

# Steppe protected areas on the territory of Ukraine in the context of the armed conflict in the Donbas region and Russian annexation of the Crimean Peninsula

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**Abstract:** This article analyses the factors influencing the conservation status of protected areas in Ukraine caused by the unstable political situation in the country in the years 2014-2016, including military action and occupation of the eastern part of Ukraine by Russian troops, and annexation of the Crimean Peninsula and increasing military activity of the Armed Forces of Ukraine. We show that these factors have caused acute adverse effects on protected areas. The eastern region of Ukraine, which contains the oldest protected areas in the country, and the Crimean Peninsula contain the most valuable and ancient nature reserves and national parks, interesting as reserves of rare species of flora and fauna, as well as objects of long-term monitoring of changes in nature. This is where much of the protected area supports steppe ecosystems. We examine the negative impacts on all steppe protected areas in Ukraine caused by the physical impact of military operations or exercises, increasing intensity of spontaneous fires, pollution and other factors stemming from the unstable political situation in the country.

**Keywords:** ATO zone, biodiversity, conservation, Donetsk region, environmental impact, fires, Luhansk region, protected areas.

**Abbreviations:** ATO = Anti-Terroristic Operation, PA = protected areas, NNP = National Nature Park, RLP = Regional Landscape Park., SPNA= Specially Protected Natural Area.

## Introduction

Since 1919, about 8,200 protected areas (PA) have been established in Ukraine with a total area of 4,071,362 hectares or 6.7% of the country's surface. The PAs were created at irregular intervals during this period, under different legislative frameworks and pursuing different objectives. In 1951 and 1961, many PAs were abolished as being discordant with the USSR's policies for resource exploitation. The same happened in the 1970-80s, when amendments to legislation three times triggered the abolishment of some of the PAs in connection with some alleged discordance with contemporary legislation and, in most cases, the liquidation was carried out to the benefit of exploitation of new timber resources or mineral deposits. In total, about 3,000 PAs lost their protected status, constituting about 15% of the total area of all PAs established in Ukraine. These losses led to an eclectic, unevenly distributed network of protected areas. There are still ideas to improve of PA network representativity (Lavrenko 1927) that were contemplated in 1927 but have not been implemented yet.

A distinctive feature of the Ukrainian PA network is the protection of steppe landscapes, as being traditional for the country. The very recognition by scientists of the degree of loss due to massive agricultural clearing of steppes in 1917-1918 gave momentum to environmental conservation. A significant proportion of the first protected areas and national parks created within the current borders of Ukraine (starting with Askania-Nova in 1919) were located in the steppe zone. The peak of establishing steppe conservation areas occurred in the second half of 1920s. Almost all of them have preserved their conservation status until now, remaining under continuous protection for the last 90 years.

Since 2010, Ukraine has been going through complex social and political perturbations that make the involvement of government authorities, scientific institutions and public engagement in environmental protection significantly more complicated. In particular, during the public administration reform conducted in Ukraine in 2010-2011, the role of the State Conservation Service as an independent executive authority coor-

dinating conservation activities was abolished. Also the regional bodies of the Ministry of Ecology and Environmental Protection that operated PAs in provinces were dissolved. Within regional administrations there were various “ecology departments” bearing various names and functions. PA establishment and administration function became the task of newly created agencies. However, these did not fully replace the former agencies and in most cases conservation practice has almost stopped. The systematic implementation of national conservation policy has thus been effectively terminated. This affects the protection of existing PAs, the establishment of new ones, as well as the continuing development of conservation institutions. Furthermore, attempts to create a new government authority that would have replaced the liquidated body have been unsuccessful.

Since 2013, conservation practice has been deeply affected by new, previously unknown, issues related to social and political changes, such as: a) Crimean peninsula annexation; b) military intervention of Russian military forces into Eastern regions of Ukraine and c) illegal activities of the Armed Forces of Ukraine in the nature conservation areas. Unfortunately, those were Eastern provinces that traditionally were the birthplace and development ground for national conservation practice, and Crimea is the area with the highest density of highly protected PAs.

## Crimea

The total area of the 183 Crimean PAs is 216,000 hectares (6% of the total PA surface of Ukraine). In Crimea, this includes 6 out of a total of 19 Ukrainian nature conservation areas of the highest level category of protected areas. Four conservation areas, the only national park as well as numerous small PAs essentially represent regional steppe ecosystems. All the conservation areas administrations are subordinated to Ukrainian government authorities, instead of local governments. There is no proprietary authority in Crimea to take care of its own conservation areas (Shyriaieva & Vasyliuk 2014; Vasyliuk & Shyriaieva 2014a). In 2014, public and political events entailed the illegal separation of Crimea from the territory of Ukraine and annexation of the Crimean Autonomous Republic to the Russian Federation. Despite the fact that world community and Ukrainian government did not recognize the peninsula’s annexation, for the time being Ukraine has lost control over Crimean territory. Change of administrative subordination of Crimea, as well as loss of control over its territory from Ukraine led to a number of negative consequences for its conservation areas:

- certain PAs have been liquidated in order to solve problems that could not be addressed while they existed, and others have undergo construction or logging on their territory;
- nature conservation areas have been subordinated to the Republic Forestry Committee of the Russian Federation, while, at the same time, scientific priorities were essentially disregarded as their primary function;

- planned conservation activities implemented by governmental bodies were stopped and constant operation of protected areas, which was maintained in previous decades, was terminated (Vasyliuk et al. 2015a; Vasyliuk & Shyriaieva 2014a).

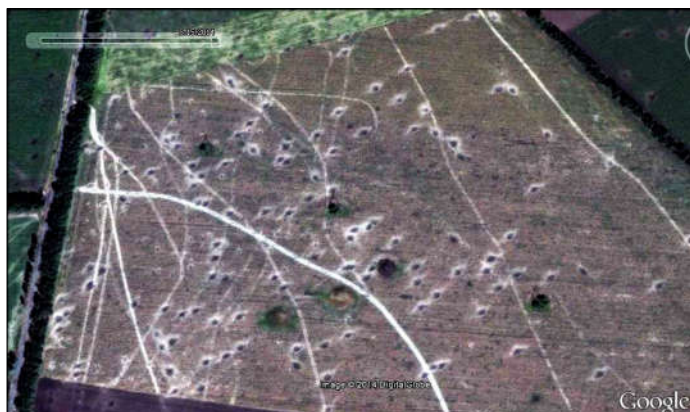
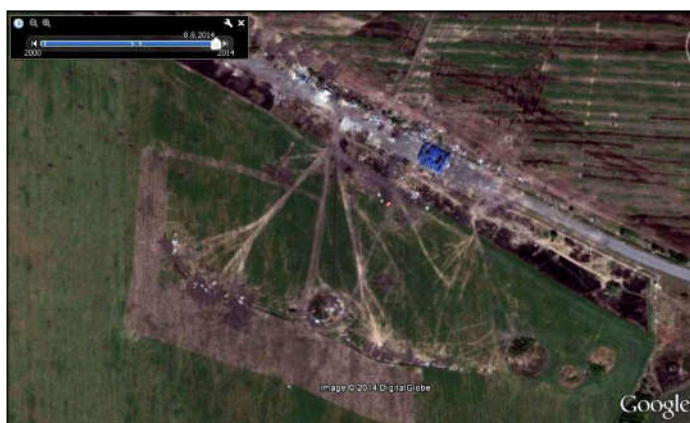
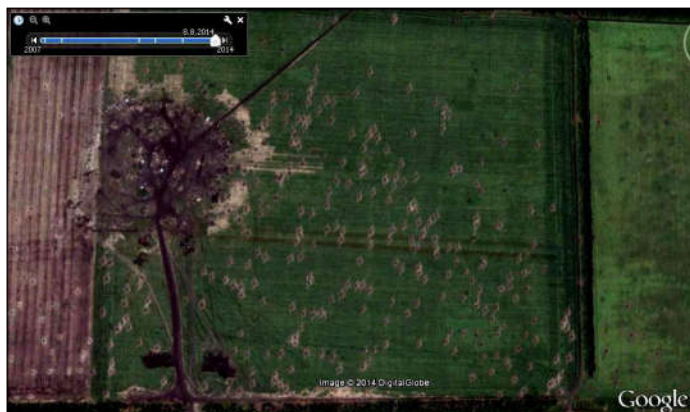
State of Crimean PAs after the Russian annexation is unknown. Establishing details about the current situation is quite difficult due to the low possibility of obtaining current operational information from the territory that is no longer controlled by Ukraine. With the annexation, the Federal Law on “Specially Protected Natural Areas” (SPNA) extended its effect on the peninsula’s territory. According to this Law, there are SPNAs of federal, regional and local level. Therefore, conservation areas and national nature parks (NNP) are controlled at the federal level, while the rest are mostly of the regional. Thus, conservation areas and national parks shall be subordinated directly to the Ministry of Nature Reserves of Russia, while the others shall be subordinated to the sub-sovereign entity, i.e. Crimea.

The policy of the self-proclaimed republic aims to preserve the PA territories under its local authority (Kryminform 2014). At the same time, there is no unified vision of implementing such intent. An option of creating a new institution that would administer conservation areas (Kianews 2014), or uniting all the conservation areas into a single conservation area (Vasyliuk 2016) was considered. In fact, in the same fashion as the forestry enterprises, the conservation areas were subordinated to the Crimea Republic Forestry Committee (Izvestiya 2014).

Another negative aspect of Crimean government policy is the commercial approach to the exploitation of natural and recreation resources of Crimean PAs. On 02 April 2014, the government issued a decree establishing that visits to conservation areas and national parks and use of touristic paths of Crimea should be free of charge until the infrastructure could be established to administer the revenue. At the same time, the Russian Forestry Committee has declared the majority of all conservation areas as “recreation objects” and established scaled entry payment (Russian Forestry Committee 2014). Crimean media actively advertise commercial tourism in Crimean conservation areas and nature reserves (Krymedia 2015). Such initiatives are caused by the shortage of PA financing available from the self-proclaimed Crimean authorities.

Obvious negative consequences of Crimean annexation were perceived in just 4 months after the annexation. As nature conservation areas lost institutional connection to the Ministry of Ecology and Environmental Protection and National Academy of Sciences of Ukraine, the majority of the conservation areas employees were dismissed, subsequently terminating long-term monitoring research at the conservation areas, and partially losing academic legacy.

In October 2014, the Crimean Nature Conservation Area was transferred to the Federal State-Funded Institution “Complex Crimea”, under jurisdiction of the Administration of the President of the Russian Federation V. Putin (Kryminform 2015).



**Figs. 1-3. Traces of large-scale fighting on satellite images, Luhansk region (1-2), Donetsk Kriazh RLP, Donetsk region (3), 2014.**

Transformation of the conservation area into a government-owned enterprise for elite hunting is a restoration of Soviet traditions, restoration of safari practice, for the purpose of which the conservation area was liquidated 57 years ago (Kryminform 2015).

There are other negative aspects. Russian troops are deployed at the territory of Karalarskyi RLP, Charivna Havan NNP, Opuk and Kazantip Nature Reserves. At the same time, the Ministry of Defence of the Russian Federation broadcasts information about mass-scale military training at Opuk Conservation Area (Environment-People-Law 2016) and Karalarskyi Park (here Russian occupants have reconstructed an airfield), including air missiles, air defence systems and high-calibre arms, that cause substantial damage to the conservation areas (Reporter 2016).

## East Ukrainian Combat Area (Anti-Terrorist Operation Zone)

The military and political conflict in the Eastern Ukraine (Donetsk and Luhansk regions) that, in 2014, led to using heavy weaponry, large-scale casualties and infrastructure devastation, is still going on. Moreover, substantial damage was incurred to surrounding landscapes including PAs. Before the occupied territories contemporary frontier was marked, battles were fought largely on the territory controlled by so called “self-proclaimed Donetsk and Luhansk People’s Republics” (Vasyliuk et al. 2015b; Vasyliuk & Shyriaieva 2014b).

The main negative factors causing damages to PAs are:

1. Passage of heavy vehicles (mainly tanks and other types of crawler machines).
2. Craters created by explosions, each of which causes mechanical damage to landscape and destruction of vegetation, as well as leaving concentrated traces of sulphur and heavy metals in the soil. Thus, around Donetsk Kriazh RLP, experts of the International Charity Organization “Ecology-Law-Human” (ELH) have counted 15,505 craters of high-calibre rounds. Each of these has caused the contamination and loss of use of 225 km<sup>2</sup> of surrounding soil surface (Melen'-Zabramna et al. 2015).

Some of the PAs that were essentially damaged by shelling: NNP Sviati Hory, NNP Meotyda, Kalmiusske and Kreidova Flora Sections of Ukrainian Natural Steppe Conservation Area, RLPs Donetsk Kriazh, Kramatorskyi, Kleban-Byk and Slovianskyi Kurort (Donetsk region), Luhanskyi, Prystenske, Kreidiane, Bilohorivskyi, Perevalskyi, Naholchanskyi wildlife reserves, Novokaterynivske Vidslonennia and Vidslonennia Nyzhnioho Karbonu natural landmarks (Luhansk region).

3. Construction of trenches and other bunkers of all sorts for personnel and machines. Trenches and other fortifications were built on the territory of some of the conservation areas (including Kreidova Flora conservation area that is located on the liberated territories now). The fortifications have been erected also in the offices of Kalmiusske USNR, Novokaterynivske Vidslonennia Nature Landmark, at Donetsk Botanical Garden, Balka Vodiana Wildlife Reserve, as well as Kramatorskyi RLP (all the PAs in Donetsk region).

4. Fires at nature reserves territories. Assessment conducted by ELH shows that about 3000 fires took place in the ATO zone (Kolomytsev et al. 2014, Vasyliuk et al. 2014). The research was conducted using the data obtained through remote Earth surface probing MODIS (NASA). It encompassed all events of fire outbreaks at the natural vegetation and rural communities' areas between June and September 2014. The reason for such increased number of fires in the ATO zone was the combination of a number of factors: a drought season that is traditionally accompanied by local increase of dry foliage fire outbreaks; unavailability of fire extinguishing infrastructure (plundered fire-fighting machinery, land mines in woods and steppes, continuous firefights); significant amount of fire outbreaks caused by explosions, as well as intentional arsons for tactical purposes.



Only for the Donetsk Kriazh RLP, the area damaged by fire is 3,952 hectares. At the same time, it is not possible to evaluate the loss incurred to the biodiversity and the damage caused to the soil by explosions and other consequences of large-scale fires at the protected territories (Kolomytsev et al. 2014).

5. Unauthorized cutting of wood by locals for domestic needs, caused by the destruction of the heating network and natural gas supply; logging for construction of defensive installations. Where shelter wood belts were cut, additionally, this might increase danger of wind erosion and dust storms.

6. Lack of governmental control gave a push to unauthorized open-pit mining of coal. Specialists of I.I. Schmalhausen Institute of Zoology of National Academy of Sciences of Ukraine together with the National Ecological Centre of Ukraine assessed loss of steppe landscapes due to such type of subsurface commissioning in Luhansk and Donetsk regions. Since early 2010, a total of 634 quarries with a total area of 5,880 hectares were created at the territory of Luhansk region; and 105 quarry complexes of 1,274 hectares were created in Donetsk region. The biggest area of illegal coal quarries is located in Anratsyt (1,416.95 hectares) and Perevalskiy (2,555 hectares) districts. About 3,826 hectares or 53.5% of the total area of quarries was created in steppe territories. The rest was created on industrial lands, fields, woods and even within transport infrastructure areas. The area of quarries within Luhansk region is equal to 2/3 of the total area of regional nature conservation territories and it's constantly growing. Such illegal coal mining damaged some of the nature conservation territories (Vasyliuk & Kolomytsev 2014): open-cast mines were spotted in wildlife reserves Miusynske Uzhiria, Pershozvanivskiy, Illiriytskyi, Bilorichenskyi, Perevalskiy (Luhansk region; Vasyliuk 2015), Larynyskyi, Zorianskyi step (Donetsk region).

7. Among other negative consequences, the glasshouse botanical collection in the Donetsk Botanical Garden was damaged by inappropriate heating during the winter season.



**Fig. 5.** In the vicinity of Kreidova Flora Nature Reserve, Donetsk region, 2014. Photo: D. Shyriaieva.

8. The war caused gross damage to the offices of nature conservation territories: the central office of the Luhansk Nature Conservation Area (Luhansk region) was plundered (Borovyk 2015), in NNP Meotyda (UNIAN 2015), Provalskiy Steppe (Luhansk region) and Khomutivskiy Steppe Nature Reserves (Donetsk region; UNIAN 2014) the offices were seized by terrorists, while in Donetsk Kriazh, Zuivskiy and Kleban Byk RLPs (Donetsk region) they simply stopped their work. The personnel, results, documents and nature reserve institutions archives all were lost (Environment-People-Law 2014).

In 2015, the filming of the "Novorussia Army" promotional video caused the extermination of a colony of 50,000 Sandwich terns in Meotyda National Park (Kryva Kosa area). Overall, the absence of the national park's security led to increasing poaching by fishermen in the protected area. After the filming was over, the crippled and non-secured territory has become a place for storing poaching nets ([https://youtu.be/snlwOggo\\_o](https://youtu.be/snlwOggo_o); accessed 10 November 2016).

So called "Donetsk People's Republic" declared occupied Meotyda territories, as well as Khomutovskiy Steppe Nature Reserve, as "specially protected republican territory named Khomutovskiy-Meotyda" The new quasi-institution is subordinated to the "Main Administration of Ecology and natural Resources of Donetsk People's Republic", being a subdivision of the "Ministry of Agricultural Policy and Products of Donetsk People's Republic" ([https://vk.com/khomutovskayastep\\_meotida](https://vk.com/khomutovskayastep_meotida); accessed 10 November 2016).

In addition, available within area under control of "self-proclaimed Donetsk People's Republic", PAs with RLP status were reclassified into the "republican national park" ([https://vk.com/rlp\\_donetckiy\\_kryazh](https://vk.com/rlp_donetckiy_kryazh); accessed 10 November 2016).

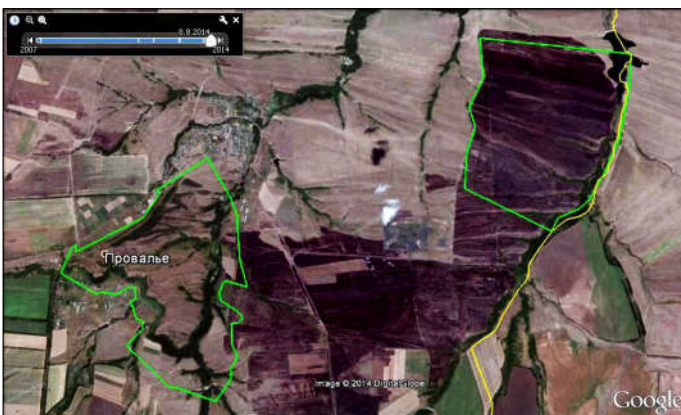
In June 2016, Ukraine's Donetsk Regional Military and Civil Administration ordered the subordinated local occupied administrations at these PAs in a completely different way. They issued the Orders of Donetsk Regional Military and Civil Administration "On the Liquidation of Donetsk Kriazh Regional Landscape Park" (Donetsk state administration 2016a), "On the Liquidation of Meotyda Regional Landscape Park" (Donetsk state administration 2016b) and "On the Liq-



**Fig. 4.** Kreidova Flora Nature Reserve, Donetsk region, 2014. Photo: S. Lymanskyi.



**Fig. 6.** Consequences of fire at "Obushok" PA (Donetsk region) on satellite image, 2014.



**Fig. 7.** Consequences of fire at the Department of the Luhans Nature Reserve "Provalskyy Step" on satellite image, 2014.

liquidation of Zuivskiy Regional Landscape Park" (Donetsk state administration 2016c), which liquidated the offices of these landscape parks. The complete liquidation of legal entities of these landscape parks offices, instead of possible cutting of their financing, turned out too cruel step.

### Activity of the Armed Forces of Ukraine vs nature protection

The location of several unsanctioned testing grounds of the Armed Forces of Ukraine in national parks within the territory controlled by Ukraine constitutes unexpected negative impacts on protected areas. Some of such territories were related to former military activities in the Soviet times. However, now military people are interfering in natural reserves, causing substantial destruction.

In October 2015, regiments of the Armed Forces of Ukraine entered the Kozachelagerska Arena of the *Oleshkivski Pisky National Park* (Kherson Region) without approval of the park management (Letter of the Oleshkivski Pisky National Park dated 14.01.2016 No 01-18/07 to Chairman of Radensk Village Council O.V. Kravchenko). No reply was given to the enquiry of the national park management to the Ministry of Ecology and Natural Resources, Ministry of Defence, National Security and Defence Council of Ukraine (Letter of the Oleshkivski Pisky National Park dated 15.12.2015 No. 01-8/171

Chairman of the National Security and Defense Council O.V. Turchynov) and to the specialized committee of the Verkhovna Rada of Ukraine (Letter of the Oleshkivski Pisky National Park dated 17.12.2015 № 01-21/112 to the Chairman of the Committee of the Verkhovna Rada of Ukraine for Ecological Policy, Nature Use, and Chernobyl Disaster Consequences Liquidation M.V. Tomenko). Military servicemen of the Armed Forces of Ukraine in fact forbade the national park inspectors and specialists to stay on its territory, thus their work and the development of the national park was stopped. The PA state security service was unable to perform its functions and research activity was virtually stopped. The 1,391 hectare reserve area requiring special protection regime is located here. The Oleshkivska Desert ecological path is also located here and has been visited by a number of tourists, to which the national park provided paid services. Students of Kherson State University and schoolchildren also failed to do their research field practice within the territory of the national park (Enquiry of Oleshkivski Pisky Scientific and Technical Council members dated 10.12.2015 No 01-18/165 to Chairman of Kherson Region State Administration A.S. Putilov).

Having no relevant decisions of governmental bodies, the Military Commissariat ordered the village councils to warn people on commencement of military exercise and on not letting visitors to the Oleshkivski Pisky reserve (Letter of the



**Fig. 8.** Fortifications in the "Kalmiuske" Department of the Ukrainian Steppe Nature Reserve (Donetsk region) on satellite image, 2015.



**Fig. 9.** Fortifications in the Balka Vodiana PA (Donetsk region) on satellite image, 2015.



Chairman of Tsiurupynsk District Military Commissariat dated 18.12.2015 No 1373 to Chairman of Radensk Village Council). The national park management was not informed of that.

Later, a series of circumstances were revealed, which led to military people capturing the Oleshkivski Pisky National Park. For the first time, it was declared a national park in 1928; however, it existed in this status for only 2 years, till 1930. After World War II, this territory was given to the state forest stock land of Tsiurupynsk State Forestry. This land was leased as bombing testing ground – the so-called former 48<sup>th</sup> Kherson Aviation Testing Ground. However, the permit resolutions for the testing ground expired. As of today, there are no documents confirming the use of this land by the Ministry of Defence of Ukraine. In 2010, the national park was created by the Decree of the President of Ukraine (Supreme Council of Ukraine 2010), and its text says clearly that the military testing ground existed there no longer.

Initially, it was offered to declare the whole territory of the former testing ground as the national park – 19,000 hectares in total. Its most valuable central part of c. 5,000 hectares was to become the park reserve area and be used for research and the territory around it was allocated as recreational zone to be visited by tourists. However, when the park was created, the Tsiurupynsk State Forestry State Enterprise refused to make a full-scale national park and agreed to allocate only the central part of the sands zone for protection, which was originally planned as natural reserve area.

Oleshkivski Pisky is a very favourable location for a national park, because in the past the testing ground was seldom used, only for bombing, which did not cause large-scale transformation of the landscape. A small number of bomb craters has an insignificant impact on the preservation of the sand steppe landscape.

After the war in Eastern Ukraine began, the Armed Forces returned to Oleshkivski Pisky, forgetting that the land lease period expired 15 years before, and without execution of any land use documents. Exercise with various weapons was carried out here. Thus, neither visitors, nor park staff could access this area.

In early February 2016, after several month of illegal military exercise, a working group was created in Kherson Region State Administration (2016) to determine the lawfulness of national park land use for military purposes. At sessions, the participants of this group did not manage to reach agreement with representatives of the Ministry of Defence, thus it was decided to ask the national park to go to court with a demand to force the troops to free the illegally occupied former testing ground.

It appeared that within the Ministry of Defence system, liquidation of the testing ground and absence of land lease rights are not considered to be a serious problem. On the contrary, existence of the national park was called a “problem issue”, which could be resolved through execution of documentation allowing the Ministry of Defence to use the whole territory of Oleshkivski Pisky, including the national park.



**Figs. 10 and 11. Consequences of illegal military exercise at “Oleshkivski Pisky” NNP, 2016. Photos: O. Vasyliuk.**

Later, ecologists detected the following violations of nature protection regime on the territory of Oleshkivski Pisky National Park: extensive illegal forest cutting (the largest separately standing trees were chosen, which could be quickly removed; <https://youtu.be/e8JncW9K8q8>); throughout numerous hectares, the earth was fully ruptured with crawler threads in tank manoeuvres locations (<https://youtu.be/N1sFQY4RKQY>); the sightseeing platform and national park protection signs were destroyed by using it as targets; targets were placed around the national park located in the centre of the sand arena, to avoid shells leaving the testing ground area, targets were installed, with troops firing from non-reserve part of the sand zone (<https://youtu.be/blats7vxzQ>) into the middle of the national park.

At the same time, a press conference took place in Kherson, attended by representatives of Oleshkivski Pisky National Park, Black Sea Biosphere Reserve, and Askaniya-Nova Biosphere Reserve (Kherson Region), the public, and scientists. The press conference participants concluded that, in their opinion, it is unacceptable that regiments of the Armed Forces of Ukraine continue to stay within natural reserves located on the territory controlled by Ukraine. Considering the absence of any approvals, as well as considerable damage to natural reserve territories, there is a need for the Military Prosecutor’s Office to file the relevant claims for damages incurred by the state as the result of deliberate damage to the natural reserve fund. Apart from rehabilitation of the damaged territories, in the opinion of the press conference

participants, it would be a valid act from the side of the Ministry of Defence of Ukraine to approve creation of national parks on lands belonging to it: Samarskyi Bir National Park (Dnipropetrovsk Region), Divychky (Kyiv Region), Shyrokyi Lan (Mykolayiv Region) etc. (<http://bit.ly/occupiedreserves>).

Later the Ministry of Defence of Ukraine addressed President Petro Poroshenko with a request to facilitate allocation of the land plot of the so-called Kherson Military Testing Ground by cancelling the largest and most important part of the Oleshkivski Pisky National Park.

After an active public campaign, an inter-departmental meeting was held in the Ministry of Ecology and Natural Resources of Ukraine, dedicated to the illegal presence of the Armed Forces contingent (The Ministry of Ecology and Natural Resources of Ukraine 2016). This meeting was initiated by the Minister of Defence of Ukraine addressing to the Minister of Ecology and Natural Resources Ostap Semerak with a request to approve the cancellation of the Oleshkivski Pisky National Park. The meeting was attended by representatives of the Ministry of Ecology and Natural Resources, by the State Forest Agency of Ukraine, Kherson Region State Administration, and the Environment-People-Law International Charity Organization. In the opinion of the Ministry of Defence, the whole territory of Oleshkivski Pisky needs to be given to the Armed Forces for locating a military testing ground, and this can be done only by cancelling the national park status, on which the Ministry of Defence addressed to the President Petro Poroshenko.

However, the situation changed radically during the meeting. The representative of the State Forest Agency informed (<https://youtu.be/2p0bhZxAd7k>) that there are land plots within the Agency system, which can be given for the testing ground. Representatives of the Ministry of Defence stated that the actual area required for setting up a testing ground comprises 5,300 hectares, which can be located outside the national park (<http://bit.ly/oleshky16>).

Allocation of the new site for the military testing ground is still in progress, but exercises have been stopped in the national park, and the enclosure is removed.

Military regiments are occupying several land plots of the Meotyda National Park, including that of the former Polovetskyi Steppe Regional Landscape Park (Donetsk Region) now forming part of the Meotyda. In particular, shooting range for small guns, large calibre machine guns, and mine throwers, together with timber boards covered with various materials, used as targets, was located there. Only a steep slope where the targets are placed on, protects the nearby village. The testing ground is too far from the fighting line to state that it is critical to place it here. There were no approvals from the national park management or of the Ministry of Ecology and Natural Resources.

Near Rybatske Village, Donetsk Region, defence structures and pillboxes are being built without required approval of the Ministry of Ecology and Natural Resources or of the national park management.

*Azovo-Syvaskyy NNP (Kherson Region)* actually remained unprotected due to the occupation by the Armed Forces of Ukraine, as unsanctioned military exercise is held here, with use of gamekeeper posts as targets.

Manoeuvres were also started in the *Tuzlivski Lymany National Park* in Odessa Region. However, active interference of the national park managers stopped them and forced the military to restore the damaged site (Southern courier 2016).

In April 2016, without the approval of the management of *Dzharylhatskyi National Park (Kherson Region)*, a military exercise was carried out by the frontier guard and coast guard, near the lighthouse (<https://youtu.be/bZySX8NSA5E>) and along the island seacoast (<https://youtu.be/Lk8jVwG68ds>).

On 5 October 2016, military people tried to get to Dzharylhach Island in two KRAZ trucks and one GAZ-66 truck. The latter sank, together with one KRAZ which tried to tow it out. Both vehicles were rescued by the second KRAZ. This drive also was not approved by the frontier guard and the national park management.

A special operations force regiment came to the territory of the *Medobory Natural Reserve (Ternopil Region)*, acting illegally, without any notice to the natural park management, with the aim to hold joint Ukrainian-American military exercises with shooting (Teren 2016). This situation was settled very unexpectedly: after a conversation with the natural park security service, American instructors refused to stay there.

Military manoeuvres were also known to be held within the *Luhanskyi Natural Reserve*, namely its part Triokhizbenskyi Step (Luhansk Region).

According to Director of the *Askaniya-Nova Biosphere Reserve (Kherson Region)* V.S. Havrylenko, military machinery of unknown regiments ([https://youtu.be/ieD\\_iTXyIXU](https://youtu.be/ieD_iTXyIXU)) passed through the natural reserve, a complete reserve steppe site. It is known that on 19 September 2015, a commander of an unknown division led a column of 6 infantry combat vehicles (ICV) for 17,140 metres through the Askaniya-Nova Biosphere Reserve of the National Academy of Agrarian Sciences of Ukraine. The column going along the automobile road from Chkalove Village, Novotroyitsk District, Kherson Region, towards Askaniya-Nova Urban Settlement, Chaplynka District; having reached the biosphere reserve border marked with a stela and a 1.5 x 2 m nameplate in brick frame, the ICVs crossed the border moat and entered the territory of the reserve, passing through the buffer zone and after 1.5 km, having crossed the 8 m fire protection strip, entered the steppe natural reserve area (the Pivdenna site – a 6,578 hectare dry plant stand area), in spite of the sign forbidding to enter or drive in. The Pivdenna site is a territory with unique natural combinations of plants and animals on protection lists including the Red Book of Ukraine, and, at the same time, is extremely vulnerable to fire. In spite of the warning from a natural reserve employee, the track machines continued their way through the nature reserve steppe. Only interference by Director V.S. Havrylenko forced the military people to leave the steppe.

Apart from that, military helicopters flew directly above the habitats in the reserve.

The Ministry of Defence planned to have missile complexes deployed on the territory of the *Chornomorsky Biosphere Reserve* (Kherson Region) and to hold exercises (Decision of the National Security and Defense Council dated 11 November 2015, entering into force by the Decree of the President of Ukraine dated 1 December 2015 No 672-22 "On urgent measures for improvement of the state's anti-aircraft defense").

The possibility of creating such a military testing ground was actively studied in the first half of 2016 on the level of the Cabinet of Ministers of Ukraine. The Chornomorsky reserve administration received several enquiries on this matter from the Ministry of Defence, requesting to clarify how land can be taken from the reserve. Moreover, the Ministry of Defence are pressing the natural reserve management for permission to deploy missile complexes on its territory ([https://youtu.be/70QRi\\_2U660](https://youtu.be/70QRi_2U660)). This issue is also known to be under the control of the Security Service of Ukraine (SSU; Letter from the Main Administration of Counter-Espionage Defense of the State Interests in Economic Safety of the Security Service of Ukraine dated 13.06.2016 No 8/2/3-7115).

In the opinion of the Ministry of Defence of Ukraine, it is necessary to withdraw 5,500 hectares of the Yavorlytsky Kut stow (the whole stow; one-third of the whole land part of the reserve) and to set up a testing ground for anti-aircraft missile and reactive weapons, and aircraft, as well as for training launches of battle missiles. The reasons for placing missiles here are that there are the remains of an earth wall from Soviet times that is suitable for installing such a complex (by the way, the natural reserve does not have the act of title for this land, and most probably this site still belongs to the Ministry of Defence), and also the need to locate such objects at the distance of 90 km from the nearest settlements. Yavorlytsky Kut and the central part of the isthmus in Tuzlivski Lymany National Park are suitable locations of this sort in Ukraine.

The territory of Yavorlytsky Kut is one of the wildest zones of the Ukrainian seacoast. Currently this territory constitutes the central nucleus of the biosphere reserve (The Black Sea Biosphere Reserve 2016). Thus, it is not possible to legally acquire this site.

In 1985, the Chornomorsky Biosphere Reserve was included into the World Network of Biosphere Reserves, which is confirmed with the UNESCO certificate dated 15 February 1985. Acquisition of the key site of this international reserve would inevitably be a severe blow to Ukraine's reputation in the global arena and would lead to exclusion of this reserve from the UNESCO list.

The Askaniya-Nova Biosphere Reserve was visited by OSCE representatives headed by Mr. Andrew Richardson. The issue of Ukraine fulfilling its obligations on maintenance and preservation of international nature protection objects protected by UNESCO was raised (Chornomorsky Biosphere Reserve, Askaniya-Nova Biosphere Reserve). Representatives of the

mission were most surprised that no one from the Ukrainian Armed Forces has met with the management of any of the natural reserves.

Due to lack of information, it is impossible to fully assess the impact of the Armed Forces of Ukraine onto the local natural reserve stock. However, we have data from our own sources about military manoeuvres held in the Druzhkivka Stone Trees Natural Monument and deployment of military machinery in the "Forest on Granite" natural reserve stow (both in Donetsk Region).

## Conclusions

Loss of government control over a part of the Ukrainian territory has led to physical damage of a considerable part of PAs on such territories, including the ones in steppes. Apart from that, on the territory controlled by Ukraine, defence improvement has led to increase of military manoeuvres. In a series of cases, they were held within PAs. Until present time, no efficient cooperation has been started between the Ministry of Defence and the Ministry of Ecology and Natural Resources on ensuring ecological safety during military activity, while this approach is one of NATO standards, to which the Ukrainian army has to aspire, in our opinion. The first step should be monitoring the current status and damages of PAs as the result of military activity.

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