



# THE LEGAL STATUS OF STURGEON IN IRELAND

A Legal Research Paper

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## Introduction

Sturgeon has the unfortunate title of the world's most threatened group of species. There are 27 species of sturgeon globally, all of which are classified as Vulnerable to Critically Endangered according to the 2022 IUCN Global Sturgeon Assessment.<sup>1</sup> One species, the Chinese Paddlefish, is now considered extinct.<sup>2</sup> The European sturgeon is the species relevant to the Irish context. The last known record was 1987 and it is now considered locally extinct.<sup>3</sup>

Sturgeon are very sensitive to environmental pressures due to their slow growth and maturity.<sup>4</sup> Overfishing, habitat alteration, obstacles preventing migration and pollution have been cited as the main factors for the decline of the European Sturgeon.<sup>5</sup> Reintroductions have been deemed crucial to ensure the survival of European sturgeons and are currently being done or prepared for throughout Europe.<sup>6</sup> Reintroduction aims to re-establish a viable population of a species within its indigenous range and is defined by the IUCN as “the intentional movement and release of an organism inside its indigenous range from which it has disappeared.”<sup>7</sup> Previous examples of attempts at reintroduction of species in Ireland involved the golden eagle,<sup>8</sup> white tailed eagles<sup>9</sup> and red kites.<sup>10</sup>

The questions to be answered by this research paper include the following:

- What is the legal status of sturgeon in Ireland? Is it a protected species?
- Is the Irish Government under a legal obligation to establish protected areas for sturgeon?
- Does the Irish Government have a legal obligation to reintroduce species, in particular sturgeon?

These questions will be answered in summary format here with more detailed legal context provided in the following sections. European Sturgeon is a protected species in Ireland via its listing in Annex II of the European Union Habitats (EU) Directive, therefore the Irish Government is under a legal obligation to establish protected areas (Special Areas of Conservation) for their habitats. European Sturgeon is also listed under Annex IV of the Habitats Directive, which means a strict protection regime must be applied across their entire natural range within the EU, both within and outside Natura 2000 sites. Ireland is not under any strict legal obligation to reintroduce species under the Habitats Directive, rather States are required to “study the desirability of re-

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<sup>1</sup> IUCN Red List 2022. <https://www.iucnredlist.org/search?query=sturgeon&searchType=species>

<sup>2</sup> Ibid.

<sup>3</sup> Quigley, D. (2014). Sturgeons (Family: Acipenseridae) in Irish & NW European Waters. Sherkin Comment, 57.

<sup>4</sup> WWF (2016) *Saving Sturgeons. A global report on their status and suggested conservation strategy*, 9.

<sup>5</sup> Vanderheyden, M. (2021) Restoring an umbrella species: do Irish rivers provide suitable habitat for the European sturgeon (Acipenser sturio)? GMT Masters Thesis, 5.

<sup>6</sup> See examples from Europe in WWF (2017), *WWF Network Sturgeon Strategy*, 17.

<sup>7</sup> IUCN/SSC (2013). Guidelines for Reintroductions and Other Conservation Translocations. Version 1.0. Gland, Switzerland: IUCN Species Survival Commission, 3.

<sup>8</sup> O'Toole, L., Fielding, A. H., & Haworth, P. F. (2002). Re-introduction of the golden eagle into the Republic of Ireland. *Biological Conservation*, 103(3), 303-312. See also White, C (2016), Reintroductions in Ireland: Restoring our Biodiversity, Trinity Student Scientific Review, Vol. II

<sup>9</sup> <https://www.npws.ie/research-projects/animal-species/birds/white-tailed-eagle-phase-2>

<sup>10</sup> <https://www.rte.ie/archives/2022/0609/1303821-red-kites-return/>

introducing species” listed in Annex IV of the Directive, which includes the European sturgeon. There is a possibility to trigger it as a compensatory measure in the context of the Article 6(4) exception after a negative appropriate assessment determination under Article 6(3), however this would apply only in the context of an existing protected area.

## I. International Law

Ireland is party to several international agreements relevant to the protection of sturgeon, including the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention),<sup>11</sup> the Convention on Biological Diversity (CBD),<sup>12</sup> the Regional Seas Convention for the Protection of the Marine Environment of the Northeast Atlantic (OSPAR),<sup>13</sup> as well as the Convention on the Conservation of Migratory Species of Wild Animals (CMS)<sup>14</sup> and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).<sup>15</sup>

### Bern Convention

Ireland is a signatory to the Bern Convention which states that “Each Contracting Party shall take appropriate and necessary legislative and administrative measures to ensure the special protection of the wild fauna species specified in Appendix II”.<sup>16</sup> European sturgeon is listed in Annex II and Revised Annex I, which is implemented in EU through the Habitats Directive. The Bern Convention was the first wildlife treaty to encourage its parties to reintroduce native species as a method of conservation.<sup>17</sup> Article 11(2)(a) on *Supplementary provisions* provides that each Contracting Party undertakes to “encourage the reintroduction of native species of wild flora and fauna when this would contribute to the conservation of an endangered species, provided that a study is first made in the light of the experiences of other Contracting Parties to establish that such reintroduction would be effective and acceptable”. The inclusion of a study as a pre-requisite for a reintroduction program is similarly reflected in the Habitats Directive as will be seen below.

In 2018 the *Pan-European Action Plan for Sturgeons*<sup>18</sup> was developed under the Bern Convention, which aims to “to restore all existing sturgeon populations to “least concern” (IUCN) or “favourable” (Habitats Directive) status and re-establish self-sustaining sturgeon populations as well as their life-cycle habitat in their historic range to an extent that ensures species survival and representation of the subpopulations where possible.”<sup>19</sup> The plan has an intended life span of 10 years, covering 2019-2029, and the geographical scope encompasses countries with shared sturgeon waters in Europe, including Ireland, the EU and neighbouring countries with shared

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<sup>11</sup> Convention on the Conservation of European Wildlife and Natural Habitats ETS No. 104, opened for signature on 19/09/1970, entered into force on 01/06/1982. See <https://www.coe.int/en/web/bern-convention>

<sup>12</sup> Convention on Biological Diversity 1760 UNTS 79 (5 June 1992)

<sup>13</sup> Convention for the Protection of the Marine Environment of the North-East Atlantic (1992) 2354 UNTS 67.

<sup>14</sup> Convention on the Conservation of Migratory Species of Wild Animals (1979) 1651 UNTS 333.

<sup>15</sup> Convention on International Trade in Endangered Species of Wild Fauna and Flora (1973) 983 UNTS 243.

<sup>16</sup> Article 6 Bern Convention.

<sup>17</sup> Rees, P.A. (2001) ‘Is there a legal obligation to reintroduce animal species into their former habitats?’ Oryx, 35(3), 216-223, 216. See also Lyster, S. (1985) *International Wildlife Law*. Grotius Publications, Cambridge.

<sup>18</sup> Bern Convention Standing Committee, Pan-European Action Plan for Sturgeons, Strasbourg, 30 November 2018. Prepared by World Sturgeon Conservation Society and WWF.

<sup>19</sup> *Ibid*, 13.

basins such as the Black Sea, Mediterranean, North Eastern Atlantic Ocean, North Sea and Baltic Sea.<sup>20</sup> While Ireland is at the edge of the European sturgeon's previous range, the species has been observed numerous times in Irish coastal waters and rivers between 1608 and 1987, including potential attempts at spawning.<sup>21</sup>

## **CBD**

The leading global treaty for the conservation of biological diversity is the Convention on Biological Diversity (CBD, 1992). The Preamble refers to “the recovery of viable populations of species in their natural surroundings”. Article 8(f) creates an obligation to “rehabilitate and restore degraded ecosystems and promote the recovery of threatened species”. Article 9 CBD, which deals with *ex situ* conservation, states that States shall “as far as possible and as appropriate, and predominantly for the purpose of complementing *in-situ* measures [...] adopt measures for the recovery and rehabilitation of threatened species and for their reintroduction into their natural habitats under appropriate conditions”.<sup>22</sup> While the wording of this article allows discretion, Article 9(c) could support arguments for a legal obligation to adopt measures for the reintroduction of species into their natural habitats under appropriate conditions.

Parties to the CBD recently approved a new post 2020 global biodiversity framework,<sup>23</sup> which contains several references to restoration of ecosystems,<sup>24</sup> and requires States to “ensure that by 2030 at least 30 per cent of areas of degraded terrestrial, inland water, and coastal and marine ecosystems are under effective restoration, in order to enhance biodiversity and ecosystem functions and services, ecological integrity and connectivity.”<sup>25</sup> Of specific relevance to sturgeon, Target 4 requires “urgent management actions to halt human induced extinction of known threatened species and for the *recovery and conservation of species, in particular threatened species, to significantly reduce extinction risk*, as well as to maintain and restore the genetic diversity within and between populations of *native, wild and domesticated species to maintain their adaptive potential, including through in situ and ex situ conservation* and sustainable management practices, and effectively manage human-wildlife interactions to minimize human-wildlife conflict for coexistence.”

## **OSPAR**

Ireland is a party to OSPAR, which obliges its member States, including the EU,<sup>26</sup> “to take all possible steps to prevent and eliminate pollution, and shall take the necessary measures to protect the maritime area against the adverse effects of human activities so as to safeguard human health and to conserve marine ecosystems and, when practicable, restore marine areas which have been

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<sup>20</sup> Ibid, 2-3.

<sup>21</sup> Vanderheyden (2021) citing Quigley (2014).

<sup>22</sup> Article 9(c) CBD.

<sup>23</sup> Kunming-Montreal Global biodiversity framework. Draft decision submitted by the President. CBD/COP/15/L.25, 18 December 2022.

<sup>24</sup> Goal A and B, *ibid*.

<sup>25</sup> Target 2, *ibid*.

<sup>26</sup> <https://www.ospar.org/organisation/contracting-parties>

adversely affected."<sup>27</sup> European sturgeon is included on the OSPAR List of Threatened and/or Declining Species and Habitats<sup>28</sup>, which is viewed as grounds for designation of a protected area.<sup>29</sup>

## **CMS**

The CMS provides a global platform for States to take collaborative action to address the conservation and sustainable use of migratory animals and their habitats.<sup>30</sup> For the purposes of the Convention, a migratory species is one that cyclically and predictably crosses one or more national jurisdictional boundaries.<sup>31</sup> European sturgeon is listed by the CMS under Appendix I, which lists migratory species that have been assessed as being in danger of extinction and Appendix II, which lists migratory species which have an unfavourable conservation status and which require international agreements for their conservation and management.<sup>32</sup> Under the CMS, 'range States'<sup>33</sup> have duties to migratory species in terms of their conservation, restoration and protection of migratory routes and habitats and limitations on their exploitation.

## **CITES**

CITES is a multilateral agreement which aims to ensure that international trade in specimens of wild animals and plants does not threaten the survival of the species.<sup>34</sup> European sturgeon is listed by CITES in Appendix I.<sup>35</sup> Therefore, any international commercial trade in wild-caught European sturgeons is prohibited.

## **II. European Law**

The European Union recently reaffirmed its commitment to protecting and restoring biodiversity through the *Biodiversity Strategy for 2030*, which calls for binding targets to restore degraded ecosystems<sup>36</sup> and the European Commission's recent proposal for a *Nature Restoration Law* in June 2022, which aims to restore ecosystems, habitats and species across the EU's lands and seas.<sup>37</sup> Operational objectives of the new law include the establishment of legally binding targets to

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<sup>27</sup> Article 2(1)(a) OSPAR Convention.

<sup>28</sup> <https://www.ospar.org/work-areas/bdc/species-habitats/list-of-threatened-declining-species-habitats/fish/sturgeon>

<sup>29</sup> OSPAR Guidelines 2003-17, Appendix 1.

<sup>30</sup> Hilty, J. and others (2020), 'Guidelines for conserving connectivity through ecological networks and corridors' Best Practice Protected Area Guidelines Series 30 (IUCN), ix.

<sup>31</sup> Article 1, para. 1 CMS. <https://www.cms.int/es/faq>.

<sup>32</sup> [https://www.cms.int/sites/default/files/basic\\_page\\_documents/appendices\\_cop13\\_e\\_0.pdf](https://www.cms.int/sites/default/files/basic_page_documents/appendices_cop13_e_0.pdf)

<sup>33</sup> Article 1(1)(h) CMS defines "range State" as any State that "exercises jurisdiction over any part of the range of that migratory species, or a State, flag vessels of which are engaged outside national jurisdictional limits in taking that migratory species".

<sup>34</sup> <https://cites.org/eng/disc/what.php>

<sup>35</sup> <https://cites.org/eng/app/index.php>

<sup>36</sup> European Commission *EU Biodiversity Strategy for 2030*. Bringing nature back into our lives COM (2020) 380 final

<sup>37</sup> [https://environment.ec.europa.eu/topics/nature-and-biodiversity/nature-restoration-law\\_en](https://environment.ec.europa.eu/topics/nature-and-biodiversity/nature-restoration-law_en)

restore and maintain ecosystems to good condition.<sup>38</sup> The *Nature Restoration Law* has been described as a key element of the EU's *Biodiversity Strategy 2030*.<sup>39</sup> While there is no explicit mention of species reintroduction in the current proposal, it is likely that such activities could fall under this law in the context of species restoration and their contribution to the health of an ecosystem.

The Habitats Directive<sup>40</sup> is the applicable law at EU level in relation to the protected status of sturgeon. It was first transposed into Irish law by means of the European Communities (Natural Habitats) Regulations, 1997.<sup>41</sup> Ireland is a Member State of the EU, which means it must transpose European law into national legislation in certain areas, including in the fields of nature conservation. Failure to do so can result in legal proceedings being initiated by the European Commission against Ireland in the Court of Justice of the European Union (CJEU), potentially resulting in sanctions in the form of fines.

The EU adopted the Habitats Directive in 1992, which aims to protect vulnerable natural habitats and wild fauna and flora including those considered rare and/or endemic.<sup>42</sup> The overarching aim of the Habitats Directive is to ensure that these species and habitats listed in its Annexes achieve or maintain “favourable conservation status” (FCS).<sup>43</sup> FCS is a benchmark of significant importance for the practical implementation of Member States’ obligations under the Habitats Directive.<sup>44</sup> The European Commission explained the concept in simple terms as follows:

“FCS could be described as a situation where a habitat type or species is doing sufficiently well in terms of quality and quantity and has good prospects of continuing to do so in future. The fact that a habitat or species is not threatened (i.e., not faced by any direct extinction risk) does not necessarily mean that it has favourable conservation status.”<sup>45</sup>

Therefore, the obligation to achieve FCS is framed in a positive way whereby Member States are required to *do more than just avoid extinction*.<sup>46</sup> The Commission explained that all measures taken under the Directive must aim to reach or maintain FCS.<sup>47</sup>

Article 3 (1) of the Directive sets out the legal obligation for Member States to establish a network of protected areas:

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<sup>38</sup> European Commission, Proposal for a Regulation of the European Parliament and of the Council on Nature Restoration, Brussels 22.6.2022, COM(2022) 304 final, 51, available at [https://environment.ec.europa.eu/publications/nature-restoration-law\\_en](https://environment.ec.europa.eu/publications/nature-restoration-law_en)

<sup>39</sup> [https://environment.ec.europa.eu/topics/nature-and-biodiversity/nature-restoration-law\\_en](https://environment.ec.europa.eu/topics/nature-and-biodiversity/nature-restoration-law_en)

<sup>40</sup> Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ L 206, 22.7.1992).

<sup>41</sup> See also European Communities (Birds and Natural Habitats) Regulations, 2011-2015.

<sup>42</sup> Article 2 (1) Habitats Directive.

<sup>43</sup> Article 2(2).

<sup>44</sup> See further Article 1(e).

<sup>45</sup> European Commission (2007) Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC, 9.

<sup>46</sup> *Ibid*, 9-10.

<sup>47</sup> *Ibid*, 10.

“A coherent European ecological network of special areas of conservation shall be set up under the title Natura 2000. This network, composed of sites hosting the natural habitat types listed in Annex I and habitats of the species listed in Annex II, shall enable the natural habitat types and the species' habitats concerned to be maintained or, where appropriate, restored at a favourable conservation status in their natural range. The Natura 2000 network shall include the special protection areas classified by the Member States pursuant to Directive 79/409/EEC.”

European Sturgeon (*A. sturio*) are listed under Annex II, which means that protected areas should be established for their habitat and managed in accordance with the ecological needs of the species. It is also listed under Annex IV which means a strict protection regime must be applied across their entire natural range within the EU, both within and outside Natura 2000 sites.<sup>48</sup>

Sites are designated as Special Areas of Conservation (SACs) in accordance with the procedure laid down in Article 4 of the Habitats Directive, which consists of three main stages.

1. Each Member State (MS) shall submit to the European Commission (EC) a list of proposed sites within their territory which are important for the conservation of the habitat types and species listed in the Directive. Discretion of MS is limited and should be based on scientific selection criteria set out in Annex III of the Directive. CJEU case law indicates that once a site appears on a list sent to the Commission, the MS should take protective measures to safeguard the ecological interest of the site<sup>49</sup> and not authorize activities which would risk compromising the ecological characteristics of those sites.<sup>50</sup>
2. The Commission will then establish, in agreement with the MS, a list of Sites of Community Importance (SCIs). Not all sites proposed by Member States on national lists will be found to be sufficiently important to be selected as SCIs. However, all proposed sites which contain a priority habitat type or priority species are automatically selected as SCIs. Once a site is adopted as an SCI by the Commission, certain management obligations will apply, specifically those contained in Articles 6(2)-(4), discussed below.<sup>51</sup>
3. The final step is designation of the selected SCIs as SACs by the MS. This must be done within six years after a site is adopted as an SCI.

The Irish National Parks and Wildlife Service (NPWS), located within the Heritage Division of the Department of Housing, Local Government & Heritage, is responsible for nature conservation in Ireland and has responsibility to designate certain types of protected areas (including SACs) and advise on the protection of habitats and species identified for nature conservation.<sup>52</sup> They outline the site selection criteria they apply in line with the requirements of the Directive.<sup>53</sup>

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<sup>48</sup> Art 12(1) Habitats Directive.

<sup>49</sup> C-117/03.

<sup>50</sup> C-244/05.

<sup>51</sup> Article 4(5) Habitats Directive.

<sup>52</sup> <https://www.npws.ie/about-npws>

<sup>53</sup> NPWS (2017) Stages in the Site Designation Process October 2017, available at <https://www.npws.ie/faq/site-designation>, 2.

- The importance within Ireland of the site for its habitats or species.
- How representative is the example of the relevant habitat present on the site (in practice, this means that a suite of sites is selected which encompasses the range of variation found).
- How isolated is the population of the relevant species on the site (the more isolated the population, the more likely it is to be genetically different from other populations).
- The intactness of the habitat on the site.
- Other factors, including the need to ensure a good geographic spread of sites, the total number of habitats and species listed in the Habitats Directive present on the site, whether or not there is a priority habitat (i.e., a habitat in danger of disappearance) on the site and whether or not the site contains habitats or species for which Ireland is especially important.

Article 6(1) of the Habitats Directive requires Member States to establish conservation measures for SACs that should correspond to the ecological requirements of the site and address the pressures and threats to the site. This is a positive obligation and distinguishable from the rest of Article 6 which is focused on preventing deterioration of sites.<sup>54</sup> As stated earlier, the purpose of the Directive is to achieve FCS for all habitats and species listed. Conservation measures can range from non- intervention, especially in the case of habitats and species that are very vulnerable to any kind of human intervention, *to more active restoration activities*.<sup>55</sup>

Article 6(2) of the Directive requires Member States to take steps to avoid deterioration of natural habitats and habitats of species, as well as disturbance of species, in SACs. Article 6(3) requires an ‘appropriate assessment’ to be carried out of any plan or project, not directly connected with or necessary to the management of the site, but likely to have a significant effect on the SAC, either individually or in combination with other plans or projects. Such an activity can only be authorised if it will not ‘adversely affect the integrity’ of the SAC. In exceptional cases, where there is no alternative and for reasons of overriding public interest, an activity may be permitted to proceed even in the event of a negative assessment.<sup>56</sup>

In such a case, Article 6(4) of the Directive requires that the Member State take “compensatory measures” to ensure that the overall coherence of the Natura 2000 network is protected and inform the Commission of such. According to a guidance document prepared by the European Commission on Article 6(4), compensatory measures constitute measures specific to a project or plan, *additional to the normal practices of implementation* under the Habitats Directive.<sup>57</sup> They aim to offset the negative impact of a project and to provide compensation corresponding precisely to the negative effects on the species or habitat concerned.<sup>58</sup> The Commission lists “species reintroduction” as part of the range of compensatory measures found in current practice under

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<sup>54</sup> European Commission (2018), Managing Natura 2000 sites: The provisions of Article 6 of the Habitats Directive 92/43/EEC (2018) 7621 final, 15.

<sup>55</sup> [https://ec.europa.eu/environment/nature/natura2000/faq\\_en.htm#3-0](https://ec.europa.eu/environment/nature/natura2000/faq_en.htm#3-0)

<sup>56</sup> Article 6(4) Habitats Directive.

<sup>57</sup> European Commission (2007) Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC, 11.

<sup>58</sup> Ibid.



Article 6(4).<sup>59</sup> Therefore, in this instance, it would appear that “species introduction” can be triggered as a compensatory measure under Article 6(4) in response to the exception to a negative assessment under Article 6(3).

With regard to the question of whether there is a general legal obligation on States to undertake reintroduction, there are only two explicit mentions of reintroduction in the Directive. The Preamble states that “provision should be made for supplementary measures governing the reintroduction of certain native species of fauna and flora and the possible introduction of non-native species.” Article 22 of the Habitats Directive on Supplementary Provisions states that:

“In implementing the provisions of this Directive, Member States shall:

- (a) study the desirability of re-introducing species in Annex IV that are native to their territory where this might contribute to their conservation, provided that an investigation, also taking into account experience in other Member States or elsewhere, has established that such re-introduction contributes effectively to re-establishing these species at a favourable conservation status and that it takes place only after proper consultation of the public concerned.”

Therefore, there does not appear to be a strict legal obligation to reintroduce species, rather an obligation to *study the desirability* of doing so in the context of implementing the Habitats Directive. European Commission guidance specifically mentions “reintroduction for a species exclusively listed in Annex IV” as an example of a measure that is *not obligatory* under the Directive.<sup>60</sup> This is because it can be a ground for derogation under Article 16. Article 16 of the Habitats Directive provides grounds for a derogation from the strict protection measures (for the species listed under Annex IV), if it is not “detrimental to the maintenance of the populations of the species concerned at a favourable conservation status in their natural range”.<sup>61</sup> European Commission guidance lists “conservation projects aiming at the reintroduction of species” as an example of a ground for derogation under Article 16.<sup>62</sup>

However, the European Sturgeon are also listed as a protected species under Annex II of the Directive and therefore require protected areas. **In a context such as Ireland, where they are locally extinct, and it is not possible to comply with the requirement to establish protected areas, it is arguable that reintroduction is the only measure available to achieve their favourable conservation status in Ireland. Therefore, there is a strong case to be made for the Irish Government to engage Article 22.**

European Commission Guidance states that “Measures taken by the Member States when implementing the provisions under the Directive should always be proportionate and appropriate

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<sup>59</sup> Ibid, 14.

<sup>60</sup> European Commission (2007) Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC, 21.

<sup>61</sup> Article 16 (1) Habitats Directive. The European Court of Justice has held that derogations must be interpreted strictly in order to avoid undermining the main provisions of the Directive, see Judgment of 20 October 2005, Commission v UK, Case C-6/04, ECR.

<sup>62</sup> European Commission (2007) Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC, 56.

to the objective pursued, i.e. maintaining and restoring favourable conservation status. The measures must be appropriate and effective on the ground. There might be some cases where appropriate measures are not obligatory under the Directive. Voluntary measures or adaptation of the Directive and its annexes may be envisaged in such cases.”<sup>63</sup>

## Concluding Remarks

Reintroduction of species is viewed as a conventional conservation tool across Europe.<sup>64</sup> Yet, obligations for Member States in situations where a protected population has gone extinct are unclear.<sup>65</sup> For example, the term ‘native species’ is not defined in the Habitats Directive and issues such as the length of time a species has been extinct could impact on whether it can still be considered native to a region.<sup>66</sup> Furthermore, some scholars claim that extinction of a species does not exonerate a Member State from their obligations under the Habitats Directive, given that restoration is a ‘dominant notion’ throughout.<sup>67</sup> In support of their claim, Bao *et al* refer to a 2007 CJEU case,<sup>68</sup> where the disappearance of a sandwich tern breeding population from a site due to predation by an invasive alien species, which the Irish authorities should have prevented, did not affect Ireland's obligation to designate and manage that site for the recovery of this species.<sup>69</sup> Declassifying sites is only a viable alternative when species or habitat types have disappeared on natural factors over which a Member State has no control.<sup>70</sup> However the question posed in the context of this research concerns a situation in which there are no protected sites already in existence for sturgeon. It is clear that more guidance is needed with regard to the extent of the legal obligations of States with regard to reintroduction in Europe, especially in the context of localised extinction, and the subsequent development and roll out of such programs on the ground from a scientific and socio-economic perspective.<sup>71</sup> Various factors need to be considered such as the elimination of the risk factors and human pressures which led to extinction in the first place, stakeholder/public support, socio-economic, political and legal context, habitat suitability, and biological and environmental considerations, a discussion of which is beyond the scope of this paper.<sup>72</sup> While acknowledging that it is an effective conservation tool, the IUCN has cautioned that reintroduction is a high risk undertaking which requires rigorous justification.<sup>73</sup>

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<sup>63</sup> Ibid, 21.

<sup>64</sup> Pillai, A. and Heptinstall, D., (2013). ‘Twenty years of the Habitats Directive: a case study on species reintroduction, protection and management.’ *Environmental Law Review*, 15(1), 27-46.

<sup>65</sup> López-Bao, J.V., Fleurke, F., Chapron, G. and Trouwborst, A. (2018). ‘Legal obligations regarding populations on the verge of extinction in Europe: Conservation, Restoration, Recolonization, Reintroduction.’ *Biological Conservation*, 227, 319-325, 320.

<sup>66</sup> For further discussion on these points, see Rees (2001).

<sup>67</sup> Lopez-Bao and others (2018), 324 citing Verschuuren, J.M. (2010). ‘Overcoming the limitations of environmental law in a globalised world’. In: Wijen, F., Zoeteman, K., Pieters, J., Van Seters, P. (Eds.), *A Handbook of Globalisation and Environmental Policy* (2nd ed. Edward Elgar, Cheltenham), 616–640.

<sup>68</sup> Case C-418/04.

<sup>69</sup> Lopez-Bao and others (2018), 323.

<sup>70</sup> Ibid, 324.

<sup>71</sup> Pillai et al (2013). Current scientific guidelines include IUCN/SSC (2013). Guidelines for Reintroductions and Other Conservation Translocations. Version 1.0. Gland, Switzerland: IUCN Species Survival Commission.

<sup>72</sup> See further IUCN (2013).

<sup>73</sup> IUCN (2013), viii.