



EUROSAI

Working Group on the Audit of Funds
Allocated to Disasters and Catastrophes



2024



JOINT REPORT

on the Results of the Parallel Audit
of Forest Protection Against Fires

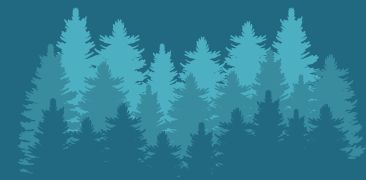


The Accounting Chamber
Supreme Audit Institution of Ukraine



VALSTYBĖS
KONTROLĖ
NAO OF LITHUANIA





PARTICIPATING SUPREME AUDIT INSTITUTIONS



The Accounting Chamber
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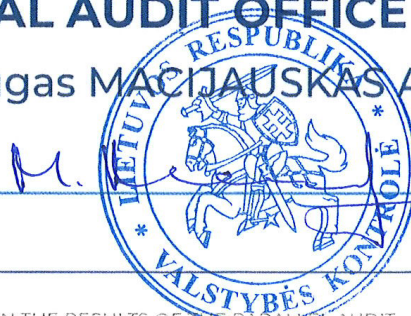


**VALSTYBĖS
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BACKGROUND

Wildfires pose a serious threat to ecosystems, human life and health, as well as the economy. In today's context, where climate change affects the frequency and intensity of fires, effective management of forest resources and fire prevention measures has become a critically important task for government bodies and the international community.

In 2023, wildfires in Europe destroyed more than 504,002 hectares of forests and natural areas (837,202 hectares in 2022). The most affected were Mediterranean countries, particularly Greece, Spain and Portugal, where numerous large fires were recorded. In Greece, near Alexandroupoli, a fire destroyed 96,000 hectares¹. The fires in the summer of 2023 resulted in emissions of approximately 20 megatons of CO₂, which is equivalent to one-third of the annual emissions from international aviation in the EU.

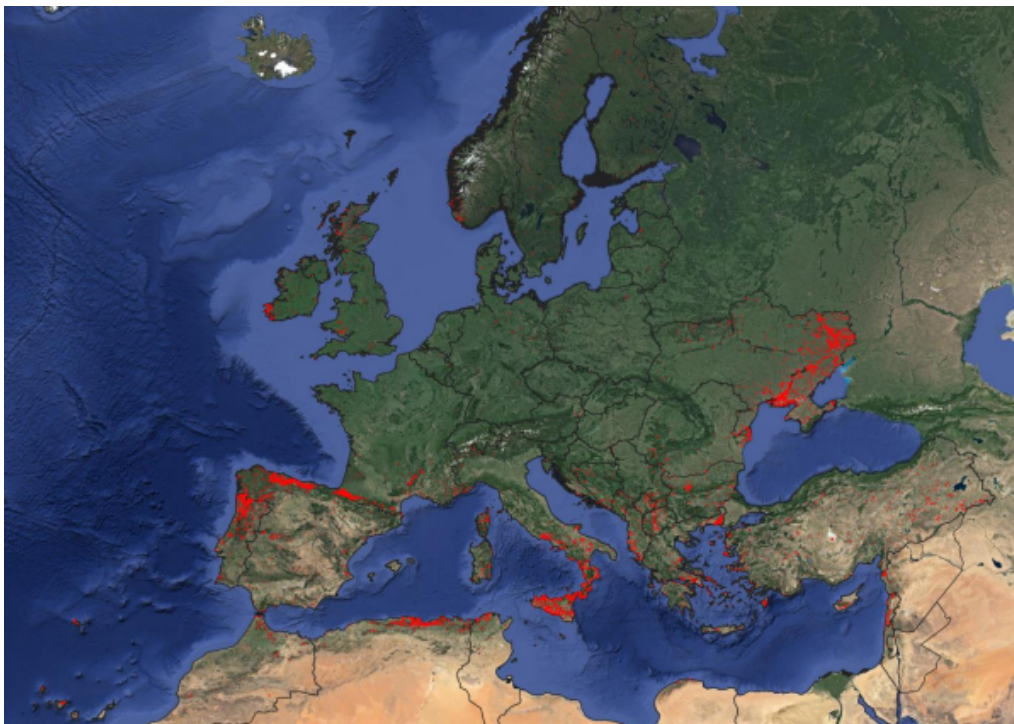


Figure 1. Traces of fires resulting from forest fires during the fire-prone season of 2023.

Source: Advance report on Forest Fires in Europe, Middle East and North Africa 2023.

¹ The Latest Data Confirms: Forest Fires Are Getting Worse. [Electronic resource.]
Available from: <https://www.wri.org/insights/global-trends-forest-fires>.



According to the World Resources Institute, the annual area affected by wildfires increased by approximately 5.4%, or nearly 6 million hectares, from 2001 to 2023. For comparison, this area is almost equal to the size of Croatia.

In 2001, losses from fires accounted for approximately 20% of the total global tree cover loss. However, today, the share of tree cover loss due to fires has increased to 33%, surpassing the losses caused by the mining industry and logging.

These changes are largely driven by climate change and other environmental factors. Rising temperatures and prolonged drought periods make forests more vulnerable to fires, which destroy vast areas of tree cover. As a result, biodiversity is lost, ecosystems are disrupted, and air quality deteriorates. This has a negative impact on public health and leads to significant economic losses.

Given the importance of preventing wildfires and minimizing their consequences, the Secretariat of the **EUROSAI Working Group on the Audit of Funds Allocated to Disasters and Catastrophes** (hereinafter — the Working Group) initiated a parallel audit on wildfires prevention. After considering the proposal, the Supreme Audit Institutions of Georgia, Lithuania, and Ukraine joined the audit, contributing materials from audits conducted on topics related to forest protection against fires.

The Supreme Audit Institution of Georgia conducted an audit on **MANAGEMENT (PREVENTION, PREPAREDNESS) OF EMERGENCY SITUATIONS CAUSED BY FOREST FIRES**. This audit, covering the period from 2017 to 2019, examined fire prevention and preparedness measures, as well as the effectiveness of the Government’s coordinated actions.



In 2021, the Supreme Audit Institution of Lithuania conducted an audit **PERFORMANCE OF FIRE FIGHTING FORCES IN REDUCING THE NUMBER OF FIRES AND FIRE DAMAGE**. The purpose of this audit was to assess whether fire safety is organized in a way that protects people and property from fires.



In 2022, it completed an audit on **PROTECTION OF LITHUANIAN FORESTRY RESOURCES**, aimed at evaluating whether forests and forest habitats of interest to the European Community are adequately protected.



In 2023-2024, the Supreme Audit Institution of Ukraine conducted an **PERFORMANCE AUDIT OF THE USE OF BUDGETARY FUNDS ALLOCATED FOR FORESTRY AND HUNTING, PROTECTION AND CONSERVATION OF FORESTS IN THE FOREST FUND OF UKRAINE**. This audit covers the years 2020 and 2021, as well as the period of open military aggression by the Russian Federation against Ukraine—2022 and the first half of 2023—when the forestry sector became particularly vulnerable to various threats, such as forest fires, illegal logging, and landmines in forest areas. One of the key audit questions is: How is forest and hunting management, as well as the protection and safeguarding of forests in the forest fund, being ensured? This includes forest fire prevention efforts.





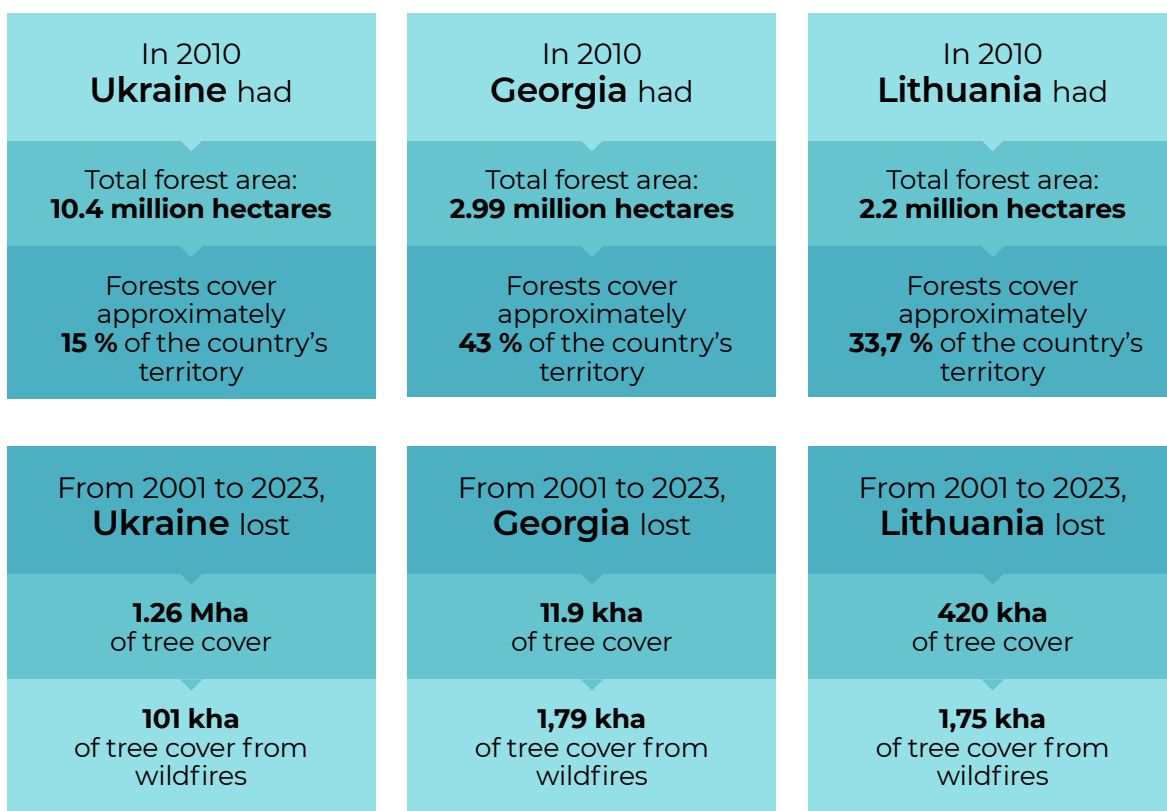
As noted in GUID 9000 “Cooperative Audits between SAIs” the exchange of information and lessons learned broadens perspectives and offers new insights into the actions of one’s own government compared to others. At the same time, the exchange of information and knowledge becomes critically important for Supreme Audit Institutions.

Therefore, **the objective of this parallel audit** is to assess the state of forest management and the effectiveness of measures aimed at preventing, preparing for, and responding to wildfires in the three countries: Georgia, Lithuania and Ukraine.



OVERALL REVIEW OF WILDFIRES IN UKRAINE, GEORGIA AND LITHUANIA

Ukraine, Georgia and Lithuania have different forest areas, terrain where forests grow, and varying levels of forest cover. These factors influence the approaches to forest management, conservation, protection, and utilization. However, wildfires remain a significant challenge for all three countries, particularly for Ukraine during the ongoing military aggression by Russia, which has continued since February 2022, as well as for Georgia and Lithuania.



Source: according to the web resource GLOBAL FOREST WATCH

An analysis of data from the “Our World in Data”² web resource for the period 2012–2024 shows that Ukraine, Georgia, and Lithuania face various challenges related to wildfires.

In Ukraine, during this period, the largest wildfire areas were recorded in 2014 and 2015, with more than 2 million hectares of forests affected by fire (Fig. 2), which accounted for nearly

² Wildfires. Explore global and country-level data on the extent of wildfires and how they’ve changed over time. [Electronic resource.] Available from: <https://ourworldindata.org/wildfires>



3% of the country’s total area (Fig. 4). In 2024, over 1.5 million hectares of forests were burned, with a significant portion in the eastern part of the country, where active combat is ongoing. The average burn area per fire in Ukraine is nearly 8,000 hectares (around 10,000 hectares in 2022) (Fig. 3).

In Georgia, which is located in mountainous terrain, the intensity of fires is also increasing. The use of agricultural land, arson, and climate change are key factors contributing to wildfires in Georgia.

However, compared to Ukraine, the level of wildfires in Georgia is significantly lower. During the period from 2012 to 2024, the fire-affected area remained very low, not exceeding 100,000 hectares (Fig. 2). The average fire area in Georgia has also remained relatively stable, with some peaks in 2017 and 2019, when the average burn area reached 9,000 hectares (Fig. 3). The share of land affected by fires remains consistently low — around 0.5% of the country’s total area (Fig. 4), or even less throughout the entire period.

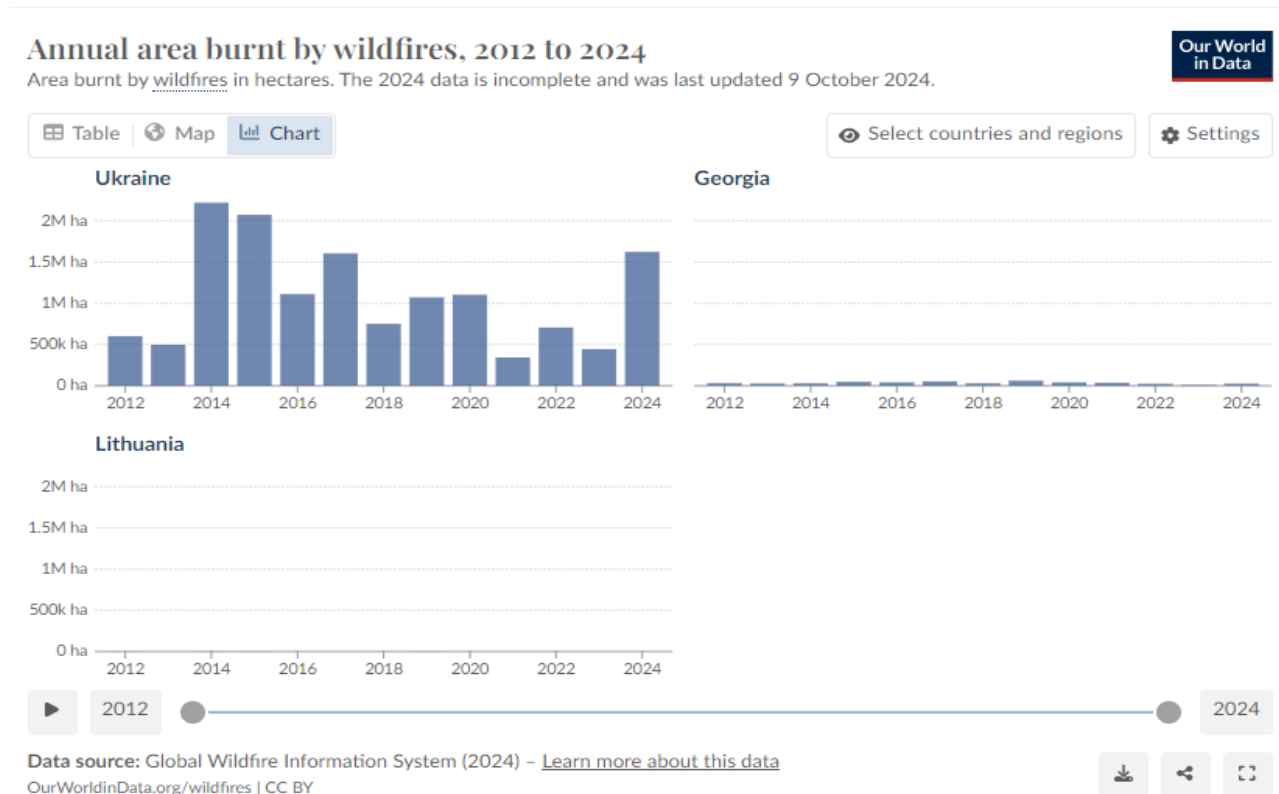


Figure 2. Annual areas burn by wildfire, 2012 to 2024 in Ukraine, Georgia and Lithuania

Source: according to the web resource “Our World in Data”



Average area burnt per wildfire, 2012 to 2024

The average area burnt per wildfire, in hectares. The 2024 data is incomplete and was last updated 9 October 2024.

Our World in Data

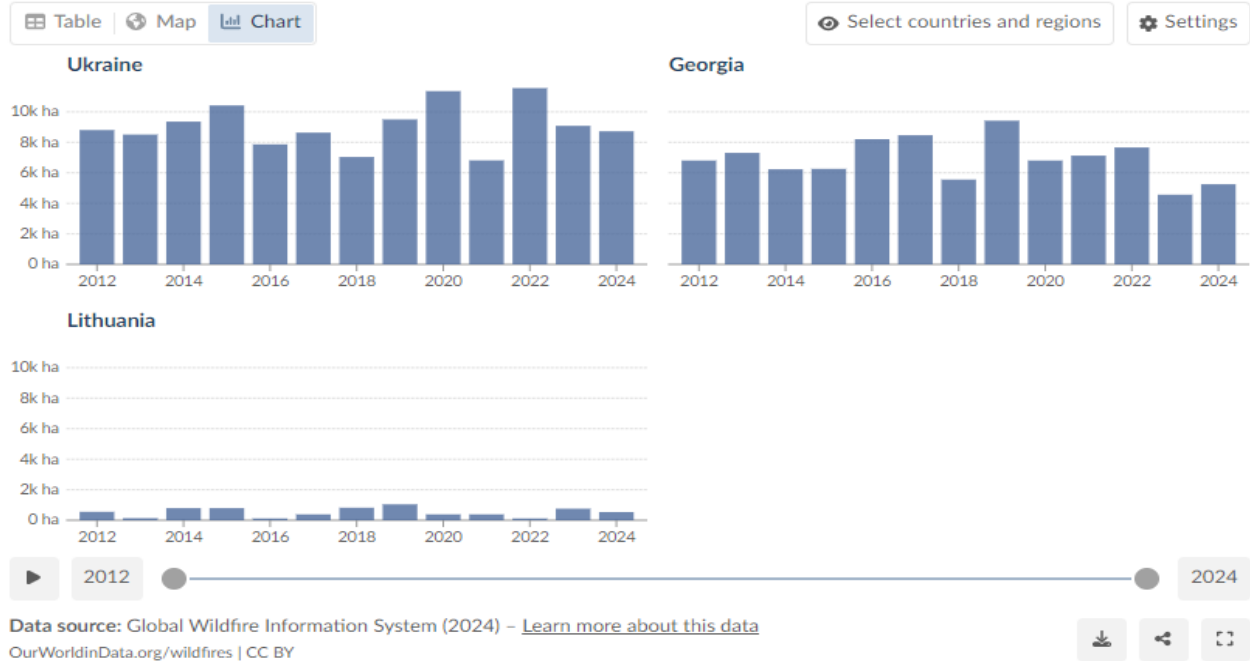


Figure. 3. Average area burn per wildfire, 2012–2024 in Ukraine, Georgia and Lithuania

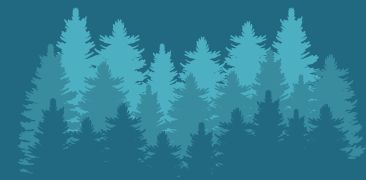
Source: according to the web resource “Our World in Data”

In Lithuania, according to the “Our World in Data” web resource, during the period 2012–2024, the smallest fire-affected areas were recorded compared to Ukraine and Georgia. Wildfires in Lithuania remain minimal, with the area burned by wildfires rarely exceeding 50,000 hectares per year (Fig. 2).

The average burn area per fire in Lithuania does not exceed 2,000 hectares (Fig. 3), and the share of land affected by fires remains almost negligible throughout the entire period of 2012–2024, not exceeding 0.1% of the country’s total area (Fig. 4).

It should be noted that the fire season in Ukraine, Georgia and Lithuania differs significantly in terms of its start and duration³:

³ According to the web resource Global Forest Watch. [Electronic resource.] Available from: <https://www.globalforestwatch.org/dashboards>.



Share of the total land area burnt by wildfires each year, 2012 to 2024

Our World in Data

The total area consumed by wildfires is recorded for each fire event, even if fires occur in the same location multiple times. The 2024 data is incomplete and was last updated 9 October 2024.

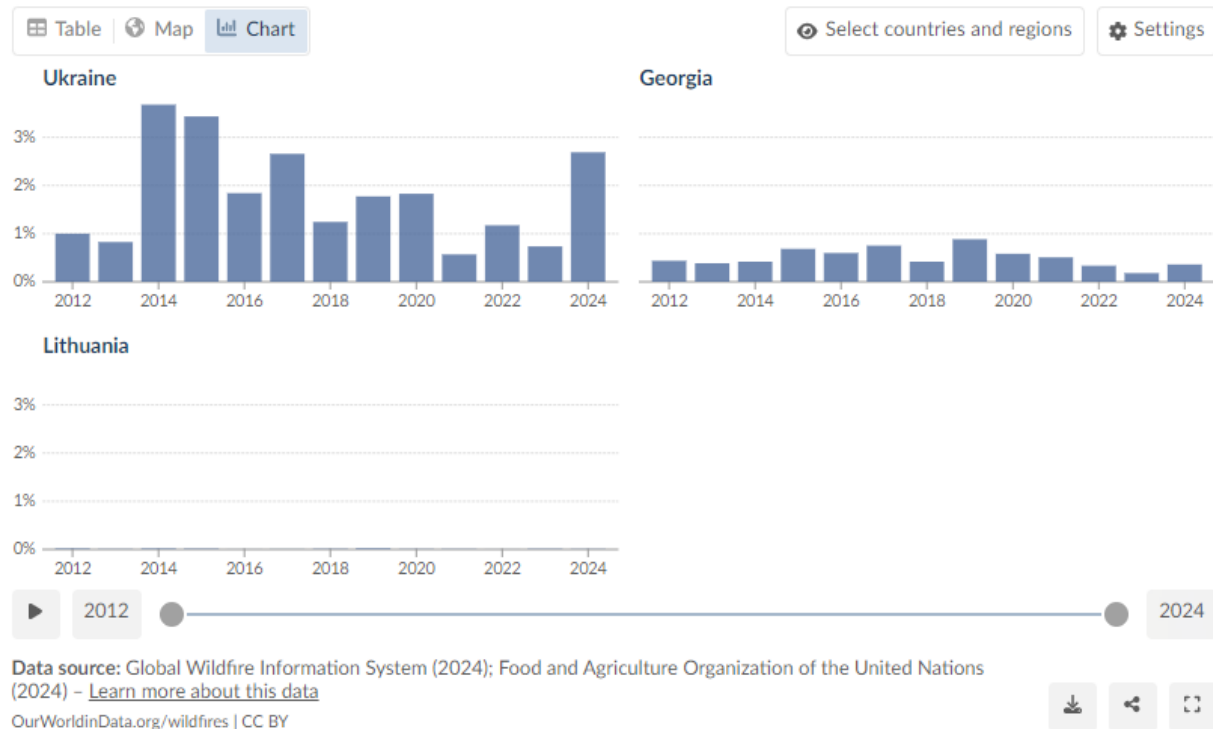


Figure. 4. Share of total land area burned by wildfire each year, 2012 to 2024 in Ukraine, Georgia and Lithuania

Source: according to the web resource “Our World in Data”

- In Ukraine, the fire season typically begins in late June and lasts for about 15 weeks. This indicates a long season, which is associated with the warm summer and autumn months, during which the risk of fires increases⁴;
- In Georgia peak the fire season starts earlier, typically begins in mid-June and lasts longer, approximately 19 weeks, due to extended periods of heat and dry weather in the mountainous and forested regions of the country⁵;
- In Lithuania, the fire season is much shorter. It typically begins in early October and lasts only 1 week, which is attributed to the cooler and wetter climate, where the risk of wildfires is lower compared to other countries⁶.

⁴ According to the web resource Global Forest Watch. Ukraine. [Electronic resource.] Available from: <https://www.globalforestwatch.org/dashboards/country/UKR/?map=eyJjYW5Cb3VuZCI6dHJ1ZX0%3D>.

⁵ According to the web resource Global Forest Watch. Georgia. [Electronic resource.] Available from: <https://www.globalforestwatch.org/dashboards/country/GEO/?location=WyJjb3VudHJ1iwiR0VPII0%3D&map=eyJjYW5Cb3VuZCI6dHJ1ZX0%3D>.

⁶ According to the web resource Global Forest Watch. Lithuania. [Electronic resource.] Available from: <https://www.globalforestwatch.org/dashboards/country/LTU/?map=eyJjYW5Cb3VuZCI6dHJ1ZX0%3D>.



These differences highlight the varying climatic conditions and, accordingly, the different risks of fires in each country, which in turn lead to specific approaches to forest resource management, conservation, protection, and utilization.

However, wildfires remain a challenge for the governments of all the participating SAIs in this parallel audit.

International cooperation and the exchange of experience among SAIs are key to providing their governments with recommendations aimed at enhancing preparedness for disasters and emergencies, including those caused by wildfires. Additionally, this cooperation contributes to improving fire prevention measures and implementing best practices in forest resource management in response to new challenges.



JOINT CONCLUSIONS

The following part of the report presents the joint results obtained by the SAIs during the national audits. Despite the fact that the national audits were conducted under separate programs without the identification of common issues and evaluation criteria, certain shared findings can be highlighted, even though differences exist in some cases.

Forest fire protection is critically important for the preservation of ecosystems, and the state plays a key role in ensuring the effective management of forest resources and fire safety.

Based on the results of the conducted audits, the SAIs concluded that national forest conservation strategies align with international goals and requirements for wildfire prevention. However, achieving strategic objectives is hindered by a lack of overall coordination at the national level and the absence of integrated data systems to support decision-making processes. Inadequate coordination between different institutions and agencies leads to inefficient use of resources and uncoordinated actions in wildfire prevention efforts.

It was found that there are no systematic monitoring and reporting mechanisms that would allow for the evaluation of the effectiveness of wildfire safety measures. Insufficient monitoring and feedback limit the countries' ability to assess risks and improve the effectiveness of wildfire prevention measures. Additionally, the lack of reliable information and comprehensive data on the condition of forest areas complicates the planning and implementation of forest protection measures.

One of the key issues is outdated infrastructure and lack of funding. Many firefighting units face a shortage of modern equipment and machinery, limiting their ability to quickly respond to large wildfires. In recent years, the financial needs for updating technical resources have significantly increased; however, government investments remain insufficient.

The condition of forest areas, especially in high-risk zones, requires additional attention due to the deterioration of natural barriers and the lack of restoration. Funding for the restoration of forest areas remains critically inadequate, leading to increased vulnerability of forests to wildfires.

The audits revealed that, despite progress, the level of forest protection remains insufficient in many regions. In many cases, the primary focus is on responding to wildfire aftermath rather than on prevention. The absence of clear prevention plans and insufficient preparedness for fires increase the risk of significant losses.

Additionally, the audit revealed that human factors are one of the main causes of wildfires. Specifically, the deliberate burning of agricultural lands, careless handling of fire, and illegal logging often lead to large fires.

Despite the implementation of modern technologies for monitoring and fighting fires, their use is limited due to a lack of adequate funding and technical support. Countries face difficulties in integrating such technologies into their national forest management systems.

Overall, while some countries have made progress in reducing the scale of wildfires, most issues remain unresolved due to the absence of a comprehensive strategy and proper coordination at all levels of governance.



JOINT RECOMMENDATIONS

Based on the main message and conclusions, the following overall subjects for suggestions recommended for consideration are made to national governments and state bodies:

1. Improving coordination between various government agencies and stakeholders in forest management and wildfire prevention to enhance preparedness for emergencies.
2. Clearly defining the roles and responsibilities of government agencies to avoid duplication of functions and ensure accountability for wildfire prevention and suppression measures.
3. Establishing integrated monitoring systems for forest resources, incorporating modern technologies such as satellite data and drones for timely detection and response to wildfires.
4. Enhancing monitoring and reporting mechanisms for fire prevention measures, ensuring accuracy and transparency in data collection to improve decision-making processes in forest management.
5. Prioritizing investments in the modernization and upgrading of firefighting equipment, including machinery, personal protective gear, and other tools necessary for effective wildfire suppression.
6. Raising public awareness of fire safety rules and sustainable forest management through educational and informational programs aimed at preventing human-caused wildfires.
7. Supporting international cooperation and experience exchange in wildfire management, particularly to implement best practices in forest resource management in the context of climate change.
8. Strengthening legal accountability for violations of fire safety regulations and introducing stricter penalties for arson and other activities that contribute to wildfires, to reduce the risk of human-caused fires.
9. Supporting reforestation efforts after fires through adequate funding and the implementation of forest restoration programs in fire-affected areas to minimize long-term impacts on ecosystems.



GOOD PRACTICES

Based on the preparation of the joint report on the results of the parallel audit, the following best practices for wildfire prevention were identified:

Integrated Forest Management Plans

The development and implementation of comprehensive forest management plans are an important component of effective fire prevention. Such plans should include risk assessments, zoning of forest areas based on fire hazard levels, and detailed measures for each zone. Effective planning can significantly reduce the likelihood of fire spread.

The use of modern technologies

A successful practice is the implementation of automated systems, such as the "Pozhezhi" ("Fires") system, for monitoring and reporting forest fires. This allows for real-time tracking of fires and enables swift decision-making for their suppression. Countries should invest in upgrading such systems and ensure their full operation in all forest regions.

Engagement of the public and education

The engagement of local communities through educational campaigns and training on fire prevention has helped reduce the number of human-caused fires. The establishment of volunteer firefighting teams among the population and their basic training can enhance the response speed to emergencies.

Strengthening the legislative framework

The implementation of stricter legal penalties for violations of fire safety regulations and illegal logging is an important step in reducing the human factor in the occurrence of wildfires.

International cooperation

The exchange of best practices and coordination of efforts between countries enhance strategies for wildfire prevention and response. Joint audits and international initiatives help countries learn from each other's experiences and implement more effective methods tailored to their specific conditions.



MAIN AUDIT FINDINGS

STATE AUDIT OFFICE OF GEORGIA

Audit Report on Management (Prevention, Preparedness) of Emergency Situations Caused by Forest Fires



REVIEW AND RECOMMENDATIONS

Forest fires threaten human life, health and property, as well as the ecosystem. Prevention of the risk of natural disasters is one of the timely tasks of the world community. The State Audit Office conducted performance audit for management (prevention, preparedness) of emergencies caused by forest fires.

Audit objects are:

- The State Sub-Agency Department of the Ministry of Internal Affairs of Georgia — Emergency Management Service;
- Ministry of Environmental Protection and Agriculture of Georgia;
- LEPL National Forestry Agency of the Ministry of Environmental Protection and Agriculture of Georgia
- LEPL Agency of Protected Areas of the Ministry of Environmental Protection and Agriculture of Georgia
- The State Sub-Agency Department of Environmental Supervision of the Ministry of Environmental Protection and Agriculture of Georgia

The relevant forest management bodies are responsible for fire prevention measures in forests of Georgia. In particular, the main part of the forest fund is managed by LEPL National Forestry Agency and LEPL Agency of Protected Areas of the Ministry of Environmental Protection and Agriculture of Georgia.



Based on quantitative and qualitative materiality, the audit studied preventive measures carried out by the mentioned two governing agencies. In addition, in the direction of prevention and preparedness, the most important role is assigned to the activities of the emergency management service, since the aforementioned agency is not only a coordinating chain in the field of catastrophe management, but also ensures the readiness of firemen and rescuers, equipping territorial fire-rescue services with inventory and material-technical base. Therefore, forest fire management (prevention-preparedness) measures undertaken by the service were examined. The audit revealed shortcomings which, if not corrected and improved, will make it practically impossible to ensure adequate prevention of forest fires and timely response to them.

SHORTCOMINGS OF FIRE PREVENTION MEASURES

The first stage for the assessment of the danger and risk of forest fires is the accounting of the forest fund and the preparation of management plans, during which the division of forest areas into fire-prone classes is carried out. After this, relevant fire prevention measures are planned.

SHORTCOMINGS OF FOREST MANAGEMENT PLANS AND FIRE PREVENTION MEASURES

The results of forest fund accounting, classification of fire-prone classes and planning of fire prevention measures are reflected in forest management plans. As a result of the audit, it was revealed that the issues of drawing up and implementing plans are partially provided by the Agency of Protected Areas. In particular, 20 of the 21 territorial administrations are under the management⁷ of LEPL Agency of Protected Areas. Moreover, 14 administrations are governed by a management plan, which should be evaluated positively. However, forest management plans have been approved for only 7 territorial administrations⁸ and their development is important for the management of the forest fund under the system of the agency.

For 32 areas (73%) of the forest fund under the management of LEPL State Forestry Agency, management plans have not been developed. Apart from that, even in those areas for which relevant plans have been developed, fire prevention activities have not been implemented. In addition, the process of drawing up the plan is also characterized by shortcomings. In particular, the standards and criteria for the arrangement of fire-fighting reservoirs, helipads, mineralized lanes and fire-fighting paths have not been established, which should be developed and approved in active cooperation with all interested agencies, especially Emergency Management Service.

⁷ One, in particular, the protected landscape of Tusheti is managed by the local municipality.

⁸ Forest inventory has been conducted on 90,100 ha of forests located in protected areas.



INEFFICIENCY OF THE EXISTING MODEL OF PHYSICAL PROTECTION OF THE FOREST

Illegal use of forest resources has a negative affect on fires, because the residues left by illegal logging dry up in a certain period and turn into easily flammable/combustible material.

Forest guards represented an important link, on the one hand, in preventing illegal use of the forest, and on the other hand, they extinguished small fires on the spot or detected the incident on time, thereby reducing the risks of small fires growing to a large scale. Before 2019, the Forestry Agency had allocated approximately 500 staff positions for forest guards. In the same period, prevention, detection and suppression of the facts of illegal use of natural resources was one of the main functions of the State Sub-Agency Department of Environmental Supervision. Therefore, until 2019, physical protection of the forest was carried out by two important state structures (LEPL National Forestry Agency and the State Sub-Agency Department of Environmental Supervision).

From January 25, 2019, in terms of physical protection of the forest, significant changes were made in the legislation. In particular, the mentioned function of the Forestry Agency was removed, due to which the position of the forest guard was cancelled and in turn, the number of employees of the State Sub-Agency Department of Environmental Supervision increased by 304 staff units. Therefore, the number of employees in the Forestry Agency was significantly reduced at the expense of those employees who had the opportunity to prevent illegal logging directly in the forest, as well as to detect forest fires in time and to localize and liquidate them.

It should be noted that according to international good practice, the employees of the forest management bodies have the function of forest monitoring and control along with other functions. Their average number in different countries is much higher. Therefore, the problem of physical forest protection is almost non-existent in such countries.

The above-mentioned change in the legislation of Georgia should have logically led to an increase in the number of illegal logging and environmental violations. However, in 2019, the indicator in this direction decreased significantly (by 58 %) compared to previous years.

Therefore, abolition of the important positions of the forest guard for the prevention of fires did not ensure an increase in the detection of the facts of illegal logging on the site (in the territory of the forest fund), but the forestry agency had a reduced number of human resources necessary for fire prevention measures.



UNEVEN DISTRIBUTION OF PRIMARY FIRE-FIGHTING INVENTORY

The audit revealed that there are no established criteria for equipping forest management agency employees with firefighting equipment. As a result, equipment is unevenly distributed both across fire-prone regions and by forest area.

ISSUED RECOMMENDATIONS

For LEPL Agency of Protected Areas and LEPL National Forestry Agency:

In order to perfect forest fire prevention measures, it is important for forest management bodies to ensure:

- Timely development of relevant plans (forest management and management plans) and organization of preparation of fire prevention measures for identified risk zones.
- In coordination with the Emergency Situations Service and other interested agencies, determining the selection criteria for forest fire prevention measures (arrangement of mineralized lanes and fire protection paths, etc.) and consideration of relevant aspects in the said process — fire-prone class, characteristics of the region, terrain, zone of increased fire danger, etc.
- Development of criteria, methodology for selection and distribution of fire-fighting inventory, as well as increase in availability of primary equipment.

For the Ministry of Environmental Protection and LEPL National Forestry Agency:

In order to ensure prevention of forest fires, it is important that both — Ministry and the Agency discuss the need for a system of forest guards, their optimal number and regional distribution. In this process, it is important for the agency to use international good practices.

For Emergency Management Service:

In order to effectively manage forest fire prevention measures, it is important that Emergency Management Service initiates appropriate changes in legislation to define and specify appropriate control/monitoring mechanisms. Through these mechanisms, periodic monitoring, assessment and necessary recommendations of measures planned and executed by the forest management bodies will be carried out.



SHORTCOMINGS OF FOREST FIRE PREPAREDNESS MEASURES

SHORTCOMINGS OF DISTRIBUTION OF FIREFIGHTER-RESCUERS: compared to other countries, the number of firefighter-rescuers in Georgia is small. The reason is because the volunteer system is currently in the process of being developed. There is significant potential for improvement and expansion in this direction. In addition, regions and municipalities unevenly distribute the existing resources of firefighter-rescuers. One of the main reasons for these shortcomings is the absence of resource distribution criteria.

SHORTCOMINGS OF PROFESSIONAL TRAINING OF FIREFIGHTERS — Currently, only 20% of firefighter-rescuers have completed the basic special professional educational program (complete training course).

SHORTCOMINGS OF TERRITORIAL DISTRIBUTION OF FIRE VEHICLES — Emergency Situations Management Service owns 372 fire vehicles. 146 of them are fire trucks-tankers⁹(hereinafter referred to as forest fire tanker) for complex terrains, which are mainly intended for forest fires (although, if necessary, they are also used in the process of extinguishing other fires), and their distribution is uneven by regions.

For example, in Adjara, where the number of fires is relatively less, there are more fire vehicles than in Kakheti, where the number of fires is almost 3 times higher than in the region of Adjara. In this case, the appropriate distribution criteria have not been approved, so we cannot be sure about the optimal distribution of the mentioned equipment, which should ensure the same high level of fire preparedness for all regions.

Inadequate readiness of forest fire vehicles — along with uneven distribution, the technical condition of fire-fighting vehicles is unsatisfactory. In particular, only 25% of the above-mentioned vehicles are fully serviceable, and 21% are in a faulty condition.

The analysis of the years of release of vehicles showed us that a large part of the fleet is significantly outdated. In particular, 51% of vehicles have passed their 25-year service life. Accordingly, their maintenance costs are high (1.2 million GEL in 2017–2019).

It should be noted that the Service purchases various technical means with existing funds¹⁰. Compared to modern vehicles, an outdated vehicle fleet incurs significant maintenance costs and has a low fire extinguishing rate. Therefore, modern, new vehicles are a prerequisite for operational response, and it is important to continue the intensive process of replacing the fleet.

⁹ 20 of them are recorded as forest cisterns in the procurement documentation.

¹⁰ For forest fires, 4 units of special, modern, high-performance “Rosenbauer” pumps and special fire hoses were purchased, with the help of which water is supplied over a distance of 2 km on a difficult terrain (sites inaccessible for equipment); UAV (drones) were purchased by the Service; 100 units of mechanical tools — “hoe-rake” were purchased by the Service which are quite effective (deciduous or coniferous) during forest fire extinguishing



SHORTAGE OF AVIATION MEANS IN THE PROCESS OF EXTINGUISHING FOREST FIRES — Emergency Management Service does not have aviation means, if necessary, helicopters of the border police are mainly used in the process of extinguishing fires.

ISSUED RECOMMENDATIONS

For effective preparedness measures, it is important for the service to ensure:

- Development and implementation of criteria for optimal distribution of firefighter-rescuers and fleet according to regions and municipalities.
- Strengthening and improving the practice of volunteer activities of firefighter-rescuers.
- In order to strengthen the aviation capabilities, study the technical base of various state agencies and initiate the issue of the possibility of equipping the service with a helicopter with the involvement of the Ministry.

LEGISLATIVE DEFICIENCIES AND UNACCEPTED LEGISLATIVE ACTS

For the effectiveness of preventive measures, it is important to have an appropriate normative base and its enforcement mechanisms. As a result of the audit, it was revealed that despite the important changes in the legislation, the National Civil Security Plan approved in 2015 has not been updated. Many normative acts should be accepted for the implementation of preventive measures. In particular, according to the information provided by Emergency Management Service, from the 32 normative acts stipulated by the new Law on Civil Security:

- 11 normative acts have been approved;
- 9 normative acts are ready for initiation;
- 12 normative acts are in different stages of processing.

For the development and implementation of risk and emergency management plans by municipalities at the local level, it is necessary to implement the delegation of authority by the legislation by the Government of Georgia, which is not provided. As a result, relevant plans have not been developed and approved in any municipality.

A challenge is also the low level of punishment for forest fires. Although the mentioned issue was planned to be initiated in 2017, no relevant changes were made in the legislation. The mentioned circumstance prolongs, complicates and in certain cases, makes the planning and implementation of necessary events and activities impossible.



ISSUED RECOMMENDATIONS

For Emergency Management Service:

In order to activate preventive measures, it is important for the emergency management service to ensure the inventory/prioritization of acceptable normative and legislative acts in the field of emergency and catastrophe management and, through initiatives, to accelerate the existing processes in this direction.

For Ministry of Environmental Protection and Agriculture of Georgia:

For the purpose of forest fire prevention, initiate discussions on tightening penalties related to fire incidents, in collaboration with the relevant agencies (LEPL — National Forestry Agency / LEPL — Agency of Protected Areas).



NATIONAL AUDIT OFFICE OF LITHUANIA

PERFORMANCE OF FIRE FIGHTING FORCES IN REDUCING THE NUMBER OF FIRES AND FIRE DAMAGE



22 March 2021

No VAE-2

SUMMARY

The Relevance of the Audit

In 2017–2020, there were 41.6 thousand fires in Lithuania, killing 354 people, destroying and damaging more than 200 thousand sq. m of residential and non-residential area. During the years 2017–2020, the funds allocated to fire safety from the State budget increased by 36% and in 2020 amounted to EUR 124 million.

Sound fire safety is one of the most important determinants of public security and it is therefore important that it is organised in such a way as to ensure the protection of people and property from fires. In Lithuania, the function of fire safety is performed by the State. The State has delegated part of this function to municipalities by the Law on Local Self-government¹¹. Fire and rescue forces consist of the State Fire and Rescue Service and municipal fire and rescue services of 51 municipalities. These services employ approximately 5.5 thousand fire fighters. The implementation of fire prevention measures is organised by municipalities, ministries, and other State institutions. Thus, more than 100 institutions participate in ensuring fire safety in Lithuania.

In order to assess whether the organisation of fire safety ensures the protection of people and property from fires, we have conducted an audit.

The Objective and Scope of the Audit

The objective of the audit is to assess whether fire safety is organised in such a way as to protect people and property from fires.

Key audit questions:

- whether the permanent standby of fire and rescue forces for fire-fighting and rescue of people and property during fires is ensured;
- whether the proper response by fire and rescue forces to fire reports is ensured;
- whether the risk of fire starts is effectively managed.

¹¹ Law on Local Self-government, Article 7(4)





Audited entities:

The Ministry of the Interior, which is responsible for shaping the State policy in the field of fire safety, organising, coordinating and controlling its implementation;¹²

Fire and Rescue Department under the Ministry of the Interior, which, within the scope of its competence, organises and manages operations relating to fire-fighting, rescue of people and property and reduction of the consequences of fire; organises state fire supervision¹³.

During the audit, we also collected information from municipal fire and rescue services of all municipalities (51), Emergency Response Centre, ministries (14), municipal administrations (60). During the audit, we organised meetings with representatives of associations operating in the field of fire safety (National Association of Fire Chiefs, National Fire Safety Association, the Fire Safety Works and Services Association, Lithuanian Fire Safety Association), companies and the academic community.

The period audited: 2017 — first half of 2020. Data of later periods was used to assess the changes related to the formation of fire brigades.

The audit has been performed in accordance with the Public Auditing Requirements and International Standards of Supreme Audit Institutions. The scope and methods of the audit are described in greater detail in Annex 2, Audit Scope and Methods.

Key Results of the Audit:

Appropriate standby of fire and rescue forces to carry out fire-fighting and rescue operations is not always ensured, and the risk of fire starts is not managed effectively.

It is necessary to ensure an appropriate standby of fire and rescue forces

Appropriateness of legal regulation of permanent standby of fire and rescue forces is not being assessed

In implementing the Law on Fire Safety, in 2013, the Government approved the Standard for Ensuring Fire Safety¹⁴, which establishes the criteria for the formation of fire and rescue forces and determination of the number of tools for fire-fighting and rescue, on the basis whereof the standby of these forces must be ensured. However, the content of the criteria is not detailed and does not determine how they are to be applied. Ministry of the Interior,

¹² Law on Fire Safety, Article 6.

¹³ Law on Fire Safety, Article 7(1) and Article 7(2)

¹⁴ Standard for Ensuring Fire Safety approved by the Government Decision No. 354 of 17/04/2013.



which is responsible for shaping State policy in the field of fire safety, within 7 years from the approval of the standard has not evaluated whether the established criteria are appropriate to ensure the permanent standby of forces to carry out fire-fighting and rescue operations. Therefore, there is no assurance of legal preconditions for establishing a reasonable need for human resources of fire fighting forces and provision of fire-fighting and rescue tools, equipment, and personal protective equipment.

Unlike the State Fire and Rescue Service, municipal fire and rescue services have been tasked with carrying out not all, but only primary people and property rescue operations. As a result, these services have lower requirements for professional, physical training, and health requirements for fire fighters. Reduced requirements and provision of fire-fighting and rescue equipment, gear, and personal protective equipment. However, it does not detail what works are included in the primary operations of people and property rescue. It has been found that a part of municipal fire prevention service fire fighters performed fire-fighting and rescue operations that are not classified as primary by the Fire and Rescue Department: 69% (35 out of 51) of municipal fire prevention service fire fighters carried out people and property rescue operations in smoke-filled premises and not suitable for breathing, 41% (21 out of 51) performed rescue operations at height, 96% (49 out of 51) provided first aid. Without detailing primary people and property rescue operations, it is not ensured that municipal fire and rescue services perform the State function assigned to them to the same extent, fire fighters are adequately trained to perform the assigned functions and are provided with the necessary gear and personal protective equipment.

Human resources of fire and rescue forces have not been formed

At the State level, there is no systematic assessment of the number and variety of fire brigades to be formed in order to ensure proper response to fire reports. The number of fire brigades is determined by different entities: the number of brigades of State fire and rescue services is determined by the Fire and Rescue Department, and the number of brigades of municipal fire and rescue services is determined by municipal councils. In 2020, only 22% (78 out of 360) of all fire brigades consisted of brigades tasked with carrying out all people and property rescue operations. About half (52%) of all fire fighters worked in these brigades. Without a systematic assessment of the need for fire brigades, it is not possible to ascertain whether the existing structure is optimal to respond appropriately to fire reports (Section 1.2, p. 17).

It is not ensured that on-duty brigades meeting the minimum requirements for the composition of on-duty fire brigade¹⁵ would be formed in all fire brigades. During the days selected in 2019–2020, 41% (147 out of 360) of brigades on duty had fewer fire fighters than established by standards. Almost half of the cases (47%) analysed, when the brigades of municipal fire and rescue services arrived at the fire site first, the brigade on duty was left

¹⁵ Annex to the Standard for Ensuring Fire Safety approved by the Government Decision No. 354 of 17/04/2013.



with only one fire fighter. Brigades on duty lack fire fighters, however, in 2017–2019, more than two-thirds of voluntary fire fighters were not called for fire-fighting. In the absence of adequate human resources to carry out fire-fighting and rescue operations, the permanent standby of fire and rescue forces is not always ensured (Section 1.2, p. 17).

Fire and rescue forces are not provided with appropriate fire fighting and rescue equipment, gear, and personal protective equipment

The Ministry of the Interior, which is responsible for shaping State policy in the field of fire safety, does not have a long-term strategy for providing fire and rescue forces with fire-fighting and rescue equipment. The issue of the provision of municipal fire and rescue services with equipment is not clarified: no funds are allocated to purchase equipment necessary for the performance of the functions assigned to them by the State and it is not established which entity has to provide these services and by what funds. The Fire and Rescue Department and municipalities provide the services with tankers by transferring old equipment. The tankers transferred during the audited period were approximately 30 years old. The Fire and Rescue Department did not carry out evaluations for three years (2017–2019) whether the provision of fire-fighting and rescue equipment to fire and rescue forces complied with the minimum requirements set forth in the Standard for Ensuring Fire Safety, therefore it did not have reliable data necessary for planning the purchase of equipment (Section 1.3, p. 21).

According to the assessment carried out by the Fire and Rescue Department in 2020, the provision of the State Fire and Rescue Service with equipment in 2017–2019 did not comply with the minimum requirements set by the Standard for Ensuring Fire Safety, the shortage of equipment increased year on year: in 2017 the lack amounted to 31%; in 2018–32%, and in 2019–38%. In 2019, almost half of the municipal fire and rescue services (23 out of 51) lacked 29% (49 out of 171) of tankers. Tankers must be complete, i.e. with fire-fighting and rescue operation gear, however, the tankers of 80% of State fire and rescue services and 25% of municipal fire and rescue services did not have all the necessary gear for these operations. Fire-fighting and rescue equipment can be used safely for about 15 years, however, 42% (124) of this equipment of State fire and rescue services were older than 15 years, and 69% (282 out of 409) of equipment of municipal fire and rescue services were older than 20 years.

Not all fire fighters are provided with the same level of personal protection equipment. The Fire and Rescue Department, which is in charge of¹⁶ supervision of the provision of special clothing for fire fighters of municipal fire and rescue services, does not manage the data whether such provision complies with the set requirements. It was found that in 2019, for 44% (222 out of 509) of fire-fighters parts of special clothing were not renewed.

¹⁶ Order of the Minister of the Interior No. 1V-601 of 06/08/2015, Clause 2



Without the provision of fire and rescue forces with fire-fighting and rescue equipment and gear, the proper permanent standby to perform fire-fighting and rescue operations is not ensured, and the lack of personal protective equipment exposes to factors that may cause harm to health, and the conditions to properly perform fire-fighting and rescue operations are not ensured (Section 1.3 and Section 1.4, p.p. 21–27).

Actions are needed to ensure an adequate response of fire and rescue forces to fire reports

The Standard for Ensuring Fire Safety establishes the maximum time to respond to fire reports at each stage of response: the maximum time for receiving and transferring fire reports by Emergency Response Centre to the forces, for the forces to leave the fire station and arrive at the site of incident (fire site). We have found that not in all cases the response to reports meets the requirements set by the Standard:

- In 2019, more than 5 thousand of reports were sent by twice exceeding the maximum time limit (2 minutes) set in the Standard. One of the reasons preventing the prompt response to requests for rescue is the outdated information system of the Emergency Response Centre which has no automatic address search function;
- In 2019, in more than 6 thousand cases, fire and rescue forces left the fire station by exceeding the maximum time (1 minute) set in the Standard. For what reasons and to what extent this maximum time was exceeded, the Fire and Rescue Department does not analyse and has no systematised data;
- In 2017–2019, three out of 10 counties have not reached the indicators established in the Standard that the arrival time to the site of the incident of 80% of first forces cannot exceed 8 minutes in urban residential areas and 18 minutes in rural areas. On average, the forces arrived at the site of the incident in urban residential areas (in Vilnius, Kaunas, and Šiauliai counties) exceeding the maximum time set in the Standard by 3 minutes, and on average 8 minutes late in rural areas in Vilnius county. This was influenced by the old tanker fleet and inadequate location of fire stations. Fire brigades are located in such a way that none of the closest brigades is able to reach part of the areas within the maximum time specified in the Standard.

Without the assurance of compliance with the requirements laid down in the Standard for Ensuring Fire Safety at each stage of response to fire reports, the time for the start of fire-fighting and rescue operations and assistance provision extends. According to the Standard, data is systematised only on the time of dispatch and arrival of the first incident response forces, regardless of whether these forces were able to carry out all fire-fighting and rescue operations or only primary operations; therefore, there is no data on the timing of the arrival of the forces ready to carry out all the operations. The longer their arrival, the higher the losses caused by fires.



The management of fire risks needs to be strengthened

The control of compliance of facilities with fire safety requirements lacks effectiveness

Deficiencies in the organisation of inspections of the compliance of facilities with fire safety requirements do not ensure that facilities are inspected at a specified frequency as:

- it is not ensured that the Fire and Rescue Department receives all the data necessary to draw up plans of inspections of facilities, as it is not regulated which entity and how should inform the Department about the economic activities started at the older facilities and recognised as suitable for the use which substantially changes the purpose of facilities, and the State Fire Supervision Administration Information System, managed by the Department, is not connected to registers and information systems (the State Enterprise Centre of Registers, *Infostatyba*);

In 2017–2019, part of inspections of facilities was not performed: in 2017 — 6% (472); in 2018 — 17% (1216); in 2019 — 2% (159). On average, inspections of facilities were delayed by almost one year. As a result, part of the facilities was not inspected at the specified intervals and the absence of violations of fire safety requirements that could cause fires was not verified.

The Fire and Rescue Department does not take advantage of all existing measures to ensure that holders of the facilities comply with the fire safety requirements as:

- upon detection of violations of these requirements, holders of the facilities are imposed with minimum fines (on average EUR18) which do not prevent the violations;
- there are long deadlines for the elimination of violations: in all the cases analysed, for the elimination of the violations was set a maximum deadline — till the next inspection (in some cases 3 years). In the analysed cases, 11% of the facilities' holders did not eliminate the violations before the next inspection.

The organisation of fire prevention lacks coordination

The Ministry of the Interior does not coordinate fire prevention at the national level. From 2017 to 2020, the Ministry did not take decisions on the organisation of fire prevention at the national level; it did not provide state and municipal institutions with methodological recommendations regarding its organisation. 31% (16 out of 51) of municipal administrations that participated in the survey lacked methodological assistance in organising fire prevention. During the mentioned period, municipal fire and rescue services implemented over 3.5 thousand fire prevention measures; however, 99% of their impact was not assessed on the grounds that municipalities were not instructed to evaluate it and the instructions for the performance of the assessment were not provided. Without an impact assessment, there is no assurance that the measures were appropriate and beneficial to manage the fire risks.

The functions of institutions carrying out fire prevention are not defined in legal acts. Ministries and municipal institutions must participate in the implementation of fire prevention



programmes¹⁷, however, it is not established which entity must prepare and approve the programmes. No Ministry (in the areas of public administration delegated to them) and 76% (39¹⁸ out of 51) of municipal administrations did not have fire prevention programmes. This leads to insufficient management of fire risks.

RECOMMENDATIONS

To the Ministry of Interior

In order to form the appropriate human resources of fire and rescue forces, we recommend (key audit results 1 and 2):

- to assess whether the provisions of the Standard for Ensuring Fire Safety approved by the Government Decision No. 354 of 17/04/2013 ensure that adequate human resources of fire and rescue forces are formed;
- to assess the need for fire and rescue forces at the national level and determine the number and variety of fire brigades to be formed and define primary people and property rescue operations;
- to review the location of forces so that the forces capable of carrying out all fire-fighting and rescue operations would arrive at the site of the incident at the time specified in the Standard for Ensuring Fire Safety approved by the Government Decision No. 354 of 17/04/2013.

In order to provide adequate fire-fighting and rescue equipment, gear, and personal protective equipment, we recommend (key audit result 1):

- to assess whether the provisions of the Standard for Ensuring Fire Safety ensure that fire-fighting and rescue equipment is provided for the fire and rescue forces;
- to develop a long-term strategy for joint provision of fire-fighting and rescue equipment, gear, and personal protective equipment for all forces, providing for purchase priorities and sources of funds.

In order to increase the effectiveness of fire prevention, we recommend (key audit result 3):

- to improve the organisation of fire prevention by establishing the functions and responsibilities of authorities responsible for fire prevention and ensuring coordination of fire prevention;
- to draft a methodology for assessing the impact of fire prevention measures and ensure that the impact of prevention measures is assessed.

¹⁷ Law on Fire Safety, Article 8(5), Article 9(1)(2).

¹⁸ Municipal administrations of Skuodas district, Jonava district, Varėna district, Šiauliai city, Akmenė district, Kelmė district, Lazdijai district, Kupiškis district, Jurbarkas district, Panevėžys city, Šiauliai district, Marijampolė, Tauragė district, Druskininkai, Birštonas, Kalvarija, Joniškis district, Ignalina district, Pagėgiai, Širvintos, Elektrėnai, Anykščiai, Biržai district, Zarasai district, Šilutė district, Utena district, Raseiniai district, Vilkaviškis district, Palanga city, Kazlų Rūda, Pasvalys district, Rokiškis district, Plungė district, Molėtai district, Kaišiadorys district, Kaunas city, Kaunas district, Šakiai district, and Mažeikiai district.



To the Fire and Rescue Department

In order to ensure adequate response to fires, we recommend (key audit results 1 and 2):

- to modernise the information system of the Emergency Response Centre in such a way as to enable the rapid transmission of information to fire forces on the need for emergency assistance;
- to ensure that fire brigades on duty are formed in accordance with the requirements of the Standard for Ensuring Fire Safety.

In order to make an effective advantage of volunteer fire forces, we recommend improving the procedure by using them to help fight fires and carry out rescue operations (key audit result 1).

In order to increase the effectiveness of fire prevention, we recommend (key audit result 3):

- to provide for measures to ensure that the data necessary for the proper planning of inspections of facilities are obtained;
- to ensure inspection of facilities at established intervals;
- to provide for measures to ensure the prompt elimination of violations of fire safety requirements.



PROTECTION OF LITHUANIAN FORESTRY RESOURCES

31 May 2022

No VAE-3

SUMMARY

Relevance of the Audit

The forest is one of the main natural assets of Lithuania, meeting the ecological, economic and social needs of the public. It protects the stability of the landscape, prevents soil erosion, absorbs carbon dioxide and purifies the air, protects groundwater and surface waters, provides the public with the necessary products, and is used as a place of rest.

Forests, with their unique natural system and their biodiversity, constitute habitats for many different land-based plants and animals. In order to preserve these habitats and their biodiversity for future generations, a coherent Natura 2000 network of European protected areas has been set up. It includes protected, endangered, vulnerable, rare or unique plant and animal species and habitats specific to the European region.

Forest land in Lithuania covers 2,202.2 thousand hectares or 33.7% of the country's area. Between 2016 and 2020, the forest cover increased by 15.4 thousand hectares or 0.2%. Forest land per capita is 0.8 ha.

In Lithuania, 434.9 thousand ha of habitats of European Community importance have been inventoried, or 6.7% of the country's territory¹⁹. Forest habitats account for 61.3% (266.7 thousand ha out of 434.9 thousand hectares) and 12.6% of all forests. To combat climate change and conserve the habitats of forest fauna and flora, forest cover is to be increased to 35%²⁰, and at least 138.5 thousand hectares of forest habitats are to be designated as areas important for habitats conservation.

Between 2016 and 2020, EUR 941.4 million²¹ were allocated to the forest sector, of which 768.3 million were operating costs of the State Forest Enterprise, 60 million from the

¹⁹ Nature Research Centre's 2015 Report No VPS-2014-188-ES Establishment of Criteria for the Favourable Conservation Status of Natural Habitats of EC Importance and Development of a Methodological Framework for a Monitoring System, Part I. Analysis of Inventory Data of Habitats of EC Importance and Establishment of Criteria for Favourable Conservation Status under the contract with the Ministry of the Environment of the Republic of Lithuania of 28/11/2014.

²⁰ National Environmental Protection Strategy, p. 21.

²¹ Excluding private forest owners' funding for forest maintenance.



Programme for the Financing of General Forestry Needs 37 million from the operational costs of the State Service for Protected Areas and 76.1 million from EU funds.

In order to assess whether forests are protected and the natural values of the European Community's interest thereof, we carried out a public performance audit.

Objective and Scope of the Audit

The objective of the audit is to assess whether the conservation of forests and their forest habitats of the European Community interest is ensured.

Key audit questions:

- whether the areas of forests in Lithuania are known and their groups are established;
- whether forests are protected against pests, diseases and other adverse factors;
- whether the planning of inspections provides preconditions for effective State control of forests;
- whether natural values of natural forest habitats of European Community interest are protected.

Audited entities:

Ministry of Environment formulates state policy in the fields of forestry and biodiversity protection; organises the inventory of all forests in the country, organises the preparation of projects for forest cover increase, landscape and biodiversity conservation, use of forest resources, and coordinates the implementation of these programmes; forms a system of protected areas; organises the selection of areas for the European ecological network Natura 2000;

State Forest Service performs state forest inventory and forest accounting, monitors their condition, sequences, predicts disease and pest violations, coordinates the application of forest sanitary protection measures; advises forest managers and users on forest use, restoration, maintenance and protection matters;

State Service for Protected Areas organises the preparation of protected areas planning documents, manages the records of protected areas, compiles and systematises data on protected areas, organises the protection and management of protected areas established by the State, coordinates the monitoring measures of the State Environmental Monitoring Programme.

State Forest Enterprise manages, maintains, protects, plants, uses and restores state forests.

The audited period — 2016–2020. In order to assess developments and compare data on some issues, data from the past and 2021 was also assessed.



The audit has been performed in accordance with the International Standards of Supreme Audit Institutions.

Key Results of the Audit:

Forests and their natural values are not adequately protected: the forestry objectives set out in the strategic planning documents have not been met; the number of trees damaged by animals, insects, diseases or other factors increases; the process of control of economic activity in forests needs improvement; designation of areas important for the conservation of the habitat is delayed.

Forest cover increase is insufficient, not all forest areas are assigned to forest groups

The Environmental Protection Strategy²² envisaged that the country's forest cover would reach 34.2% (2,233.3 thousand hectares) in 2020 and 35.0% (2,285.5 thousand hectares) in 2030, but over the period from 2016 to 2020, the forest cover increased at an average annual rate of 0.04% (3.1 thousand hectares), and by 2020 it was 33.7% (2,202.2 thousand hectares). If forest cover continues to increase at this rate, the set target will be reached only in 2047. Insufficient forest cover increase results in ecological imbalance, with forests absorbing less carbon dioxide.

An area of non-forest land overgrown with wild trees is considered to be a forest when the average age of the wild trees is at least 20 years. In order for a self-created forest to obtain legal protection, it must be identified, accounted for and included in the Forest State Register. According to the data of the State Forest Service, in 2016–2020, 1,505.3 ha of non-forest land covered with wild trees with an average age of at least 20 years was included in this register. Only 36.3% (545.7 ha out of 1,505.3 ha) had an average stand age between 20 and 30 years, while 63.7% (959.6 ha out of 1,505.3 ha) had an average stand age above 30 years. More than a tenth, i.e. 10.7% (161.2 ha out of 1,505.3 ha), had an average stand age of 100 years or more. According to preliminary estimates of the State Forest Service, around 15.5 thousand ha of non-forest land covered with wild trees have not been inventoried and included in the register. Due to the failure to inventory and include the areas of land covered with wild trees in the Forest State Register in a timely manner, the protection of self-created forests is not ensured and there is no obligation for the forest manager to monitor the condition of the forest and to cultivate and maintain the growing stand. There are also no restrictions on the clearing of such forests and no requirement to restore the forest area cleared.

Forests must be grouped according to the purposes of farming. We found that as of 1 December 2021, 28.4 thousand ha of forest area (1.3%) registered in the Forest State Register were not classified into forest groups. Neither have the management schemes necessary to classify a forest area into a specific forest group been prepared. About one fifth

²² National Environmental Protection Strategy, p. 21.



(6.0 thousand ha out of 28.4 thousand ha, i.e. 21.2%) of such forest areas were included in the register 9 or more years ago. If the forest group has not been identified for a long time, the forests may not be properly maintained and may be subject to economic activities that should be restricted for forests of 1–3 groups.

The forest monitoring system has room for improvement

When the State Forest Service receives information about a large-scale forest violation caused by insects, diseases or other factors, it should identify the cause of the violation, assess the risk of the formation of hotspots of mass spread, recommend preventive or destructive measures and monitor the effectiveness of the applied measures. In a random statistical sample of 41 cases, we found that only 1 case (2.4 %) was followed up by the Service. The National Forestry Sector Development Programme for 2012–2020²³ set the objective of preserving and increasing the area of Lithuania's forests and their resources. The target was to keep the number of damaged trees below 16 % in 2020, but between 2016 and 2020 this figure increased by 6.4 p.p. to 23.1%. In order to protect forests and their biodiversity, it is important to detect violations in time, correctly identify their causes and prevent the emergence or spread of disease or pest outbreaks as early as possible. Due to the failure to identify the causes of the violation, to assess the risk of mass spread of diseases or pests, and to recommend preventive or destructive measures the opportunity to take timely measures to stop the spread of diseases and pests is.

The actions of the monitoring institutions must be directed first towards eliminating the highest risk cases. Risk assessment should be carried out according to defined criteria and inspection plans should be drawn up based on the results. The State Forest Service had established criteria for the selection of economic entities to be inspected²⁴, however, they were not attributed with weights for the purpose of ranking the economic entities and identifying the riskiest ones. The assessment process and its results are not documented, therefore we could not ascertain whether the riskiest economic entities were included in the inspection plans. On average, the State Forest Service carried out around 38 % of planned inspections in private forests each year between 2016 and 2020, while it is recommended to carry out at least 50 % of the total number of such inspections. The absence of a well-functioning risk assessment system in place to identify the riskiest economic entities results in the failure to ensure that inspection plans are drawn up in an objective and impartial manner and the loss of the opportunity to include in the plan and inspect the economic entities whose activities pose the greatest risk to the environment.

In order to objectively assess the riskiness of economic entities, it is recommended that monitoring institutions separate the functions of planning and carrying out inspections. The

²³ Number of affected trees based on forest monitoring data (average of the previous 5 years) in percent.

²⁴ The rules of scheduled and unscheduled inspections of the State Forest Service in the course of the state control over the condition, use, restoration, plant and protection of forests approved by the Order No 87-12-V of the Director of the State Forest Service of 19 April 2012; the methodology for planning inspections of private forest land plots or sawmills approved by the Order No 78-13-V of 12 April 2013.



employees proposing the selection of economic entities should not have a direct reporting relationship with the persons directly organising and carrying out inspections²⁵. The State Forest Service did not adequately separate the functions of selecting and conducting inspections. Inspection officers were also involved in the process of assessing the risk of economic entities and drawing up inspection plans. This did not ensure an impartial risk assessment of the economic entities included in the plan.

Adequate conditions for the protection of rare, endangered or vulnerable habitats, plants and animals in forests are not ensured

In order to protect the natural values of forest habitats, countries are obliged to include at least 60 % of priority forest habitats and 20 % of non-priority forest habitats of each type in the Natura 2000 network²⁶; in total, this would amount to 138.5 thousand ha in Lithuania. Lithuania proposed to the European Commission to include only 81.8 thousand hectares of the 138.5 thousand ha (59.0 %) of the planned area by 01/10/2021, but only 36.0 thousand ha of the 138.5 thousand ha (26.0 %) of the planned area have been actually included. Once the European Commission has confirmed that a site proposed by a country meets the requirements for Natura 2000 areas, Member States must designate it as a site important for habitats conservation (i.e. to include in the Natura 2000 network) as soon as possible, but no later than within 6 years²⁷. Between April 2009 and October 2021, 210 (62.1%) of the 338 sites of Community importance approved by the European Commission have been identified as important for habitat conservation. Of these, 167 (79.5 %) have taken more than 6 years to be designated and 128²⁸ (37.9 %) are still not designated. The European Commission has launched an infringement procedure against Lithuania for failing to provide the European Commission with an adequate list of sites and for failing to designate a site as an important site for habitat conservation within the deadlines set. Failure to designate sites important for habitat conservation in a timely manner prevents the protection of endangered, rare animal, bird or plant species.

The protection of sites important for habitat conservation must be carried out in the context of defined conservation objectives, which must be specific, clear, measurable and capable of being monitored²⁹. The conservation objectives set by the Ministry of the Environment for these sites are very abstract and do not define the desired conservation status for each of the protected habitats and species for which the site was designated. The

²⁵ Guidelines for risk-based monitoring of economic entities approved by Order No 4-432/1R-169 of the Minister of Economy and the Minister of Justice of 3 July 2015, points 34.2-34.4.

²⁶ By the Decision of the Habitats Committee Hab. 97/2 rev. 4 18/11/97, Internet access: https://www.eionet.europa.eu/etcs/etc-bd/activities/hab_97_2_criter_en.pdf.

²⁷ Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, Article 4.

²⁸ 26 sites are still within the 6-year deadline.

²⁹ European Commission Communication on the setting of targets for the protection of Natura 2000 sites (European Commission, Doc. Hab.12-04/06, November 2012).



Ministry of the Environment has only started to establish conservation objectives in a new format, with criteria for good conservation status for habitats and plant and animal species, as of 7 September 2021. By 10/05/2022, objectives are set to only 6.2% (13 out of 210) of forest habitats.

Monitoring of sites important for habitat conservation is needed to assess the achievement of the objectives. Monitoring of habitats in forests should be carried out at least every 3 years³⁰. The first 61 sites important for habitat conservation were identified in 2018 but were not monitored until 31/12/2021. Failure to set specific conservation objectives for habitat conservation and failure to monitor the condition may result in the loss of rare, endangered or vulnerable bird, animal, plant or habitat species.

RECOMMENDATIONS

To the Ministry of Environment

Measures to accelerate the increase of forest cover to ensure ecological stability and combat climate change must be established (1 key audit result).

In order to ensure the protection of self-created forests, all non-forest land forests with an average age of at least 20 years must be inventoried and included in the Forest State Register within a maximum of 5 years (1 key audit result).

In order to identify key economic requirements and protect forests, a forest group no later than 3 years after inclusion in the Forest State Register must be set (1 key audit result).

In order to guarantee effective control of state forests, ensure that the Environmental Protection Department separates the planning and conducting of inspections and introduces a system of risk assessment of economic entities in the context of state control over the condition, use, restoration, plant and protection of the country's forests under all forms of ownership (2 key audit result).

In order to protect rare animals, birds and plants from extinction, ensure that sites of European Community importance are designated for the protection of habitats within the deadlines set by the European Community (3 key audit result).

In order to protect endangered and rare animals, birds and plants, ensure that at least 60% of priority forest habitats and 20% of non-priority forest habitats for each species are included in the Natura 2000 network (3 key audit result).

³⁰ Monitoring programme for habitats and sites important for the conservation of birds approved by Order No 695 of the Minister of the Environment of 31 December 2002, Table 1.



In order to provide the right preconditions for the effective conservation of rare, endangered or vulnerable bird, animal, plant or habitat species, review and revise the objectives set for the protection of sites important for habitat conservation to be in line with EU requirements (3 key audit result).

In order to assess the condition of sites important for the conservation of habitats in forests, establish criteria for the assessment of good condition (3 key audit result).

To the State Forest Service

In order to prevent the formation emergence or spread of disease or pest outbreaks, in case of large-scale violations in forests, to identify the causes of the violation, assess the risk of the formation of hotspots of mass spread, recommend the most appropriate preventive or destructive measures, and monitor the effectiveness of the measures taken (2 key audit result).

To the State Service for Protected Areas

In order to assess changes in these sites, periodic monitoring of forests in sites of importance for habitat conservation needs to be performed (3 key audit result).



Performance audit of the use of budgetary funds allocated for forestry and hunting, protection and conservation of forests in the forest fund of Ukraine

(Resolution of the Accounting Chamber No. 11-1 dated March 15, 2024)

"...The forests of Ukraine are a national treasure and primarily serve protective, water conservation, sanitary-hygienic, health, recreational, aesthetic, educational, and other functions based on their purpose and location. They are also a source for meeting society's needs for forest resources.

All forests in Ukraine, regardless of the land categories on which they grow or ownership rights, constitute Ukraine's forest fund and are protected by the state..."³¹.

SUMMARY

Relevance of the Audit

Of the total area of Ukraine's forest fund (10.4 million hectares), 7.1 million hectares are managed by enterprises, institutions and organizations under the jurisdiction of the State Agency of Forest Resources of Ukraine (hereinafter referred to as the State Forest Agency).

Currently, due to the open military aggression of Russia against Ukraine, the functions of forests over one-third of their total area, which is nearly 3.0 million hectares, are restricted. As a result of the occupation of Ukrainian territories by Russia, as well as wildfires and flooding, our country may lose about 1 million hectares of its forest fund. This assessment is provided by the Ministry of Environmental Protection and Natural Resources of Ukraine. The losses are also significant. According to estimates from the State Environmental Inspectorate of Ukraine, the damage from the destruction of over 66,000 hectares of forests by wildfires amounts to more than 1 trillion hryvnias.

In 2021, the Government approved the State Forest Management Strategy of Ukraine until 2035, and in 2022, the implementation of Cabinet of Ministers Resolution No. 1003 dated September 7, 2022, "On Certain Issues of Reforming Forest Management," was initiated, aimed primarily at separating control and economic functions in the forestry sector.

³¹ Частини друга та третя статті 1 Лісового кодексу України.



Audit Objective and Scope

Audit Objective: To establish the actual state of affairs and assess the effectiveness of the use of budgetary funds allocated for forest and hunting management, as well as the protection and safeguarding of forests in Ukraine's forest fund.

Audited Entities: The Ministry of Environmental Protection and Natural Resources of Ukraine; the State Agency of Forest Resources of Ukraine; and 7 other audit entities (individual institutions, enterprises, and organizations under its jurisdiction).

Audit Period:

The period covered by the audit is from 2020 to 2022, and the first half of 2023, with specific issues addressed in 2023.

Key Results of the Audit:

Data on State Forest Accounting and Monitoring Needs Updating.

State accounting and national forest inventory, systematic, objective, and timely monitoring of forest objects, as well as forest management, are key to ensuring sustainable forest management, especially in the context of limited resources and low forest protection effectiveness.

Due to the lack of budget funding, activities related to state accounting and forest monitoring in Ukraine have been suspended (the last state forest accounting in Ukraine was conducted as of January 1, 2011, and the forest monitoring database was established in 2015).

The Cabinet of Ministers of Ukraine, in accordance with the requirements of the Forest Code of Ukraine (the relevant amendments to the code came into force on June 25, 2020), approved the Procedure for conducting the national forest inventory by resolution on April 21, 2021. The Ukrainian State Forest Inventory and Management Production Association (PA "Ukrderzhlisproekt") was designated as the Center for the National Forest Inventory. Funding for the national forest inventory was planned through the state budget and co-financed by the German government.

However, due to the onset of Russia's military aggression against Ukraine in 2022, the national forest inventory work, initiated by the PA "Ukrderzhlisproekt" in 2021 (909 inventory plots were surveyed), was suspended. The PA "Ukrderzhlisproekt" (located in Irpin) suffered significant material losses due to being in a combat zone (the administrative building was destroyed, and special equipment and transport were lost). Currently, planned work is being carried out, but the institution requires complete restoration and modernization. The national



inventory cycle, which began in 2021, is scheduled to be completed in 2025, but this deadline may not be met considering the conditions of martial law.



Reference. According to paragraph 1 of the Cabinet of Ministers of Ukraine Resolution No. 388 dated April 25, 2023, “On Certain Issues of Conducting the National Forest Inventory During Martial Law” the requirements for establishing a six-year cycle for conducting the national forest inventory do not apply during the period of martial law and for two years following its termination or cancellation.

The actual accountability for the damage and losses inflicted on the forest fund has not been established, and the activities of the State Forest Agency in this regard are insufficient.

From 2020 to the first half of 2023, 4,587 fires occurred in Ukraine (excluding fires due to military actions) covering an area of 93.2 thousand hectares. These fires caused total damages amounting to 20,339 million hryvnias (of which 19,113 million hryvnias (94%) occurred in 2020). Of this total amount of damages, only 192.0 thousand hryvnias have been compensated.

Most cases of wildfires (63%) during this period were caused by human activity (Fig. 5).

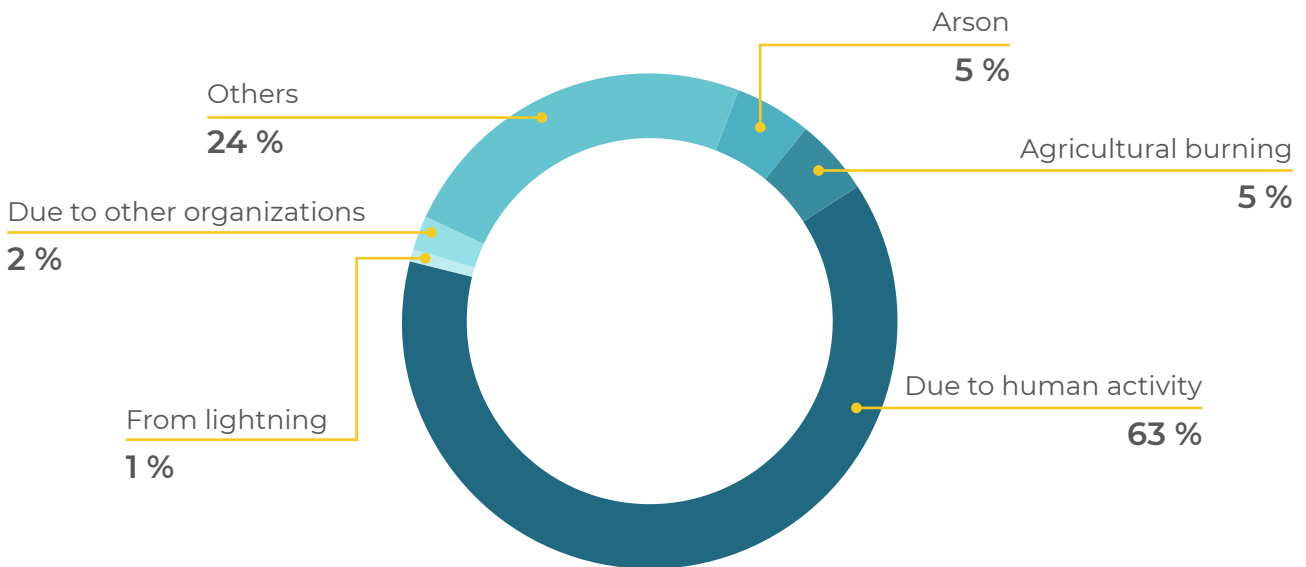


Figure. 5. Main Causes of Wildfires in Ukraine's Forest Fund

The most severely affected by wildfires were the Zhytomyr (43.3 thousand hectares) and Luhansk (29.2 thousand hectares) regions (Fig. 6).



The open military aggression of the Russian Federation against Ukraine, which began in 2022, has led to an increase in fire risk in the forests. Timely detection and rapid response to such fires are complicated by combat operations, shelling, landmines, and the presence of a significant number of explosive remnants in forest areas.

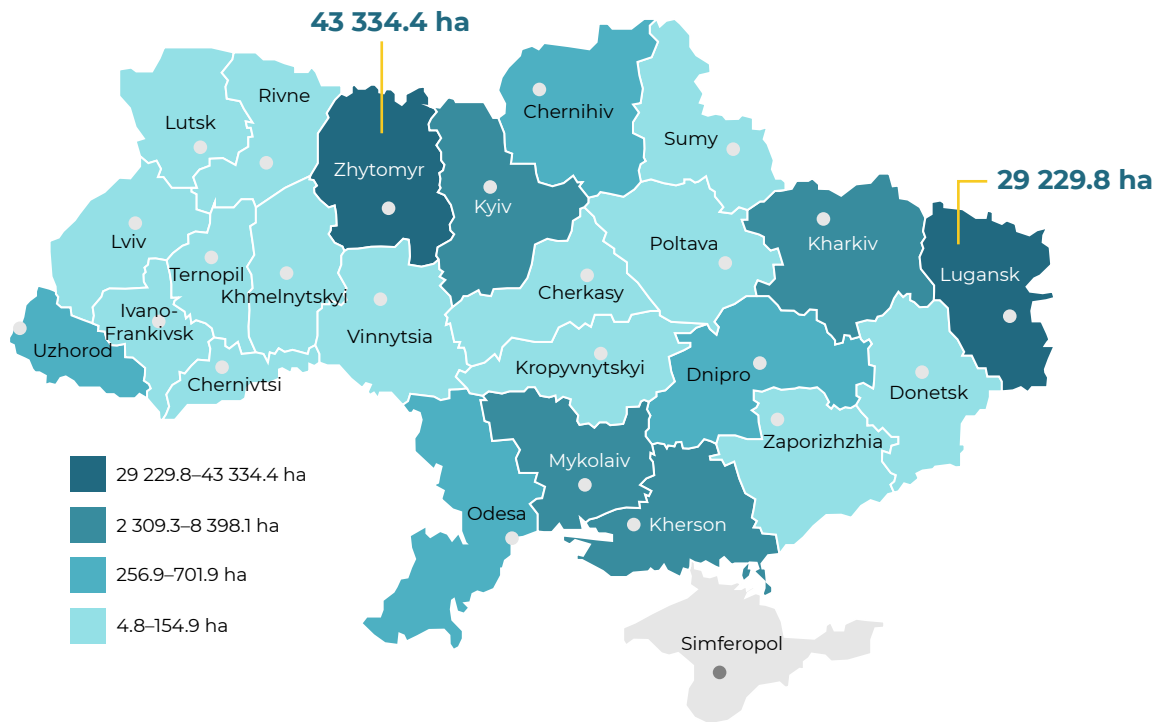


Figure. 6. Areas of the forest fund affected by wildfires during 2020–2022 and the first half of 2023, by region

According to operational information, the area of de-occupied (liberated) territories and areas where active combat operations are ongoing (or have been ongoing), excluding temporarily occupied lands of the forest fund (as of November 31, 2023), amounts to approximately 975.3 thousand hectares. More than 500 thousand hectares of forest fund lands in territory controlled by the Ukrainian authorities require demining, of which about 73 thousand hectares, or 14.6 percent, have been cleared (surveyed).

It is necessary to enhance the effectiveness of wildfire prevention and suppression measures by the departmental fire protection of the State Forest Agency's enterprises.

The organization of forest protection and conservation involves implementing a comprehensive set of measures aimed at safeguarding forests from fires, illegal logging, damage, weakening, and other harmful influences, as well as protection against pests and diseases (Article 86 of the Forest Code of Ukraine).



According to Appendix 1 of the Regulations on the Unified State Civil Protection System, the State Forest Agency has established a subsystem for the protection and safeguarding of forests (a functional subsystem of the unified state civil protection system). The list of economic entities where departmental fire protection is created includes economic entities, enterprises, institutions, and organizations that fall under the jurisdiction of the State Forest Agency. Its main tasks include ensuring fire safety, preventing the occurrence of fires and accidents during fires, extinguishing fires, rescuing people, and providing assistance in eliminating the consequences of other emergencies.

The establishment of forest fire stations and the organization of their activities are ensured by permanent forest users and forest owners. Each forest fire station is equipped with a firefighting team, which is staffed by fire-rescue units from the departmental fire protection or voluntary fire protection, who have the necessary qualifications and have completed training under the “Forest Firefighter Training Course” program.

The system for organizing the protection and safeguarding of forests from fires for enterprises and institutions under the jurisdiction of the State Forest Agency is illustrated in Fig. 7.

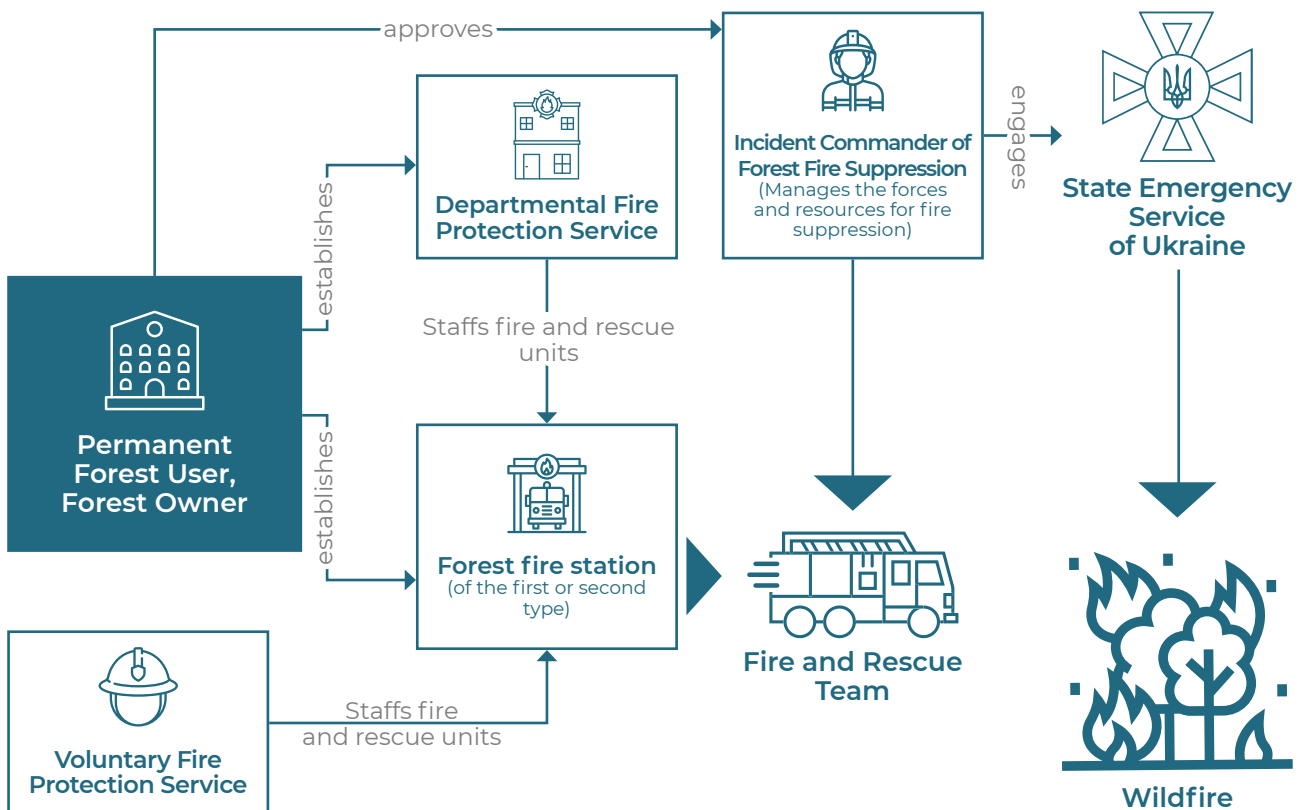


Figure. 7. The Wildfire Protection and Safeguard System of Enterprises and Institutions Subordinate to the State Forest Resources Agency



As of January 1, 2023, the number of personnel in the departmental fire protection service amounted to 11,796 employees, including 721 permanent staff members and 11,558 voluntary fire protection personnel. Since 2023, forest wildfire protection has been ensured by the branches of the State Enterprise “Forests of Ukraine” and by enterprises, institutions, and organizations directly subordinate to the State Forest Resources Agency. A separate branch, the “Forest Fire Center,” has been established within the structure of the State Specialized Forest Enterprise “Forests of Ukraine”.

The technical equipment of the units requires modernization.

The forest fire units are equipped with 532 fire trucks, of which 480 (90%) have been in service for 16 years or more. An additional 33 vehicles are needed. To ensure proper monitoring of forest areas, timely detection of fires, and their suppression at the initial stage, a network of 488 fire observation towers and masts has been established, according to reports on the execution of production and financial plans. Of these, 431 are equipped with television surveillance systems for the rapid detection of forest fires, with an additional requirement of 72 towers, or 15%.

Fire prevention measures, such as the creation of firebreaks and mineralized strips, significantly decreased in 2022 due to military aggression, which affected access to forest areas and the implementation of preventive actions.

To reduce the number and area of forest wildfires, enterprises under the jurisdiction of the State Forest Resources Agency implemented restrictive measures from 2020 to 2022 and in the first half of 2023. These measures included the establishment of firebreaks, barriers, and screens covering 118.9 km, and the creation of 175,000 km of mineralized strips (see Fig. 8). However, due to the military aggression of the Russian Federation against Ukraine and the inability to access forest land due to temporary occupation in 2022, the number of these measures significantly decreased compared to 2020, amounting to only 30.6% and 63.4%, respectively.

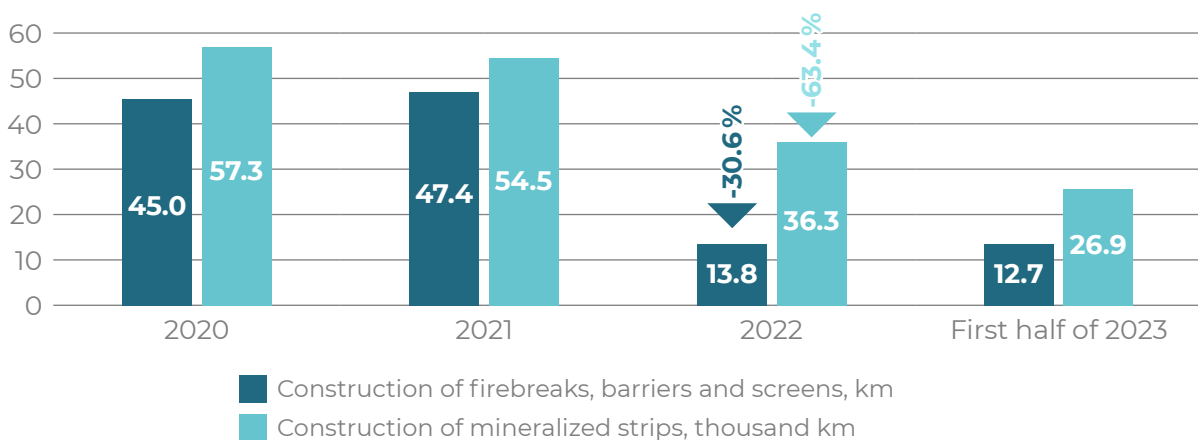


Figure. 8. Dynamics of Wildfire Prevention Measures from 2020 to 2022 and the First Half of 2023



The automated “Pozhezhi” (“Fires”) system, implemented in 2021, ensures the prompt recording and transmission of information about forest wildfires, facilitating faster responses to emergency situations.

Active collaboration between relevant state authorities and the recording system facilitates the rapid detection and suppression of forest wildfires by uniting efforts to preserve forest resources and prevent negative environmental consequences. To support the acquisition and transmission of information about forest wildfires, the automated “Pozhezhi” (“Fires”) system was introduced in 2021. Permanent forest users and forest owners input data into the system regarding detected wildfires and their suppression efforts.

In September 2023, a Memorandum of Cooperation was signed between the State Forest Resources Agency and the State Emergency Service of Ukraine to enhance collaboration in protecting forests from wildfires and to ensure the implementation of demining operations on forest fund lands.

The forest management reform, initiated in 2022, is currently in the process of implementation.

The reform of Ukraine’s forestry sector is outlined in the Presidential Decree “On Certain Measures for Forest Conservation and Restoration” and other regulatory acts. The implementation of the reform is planned with the adoption of best practices from European Union countries, particularly Germany, Poland, and Lithuania. The successful experiences of these countries will help establish an effective and efficient model of forest management in Ukraine.

The Presidential Decree No. 675, issued on September 29, 2022, enacted the decision of the National Security and Defense Council of Ukraine from the same date, titled “On the Protection, Defense, Use, and Reproduction of Forests in Ukraine During a Special Period.” This decision serves as the foundation for implementing the reform and ensuring the efficient functioning of the sector. Among other measures, it calls for strengthening administrative responsibility for non-compliance with lawful orders or instructions, as well as other legitimate demands from officials of the state bodies responsible for environmental protection, use of natural resources, radiation safety, or natural resource conservation. Penalties are also foreseen for failing to provide necessary information, providing false information, or obstructing officials from fulfilling their duties.

According to the State Strategy for Forest Management in Ukraine until 2035, effective forest management involves creating a balanced system of legal relations between forestry entities, while simultaneously preventing potential conflicts of interest (see Fig. 9).

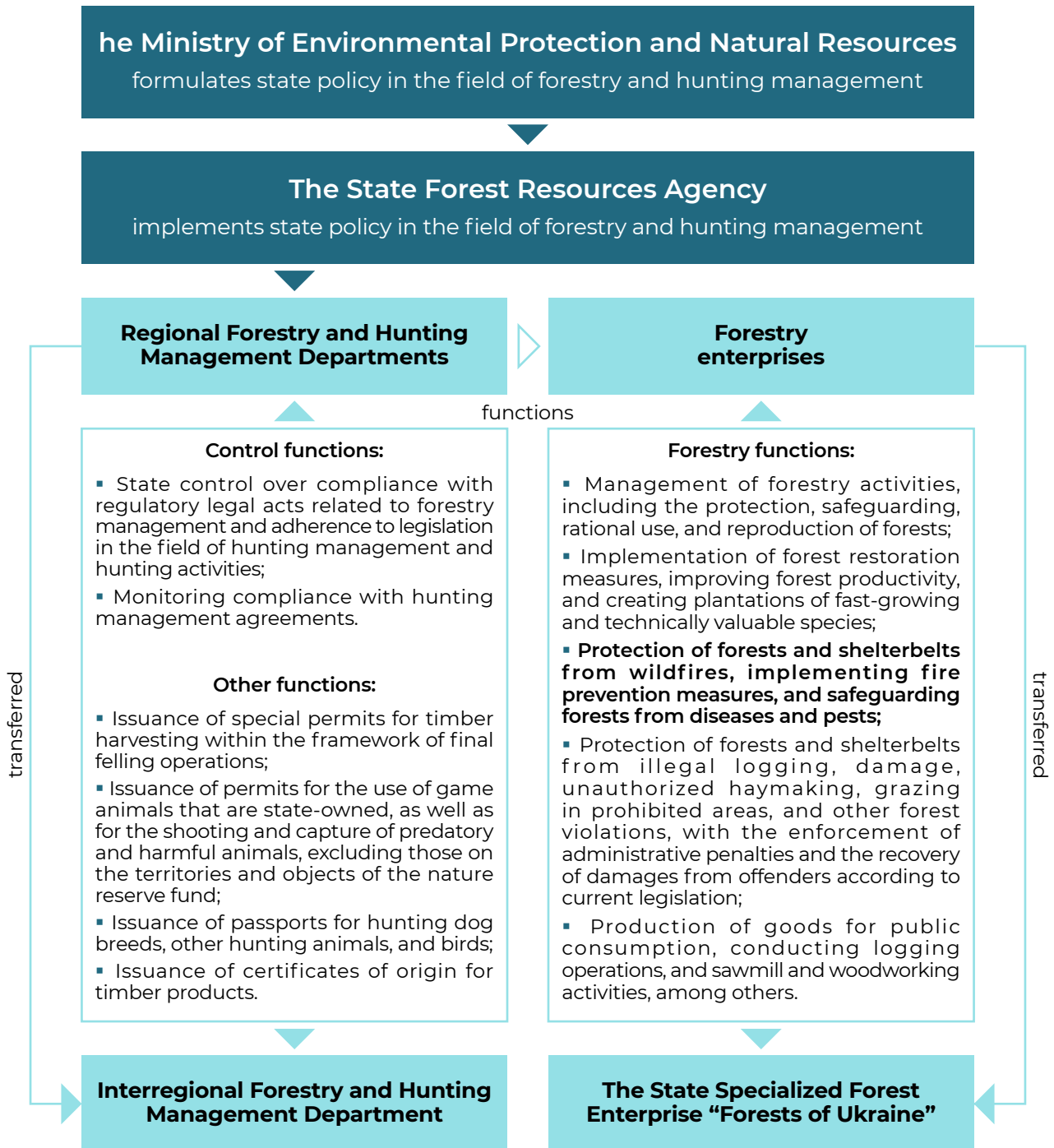


Figure. 9. Distribution of Functions in Forestry Management Considering Changes in the Structure of the State Forest Resources Agency

The implementation of the Cabinet of Ministers of Ukraine resolution “Some Issues of Reforming the Management of the Forestry Sector” has made it possible to eliminate the conflict of interest that arose due to the State Forest Resources Agency combining



regulatory, management, and control functions within the forestry sector. This was achieved by transferring the forestry management functions to the State Specialized Forest Enterprise “Forests of Ukraine”.

Additionally, the function of protecting forests and shelterbelts from wildfires and implementing fire prevention measures was also transferred from forestry enterprises to the State Specialized Forest Enterprise “Forests of Ukraine”.

Along with the Strategy, the Government approved the Operational Plan for implementing the State Strategy for Forest Management of Ukraine until 2035 during 2022–2024. The plan consists of 16 measures, 11 of which are scheduled to be completed in 2024, and two more after the cessation of hostilities. Of the three measures with a 2023 deadline, only one has been completed — by the Cabinet of Ministers of Ukraine’s resolution “Some Issues of Reforming the Management of the Forestry Sector,” which optimized the structure of the State Forest Resources Agency.

Two measures were not completed in 2023:

- the new training course programs “Forest Firefighter Training Course” and “Incident Commander of Forest Fire Suppression” were not developed;
- the draft resolution by the Cabinet of Ministers of Ukraine “Some Issues of Close-to-Nature Forestry and Logging during Martial Law,” developed by the State Forest Resources Agency, has not been approved yet (it is under review).

Work is ongoing to develop and adopt regulatory legal acts in line with the tasks scheduled for 2024.



RECOMMENDATIONS

For the Cabinet of Ministers of Ukraine:

- Take necessary measures to implement the decision of the National Security and Defense Council of Ukraine from September 29, 2022, “On the Protection, Defense, Use, and Reproduction of Forests in Ukraine During a Special Period,” enacted by the Presidential Decree No. 675 on September 29, 2022.

For the Ministry of Environmental Protection and Natural Resources of Ukraine and the State Forest Resources Agency of Ukraine:

- Develop and submit to the Cabinet of Ministers draft laws to amend the Criminal Code of Ukraine and the Code of Ukraine on Administrative Offenses. These amendments should improve responsibility for violations in the forestry sector and combat illegal timber circulation, and increase penalties for non-compliance with the lawful demands of officials responsible for state environmental protection control.

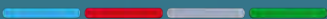
For the State Forest Resources Agency of Ukraine:

- Implement quarterly monitoring of forestry management activities, including forest management, afforestation and reforestation, forest protection and defense, the creation of protective forest plantations, and shelterbelts. A comprehensive assessment of the implementation of action plans should be provided by the interregional forestry and hunting management departments and state budget fund recipients.
- Ensure the maintenance of the national forest inventory and forest accounting system.
- Conduct forest monitoring as part of the state environmental monitoring system.
- Intensify legal claims and litigation efforts to recover damages caused to the forest fund.
- Provide for the technical re-equipment of forest fire units, including the acquisition of fire prevention equipment, firefighting tools, and surveillance systems to prevent the occurrence of wildfires.



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