Recognition of protected areas as legal entities as a way to stop protected area genocide

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Abstract. The definition of protected areas as legal entities is not defined at the legislative level, which significantly reduces the range of tools for protecting the corresponding territories from abuses and loopholes in the current legislation regarding the scope and methods of utilizing their natural potential. The study focuses on an analysis of the concept of the “legal personality” of protected areas in Ukraine, considering the requirements of current legislation to address the restoration and protection of the rights of the protected areas through judicial and extrajudicial procedures. For a comprehensive analysis of market dynamics with minimal variations between studies, a quantitative literature review, including meta-analysis, was conducted. The main directions of post-war market revival were identified and the feasibility of adapting these strategies to the Ukrainian economy was evaluated using a comparative method. The research asserts that granting legal personality status to protected areas would contribute to the protection of their rights, as it would enable their identification as independent participants in economic relations and provide them with the necessary mechanisms to protect their territories. The necessity of introducing the concept of “legal personality” at the legislative level for protected areas is substantiated, which would not only help identify the most violated rights of protected areas but also promote increased investments in this sector. The practical significance of the study is determined by recommendations regarding the legitimizing protected areas as legal entities and having a clear normative and legal basis would ensure the establishment of a transparent form of judicial and extrajudicial protection and restoration of violated rights of protected territories.

Keywords: nature reserved territories; ecocide; postwar period; consequences of war; legitimation

Introduction

Military aggression against Ukraine resulted in significant environmental destruction, which has negative consequences for the health and well-being of people and the national economy. The ongoing bombing and shelling of cities caused a nature catastrophe that has affected both renewable and non-renewable natural resources in the country. Protected Areas (hereinafter – PAs) in Ukraine are recognized under national law as natural territories that are important not only for local communities but also for the entire country. The legal status of PAs as independent market subjects provides the opportunity to investigate their rights and responsibilities and to safeguard those rights.

In the field of Genocide Studies, the destruction of non-human beings and the natural environment is often addressed as a distinct but interconnected phenomenon known as “ecocide”. Ecocide refers to the deliberate destruction of nonhuman nature. According to L. Eichler (2020), this concept is considered related to, yet separate from, the study of genocide.

R. Killean (2021) examines the evolution of so-called green approaches and considers the duty of international criminal law to respond to environmental destruction. The researcher considers whether the reparation framework adopted by the International Criminal Court offers an opportunity to meaningfully respond to environmental destruction and related human rights violations. He also states that “there are three main ways in which this might be done: (1) by introducing the concept of ‘eco-sensitivity’ to reparations designed to respond to other anthropocentric harms; (2) by awarding reparations that explicitly recognize the harm caused by environmental destruction when possible; and (3) by exploring the possibilities of an environmental approach towards ‘transformative reparations’.”

A. García Ruiz et al. (2022) claim that one of the most reliable key elements of the policy and practice of ending ecocide is the call to prioritize the adoption of technologies that are benign and renewable.

J.M. Herndon and M. Whiteside (2020) claim that an “international treaty is obliged to prohibit environmental warfare, but which specifically does not prohibit ‘peaceful’ environmental changes where ‘environmental changes
techniques' refers to any technique for changing – through the deliberate manipulation of natural processes – the dynamics, composition or structure of the Earth, including its biota, lithosphere, hydrosphere and atmosphere, or of outer space."

According to A. Dunlap (2021), “green” and conventional natural resource extraction is responsible for degrading human and biological diversity, thereby contributing to larger trends of socio-ecological destruction, extinction and the potential for human and nonhuman extermination. The author admits that land control was largely enforced through force, notably through “hard” coercive technologies executed by various state and extra-judicial elements, which was complemented by employing diplomatic and “soft” social technologies of pacification. Natural resource extraction is a significant contributor to the genocide-ecocide nexus, leading to discussion points.

A. Dunlap (2020) claims that “the idea of ‘engineering extraction’ is defined through counterinsurgency to acknowledge the extent of extractive violence, arguing that the term ‘land grabbing’ is indeed a more appropriate term than ‘land deals’.”

However, in the post-war era, the global market is undergoing significant changes due to psychological and social transformations within society. This includes the development of ethical and normative frameworks for inspection and supervision. Deviant behaviour, viewed as a social phenomenon, can have adverse effects not only on the individual but also on others and even the economic well-being of a region (Nikolaychuk, 2022).

The negative environmental impact caused by destructive activities also has adverse socioeconomic consequences, affecting the entire local community. While eco-business is typically associated with environmentally friendly practices, pollution in an area can hinder the establishment of any eco-safe business activities.

Through an analysis of the impact of the Russian invasion, a concerning phenomenon known as “PAsCide” emerges, shedding light on the deliberate targeting and destruction of protected areas (PAs). These areas play a vital role in preserving the integrity of the world’s ecosystems.

Finally, the study suggests that in light of the war events leading to PAsCide, it is crucial to identify and safeguard the most critical rights of protected areas according to “legal identity”. The environmental and social effects of PAsCide resulting from Russian aggression represent one of the most severe forms of war losses. The destruction of infrastructure indicators negatively impacted businesses, highlighting the need for a model or plan for the most valuable post-war tools for sustainable development.

**Literature review**

According to M. Crook et al. (2018), the definition of ecocide that applies to nature and the environment is not yet formally accepted within the body of international law.

T. Sandwith et al. (2001) claim that the PAs “safeguard biological and cultural diversity, help to improve the livelihoods of local communities, provide the homelands for many indigenous peoples, and bring countless benefits to society in general. As the world becomes more crowded, and as the pressures on natural resources increase, a recognition of the importance of such places to the future of humankind grows too”.

A. Johnston et al. (2013) believe that one of the key questions is whether existing protected area networks will remain effective in a changing climate. The everyday shelling of the Ukrainian PAs might influence a changing climate, which will also produce negative consequences for Ukrainian Eco-market.

The legislative, and social state of PAs should be changed, and these changes will cause the economic and financial status. The more defined status will have PAs in the post-war Ukrainian legislative system, the high level of protection it might have, and the more attractive for investors it could be. Some counties have already considered the innovative legal state of nature objects, e.g., a New Zealand River revered by the Maori has been recognised by parliament as a “legal entity”, in a move believed to be a first occurrence (New Zealand River…, 2017).

T. Boekhout van Solinge (2010) admit that exploitation of natural resources often goes hand in hand with armed conflicts and threats to wildlife and biodiversity and cannot be stopped unless the demand for natural resources can be dwindled, better regulated, and preferably be based on criteria of conservation and sustainability.

A. Brisman and N. South (2016) argue that one of the most important social issues is unequal access to natural resources, e.g., water. The scholars examined some relevant challenges and inequalities in the 21st century but also by recalling an instructive case from the history of colonialism and the human ability to turn a failure of nature into a disaster and to disregard democracy and justice to perpetuate social divisions.

Military aggression led to the amount of negative socio-lect-environmental consequences. R.A. Falk (1973) noticed that the war process is transforming militarily into making the country unfit for civilian habitation, the indiscriminate-ness of warfare carried out against people on the land itself.

According to T. Lindgren (2018), “ecocide is a structurally reoccurring phenomenon contributing to a serious disequilibrium in the Earth-system that buttress all planetary life. Ecocide is also a possible method of genocide if it damages or destroys vital socioecological and cultural relationships between humans and nature. Practices that inflict ecocide are hence often responsible for the destruction of ecological and social life systems that face adversities due to deteriorating ecological conditions”.

The concept of genocide, coined by R. Lemkin (2008) in 1944, refers to the intentional destruction of a people, often based on ethnicity, nationality, race, or religion. However, the destruction of PAs carries profound harm not only to Ukraine but also to the entire European Union and its member states. Thus, it is necessary to differentiate the term “PAsCide” as a societal phenomenon during times of war, which has wide-ranging negative effects on the overall well-being of society.

The legislative procedure of estimating environmental damage should have a strong law backdrop. R. Mwanza (2018) acknowledges that the introduction of ecocide as the fifth crime in the Rome Statute of the International Criminal Court ("Rome Statute") aims to strengthen environmental protection through the application of international criminal law.

If adopted, this crime would be the first environmental crime under the Rome Statute. Its proponents view it as a powerful liability norm for dealing with the humanitarian, ecological and structural aspects of environmental damage that together threaten international peace and security.

R. White (2018) suggested that ecocentrism has an important influence on criminal justice, the core principles of
an ecocentric worldview are also being translated into concrete application.

U. Natarajan and K. Khoday (2014) suggested that through exploring the cultural milieu from which international environmental law emerged, an impoverished understanding of nature that is incapable of responding adequately to ecological crises is created.

M. Crook and D. Short (2021) noticed that the ecologically induced genocide suffered by such groups where environmental destruction results in conditions of life that fundamentally threaten a social group’s cultural and/or physical existence. It is likely to see this form of genocide in Ukraine because the Russian unprovoked and unjustified invasion caused huge damage to the Ukrainian nation as well.

P. Higgins et al. (2013) argue that ecocide should be internationally recognized as a criminal offence. However, for a considerable period, there was no clear legal definition of ecocide. Despite lacking a precise legal definition, its fundamental meaning is widely understood. It encompasses various actions and practices that lead to devastating and destructive impacts on the ecological balance of specific geographic areas, resulting in harm to human life, animal life, and plant life (Fried, 1972).

According to V. Joksimovich (2000), throughout world history, numerous instances can be observed where the environment has suffered incidental damage as a result of warfare. The atomic bombings on Japan to end World War II serves as a prominent example.

For a long period protected areas were mono-functional, but it often fulfils a multitude of different tasks, not only by nature protection. Nowadays there is an expectation that PAs are likely to develop as a regional model of sustainable development (Mose & Weixlbaumer, 2007).

K. Gaston et al. (2008) point out that despite important legal frameworks for conservation planning, explicit quantitative goals for the representation and persistence of biodiversity are largely lacking. Assessment of the effectiveness of existing protected area systems is patchy and rather ill-developed, with a substantial gulf between the work being conducted in more academic and policy-oriented arenas.

L.N. Joppa et al. (2008) argue that there is a probability that global databases on protected areas are biased toward highly protected areas and ignore “fictional parks.”

A. Kothari et al. (1995) find that ensuing conflicts, particularly when combined with industrial pressures on the different nature areas, have spurred many conservationists, social activists, and forest officials to reconsider on national and local levels the artificial divide between conservation and human rights.

S. Chowdhury et al. (2022) noticed that “insects dominate the biosphere and play a central role in ecosystem processes, but they are rapidly declining across the world. Protected areas (PAs) are designed to insulate biodiversity from human-induced threats, but they have been mainly designated for vertebrates and plants. Most research on insects in PAs focuses on the representation of species, and few studies assess threats to insects or the role that effective PA management can play”.

The Russian military aggression caused a negative influence on the so-called insect infrastructure. PAs of Southern Regions of Ukraine, e.g., Mykolaiv, Kherson and Zaporizhzhia regions are based in the steppe zone, so the insects dominate these PAs, as a main part of the ecosystem. The destruction of insect infrastructure caused a long-term disaster not only from an ecological but also from an economic point of view. Since insects are the main part of raw materials – the production chain in Southern Ukraine is crippled. In addition to the negative environmental impact, the long-term negative side effect on eco-market should also be discussed.

J.N. Sanchirico et al. (2002) admit that the uncertainty stems from the fact that PAs and MPAs only treat the symptoms and not the fundamental causes of important problems, such as nature resources extraction or over-pollution of the region.

P.J. Ballint (2006) points out that community-based conservation projects implemented in conjunction with protected area management often struggle to meet expectations. The researcher argues that outcomes will improve if project leaders pay closer attention to four development indicators – rights, capacity, governance, and revenue – that are often taken for granted or considered beyond the scope of local conservation projects.

M. Rao et al. (2002) believe that involving local communities in the management of protected areas and buffer zones; building the technical capacity of protected-area staff; implementing a comprehensive land-use plan focused on stabilizing land use; and amending existing wildlife laws to fulfill international treaty obligations.

S.A. Mukul et al. (2008) concluded that effective co-management, between PA managers and local user groups, which ensures clearly defined rights of various stakeholders on PAs and their active participation in decision-making processes, is necessary to secure the future of PAs.

P. West et al. (2006) noticed that protected areas are a form of what has been called globalization. The contemporary focus on the technological aspects of globalization (such as the rapid communication and information systems and networks, rapid transportation, and the movements of people, money, and ideas) has perhaps made globalization seem less relevant in a field where the aim appears to be the preservation of a natural state.

According to opinion, such researchers as H. Bingham et al. (2017) “privately protected areas (PPAs) are increasingly recognized as important conservation initiatives, as evidenced by recent developments that support recognizing and documenting them alongside protected areas under other governance types”.

R. Abell et al. (2007) admit that declining trends in the integrity of freshwater systems demand exploration of all possible conservation solutions. Freshwater protected areas have received little attention, despite the prominence of protected areas as conservation interventions for terrestrial and more recently marine features. The scholars argue that a dialogue on freshwater protected areas has been neglected both because few models of good, protected area design exist, and because traditional notions of protected areas translate imperfectly to the freshwater realm.

Materials and methods

A comprehensive literature review was conducted to explore the relationship between the extent of the destruction of protected areas and its adverse environmental impact on society. Additionally, the potential negative effects on the national market and existing investment flows were examined, with consistent findings across multiple studies. The comparative method was used to develop key strategies for the post-war reconstruction of protected areas, transforming
them into socio-economic hubs that attract investment and are adaptable to the Ukrainian economy. To enhance the socio-economic potential of local communities, indicators of regional destruction will be utilized. These indicators will be integrated into the modelling process, envisioning protected areas as post-war environmental and socio-economic centres. By incorporating these indicators, effective methods for revitalizing the affected areas and maximizing their socio-economic benefits can be identified and implemented.

The South Region of Ukraine has 24 estuaries (Appendix A). All these estuaries are polluted due to everyday bombing and shelling by the Russian army. The Eco-oriented business couldn’t be provided in such territory’s conditions. Part of these estuaries do not belong in the protected areas, so the recovery process might be not urgent. Protected areas should be legislatively separated according to geographical conditions, which are relevant to the economic potential of PAs.

Post-war Ukraine is primarily PAs and other natural territories capable of self-recovery. PAs, or protected areas, can indeed be viewed as valuable assets. They represent areas of significant ecological importance, harbouring diverse plant and animal species, and providing vital ecosystem services.

PAs contribute to the conservation of biodiversity, help maintain ecological balance, and offer opportunities for research, education, and sustainable tourism. Recognizing and appreciating PAs as assets emphasizes their inherent value and the need to protect and manage them effectively for present and future generations: unique ecosystems capable of self-reproduction; access to clean natural resources; re-sourced-packed territories, the start-point of environmentally oriented business development in the local communities; tourist and recreational zones, which has not lost its properties due to destroyed infrastructure and logistics chains; a restoration hub of the ethnic and cultural traditions of the regions (local communities) (see Table 1).

### Table 1. The main indicators of PAs economic efficiency

<table>
<thead>
<tr>
<th>№</th>
<th>Indicator type</th>
<th>Reference indicators (in percentage terms)</th>
<th>Indicators attribution of negative and positive influence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Distance indicator from large cities, urban agglomerations (P1)</td>
<td>≤ 64%</td>
<td>Too high; classified as negative impact indicators (In)</td>
</tr>
<tr>
<td>2</td>
<td>The destruction degree of economic and civil infrastructure (P2)</td>
<td>≥ 31%</td>
<td>Normal, classified as indicators of positive influence (Ip)</td>
</tr>
<tr>
<td>3</td>
<td>The preservation state indicator of the PAs and other nature areas (P3)</td>
<td>≥ 75%</td>
<td>Normal or high, classified as indicators of positive influence (Ip)</td>
</tr>
</tbody>
</table>

*Source: authors’ development*

The indicators will be calculated according to the geo-economic location and special characters of each PA and the level of destruction (e.g., region, territorial community). Considering the method of expert evaluations, the indicators cannot be comprehensive and have a division into mandatory and auxiliary, as a formal calculation criterion. It is necessary to consider the properties and measures of the pre-war period and the existing vectors of economic and ecological restoration (see Table 2).

One example is when measuring the distance between cities or urban areas with low to moderate degrees of destruction. However, it’s important to also consider the level of destruction in each city or urban area. This is determined by a settlement located closer may have a higher level of destruction and lower economic and social indicators compared to a settlement located further away but with a lower degree of destruction.

### Table 2. The destruction indicators, which hurt PAs

<table>
<thead>
<tr>
<th>№</th>
<th>The name of the destruction indicator</th>
<th>Measure</th>
<th>Quantity/volumes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Population of the settlement</td>
<td>thousand people</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>The area of the settlement within the city strip, including:</td>
<td>hectares</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Area of agricultural territories:</td>
<td>hectares</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Total area of production areas</td>
<td>hectares</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>The total area of green spaces</td>
<td>hectares</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Area of reserve territories</td>
<td>km</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>The length of the trunk network of the settlement, including:</td>
<td>km</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>The density of the main street network</td>
<td>km/km²</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Indicator of the destruction of infrastructure:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Civil</td>
<td>km/km²</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Economic (production)</td>
<td>km/km²</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Strategic</td>
<td>km/km²</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Indicators of urbanization of the territory</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The main economic and social indicators of a settlement (urban agglomeration) that form the coefficient “Degree of destruction of economic and civil infrastructure” (P2) include the following:

The distance from the settlement (urban agglomeration) according to the remoteness indicator is planned to be calculated as follows (see Eq. 1):

$$L_{ser} = \sum \frac{P_2}{L_1 + L_2}$$,  

where, $L_{ser}$ – the distance of the population from the settlement, taking into account the two most logistically and economically advantageous routes, considering the post-war situation, km; $P_2$ – the degree of destruction (degradation) of the settlement, which will take into account a set of basic economic and social indicators; $L_1, L_2$ – the distance to the 1st and 2nd conditional lines, from which the administrative-territorial unit begins – the settlement (if the geo-infrastructural conditions are to be determined), km;

The Lser indicator, which is within 1.5-2.4 km, characterizes the territory of the city as compact.

Each indicator is calculated separately, considering the features of the location, economic-social and economic-ecological development of the settlement. That is, exceeding certain indicators may be critical for one region, but be acceptable for another region. It is a valid perspective that the level of development of a settlement can have an impact on the investment potential of a nearby nature reserve. In post-war times, the nature reserve in Ukraine can be seen as having a direct investment correlation with the surrounding settlement. As the settlement experiences growth and development, it can potentially attract more investments towards the nature reserve, recognizing the economic opportunities and benefits that the protected area can offer. This symbiotic relationship between settlement development and the adjacent nature reserve underscores the potential for mutually beneficial outcomes in terms of economic and environmental sustainability (see Fig. 1).
To better understand this suspected connection, a thorough analysis is required. This analysis should examine how the destruction of infrastructure, such as residential buildings, roads, utilities, and public facilities, impacts the community’s ability to recover and rebuild. It is crucial to assess the level of damage inflicted on the local infrastructure and its subsequent effects on the community’s socioeconomic well-being, access to basic services, and overall resilience. By conducting a comprehensive analysis, we can gain insights into the interplay between destruction and infrastructure and identify strategies for post-war recovery and rebuilding efforts (see Eq. 2).

\[ AB = \frac{1}{2} (X_b - X_a)^2 + \frac{1}{2} (Y_b - Y_a)^2, \]  

where \( AB \) – is the correlation between the extent of destruction and the infrastructure of the local community (The protected area (PA) is located in this local community); 

\[ AC = X_b - X_a, \]  
\[ BC = Y_b - Y_a, \]  
\[ AB = \sqrt{AC^2 + BC^2}, \]  
\[ PAs \geq 0. \]  

Equation 5 means, that the natural resources of PAs and socioeconomic potential are not destroyed, and the territory is not under occupation (Fig. 2, Table 3).

**Figure 1.** The Connection line between destruction level and infrastructure conditions  
**Note:** A \((X_a, Y_a)\) – the destruction level of the local community (region); B \((X_b, Y_b)\) – the infrastructure environment in the local community (region); AB – indeed, there is a correlation between the extent of destruction caused by the Russian invasion and the infrastructure of the local community  
**Source:** compiled by the author

**Figure 2.** The colour scale of PAs of socioeconomic and environmental potential  
**Source:** compiled by the author

**Table 3.** The scale of PAs of socioeconomic and environmental potential

<table>
<thead>
<tr>
<th>Scale PAs</th>
<th>Level of environmental destruction</th>
<th>Level of socioeconomic potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \geq 0 )</td>
<td>Natural resources are in satisfactory condition. Renewable resources can replenish their potential within the next 2-3 years</td>
<td>The socioeconomic potential of a nature reserve can meet the interests of the local community (region). The territory is not under occupation and was not under occupation</td>
</tr>
</tbody>
</table>
According to the Laws of Ukraine, specifically the “On Environmental Protection” (1991) and “On the Nature Reserve Fund of Ukraine” (1992), protected areas (PAs) are not categorized based on the distinction between surface-based, marine, or freshwater areas. The legislative framework does not explicitly consider the specific issues that may arise when managing two similar PAs, one being surface-based and the other freshwater-based. This lack of differentiation in the legal system may present challenges when addressing the unique characteristics and management requirements of these distinct types of protected areas (see Fig. 3).

<table>
<thead>
<tr>
<th>Scale PAs</th>
<th>Level of environmental destruction</th>
<th>Level of socioeconomic potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>= 0</td>
<td>Natural resources have been negatively affected, and it will take at least 5 years and investment to restore the resources</td>
<td>The socioeconomic potential requires the development of a clear business plan and a system of measures for ecosystem restoration. The territory was under occupation (the whole PAs or part).</td>
</tr>
<tr>
<td>≤ 0</td>
<td>Natural resources require restoration and a 3–5-year investment and financial plan. The level of degradation of natural resources is very high. Non-renewable natural resources have been almost destroyed</td>
<td>The socioeconomic potential is unclear, a high level of infrastructure destruction. Potential forms of entrepreneurship require planning and sources of financial restoration. The territory was under occupation for a long time</td>
</tr>
<tr>
<td>≥ ?</td>
<td>The level of degradation of natural resources is unknown or critically high</td>
<td>The socioeconomic potential is unknown or low, which is linked to a high level of infrastructure destruction. The territory is under occupation (the whole local community or PAs)</td>
</tr>
</tbody>
</table>

*Source:* authors’ development

### Results and discussion

According to the Laws of Ukraine, specifically the “On Environmental Protection” (1991) and “On the Nature Reserve Fund of Ukraine” (1992), protected areas (PAs) are not categorized based on the distinction between surface-based, marine, or freshwater areas. The legislative framework does not explicitly consider the specific issues that may arise when managing two similar PAs, one being surface-based and the other freshwater-based. This lack of differentiation in the legal system may present challenges when addressing the unique characteristics and management requirements of these distinct types of protected areas (see Fig. 3).

As of the beginning of 2022, there were 8,633 territories and objects of the nature reserve fund in Ukraine - this is 6.8% of the country’s area. The nature reserve fund includes 5 biosphere reserves, 19 nature reserves, and 53 national natural parks. Some protected areas are in a zone of humanitarian crisis; other protected areas are deprived of funding (e.g., the Mykolaiv Zoo) (Fig. 4) (Nature Reserve Fund of Ukraine, n.d.).

For example, the Mykolaiv region has a huge potential for economic, tourism and recreational development. In the post-war period, the Mykolaiv region can become a multi-task socio-cultural-economic hub of the region (Fig. 5).

The establishment of a “legal personality” for protected areas in the Ukrainian legislative system can provide numerous benefits, not only in terms of ecology but also in safeguarding the socio-economic potential of these areas.

One of the values of having a “legal personality” in law is that such status automatically confers certain rights, although not all so-called legal persons have the same rights. For instance, estuaries can be considered freshwater PAs, which means another category of PAs according to the national legislative system.

Based on the information provided in Table 2, it can be inferred that the category “estuary” can be examined from socio-economic, normative, and eco-geographic perspectives. This classification aligns with the criteria outlined in the Law of Ukraine “On Geographical Names” (2005), which mandates the consideration of various factors when assigning geographical names. Therefore, considering the socio-economic, normative, and eco-geographic aspects is following the requirements outlined in the aforementioned law:

- geographical names are proper names of geographical objects used for their recognition and differentiation from other objects;
- geographical objects are integral and relatively stable formations of natural or anthropogenic origin on the Earth that exist or have existed in the past and are characterized by a certain location: orographic – continents, mountains,
ridges, rocks, gorges, glaciers, plains, lowlands, gullies, islands, spits, volcanoes, caves, etc.;

- hydrographic – oceans, seas, bays, straits, estuaries, lakes, swamps, reservoirs, rivers, canals, etc. Considering the category “estuary” from an eco-geographic point of view, it is expedient to distinguish the main characteristic feature that is typical for this group of water bodies, namely, the absence of a permanent connection with the sea. The main elements of the “estuary” category from a geographic approach include (Fig. 6).

**Figure 4.** Mykolaiv Zoo, 2022, May-June

*Source:* Telegram channel News Mykolaiv

**Figure 5.** The ecological potential of Mykolaiv Region: Arbuzynsky Canyon & Tiligulskiy Estuary, 2022

*Source:* Photo by the author
determination of morphological features of the Liman and diagnostics of the boundaries of the water body;  
determination of morphometric characteristics of water bodies;  
diagnostics of watercourse systems of water bodies;  
analysis of historical names of water bodies and their watercourses to create a unified system of geographical terms;  
definition of the “group of estuaries” as part of the conceptual-categorical apparatus of the industry (Fig. 7).

Figure 6. Ecological-geographical approach to the development of estuaries  
Source: compiled by the author based on 17 Sustainable Development Goals (SDGs) (Resolution adopted by the General Assembly…, 2015)

- attracting environmentally friendly and green investments to the region

Figure 7. Legislative approach by estuaries essence  
Source: authors’ development

Preventing dualism in interpretation, avoiding collisions and gaps in legislation, preventing the emergence of ‘pretend’ or other quasi-normative relationships, preventing abuse of the use of analogies of law and analogies of right, and forming a transparent legal status.
Analysing the category of “estuary” from the perspective of a normative approach, it is necessary to distinguish between estuary as a legal term and a definition. A legal term is a word or phrase used to designate a specific legal concept that reflects the specificity of state-legal phenomena (Legal term, n.d.). Therefore, estuary as a legal term should define the essence of a state-legal phenomenon, for example, estuaries as part of the macro-region “Azov-Black Sea”. A legislative definition is defined as follows:

- a term requiring translation denotes a legal institution that is analogous to a legal institution in the legal system of the language in which the translation is made. At the same time, these institutions have the same normative regulation;
- the corresponding legal institution denoted by a term requiring translation denotes an analogous legal institution that has different legal regulations;
- the corresponding legal institution exists in one legal system and is not characteristic of another (Khvorostiankina, n.d.). An example of a legislative definition is the relationship between the terms “estuary” and “river mouth”, which is used as an analogue in Western European and Latin American countries. The domestic legislator does not use the term “river mouth” in official documents (Official website of the Verkhovna Rada..., n.d.)

Essentially, the emphasis is placed on the significance of maintaining consistency and clarity in the interpretation and implementation of laws. It is crucial to avoid situations where conflicting or ambiguous legal frameworks exist, as they can lead to confusion and undermine the effectiveness of legal systems. Additionally, the misuse of legal tools, such as inappropriate analogies, should be prevented to uphold the integrity of the legal process. Transparency and understanding of legal status are essential for all parties involved to ensure fairness and promote a just legal environment.

From the socio-economic perspective, “estuaries” represent an economic category and a socio-economic phenomenon. An economic category is a generalized abstract (theoretical) expression of objectively existing economic relationships and their manifestations, aspects, and means of knowledge acquisition. They are the means of cognition of the objective economic reality, its result, and means (Artomova, 2009). An example of a socio-economic approach to estuaries is their consideration as a part of the water management system to meet the needs of the population and the national economy sectors for water resources, preservation and restoration of water resources, and implementation of an integrated water resource management system (Law of Ukraine No. 4836-VI..., 2012) (Fig. 8).

![Diagram](https://via.placeholder.com/150)

**Figure 8.** Socio-economic approach by estuaries essence

Source: compiled by the author

There is no statistical data available on the ecological, socio-economic, economic, and other indicators of the use of estuaries as natural resources and regional assets. This is primarily because many territorial communities do not see estuaries as centres of infrastructure and economic development, as well as conditional assets of the community. Among the potential consumers of services that can be provided using the resource potential of estuaries, the coastal zone and the area of passive recreation are identified.
In the Southern part of Ukraine there are a lot of freshwater objects (especially in Mykolaiv and Kherson Regions), which are part of existing PAs, but should they have the same protected state and economic potential. Possibly, it is necessary to distinguish so-called Freshwater protected areas (FPAs) as a separate category of PAs (Fig. 9).

Many scholars have researched the concept of granting legal personality to natural entities, such as rivers. C.J. Iorns Magallanes (2018) asserts that granting legal personality or similar rights to rivers aims to reinforce human responsibility and enhance protection against degradation. The intention is to recognize the intrinsic value and rights of these natural objects, acknowledging the need for responsible stewardship and conservation efforts. By attributing legal personality to rivers, there is an attempt to promote a more comprehensive and effective approach to environmental protection.

According to V.A.J. Kurki (2022), the Rights of Nature movement has achieved notable successes by employing legal personhood as a means of environmental protection. One prominent example is the Whanganui River in Aotearoa New Zealand, which was granted legal personhood in 2017. The case of the Whanganui River exemplifies the direct legal personhood model, where legal rights are purportedly bestowed directly upon the river itself. In contrast, some jurisdictions have established legal persons to oversee rivers without declaring the rivers as legal persons, following the indirect legal personhood model. This study presents legal-philosophical arguments to contest the attribution of direct legal personhood to rivers. It critically examines the rationale behind granting rivers legal personhood and challenges the notion that rivers can possess legal personhood in and of themselves.

M.J. Lynch et al. (2021) argue that a lot of studies examine the intersection of genocides and ecocide, which can be linked to production arguments and related approaches in environmental sociology. Specifically, these scholars suggest that “the ecocide-genocide nexus is useful for understanding the destruction of people and ecosystems by states and corporations intersect throughout the history of capitalism, with evidence that many contemporary genocides are driven by ecocide and efforts to expand raw material resource withdrawals controlled by the capitalist treadmill of production”.

J. Jiménez-López and M. Mulero-Pázmány (2019) suggested, that only innovative, but unusual technologies might be a way for PAs development, e.g., “park managers call for cost-effective and innovative solutions to handle a wide variety of environmental problems that threaten biodiversity in protected areas. Recently, drones have been called upon to revolutionize conservation and hold great potential to evolve and raise better-informed decisions to assist management”.

M. Ito and M. Montini (2018) put forth the argument that the concept of rights to Nature holds little meaning unless Nature itself is recognized as having a right to its existence. They contend that the rights to Nature and the rights of Nature are inherently interconnected. They highlight a fundamental flaw in the current legal framework, which treats living beings such as ecosystems and other species as mere property while granting legal personality and rights to entities in the form of corporations. To address the environmental crisis, they suggest acknowledging and addressing this flaw in the legal system. This would involve moving away from the perspective that treats Nature as property and towards a framework that recognizes the rights and intrinsic value of the natural world. By rectifying this flaw, there is potential for a more sustainable and harmonious relationship between humans and the environment.

If nature and its entities were recognized as legal subjects rather than legal objects, it could profoundly influence the way humans interact with and perceive them. Objects in human everyday lives that could be granted legal subjectivity include rivers, forests, and even animal species. Endowing these elements of nature with legal rights would empower them to have a voice and agency in their ecological well-being and biodiversity. By granting legal subjectivity to nature, these entities would have the right to protect and defend themselves against environmental degradation. They could be represented in a court of law, allowing for legal actions to be taken on their behalf. This shift in legal perspective would contribute to the paradigm of preserving and protecting biodiversity for the benefit of present and future generations. Recognizing the legal subjectivity of nature would signal a deeper understanding and respect for the interconnectedness and intrinsic value of the natural world. It would encourage a more responsible and sustainable approach to human interaction with the environment, fostering a harmonious coexistence between humans and nature (Beebeejaun, 2021).

This study indicates the need to reconsider the legal system and the status of protected areas in the post-war period. Recognizing PAs as valuable resources and leveraging
their potential can significantly contribute to the economic development of regions in Ukraine. By reevaluating and updating the legal framework governing PAs, it becomes possible to unlock their economic potential and capitalize on the benefits they offer. Protected areas can serve as catalysts for economic growth, attracting investment, and generating employment opportunities. They provide opportunities for ecotourism, sustainable resource management, and the development of nature-based industries. By ensuring that the legal system supports and enables the sustainable use of PAs, Ukraine can harness their economic value and foster regional development. Changing the law system and enhancing the status of PAs in the post-war period can provide a solid foundation for sustainable economic growth, while simultaneously preserving the natural environment and its ecological functions. It requires a comprehensive approach that considers the socio-economic, environmental, and legal aspects to create a conducive environment for the economic development of PAs in Ukraine.

Conclusions

The research proposes the introduction of a “legal personality” status for protected areas within the Ukrainian legislative system, highlighting the numerous advantages this approach can offer. Granting legal personality to protected areas not only provides ecological benefits but also protects their inherent socio-economic potential.

By endowing protected areas with legal personality, they are granted specific rights that can vary depending on the entity. For instance, estuaries may have a distinct classification within the national legislative framework due to their freshwater PA designation. This research not only provides a theoretical approach but also suggests amendments to the existing law system to accommodate the changes in the market and society.

Adopting eco-oriented management approaches within protected areas allows for economic activities while promoting both economic and ecological development in the region. This approach facilitates the establishment of sustainable investment flows and helps maintain a balance between state authorities, local communities, and private sector representatives.

Numerous studies support the notion that granting legal personality to PAs simplifies the procedure of defending their rights. Treating PAs as independent subjects with their rights enables the identification and protection of the full range of their rights. The necessary changes to the legislative system in Ukraine should align with market needs, ensuring the acceptance of legal personality has both long-term perspectives for the Ukrainian and international markets.

Indeed, further research should focus on analyzing the advantages and disadvantages of granting legal personality to different types of protected areas, such as freshwater PAs or traditional PAs. By examining the specific characteristics and needs of each type of PA, researchers can assess how the implementation of legal personality can impact their management, conservation, and socio-economic potential.

Additionally, developing a comprehensive framework for legislative amendments in this area is crucial. This framework should consider the specific requirements and challenges of different types of PAs, while also considering the broader legal, social, and economic context. It should address issues such as the recognition of rights, responsibilities, and decision-making processes for PAs with legal personality.

By conducting this research and developing a comprehensive framework, policymakers and stakeholders can make informed decisions about the implementation of legal personality for PAs. This can contribute to the effective management, protection, and sustainable development of protected areas, ultimately benefiting both the environment and society.

Acknowledgements

The author would like to express sincere gratitude to the many individuals who played a role in the completion of this manuscript. In particular, the author would like to extend heartfelt thanks to the Institute for Advanced Studies (FRIAS) at the University of Freiburg, and specifically the Young Academy for Sustainability Research, for their generous support. The author is immensely grateful for being granted an Associated membership and the necessary financial resources, as these contributions have been instrumental in enabling the continuation of the research project.

Additionally, the author expresses deep appreciation to family, friends, and colleagues for their unwavering support, encouragement, and understanding throughout the process. Their belief in the author and their encouragement have served as constant sources of inspiration and motivation.

Once again, the author extends heartfelt gratitude to all those who have played a part in the realization of this manuscript.

Conflict of interest

None.

Appendix A. List of estuaries by relevant local communities of the North-Western Black Sea Region (2022)

<table>
<thead>
<tr>
<th>№</th>
<th>The name of the estuary</th>
<th>Region</th>
<th>Local community</th>
<th>The length of the coastline estuary or lagoon area</th>
<th>Protected territories and objects located on adjacent territories or included in the composition</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Tuzlovski estuaries:</td>
<td>Odesa Region</td>
<td>Tyzlivska local community</td>
<td>206 km²</td>
<td>National Park “Tuzlovsky lymani”</td>
</tr>
<tr>
<td>1.2</td>
<td>Solone</td>
<td>Odesa Region</td>
<td>Tyzlivska local community</td>
<td>3,7 km</td>
<td>National Park “Tuzlovsky lymani”</td>
</tr>
<tr>
<td>1.3</td>
<td>Khadjider</td>
<td>Odesa Region</td>
<td>Tyzlivska local community</td>
<td>4,0 km</td>
<td>National Park “Tuzlovsky lymani”</td>
</tr>
<tr>
<td>1.4</td>
<td>Karachaus</td>
<td>Odesa Region</td>
<td>Tyzlivska local community</td>
<td>76 he</td>
<td>National Park “Tuzlovsky lymani”</td>
</tr>
<tr>
<td>1.5</td>
<td>Kryydol</td>
<td>Odesa Region</td>
<td>Tyzlivska local community</td>
<td>2,4 km</td>
<td>National Park “Tuzlovsky lymani”</td>
</tr>
<tr>
<td>1.6</td>
<td>Buduri</td>
<td>Odesa Region</td>
<td>Tyzlivska local community</td>
<td>0,6 km</td>
<td>National Park “Tuzlovsky lymani”</td>
</tr>
<tr>
<td>1.7</td>
<td>Martaza</td>
<td>Odesa Region</td>
<td>Tyzlivska local community</td>
<td>50 he</td>
<td>National Park “Tuzlovsky lymani”</td>
</tr>
<tr>
<td>1.8</td>
<td>Magala</td>
<td>Odesa Region</td>
<td>Tyzlivska local community</td>
<td>76 km</td>
<td>National Park “Tuzlovsky lymani”</td>
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<tr>
<td>1.9</td>
<td>Djantshei</td>
<td>Odesa Region</td>
<td>Tyzlivska local community</td>
<td>6,92 km²</td>
<td>National Park “Tuzlovsky lymani”</td>
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<td>Maliy Sasik</td>
<td>Odesa Region</td>
<td>Tyzlivska local community</td>
<td>2,36 km</td>
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</tr>
<tr>
<td>№</td>
<td>The name of the estuary</td>
<td>Region</td>
<td>Local community</td>
<td>The length of the coastline estuary or lagoon area</td>
<td>Protected territories and objects located on adjacent territories or included in the composition</td>
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<td>--------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1.11</td>
<td>Sasik</td>
<td>Odesa Region</td>
<td>Lymanska silska local community</td>
<td>35,0 km</td>
<td>National Park “Tuzlovsky lymani”</td>
</tr>
<tr>
<td>1.12</td>
<td>Burns</td>
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<td>Tzyzivska local community</td>
<td>7,0 km</td>
<td>National Park “Tuzlovsky lymani”</td>
</tr>
<tr>
<td>1.13</td>
<td>Alibe</td>
<td>Odesa Region</td>
<td>Tzyzivska territorial community</td>
<td>15,0 km</td>
<td>National Park “Tuzlovsky lymani”</td>
</tr>
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<td>1.14</td>
<td>Shagani</td>
<td>Odesa Region</td>
<td>Lymanska local community</td>
<td>9,0 km</td>
<td>National Park “Tuzlovsky lymani”</td>
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<td>1.15</td>
<td>Budakskiy (Shabolatskiy) estuary</td>
<td>Odesa Region</td>
<td>Lymanska local community</td>
<td>17,0 km</td>
<td>Regional landscape park “Tiligulsky”</td>
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<tr>
<td>6</td>
<td>Tiligulski estuary</td>
<td>Odesa Region, Mykolaiv Region</td>
<td>Koblivska local community Vizirska local community Berezivska local community Dobroslavska local community</td>
<td>61,2 km</td>
<td>The botanical reserve of local importance “Kairivskyi”</td>
</tr>
<tr>
<td>78</td>
<td>Kuyalnytsky estuary (Andriivskyi)</td>
<td>Odesa Region</td>
<td>Krasnosilska local community</td>
<td>28,0 km</td>
<td>National park Kuyalnytsky</td>
</tr>
<tr>
<td>9</td>
<td>Khadziebeivski estuary</td>
<td>Odesa Region</td>
<td>Local community Usativska Village Council</td>
<td>31,0 km</td>
<td>Novomykolaiv Landscape Reserve</td>
</tr>
<tr>
<td>10</td>
<td>Dniestere estuary</td>
<td>Odesa Region</td>
<td>Shabivska united territorial community Maraziilivska village united territorial community</td>
<td>41,0 km</td>
<td>“Nizhnyodnistrovsky NPP” Reserve tract “Dniester floodplains” Landcape reserve of local importance “Lymanksy”</td>
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<td>11</td>
<td>Dry (Klein-Liebenthal) estuary</td>
<td>Odesa Region</td>
<td>Tairov united the local community</td>
<td>14,0 km</td>
<td></td>
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<tr>
<td>12</td>
<td>Small Ajalytskyi (Gryhorivskyi) estuary</td>
<td>Odesa Region</td>
<td>Lymansk rural local community</td>
<td>12,0 km</td>
<td></td>
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<td>13</td>
<td>Great Ajalytskyi (Daufinivskyi) estuary</td>
<td>Odesa Region</td>
<td>Lymansk rural local community</td>
<td>8,0 km</td>
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<tr>
<td>14</td>
<td>Karabush estuary</td>
<td>Mykolaiv Region</td>
<td>Berezan local community</td>
<td>4,2 km</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Soysky estuary</td>
<td>Mykolaiv Region</td>
<td>Berezan local community</td>
<td>24,0 km</td>
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<td>16</td>
<td>Berezansky estuary</td>
<td>Mykolaiv Region</td>
<td>Berezan local community</td>
<td>73,0 km</td>
<td></td>
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<tr>
<td>17</td>
<td>Baykus estuary</td>
<td>Mykolaiv Region</td>
<td>Ochakov city community</td>
<td>6,0 km</td>
<td></td>
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<td>18</td>
<td>Buzky estuary</td>
<td>Mykolaiv Region</td>
<td>Ochakov city community Halysyniv Territorial Community of Vitovskei region Mykolaiv City local community</td>
<td>110,0 km</td>
<td>Reserve “Olvia” National Park “Buzky Gard”</td>
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<tr>
<td>19</td>
<td>Dnipro-Buz estuary</td>
<td>Mykolaiv Region, Kherson Region</td>
<td>Ochakov city community Belozersk community Bekhter community Holostryan city community</td>
<td>71,0 km</td>
<td>National Park “Biloberezzhya Svyatoslav” Black Sea Biosphere Reserve National Park “Buzky Gard” Pervomaisky Island – 1.3 km</td>
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<tr>
<td>20</td>
<td>Karabush (Karabash)</td>
<td>Mykolaiv Region</td>
<td>Berezan united territorial community</td>
<td>1,0 km + 2,0 km</td>
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References


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<td>23</td>
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Source: State Statistics Service of Ukraine (2022)


Визнання заповідних територій юридичними особами як інноваційний спосіб припинення геноциду заповідних територій

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Анотація. Поняття правоздатності об’єктів природно-заповідного фонду не визначено на законодавчому рівні, і це суттєво зменшує обсяг інструментів для захисту відповідних територій від зловживання прогалинами в чинному законодавстві щодо обсягів та методів використання їхнього природного потенціалу. Наукове дослідження зосереджено на вивченні поняття «правоздатність» об’єктів природно-заповідного фонду України з урахуванням вимог чинного законодавства з метою відновлення та захисту прав заповідних територій у судовому та позасудовому порядку. Для всебічного вивчення динаміки ринку з мінімальними варіаціями між дослідженнями проведено кількісний огляд літератури, зокрема метааналіз. За допомогою порівняльного методу визначено основні напрями відродження післявоєнного ринку та оцінено доцільність адаптації цих стратегій до української економіки. У дослідженні стверджується, що надання природоохоронним територіям статусу юридичної особи сприяло б захисту їхніх прав, оскільки це б дало змогу ідентифікувати їх як самостійних учасників господарських відносин і забезпечило б їм необхідні механізми для захисту своїх територій Обґрунтовано необхідність запровадження на законодавчому рівні поняття «юридична особа» для об’єктів природно-заповідного фонду, що не лише допоможе визначити права заповідних територій, які найбільше порушуються, але й сприятиме збільшенню інвестицій у цей сектор. Легітимізація заповідних територій як юридичних осіб, наявність чіткого нормативно-правового підґрунтя забезпечить формування прозорої форми судового та позасудового захисту й відновлення порушених прав заповідних територій, стане інструментом зниження надмірного використання їх природного потенціалу, латентного антропогенного навантаження від господарської діяльності. Практичне значення дослідження полягає в тому, що його рекомендації щодо легітимізації заповідних територій як юридичних осіб дають можливість як українським, так і міжнародним інвесторам залучитись до відповідного сектору національної економіки, орієнтованого на екологізацію усіх сфер виробництва, що призведе до підвищення прибутковості та диверсифікації ризиків

Ключові слова: природно-заповідні території; екоцид; післявоєнний період; наслідки війни; легітимізація