



Common borders. Common solutions.

**Invasive Alien Species Observatory and Network Development for
the Assessment
of Climate Change Impacts in Georgia**

Project Code: BSB-1121

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IBEDC
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Project objectives

- Introduction and communication of joint monitoring methods for alien invasive species in the Black Sea Delta ecosystems, evaluation of the obtained results in relation to the existing and future climatic conditions
- Assess the risks of alien invasive species in the protected areas of the project and support and motivate each country for the inventory of its own alien invasive species
- Enhance long-term cross-border cooperation, information sharing and research capabilities using state-of-the-art technologies for monitoring alien invasive species
- Increase community involvement in monitoring alien invasive species at various stages of the project



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Project activities

- Literary Review of Invasive Species Listed (October-November, 2020)
- Literary Review of Climate Data (December, 2020)
- Evaluation of selected invasive species and preparation of a report (February, 2021)
- Assessment report of the IAS study list (March, 2021)
- Common Invasive Species Monitoring Protocol and Expected Risk Assessment (March, 2021)
- Stakeholder Involvement, Dissemination of Questionnaires and Sharing of Evaluations (April, 2021)
- Preparation of information leaflets and banners, their dissemination (April, 2021)
- Arrangement of Info Day (April, 2021)
- The 1st Periodical IAS monitoring surveys – Kolkheti area (June-July-October, 2021)
- The 1st Periodical IAS monitoring surveys – Chorokhi delta (May-July-October, 2021)
- IAS The 1st Periodical ichthyology surveys – Chorokhi delta (October, 2021)
- Mapping in protected areas under Natura 2000 requirements (February-up to now)
- The 2nd Periodical IAS monitoring surveys (the 1st phase) – at both targeted areas (May 2022)

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Literary review of listed
invasive species

The distribution of invasive species in Georgia and their impact studied in the literature

- Impact on forest ecosystems - 12 publications
- Impact on Meadows Ecosystems - 10 publications
- Impact on Wetland Ecosystems - 9 Publications
- Impact on Freshwater Ecosystems - 9 Publications
- Impact on human activities and land use - 6 publications
- Impact on Black Sea Ecosystems - 11 publications
- Various legislative acts, international conventions, agreements, strategies

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Invasive species listed in questionnaire

Flora

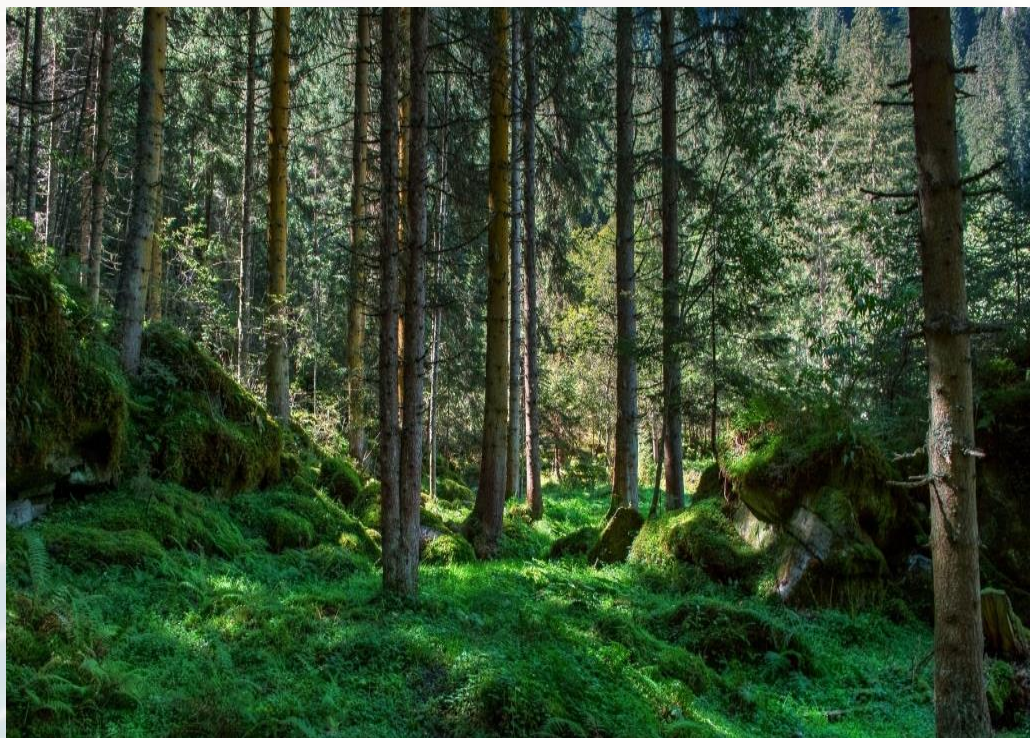
1. Black locust (*Robinia pseudoacacia*)
2. Common ragweed (*Ambrosia artemisiifolia*)
3. Star-cucumber (*Sicyos angulatus*)
4. Spiny burr grass (*Cenchrus longispinus*)
5. Brazilian verbena (*Verbena brasiliensis*)
6. Canadian goldenrod (*Solidago canadensis*)
7. Oriental false hawksbeard (*Youngia japonica*)
8. False indigo-bush (*Amorpha fruticosa*)
9. Caspian locust (*Gleditsia caspica*)

Fauna

1. Coypu or Nutria (*Myocastor coypus*)
2. Western mosquitofish (*Gambusia affinis*)
3. Prussian carp (*Carassius gibelio*)
4. Stone moroko (*Pseudorasbora parva*)
5. Warty comb jelly (*Mnemiopsis leidyi*)
6. Veined rapa whelk (*Rapana venosa*)
7. Maohan (*Anadara kagoshimensis*)

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Colchis forests, wetland areas





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Bird watching, Batumi



Peatlands of world importance, Kolkheti lowland



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Features of Chorokhi deltaic areas and Kolkheti lowland

Chorokhi delta

Up to 20 000 water flying bird species

Migrant species – almost 40 000

Habitat's diversity

1. coastal sand
2. coastal sand dune
3. Fresh water wetland
4. Wetlands
5. Forests
6. sloped meadows
7. Rocks
8. Rocky slopes
9. Roads

Kolkheti lowland

- Relict origin – Cainozoic era
- High endemism
- Boreal species
- Flora of alpine zone
- Flying/migrated birds - 194

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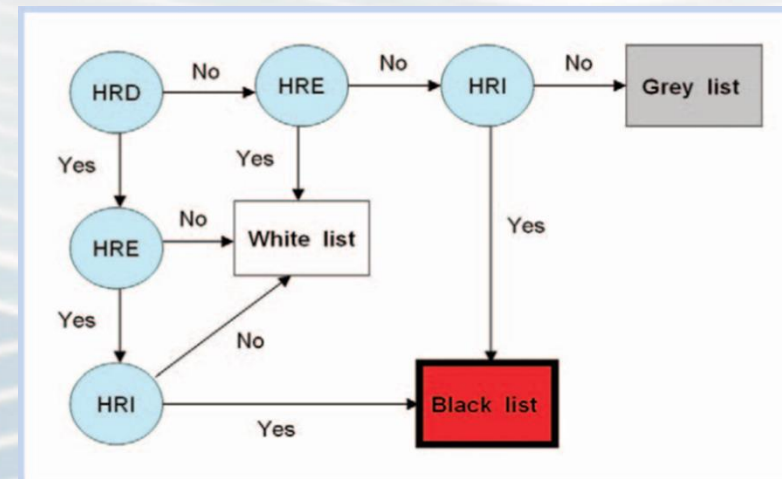
Common IAS monitoring and risk assessment

Species-specific Bio Pollution Risk (SBPR)

Features:

1. (HRD) High Risk of Dispersal
2. High risk for establishment in a new environment (HRE)
3. High risk to cause ecological and negative socio-economic impacts (HRI)

- Grey list- Pollution index 1
- White list- Pollution index 2
- Red list- Pollution index 3





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Surveyed species (May, July, October 2021)

Chorokhi delta

- Common ragweed (*Ambrosia artemisiifolia*)
- Canadian goldenrod (*Solidago canadensis*)
- (*Linnaeus, 1758*)
- Star-cucumber (*Sicyos angulatus*)
- (*Linnaeus, 1758*)
- Brazilian verbena (*Verbena brasiliensis*)
- (*Vellozo, 1829*)



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Surveyed species (June, July, November 2021)

Kolkheti area

- Common ragweed (*Ambrosia artemisiifolia*)
- Canadian goldenrod (*Solidago canadensis*)
- (*Linnaeus, 1758*)
- false indigo (*Amorpha fruticosa* (*Linnaeus, 1758*))
- Caspian locust (*Gleditsia caspica* (*Desf.*))



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Surveyed species (September, November 2021)

Chorokhi delta ichthyology

- So-iuy mullet (*Planiliza haematocheilus* (Temminck & Schlegel, 1845)
- Prussian carp (*Carassius gibelio* (Bloch, 1782)
- Mosquitofish (*Gambusia affinis* (Baird & Girard, 1853)

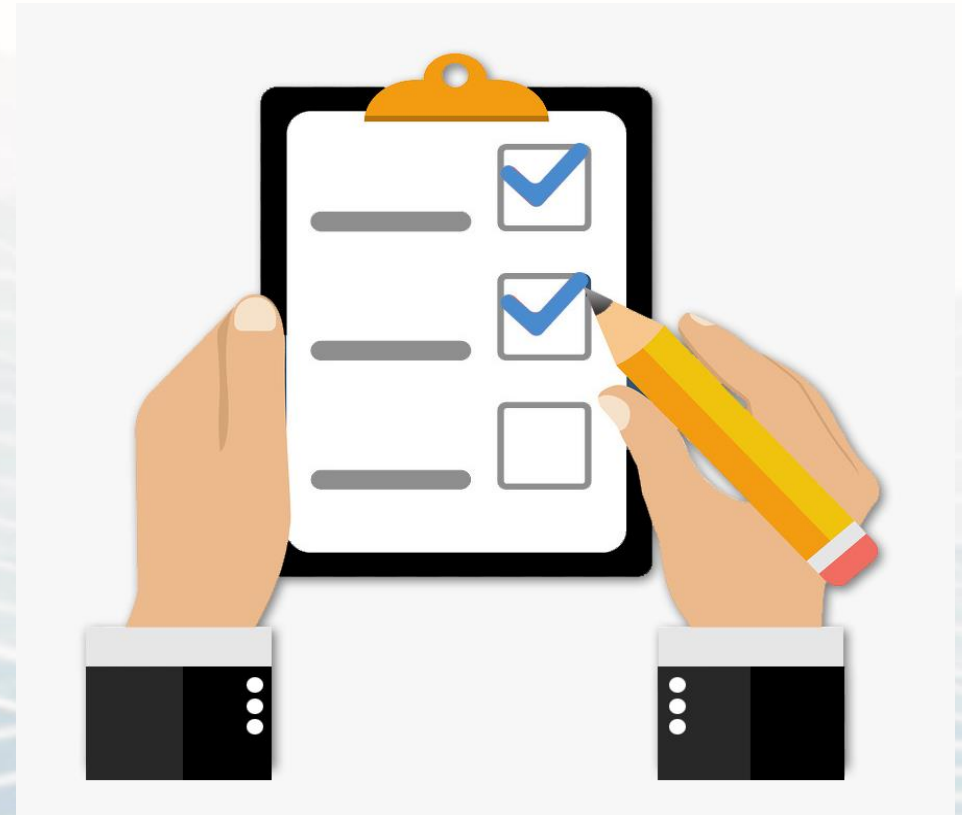


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Involvement of stakeholders, questionnaire and assessment

Methodology

- **Three types of addressed questions**
 1. Central/regional authorities, research and educational organizations, environmental non-governmental organizations
 2. Local public authorities, non-governmental organizations, business representatives
 3. Community, local population





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Community, local population
Outputs

- In total 77 respondents
- Chorokhi delta - 40
- Kolkheti lowland - 37

Chorokhi delta

- 29 households
- 2 teachers
- 1 medical assistants
- 3 Public servants
- 5 Unemployed

Kolkheti lowland

- 4 households
- 7 teachers
- 1 medical assistants
- 2 Public servants
- 9 Unemployed
- 11 fisherman
- 3 famrer





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Outcomes from community and local population

Chorokhi delta (impact assessment 1-5)

Species	Impact on ecosystem (average index)	Impact on human activity (average index)
Flora:		
Star-cucumber- <i>Sicyos angulatus</i>	2.5	3
Common ragweed- <i>Ambrosia artimisiifolia</i>	1.3	2
Oriental false hawksbeard - <i>Youngia japonica</i>		0.1
False indigo-bush - <i>Amorpha fruticosa</i>		0.1
Black locust- <i>Robinia pseudoacacia</i>	1	0.5
Fauna:		



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Kolkheti lowland (impact assessment 1-5)

Species	Impact on ecosystem (average index)	Impact on human activity (average index)
Flora:		
Canadian goldenrod - <i>Solidago canadensis</i>	1	<1
Caspian locust - <i>Gleditsia caspica</i>	2	1
False indigo-bush - <i>Amorpha fruticosa</i>	1	1
Common ragweed- <i>Ambrosia artemisiifolia</i>	3	1
Black locust- <i>Robinia pseudoacacia</i>	1	1
Star-cucumber- <i>Sicyos angulatus</i>	<1	<1
Fauna:		
Coypu or Nutria - <i>Myocastor coypus</i>	2	1
Prussian carp - <i>Carassius gibelio</i>	3	2
Veined rapa whelk - <i>Rapana venosa</i>	<1	2
Warty comb jelly - <i>Mnemiopsis leidyi</i>	<1	1

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Additional invasive species suggested by the local population

Chorokhi delta

- Flora
- Meadowsweets *Spiraea hypericifolia*
- Mock Strawberry *Duchesnea indica*



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Additional invasive species suggested by the local population

Kolkheti lowland

Fauna

- Brown marmorated stink bug (*Halyomorpha halys*)
- Fall webworm (*Hyphantria cunea*)
- Box tree moth (*Cydalima perspectalis*)



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Central/regional authorities, research and educational organizations, environmental non-governmental organizations

Totally 32 respondents

- Ajara - 21
- Samegrelo - 6
- Imereti - 1
- Tbilisi - 4



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Local public authorities, non-governmental organizations, business representatives

Totally 18 respondents

- Ajara - 3
- Samegrelo - 11
- Imereti - 2
- Guria - 1
- Tbilisi - 1





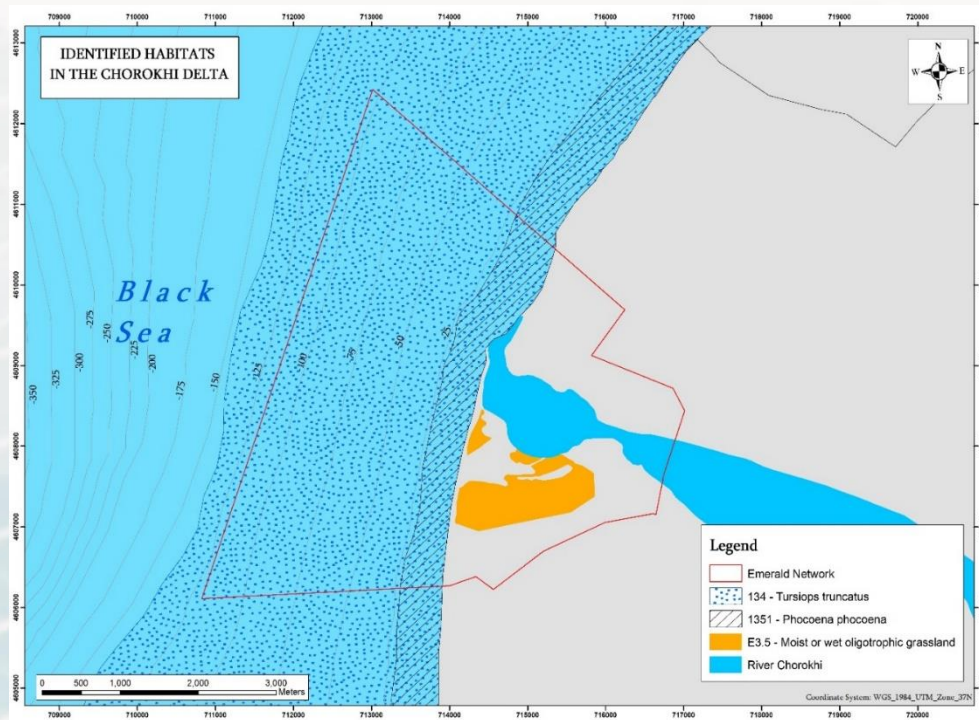
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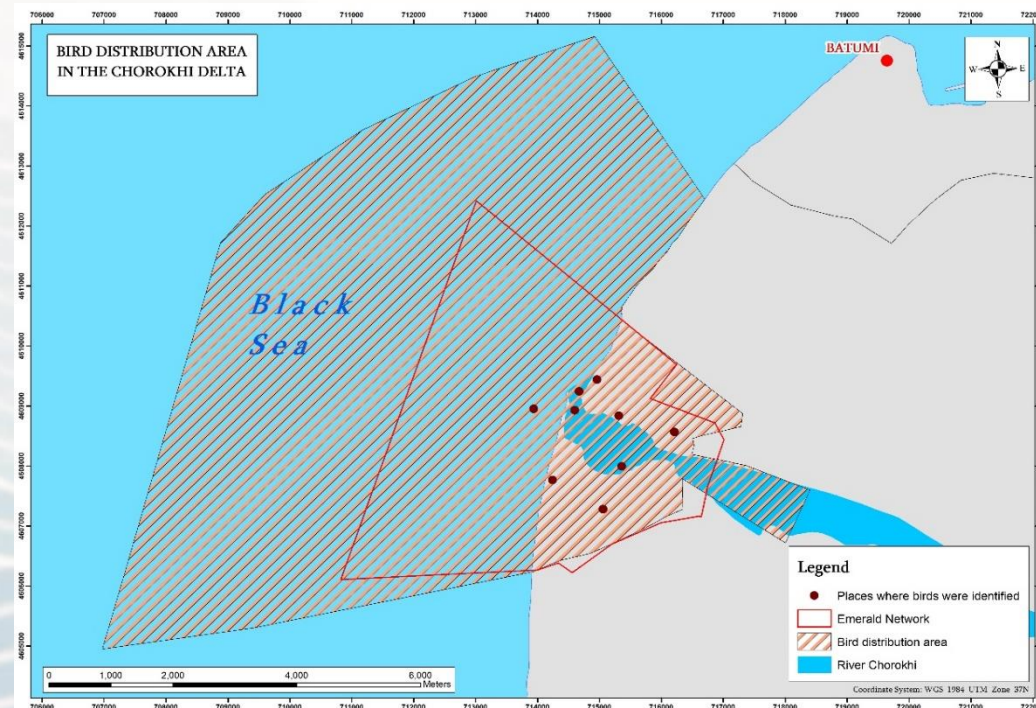
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Mapping in protected areas under Natura 2000 requirements (February-up to now)

Chorokhi SCI mapping



Chorokhi SPA mapping



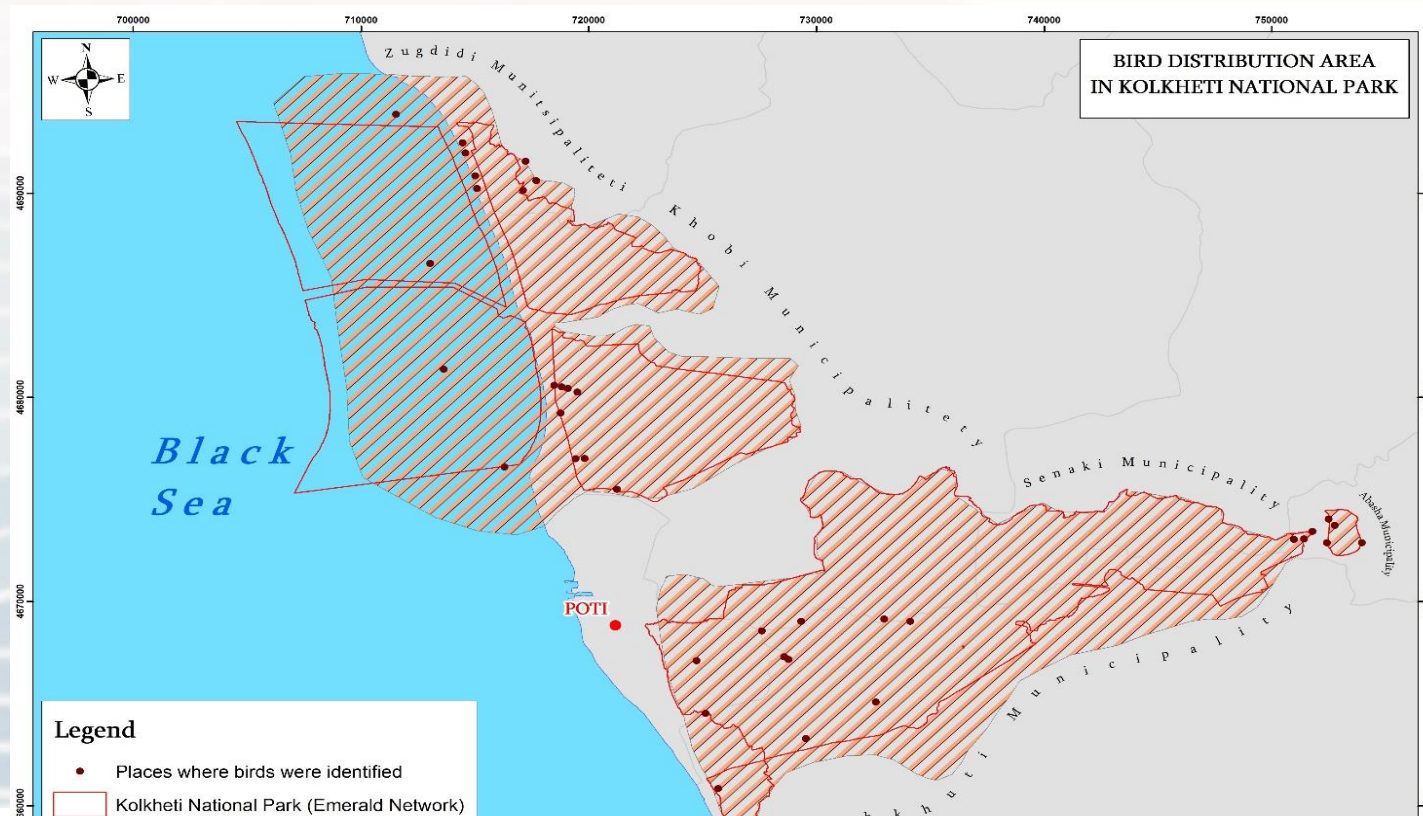


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**Mapping in protected areas under Natura 2000
requirements (February-up to now)
Kolheti SPA mapping**





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Mapping in protected areas under Natura 2000 requirements

April 2022 - Experts studied the areas to be mapped and harmonized with the NATURA 2000 requirements. Desktop study was done at the main offices having been acknowledged with the previous maps. During the site visits the areas were measured recording the GPS coordinates in duly manner. Habitat and IAS species identification was implemented including the birds migrating zones. As a result IBEDC has developed the relevant report on Mapping in protected areas under Natura 2000 requirements and submitted to the partners.





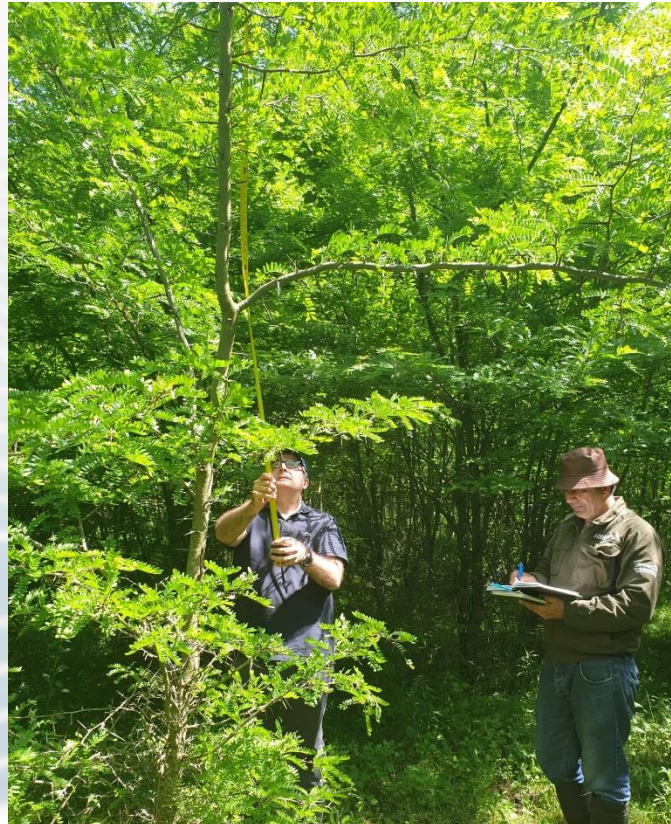
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2nd Periodical IAS Monitoring - phase I Kolkheti National Park (May 2022)

- Three invasive species are selected throughout the Kolkheti National Park:
Canadian goldenrod - *Solidago canadensis*, Caspian locust - *Gleditsia caspica* and False indigo-bush - *Amorpha fruticosa*.





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2nd Periodical IAS Monitoring - phase I Chorokhi delta (May 2022)

- *Ambrosia artemisiifolia* (Linnaeus, 1758)
- Star-cucumber - *Sicyos angulatus* (Linnaeus, 1758)
- Brazilian verbena - *Verbena brasiliensis* (Vellozo, 1829)

