

# UNRECOGNIZED CONFLICTS AMONG FORESTRY, AGRICULTURE AND THE ECOLOGICAL NETWORK: EASEMENT OF FORESTS AND FOREST LAND FOR THE RAISING OF PERENNIAL CROPS - CASE STUDY DUBROVNIK-NERETVA COUNTY

## NEPREPOZNATI KONFLIKTI IZMEĐU ŠUMARSTVA, POLJOPRIVREDE I EKOLOŠKE MREŽE: OSNIVANJE PRAVA SLUŽNOSTI NA ŠUMI I ŠUMSKOM ZEMLJIŠTU RADI PODIZANJA VIŠEGODIŠNJIH NASADA - ANALIZA SLUČAJA DUBROVAČKO-NERETVANSKA ŽUPANIJA

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**Abstract:** The Government of Croatia, greatly opposed by the forestry professionals decided to ease forest and forest land in the amount of 21,949.828 ha throughout the country for the raising of perennial crops (vineyards and olive yards). Apart from being professionally unjustified, since the recent study of the Faculty of Agriculture on Pollution of Ground and Surface Waters Caused by Agriculture from 2014 stated that approximately 52% of the agriculture land in the Dubrovnik-Neretva County is not being used, these areas are greatly conflictual since they overlap with the ecological network sites: firstly, with the National Ecological Network proclaimed in 2007 and later with NATURA 2000 proclaimed after the admission of Croatia to the EU in July 2013. Conservation goals of the ecological network sites are, in a great number of cases, forest habitat types which will be clear-cut if the Government's decisions are fully executed. However, since most of these decisions have not yet been implemented, there is still a chance to revoke them to preserve vast ecological network areas and thus avoid paying of substantial penalties to the EU due to the loss of habitat types - conservation goals (more than 1 %). By the utilization of the GIS and comparison of cadastral lots designated for easement with the ecological network areas from 2007 and 2013, the article analyses significant threats from the loss of vast ecological network areas and suggests means for avoiding of such a scenario.

**Keywords:** Government decisions, easement, perennial crops, ecological network, Dubrovnik-Neretva County.

**Sažetak:** Odlukama Vlade RH u razdoblju 2004. - 2013. godine, čemu se šumarska struka od početka žestoko protivila, ustanovljeno je pravo služnosti na šumi i šumskom zemljištu radi podizanja višegodišnjih nasada (vinograda i maslinika) na ukupnoj površini od 21.940,828 ha diljem države. Osim stručne neopravdanosti ovih odluka, budući da Studija o utjecaju poljoprivrede na onečišćenje površinskih i podzemnih voda Agronomskog fakulteta u Zagrebu iz 2014. godine ukazuje na to da je na području DNŽ neiskorišteno oko 52% poljoprivrednog zemljišta, uvelike je konfliktno preklapanje površina namijenjenih za prenamjenu s područjima nacionalne ekološke mreže proglašene 2007. godine te kasnije ekološkom mrežom NATURA 2000 proglašenom nakon pristupa Hrvatske EU u srpnju 2013. godine. Ciljevi očuvanja područja ekološke mreže su u velikom broju slučajeva šumski stanišni tipovi koje se predmetnim odlukama kani iskrčiti radi podizanja višegodišnjih nasada. Međutim, budući da većina ovih odluka nije sprovedena u djelo, još uvijek postoji mogućnost njihovog poništenja, čime bi se sačuvala velika područja ekološke mreže i spriječilo plaćanje penala Europskoj uniji zbog gubitka stanišnih tipova - ciljeva očuvanja (više od 1%). Uz primjenu GIS alata te usporedbom kastastarskih čestica namijenjenih za prenamjenu s područjima ekološke mreže iz 2007. i 2013. godine, članak analizira značajne moguće opasnosti gubitka velikih područja ekološke mreže te predlaže mjere sprječavanja ovakvog scenarija.

**Gljučne riječi:** Odluke Vlade, osnivanje služnosti, višegodišnji nasadi, ekološka mreža, Dubrovačko-neretvanska županija.

Received: 22.11.2017 / Accepted: 12.12.2017

Published online: 18.12.2017

Pregledni rad / Review paper

## 1. INTRODUCTION

In the period from 2004 till 2013, the Croatian Government issued 10 Decisions upon which a substantial amount of state-owned forests and forest land was designated for easement to third parties for the raising of perennial crops, namely vineyards and olive yards (Prpić 2004). Allegedly, the background for such decisions lies in the fact that there is insufficient land to be utilized for this purpose, since the utilization of privately owned agricultural land is greatly inhibited by the depopulation of rural areas and

unresolved proprietary and cadastre issues, and the sole Government's intention was to support agricultural development in rural Mediterranean areas. This article shall, however, not debate on the political aspect of this issue, but rather focus on the concrete consequences these decisions might have on nature and forests on a greater scale, analysing the case-study of the Dubrovnik-Neretva County. The basic conflict of this issue lies in the fact that,

exactly in the middle of the period during which these Decisions were issued, the first Regulation on the Ecological Network of Croatia was released - in 2007, proclaiming the first ecological network sites (Cro NEN, or the so-called Emerald Network, a predecessor of the today's Natura 2000). The network, like today, consisted of an array of sites, and for each of those sites conservation goals were determined - in this case, the focus shall be set on the so-called pSCI areas (proposed Sites of Community's Interest). Conservation goals of such areas can be either wild species or wild habitats. The main conflict arises when habitat types - conservation goals of such areas are also forests and forest land areas that are scheduled for clear-cutting to make room for the future perennial crops. The mistakes made during this process are two-fold: firstly, when the ecological network sites were proclaimed, no one paid attention to the fact that a large area of forests and forest land (determined by the Decisions from 2004 till 2007) are scheduled for clear-cutting, and secondly - after the ecological network sites were proclaimed - again, no one paid attention to the fact that forests designated for clear-cutting are conservation goals of some of the ecological network sites (Decisions issued in the later period, i. e. from 2007 till 2013). Although most of these decisions are not yet implemented due to the lack of interest from the entrepreneurs' side, i. e. easement contracts were not signed with the State, there is still a chance that the current ecological network might be affected if additional contracts are signed and executed. Although the amendments to the Forest Act from 2014 excluded the possibility of signing further easement contracts on forest and forest land, but the same document proclaimed all the land designated for easement in the respective Decisions as agricultural land, putting it under the direct jurisdiction of the Agricultural Land Agency. By the means of thorough GIS analyses and data acquired from the Dubrovnik-Neretva County, "Croatian Forests" Ltd. and the Croatian Agency for the Environment and Nature, the article analyses effects of these Decisions on the current ecological network (Natura 2000) sites and proposes means for the resolution of this obvious conflict.

## 2. THEORETICAL BACKGROUND

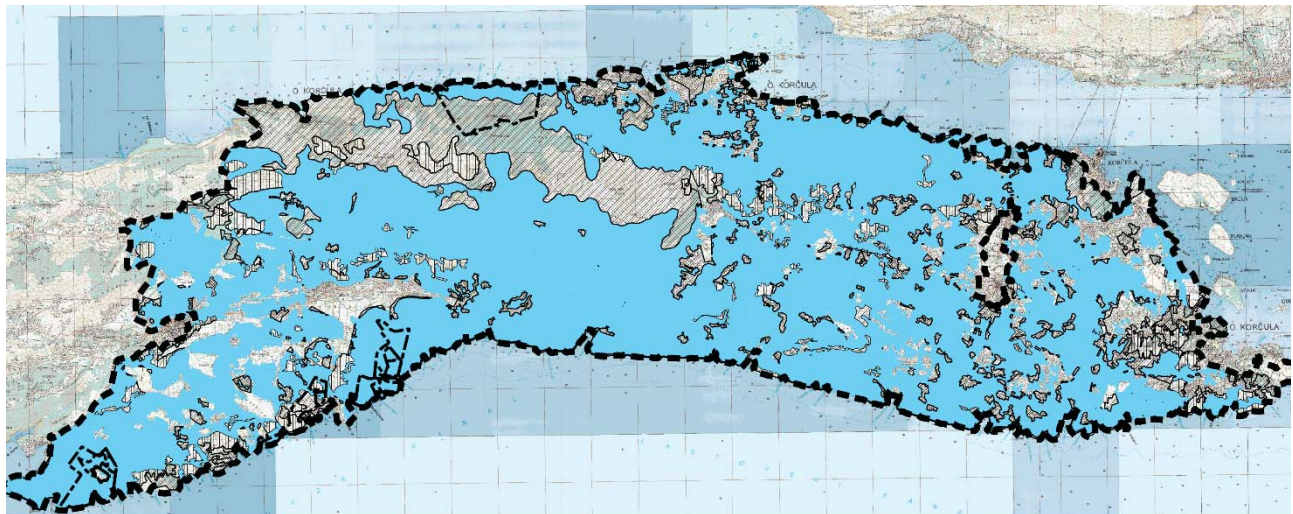
The problems that arouse during the strategic environmental impact assessment process conducted for the amendments of the Dubrovnik-Neretva County spatial plan, namely during the public debate, were greatly (or, better to say, entirely) the consequence of miscommunication, i.e. the lack of proper communication among the parties involved. Due to the lack of means and time, it seemed rather pretentious to deep-dig into social theories that address the issue of miscommunication among parties in various societal processes, so this will be skipped and replaced by a brief explanation on what went on regarding this process.

Simply said, one of the many parties that provided the client (Dubrovnik-Neretva County, more precisely the Institute for Physical Planning who are the makers of the amendments to the current county spatial plan which is subject to the strategic environmental impact assessment process) with the vector data (.shp) of state-



owned forests and forest land surfaces designated for easement to third parties, i. e. for land use change (growing of perennial crops - vineyards and olive yards). This party ("Croatian Forests" Ltd.), however, forgot to mention that for some very large cadastral lots (100 hectares and more) only a PART of the lot is designated for easement, and not the whole lot, which is the core reason for the entire misunderstanding. If all the original lots' surfaces were to be clear-cut, that would - beyond doubt - cause the loss of more than 1 % of habitat types which are also conservation goals of the ecological network sites. By the generally accepted opinion of the EU experts, this is considered to be "...a significant adverse impact on an ecological network site" (CAEN)(n.d.)). Since this was not explained in the beginning (the .shp file received from the client was taken for granted), the whole surface was considered as designated for clear-cut. Although this issue is not a spatial planning category, it nevertheless causes a significant cumulative impact and therefore had to be addressed in the SEA Report. As expected, this led to a heated discussion during the public debate, namely raised by the beneficiaries of the easement rights who felt threatened by a simple measure prescribed in the Report to "...review the Government's decisions". Since this issue is not a physical planning category, the measure could not have been precisely defined - the only goal of the Practitioner was to avoid the most sinister scenario, i. e. the significant loss of habitat types - conservation goals of the ecological network.

After the public debate, pursuant to the comments and complaints received, the Practitioner conducted a review of the case and, after the detailed analysis of respective Government's decisions, came with the conclusion that a much lesser surface of forests was designated for easement, and that the problem which was originally considered to be huge maybe does not even exist. Pursuant to the Regulations on Procedure and Measures for the Easement of State-owned Forests and Forest Land for the Raising of Perennial Crops (from 2006 and 2008, now both null and void), the beneficiaries had the obligation to consume the easement (clear-cut the forest and plant vines or olive trees) during the two-year period. After the high pressure from the foresters' lobby who considered the clear-cutting of forests, especially in the Mediterranean areas, to be most unacceptable, the last amendments to the Forest Act (August 2014, OG 094/14) abated the possibility of such easement. But, since all the land designated for easement in the Decisions is now agricultural land, additional calls for contracts can be issued at any time, which still creates a possibility for the significant loss of habitat types - conservation goals of the ecological network. Since the Regulation from 2008 provided for the beneficiaries to consume the contract at any point in the future (there is, unlike in the Regulation from 2006, no timeframe within which the contract must be executed), the only issue that needs to be addressed is the way the execution of these contracts will be conducted, i. e. which measures to prescribe in the SEA Report for the mitigation or evasion of adverse impacts on the ecological network.









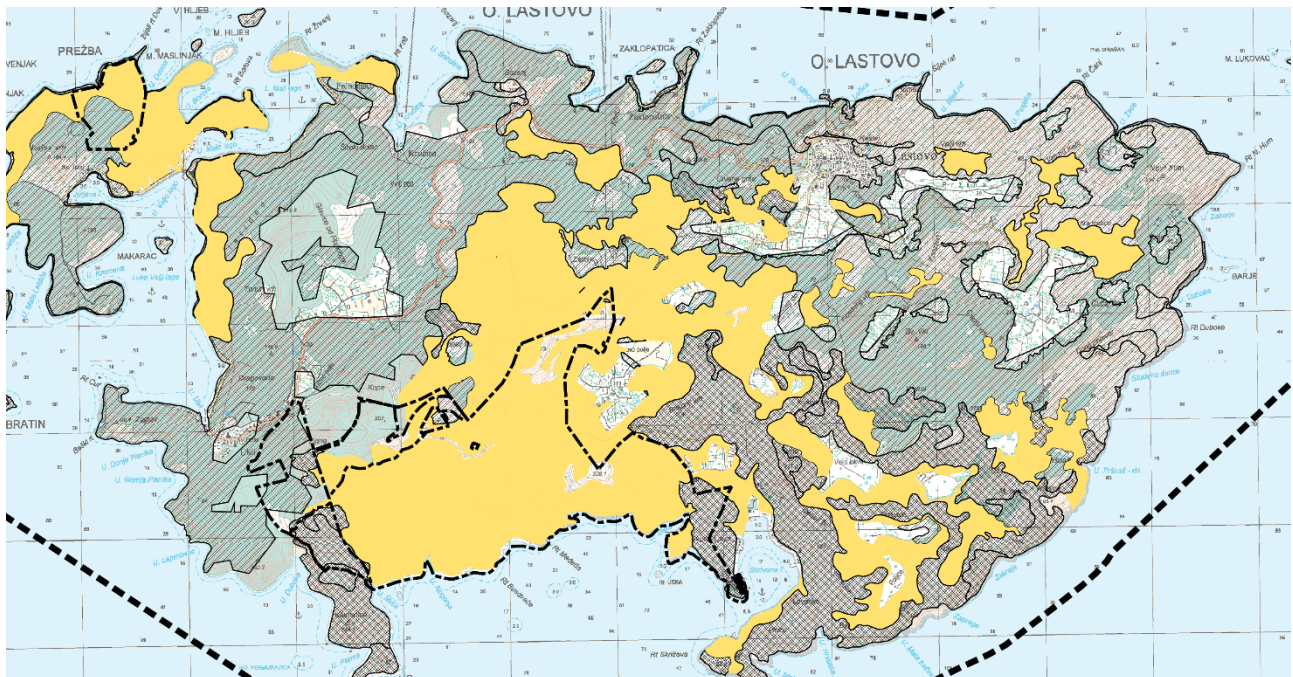
**LEGEND**

 ecological network site HR2001367 - First Part of Korčula  
 cadastral plots designated for easement



**habitat types - conservation goals**

-  \*6220 - Pseudo-steppe with grasses and annuals (Thero-Brachypodietea)
-  5210 - Arborescent matorral with Juniperus sp.
-  9340 - Quercus ilex and Quercus rotundifolia forests
-  9540 - (Sub-)Mediterranean pine forests with endemic black pines




*Figure 1: Areas dedicated for easement against the forest habitat types - conservation goals within the ecological network site HR2001367 - First Part of Korčula*



**LEGEND**

 ecological network site HR5000038 - Nature Park Lastovo Archipelago  
 cadastral plots designated for easement

**habitat types - conservation goals**

-  \*6220 - Pseudo-steppe with grasses and annuals (Thero-Brachypodietea)
-  5210 - Arborescent matorral with Juniperus spp.
-  9320 - Olea and Ceratonia forests

*Figure 2: Areas dedicated for easement against the forest habitat types - conservation goals within the ecological network site HR5000038 - Nature Park Lastovo Archipelago*



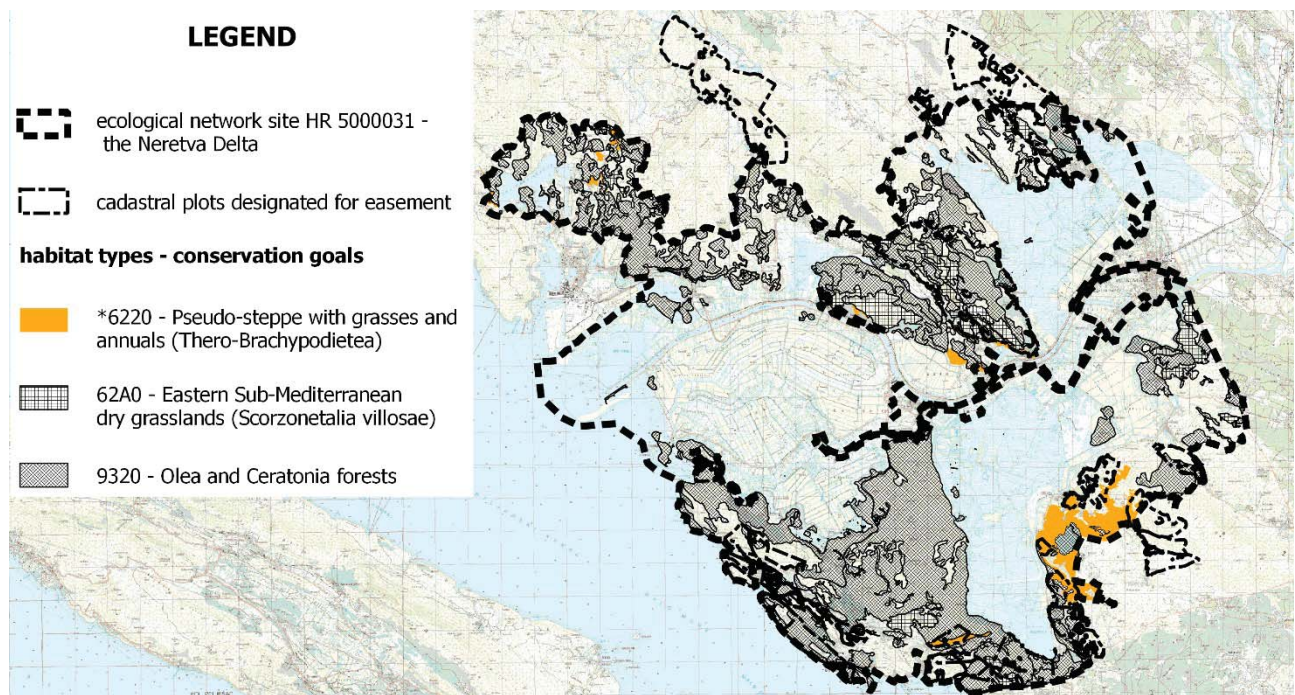


Figure 3: Areas dedicated for easement against the forest habitat types - conservation goals within the ecological network site HR5000031 - The Neretva Delta

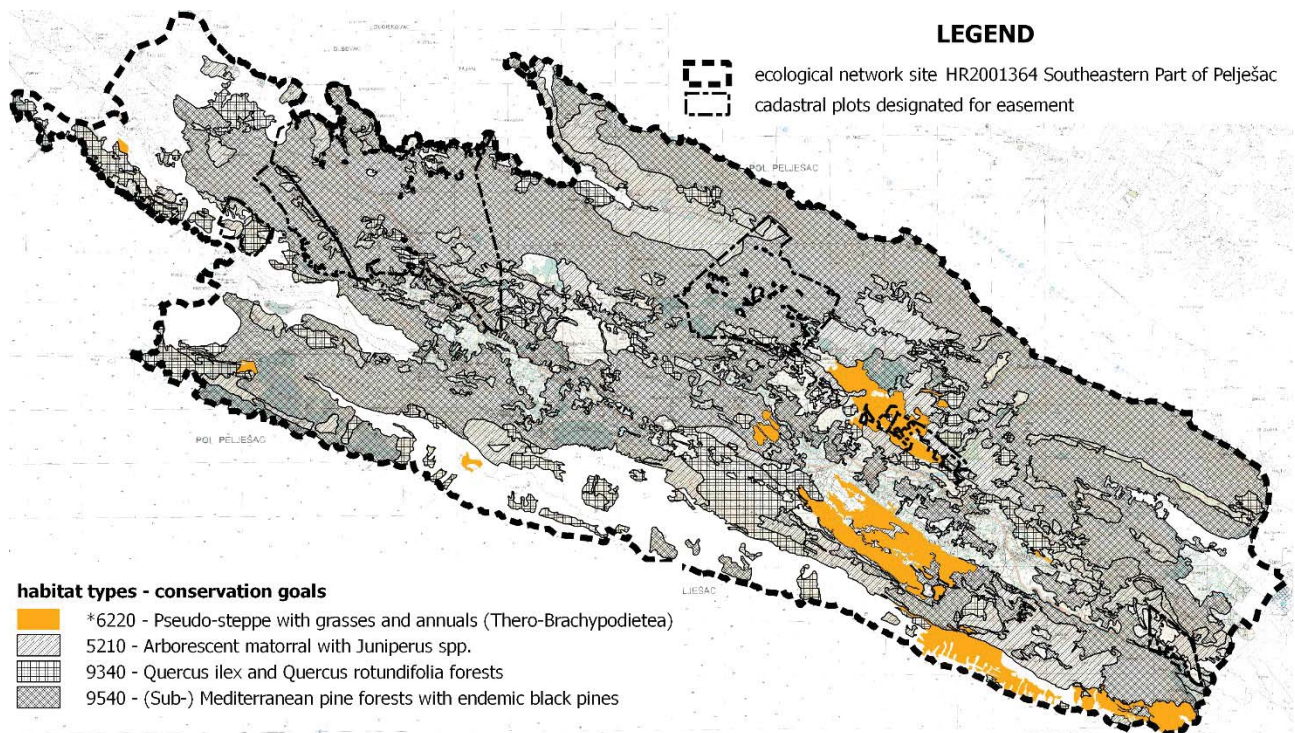


Figure 4: Areas dedicated for easement against the forest habitat types - conservation goals within the ecological network site HR2001364 - Southeastern Part of Pelješac

### 3. METHODOLOGICAL FRAMEWORK

Contingent adverse effect the easement might have on the ecological network sites was entirely assessed via GIS tools, namely by overlapping and intersecting of various vector layers (shape files) in the GIS application

(Quantum GIS). The initial steps in the GIS analysis consisted of the following:

- intersecting (clipping) layers with data on the ecological network sites with the map of habitat types, thus acquiring the potentially threatened areas (forest habitat types which are also conservation goals of the ecological network sites);

- clipping the map of forests and forest land designated for easement with the ecological network sites, thus acquiring the potentially threatened lots,
- clipping the latter with the first, thus acquiring the map of areas which will be harmed by the execution of (potential) easement contracts, i.e. forest lots designated for easement which are also at the same time conservation goals of a specific ecological network site.

Three types of data were used to establish the map of habitat types which are also conservation goals of the four ecological network sites which overlap with the areas designated for easement: old vector data on terrestrial habitat types (minimum map unit: 9 ha), new vector data on terrestrial habitat types (minimum map unit 1,5 ha) and vector data on state forests acquired from "Croatian Forests" Ltd. All three sources had to be used for the following reasons: although the new map of habitat types is much more precise than the old one (minimum map unit 1,5 ha compared to 9 ha), it however does not contain data on forest habitat types (all forest areas are simply marked as "forests"). Therefore, precision of the new map will be combined with forest habitat types of the old map in order to generate a relatively precise forest habitat types map. On the other hand, many areas on both habitat types maps are marked as a combination, or a mosaic, of certain habitat types (it would be practically impossible to mark the exact surface for all habitat types) which leaves a researcher with a high level of uncertainty (e. g. if some area is marked as a combination of three various habitat types and only one of them is a forest, we cannot determine its exact location). Therefore, a highly accurate digital map of state forests was used to eliminate these uncertainties, because it reflects the data on actual forest surfaces to the maximum. As a result, a sufficiently accurate digital map on forest habitat types which are also the conservation goals of respective ecological network sites was generated.

The next step was to calculate the surfaces of forest types - conservation goals of the ecological network sites which might be affected by the Government's Decisions and their relative amount in the whole area of the ecological network site, which answers the most important question raised by this article: do these surfaces amount less than 1 % of surface of a specific forest habitat type - conservation goal within the ecological network site? (Although this figure is not prescribed legally in any of the EU countries legislation, it is nevertheless an opinion based upon the EU experts' experience and therefore considered as relevant. Although the loss of a habitat type - conservation goal in the amount greater than 1 % is always considered to be "a significant adverse impact", the impact may be

significant if this loss is less than 1 %, depending on the situation. Therefore, it is essential to maintain the contingent losses of habitat types - EN site conservation goals on the rate lower than 1 % of this habitat type's surface within a specific EN site.)

The following images depict the areas dedicated for easement against the forest habitat types - conservation goals within the specific ecological network site.

#### 4. ANALYSIS OF RESULTS

The analysis of results comprised of the following: determining the actual surface of habitat types - conservation goals which overlap with the lots dedicated for easement and the ecological network sites, calculating their relative surface in comparison to the site's surface of habitat type - conservation goal and - most important of all - determining the areas which will surely be clear-cut if the Decisions are executed (i. e. if the total plot's surface is equal to that designated for clear-cut) and the areas of lots which will only partially be clear-cut (for example, if a plot's surface is 200 ha and the designated surface for easement on that particular plot is only 10 ha). The issue of partially designated plots was the core reason for misunderstanding, but also the major uncertainty factor - it is not known which part of a certain large lot will be eased. To add to the uncertainties, most of the habitat types - conservation goals on the new habitat types' map are presented as combinations - therefore, it is impossible to state the exact surface of almost anything included in this story.

The comparative table of data is shown in **Table 1**. From the previous table, it is obvious that the area of lots which are certain for clear-cut if the Decisions are executed is, in most cases, much lesser than 1 % of the conservation goals' surfaces, except for the two ecological network sites HR5000031 the Neretva Delta and HR2001364 Southeastern Part of Pelješac where these figures will be reached immediately (2,01 % and 1,74 % of the total conservation goal's surface within the specific ecological network site). For all the other sites, the level of significant impact exclusively depends on where the designated easement areas will be situated. Therefore, to avoid such adverse impact on the ecological network sites HR5000031 the Neretva Delta and HR2001364 Southeastern Part of Pelješac, it is essential to prevent the signing and execution of any further contracts between the final beneficiaries and the state where designated areas to a great extent overlap with the habitat types - conservation goals.



**Table 1. Overview of conservation goals surfaces against the ecological network sites and cadastral lots designated for easement**

ECOLOGICAL NETWORK SITE	area of cadastral plots that overlap with forest habitat types - conservation goals	relative amount of the conservation goal's surface within the EN site	cadastral plots designated for total easement which overlap with conservation goals	relative amount of the EN CG surface	cadastral plots - partial easement	areas that overlap with CG
	ha	%	ha	%	ha	ha
HR5000031 The Neretva Delta	934,9513	4,2049	146,6025	2,01	3.732,1460	1001,3778
HR2001364 Southeastern Part of Pelješac	1.428,6888	12,3809	181,0672	1,74	1.526,8157	1740,5634
HR2001367 First Part of Korčula	540,6249	4,1520	40,0035	0,39	617,8243	577,9683
HR5000038 Nature Park Lastovo Archipelago	544,7327	2,2849	0,0000	0,00	657,1193	447,2087

## 5. CONCLUSIONS AND DEBATE

Although it is obvious that there is a great threat to the ecological network sites from the execution of easement contracts, so far there hasn't been any reaction to it and no attempts were made to prevent such a scenario – on the contrary, new easement calls for the area of Dubrovnik-Neretva County are being announced as we speak. Although there is, beyond any doubt, a political background to this issue, it falls beyond the scope of this work which particularly deals with any contingent solutions to the problem, if there are any. As the most obvious and, basically, the only possible mitigation measure of adverse impacts is to designate a part of a larger cadastral lot on a habitat type which is not a conservation goal of a specific ecological network site. However, it has to be noted that raising of vineyards (at least a high-quality ones) require certain conditions which have to be met such as inclination, exposition and soil type, and these are not always easy to find. Therefore, it is very likely that potential beneficiaries will look specifically for such turf and will not be satisfied with anything less. Although there is no more possibility of further designating of forests and forest land for easement, it has to be noted that pursuant to the latest amendments to the Forest Act from 2014 all forests and forest land dedicated for easement are being declared as agricultural land, so the Forest Act will not be violated by the additional easement contracts. This is probably the most absurd provision of the latest amendments to the Forest Act, because all these areas are being put under the direct jurisdiction of the Agency for Agricultural Land (Article 46. of the Law on Amendments to the Forest Act, Official Gazette 094/14). This situation is pointless due to several reasons: firstly, it is still unknown which exact area is being eased (in most cases, cadastral lot is much larger than the surface dedicated for easement), and the Agency has absolutely no idea what land that would be, whilst “Croatian Forests” Ltd. are, legally speaking, not a party to the

process any more. Secondly, there is a great shortage of interest of potential beneficiaries, which brings the state into the position of violating its own laws, i. e. its Governments' decisions are basically – illegal, since Article 4 of the Agricultural Land Act states that “...*agricultural land has to be maintained in order to serve its purpose*”, which means that woody perennials should be clear-cut from such surfaces.

However, there is another punchline to the story which clearly depicts all the tragedy withheld in it: according to the data acquired from “Croatian Waters”, the institution in charge of the management of Croatian waters and based on the recent study conducted by the [Faculty of Agriculture \(2014\)](#) entitled “The Impact of Agriculture on Pollution of Surface and Groundwater in the Republic of Croatia” approximately 52 % of the County's agricultural land is not being used. The only logical question to be asked is why is the state forest land being eased for agricultural purposes, while more than the half of the County's agricultural land is **not being used** at all? The answer is very simple: unresolved proprietary and cadastral issues prevent this land from appearing on the market. If it were otherwise, potential beneficiaries would most probably have invested into the purchase of common agricultural land and raise vineyards or olive yards without any legal impediments, but since this is not the case, the State decided to undertake such drastic and unjustified step, rather than trying to resolve the proprietary, cadastral and heritage issues which is, undoubtedly, too big a bite for any of the governments which ran this country so far. It is obviously much easier to clear-cut a tremendously valuable hectares of Mediterranean forest to make room for agricultural projects (most of which failed, by the way), than to take the hard path and resolve, either by a decree or through some other legal instrument – maybe even intervening into the very Constitution and redefining the term of “private property”, the issue that caused this country to gradually become overwhelmed

with weeds and whose entire agriculture sector is pretty close to the point of utter disintegration.

Although at least some of these problems could be easily resolved, for instance revoking the Decisions for those lots for which it is absolutely certain that they will never be eased, or simply by preventing any further easement, i. e. signing of additional contracts, one can only state the many times proven fact that politics is always, without exclusion, above expertise or common sense.

## 6. LITERATURE

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