do this. If not, we would seek advice from one of SEPA’s economists.
2. Apply the appropriate multiplier to the GVA estimated in step 1 to account for indirect and induced economic effects. If we cannot find the appropriate multiplier in Table 8, we would seek advice from SEPA’s Water Unit.

Using the scheme in Table 7, we will categorise the scale of the GVA per year calculated at step 2 above in proportion to the size of the GVA of the Scottish economy as a whole. We would obtain the most recent estimate of annual Scottish GVA from the Scottish Government quarterly national accounts.

**Table 7: Estimated direct contribution to Gross Value Added of different business sectors**

| **Business sector** | **Units** | **Approximate annual GVA per unit (£/year)** |
| --- | --- | --- |
| Aquaculture | Number of employees at site | £63,000 |
| Agriculture | Number of employees at site | £25,000 |
| Electricity generation | Giga Watt hours power generated/year at site  | £47,000 |
| Manufacture of beverages | Number of employees at site | £204,000 |
| Manufacture of chemicals and chemical products | Number of employees at site | £95,000 |
| Manufacture of food products | Number of employees at site | £46,000 |
| Manufacture of paper and paper products | Number of employees at site | £52,000 |
| Mining and quarrying | Number of employees at site | £64,000 |

**Notes**

GVA = Gross Value Added

**Table 8: GVA multipliers for different business sectors**

| **Business sector** | **GVA multiplier** |
| --- | --- |
| Aquaculture | 2.4 |
| Agriculture | 1.7 |
| Beverage manufacture | 1.8 |
| Chemicals manufacturing (listed as ‘other chemicals’) | 1.5 |
| Electricity generation | 1.9 |
| Food manufacturing | 1.8 |
| Mining and quarrying (average of coal and lignite and other mining and quarrying) | 1.8 |
| Paper and paper products manufacture | 1.9 |

The Scottish Government had produced estimates of the multipliers associated with all industrial sectors. This table reproduces only a sub-set of multipliers

**Table 9: Categorising the scale of an activity’s GVA**

| **Scale** | **% of Scottish GVA** | **GVA based on the Scottish economy’s GVA in 2015/2016 (£/Year) (rounded)** |
| --- | --- | --- |
| Very Small | ≤ 0.002% | ≤ £3m |
| Small | 0.002 – 0.01% | £3 - £100m1:25 year |
| Medium | 0.01 – 0.04% | £100 - £500m |
| Large | 0.04 – 0.2% | £500 - £3,000m |
| Very Large | >0.2% | >£3,000m |

## How do we estimate the scale of the economic benefit of flood defence schemes?

The local authority should be able to provide the estimate of the economic value of a proposed flood defence scheme that it obtained as part of its cost-benefit analysis. This value will have been calculated using guidance contained in the “Multicoloured Manual”.

Before using the value, we need to check that it is:

* a discounted benefit value and that the discount rate used to calculate it was 3.5% per annum. If not, we would contact one of SEPA's economists for advice; and
* a yearly benefit value. In most cases, the value given in the local council's cost-benefit analysis will be total benefits, expressed as a Net Present Value (NPV). To estimate the annual benefit from an NPV, we will divide the (discounted) NPV figure by the lifetime of the scheme (100 years in most cases).

## How do we estimate the scale of potential economic effects on angling?

Some proposals may affect the number of fish available to a rod and line fishery. For example, damage to salmon and sea trout habitats in rivers may result in reduction in the number of smolts produced and so reduce the number of adults subsequently available to the fishery.

To assess the scale of the potential economic effect on sea trout and salmon angling, we would ask our fish ecologists to estimate the impact of the proposal on smolt production or on the number of adults likely to return to the river system as a whole. We would then use the guide below to estimate the potential economic effect.

**Indicative economic value of salmon and sea trout per individual (£)[[4]](#footnote-5)**

Smolt - £30

Adult fish - £650

## How do we work out the significance of the economic effect?

We would use the guidance in the main part of the guidance to assess the magnitude and significance of the economic effect of the proposed activity.

The vast majority of developments that we are likely to encounter will have a very low significance positive effect on the Scottish economy.

# Appendix C: Effects on well-being

## C.1 Effects on health and safety

### What effects on human health and safety should I consider?

We would consider effects that increase or decrease:

* the risk of ill-health or disease;
* the risk of injury; or
* human well-being more generally.

Controlled activities can affect human health and well-being in a variety of ways. For example:

* People can be injured during floods and people whose homes have been affected by floods can suffer ill-health through stress. Flood defence schemes can thus benefit human health and safety by reducing the risk of such effects[[5]](#footnote-6).
* Poor quality drinking water supplies or failures in water supply can adversely affect people’s health. Developments designed to improve the quality or reliability of water supplies benefit human health. Similarly, developments that improve the quality of bathing waters can reduce risks to human health.
* Recreation is important for health and well-being because it involves exercise and provides a break from stress. Developments that reduce recreational opportunities can have a negative effect on health whilst those that increase recreational opportunities or improve the quality of existing opportunities have a positive effect on health and well-being.
* Deprivation[[6]](#footnote-7) and disadvantage can adversely affect health. Developments that affect the level of deprivation or disadvantage, for example, by changing the economic opportunities of deprived or disadvantaged communities, can thus affect health.

Specific guidance is provided in subsequent sections on assessing the effects of proposed activities on **recreation** and on the **economic opportunities for deprived and disadvantaged communities**. We would only use this section to assess other effects on human health and safety.

### What importance should we give to effects on health and safety?

The importance of an effect on human health and safety depends on the seriousness of the potential effect were it to occur and the degree of control people have over their exposure to a risk. We can use the guidance in Table 10 to help judge the importance of an effect on human health or safety.

**Table 10: Indicative guide to assessing the importance of effects on human health or safety**

| **Scale** | **Effects on human health and safety** |
| --- | --- |
| Low Importance | * The effect would be to produce or remove a health or safety issue that would not be (or is) not very serious;
* People are unlikely to notice the change; and
* People are easily able to control their exposure to the reis to their health or safety.
 |
| Medium Importance | * The effect would be to produce or remove a health or safety issue that would not be (or is) not life-threatening, not particularly debilitating and not long-lasting;
* Effective treatments/alternatives are readily available and full recovery would be likely in a few days; and
* With care, people are able to avoid exposure to the risk to their health and safety.
 |
| High Importance | * The effect would change the status of a Bathing Water; or
* The effect would be to produce or remove a health or safety issue to significant concern and that would be (or is) debilitating at least for a short period;
* Effective treatments/alternatives exist but recovery may take several weeks;
* People are unlikely to be able to completely avoid exposure to the risk to their health or safety but may have some control over exposure; and
* The people affected will tend to include those from vulnerable or disadvantaged groups.
 |
| Very High Importance | * The effect would be to produce or remove a health or safety issue that would be (or is) very serious, life-threatening or very debilitating;
* Completely effective treatments/alternatives may not be available and recovery is likely to require a lengthy period of time;
* People are not able to avoid their exposure to the risk of their health or safety; and the effect is likely to be particularly concentrated on vulnerable and disadvantaged groups.
 |

**Notes**

To use this guide, we will decide if a proposal would remove or create effects falling within a particular importance category.

### How do we assess the scale of effects on health and safety

The scale of an effect on human health and human safety depend on:

* The degree to which risks to health and safety are altered; and
* The number of people likely to be affected.

We will use the guide in Table 12 below to help categorise the scale of effect.

**Table 11: Indicative guide to assessing the scale of an effect on human health or human safety on general population\* or disadvantaged groups\*\***

| **Increase or decrease** **in risk, or benefit,****to health and well-being** | **<10\*** | **10 to < 100\*** | **100 to < 1,000\* or****10 to < 100\*\*** | **1,000 to < 10,000\* or****100 to < 1,000\*\*** | **>10,000\* or****> 1,000\*\*** |
| --- | --- | --- | --- | --- | --- |
| Very small (perhaps imperceptible)) | N | VS | VS – S | S | S - M |
| Small | VS | VS – S | S | S – M | M |
| Modest | S  | S – M | M | M | M – L |
| Large | S – M | M | M- L | L | L- VL |
| Very large (eg a risk to health completely, or nearly completely eliminated). | M | M – L | L | L – VL | VL |

Key:

N = negligible; VS = very small; S = small; M = medium; L = large; and VL = very large

\* = general population values; \*\* = disadvantaged groups values

### How do we work out the significance of an effect on human health and safety?

Once we have an estimate of the scale of an effect on human health and safety and the importance of the effect, we will use the guidance in the main part of this guidance to assess the magnitude and significance of that effect.

## C.2 Effects on recreation

### What effects on recreation do we consider?

We would consider effects likely to increase or decrease opportunities for recreation or the quality of a recreational experience. Such effects may result from:

* the direct effect on the water environment of the proposed controlled activity; or
* the establishment or improvement of recreational facilities provided that establishment or improvement is directly dependent on the proposed controlled activity.

### What importance should we give to effects on recreation?

To assess the importance of an effect on recreation, we need to consider:

* the uniqueness or rarity of the recreational resource in local, regional, national and international contexts;
* the accessibility of the resource and travel distances for likely users of the resource;
* the qualities offered by the resource to users of different abilities;
* the level of use of the resource compared with other similar resources; and
* whether or not the resource is a recognised sporting or training venue.

We can use the guidance in Table 13 to help judge the importance of an effect on recreation.

Where effects on recreation may be a deciding factor in the balancing test, we we would consider consulting Sport Scotland, the local authority and the relevant governing or representative body for the sport or recreational interest (eg Scottish Canoe Association, Ramblers Association, Royal Yachting Association etc) to help we assess the importance of the recreational resource.

**Table 12: Indicative guide to assessing the importance of an effect on recreation**

| **Scale** | **Importance of an effect on recreation** |
| --- | --- |
| Low Importance | * The part of the water environment is frequently used for

 recreation but does not meet any of the other criteria listed in this Table. |
| Medium Importance | * The part of the water environment is among the most popular locations regionally for a particular form of recreation or type of experience/challenge within that form; and
* the qualities of the part of the water environment (including its landscape qualities) place it amongst the best sites in the region for a particular form of recreation or type of experience/challenge within that form. Similar sites are likely to be rare to very rare in the region; or
* the site is used by clubs in the region as a venue for training or competitions; or
* the site is particularly important regionally because its location means that it is particularly accessible to recreational users in the region; or
* the site is a recreational resource for deprived or otherwise disadvantaged communities or groups.
 |
| High Importance | * The part of the water environment is regularly used by people from all over Scotland; and
* the qualities of the part of the water environment place it amongst the best sites in Scotland for a particular form of recreation or type of experience/challenge within that form. Similar sites are likely to be rare to very rare in Scotland; or
* the site is one of the top sites regionally for a particular form of recreation and its location means that it is particularly accessible from a number of Scotland’s major population centres - so making it of national importance; or
* the site is a recreational resource for one or more of the most deprived or otherwise disadvantaged communities in Scotland; or
* the site may host national competitions or events or be an important training site for such events.
 |
| Very High Importance | * The part of the water environment specifically attracts overseas visitors interested in this form of recreation; and
* the qualities of the part of the water environment make it one of the most renowned sites for this form of recreation or type of experience/challenge within the form in the UK; or
* the site is a venue for international competitions or events or an important training venue for such events.
 |

### How do we assess the scale of effects on recreation?

The scale of an effect on recreation depends on the size of the increase or decrease in opportunity for recreation or the quality of the recreational experience. We can use the general guide in Table 13 to help categorise the scale of an effect on recreation.

Table 14 provides more specific guidance for assessing effects on canoeing and kayaking

**Table 13: Indicative guide to assessing the scale of an effect on recreation**

| **Scale** | **Effect on Recreation** |
| --- | --- |
| Very Small | Very small effects less than around a 5% increase in:* the availability of the recreational resource (within a time period); or
* the usage of the resource (numbers of people).
 |
| Small | Small effects:- around a 6% to 15% reduction or increase in:* the availability of the recreational resource; or
* the usage of the resource.

If effects are concentrated at low usage times (eg week days) then a greater than 15% reduction or increase in the availability of the resource at these times may still be small.If effects are concentrated at high usage times (eg weekends), then reductions or increases in availability of less than 15% may be medium scale. |
| Medium | Moderate effects:- around a 16% to 40% reduction or increase in:the availability of the recreational resource; or* the usage of the resource.

If effects are concentrated at low usage times (eg week days) then a greater than 40% reduction or increase in the availability of the resource at these times may still be small.If effects are concentrated at high usage times (eg weekends), then reductions or increases in availability of less than 40% may be medium scale. |
| Large | Large effects:- around a 41% to 80% reduction or increase in:the availability of the recreational resource; or* the usage of the resource.
 |
| Very Large | Very large scale effects:- more than an 80% reduction or increase in:the availability of the recreational resource; or* the usage of the resource.
 |

**Table 14: Indicative guide assessing the scale of an effect on canoeing/kayaking**

| **Scale** | **Effect on canoeing/kayaking** |
| --- | --- |
| Very Small | No more than 5% of potential canoe days completely lost or gained; and/or* less than a 5% reduction or increase in number of potential canoe-able days on which flows are better than scrape-able.
 |
| Small | Between 6% - 15% of potential canoe days completely lost or gained; and/or* between a 6 % - 15% reduction or increase in number of potential canoe-able days on which flows are better than scrape-able.

If the availability, quality and extent of the recreational resource on weekends is largely unaffected and there is evidence that weekday use is much less important than weekend use, the scale of the impact may be considered small even if the overall reduction in the availability and quality of the resource is as high as 20 - 30 %. |
| Medium | Between 16% – 40% of potential canoe days completely lost or gained; and/orbetween a 16% - 40% reduction or increase in the number of potential canoe-able days on which flows are better than scrape-able.If the availability, quality and extent of the recreational resource on weekends is only subject to a very small reduction and there is evidence that weekday use is much less important than weekend use, the scale of the effect overall may be considered medium even if the overall reduction in the availability and quality of the resource is as high as 45 - 55 %. |
| Large | Between 41% - 80% of potential canoe days completely lost or gained; and/or* between a 41% - 80% reduction or increase in the number of potential canoe-able days on which flows are better than scrape-able.
 |
| Very Large | More than 80% of potential canoe days completely lost or gained; and/or* more than an 80% reduction or increase in number of potential canoe-able days on which flows are better than scrape-able.
 |

### How do we work out the significance of an effect on recreation?

Once we have an estimate of the scale of an effect on recreation and of the importance of the affected recreational resource, we would use the guidance in the main part of this guide to assess the magnitude and significance of the effect.

## C.3 Effects on visual amenity and landscapes

### What effects on visual amenity & landscape character should I consider?

We would only consider effects of the proposed controlled activity on the appearance of the following:

* watercourses and that part of their riparian zone on which their physical condition and ecological health depends. The latter will include the corridor of land along the bank top and any adjacent land directly shaped by its connection with the river, such as floodplain wetlands and oxbow lakes;
* lochs and their shore zones; and
* wetlands

### What importance should we give to effects on visual amenity and landscapes?

The importance of the appearance of the water environment depends on:

* the prominence of, or role played by, the water environment in the landscape or visual amenity concerned;
* the local, regional, national or international conservation value of the landscape. Some of Scotland’s landscapes are unique or otherwise culturally important even though few people may see them. The conservation of these landscapes can be of high importance for future generations; and
* the social and economic value of water environment features in visual amenity terms. If the water environment is a prominent feature of a visual amenity that attracts large numbers of overseas visitors, it is likely to be of high or very high importance.

Improvements to degraded parts of the water environment can also be of high importance, for example, where they significantly improve visual amenity for deprived and disadvantaged communities.

We can use the guidance in Table 16 to help judge the importance of an effect on visual amenity and landscapes. In using the table, we would assess the importance of the water environment as:

* a visual amenity; and
* a landscape feature of a locally, regionally, nationally or internationally important landscape.

The water environment may be important in one or both these respects. If the latter, we would consider whether or not this should increase the importance we assign to the water environment. For example, where the water environment is of high importance as a visual amenity and a prominent feature of the landscape character of a landscape of high conservation importance (eg a national scenic area), the overall importance of the water environment is likely to be very high.

We would seek advice (via the local NatureScot office) from specialist landscape advisors in NatureScot where a proposal is likely to affect a site designated for its landscape importance or a site identified as a Wild Land Area.

When using Table 16, we would only treat the water environment as a landscape feature of local, regional, national or international importance for the purpose of our assessment if the proposed activity is likely to have a significant effect on that landscape’s character.

An activity may affect the visual amenity of the water environment without affecting the water environment’s wider landscape importance. Where this is the case, we would only take account of the water environment’s visual amenity importance when assessing the significance of visual amenity effects.

**Table 15: Indicative guide to assessing the importance of landscapes and viewpoints**

| **Scale** | **Importance of landscapes and viewpoints** |
| --- | --- |
| Negligible | **Visual amenity – types of viewpoints*** Minor transport routes not meeting the criteria for medium importance.
* Formal outdoor recreation facilities not meeting the criteria for low or medium importance.
 |
| Low Importance | **Visual amenity – types of viewpoints onto the water environment*** Informal recreational routes and areas not meeting the criteria applicable for medium, high or very high importance.
* Formal outdoor recreation facilities (swimming pools; golf courses; etc) acting as regional centres or regularly hosting regional sporting events).
* Residences and residential areas not meeting the criteria for medium, high or very high importance.
* Listed buildings, ancient monuments and other built heritage sites not meeting the criteria for medium or high importance.

**Landscapes*** The water environment is a feature of the landscape of a [Country park.](https://www.snh.scot/professional-advice/safeguarding-protected-areas-and-species/protected-areas/local-designations/country-parks)
 |
| Medium Importance | **Visual amenity – types of viewpoints onto the water environment*** Informal recreational routes, and other areas, that are amongst the most visited locally.
* Major transport routes not meeting the criteria for high importance.
* Minor transport routes used frequently by visitors to Scotland or people from other parts of Scotland.
* Residences and residential areas in neighbourhoods that are amongst the most deprived regionally.
* Extensive residential areas in villages, towns or cities.
* Formal recreation facilities regularly hosting national or international sporting events. Listed buildings, ancient monuments and other built heritage sites that are amongst the most visited regionally.

**Landscapes*** The water environment is a feature of a designated [Local Landscape Area.](https://www.snh.scot/professional-advice/safeguarding-protected-areas-and-species/protected-areas/local-designations/local-landscape-areas)
* The water environment is a feature of a [Regional park.](https://www.snh.scot/professional-advice/safeguarding-protected-areas-and-species/protected-areas/local-designations/regional-parks)
 |
| High Importance | **Visual amenity – types of viewpoints onto the water environment*** Informal recreational routes and areas that are amongst the most visited regionally and in which the water environment is a major component of the visual amenity.
* Major transport routes used extensively by visitors to Scotland as well as people from throughout Scotland.
* Residences and residential areas in neighbourhoods that are amongst the most deprived nationally.
* Residential areas in villages, towns or cities with an historic association with the part of the water environment concerned.
* Listed buildings, ancient monuments and other built heritage sites attracting large numbers of visitors from across Scotland and beyond.

**Landscapes*** The water environment is a feature of the landscape character of [*National Scenic Areas;*](https://www.snh.scot/professional-advice/safeguarding-protected-areas-and-species/protected-areas/national-designations/national-scenic-areas)[*National Parks;*](https://www.snh.scot/professional-advice/safeguarding-protected-areas-and-species/protected-areas/national-designations/national-park) and areas listed in [Scotland's Inventory of Gardens & Designed](https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=7c365ace-e62d-46d2-8a10-a5f700a788f3)Landscapes and Wild Land Areas.
 |
| Very High Importance | **Visual amenity – types of viewpoints onto the water environment*** Informal recreational routes and areas attracting especially large numbers of visitors from across Scotland and beyond and in which the water environment is the dominant component of the visual amenity.
* Residences and residential areas that are within a national priority area for regeneration.
* Landscapes
* The water environment is a feature of the landscape character of a world heritage site for which landscape was an important factor in its designation.
 |

### How do we assess the scale of an effect on visual amenity & landscapes?

The scale of an effect on visual amenity and landscapes depends on:

* the reduction or increase in people’s opportunity to experience the visual amenity;
* the degree of change to the quality/character of the visual amenity or character of the landscape.

We can use the general guide in Table 16 to help categorise the scale of an effect on landscapes and visual amenity.

Table 17 and Table 18 provide more specific guidance for assessing effects on the visual amenity provided by waterfalls.

**Table 16: Determining the scale of an effect on visual amenity**

| **Scale** | **Effect on visual amenity** |
| --- | --- |
| Very Small | **Viewpoints*** Small change in the quality of the view for a small or moderate proportion of viewpoints.

**Landscapes*** Only features that play a minor role in creating the distinctiveness and character of the landscape would be altered and the changes would be virtually imperceptible and/or within the capacity of the landscape to absorb.
 |
| Small | **Viewpoints*** Small degree of change in the quality of the view for a large or very large proportion of viewpoints; or
* Moderate change in the quality of the view for a small proportion of viewpoints; and/or

**Landscapes*** Features that contribute to the distinctiveness and character of the landscape would be altered slightly but noticeably in a localised area.
 |
| Medium | **Viewpoints*** Moderate change in the quality of the view for a moderate or large proportion of viewpoints;
* large change in the quality of the view for a small or moderate proportion of viewpoints; or
* very large change in the quality of the view for a small proportion of viewpoints; and/or

**Landscapes*** Features that contribute to the distinctiveness and character of the landscape would be altered to a medium extent over a wide area or altered substantially in a localised area.
 |
| Large | **Viewpoints*** Large change in the quality of the view for a large or very large proportion of viewpoints; or
* Very large change in the quality of the view for a moderate or large proportion of viewpoints; and/or

**Landscapes*** Features that contribute significantly to the distinctiveness and character of the landscape would be moderately altered over a wide area or altered very substantially over a limited area.
 |
| Very Large | **Viewpoints*** Very large change in the quality of the view for a very large proportion of viewpoints; and/or

**Landscapes*** Features that contribute significantly to the distinctiveness and character of the landscape would be lost or very substantially altered over a wide area.
 |

### Assessing the scale of effects on the visual amenity provided by waterfalls and similar water features

The visual amenity experience provided by water features, such as waterfalls, varies depending on water levels. A proposed activity may affect some water levels and hence some visual amenity experiences more than others. To assess effects on the different experiences, we would estimate the average number of days per year that water levels would be in each of the flow classes described in Table 17:

* currently; and
* if the proposed activity were to be authorised.

**Table 17: Different visual amenity experiences of waterfalls & cascades**

| **Very low flows** | **Low flows** | **Mid flows** | **Full flows** | **Very full flows** |
| --- | --- | --- | --- | --- |
| ≤ Qn95 | > Qn95 ≤ Qn70 | > Qn70 < Qn30 | ≥ Qn30 ≤ Qn5 | > Qn5 |

We can use Table 18 to categorise the scale of the change in opportunity to view the water feature at each of the different water levels.

**Table 18: Scale of effect on the visual amenity provided by waterfalls and other similar water features**

| **Scale** | **Effect of visual amenity** |
| --- | --- |
| Negligible | ≤ 20% reduction in the number of days per year on which the water feature can be experienced in any amenity class |
| Very Small | > 20 and < 40% reduction in the number of days per year on which the water feature can be experienced in any amenity class. |
| Small | ≥ 80 % reduction in the number of days per year on which the water feature can be experienced in one of the amenity classes; or> 40 and < 80 % reduction in the number of days per year on which the water feature can be experienced om two of the amenity classes. |
| Medium | ≥ 80 % reduction in the number of days per year on which the water feature can be experienced in two of the amenity classes; or> 40 and < 80 % reduction in the number of days per year on which the water feature can be experienced in three of the amenity classes. |
| Large | ≥ 80 % reduction in the number of days per year on which the water feature can be experienced in three of the amenity classes; or> 40 and < 80 % reduction in the number of days per year on which the water feature can be experienced in four of the amenity classes. |
| Very Large | ≥ 80% reduction in the number of days per year on which the water feature can be experienced in four or more of the amenity classes. |

### How do we work out the significance of an effect on visual amenity?

Once we have an estimate of the scale of an effect on visual amenity and of the importance of the effect, we would use the guidance in the main part of this guidance to assess the effect’s magnitude and significance.

## C.4 Effects on economic opportunities for disadvantaged groups

### What effects on the economic opportunities of disadvantaged groups should we consider?

We would consider effects likely to have a direct effect on the economic opportunities available to disadvantaged groups, in particular effects on the availability of employment. Disadvantaged groups tend to have limited opportunities to move or travel long distances for work. Consequently, effects on the local availability of employment opportunities may be significant.

Disadvantaged groups include people in the lowest deciles of the Scottish Index of Multiple Deprivation[[7]](#footnote-8), people with disabilities and people who otherwise have significantly less opportunity than the majority of the population to participate in, and benefit from, economic activity in Scotland.

### What importance should we give to effects on the economic opportunities of disadvantaged groups?

The importance of an effect on the economic opportunities of a disadvantaged group depends on the degree of disadvantage of the group. We can use the guide in Table 19 to help assess the importance of an economic effect on a disadvantaged group.

**Table 19: Indicative guide to assessing the social importance of an economic effect**

| **Scale** | **Social importance** |
| --- | --- |
| Low importance | The affected community is, or would be, in the most deprived >20% to 30 % of neighbourhoods in Scotland. |
| Medium importance | The affected community is, or would be, in the most deprived >10% to 20% of neighbourhoods in Scotland. |
| High importance | The affected community is, or would be, in the most deprived > 5% to 10% of neighbourhoods in Scotland. |
| Very High importance | The affected community is, or would be, in the most deprived 5% of neighbourhoods in Scotland. |

### How do we assess the scale of an effect on the economic opportunities of a disadvantaged group?

The scale of an effect on economic opportunity depends on the degree of change in economic opportunity and the numbers of people affected by the change. We can use the guide in Table 20 to help categorise the scale of an effect on a disadvantaged group.

**Table 20: Indicative guide to assessing the scale of an effect on a disadvantaged group**

| **Scale** | **Effect on disadvantaged groups** |
| --- | --- |
| Very Small | There would be a very small change to the economic opportunities of the group as a whole. A very small number of individuals may benefit more significantly. |
| Small | There would be a small change to the economic opportunities of the group as a whole. A small number of individuals may benefit more significantly. |
| Medium | There would be a moderate change to a moderate proportion of the affected group. |
| Large | There would be a large change to a moderate proportion of the affected group or a moderate change to a very large proportion of the group. |
| Very Large | There would be a very large change to the economic opportunities available to a very large proportion of the affected group. The size of the affected group or groups is large. |

### How do I work out the significance of an effect on the economic opportunities of a disadvantaged group?

Once we have an estimate of the scale of an effect on economic opportunities for a disadvantaged group and of the importance of the effect, we would use the guidance in the main part of this guidance to assess the effect’s magnitude and significance.

# Appendix D: Effects on natural resource use

## D.1 Effects on climate change

### What climate change effects should we consider?

We would consider the direct effects on greenhouse gas emissions resulting from the activity. These effects include:

* reducing reliance on fossil fuel energy by enabling the generation of renewable energy or the replacement of one operation or process with a more energy efficient one;
* increasing reliance on fossil fuel energy by increasing energy demand; or
* directly generating greenhouse gases.

We would not consider greenhouse gas emissions that may result from the subsequent uses in the economy of products arising from the carrying out a water activity. For example, we would not take into account greenhouse gas emissions from the use of coal even where the mining of that coal was enabled by a water activity.

### What importance should we give to climate change effects?

Making sure Scotland plays its part in tackling climate change is a national policy priority. Accordingly, we would normally treat decreases or increases in greenhouse gas emissions as of high importance. However, depending on the potential benefits, projects to develop and test novel and internationally transferrable techniques for renewable energy generation may be of very high importance.

### How do we assess the scale of climate change effects?

To assess the scale of a climate change effect, we need an estimate of the additional:

* renewable energy generated in giga Watt hours per year;
* non-renewable energy consumed in giga Watt hours per year;
* greenhouse gases emitted in tonnes of carbon equivalents per year; or
* greenhouse gases emissions saved in tonnes of carbon equivalents per year.

We can then use the guide in Table 21 to categorise the scale of the effect.

**Table 21: Indicative guide to assessing the scale of a climate change effect**

| **Scale** | **Average net increase in renewable** **energy generated or** **non- renewable energy** | **Carbon equivalents9** **(t/year)** |
| --- | --- | --- |
| Negligible | ≤ 0.25 | ≤ 108 |
| Very Small | > 0.25 to < 20 | > 108 to <8,600 |
| Small | 20 to < 120 | 8,600 to <51,600 |
| Medium | 120 to < 150 | 51,600 to <65,000 |
| Large | 150 to < 200 | 65,000 to <86,000 |
| Very Large | ≥ 200 | ≥ 86,000 |

**Note:**

We would treat effects on greenhouse gas emissions that are smaller than those in the “very small” category as non-significant effects. We would ignore such effects when weighing up the positive and negative effects of the proposed activity.

### How to work out the significance of a climate change effect?

Once we have an estimate of the scale of the climate change effect, we would use the guidance in the main part of this guidance to assess the magnitude and significance of that effect.

# Disclaimer

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1. Indirect environmental effects include any effects on the biodiversity of the surrounding land resulting from the impact of the activity on the water environment. For example, such effects may be caused by inundation of the surrounding land in the case of proposals to create an impoundment or to increase the size of an existing impoundment. [↑](#footnote-ref-2)
2. SEPAs ecology department will be consulted for advice about any high interest biodiversity sites. [↑](#footnote-ref-3)
3. Quarterly National Accounts Scotland 2016 Quarter 1 [↑](#footnote-ref-4)
4. Values based on recorded average annual catch of salmon and sea trout between 2011 and 2015 (102,000); an assumed spawning escapement of 50%; an assumed smolt survival of 5%; and total economic value of rod and line salmon and sea trough angling per year of £134 million [↑](#footnote-ref-5)
5. Exploring the Social Impacts of Flood Risk and Flooding in Scotland [↑](#footnote-ref-6)
6. See Scottish Index of Multiple Deprivation for information on relative deprivation of different neighbourhoods in Scotland (includes interactive map). [↑](#footnote-ref-7)
7. See Scottish Index of Multiple Deprivation for information on relative deprivation of different neighbourhoods in Scotland (includes interactive map). [↑](#footnote-ref-8)