

**Assessing Harvest  
Levels for *Galanthus  
woronowii* in Georgia  
and the  
Challenge of making  
a Non-Detriment  
Finding**

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## *Galanthus woronowii*

- In Georgia, abundant populations of *Galanthus woronowii* are found in Black Sea coast area (Ajara and Guria regions); populations of *Galanthus woronowii* are also recorded in the regions of Imereti (West Georgia) and Kartli (East Georgia)
- Populations of *Galanthus woronowii* occur in deciduous and mixed deciduous forests (*Alnus barbata*, *Carpinus caucasica*, *Zelkova carpinifolia*, etc.), hazel scrub, near springs, and in man-made habitats – roadsides, tea and citrus plantations.
- Vertical distribution of *Galanthus woronowii* in Georgia ranges from sea level to 900 m asl.

# *Galanthus woronowii*

## Distribution in Georgia



# *Galanthus woronowii*

in deciduous forest habitats



# *Galanthus woronowii*

associated with citrus plantations



# *Galanthus woronowii*

on roadsides/banks



# Areas of bulb cultivation in Georgia

## *Galanthus woronowii*

- The majority of cultivation sites are concentrated in Ajara – SW part of Georgia at Black Sea coast. Considerably fewer sites are established in Guria and Imereti districts.
- Only a single cultivation site is established in the region of Kartli – in the central part of Georgia.

# *Galanthus woronowii*

## Cultivation sites in Georgia





# *Galanthus woronowii*

## Cultivation sites and wild populations in Georgia



# Bulb production in Georgia

## *Cultivation methods*

- Reliable information on the cultivation of *Galanthus* in Georgia is not yet available
- *Galanthus* plants naturally occur as weeds on agricultural lands, mainly cornfields and citrus plantations; besides, some populations associated with forest habitats are also target for bulb collection once the forest is cleared
- One commercial company has rented approximately 30 ha area since 1995 for specific cultivation of *Galanthus*.

# Bulb production in Georgia

## *Cultivation methods*

- The planting stock for *Galanthus* cultivation comprises:
  - bulbs naturally occurring on agricultural fields
  - re-planting material (small bulbs), which is remained after bulb selection for export
  - natural bulb regeneration
  - natural seed regeneration
  - according to anecdotal data, some traders are collecting bulbs from the natural habitats

# Bulb production in Georgia

## *Harvesting*

- Collection of *Galanthus* bulbs is carried out in cultivated areas, mainly in cornfields and plantations of citrus and tea.
- In cornfields, the soil is cultivated by plough; bulb collectors follow behind and gather the bulbs between soils tussocks.
- In citrus plantations, bulbs are collected during the cultivation of plants and they are separated from the soil by raking.

# Bulb production in Georgia

## *Preparation for export*

- In Georgia, after harvesting, the bulbs are transported to the bulb delivery station at Gonio (seaside town south of Batumi in Ajara Autonomous Republic).
- At Gonio the soil and very small bulbs are separated from the larger ones.
- The larger bulbs are further sorted and those too small for export are added to the soil mixture.
- The smaller bulbs (and soil) are replanted in farm fields, and harvested later, on a rotational basis.

# Bulb production in Georgia

## *Main exporters*

- The main exporters of *Galanthus* from Georgia until 2008 were two companies.
- Only a single third company –was dealing with international trade of *Cyclamen*; the same company also exported relatively small quantities of *Galanthus* bulbs (2 million) to Netherlands
- In 2008, the 10-year long license enabling international trade in *Galanthus* was sold to 4 companies.

# Establishment and Management of quotas 1999-2007

- Until 2005 there had been no national legislation on CITES related issues in Georgia; export, import and re-export permits were issued directly according to the articles of the convention.
- In 2005 the Georgian Law on Licenses and Permits was adopted.
- This Law was pioneer in Georgian legislation establishing that the export, import, re-exports and introduction from the sea of the specimens of species included in CITES Appendices requires appropriate permits.

# Establishment and management of quotas 1999-2007

- The rules and provisions for issuance of these permits was determined by the Regulation of the Georgian Government #96, May 31, 2006.
- In case of commercial trade in *Galanthus* and *Cyclamen*, priority was given to those exporters who had already concluded an agreement with importer on the highest price.

This was due to the fact that demand on *Galanthus* export was more than export quota (18 mln bulbs).



# Establishment and management of quotas 1999-2007

- Since 2001, exporter companies were required to submit to the Ministry of Environmental Protection and Natural Resources (MoE) a list of subcontractor farmers with indication of the exact location of their cultivated fields and amount of *Galanthus* bulbs in kgs to be provided by each subcontractor
- Members of Scientific Authority were inspecting the cultivation fields sites in order to establish realistic export quota

# Establishment and management of quotas 1999-2007

- In accordance with Georgian legislation and CITES requirements, Scientific Authority establishes export quota for *Galanthus* and *Cyclamen* on yearly basis; the quota is submitted to the Minister of Environment for formal approval
- Once the quota is established and approved, MoE announces auction for interested parties; the winners are automatically issued the export permit

# Establishment and management of quotas 2008

- In accordance with new legislation adopted in 2007, Ministry for Economical Development of Georgia is responsible for the organization of auctions to sell export licenses for *Galanthus* and *Cyclamen*
- In 2008, four companies were sold ten-year long licenses that enables the export of *Galanthus*
- The annual export quotas will still be established by Scientific Authority at MoE and officially submitted to the Ministry for Economical Development of Georgia

# Export quotas for *Galanthus* 1997-2008

## *Galanthus*

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Million bulbs	10	10	10	10	15	15	15	18	18	18	15	15

# Monitoring of populations

- No systematic monitoring of wild populations of *Galanthus* and *Cyclamen* associated with natural habitats has been undertaken during the last years
- Occasional monitoring and site visits were made by the regional representatives of MoE to some sites of occurrence of *Galanthus* in Ajara, Guria and Imereti regions; illegal collection of bulbs was detected in 2006 in Imereti region (environs of Dzulukhi village, Vani administrative district)
- No independent inventory of cultivation fields has been done in recent years

# Challenges to sustainable trade!

- There is no hard scientific data on the wild stock of *Galanthus* in Georgia
- Sites of artificial propagation have to be fully assessed to assess the harvest and collect realistic and reliable information on the *Galanthus* stock on cultivated fields
- Comprehensive monitoring system of wild populations has never been developed and implemented
- There is no fully effective system of control of purity of harvested bulbs; in previous years, bulbs of *Galanthus woronowii* were mixed up with those of *Galanthus krasnovii*
- No guidelines for cultivation of *Galanthus* and *Cyclamen* were elaborated to facilitate artificial propagation of above

# CITES Project

- Sampling of wild populations
- Sampling of cultivated populations
- Do cultivated populations meet CITES criteria for artificial propagation?
- Development of criteria & indicators for wild and artificially propagated populations for NDF
- Use of population modelling?
- Development of Management Plan
- Development of monitoring system

# Key Points

- Need simple sampling and monitoring system for wild and cultivated populations
- Need indicators for detrimental harvest
- Any system should aim to combine collection of qualitative and quantitative data
- Need a manual or guide on NDF's for Bulbs
- Any monitoring system should be suitable for use by non specialist staff e.g. local inspectors
- How to manage and review data?