



Scottish Government
Riaghaltas na h-Alba
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Consultation on Measures for the Conservation of Pike

marinescotland

1. Overview

1.1 Section 51A of the Salmon and Freshwater Fisheries (Consolidation) (Scotland) Act 2003 Act (“the 2003 Act”) provides that the Scottish Ministers may make regulations if they consider that it is necessary or expedient to do so for the conservation of freshwater fish. This means that Scottish Ministers must be able to demonstrate that there is a need for conservation measures to be implemented and that there is a link between the proposed measures and the identified problem. Accordingly, the requirement for the measures should be underpinned by scientific research and evidence which demonstrates that there is a need for the conservation measures to be put in place.

1.2 This consultation asks for responses regarding a number of proposed measures to conserve pike.

2. Why We Are Consulting

2.1 In February 2017, Scottish Ministers made a commitment to explore potential freshwater conservation provisions ahead of the introduction of a Wild Fisheries Bill.

2.2 The initial recommendation from our exploration of potential freshwater conservation provisions with the Wild Fisheries Reform Stakeholder Reference Group is the introduction of conservation regulations to provide better protection for pike.

2.3 The purpose of this consultation paper is to seek views on whether these legislative provisions should be introduced.

3. What happens next?

3.1 Following the consultation, all responses will be analysed to help Scottish Ministers consider if it is necessary or expedient to make regulations for the conservation of pike. If so, we would envisage a new Scottish Statutory Instrument (SSI) could be introduced in 2019.

Responding to this Consultation

3.2 We are inviting responses to this consultation by 31 August 2018.

3.3 Please respond to this consultation using the Scottish Government’s consultation platform, Citizen Space. You view and respond to this consultation online at <https://consult.gov.scot/marine-scotland/pike-conservation>. You can save and return to your responses while the consultation is still open. Please ensure that consultation responses are submitted before the closing date of 31 August 2018.

If you are unable to respond online, please complete the Respondent Information Form (see “Handling your Response” below) to:

Salmon and Recreational Fisheries Team,
Marine Scotland, Area 1B North, Victoria Quay, Edinburgh, EH6 6QQ

Handling your response

3.4 If you respond using the consultation hub, you will be directed to the About You page before submitting your response. Please indicate how you wish your response to be handled and, in particular, whether you are content for your response to be published. If you ask for your response not to be published, we will regard it as confidential, and we will treat it accordingly.

3.5 All respondents should be aware that the Scottish Government is subject to the provisions of the Freedom of Information (Scotland) Act 2002 and would therefore have to consider any request made to it under the Act for information relating to responses made to this consultation exercise.

3.6 If you are unable to respond via Citizen Space, please complete and return the Respondent Information Form included in this document.

3.7 To find out how we handle your personal data, please see our privacy policy: <https://beta.gov.scot/privacy/>

Next steps in the process

3.8 Where respondents have given permission for their response to be made public, and after we have checked that they contain no potentially defamatory material, responses will be made available to the public at <http://consult.gov.scot>. If you use the consultation hub to respond, you will receive a copy of your response via email.

3.9 Following the closing date, all responses will be analysed and considered along with any other available evidence to help us. Responses will be published where we have been given permission to do so. An analysis report will also be made available.

Comments and complaints

3.10 If you have any comments about how this consultation exercise has been conducted, please send them to Simon Dryden [simon.dryden@gov.scot]

Scottish Government consultation process

3.11 Consultation is an essential part of the policy-making process. It gives us the opportunity to consider your opinion and expertise on a proposed area of work.

3.12 You can find all our consultations online: <http://consult.gov.scot>. Each consultation details the issues under consideration, as well as a way for you to give us your views, either online, by email or by post.

3.13 Responses will be analysed and used as part of the decision making process, along with a range of other available information and evidence. We will publish a report of this analysis for every consultation. Depending on the nature of the consultation exercise the responses received may:

- indicate the need for policy development or review
- inform the development of a particular policy
- help decisions to be made between alternative policy proposals
- be used to finalise legislation before it is implemented

3.14 While details of particular circumstances described in a response to a consultation exercise may usefully inform the policy process, consultation exercises cannot address individual concerns and comments, which should be directed to the relevant public body.

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RESPONDENT INFORMATION FORM

Please Note this form **must** be completed and returned with your response.

Are you responding as an individual or an organisation?

- Individual
 Organisation

Full name or organisation's name

Phone number

Address

Postcode

Email

The Scottish Government would like your permission to publish your consultation response. Please indicate your publishing preference:

- Publish response with name
 Publish response only (without name)
 Do not publish response

Information for organisations:

The option 'Publish response only (without name)' is available for individual respondents only. If this option is selected, the organisation name will still be published.

If you choose the option 'Do not publish response', your organisation name may still be listed as having responded to the consultation in, for example, the analysis report.

We will share your response internally with other Scottish Government policy teams who may be addressing the issues you discuss. They may wish to contact you again in the future, but we require your permission to do so. Are you content for Scottish Government to contact you again in relation to this consultation exercise?

- Yes
 No

4. Current Regulatory Framework

4.1 Section 51A of the Salmon and Freshwater Fisheries (Consolidation) (Scotland) Act 2003 Act (“the 2003 Act”) provides that the Scottish Ministers may make regulations if they consider that it is necessary or expedient to do so for the conservation of freshwater fish.

5. Proposals

5.1 There is a body of scientific evidence in support of the concept of protecting large fish (females particularly) within populations. Such fish provide a large number of eggs per individual and furthermore the eggs are often relatively large and hence likely yield particularly robust offspring. A stock of long-lived fish also provides buffering against a series of poor years for survival of eggs and juveniles enabling stock recovery. Hence, if managing a fish stock for exploitation it would be a sensible strategy to protect large spawners.

5.2 As well as providing population resilience, large size in pike is favoured by recreational anglers who generally value a fishery in terms of likelihood of catching a “trophy” fish rather than a large catch of small fish. Hence, it is a sensible strategy to protect large pike in recreational fisheries.

5.3 A theoretically possible negative factor would be cannibalism of smaller pike by these large fish. However, although this phenomenon has been recorded in some specific situations, there is scepticism that it occurs generally because size classes of pike favour distinctly different habitat types and hence for the most part are spatially segregated.

5.4 Large pike may be protected by imposing a limit on the maximum size of fish that may be removed. It has been shown that pike can be quite resilient to catch-and-release angling, with about a 5% mortality due to damage from hooking, but some variation between capture methods and studies (Arlinghaus et al., 2008). It is possible, however, based on results of studies on other species, that the level of loss from capture may be greater at relatively high temperatures.

5.5 Pike soon learn to avoid lures but not natural baits, and therefore some individuals may be captured on numerous occasions. The cumulative mortality risk is hence a consideration, particularly in waters with high fishing pressure and/or low abundance of natural food items.

5.6 Information on effects of catch size limits is available for a theoretical study (Arlinghaus et al., 2010) and an extraordinary N American study (Pierce, 2010) including surveys of 69 lakes, data for 9-17 years of experimentation and up to 37 years of monitoring. This study showed generally large increases in the occurrence of large pike following implementation of maximum size limits of predominantly 70cm (with two sites using maxima as low as 51cm). There was no detectable effect on overall production, suggesting no strong regulation through cannibalism by large pike. Tiainen et al. (2017) similarly found a positive effect of maximum size limits (65cm) on abundance of large pike in a small sample of Finnish lakes. In general the empirical studies correspond well with the theoretical modelled predictions. Although based on few data, the Finnish study provides field evidence for the prediction that a maximum harvest size need to be supported by regulation of angling pressure if the rate of growth is insufficient to allow more pike to reach large sizes than are removed by incidental angling mortality.

Arlinghaus, R., Klefoth, T., Kobler, A., Cooke, S.J., (2008). Size-selectivity, capture efficiency, injury, handling time and determinants of initial hooking mortality of angled northern pike (*Esox lucius* L.): the influence of bait type and size. *North American Journal of Fisheries Management* 28, 123–134.

Arlinghaus, R., Matsumura, S., & Dieckmann, U. (2010). The conservation and fishery benefits of protecting large pike (*Esox lucius* L.) by harvest regulations in recreational fishing. *Biological Conservation*, 143(6), 1444-1459.

Pierce, R. B. (2010). Long-term evaluations of length limit regulations for northern pike in Minnesota. *North American Journal of Fisheries Management*, 30(2), 412-432.

Tiainen, J. M., Olin, M. J., Lehtonen, H. V. T., Nyberg, K. B., & Ruuhijärvi, J. (2017). The capability of harvestable slot-length limit regulation in conserving large and old northern pike (*Esox lucius*). *Boreal Environment Research*.

5.7 There is strong scientific support for setting a maximum harvest size but insufficient information to specify the precise limit.

5.8 We propose that any pike of more than 60 cm in length must be released.

5.9 The value of a bag limit depends on the productive capacity of a water for pike and angling pressure. Furthermore, if there is strong density dependence, then it may be advantageous to remove small pike, up to a point, to stimulate increased growth in those remaining. We acknowledge, however, that there is little information available on the density dependence of pike stocks in any Scottish fisheries and therefore propose that a precautionary approach - a one fish bag limit - is appropriate.

5.10 We propose that a general bag limit of one pike, of maximum 60 cm in length, per person per day to prevent the depletion of stocks by excessive removals or commercial exploitation.

5.11 Although no systematic research has been possible, there is a large body of anecdotal evidence indicating that taking pike for the table in substantial numbers has become increasingly common across Scotland in the last fifteen years or so. Sport anglers' catches – especially of larger fish - from many formerly productive waters across the country are widely reported to have fallen significantly. In the worst instances illegal methods are being used, but more common are the reports of groups of anglers fishing intensively for the table and taking all the pike they can catch either for personal consumption or sale.

5.12 We propose that no person can sell, offer or expose for sale any pike that has been taken by rod and line.

Question 1 – Do you agree that any pike of more than 60 cm in length must be released? Please add any evidence you have in support of your position.

Question 2 – Do you agree that there should be a general bag limit of one pike, of maximum 60 cm in length, per person per day? Please add any evidence you have in support of your position.

Question 3 – Do you agree that no person should be able to sell, offer or expose for sale any pike that has been taken by rod and line? Please add any evidence you have in support of your position.



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Edinburgh
EH1 3DG

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