

Final Technical Report

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TITLE of AGREEMENT	CWR in EURISCO
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IMPLEMENTING PARTNER	Nature Research Centre, Vilnius
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TYPE OF REPORT	Final Technical Report
ABSTRACT (maximum 200 words)	<p>The dataset of Lithuanian priority CWR populations was prepared and uploaded to EURISCO (https://eurisco.ipk-gatersleben.de/apex/eurisco_ws/r/eurisco/in-situ-cwr-search) by using the template with 28 EURISCO-recommended <i>in situ</i> CWR passport descriptors. A total of 1080 populations representing 96 CWR species (65.3% of the priority list) were included in the dataset with the median of seven populations per species. By organizing field trips in 2024, the CWR passport data was collected for 323 populations from 22 new sites totaling to 73 sites in national protected areas, Natura 2000 sites, and ancient hillfort sites. Three partners have been invited and agreed to cooperate in providing data on priority CWR populations: Lithuanian State Service of Protected Areas, NGO Baltic Environmental Forum, and NGO Wetlands Restoration and Protection Fund. The next steps to be taken will focus on the national CWR Inventory at the population level: selecting the most appropriate populations of 51 species which are not included in the current dataset as well as those with only 1–4 populations recorded; focusing research on those geographic areas which are least represented, such as Western Lithuania; taking into account specific habitats and ecogeographic diversity of the priority CWRs.</p>
KEYWORDS	<p>Country/region: Lithuania/Europe.</p> <p>Crop(s): Crop wild relatives for food and agriculture.</p> <p>Subject: The preparation and inclusion in EURISCO of <i>in situ</i> Crop Wild Relative datasets from Lithuania.</p>

1. Research project highlights

The pilot dataset of Lithuanian CWR populations was prepared and uploaded to EURISCO (https://eurisco.ipk-gatersleben.de/apex/eurisco_ws/r/eurisco/in-situ-cwr-search) by using the template with 28 EURISCO-recommended *in situ* CWR passport descriptors (van Hintum and Iriondo, 2022; ECPGR, 2024).

A total of 1080 populations representing 96 CWR species (65.3% of the priority list) were included in the dataset with the median of seven populations per species.

By organizing field trips in 2024, the CWR passport data was collected for 323 populations from 22 new sites totaling to 73 sites located mostly in protected areas.

Three partners have been invited and agreed to cooperate in providing data on priority CWR populations: Lithuanian State Service of Protected Areas, NGO Baltic Environmental Forum, and NGO Wetlands Restoration and Protection Fund.

2. Specific milestones achieved

The list of CWR priority species was appended with three more species, namely, *Armoracia rusticana* G.Gaertn., B.Mey. & Scherb., *Medicago sativa* L., and *Rumex acetosa* L., totaling 147 (Table 1).

Table 1. Summary of the prioritized Lithuanian CWR inventory updated

Family	Genera #	Species #	Species %	Genera with numbers of species
Poaceae	19	47	32.0	Agrostis (5), Alopecurus (4), Anthoxanthum (3), Arrhenatherum (1), Avenula (1), Briza (1), Bromus (1), Cynosurus (1), Dactylis (1), Deschampsia (2), Elymus (1), Festuca (8), Glyceria (4), Helictochloa (1), Leymus (1), Lolium (1), Phalaris (1), Phleum (2), Poa (8)
Fabaceae	11	47	32.0	Anthyllis (1), Astragalus (3), Lathyrus (7), Lotus (2), Medicago (2+1*), Melilotus (2), Onobrychis (2), Ononis (1), Securigera (1), Trifolium (14), Vicia (11)
Rosaceae	5	16	10.9	Fragaria (3), Malus (2), Prunus (3), Pyrus (2), Rubus (6)
Lamiaceae	3	6	4.1	Mentha (3), Origanum (1), Thymus (2)
Brassicaceae	3	6	4.1	Armoracia (1) , Barbarea (2), Rorippa (3)
Amaryllidaceae	1	6	4.1	Allium (6)
Ericaceae	1	5	3.4	Vaccinium (5)
Apiaceae	4	4	2.7	Angelica (1), Carum (1), Daucus (1), Pastinaca (1)
Grossulariaceae	1	3	2.0	Ribes (3)
Asparagaceae	1	1	0.7	Asparagus (1)
Asteraceae	1	1	0.7	Cichorium (1)
Betulaceae	1	1	0.7	Corylus (1)
Cannabaceae	1	1	0.7	Humulus (1)
Papaveraceae	1	1	0.7	Papaver (1)
Elaeagnaceae	1	1	0.7	Hippophae (1)
Polygonaceae	1	1	0.7	Rumex (1)
Total: 16	55	147	100.0	

*Boldface fonts indicate the added numbers of species and names of genera and a family compared to the previous version of the priority CWR, presented with CWR in EURISCO project report in 2023 (Labokas, 2023).

Although it has been reported that *Armoracia rusticana* is a potentially invasive species (Gudžinskas et al. 2023), our field studies showed that it occurred only in one single site (Prelomčiškės, Southern Lithuania), which is next to the roadside. This suggests that the species invasiveness is very limited and related to such anthropogenic activities like bringing in soil from farmland or any other place where species occur.

A total of 1080 populations representing 96 CWR species (65.3% of the priority list) were included in the dataset with the median of seven populations per species (Table 2).

Table 2. Frequencies of population records of CWR priority species

Frequency group	No. of populations	No. of species	Percent of CWR priority species
0	0	51	34.7
1	1–4	35	23.8
2	5–9	21	14.3
3	10–14	11	7.5
4	15–19	6	4.1
5	≥20	23	15.6
Total CWR priority list		147	100.0
Total species recorded		96	65.3
Total populations	1080		
Median per species	7		

There were 23 species with over 20 populations each: *Agrostis capillaris*, *Astragalus glycyphyllos*, *Pyrus communis*, *Rumex acetosa*, *Rubus caesius*, *Trifolium pratense*, *Poa angustifolia*, *Lathyrus pratensis*, *Festuca pratensis*, *Medicago falcata*, *Allium oleraceum*, *Fragaria viridis*, *Briza media*, *Trifolium medium*, *Festuca rubra*, *Prunus padus*, *Thymus pulegioides*, *Fragaria vesca*, *Rubus idaeus*, *Corylus avellana*, *Phleum pratense*, *Vicia cracca*, and *Dactylis glomerata*. The latter two occurred in more than half of the studied sites – 41 and 45, respectively. In contrast, there were 16 species with only one population each: *Agrostis stolonifera*, *Allium angulosum*, *Alopecurus pratensis*, *Armoracia rusticana*, *Asparagus officinalis*, *Fragaria moschata*, *Hippophae rhamnoides*, *Lathyrus laevigatus*, *Lathyrus palustris*, *Melilotus albus*, *Onobrychis viciifolia*, *Prunus spinosa*, *Pyrus pyraster*, *Rubus plicatus*, *Trifolium campestre*, and *Vicia tetrasperma*.

A total of 51 CWR priority species still are not represented in the dataset.

3. Update on issues during the reporting period (e.g., personnel changes, financial resources, research sites, risks)

To stick to the most recent data, only the targeted site selection approach was employed, based on evaluation of pre-selected sites, such as ancient hillfort sites (corresponding to the concept of Other Effective area-based Conservation Measures, OECM), NATURA 2000 sites established under the Habitats Directive, and national protected areas (see Nature Research Centre’s Report on CWR in EURISCO, 2023).

4. Activities planned and results expected during the reporting period

The following activities were planned to implement during the reporting period:

4.1. Lithuanian State Service of Protected Areas is officially informed about the ongoing in situ CWR conservation actions and invited to regularly cooperate in providing data on priority CWR populations. An inquiry for other stakeholders regarding in situ CWR performed and potential partners identified.

4.2. The available data on priority CWR populations filtered to about 1,000 records for the upload to EURISCO.

4.3. Priority CWR distribution data collected from 10–15 new sites by organizing field trips.

The results of the activities, correspondingly, are as follows:

- Three partners have been invited and agreed to cooperate in providing data on priority CWR populations: Lithuanian State Service of Protected Areas, NGO Baltic Environmental Forum, and NGO Wetlands Restoration and Protection Fund.
- A total of 1080 populations representing 96 CWR species (65.3% of the priority list) were included in the dataset and uploaded to EURISCO.
- By organizing field trips in 2024, the CWR passport data was collected for 323 populations from 22 new sites totaling to 73 sites located mostly in national protected areas and Natura 2000 sites (Figure 1).

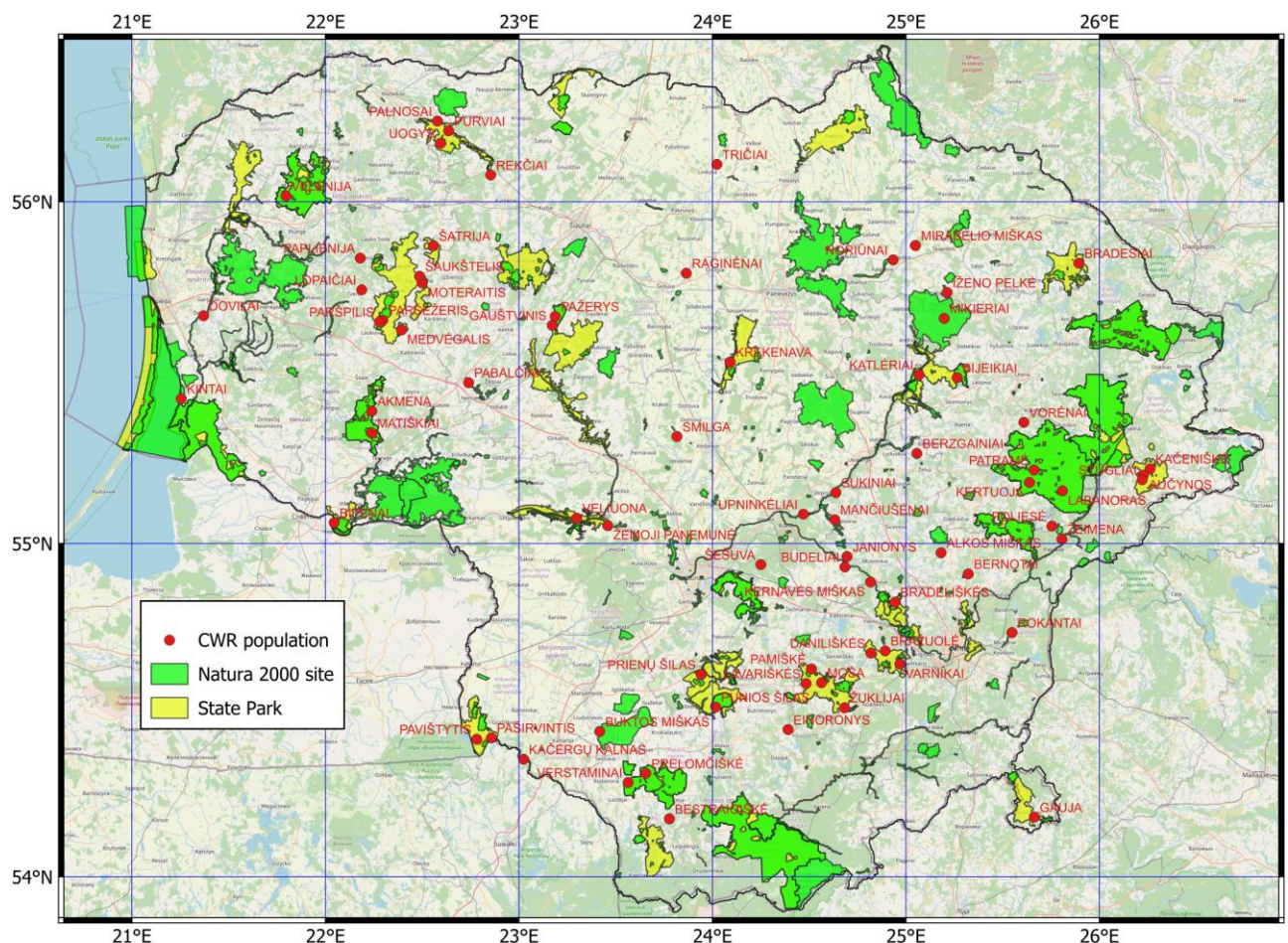


Figure 1. Distribution of 73 sites (red points) with a total of 1080 populations of 96 CWR species, the passport dataset of which was uploaded to EURISCO. Red points outside of Natura 2000 sites (green) and national protected areas (state parks, yellow) mostly are in ancient hillfort sites.

5. Major challenges encountered during the reporting period

One of the major challenges is that most of the CWR species are not legally protected. Only 17 species (11.6% of the priority CWR) are under state protection (Labokas, 2023). This requires additional efforts to conserve those species which are relatively rare and occur in specific habitats. Thus, efforts towards establishing genetic reserves appear well justified.

Another major challenge is that the term “crop wild relative” is not yet legally documented at the national level as it is not included in the [Republic of Lithuania Law on National Plant Genetic Resources](#). Instead, the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), ratified by the Lithuanian Seimas (Parliament) in 2005, provides a kind of ‘substitute’ in terms of legal framework for that purpose. However, the Article 5 of ITPGRFA, which states that “Each Contracting Party shall, subject to national legislation [...] promote an integrated approach to the exploration, conservation and sustainable use of plant genetic resources for food and agriculture and shall in particular [...] promote in situ conservation of wild crop relatives and wild plants for food production” (FAO, 2009), implies that the national legislation is essential.

6. Next steps to be taken

6.1. An effort must be made to incorporate the provision on crop wild relatives in the Law on National Plant Genetic Resources to better harmonize it with the ITPGRFA and extend the legal framework for national activities.

6.2. Focusing on the national CWR inventory at the population level: (1) selecting the most appropriate populations of 51 species which are not included in the current dataset as well as those with only 1–4 populations recorded; (2) focusing research on those geographic areas which are least represented, such as Western Lithuania; (3) taking into account specific habitats and ecogeographic diversity of the priority CWRs.

6.3. Providing data on priority CWR distribution and updates countrywide is a crucial step in maintaining CWR National Inventory database. Regarding this activity, a contribution from all the three above-mentioned partners is expected with the greatest input from Lithuanian State Service of Protected Areas.

7. Lessons learnt and implications for the project

It was a very useful project which stimulated the research on CWR *in situ* conservation, particularly regarding data standardization for CWR National Inventory through the employment of “Principles for the Inclusion of CWR Data in EURISCO” (van Hintum & Iriondo, 2022) as well as the use of descriptors for uploading *in situ* CWR passport data to EURISCO (ECPGR, 2024). It also contributed to public awareness of plant genetic resources occurring in the wild, including wild harvested plants (WHP). In conclusion, this project is an effective step towards establishing of the European network of genetic reserves harboring important CWRs and WHPs as all major endeavors start with information collecting and its skillful management.

8. Other comments

Attached is the file “CWR to EURISCO_Lithuania_for upload_v1.xlsx” with CWR *in situ* populations data uploaded to EURISCO.

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