



Summary and interpretation of the preliminary findings of the report

Inventory and assessment of the environmental effects of “maintenance” works interfering with the hydro-morphology of rivers, performed on the water courses in the following administrative units (voivodships): Łódzkie, Podkarpackie, Podlaskie, Małopolskie, Mazowieckie, Opolskie, Świętokrzyskie, Warmińsko-Mazurskie, Wielkopolskie, Zachodniopomorskie in the years 2010-2012- developed on the basis of the notices of invitation to tender published on the WZMiUW website (Wojewódzki Zarząd Melioracji i Urządzeń Wodnych/Voivodship Authority of Drainage, Irrigation and Water Infrastructure) and on the basis of the results of the surveys sent to those institutions
updated with data from 2013 year

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INTRODUCTION

The challenges of the current stage of Poland's socio-economic development and the requirements of the EU directives necessitate a new perspective on the water management issues in our country. Poland's membership in the European Union results in both significant aid funds allocated to Poland to boost social and economic development as well as the need for the effective and timely implementation of Community legislation in our country aimed to preserve and improve the natural environment. This approach to harmonize economic

development and environmental requirements stems from the belief that one of the most important indicators of the quality of human life is the quality of the environment that surrounds people. It is coherent with the EU policy¹ and refers also to the absorption of the aid measures granted to Poland. However, in the field of water management 9 years of Poland's membership in the EU has not led to the full integration of the requirements of socio-economic development with the needs of the natural environment. **The current state of water management in our country in terms of achieving its environmental objectives should be considered as very bad, even alarming.** Unfamiliarity with, misunderstanding and lack of acceptance of the EU environmental legislation regarding water management are common and include all major spheres – ranging from national legislation and strategic documents to a daily practice of the hydraulic engineering projects' implementation. The current state of water management in Poland results in the increased adverse effects and risks not only for aquatic and water-dependent ecosystems, but also for the society and the economy.

After Poland's accession to the EU, the inflow of aid funds into our country resulted in a rapid acceleration of river ecosystem degradation, contrary to the EU environmental policy. It brought about the regulating and deepening of thousands of kilometers of rivers, without any convincing rationale, applying outdated technical solutions inconsistent with good practices and often excessively costly. Such projects have often been carried out in violation of national and community environmental law. For 9 years the problem has regularly been signaled by WWF Poland, other environmental organizations and scientific communities. Up to the present moment, the Ministry of the Environment, responsible for water management in Poland, has not made any effort to solve the problem – and the issue of river ecosystem degradation due to hydraulic engineering works has intensified. However, no precise data to assess the scale of this phenomenon is available due to the fact that no central institution in Poland keeps systematic record of all hydraulic engineering works which could negatively affect the environment.

The report *„Inventory and assessment of the environmental effects of “maintenance” works interfering with the hydro-morphology of rivers, performed on the water courses in the following administrative units (voivodships): Łódzkie, Podkarpackie, Podlaskie, Małopolskie, Mazowieckie, Opolskie, Świętokrzyskie, Warmińsko-Mazurskie, Wielkopolskie, Zachodniopomorskie in the years 2010-2012 - developed on the basis of the notices of invitation to tender published on the WZMiUW websites (Wojewódzki Zarząd Melioracji i Urządzeń Wodnych/ Voivodship Authority of Drainage, Irrigation and Water Infrastructure) and on the basis of the results of the surveys sent to those institutions”*, updated with data concerning year 2013², is to illustrate the extent of hydraulic engineering works, so called “maintenance work harmful for river ecosystems, such as mainly river deepening defined as “dredging” – a procedure involving mechanical or manual removal of the silt layer (sediment layer) from the river bottom with a thickness of 10-50 cm and spreading it on the river banks. In practice, the extraction of sediments from the bottom of the river is connected with shaping river banks so that it has a trapezoidal cross-section. It should be emphasized here that the word “mud” (silt) has negative connotations in common Polish language, so “dredging” (in Polish “clearing from mud”) may apparently seem to be an absolutely positive action. As a matter of fact “mud” (or in other words 'bottom sediment') is an integral part of river ecosystem. A number of animal species live there, including the species protected by the

¹ The European Union's environment policy is based on Article 191 of the *Treaty on the Functioning of the European Union (TFEU)*

² The report has been updated by results of the tenders' inventory published on the WZMiUW websites in the period January – July 2013.

Polish and EU law and also the very rare, endangered species, entered into the Polish "Red Book of Animals". Many fish species feed on the invertebrates that live in the bottom sediments. For these reasons, among others, the occurrence of a set of species of the invertebrates living in bottom sediments (the so-called benthic index) is a benchmark of a good ecological status of a river, required by the Water Framework Directive. "Maintenance works" involving the removal of the bottom substrate using a digger/dredger, embankment profiling and depositing the extracted materials on the shore and spreading them evenly, strongly change the hydro-morphology of the river, causing its significant hydromorphological deterioration – by about two to three classes (from a high to poor status or a very bad one)³.

This report is the first attempt undertaken in Poland to estimate the scale of "maintenance works" on the rivers. The report covers only the maintenance works carried out by the Voivodship Authority of Drainage, Irrigation and Water Infrastructure (WZMiUW), subordinated to the offices of the Marshal.

The report was commissioned by WWF Poland Foundation, on the basis of an inventory of hydraulic engineering works carried out by a team of biologists from the University of Warsaw under the guidance of Dr. Ewa Jablonska. The report covers 10 voivodships (administrative units). The selection of voivodships results, among others, from the fact that an access to the information about the work performed in the field of conservation and maintenance of water courses was very different for particular regions. 10 voivodships were selected out of the ones with high data availability following the criterion of representativeness for different regions of the country - with different natural conditions and the state of preservation of natural values.

This summary of the report „*Inventory and assessment of the environmental effects of "maintenance" works interfering with the hydro-morphology of rivers ...*" presents the results of a latest version of this report updated with data concerning year 2013⁴ and the interpretation of these results in the context of problems identification during the implementation of EU legislation in Poland, directly or indirectly related to water management (Water Framework Directive, the Nitrates Directive, Habitats Directive, Birds Directives, EIA Directive). The summary of this report also presents the proposals for the remedies and solutions of the major identified problems.

RESULTS OF THE REPORT AND THEIR INTERPRETATION

The data regarding ten voivodships indicate that in these voivodships **maintenance works involving deepening (dredging) of the rivers and other water courses over a stretch of at least 9919 km were carried out (as ordered by Wojewódzki Zarząd Melioracji i Urządzeń Wodnych/Voivodship Authority of Drainage, Irrigation and Water Infrastructure)** (Table 1). Extrapolating the data from these ten voivodships for the remaining six voivodships which were not analyzed, **it can be estimated that in Poland in the years 2010 - 2013 about 15 000 km of small rivers were deepened (dredged)**. For comparison: the length of the Vistula River, the largest river in Poland and in the basin of the Baltic Sea, is 1 047 km.

³ Hydromorphological status measured by the RHS (River Habitat Survey): data obtained from the report "Evaluation of the impact of the hydraulic works on hydromorphological conditions of the selected rivers in the basin of the Supraśl river ", K. Bakun, M. Grygoruk, 2013

⁴ Version of 6th September, 2013

It is necessary to stress out that the number of kilometers of rivers destined for dredging in 2013 is more than 50% higher than average from years 2010 – 2012.

The above assessment concerning the scale of the “maintenance works” in years 2010 - 2012 does not include the maintenance works carried out at this time at the request of the Regional Water Management Authorities⁵ that administer the main and small rivers and streams in the mountain and foothill areas in southern Poland⁶.

The results of this report indicate that Poland, being a member state of the European Union for almost nine years:

- has not correctly transposed the Water Framework Directive (WFD), as in fact the effectiveness of the Directive has not been ensured as well as the pursuit of the environmental objectives⁷ in a daily practice of “water management”
- has failed to comply with the obligation under the provisions of the Water Framework Directive to review the impact of human activities on water status;
- has not restricted but on the contrary - increased the risk of eutrophication of waters by the nitrates released from desiccated peat soils as a consequence of farming as well as dredging of rivers and ditches executed on behalf of farming, which imperils the attainment of the Nitrates Directive objectives;
- has implemented on a large-scale hydraulic engineering projects - destructive to fluvial ecosystems – with no convincing economic or substantive justification, and in many cases violating the obligation of prior adequate assessment of the environmental impact resulting from the EIA Directive or the Habitats Directive;
- has implemented on a large scale the activities that could adversely affect the conservation status of the national population of some species included in Annexes IV and V of the Habitats Directive (thick shelled river mussel⁸, green snaketail⁹, large copper, scarce and dusky large blue¹⁰, marsh frog, common frog¹¹, European brook lamprey¹²), and also led to the situation when the habitats of certain species of birds are not maintained in accordance with the ecological needs of birds, both in the territory of the Natura 2000 site and beyond¹³;

⁵ RZGW (Regional Water Management Authorities) are subordinated to National Water Management Authority and the Ministry of the Environment. One of the undersecretaries (Stanisław Gawłowski) is in charge of water management in the Ministry of the Environment.

⁶ Non-taking into account the maintenance works carried out by RZGW (the Regional Water management Authorities) in this report (due to inability to carry out such broad research) indicates that in the period the report refers to, the total number of kilometers of rivers subjected to various forms of hydromorphological interference is much higher than the number of 9 000 linear kilometers of rivers according to the report and is likely to exceed 10 000 km.

⁷ Environmental objectives of WFD – to achieve by 2015 a good status of waters also including good ecological status of waters.

⁸ *Unio crassus* – Annex IV of Habitats Directive

⁹ *Ophiogomphus cecilia*, species from the Annex IV of Habitats Directive IV, reproduction and larval development in river demersal zones; the problem may refer also to other dragonflies from Annex IV – *Aeschna viridis*, *Leucorrhinia pectoralis*, *Leucorrhinia caudalis*, *Leucorrhinia albifrons*

¹⁰ *Lycaena dispar*, *Maculinea telejus*, *Maculinea nausithous* – river dredging directly affects breeding habitats by altering water conditions and desiccation which may lead to the loss of host plants.

¹¹ *Rana ridibunda*, *Rana temporaria* – species from Annex IV of Habitats Directive, wintering in the mud on the bottom of water courses

¹² *Lampetra fluviatilis* – species from Annex V of the Directive, larvae develop in silts/muds.

¹³ The requirement of Art. 3(2b) of the Birds Directive

- has expended significant public funds, including funds from the EU budget, in an improvident way contrary to the environmental policy of the European Union.

WWF Poland, Klub Przyrodników (the Naturalists' Club), Towarzystwo Na Rzecz Ziemi (the Society for Earth), OTOP (the Polish Society for the Protection of Birds) and other NGOs repeatedly drew attention of the Ministry of the Environment towards the issue of the environmental objectives of the Water Framework Directive (WFD) and Habitats and Birds Directives, the achievement of which is threatened in Poland due to water management activities including the ones implemented within the framework of the so-called. "inland waters maintenance". It should be stressed that **the so-called "maintenance works", practically devoid of institutional and public control in terms of their environmental effects, are in the opinion of WWF Poland a systemic violation of the WFD and the EIA Directives, resulting from the incorrect transposition of these Directives into the Polish law and their improper implementation.**

Some of the hydraulic engineering works carried out under the name of "maintenance works" (e.g. river dredging) fall in fact within the scope of 'sewerage and flood defense works' listed in Annex II of the EIA Directive, while the Polish approach is that they are customarily carried out without any environmental impact assessment (the violation of Art. 2.1 and Art. 4.2 of the EIA Directive). Other works, even those not subject to the obligations arising from the EIA Directive, may nevertheless have significant negative effects on the Natura 2000 sites protecting water-dependent habitats and species and yet, in spite of that a proper assessment of their impact on the Natura 2000 site is not guaranteed (the violation of Article 6.3 of the Habitats Directive). Finally, other "maintenance works" may affect the habitats and populations of species protected by Art. 12 of the Habitats Directive, thus directly or indirectly destroying or damaging their breeding places - despite a formal obligation to obtain relevant permits. In practice generally the majority of such cases is not even noticed by the institutions responsible for assessing the impact of the undertakings on the environment (the violation of Art. 12 of the Habitats Directive). River dredging by draining the land and removing wetlands from agricultural lands makes the habitats of the birds associated with wetlands not maintained in accordance with the ecological needs both in the territory of the Natura 2000 sites and outside (the violation of Art. 3.2b of the Birds Directive). "Maintenance works" can, in the result, have a significant impact on the populations of species referred to in Annex V of the Habitats Directive. Such an impact - which due to the scale of works may have a mass effect - is not subject to any supervision (the violation of Art. 11 of the Habitats Directive).

"Maintenance works" involving the river dredging, due to their scale, upward trend and negative environmental effects, pose a threat to the achievement of the environmental objectives of the Water Framework Directive in Poland. There are serious premises to conclude that continuation of the "maintenance works" on Polish rivers in present manner will cause not reaching of the environmental goal of the Water Framework Directive, what will result with violating Art. 4 (1) of this directive. River dredging has a serious negative impact on the hydro-morphology and numerous aquatic organisms, which may result in a reduction of ecological water status parameters in case of the rivers covered by these works (especially the parameters measured by benthic, fish and macrophyte indices). In many rivers - including those recognized as natural water bodies – dredging preserves their highly transformed (in the past) morphology, undermining the seedbeds for natural processes or river re-naturalization, and thus keeps the river as a simplified ecosystem, depleted in terms of the habitats for fish and other organisms associated with the river and far from good ecological status. In case of

the rivers with a natural hydromorphology and the ones that used to be regulated (30 - 40 years ago), “maintenance works” involving the removal of the bottom substrate by using a digger/dredger, profiling the embankment and depositing the extracted materials on the shore and spreading them evenly, strongly change the hydro-morphology of the river causing its significant hydromorphological deterioration - by about two to three classes (from good to poor status or a very bad one).

In 10 administrative units (voivodships) referred to in this report, dredging works - identified on the map of hydrographic division of Poland on the basis of WZMiUW documentation (Wojewódzki Zarząd Melioracji i Urządzeń Wodnych/Voivodship Authority of Drainage, Irrigation Reclamation and Water Infrastructure) (62% km of dredged water courses, see Table 1) - were carried out on 1042 rivers and other water courses, among which 718 are considered natural rivers, slightly transformed by human intervention (classified as so called natural surface water bodies¹⁴). Sections of the rivers and other 'dredged' water courses with the type of water bodies (natural, heavily modified, artificial) are shown in Figure 1.

This report shows that **in most cases dredging was carried out on natural rivers and therefore, the ones with the highest environmental and economic values and at the same time vulnerable to disturbances caused by hydraulic engineering works - 69% of linear kilometers of the dredged rivers are natural rivers.** High environmental values of natural rivers translate into their high economic values as seen from the perspective of fisheries management. However, it should be emphasized here that the **interest of such an important sector of the economy as the inland fisheries (including angling) is in fact completely ignored during the decision-making process with regard to the implementation of - harmful to fish fauna – hydraulic engineering works**, such as, river regulating, blocking rivers with water impoundment structures, maintenance work (including dredging, cutting down trees and shrubs that grow along the river), etc.

Table 1.

The total length of water courses covered by dredging in the years of 2010-2013 in 10 analyzed regions, broken down into water courses identified on the map, and those not identified on the map.

	Total length of water courses identified on the map [km]	Total length of water courses not identified on the map [km]	Total
WZMiUW in Łódź	326	ok. 64	390
PZMiUW in Rzeszów	490	ok. 106	596
MZMiUW in Kraków	16	ok. 253	269
ŚZMiUW in Kielce	86	ok. 20	106
ZMiUW in Olsztyn	583	ok. 264	847
ZMiUW in Szczecin	1105	ok. 1047	2152
WZMiUW in Opole	491	ok. 632	1123
WZMiUW in Poznań	657	ok. 462	1119

¹⁴ Terminology used in the classification of rivers for the needs of the Water Framework Directive implementation.

WZWiUW in Warsaw	1373	ok. 646	2019
WZMiUW in Białystok	1043	ok. 255	1298
TOTAL	6170	ok. 3749	9919

The length of a river section dredged once (in one year) was, on average, 2 km. However, in **62 cases the length of a river section dredged once was more than 10 km (max. 18.3 km)**. Due to the fact that Voivodship Authorities id Drainage, Irrigation and Water Infrastructure manage mainly small rivers in the agricultural landscape, such long sections of dredged rivers account for a significant part of their total length. Out of the water courses identified on the official map of Poland's river systems¹⁵, **in the case of 41 rivers more than 50% of the total length of the river** or its part – representing the so called Natural Surface Water Body (SWB) – **was dredged. In the case of further 66 rivers more than 25% of the total length of the river** or its part - representing SWB - **was dredged**. That means a very serious interference in the state of hydromorphology and of the whole ecosystem of such rivers, which is likely to lead to a very serious and permanent/ very long lasting deterioration of the parameters of ecological water status resulting in a drop of water status class of the whole SWBs.

The strongest interferences in individual SWB were made in Podlaskie, Zachodniopomorskie and Łódzkie voivodships (Fig. 2). It should be emphasized here that the downgrading of a small river hydromorphology by “maintenance works” can have very serious negative effects on the environment also with regard to the areas located at a considerable distance from that river, even hundreds kilometers away. Small rivers and streams (the so-called higher-order tributaries) are in many cases historical spawning grounds of migratory fish (salmon, sea trout, vimba bream) where spawning of the species can be restored after the removal of barriers hindering their current spawning migrations. Thus, the destruction of the potential spawning environments by river dredging can have negative environmental effects ranging, in extreme cases, "from the mountains to the sea." To sum up, **due to the mass implementation and upward trend of the so-called "maintenance works" (about 15 000 linear km only in the last four years, what makes ca. 23% km of rivers managed by WZMiUW) and their strong negative, lasting impact on the water status parameters, the environmental objectives of the Water Framework Directive in Poland in the required time, that is, by 2015, are seriously threatened.**

River dredging, directly or indirectly, adversely affects the habitats and species protected under the Habitats and Birds Directives, which - due to the scale of works - poses a threat to the achievement of the objectives of these Directives in Poland. The data regarding the ten voivodships indicate that in these voivodships, - **410 km of the watercourses that underwent maintenance works involving dredging are located in the Special Areas of Conservation and 866 km in the Special Protection Areas** (out of all the water courses that underwent dredging identified on the official map of Poland's river systems). **The vast majority of the works were carried out without any adequate assessment of their impact on the Natura 2000 site – according to our records the decisions issued by RDOŚ (Regionalna Dyrekcja Ochrony Środowiska/Regional Directorate for Environmental Protection) were obtained only for the section of 39 km of the dredged rivers.** The occurrence of the dredged rivers against the Natura 2000 sites is shown in Figure 3.

¹⁵ In Polish “Mapa podziału hydrograficznego Polski”

Dredging carried out on the rivers in order to remove the waterlogging and inundations in rural areas, remove the habitats of wetland birds. Thus, there is an infringement of the duty under Art. 3.2b of the Birds Directive, which demands the maintenance of birds habitats in accordance with the environmental requirements, including the areas outside the Natura 2000 site.

A substantial part of the dredged water courses, identified on the map, flows through wetland areas: in years 2010 – 2012 in the 10 voivodships it was 2371 km of the river courses (42% of all dredged kilometers of the rivers). The changes in water table associated with the deepening and straightening of the river may contribute to the degradation of wetland habitats. **Desiccation of wetland habitats caused by river dredging also results in organic soil degradation and an increased inflow of the nitrates into inland waters, which threatens the implementation of the objectives of the Nitrates Directive in Poland.**

Numerous negative environmental effects of river dredging performed mainly by the Voivodship Authorities of Drainage, Irrigation and Water Infrastructure as the activities "for the purposes of agriculture", mean that these works are a kind of human activity with a particularly strong impact on water status. Despite this fact, the institutions responsible for water management and the implementation of Community legislation in Poland concerning the protection of waters, habitats and species have not carried out any, even pilot research that would allow accurate assessment of the effects of the maintenance and river regulation works – that have already been done and planned - for water status parameters. Nor has there been any studies on the economic aspects of river dredging, even as basic as a comparison of the costs incurred for dredging with the profits for intensive agriculture, which is the sole beneficiary of the river dredging.

As a matter of fact in Poland, no regional or central register of hydraulic engineering works on inland waters (river regulating and maintenance) is systematically carried out - there is no database with easy and precise information regarding the scope of such activities, their location, time of performance, cost, expected economic benefits, environmental effects, etc.

Therefore, **it is not possible to even approximately evaluate the environmental impact of potentially destructive hydraulic engineering works, such as the removal of silt and debris from inland waters, to aquatic ecosystems with regard to river basins and smaller hydrographical sections.** In fact, this report is the first attempt in Poland to assess the extent of “maintenance works” (mainly river deepening – dredging) carried out on the rivers. This means that **Poland does not comply with the requirements contained in the provisions of the Water Framework Directive to review the impact of human activity on water status.**

This infringement is particularly significant given the fact that in Poland there is no system of water monitoring that meets the requirements of the Water Framework Directive. The report makes it clear that "maintenance works" represent an important anthropogenic factor affecting the hydro-morphology of surface waters, especially counteracting the process of making the hydromorphology closer to natural one. Therefore, they fall under the understanding of *'The estimates and identification of other important anthropogenic impacts on surface water status'* and *'Identification of significant morphological alterations to water bodies'*, which according to Annex II of the Water Framework Directive (1.4 and 1.5) and Art. 5 (1) of the Directive, leads to the obligation to monitor and evaluate their effects.

Thus, in the absence of monitoring, it is not possible to control the impact of “maintenance works” on water status. This leads to the above mentioned infringement of the requirement under Article 11 (3)(i) of the Water Framework Directive – the adoption of the measures aiming to achieve environmental objectives - containing, according to the provisions of the

Directive, mandatory measures *“for any other significant adverse impacts on the status of water identified under Article 5 and Annex II, in particular measures to ensure that the hydromorphological conditions of the bodies of water are consistent with the achievement of the required ecological status or good ecological potential for bodies of water designated as artificial or heavily modified. Controls for this purpose may take the form of a requirement for prior authorisation or registration based on general binding rules where such a requirement is not otherwise provided for under Community legislation”*.

It is to be stressed that the **cumulative effect of river deepening (dredging) in agricultural landscape to accelerate the outflow of water from agricultural catchments to major rivers may result in an increased flood risk for municipal and industrial infrastructures that are located along major rivers**. Despite this fact, river dredging is often carried out as an activity designed to prevent flooding, and even the removal of sediments from the bottom of a river with natural hydro-morphology is sometimes referred to as "the removal of flood damage" (sic).

There is no publicly available data to accurately assess the cost of river dredging in Poland for the period 2010-13. The costs can be estimated at approximately PLN 105-225 million (26 - 56 million EURO). According to WWF, the financial resources were spent wastefully, in a manner inconsistent with the environmental policy of the European Union and Poland’s raison d’état. It should be underlined that some of the funds spent on the river dredging came from the EU budget through the Programme for the Development of Rural Areas, Regional Operational Programmes, Solidarity Fund.

The estimated costs of dredging are based on the data from the Podlaskie voivodship, where the value of the dredging of 1 km of the river was set at PLN 7 - 15 thousand. It is to be stressed that dredging is one of the cheapest hydraulic engineering works. However, the cost of 1 linear meter of hydraulic structure used in river regulating ranges between PLN 0.2 and 7 thousand, which when calculated per 1 linear kilometer of hydraulic structure ranges between PLN 200 thousand and 7 million. This means that the total cost of river regulation carried out in Poland in four years, covered by this report, may be higher than the costs of maintenance works by an order of magnitude. With this in mind, after Poland’s accession to the EU the total cost of all hydraulic engineering works - adversely affecting the ecosystems of the rivers and their valleys - involving training and "maintaining" of the rivers in Poland, can be very roughly estimated at more than PLN 1 billion¹⁶.

WWF Poland, Klub Przyrodników (the Naturalists’ Club), Towarzystwo Na Rzecz Ziemi (the Society for Earth), OTOP (the Polish Society for the Protection of Birds) and other NGOs repeatedly drew attention of the Ministry of the Environment towards the incomplete transposition of the Water Framework Directive into the Polish law¹⁷ (also incompatible with the basic spirit of the Directive). One of the consequences of this situation is the implementation - on a large scale - of hydraulic engineering works and investments that pose a threat to the environmental objectives of the WFD. One of the specific problems pointed out by those organizations is mishandling of the maintenance works - including river deepening

¹⁶ Similarly, it is very difficult to obtain information on the funds spent at the same time in Poland on the activities aimed to improve the ecological status of waters, e.g. the funds for the restoration of rivers and wetlands. However, it seems highly likely that these resources are lower than the ones spent on the hydraulic works deteriorating water status by at least one order of magnitude.

¹⁷ In January and February of the current year, the European Commission brought two cases against Poland to the European Court of Justice: with regard to an invalid transfer of the provisions of the Water Framework Directive into national law and with regard to water pollution by nitrates.

(dredging) - in the Water Law Act. It should be stressed here that the **Project 2013-09-17** developed by the Ministry of the Environment **including the amendment to the Water Law Act, Nature Conservation Act, Act on providing information on the environment and environmental protection, public participation in environmental protection and on environmental impact assessment will not solve the problem with maintenance works - despite some positive developments, that might prove superficial. The Project will lead to an increased pressure of the disruptive maintenance works on the environment and inland water ecosystems and at the same time will weaken institutional and social control over the planning and execution of maintenance works¹⁸.**

¹⁸ Statement of Klub Przyrodników (the Naturalists' Club) and WWF Poland on amendments of law concerning the maintenance works is presented in details in a separate document, On request of Poland's Ministry of Environment WWF PL in cooperation with the Naturalists' Club, prepared a proposal of improving the amendments of law concerning the maintenance works. However, the proposed changes were not reflected in the consecutive version of the law's amendments, that is the Project 2013-09-17.

PROPOSED SOLUTIONS OF THE KEY PROBLEMS CONCERNING PLANNING AND IMPLEMENTATION OF MAINTENANCE AND TRAINING WORKS HARMFUL FOR FLUVIAL ECOSYSTEMS

Final removal of irregularities in the planning and execution of hydraulic engineering works carried out on the rivers and their valleys can ensure thorough implementation of ecological water management reform in Poland outlined in *"National Water Policy Project (including 2015 stage)"* developed at the request of the National Water Management Authority in 2008. Unfortunately, the work on the implementation of water management reform has been suspended.

Intervention operations regarding maintenance and regulating of the rivers – called for in this document - should be introduced and developed under “the urgency procedure” as remedial measures of a temporary nature. The operations should primarily focus on halting further degradation of the rivers and on the full assessment of environmental effects of the hydraulic engineering works already performed and planned in the country:

1. Halting the implementation of all the projects planned in 2013 in the field of hydraulic engineering (maintenance, river regulating and others), pending verification in terms of:
 - a. justification of the project objective;;
 - b. selection of the methods to achieve the objective (including alternative, nature-friendly ways of achieving the objective);
 - c. economic viability of the project;
 - d. environmental impact of the projects, including their impact on the objectives of the Water Framework Directive (impact on good water status);
 - e. cumulative environmental impact of all the hydraulic-engineering works designated for 2013 and 2014, on the background of cumulative environmental impact of the hydraulic-engineering works completed after Poland’s EU accession, that is in years 2004 – 2013.
2. Effectively introducing - under the urgency procedure - an obligation to carry out an environmental impact assessment and verification (with assured public participation) of the conditions of Art. 4.7 of the Water Framework Directive in case of all hydraulic engineering investments (including those related to flood defense) and maintenance works affecting the hydro-morphology of the river¹⁹;
3. Preparing (in cooperation with environmental NGOs) and implementing - under the urgency procedure - the environmental and economic funding criteria (from EU and national funds) for the projects related to the maintenance and training of the rivers;
4. Training of the staff of the institutions related to financing water management (including The National Fund for Environmental Protection and Water Management (NFOŚiGW), the Voivodship Funds for Environmental Protection and Water

¹⁹ The detailed rules for the analysis of the conditions referred to in Art. 4.7 of the Water Framework Directive are contained in an expertise developed for the National Water Management Authority (KZGW) available at : <http://www.kzgw.gov.pl/pl/Wiadomosci/6b198554aefdd37bf030af5f4d6e229c.html>

Management (WFOŚiGWs)) with regard to the environmental aspects of water management and environmentally friendly methods for implementing hydraulic engineering projects in the context of the implementation of the Water Framework Directive (WFD), the Habitats Directive, the Birds Directive and the EIA Directive;

5. Training of the staff of the institutions directly and indirectly related to water management (the National Water Management Authority (KZGW), The Regional Water Management Authorities (RZGW), The Voivodship Authorities of Drainage, Irrigation and Water Infrastructure (WZMiUW), The General Directorate for Environmental Protection (GDOŚ), The Regional Directorate for Environmental Protection (RDOŚ)) with regard to the environmental aspects of water management and environmentally friendly methods for implementing hydraulic engineering projects in the context of the implementation of the Water Framework Directive (WFD), the Habitats Directive, the Birds Directive and the EIA Directive;
6. Developing voivodship plans for maintenance works on the rivers (or alternatively – the plans in the system of river basins/water regions) carried out by the Voivodship Authorities of Drainage, Irrigation and Water Infrastructure and the Regional Water Management Authorities and submitting those plans for mandatory strategic assessment in terms of environmental effects; such plans should be prepared for the Podlaskie, Zachodniopomorskie and Łódzkie voivodships - where the works involving deepening/dredging of the rivers are carried out on the largest scale - under the urgency procedure (high priority);
7. Designating "*Rivers (and streams) of Particular Importance to Migratory Fish*", constituting the most significant migration corridors and spawning grounds as well as the site of maturation for juvenile fish; the rivers would be given priority in terms of clearing the blockages on fish migration routes, the construction of new impoundment structures on such rivers would be banned and the sections of rivers and streams of particular importance to fish breeding would be protected from adverse hydro-morphological changes. The rivers should have a legal status of the "area intended for the protection of water species of economic importance" within the meaning of Art. 6 and the Annex IV of Water Framework Directive, which would also integrate the national forms of the protection of nature and fish fauna resources (Natura 2000 sites, fish habitat protection area, etc.)²⁰;
8. Developing (in cooperation with environmental NGOs) and introducing a transparent and publicly accessible system of full inventory of all hydraulic engineering projects after Poland's accession to the European Union - both planned for implementation as well as already completed - including the maintenance and regulating of rivers;
9. Developing, under the urgency procedure, the comments to the Water Law Act, as it currently stands, subordinated to the principle of Community conforming interpretation of national law. This would involve an appropriate interpretation of the national provisions which may be in conflict with the achievement of the objectives of the Water Framework Directive (legislation transposing EU law incorrectly or

²⁰ In a document "Draft of National Strategy for Water Management in 2030 (including 2015 stage)" commissioned by The National Water Management Authority and subject to public consultations, establishing the "*Rivers (and streams) of Particular Importance to Migratory Fish*" was recognized as one of the priority actions in the transitional phase of water management. However, it was later removed by the National Water Management Authority on the ground that "in Poland there is no aquatic species of economic importance" (sic)

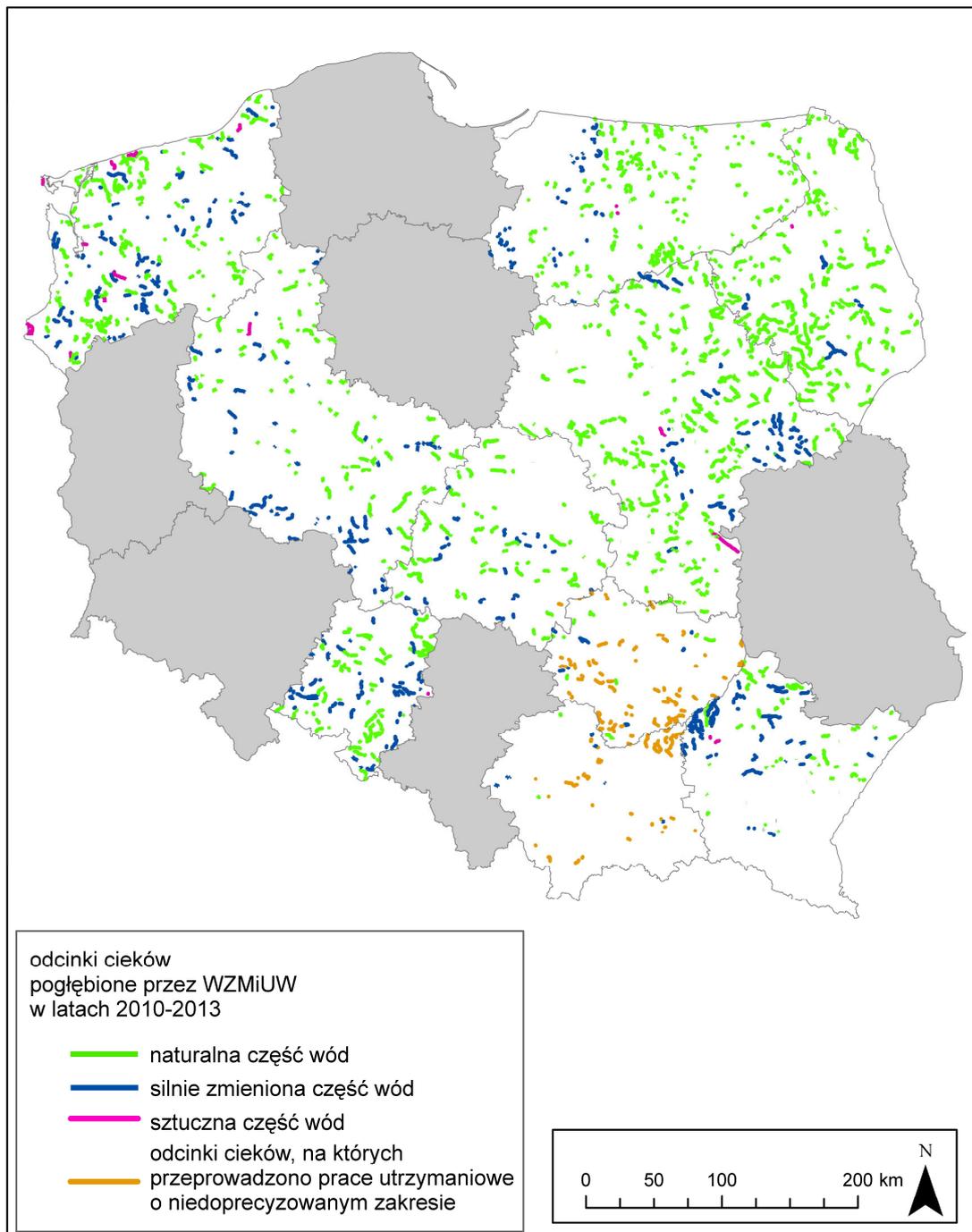
misinterpreted, especially the provisions relating to maintenance works and river training);

10. Amending the Water Law - removing a legal loophole involving the imprecise definition of maintenance works and developing a catalog of maintenance works, with the participation of specialists in hydromorphology, hydrobiology and protection of species, aquatic and water-dependent habitats;
11. Including maintenance works to a group of *projects that may potentially have a significant effect on the environment* (subject to the obligation to carry out the screening procedure);
12. Introducing a ban on river regulation which involves shaping the riverbed section into a trapezoid cross section outside built-up areas and developing guidelines for the designers of environmentally friendly methods for implementing hydraulic engineering projects;
13. Developing (in cooperation with environmental NGOs) and disseminating a guidance on environmental impact assessments with regard to hydraulic engineering projects (including also an assessment of the impact of the projects on the parameters of the ecological status of water bodies within the meaning of the WFD);
14. Amending (with public partnership) and disseminating "good practice guides on mountain and lowland river maintenance and regulating" and the guidelines for planning and implementation of hydraulic engineering projects;
15. Authorizing/appointing an independent institution (independent of Marshal Offices and the Voivodship Authorities of Drainage, Irrigation and Water Infrastructure), to control the validity of the current and planned expenditure of the funds that are at the disposal of the Programme for the Development of Rural Areas and the Regional Operational Programmes as well as national funds, allocated to the management of water resources for agriculture, rural landscape and flood defense. The personnel of such institution (alternatively, the possibility of appointing external experts) should in particular ensure a reliable assessment of the impact of the planned hydraulic engineering project on hydro-morphological and all biological aspects of good water status within the meaning of the Water Framework Directive and on the areas of special natural values;
16. Developing (with the participation of NGO partners and international experts) and implementing (to increase water management innovation²¹) a long-term interdisciplinary research program of the environmental effects related to river training and maintenance works with the use of a representative sample of the projects already implemented and just planned as well as developing the methods to minimize the negative environmental effects of river maintenance and training;
17. Assessing comprehensively the environmental impact of maintenance works and river regulating after Poland's accession to the EU, including their impact on the achievement of the environmental objectives of the Water Framework Directive by 2015;
18. Removing current restrictions regarding public participation in the process of issuing administrative decisions on hydraulic engineering projects.

²¹ The companies implementing the projects (design and construction) of river regulating and maintenance should participate in the funding of this research program.

Meeting first six demands - under the urgency procedure – plays the key role in halting the degradation of river ecosystems by maintenance works and trainings.

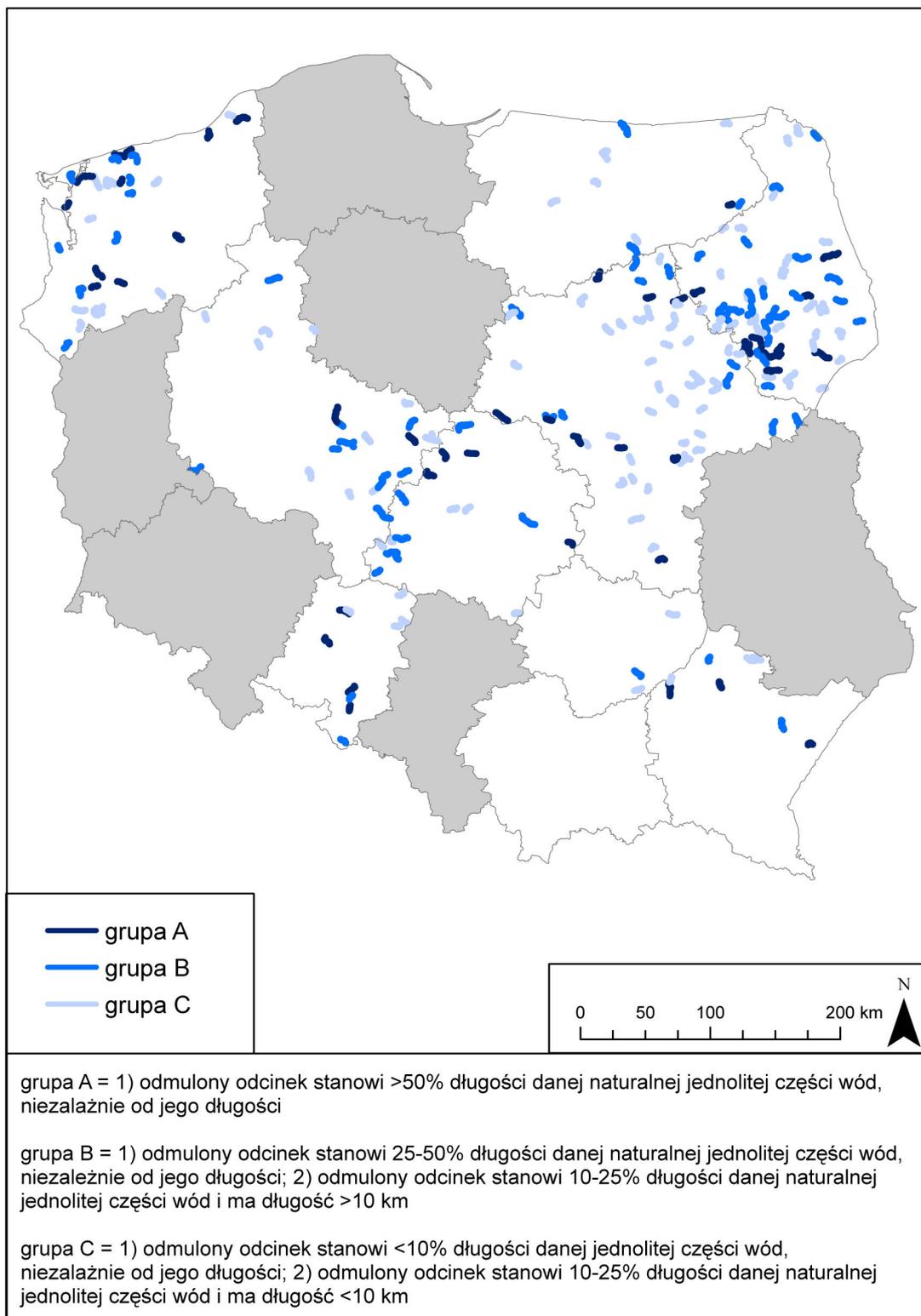
Illustrations



sections of water courses dredged by the Voivodship Authorities of Drainage, Irrigation and Water Infrastructure in the years 2010 – 2013

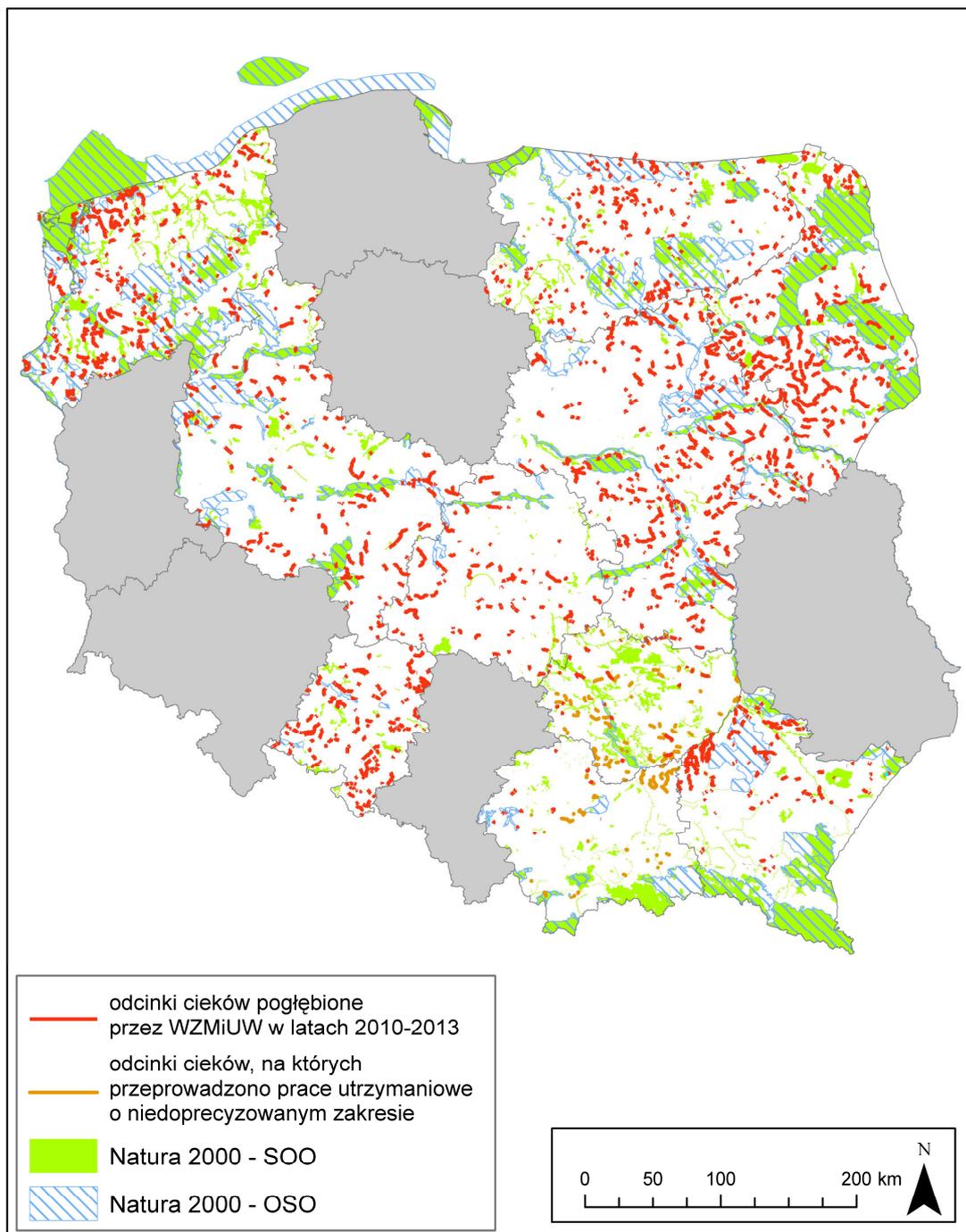
- natural body of water
- heavily modified body of water
- artificial body of water
- sections of water courses on which the maintenance works were carried out with an unspecified range

Figure 1. Maintenance works involving dredging, carried out in Poland by the Voivodship Authorities of Drainage, Irrigation and Water Infrastructure in the years 2010 - 2013, including a type of water body (natural, heavily modified, artificial). Grey color - the regions not covered by the analysis.



- group A** = 1) dredged section represents >50% of the length of a natural water body regardless of its length
group B = 1) dredged section represents 25-50% of the length of a natural water body regardless of its length
 2) dredged section represents 10-25% of the length of a natural water body and is >10 km
group C = 1) dredged section represents < 10% of the length of a natural water body regardless of its length
 2) dredged section represents 10-25% of the length of a natural water body and is < 10 km

Figure 2. Surface water bodies substantially changed by dredging as part of maintenance works carried out in Poland by the Voivodship Authorities of Drainage, Irrigation and Water Infrastructure in the years 2010-2013. There were considered only those rivers where the dredged section of a given river was minimum 5 km long. Grey color - the regions not covered by the analysis.



- sections of water courses dredged by the Voivodship Authorities of Drainage, Irrigation and Water Infrastructure in the years 2010 – 2013
- sections of water courses on which the maintenance works were carried out with an unspecified range
- Natura 2000 – SOO Special Area of Conservation (Habitats Directive)
- ▨ Natura 2000 – OSO Special Protection Areas (Birds Directive)

Figure 3. Maintenance works involving dredging carried out in Poland by the Voivodship Authorities of Drainage, Irrigation and Water Infrastructure in the years 2010-2013. Grey color - the regions not covered by the analysis.

Annex

Photographs of examples of the „maintenance works” carried out in Poland by the Voivodship Authorities of Drainage, Irrigation and Water Infrastructure in the years 2010-2012

1. Jagodzianka River (Kanał Bilińskiego), mazowieckie voivodship, Natura 2000 sites SAC and SPA *Bagno Całowanie*



Weatherfish *Misgurnus fossilis* found on the river bank, in the sediments removed from the river during the “maintenance works”.

2. Mleczna River, mazowieckie voivodship, close to a border of Natura 2000 site SPA *Ostoja Kozienicka*



Mleczna River before the „maintenance works”



Mleczna River after the „maintenance works” were carried out

3. Złodziejka River podkarpackie voivodship, Natura 2000 sites: SAC *Uroczyńska Lasów Janowskich* and SPA *Lasy Janowskie* after the „maintenance works” were carried out



4. Pleśnianka River, małopolskie voivodship after the „maintenance works” were carried out



5. Pluskawka River (Przeżunia), małopolskie voivodship



Pluskawka River before the „maintenance works”



Pluskawka River after the „maintenance works” were carried out



Pluskawka River after the „maintenance works” were carried out



Pluskawka River after the „maintenance works” were carried out

6. Stradomka River, małopolskie voivodship, close to a border of Natura 2000 site SPA *Ostoje Nietoperzy Beskidu Wyspowego*



Stradomka River before the „maintenance works”



Stradomka River before the „maintenance works”



Stradomka River during the „maintenance works”



Stradomka River during the „maintenance works”

7. Tarnawka River, małopolskie voivodship, Natura 2000 site SAC *Tarnawka*



Tarnawka River before the „maintenance works”



Tarnawka River before the „maintenance works”



Tarnawka River after the „maintenance works” were carried out



Tarnawka River after the „maintenance works” were carried out



Tarnawka River after the „maintenance works” were carried out



Tarnawka River after the „maintenance works” were carried out

8. Wilga River, małopolskie voivodship



Wilga River after the „maintenance works” were carried out



Wilga River after the „maintenance works” were carried out



Wilga River after the „maintenance works” were carried out



Wilga River after the „maintenance works” were carried out

12. Supraśl River, podlaskie voivodship, Natura 2000 site SPA *Puszcza Knyszyńska*



Supraśl River during the „maintenance works” labeled as *flood damages’ removal*



Supraśl River during the „maintenance works” labeled as *flood damages’ removal*



Supraśl River during the „maintenance works” labeled as *flood damages’ removal*



Supraśl River during the „maintenance works” labeled as *flood damages’ removal*



Supraśl River during the „maintenance works” labeled as *flood damages’ removal*