

ECOLOGICAL observing System in the Adriatic Sea: oceanographic observations for biodiversity
Priority Axis 3: Environment and cultural heritage
Specific Objective 3.2: Contribute to protect and restore biodiversity

D4.2.3 Report on the development of a local action plan and upscaling at the basin scale

WP4 – Establishing the Ecological Observing System in the Adriatic Sea (ECOAdS)

A4.2 – Integration of ecological observing system with Natura 2000 target species

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Status: Final

Public

30th June 2011

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INTRODUCTION

In the framework of work package 4 and the development of case studies the current activity aims to develop a local action plan and upscaling it at basin scale, focusing on species. Indeed, some species have complex life cycles and their conservation might need specific requirements covering an area much broader than a single Natura 2000 (N2K) site, as well as agreements and interventions from different Authorities.

This deliverable was developed thanks to the previous results from other activities and in particular of the following deliverables:

- D3.3.1 Report on the key oceanographic processes and performance indicators for Natura 2000 marine sites
- D 4.3.1 Review of the knowledge of the ecological processes in the selected Natura 2000 sites

The information of the above-mentioned deliverables was integrated with documents, information and previous experiences from the Po Delta Veneto Regional Park, which cover the complex territory of the Po River delta, the only delta present in Italy. In particular the Park is already involved in drafting an Action Plan (AP) for the conservation of single species, such as the Adriatic sturgeon *Acipenser naccarii*. The Adriatic sturgeon is an anadromous species, its spawning phase occurs in freshwater, but the adults live in open sea and the delta and coastal areas are nursery grounds. In the Italian waters there were historically three species of sturgeon: *Huso huso* (Beluga sturgeon), *Acipenser sturio* (European sturgeon) and *Acipenser naccarii* (Cobice sturgeon). The first two species are locally extinct, but a recent project reintroduced the Beluga in the Ticino River and the species was monitored to migrate along the Po River towards the sea.

ACTION PLAN

The Po Delta Veneto Regional Park covers two N2K sites, both among those selected by the project ECOSSE: IT3270017 Delta del Po: tratto terminale e delta Veneto; IT3270023 Delta del Po.

As a matter of fact the two sites have a large level of overlapping and last but not least Special Protection Area (SPA) are effective part of N2K network according to the Art.3 of Habitats Directive (HD) *“1. 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.”*

For the SPA “IT3270023 Delta del Po” a management plan (MP) was drafted in year 2011, but it was never formally approved. The MP was originally drafted for the SPA and not for the SAC “IT3270017 Delta del Po: tratto terminale e delta Veneto”, even if the sites share almost all the same habitats and species. For the focus on species the Po Delta Veneto Regional Park realized an AP for the Adriatic sturgeon *A. naccarii* in the year 2007.

The experiences gained from drafting the two cited plans are used and proposed in the following chapter.

Action Plan or conservation measures?

The deliverable of the project “D3.2.1. Report on the ecological monitoring, conservation strategies and management objectives of Natura 2000 marine sites” analysed the strategies of the different Directives at the basin level “*EU member states assign responsible administrators to achieve and evaluate the conservation purposes of the designated N2K network areas.*

While there is no Adriatic agreement on protection of biodiversity at the basin level, there are multiple initiatives, such as the EU Strategy for the Adriatic-Ionian (EUSAIR, adopted by the Commission on June 2014 and endorsed by the EU Council on October 2014) as a platform for cross-border/international collaboration between Albania, Croatia, Greece, Italy, Montenegro, and Slovenia. “

Furthermore, considering the Natura 2000 sites the HD Art. 6 states the need of conservation measures and Management Plans: “*1. For special areas of conservation, Member States shall establish the necessary conservation measures involving, if need be, appropriate management plans specifically designed for the sites or integrated into other development plans, and appropriate statutory, administrative or contractual measures which correspond to the ecological requirements of the natural habitat types in Annex I and the species in Annex II present on the sites.*”

The conceptual model developed in the framework of deliverable 3.3.1, reported in Figure 1, also highlights the double tool conservation measures/management plan.

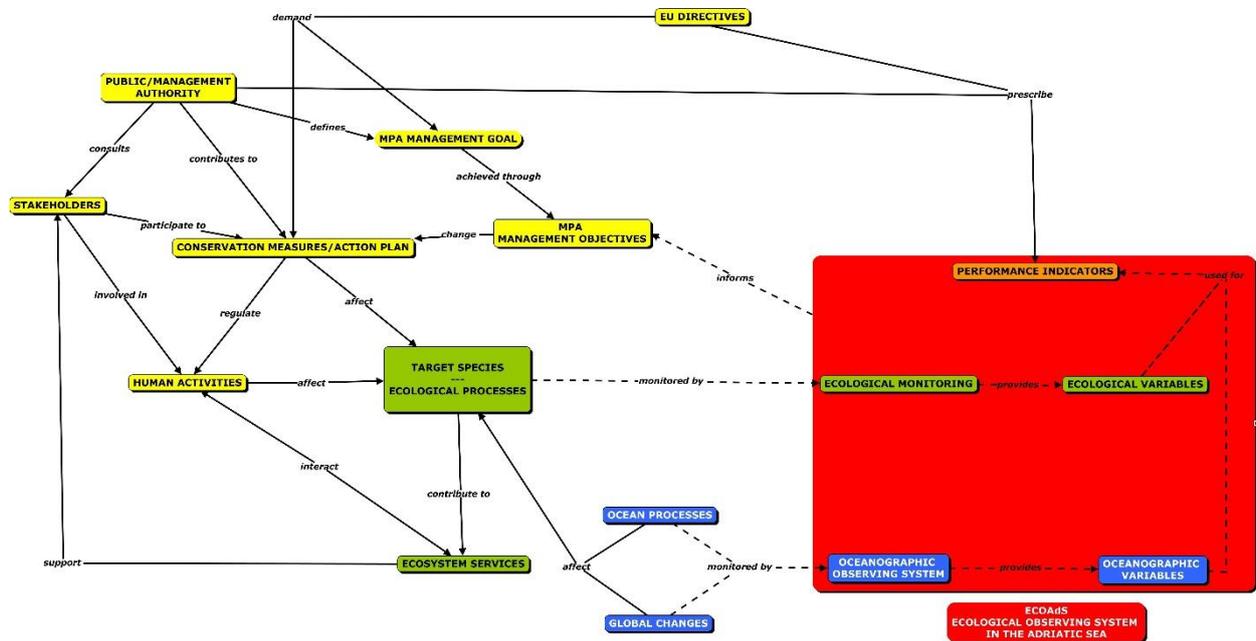


Figure 1: extracted from “D3.3.1 Report on the key oceanographic processes and performance indicators for Natura 2000 marine sites” Generic conceptual model linking ECOAdS with MPA management and EU Directives

A Commission notice¹ document clarified that the conservation measures are mandatory for habitats and species while the responsible administrators can choose if drafting or not a management plan for the sites. The HD leaves open the key question of the choice of a MP, therefore when should a MP be adopted? The former Italian Ministry of the Environment (now Ministry of Ecological Transition) provided guidelines² for logical-decision-making process for choosing the MP. The guidelines suggest a logical process, but they are not statutory for all the case studies and the decision process might also consider local and practical criteria.

¹ Commission notice C(2018) 7621 final, Brussels, 21.11.2018. "Managing Natura 2000 sites The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.

² Linee guida per la gestione dei siti Natura 2000. Decreto del Ministro dell'Ambiente e della Tutela del Territorio del 3 settembre 2002. (G.U. della Repubblica Italiana n. 224 del 24 settembre 2002)

As a general rule a MP should be drafted and adopted whenever the conservation measures are considered not sufficient to reach, in a reasonable timespan, the conservation objectives. The timespan is a local criterion with a huge range of variation, for instance some habitats might recover in a single season, others need years to be fully restored.

A second point to consider are the practical advantages of a MP, such as introducing not only actions for the conservation of the target habitats and species, but also tools for monitoring and revising the implementation of the management plan and its objectives. Furthermore, MP must take in consideration positive or negative interactions with economic activities of the area of intervention.

The MP drafted by the Po Delta Veneto Regional Park was elaborated according to the above-mentioned guidelines and the plan targets also species, but HD does not specify the need of an AP for single species. In the following chapter is proposed a structure of the Management Plan, which follows the cited guidelines of the Italian Ministry, and it can be used also for single species. As a matter of fact, the guidelines were used successfully for drafting an AP for the conservation of Adriatic sturgeon.

The structure presented below does not replace the guidelines, but is a proposal for upscaling at the basin level the conservation of Adriatic sturgeon taking into account also the experiences gained from the Po Delta Veneto Regional Park from the elaboration of an *ad hoc* AP.

ACTION PLAN STRUCTURE

The HD does not directly require AP for single species, as a matter of fact Art. 6 of Habitats Directive “1. For special areas of conservation, Member States shall establish the necessary conservation measures involving, if need be, appropriate management plans specifically designed for the sites or integrated into other development plans, and appropriate statutory, administrative or contractual measures which correspond to the ecological requirements of the natural habitat types in Annex I and the species in Annex II present on the sites.”

The HD does not specify the need of an AP for single species; anyhow the experience of Delta Veneto Regional Park clearly demonstrated that a species-specific AP can greatly improve the conservation status of a species previously close to the extinction.

Therefore, it is proposed a structure of MP that must be developed considering the characteristics of the area in which the species occurs, not only the N2K site, the ecological requirements of the target species, as well as the territorial and socio-economic context. Only from a deep knowledge framework and analysis the management strategies for the species can arise.

The structure is resumed considering the five main sections: 1. Knowledge framework of the area in which the species occurs; 2. Assessment of the ecological requirements of habitats and species; 3. Conservation objectives; 4. Management strategies; 5. Revision and monitoring of the Action Plan. Each session is mandatory and cannot be skipped, since it is somehow preparatory to the next one, but it is expected to vary and to be adapted by scientific knowledge site by site.

1. Knowledge framework of the characteristics of the area

This is the first part of the plan required in order to build a territorial framework of the area of interest for the species, using as much as possible updated information based on scientific publications as well as grey literature, such as technical report. In order to make the AP a document really effective for the management issues, it is suggested to focus it only on the area on which the actions will be implemented, while the wider description of the whole area of occurrence of the species might be inserted into a general introduction chapter.

The knowledge framework can be resumed in:

- Physical description of the area
- Biological description of the species
- Socio-economic description of the area
- Description of the architectural and cultural values of the area
- Landscape description

The **physical description** will include description of the borders of the area and its dimension, regional and local climate, geology and geomorphology, paedogenetic substrate and soil, hydrology. In relation to the targeted species, details on some of these elements might not be necessary. The description should include all the N2K sites in which the species is already listed and if necessary also the Natura 2000 sites in which the species should be included in future updates.

The **biological description** regards the species and its habitat for the entire life cycle. This is a critical part, from which a lack of knowledge on the species can arise; in this case it can be appropriate to consider a specific monitoring action in order to fill the gap. As a matter of fact,

an updated knowledge on the species is the basis for an effective AP. The presence of knowledge gaps should be taken into account also in the phase of revision and monitoring of the plan, since it might actually shorten the period for its revision. The biological description should include also the distribution of the species, including areas of particular interest such as reproduction, foraging, nursery etc. etc.

The **socio-economic description** identifies existing or potential factors which might influence positively or negatively the conservation of the habitats and species of the site. The section should include information on the various Authorities having competence on the site, on existing regulation, on the demography of the human population and on the economic activities.

The identification of areas with **architectural, archaeological and cultural values** is necessary in order to identify possible interactions with the conservation of the species since, when present, usually these kinds of areas have some level of constrain and protection, which must be considered within the portfolio of management objectives.

The **landscape characteristics** to consider depends on local legislation, the key point being that they might be subjected to specific legislation and constrain with effects on the conservation issue. For instance Italy have specific legislation on conservation of landscape and cultural characteristics.

2. Assessment of the ecological requirements of the species

The ecological requirements of the species must be analysed and evaluated in comparison with the influence of the biological and socio-economic factors identified in the knowledge framework of the site. The ecological requirements involve a variety of conditions as specified by a Commission note on Establishing Conservation Measures (European Commission, Doc.

Hab.13-04/05, September 2013): *“The ecological requirements involve all the ecological needs, including both abiotic and biotic factors, which are deemed necessary to ensure the conservation of the habitat types and species, including their relations with the physical environment (air, water, soil, vegetation, etc.).”*

Indicators and threshold values should be used in order to assess whether the species is in a favourable state of conservation and which make it possible to evaluate their evolution;

The influence on conservation of the species of biological and/or socio-economic factors identified in the knowledge framework must be analysed. In general term whenever the influence is negative for the conservation a threat is identified.

3. Conservation objectives

The definition of general and specific objectives arises from the comparison of threats and impact factors arising at a site and the assessment of the ecological needs of the species.

It might be necessary to consider not all the factors with negative influence on conservation, but to prioritise these elements in order to conceive conservation objectives. They derive from the identification of critical and degradation phenomena to be eliminated or mitigated, or of dynamics favourable to the conservation of the site to be safeguarded.

During the elaboration of the conservation objectives also possible conflicting objectives must be considered. Each species has some influence on other species and even on habitat the conflicting objectives might appear among the needs of target species or between one animal species and the evolution of plant species. In such a case intervention priorities must be defined on the basis of strategic assessments that respect the species target of the AP and others species and habitats.

4. Management strategies and Actions schemes

The management strategies define concrete actions to implement in order to reach the conservation objectives. Such strategies include a set of different actions selected for their potential effectiveness in supporting the achievement of the management goals and also evaluated in terms of costs and the time needed for their implementation.

The actions to implement can be categorized by the methods of implementation as follows:

- Active interventions
- Regulations
- Incentives
- Monitoring and/or research programmes
- Educational programmes

Active interventions generally aim at removing/reducing a disturbing factor or directing a natural dynamic. Such interventions can often have a structural character and the result of the action usually is visible and measurable. Quite often the active interventions are necessary for the recovery of the species as well as restoration of its specific habitat or in order to orient the dynamic of natural processes. Anyhow local condition might need a specific frequency of intervention.

Regulations are any plan or law that must be applied locally or at a wider scale necessary for the conservation objectives. The regulations must be binding in order to grant the Authority the power to enforce such rules.

Incentives, on the contrary of regulations, are not mandatory but can be used on voluntary basis. Incentives usually are of economic origin with the objective to direct economic activities, in the area in the correct way in order to reach the conservation target.

The **monitoring and/or research programmes** aim to measure the state of conservation of the species, as well as to evaluate the results of the actions of the AP. These programmes also aim to fill in any knowledge gap, since the accurate knowledge is necessary to define the management more precisely and to calibrate the identified strategy.

Educational programmes have the purpose to increase knowledge and to disseminate models of sustainable behaviour as well as to raise awareness among local population. The sustainable behaviour aims to protect the values of the species.

In order to make the AP as much operational as possible the **actions schemes** have a common template, which contains all the elements useful for understanding, implementing and verifying the intervention. The common template is summarized in the following table, suitable for each action category.

Title of the action	
Action type	<input type="checkbox"/> Active interventions <input type="checkbox"/> Regulations <input type="checkbox"/> Incentives <input type="checkbox"/> Monitoring and/or research programmes <input type="checkbox"/> Educational programmes
Territorial Application	Localized to a specific area; involving a whole Natura 2000 site, more Natura 2000 sites, etc...
Habitat/ Species	Code and scientific name of the target habitat/species involved
Reference map	Specify the database, if any, with spatial georeferenced information
Description of current status	Description of current status of the species
Monitoring indicators	For instance increase of the area of occurrence, increase of the population, number of people involved into the educational programme, etc...
Action objective	Habitat of the species improvement, Restoration, Restocking, Awareness raising, etc...
Action description	How to
Monitoring the implementation/ progress of the action	How to
Description of expected results	Description of expected results in quantitative and measurable terms
Economic interests involved	Description of economic interests involved
Beneficiaries	If applicable description of beneficiaries, for instance in case of action involving specific economic activities, private areas, areas exploited for economic activities etc..
Authority responsible for implementation	The Authority in charge for the action implementation

Authority responsible for monitoring	The Authority in charge for the action monitoring, not necessarily the same responsible for the implementation																																	
Control frequency	After the 1 st year, 2 years, etc...																																	
Penalties	If applicable description of penalties																																	
Action Priority	<input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low Action priority considering the whole set of actions of the management plan																																	
Corrective action	Description of corrective action if the expected results are not achieved during the control																																	
Timetable and costs	Cost of the actions and timetable for its implementation, add as many as necessary. <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Year</th> <th colspan="2">1°</th> <th colspan="2">2°</th> <th colspan="2">3°</th> <th colspan="2">4°</th> <th colspan="2">...°</th> </tr> <tr> <td></td> <th>min</th> <th>max</th> <th>Min</th> <th>Max</th> <th>Min</th> <th>Max</th> <th>Min</th> <th>Max</th> <th>Min</th> <th>Max</th> </tr> </thead> <tbody> <tr> <td>€</td> <td></td> </tr> </tbody> </table>	Year	1°		2°		3°		4°		...°			min	max	€																		
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Policy references and funding	Description of funding sources identified to implement the action																																	
References and technical annexes	If applicable description of technical detailed annexes necessary for the implementation of the action																																	

5. Revision and monitoring of the Action Plan

The last chapter of the plan is the evaluation and review of the plan itself. Indeed, the AP general objective is the conservation of the species, but during the plan implementation the conservation status might change both as a result of the actions or for complementary and unforeseen impacts from other sources. The revision objective is to evaluate the plan implementation and to adapt it to the new situation. The revision must be periodic with a frequency that fits to the time foreseen to achieve the expected results of the actions. Therefore to determine the revision frequency the various timetables of the actions scheme can be compared.

Common indicators for the plan revision are action implementation status (completed, on course, not implemented), costs respect, achievement of the expected results. The result of the revision is an updated AP, with updated conservation objectives and updated set of actions. In consideration of updated scientific information and changes in legislation, it might be necessary also to update the chapters on knowledge framework and ecological requirements.

UPSCALING AT BASIN SCALE TO SPECIES-SPECIFIC ACTION PLAN

The deliverable “D4.3.1 Review of the knowledge of the ecological processes in the selected Natura 2000 sites” analysed ecological process and the management objectives of the N2K case studies, which are summarized also in relation to the main species and habitats from the Standard Data Form (SDF).

Table extracted from D4.3.1 Review of the knowledge of the ecological processes in the selected Natura 2000 sites.

NATURA 2000 SITE(s)	GOAL	MANAGEMENT OBJECTIVES
Cres-Lošinj (HR 3000161) and Viški akvatorij (HR3000469)	Preservation of the common bottlenose dolphin (<i>Tursiops truncatus</i>) population at a favourable status	<ul style="list-style-type: none"> • Protect and increase the population of <i>T. truncatus</i> • Prevent over-exploitation of prey of <i>T. truncatus</i> • Preserve incoming/outgoing genetic flow for <i>T. truncatus</i> • Maintain a good seawater quality • Decrease/regulate interactions between human activities and <i>T. truncatus</i> individuals
Malostonski zaljev (HR4000015)	Preservation of target habitats ('Shallow inlets and bays' and	<ul style="list-style-type: none"> • Prevent high eutrophication and pollution levels in the bay • Assess distribution and conservation

	'Reefs') at a favourable status	<p>status of the identified target benthic species</p> <ul style="list-style-type: none"> • Maintain/restore the current status of target species populations
Tegnùe di Chioggia (IT3250047) and Trezze San Pietro e Bardelli (IT3330009)	Conservation of mesophotic biogenic reef communities at a favourable status	<ul style="list-style-type: none"> • Maintain/restore the current status of target species populations • Preserve coralligenous community diversity and gene pool • Preserve bioconstruction process • Minimize nutrient load and pollution from coast • Reduce human activities inside and next to the N2K sites • Assess the presence and impact of invasive species • Reduce impact of marine debris on benthic species
Delta del Po: tratto terminale e delta Veneto (IT3270017) and Delta del Po (IT3270023)	Conservation of target habitats and species at a favourable status in the Po Delta	<ul style="list-style-type: none"> • Improve water circulation and quality • Reduce impact of invasive species • Monitor and limit fishing • Create/restore optimal habitats for target species (nesting/resting/feeding sites) • Maintain/restore the current status of target species populations • Increase genetic diversity of the Adriatic sturgeon • Decrease tourism-induced disturbance at nesting bird sites • Control of the yellow-legged gull population and terrestrial predators of target birds' eggs

Not all N2K case studies have been designated to protect the same species and this apparently impedes the upscaling of a shared Action Plan at the basin scale or even its application to other sites. On the opposite, the structure can fit to different species since it is based on ecological requirements for the target species and specific threats. Last but not least the Commission notice³ clarifies that the ecological requirements “...are based on scientific knowledge and can only be defined on a case-by-case basis, according to the natural habitat types in Annex I, the species in Annex II, and the sites which host them. Such knowledge is essential to make it possible to draw up the conservation measures, on a case-by-case basis.”

It might be the case that a target species needs a specific AP in order to reach a favourable conservation status. The structure of the proposed AP is suitable, since it will be necessary to consider ecological requirements of the target species, the threats, the conservation objectives and the management strategies.

Species-specific AP might look simplified since it will deal just with one species and therefore it should address a limited number of threats and implement a minor number of conservation actions. On the other hand, for wide range species it might be necessary to consider more N2K sites, since the ecological requirements may vary from one site to another, for example a site can be used as nursery ground, another site for feeding and so on.

Action Plan at basin scale for *Tursiops truncatus*

The Adriatic Sea and the selected N2K sites constitute a proper context for the development of an AP for the species *Tursiops truncatus*. Looking at the Table extracted from D4.3.1, the species does not appear common to all the sites, but it is listed on four out of the seven pilot sites. Last but not least, the Veneto Region recently proposed a new N2K marine site (Figure 2),

³ Commission notice C(2018) 7621 final, Brussels, 21.11.2018. "Managing Natura 2000 sites The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.

which should list in the SDF also *T. truncatus*. This is an example where for the conservation of a species requires a network of N2K sites not only one site. Considering the sites are managed by different Authorities the AP should be shared and approved by all the competent Authorities.

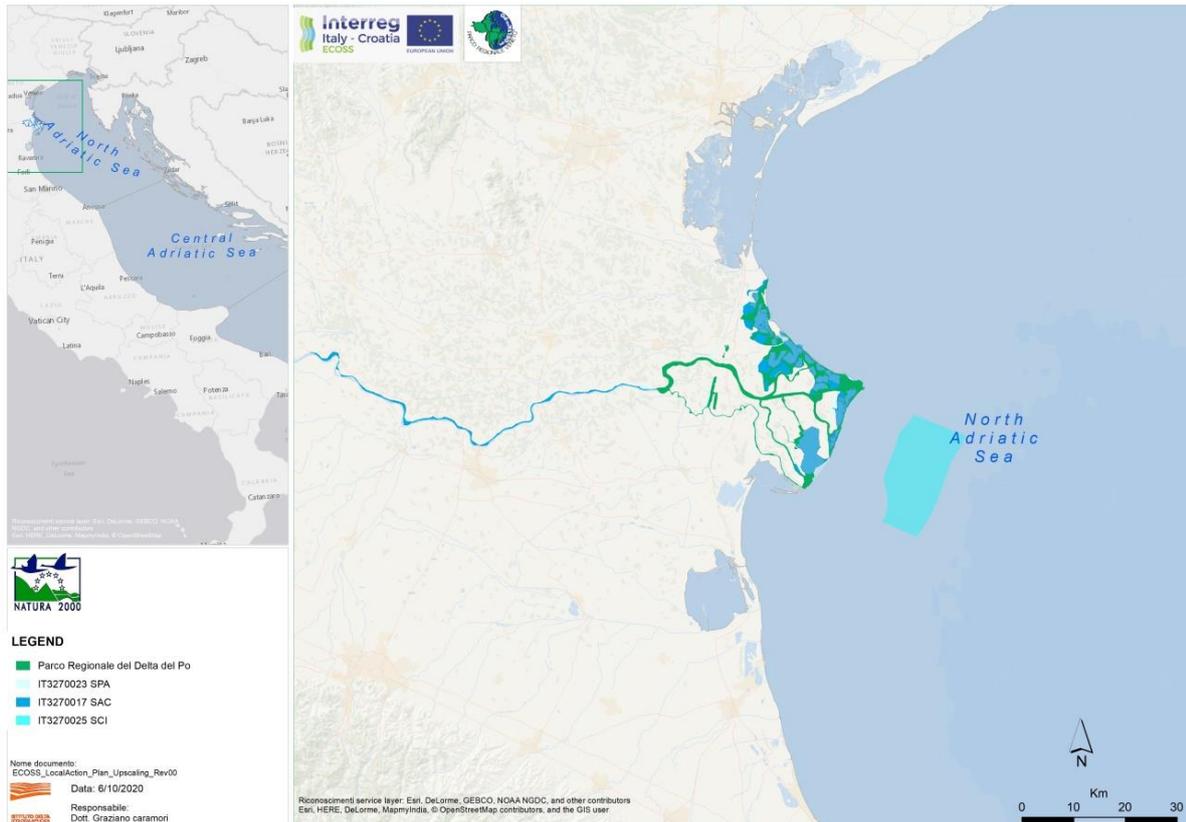


Figure 2: selected sites IT3270017 Delta del Po: tratto terminale e Delta Veneto; IT3270023 Delta del Po; the new marine site IT3270025, proposed on August 2020, is a large site in front of the delta.

Case study upscaling to a species-specific Action Plan: *Acipenser naccarii*

The Po Delta Veneto Regional Park realized an AP for the Adriatic sturgeon in the year 2007 (

Figure 3), which is an appropriate example of upscaling at basin scale. Actually, the conservation of this species cannot be achieved with conservation actions limited to one or more N2K sites, but it needs a management perspective at the scale of the ecological requirements of the species.



Il recupero dello storione cobice in Italia **ACTION PLAN**



Progetto Life 04NAT/IT/000126
"Conservation and Breeding of Italian Cobice Endemic Sturgeon"



 Regione Emilia-Romagna

 Regione Lombardia

 REGIONE DEL VENETO

Figure 3: cover of the AP for Adriatic sturgeon realized in year 2007 and approved by three Regions.

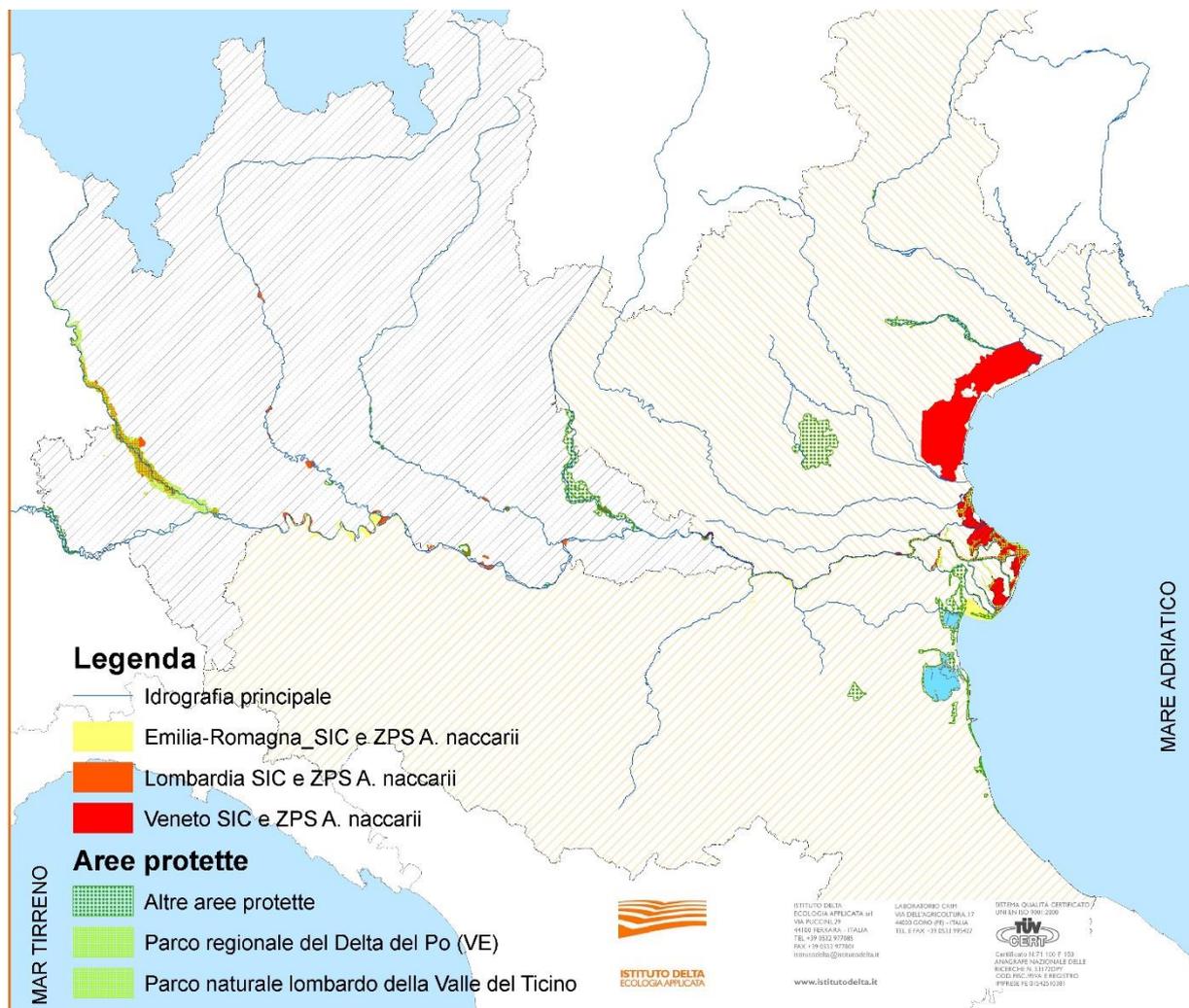


Figure 4: Natura 2000 sites and protected areas, extracted from “Il recupero dello storione cobice in Italia ACTION PLAN ed aree protette nell’areale dei progetti, G. Caramori, et al., 2007”.

The life cycle of the *A. naccarii* can be completed only including upstream freshwater areas in which spawning occurs. The Po Delta Veneto Regional Park territory does not include spawning sites, consequently the AP analysed the N2K sites of the Po river basin in which the species occurs considering the Standard Data Form (Figure 4) in order to have an updated overview of the species.

Any AP for species covering a wide territory might need the formal approval and implementation by different Authorities in order to be as much effective as possible. Therefore three different Regions formally approved the AP: Veneto, Emilia-Romagna and Lombardia. The three Regions basically cover the whole area of this endemic species. The AP approved only by the Po Delta Veneto Regional Park would not have been effective.

The Adriatic sturgeon AP includes a chapter for its revision, but this cannot be performed in this report since the data are scattered among the three Regions. Despite this limit, it is possible to outline three strategic points to take in consideration for the revision:

- 1) Main river barriers
- 2) Key sea areas necessary to the species
- 3) Involvement of professional and recreational fishermen

First of all the revision should include the main scientific advances. In this particular case the recent AMBER project ⁴ provided new insights on one of the main threats to the conservation of this species as well as to other freshwater migratory species: the habitat fragmentation due to river artificial barriers. The AMBER project collected a list of river barriers at EU level categorized in six different types. The river barriers for the Po river basin extracted from

⁴ AMBER Consortium (2020). The AMBER Barrier Atlas. A Pan-European database of artificial instream barriers. Version 1.0. June 29th 2020. <https://amber.international/european-barrier-atlas/>

AMBER Atlas, visible in Figure 5, are categorized in the six different types accordingly AMBER. This Atlas must be a reference point for AP revision and any plans for river migratory species. Anyhow, up to the date of the current deliverable, the AMBER Atlas does not yet include information if the listed barrier has a fish passage or not. For instance, this is the case of one of the main river barrier in the Po river: the Isola Serafini dam. A fish passage was completed on the dam, thanks to the project LIFE CONFLUPO⁵ which ended in year 2018. Therefore the AMBER Atlas cannot be used “as it is” but it must be compared with the most recent knowledge, in order to provide a correct chapter on “Knowledge framework of the characteristics of the area”.

The second relevant point is the area frequented by adults of *A. naccarii* when they migrate back to the sea, since the main key sea areas might need some level of protection, or on the contrary, the areas might be already inside the N2K site. Anyhow, a specific study is necessary to identify these areas in the Adriatic Sea, including coastal areas which are probably used as nursery ground.

The involvement of both professional and recreational fishermen was already proved to be effective during the LIFE Cobice project, in which recreational fishermen provided recording of accidental capture of the species. Some recordings came also from professional fishermen, who provided recording of capture of the species in the sea. Considering the strategic point 2), their involvement is now necessary more than ever. The involvement of professional fishermen should follow the model experienced into the LIFE AGREE⁶ in which local fishermen were not just informed of the project, but they directly participated with an active role to the project

⁵ LIFE 11 NAT/11/188 “Restoring connectivity in Po river basin opening migratory route for *Acipenser naccarii* and 10 fish species in Annex II”

⁶ LIFE13 NAT/IT/000115 - LIFE AGREE, coAstal laGoon long teRm managEmEnt.

<https://lifeagree.eu>



implementation. This kind of involvement proved to be effective and also guarantee the participation in very early phases as well as a possible change into the approach at the species.

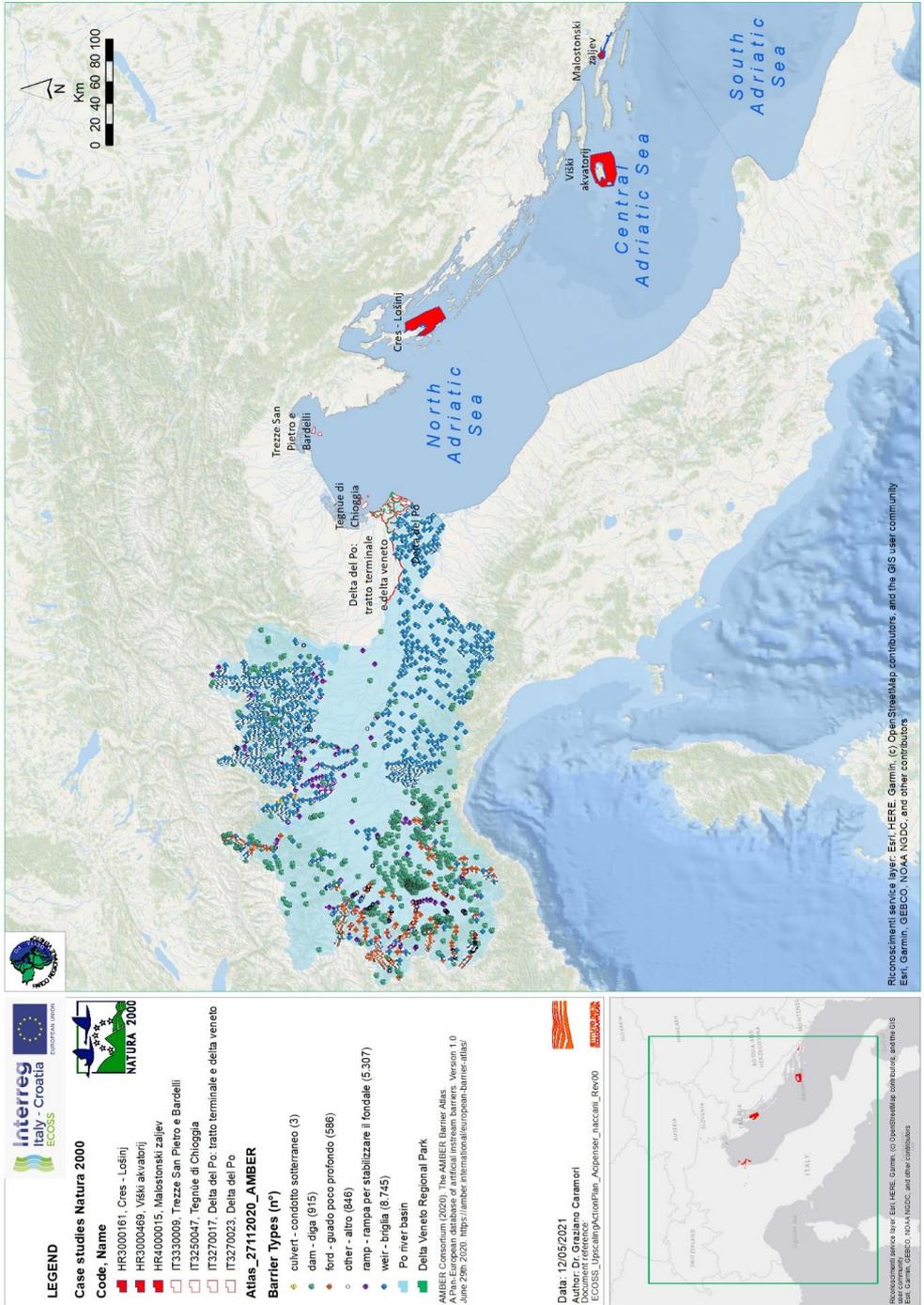


Figure 5: river barriers into the Po river basin, extracted from AMBER Barrier Atlas.

CONCLUSION

The present deliverable analyzed part of the previous deliverable plus further studies and available documents in order to upscale an AP at the basin scale focusing on species.

The deliverable provides a general structure for an AP at species level, in compliance with Art. 6 of HD. Furthermore, considering the N2K sites selected as case studies in the ECOS project, the current deliverable suggests *T. truncatus* as species for a possible AP upscaling at the basin scale and the experience of the *A. naccarii* AP as case study. As a matter of fact the N2K in the Adriatic Sea still needs to be improved. Considering the dimension of the area for the upscaling, one strategic element to take in consideration is the involvement of professional fishermen, who play a crucial role for the conservation objectives and must be involved directly into any active management.

For the direct involvement of fishermen it is suggested the model of LIFE AGREE which proved to be effective. In this project professional fishermen were directly involved since the early phases and participated actively to some of the conservation actions with specific and adequate funding. As a matter of fact conservation is not the isolation or closure of limited areas, but involves a change of the use of different resources of the ecosystems.

REFERENCES

Ciriaco S., Menon S., Franzosini C. (2019) D4.3.1 Review of the knowledge of the ecological processes in the selected Natura 2000 sites. Shoreline Soc Coop. Interreg Italy-Croatia ECOSS. Internal document, pp. 64.

Commission note on establishment conservation measures for Natura 2000 sites. European Commission, Doc. Hab.13-04/05, September 2013 (original version in English).

http://ec.europa.eu/environment/nature/natura2000/management/docs/commission_note/comNote%20conservation%20measures_en.pdf

Caramori G., Barbieri C., Galli A., Lombardi C., Marconato E., Arlati G., Congiu L., Raimondi Evalli S., Corazza S. (2007). Il recupero dello storione cobice in Italia ACTION PLAN. Progetto Life 04NAT/IT/000126 "Conservation and Breeding of Italian Cobice Endemic Sturgeon". Rovigo, dicembre 2007.