



Joint ESENias and DIAS Scientific Conference and 9 th ESENias Workshop

Bella Japoshvili

Ilia State University
Lab of Hydrobiology
and Ichthyology,
Institute of Zoology

03–06 September 2019,
Ohrid, Republic of North Macedonia



Because of its high landscape diversity and low latitude, In Georgia we have very diverse biomes.
 Forest covers 40 % of Georgia

- ▶ In the past, there was no control of the introduction (both intentional and random) of alien species into Georgia and many invasive alien species are now found throughout the country. In some cases, the impact has been devastating (e.g. prussian carp (*Carassius gibelio*) in freshwater lakes).
- ▶ Introduction of non-native animal species is prohibited by law.
- ▶ Georgia's forests are suffering from pest species and diseases that have been unintentionally introduced into the country. These include spruce bark beetle, chestnut blight, box tree moth etc.

National Target B.2 By 2020, alien invasive species have been assessed with regard to their status and impact; their pathways have been evaluated and identified, and measures are in place to prevent their introduction and establishment through the management of these pathways; no new alien species have been recorded

Action	Time frame	Responsible/Implementing agency	Source of funding (potential)
Objective B.2-o1. Prevent the distribution of new alien invasive species and control the existing populations of alien species			
B.2-o1.1 Identify, assess and prevent the existing and potential pathways of invasive alien species into the country's terrestrial, freshwater and marine ecosystems	2014-2018	MoENRP; APA; research institutes; NGOs	State budget. donors
B.2-o1.2. Assess the status and distribution of invasive alien species and conduct a modelling of the threats they pose to native biodiversity and ecosystems	2014-2018	MoENRP; APA; research institutes; NGOs	Donors
B.2-o1.3. Develop a legal framework and strategy for the management of invasive alien species	2015-2020	MoENRP; research institutes; NGOs	State budget. Donors
B2-o1.4. Establish effective measures for the control of the populations of marine alien species, including <i>Mnemyopsis leidi</i> and <i>Rapana venosa</i>	2014-2020	MoENRP; research institutes; NGOs	State budget. Donors
B2-o1.5. Conduct monitoring of invasive alien species within the framework of the National Biodiversity monitoring System	2014-2016	MoENRP; research institutes; NGOs	State budget. donors

▶ The decree of the Minister of Environment and Natural Resources Protection of Georgia on the Indicators of the National Biodiversity Monitoring System was adopted on 18th of December 2012, by this normative act Indicator P9 – [Number and distribution of invasive species](#) was elaborated, but terms of use of this indicator is not defined up to date and it is not functioning.

▶ In accordance with Article 3, in the draft on Law of Georgia on Aquaculture, regulation of aquaculture activities should be based on several basic principles, including: monitoring of the use of hybrids and invasive species. However, after the entry into force of the law, it is necessary to facilitate enforcement and ensure monitoring mechanisms.

▶ There is no strategy and necessary infrastructure for inventory, research and monitoring of invasive species, which prevents integration and utilization of fragmented data.

- ▶ Some of the new invasive species for Georgia (*Ferrissia californica*, *Mytilopsis leucophaeata*) were found in fragmented studies (by scientific / research institutions, Ilia State University) and some ecological problems related to IAS have been identified in limited geographical scale (as in case of Prussian carp).
- ▶ It should be taken into consideration, that these studies do not have a systemic character and are entirely related to the interest/grants of individual researcher or research groups.

- ▶ In 2014, box tree moth (*Cydalima perspectalis*) was first detected in the country. The species introduced in Sochi, Russia in year 2012 and later expanded its range toward the south. Box tree moth spread through Georgia and greatly affected on box trees all over the country. Governmental agencies tried to limit the species using **biological method – species specific bacterium** that killed the moth on early larva stage. According to state monitoring results, the method did not have good results and government decided to use pesticides against the box tree moth.
- ▶ In 2015, brown marmorated stink bug (*Halyomorpha halys*) was first found in Georgia. The stinkbug spread very fast in western Georgia and caused great damage on agriculture, especially on hazelnut plantation. The stinkbug became a number one pest in the country and the government used various methods to limit its number. **Bifenthrin** insecticides were widely used to control the species, but it also affected to the local species as well as on domestic bee population. We do not know, what an impact of the invasion on local biodiversity is and how the wide range of pesticides affected local insect populations.

- ▶ During the last century various alien mammal species were introduced in Georgia, including Raccoon (*Procion lotor*), coypu (*Myocastor coypus*), muskrats (*Ondatra zibethicus*) and red squirrel (*Sciurus vulgaris*). These animals were successfully adapted to local environment and probably negatively affected on local biodiversity. Although, an impact of the invasions on local biodiversity was never studied.



Uncontrolled distribution of certain alien tree species such as *Paulownia tomentosa* and *Ailanthus altissima* poses a threat to the country's natural (including flood plain) forests. Detailed studies are needed to assess the potential threats from certain invasive tree species in Georgia.

Table 1 Synopsis of the native and alien flora of Georgia (% is given in brackets).
ცხრილი 1 საქართველოს ავტოქტონური და არაადგილობრივი ფლორის სინოფსისი (პროცენტული მაჩვენებლები მოცემულია ფრჩხილებში)

	Pteridophyta	Spermatophyta			TOTAL სულ
	Pteridophytes გვიმრანაირები	Gymnosperms შიშველთესლოვნები	Dicotyledons ორღებნიანები	Monocotyledons ერთღებნიანები	
Native species* ავტოქტონური სახეობები*	79 (2)	16 (0.5)	3089 (79.5)	700 (18)	3884 (100)
Families ოჯახები	24 (14)	4 (2)	114 (65)	34 (19)	176 (100)
Alien species** არაადგილობრივი სახეობები	5(1.4)	2 (0.6)	282 (74)	91 (24)	380 (100)
Families which include alien spp. ოჯახები, რომლებიც შეიცავენ არაადგილობრივ სახეობებს	4(5.4)	2 (2.7)	55 (74.4)	13 (17.5)	74 (100)
TOTAL no. species სახეობების საერთო რაოდენობა	84 (1.9)	18 (0.4)	3371 (79.1)	791 (18.6)	4264 (100)
% alien species of total no. species არაადგილობრივი სახეობების % ავტოქტონური სახეობების საერთო რაოდენობიდან	5.9	11.1	8.3	11.5	8.9

* excluding subspecies and varieties
ქვესახეობების და უფრო დაბალი რანგის ტაქსონების ჩათვლელად

** excluding cultivated species which are not, or only rarely, found in the environment
კულტურული მცენარეების ჩათვლელად, რომლებიც არ გვხვდებიან ან მცირე რაოდენობითაა ბუნებრივ გარემოში

- ▶ In order to achieve the target B.2, it is necessary to develop strategic planning in the direction of IAS research:
- ▶ (a) establishing the IAS inventory and monitoring platform,
- ▶ (b) creation of the National Consortium with the involvement of relevant parties, joining to international networks,
- ▶ (c) Introduction / Optimization of the modern methods of research and
- ▶ (d) Optimizing legal framework according to the European Union standards and enforcement its mechanisms

Thank you for your attention