| Milestone | Indicator |
|---|---|
| logging (deadline: February 28, 2013) | Documentation of logging done |
| Deployment, supplementation (deadline: 31 December, 2014) | Documentation of the deployment and supplement jobs done.<br>Intermediary report on the results of the measure<br>Successful first afforestation (official procedure)<br>Completion of afforestation (official procedure) |
| Maintainance (deadline: 31 December, 2018) | Summary report of the outcomes of the measure |

## Measure 5: Restoration Of Pannonic Sand Steppes (6260) At The Site Of HUDI20046 Szigeti Homokok

At the site of HUDI20046 "Szigeti homokok" Pannonic sand steppes are endangered primarily by non-indigenous tree species and the expansion of herbaceous plants. Kansas milkweed (Asclepias syriaca), acacia (Robinia pseudo-acacia), tree of heaven (Ailanthus altissima), and common hackberry (Celtis occidentalis) expansion in the last decades have reached such volumes, what forecloses management in the course of ordinary usage, therefore a single major restoration of habitat is necessary.

Objectives:

Restoration of Pannonic sand steppes by removal of the invasive plants particularly dangerous to the habitat (Acer negundo, Ailanthus altissima, Asclepias syriaca, Celtis occidentalis, Pinus sylvestris, Pinus nigra, Robinia pseudo-acacia).

Value of Community interest to be compensated for:

Pannonic sand steppes (improvement of habitat conditions)
Iris humilis ssp. arenaria (improvement of habitat conditions)
Carabus hungaricus (improvement of habitat conditions)

Affected land registry numbers:

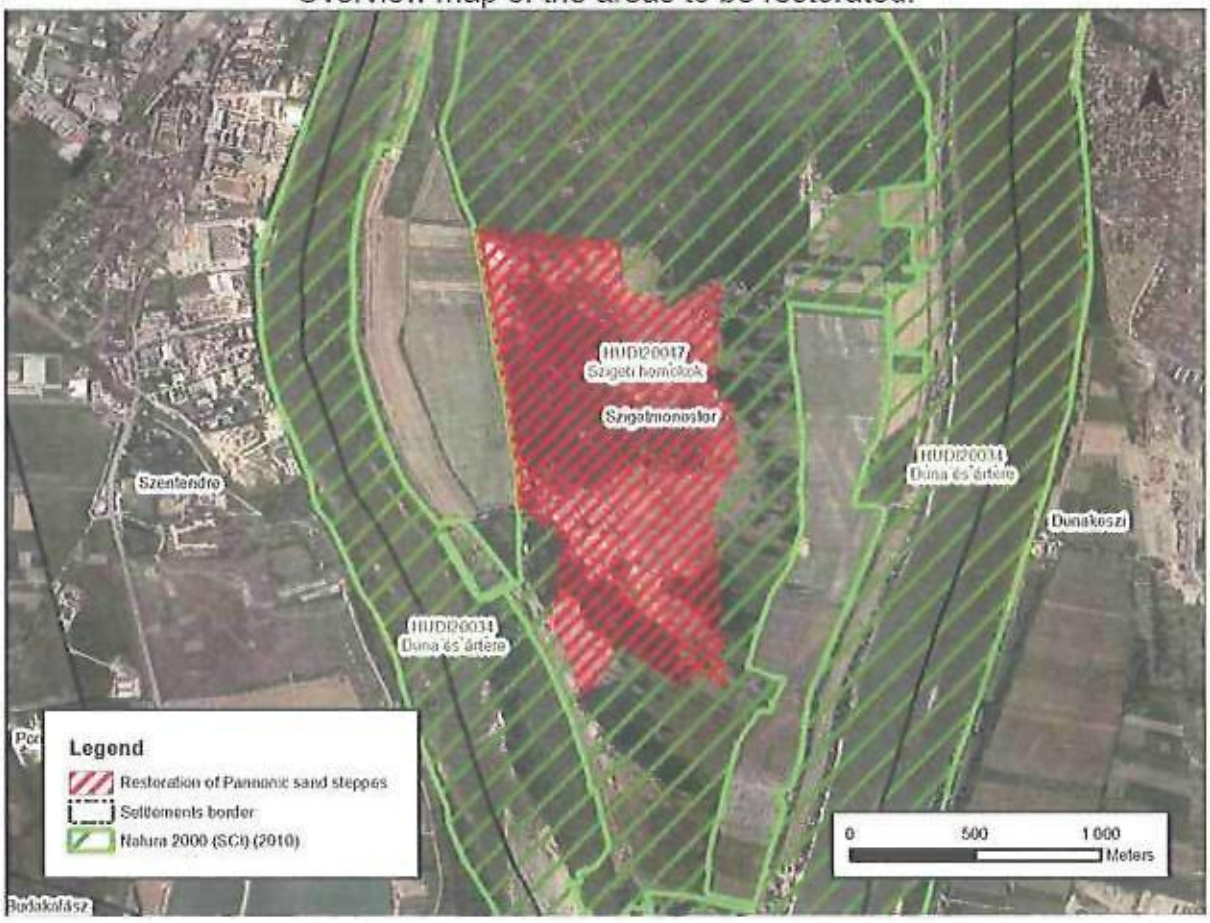
| Settlement | Affected land registry number | Affected sub-part | Branch of cultivation | Total size (ha) | Proprietor | Comments |
|---|---|---|---|---|---|---|
| Szigetmonostor | 085/2 | a | forest | 45.5993 | MÁ: DINPI | |
| | | b | grassland | 57.9521 | MÁ: DINPI | The area of intervention |
| | | c | forest | 3.2860 | MÁ: DINPI | |
| | | d | grassland | 1.9937 | MÁ: DINPI | The area of intervention ha. |
| | | f | forest | 0.2153 | MÁ: DINPI | |
| | | g | forest | 11.6115 | MÁ: DINPI | |
| | | h | grassland | 5.0705 | MÁ: DINPI | The area of intervention |

| Settlement | Affected land registry number | Affected sub-part | Branch of cultivation | Total size (ha) | Proprietor | Comments |
|---|---|---|---|---|---|---|
| | | j | forest | 3.6331 | MÁ: DINPI | |
| | | k | uncultivated road | 0.3988 | MÁ: DINPI | |
| Total: | | | | 129.7603 | MÁ: DINPI | |

Exposition of restoration measures necessary in the area:

On spots not under forest cultivation of the area removal of non-indigenous arboreal vegetation, primarily tree of heaven (Ailanthus altissima), common hackberry (Celtis occidentalis) and acacia (Robinia pseudo-acacia) is necessary. Extermination of herbaceous invasive plants, primarily Kansas milkweed (Asclepias syriaca) is a priority task. The affected area is appr. 65 ha. In the course of the extermination combined mechanical and chemical interventions are required, care must be taken to the protection of habitats in the surrounding area while chemicals are used.

Overview map of the areas to be restorated.




Technical risks of the measure:

Technical risks are not perceived in the implementation of the measure, these interventions are based on long standing methods.

Time Schedule of the Measure:

| Intervention | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|
| Investment | | | | | | | | |
| Restoration of habitat | | | | | | | | |
| Planning, authorization | | | | | | | | |
| non-indigenous arboreal plants extermination | | | | | | | | |
| herbaceous invasive plants removal | | | | | | | | |

The investment is implemented in 114 hectares until 2012, the remaining 78 ha is perceived to be covered by constructions after 2013. The invasive plants extermination cannot be done in one year, according to the up-to-date practice, such intervention needs minimum two, optimally three years. Any shorter period for the intervention may result in the remaining single organisms re-infesting the complete area again.

Estimated budget of the measure:

| Activity | Quantity | Unit price | Estimated cost (million HUF) |
|---|---|---|---|
| Planning, evaluation, authorization | | | |
| non-indigenous arboreal vegetation extermination (mechanical and chemical extermination for 3 years) | 65 ha | | |
| herbaceous invasive plants removal (mechanical and chemical extermination for 3 years) | 35 ha | | |
| **Total:** | | | |

It must be emphasised however, that these are estimated costs, and the actual costs may be subject to changes in the course of the effective implementation, depending on the year, period and form thereof.

The milestones and indicators of the measure:

| Milestone | Indicator |
|---|---|
| Planning (deadline: March 30, 2011) | Detailed intervention plan and the documentation of the request for authorization |
| Authorization (deadline: May 30, 2011) | Official permissions |
| Exterminations (deadline: 30 October, 2014) | Documentation of the work done<br>Preliminary monitoring reports |
| Description of conditions and evaluation of changes (deadline: 31 December, 2015) | Preliminary monitoring reports<br>Summary report of the outcomes of the measure |

## Measure 6: Invasive Plants Extermination In The Surroundings Of New Habitats To Be Established In The Site Of HUFH20009 "Gönyűi Homokvidék"

Success potential of the planned habitat establishing and restoration measures is strengthened, if the invasive plants endangering the natural habitats are eliminated not just in the area of intervention, but also in the surroundings thereof. The possibility of re-infestation of the areas restorated by the measure is decreased. In the framework of this measure, a 100 meter perimeter is subject to the arboreal and herbaceous invasive plants removal, wherever it is necessary, around the sand steppes established by means of Measure 3 and around Pannonic inland sand dune thickets created by means of Measure 4. The measure is not affecting areas covered by Life+ project. This measure may not overlap with other measures, in order to avoid double financing.

Objectives:

Support of measures to establish new habitats on the HUF20009 "Gönyűi homokvidék" SAC by termination of the source of potential invasion plants (Ailanthus altissima, Asclepias syriaca, Celtis occidentalis, Eleagnus angustifolia, Solidago gigantea) from the neighbouring areas. Affected areas: basis for the measure is defined by the map coverage, list of affected forest parts is mentioned only for informational purposes..

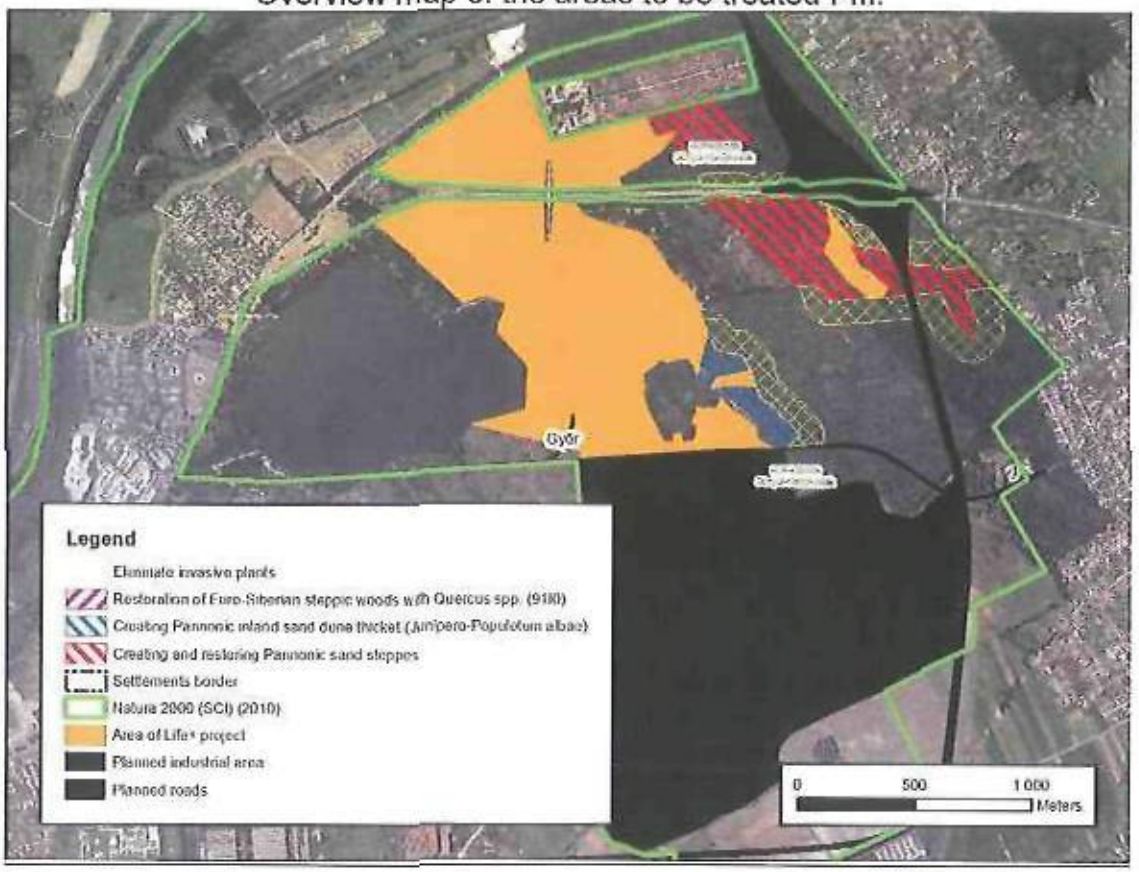
| Settlement | Forest part | Branch of cultivation | Area (ha) | Proprietor | Forest manager | Comments |
|---|---|---|---|---|---|---|
| Győr | 564 M, 564 L | uncultivated | 1.55 | Hungarian State: Ministry of Defense | HM Bp-i Erd. Zrt. | |
| Győr | 565 F | uncultivated | 4.1 | Hungarian State: Ministry of Defense | HM Bp-i Erd. Zrt. | |
| Győr | 568 I, H, L, F | uncultivated | 7.3 | Hungarian State: Ministry of Defense | HM Bp-i Erd. Zrt. | |
| Győr | 568 A, B569 A | uncultivated | 4.8 | Hungarian State: Ministry of Defense | HM Bp-i Erd. Zrt. | |
| Győr | 569 A, B, C | uncultivated | 6.9 | Hungarian State: Ministry of Defense | HM Bp-i Erd. Zrt. | |
| Győr | 574 D | uncultivated | 0.7 | Hungarian State: Ministry of Defense | HM Bp-i Erd. Zrt. | |
| Győr | 574 D, E | uncultivated | 4.8 | Hungarian State: Ministry of Defense | HM Bp-i Erd. Zrt. | |

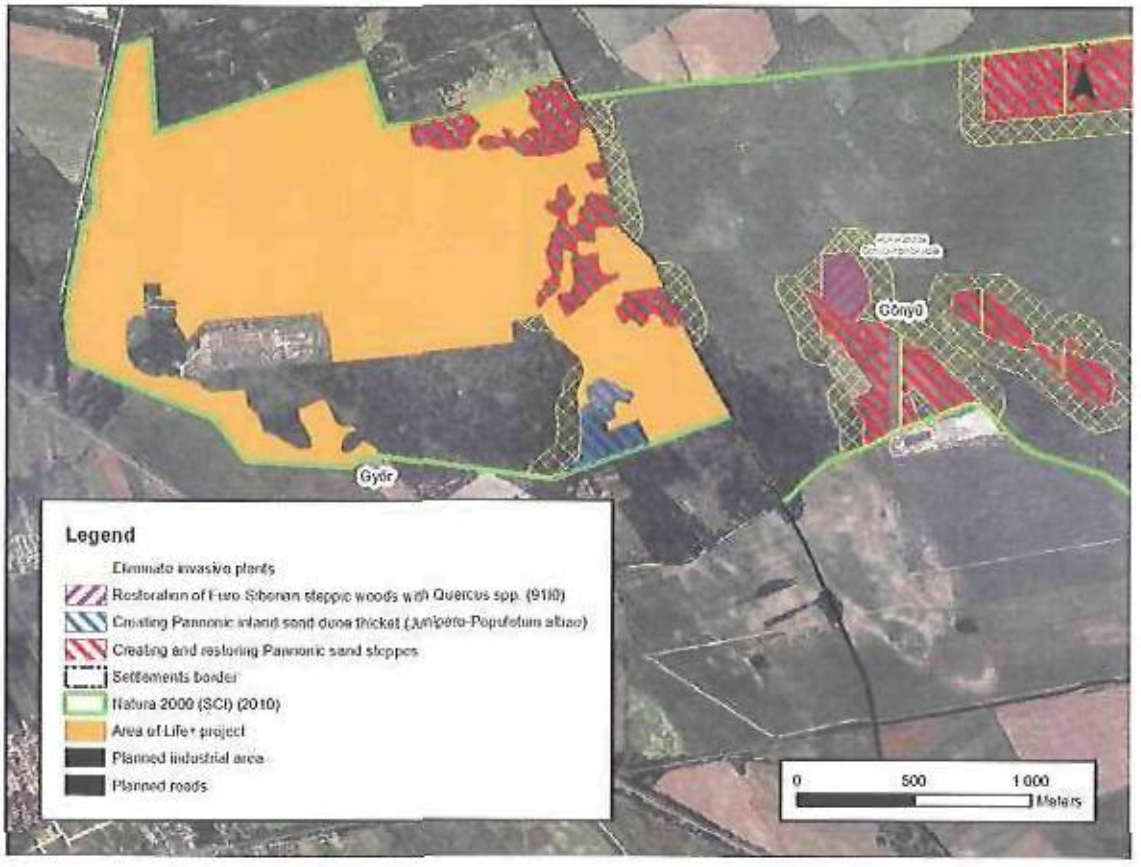
| Settlement | Forest part | Branch of cultivation | Area (ha) | Proprietor | Forest manager | Comments |
|---|---|---|---|---|---|---|
| Gönyű | 1 A, H, TI1, TI3 | forest | 5.9 | Hungarian State: KAEG Zrt. | KAEG Zrt. | |
| Gönyű | 2 B, C | forest | 3.3 | Hungarian State: KAEG Zrt. | KAEG Zrt. | |
| Gönyű | 3 B, E, G, H, I, TN1, 4 M, N,6 D, G, VF, L, E, K, I, 7 R, B, S, Q, N, P | forest | 45.3 | Hungarian State: KAEG Zrt. | KAEG Zrt. | |
| Gönyű | 7 E, F, H, VF,8 F, VF, 11 C, | forest | 48.3 | Hungarian State: KAEG Zrt. | KAEG Zrt. | |
| | G, I, J, 12 A, VF, I, J, F, E | | | | | |
| Gönyű | 13 T, 14 E, G, F, P, O, 19 M, J, K, G, 20 A, B | forest | 16.7 | Hungarian State: KAEG Zrt. | KAEG Zrt. | |
| Gönyű | 5 A, B, C, N, M, K, J, 8 G, O, J, F | forest | 14.9 | Hungarian State: KAEG Zrt. | KAEG Zrt. | |
| Total: | | | 164.55 | | | |

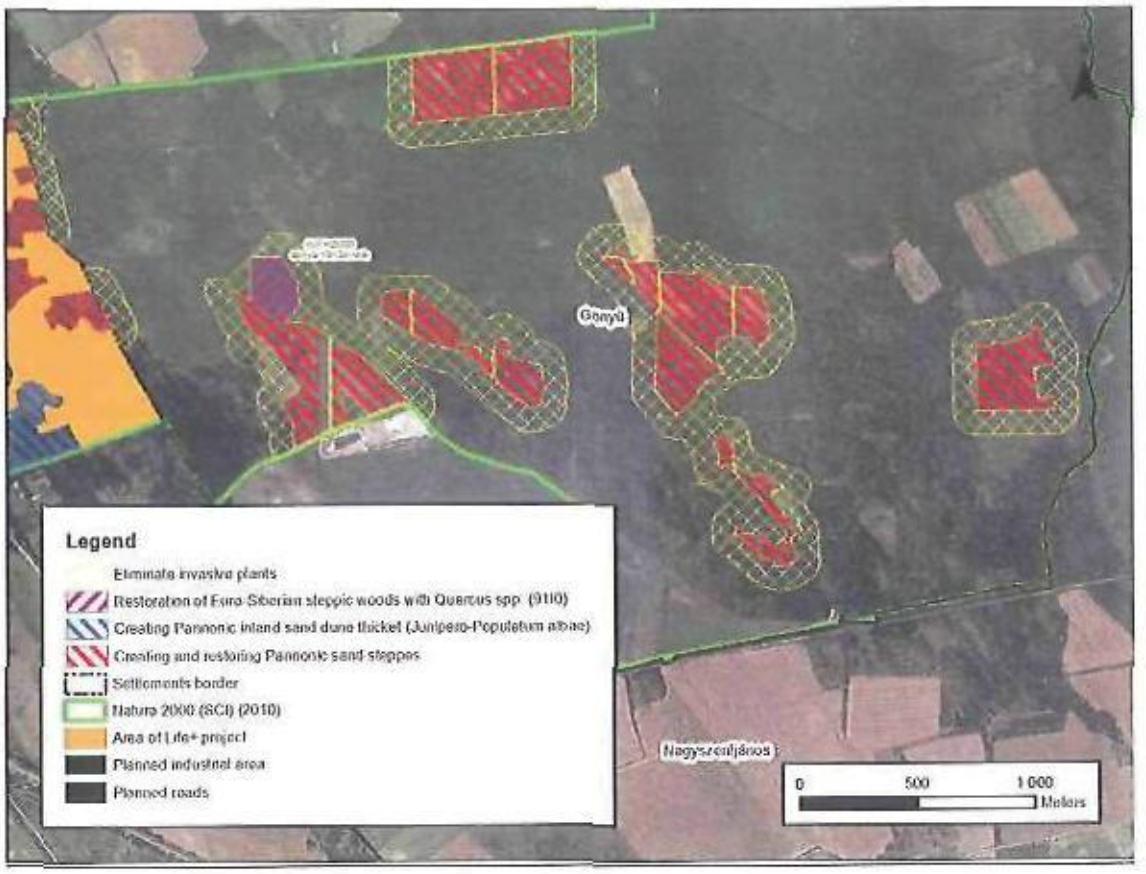
Exposition of the implementation of the measure:

After the area has been measured, the detailed intervention plan has been set up (marking the time of intervention and the best methods (injection, plastering, manual and mechanical spraying) by parts of the territory, in the light of the invasive species present and the level of infestation) and the necessary official permissions have been acquired, the termination of unwanted species may be started. In case of Celtis occidentalis mechanical intervention (cutting) is usually sufficient, other species may require combined mechanical and chemical interventions. In case of applying chemicals extra care must be taken to the preservation of the surrounding habitats, for the controllability of the work adding colouring substance to the applied chemical is suggested. Treatments have to be performed by annual repetition for three years, in order to avoid reappearance from after-crop or from seed.

Overview map of the areas to be treated I-III.






Technical risks of the measure:

Technical risks are not perceived in the implementation of the measure, these interventions are based on long standing methods.

Time Schedule of the Measure:

| Intervention | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|
| Investment | | | | | | | | |
| Restoration of habitat | | | | | | | | |
| Planning, authorization | | | | | | | | |
| non-indigenous arboreal plants extermination | | | | | | | | |
| herbaceous invasive plants removal | | | | | | | | |

The investment is implemented in 114 hectares until 2012, the remaining 78 ha is perceived to be covered by constructions after 2013. The invasive plants extermination cannot be done in one year, according to the up-to-date practice, such intervention needs minimum two, optimally three years. Any shorter period for the intervention may result in the remaining single organisms re-infesting the complete area again.

Estimated budget of the measure:

| Activity | Quantity | Unit price | Estimated cost (million HUF) |
|---|---|---|---|
| Planning, evaluation, authorization | | | |

| Activity | Quantity | Unit price | Estimated cost (million HUF) |
|---|---|---|---|
| non-indigenous arboreal vegetation extermination (mechanical and chemical extermination for 3 years) | 164 ha | HUF/ha/3 years | |
| herbaceous invasive plants removal (mechanical and chemical extermination for 3 years) | 164 ha | HUF/ha/3 years | |
| **Total:** | | | |

It must be emphasised however, that these are estimated costs, and the actual costs may be subject to changes in the course of the effective implementation, depending on the year, period and form thereof.

The milestones and indicators of the measure:

| Milestone | Indicator |
|---|---|
| Planning (deadline: March 30, 2011) | Detailed intervention plan and the documentation of the request for authorization |
| Authorization (deadline: May 30, 2011) | Official permissions |
| Exterminations (deadline: 30 October, 2014) | Documentation of the work done Preliminary monitoring reports |
| Description of conditions and evaluation of changes (deadline: 31 December, 2015) | Preliminary monitoring reports Summary report of the outcomes of the measure |

## Measure 7: Restoration Of Habitat In The Euro-Siberian Steppic Woods With Quercus Spp. (91I0) Habitat-type At The Special Area Of Conservation Of HUFH20009 "Gönyűi-homokvidék"

Due to the alteration of the conditions at the growing location (several meters decrease in the ground water level due to the riverbed sinking of the Danube), Euro-Siberian steppic woods cannot be established or only to a very limited extent. Thus focus must be laid upon the preservation and restoration of existing stocks. The conditions of the Euro-Siberian steppic woods is extremely degraded due to the decreased ground water level and the forestry practice (supplement and refreshment have been achieved mostly by acacia and pine trees) of the last few decades. The improvement of the conditions is possible, concluding from the results of prior attempts. Yet it is an extremely cost and work intensive intervention, that cannot be done in the ordinary framework of forestry. (Restructuring is not a mandatory, but a voluntary activity, subject to supports). The complete restoration process lasts for an extremely long time due to the slow development of the forest, that may even reach 50-60 years. In the framework of the proposed measure the first intervention of the restoration of the existing Quercus woods can be planned, what is not achievable in the course of ordinary maintenance, and it is taken for granted, that future sustainability interventions necessary for conservation can be conducted in the framework of the ordinary management.

Objectives:

4 ha Euro-Siberian steppic woods with Quercus spp. habitat restoration at the HUFH20009 "Gönyűi-homokvidék" SAC.

Value of Community interest to be compensated for:
Euro-Siberian steppic woods with Quercus spp.

The Measure may be beneficial for the following species of community interest:
Nyctalus noctula (making habitat more suitable for the species) Myotis myotis (making habitat more suitable for the species) Lucanus cervus (making habitat more suitable for the species) Cerambyx cerdo (making habitat more suitable for the species)

Affected forest parts:

| Settle-ment | Land.reg .no. | Forest part | Area (ha) | Proprie-tor | Forest manager | Comments |
|---|---|---|---|---|---|---|
| Gönyű | 048/a | 3 D | 4,41 | Hunga-rian State: KAEG Zrt. | KAEG Zrt. | |
| Total: | | | 4,41 | | | |

Exposition of Restoration and Improvement Measures Required for the Area:

The first step of the measure is an individual plan, developed for forest parts. In each forest part specimens to remain and to be terminated have to be identified and marked on the field. In the development of the leaks priority shall be given to avoid leaks larger than 1,5 tree length in one way. Perpendicular leaks shall be designated by the possibilities and the conditions of the forest. Throughout the forest parts primarily acacia and tree of heaven specimens shall be terminated (even all of them). The one time removal of the pine trees is not recommended, because of the risk of the complete stock collapsing; meanwhile several specimens can be cut. After the planning and receiving authorisation marked trees must be terminated. In case of the tree of heaven and acacia liquidation of the tree is recommended either by injection or by ringing, in order to avoid future offset.

In the leaks developed as described above oak trees (Quercus robus, Quercus cerris) shall be planted by sowing acorn, and poplar trees (Populus alba or P. canescens) by saplings. Planting areas shall be protected by game fences if necessary against wild boar damages. According to prior experience, planting can be calculated to bring a 20-30% level of success, this means 4-5 repetition of the planting shall be accounted for. During the maintenance reappearing invasive plants must be removed, and the saplings shall be protected and assisted in development.

Overview map of the affected areas


Technical risks of the measure:

Restoration interventions are hampered by the cockchafer infestation generally present in the area, what may destroy a significant portion of the new growth. Protection against cockchafer is available only to a limited extent, by not efficient methods, due to the standing legal regulation. Efficient solutions bring forth the problem, that these would destroy not just the cockchafer, but all arthropod species, including those to be protected, like the great capricorn beetle (Cerambyx cerdo) and stag beetle (Lucanus cervus). The solution therefore is repetition of supplement and deployment until successful abodance. Another problem may result from wild boar damages, but complete closure of the species is not recommended, as it is one of the greatest consumer of cockchafer larvae. Local problems may be solved by temporary game fences.

Time Schedule of the Measure:

| Intervention | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | ... | 2026 |
|---|---|---|---|---|---|---|---|---|
| Investment | | | | | | | | |
| restoration of habitat | | | | | | | | |
| Planning, authorization | | | | | | | | |
| logging, cutting cleanse | | | | | | | | |
| Deployment | | | | | | | | |
| Maintainence | | | | | | | | |

The investment will perceivably be realised on the original, supposedly decaying habitat only after 2013. Earlier phases of the investment will not affect Euro-Siberian steppic woods with Quercus spp. habitat-type. Restoration of forest communities is an extremely lengthy, multiple process, particularly so, if the existing elements of stock are also meant to be secured.

Estimated budget of the measure:

Upon consultation of the forest manager earlier estimated budget needs an apparent supervision, since local experience shows that during the restoration at least three major supplements are necessary. Removal of non-indigenous tree species currently present in the area also require several, repetitive interventions.

| Activity | Quantity | Unit price | Estimated cost (million HUF) |
|---|---|---|---|
| Planning, evaluation | 1 | HUF | |
| Authorization | 1 | HUF | |
| logging and cutting cleanse (removal of unwanted species) | 4,4 ha | HUF/ha | |
| Restoration and maintenance for 12 years by utilization of chemicals (sowing of acorn and white poplar sapling, socket drilling,planting, line- and spacing treatment manually) | 4,4 ha | HUF/ha | |
| Game fence (temporary) | 0,8 km | HUF/m | |
| **Total:** | | | |

It must be emphasised however, that these are estimated costs, and the actual costs may be subject to changes in the course of the effective implementation, depending on the year, period and form thereof.

The milestones and indicators of the measure:

| Milestone | Indicator |
|---|---|
| Planning (deadline: June 30, 2011) | Intervention plan by forest parts |
| Authorization (deadline: August 30, 2011) | Official permissions |
| logging (deadline: February 28, 2013) | documentation of logging |
| Deployment, supplement (deadline: 31 December, 2016) | documentation of supplementing work done. documentation of technical handover<br>Preliminary monitoring reports |
| Maintenance (deadline: continuous) | Preliminary monitoring reports<br>Summary report of the outcomes of the measure |

## Monitoring of The Outcomes of The Proposed Measures

Beyond the documentation of the phases of implementation we consider necessary the monitoring of the planned habitat-establishing, - restoration and –improving interventions conducted in the framework of the compensatory measures via regularly repeated examinations. During these examinations outcomes must be examined compared to the original situation and to a selected reference area (in the vicinity of the area of intervention, in the same production site). Primarily standard sampling methods of monitoring systems already in use in Hungary shall be applied in these monitoring examinations.

Most important questions to be answered:

How does the conditions (contents, structure, function) of the established habitat relates to those of the reference habitat?

How does the established and restored conditions (contents, structure, function) change during the measure (examination of succession)?

How does the the fauna of the established and restored habitat change due to the intervention?

How successful have been the removal of invasive plants?

Are there any reappearance observable in the managed areas?

Are there any improvents observable in the situation of the species of community interest or those under protection according to national legal regulations?

How the situation of the habitats and the species would change after the finalisation of the interventions (sustainability examination)?

Would regular maintenance treatment be necessary?

Examined objects

- habitat (structure and function) alteration (preparation of habitat-maps in case of new designations)
- Plants (species of community interests and those protected by means of national legal regulations)
- Plants (invasive ones)
- Alterations of Terrestrial arthropod communities
- Alterations of Orthoptera communities
- Reptiles
- Birds (for forests only)

Methodology of Sampling

In case of habitats the methodology of Hungarian Natura 2000 monitoring applied for grasslands and forests is applicable (structure and function monitoring – intensive). For

plants, the protocol of National Biodiversity Monitoring System developed for protected and rare species is applicable, while maintaining, that the stock of all plants affected in the intervention area must be examined by point mapping. In case of invasive plants a similar method should apply, but spot and point mapping shall be combined for the marking of the occurrences. In case of invasive plants, quantity should be marked in the percentage of the area covered with reference to the particular sport. In case of Terrestrial arthropods, the Orthoptera communities and reptiles also the NBmR protocol shall be applicable. In case of birds, the Ordinary Birds Monitoring (MMM) methods shall be applied, as developed by the Hungarian Ornithology and Nature Protection Association.

Number of sampling locations

Habitats: 2 sampling location by areas of interventions and/or 1 sampling location per every 20 hectare

Plants (protected and invasive species): complete area of intervention

Terrestrial arthropods and Orthopterae: sampling locations shall be the same used for habitats

Reptiles: min. 2 pcs of 1000 m transect by intervention areas

Birds: complete area of intervention

Outcomes of the monitoring must be collected in progress reports in the year of the sampling, and also in a Summary report within a year from the closure of the compensatory measure.

**Legal And Financial Assessment of The Proposed Provisions**

## Legal Feasibility

The proposal of the new Natura 2000 areas towards the European Commission, as well as their indication in the national law is the competence of the Hungarian Government. The preparation of the designation will expectedly be performed by the Ministry of Rural Development through the preparation of the modifications on the 275/2004. (X. 8) Government Regulation and the 14/2010. (V. 11.) Ministry of Rural Development Regulation. The statutory modifications will be adopted and enacted by the Government further on it will effectuate the related measurements.

The proposed compensatory measurements will be realised on Natura 2000 areas already existing, or designated in the frame of compensatory measurements. For the Natura 2000 areas not considered nature reserves the 275/2004. (X. 8) Government Regulation on the European Community significance nature reserve areas (Natura 2000 Government Regulation) shall be applicable. The interventions will be realised on the HUDI20026 "Szigeti homokok" and the HUKN20024 Bócsa-bugaci sand bare entirely, while on the HUFH20009 Gönyűi-sand bare partially on national significance nature reserves, therefore on the course of the authorisation procedure the 1996. Act (No. LIII) on the conservation shall also be applicable beyond the Natura 2000 Government Regulation.

For the interventions proposed in, or in the place of forests the articles of the 2009 Act (No XXXVII.) on the protection of forests and sylviculture shall be applicable.

The conversion of forests into agricultural areas (in this case into grasslands) is according to Article 77 Section a) of the 2009 Act (No XXXVII.) the requisition of the forest. According to Article 78 Paragraph (1) a forest can only be requisitioned in exceptional cases – except of the provisions of Paragraph (3) only in cases of public interest. Through Article 78 Paragraph (2) the the preliminary admission of the sylviculture authority is required. The forest may only be requisitioned within the deadline ascertained in the admission for the objective given within. The majority of the forests planned for conversion has some sort of primary protective function (ground protection, conservation) however some instalments have primary economic function for which according to Article 78 Paragraph (3) the requisition of culture forests and plantations is permissible by the authority to the condition of an afforestation territorially equalling to the requisitioned forest on or at the neighbouring location of the forest concerned of an equalling or of higher natural value to the requisitioned forest.
In the case of forest requisition the requisitioner has to pay a forest protection affix according to Article 81 Paragraph (1).
In the case of taking into agricultural cultivation of primary protective function forests according to Paragraph (2) Section ba) the forest protection affix equals to twenty times the forest protection affix basis therefore 2 million forint, in all other cases according to Paragraph (2) Section bb) the affix equals to five times the forest protection affix basis therefore 0,5 million forint;
A part of the planned interventions is performed by the requisition of acreage serving indirect sylviculture objectives, in these cases according to Paragraph (2) Section d) the forest protection affix equals to half of the forest protection affix ascertained for primary protective function forests namely 250 thousand forint;

The Forest Act gives exemptions in certain cases from the duty of forest protection affix payment.
If the according to Article 82 Paragraph (3) Section aa) of the Forest Act the requisitioner plants a forest on equalling territory to the requisitioned forest (swap afforestation)
According to Article 82 Paragraph (3) Section c) of the Forest Act the taking into agricultural cultivation of the plantation and culture forest after its desolation or its final utilisation according to the sylviculture plan, if the conditions of the production site do not allow the re-cultivation with native tree species.
The detailed regulations of the forest requisition permission procedure and the elements of the petition are regulated by Articles 54-57 of the 153/2009. (XI.13.) Ministry of Rural Development.
The legal provisions allow the conversion of forests into agricultural areas – in this case into grasslands – however if the exceptions are not applicable a forest protection affix is to be paid or swap afforestation is to be performed.

A part of the planned interventions is falling under the provisions of the 314/2005. (XII. 25.) Government Regulation on environmental impact assessment and integrated pollution prevention control procedure, therefore in course of the planning assignments the observance of the provisions of this regulation are also to be considered.

The forest requisitioning in case of further utilisation as soil if the requisition exceeds 50 hectare is subject to environmental impact assessment according to the provisions of Annex 1 of the 314/2005. (XII. 25.) Government Regulation on environmental impact as-

sessment and integrated pollution prevention control procedure, if the requisition exceeds 30 hectare may be subject to environmental impact assessment according to the provisions of Annex 3 of the 314/2005. (XII. 25.) Government Regulation on environmental impact assessment and integrated pollution prevention control procedure depending on the decision of the inspectorate, therefore a the preparation of a preliminary inspection documentation is by all means necessary during the planning and authorisation period.

After the exploitation and sodding of the forests the natural state is to be recorded in the Land Registry. For this recording the declaration of the forestry authority has also be attached above the parcellation plan.

During the recovery and amelioration of the grasslands of the Natura 2000 areas not considered nature reserves the permission of the Inspectorate is required according to Article 9 Paragraph (2) Section b) of the 275/2004. (X. 8) Government Regulation on the European Community significance nature reserve areas for the recovery, and according to Section c) for the planting and cutting of the forests not falling under the provisions of the Forest Act or under the Government Regulation on arboreal energetic plantations. In the case of nature reserves the permission of the nature reservation authority is required according to Article 38 Paragraph (1) Section c) of the 1996. Act (No. LIII) on the conservation for the recovery of the area, for the alteration of its character or usage, according to Section e) for the the planting and cutting of the forests not falling under the provisions of the Forest Act, whereas according to Section g) for the utilisation of pesticides, bioregulators and other exterminators, and other chemicals affecting the productivity of the soil.

In the case of the measurements falling under 1) and 2) according to the Government Regulation No. 193/2009.(IX.15.) the demolition of certain buildings and some landscaping works are subject to permission or notification. During the detailed planning and authorisation these have to be refined by consulting the construction authority. The disposal and handling of illegal refuse can be performed through the involvement of enterprises having the permission of the environmental authority.

Certain compensatory measures suggested for the innovation will materialise under the competence of several environmental, conservationist and water inspectorate.
During the prescription of the compensatory measurements and the execution of certain compensatory measurements the co-ordinator will expectedly be the North-Transdanubian Environmental, Conservationist and Water Inspectorate (Észak-dunántúli Környezetvédelmi, Természetvédelmi és Vízügyi Felügyelőség) by establishing specific competence and jurisdiction provisions so that it could also prescribe obligations in the environment usage permissions to the jurisdiction of the Central-Danube Valley Environmental, Conservationist and Water Inspectorate and the Lower-Tisza-Region Environmental, Conservationist and Water Inspectorates (Közép-Duna-völgyi and Alsó-Tisza-vidéki Környezetvédelmi, Természetvédelmi és Vízügyi Felügyelőség).

According to the above the planned measurements can be legally effectuated by the observance of the above legal provisions.

## Financial Feasibility

A detailed budget has been elaborated for the certain measurements which to our present information is sufficient for the performance of the interventions. Not foreseeable and not

planned events (e.g. catastrophe events, weather conditions, e.t.c.) could effect non-expected expenses therefore the budget has to be open from above.

The expenses of the compensating measurements – including the expenses related to the Natura 2000 indication (preparation and the eventual reimbursements), and to the forest requisitions (swap afforestation or forest protection affix) – are to be provided by the investor according to „the pollutant pays" principle . The application of „the pollutant pays" principle does not exclude the possibility for the Hungarian State to provide the location necessary for the swap afforestation from the National Land Fund Management Organisation.

## Assesment of The Proposed Measures From The Perspective of The Objectives of The Affected Natura 2000 Site

The planned compensatory measures affect several existing Natura 2000 sites, the evaluation must be performed in every case according to the objectives of the given site.

Among the general objectives of the HUFH20009 "Gönyűi-homokvidék" SAC there is the transformation of artificial habitats (e.g. tree plantations) into natural habitats adequate for the place of production. Establishment of Pannonic sand steppes in the place of the tree plantations, and the conversion of tree plantations into Pannonic inland sand dune thickets conforms with nature conservation objectives of the site. Restoration of the Euro-Siberian steppic woods with Quercus spp(91I0) covered areas is also mentioned among the general objectives of the site. Planned intervention on the Special Area of Conservation of HUDI20046 "Szigeti homokok" (Pannonic sand steppes restoration) corresponds to the general objectives of the area, moreover the reduction of the degrading effects of invasive species is mentioned among the developments required for the beneficial natural conditions.

## Information For The General And Professional Public

The first step regarding the compensatory measures is the information of the affected Proprietors, property managers, farmers and authorities, and the insertion of their potential comments into the planning. The consultation offers an opportunity for learning about potential claims for damages. The affected authorities had already been contacted and the first negotiations have been already held.

Throughout the implementation of the compensatory measures information of the general and professional public must be continuously secured. The first step of such information is introduction of the prescribed compensatory measures. For that, a public forum or a website seems most appropriate. Major steps achieved during the implementation, as well as outcomes of closed measures is also recommended to be continuously published. For the information of the professional public an academic conference or workshop seem more appropriate, where beyond the descriptions of the outcomes professional experience may be exchanged and there would be also an opportunity for practical presentations.

# Proposed Compensatory Measures Regarding The Eastern Bypass Road, The Northern And Southern Industrial Road Investments

## Values of Community Interest To Be Compensated For In Connection With The Investment

Due to the planned road construction on Natura 2000 sites 7,5 ha Pannonic sand steppes (6260) and 3 ha Euro-Siberian steppic woods with Quercus spp (9110) habitat type will be demolished, moreover 14 hectare Pannonic sand steppes (6260) and 3,6 ha Euro-Siberian steppic woods with Quercus spp(9110) habitat type will be possibly subject to degradation because of fragmentation. Fragments of Pannonic inland sand dune thickets (Junipero-Populetum albae) habitat type is affected minimally on 1 ha only. Later habitat-type is classified "D" in the SDF data sheet. From the species of Community interest and those protected by Hungarian national legal regulation, the presence of the Annex II species of the Natura 2000 site must be emphasised, that is the Carabus hungaricus dwelling in the affected sand grasslands. There are a number of species of community interest present, for which the site is not designated (Lucanus cervus, Cerambyx cerdo, Lacerta agilis etc.). The proposed compensatory measures are beneficial to these species as well.

## The Proposed Compensatory Measures

## Measure 1: Enlargement And Restoration Of The Attached Territories On The Special Area Of Conservation HUFH20009 "Gönyűi-homokvidék"

One part of the area is directly connected to the designated areas under military use in the framework of INMOD, the other part is cut off by a railway track from the existing Natura 2000 areas. There are particularly good quality open sand grasslands in both parts, however a part of the grassland is infested with feathertop and Kansas milkweed. (Restoration of these is necessary.) There are low quality forestry plantations on the majority of the area, that are partially convertible to sand grasslands.

Affected land registry numbers:

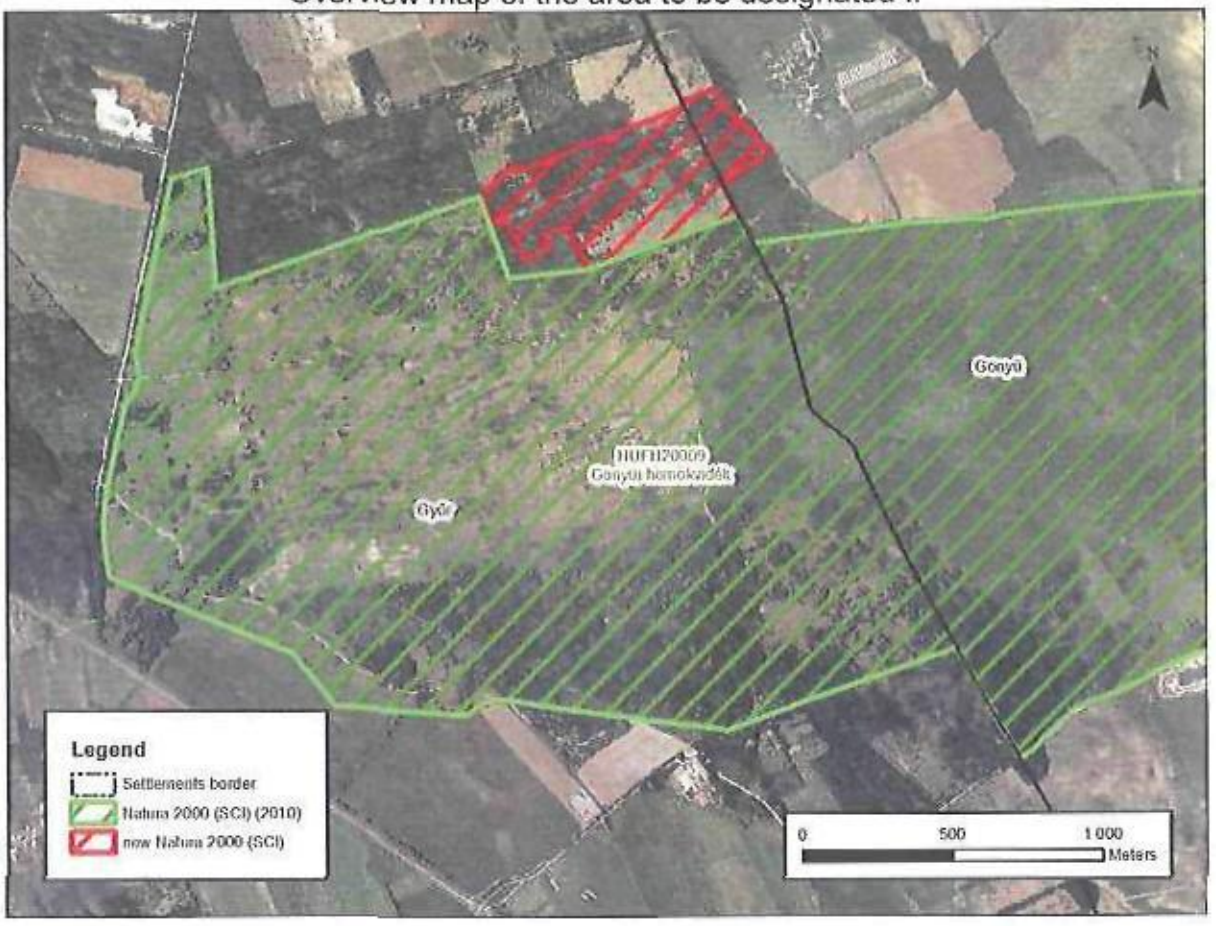
| Settlement | Affected land registry number | Branch of cultivation | Total size (ha) | N2000 site (ha) | Proprietor | Comments |
|---|---|---|---|---|---|---|
| Gönyű | 064/ | forest | 15,5244 | 4,32 | | Division is necessary. Gönyű 21/C forest part would be inserted into Natura 2000 network |
| Győr | 0879/ | /b forest/d uncultivated/f forest | 44,3432 | 25,55 | MÁ (KAEG zrt.) | Division is necessary. Győr 538/J,538/K, 538/TI2, 538/CE2, 538/NY2 forest parts would be inserted into Natura 2000 network. |

| Settlement | Affected land registry number | Branch of cultivation | Total size (ha) | N2000 site (ha) | Proprietor | Comments |
|---|---|---|---|---|---|---|
| Nagyszentjános | 0179/1 | forest | 28,5864 | 28,5864 | MÁ (KAEG zrt.) | The area is partially not suitable for the establishment of sand grasslands, but due to its territorial structure its division would have no meaning. |
| Total: | | | 88,454 | 58,4564 | | |

Annex I habitat type: Pannonic sand steppes - appr. 15 ha existing (from these 5 ha to be improved) and appr. 36 ha to be established

Annex II species: Carabus hungaricus

Overview map of the area to be designated I.



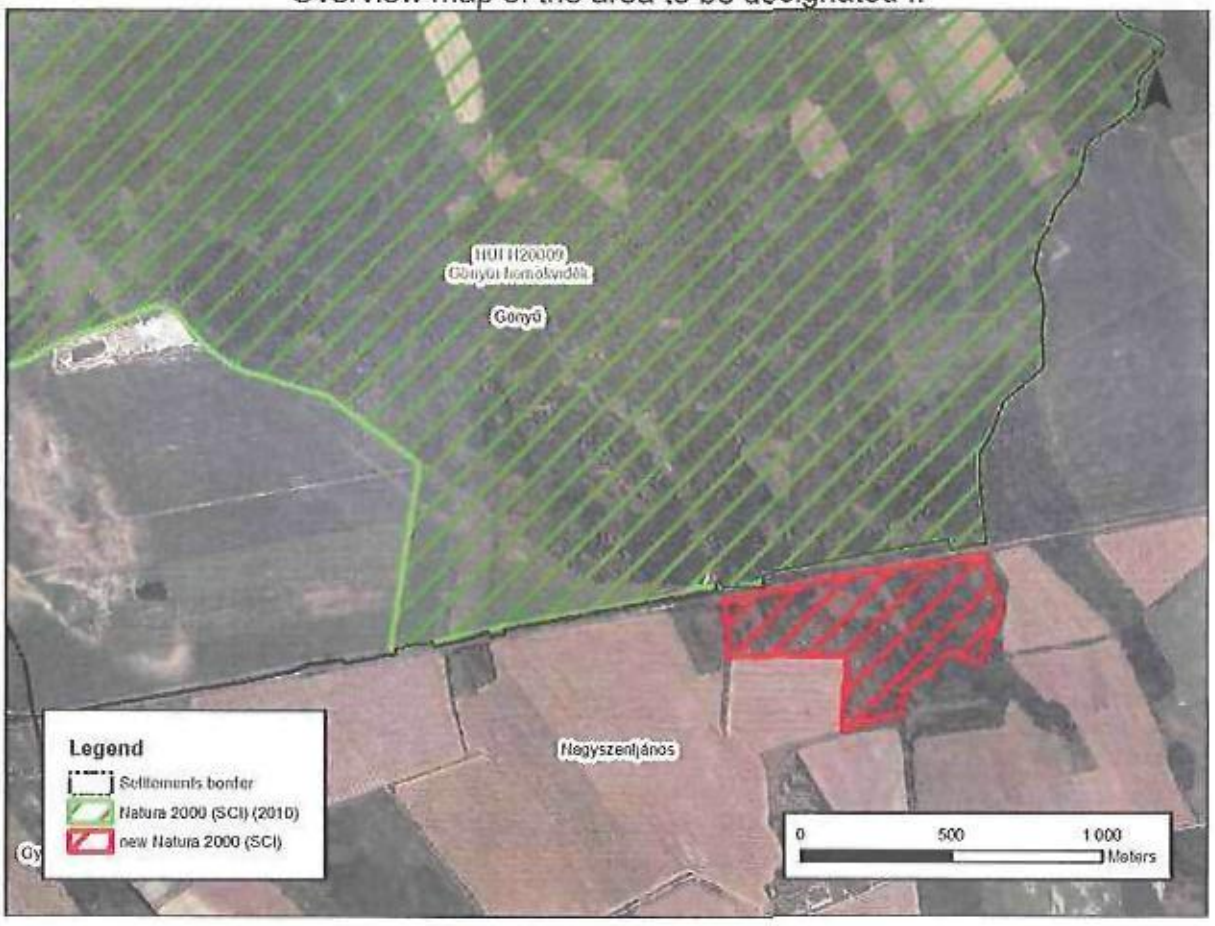

Exposition of Restoration and Improvement Measures Required for the Area:

The task of planning and authorisation is to provide for a detailed evaluation of the affected areas (basic soil scientific and chemical evaluation, botanical evaluation), to mark the potentially remaining trees, smaller groups of trees (exclusively native tree specimens may be kept, if they fit for the given habitat), to evaluate the invasive plants to be eliminated, to select the best method for extermination bearing in mind the occurrence, to determine the

necessary soil cultivation work, to mark the locations where soil cultivation is to be avoided. Compilation of documentations required for the official permission and the filing in of the requests for permission are conducted in the course of the intervention .

There are loose, lowly developed pine tree groups in the territory of the Győr 538/J (9,68 ha), Győr 538/K (5,07 ha) and Gönyű 21/C (4,32 ha) forest parts, on the clearings of various sizes there are sand steppes featuring low levels of naturalness. Kansas milkweed is present in the area in mass quantities, its coverage reaches 30-80%. Sand steppe establishment may be commenced in the site only after the removal of the tree vegetation (including stumps and roots) and the Kansas milkweed. Existing grasslands must be preserved in the course of sodding, ploughing and harrowing. In the Autumn, work on sodding ploughing, harrowing, seed bed preparation and sowing must be finished. After the grassland is established, its development must be assisted by one or if necessary two mowings (including removal) a year. If the Kansas milkweed reappears from seed, it must be continuously eliminated from the area. There are primarily various level naturalness sand grasslands in the areas marked in the plan of management as Győr 538/TI2 (6,37 ha) and Győr 538/CE2 (3,83) – in some areas Kansas milkweed is present mass quantities. The procedure applicable here is similar to that of the transformation of the existing forests, however parts of existing grasslands featuring good and medium quality must be marked before the intervention in order to avoid their disturbance.
Logging and cutting cleanse affects the area only partially, in an amount of appr. 5 ha.

Overview map of the area to be designated I.




From the Nagyszentjános areas clearings require only minor interventions, these are covered by good quality sand grasslands. Their improvement of conditions may demand re-

moval of occasionally present acacias or groups thereof, mostly top dry and removal of silver-berry. In some locations thick grass moors may necessitate removal, this can be achieved by mowing and collection and transport of hay. The budget calculates these jobs (logging, after-care measures) by a reduced territory – 2 ha is accounted for. In the forest parts marked as Nagyszentjános 15/A (0,88 ha), 15/B (9,84 ha), 15/C (0,53 ha), 15/D (2,42 ha), 15/E (1,72 ha), 15/G (2,31 ha) the tree plantations need to be transformed into sand grasslands. Forest part 15/H cannot be transformed into grassland. The transformation process shall follow that described above regarding the forest parts in and around Győr. Specimens of grey and white poplars, Pedunculate Oaks and turkey oaks must be preserved in the logging process.

In the framework of the above habitat rehabilitations there is an improvement of conditions on 10 ha of degraded quality grasslands beyond those 5 ha existing currently in good conditions. Beyond the existing grasslands 36 additional hectares will be converted thereto from tree plantations, thus an overall 51 ha will be Pannonic sand steppes from the total 58,46 ha to be designated Natura 2000 site.

Technical risks of the measure:

In the framework of the measurement some problem may emerge if adverse weather conditions set back harvesting of seeds necessary for sowing of grass or the harvested seed is not of an appropriate quality (e.g. the portion of germinating seeds is extremely law due to serious draught). In order to counter such problems, harvesting the necessary amount of seed (min. 25 kg/ha) must be started already in the first year (2011) and the suitable storage thereof (for a maximum period of three years) must be secured until sowing. Adverse weather conditions may also result in a frustrated sowing (e.g. portion of burgeoning remains low). The solution is repeated sowing, costs thereof are also represented in the budget. In the first two years certain unwanted species are probable to appear in mass quantities (e.g. Ambrosia elatior, Erigeron canadensis, Calamagrostis epigeios), and also Kansas milkweed may reappear from the its seed reserves in the soil. Protection against these species is possible by the careful planning and implementation of after-care measures, which supposes continuous expert monitoring of the sodding process and potential supervision of the after-care techniques applies.

Time Schedule of the Measure:

| Intervention | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|
| Investment | | | | | | | | |
| Designation of Natura 2000 site | | | | | | | | |
| Restoration of habitat | | | | | | | | |
| Planning, authorization | | | | | | | | |
| logging, cutting cleanse | | | | | | | | |
| Cartridge exemption | | | | | | | | |
| Stumping, root collection | | | | | | | | |
| invasive plants removal | | | | | | | | |
| soil preparation, sodding | | | | | | | | |
| After-care measures | | | | | | | | |

The implementation of the investment is achieved in several phases. The construction of the first one would start in 2012 and would include the Northern and the Souther industrial roads and the section of the Eastern bypass road between the two industrial roads. Second phase will be perceivably commenced in 2015. The designation of the new Natura 2000 site may be achieved before the commencement of implementation of the investment. The implementation of the restoration measure however requires a relatively long time. At least one year shall be granted for preparation and official licensing procedures. After the authorisation tree stock removal is immediately possible, yet sodding should not be started until the invasive plants living in the area (particularly Ailanthus altissima, Asclepias syriaca, Robinia pseudo-acacia) coverage is reduced below 1%. Earlier sodding would result in protective measures against these species on an already developing grass, that could slow down the progress. Extermination of invasive plants may be finished in 1-3 years depending on the level of the infestation. Establishment of the grassland requires at least two years, because in case of adverse weather conditions sowing may need repetitions. Sodding may only be successful if during the After-care measures the settlement of unwanted species (e.g. Calamagrostis epigeios, Erigeron canadensis, Agropyron repens etc.) and the resettlement of invasive plants is precluded. The After-care measures shall be maintained until the grassland reaches a near-natural condition, that is perceivably 4-5 years according to our prior examinations. Maintenance of the grasslands does not require measures from that point on, yet occasional interventions may become necessary. These however may be performed in the course of ordinary maintenance The above timing is rather pessimistic, in ideal circumstances this measure may be finalised in 2-3 years.

Estimated budget of the measure:

| Activity | Quantity | Unit price | Estimated cost (million HUF) |
|---|---|---|---|
| preparation for the designation of Natura 2000 site, official procedures | 1 | HUF | |
| Planning, evaluation, authorization | 1 | HUF | |
| logging and lumber removal from clearing | 39 ha | HUF/ha | |
| tree vegetation removal on the territories directly used for forestry | 12,57 ha | HUF/ha | |
| Cartridge exemption | 29 ha | HUF/m2 | |
| Stumping (1000-1500 logs/ha) | 39 ha | HUF/ha | |
| Root collection and removal | 39 ha | HUF/ha | |
| invasive plants removal | 48 ha | HUF/ha | |
| soil preparation ploughing/disking, harrowing | 40 ha | HUF/ha | |
| sodding grass seed harvest, drying, storage, preparation of seed beds, sowing, compression | 40 ha | HUF/ha | |
| After-care measures (1-3 years)shaft tearing, removal of settled invasive plants by mechanical and chemical means, later only if necessary | 55 ha | HUF/ha/3 years | |
| After-care measures (4-7 years.)shaft tearing | 40 ha | HUF/ha/4 years | |
| Cost of replacement forests or forest protection contribution | 51,84 ha | | |
| **Total:** | | | |

It must be emphasised however, that these are estimated costs, and the actual costs may be subject to changes in the course of the effective implementation, depending on the year, period and form thereof. According to data from the National Forest Stock Database the utilisation effects an amount of 47,52 ha areas under the scope of the Act on Forests. From these 32,45 hectare is covered by forest, while 15,07 hectare area directly serves forestry. In case of an area directly serving forestry the amount of forest protection contribution is 2,5 times the basis of contribution, that is 250 thousand forint per hectare. From the 32,45 hectare forest for the actual 9,84 hectare qualified as forest no forest protection contributions due under section 82.§ (3) c) of the Act on Forest Protection.

The milestones and indicators of the measure:

| Milestone | Indicator |
|---|---|
| Natura 2000 designation (deadline: June 30, 2011) | Governmental Degree<br>Proposal for the European Commission<br>Land registry entry (It will be realized later, since it is subject to a separate official procedure.) |
| Planning (deadline: June 30, 2011) | evaluation, Detailed plan and the documentation of the request for authorization |
| Authorization (deadline: 31 December, 2012) | Official permissions |
| per-sodding work (deadline: 30 October, 2013) | Increased size of the areas made suitable for sodding and the documentation on the jobs done |
| sodding (deadline: 30 November, 2014) | Documentation of the finished sodding Preliminary monitoring reports |
| Description of conditions and evaluation of changes (deadline: 31 December, 2018) | Preliminary monitoring reports<br>Summary report of the outcomes of the measure |

## Measure 2: Restoration Of Habitat-type Euro-Siberian Steppic Woods With Quercus Spp(91I0) On The Special Area Of Conservation Of HUFH20009 "Gönyűi-homokvidék"

Due to the alteration of the conditions at the growing location (several meters decrease in the ground water level due to the riverbed sinking of the Danube), Euro-Siberian steppic woods cannot be established or only to a very limited extent. Thus focus must be laid upon the preservation and restoration of existing stocks. The conditions of the Euro-Siberian steppic woods is extremely degraded due to the decreased ground water level and the forestry practice (supplement and refreshment have been achieved mostly by acacia and pine trees) of the last few decades. The improvement of the conditions is possible, concluding from the results of prior attempts. Yet it is an extremely cost and work intensive intervention, that cannot be done in the ordinary framework of forestry. (Restructuring is not a mandatory, but a voluntary activity, subject to supports). The complete restoration process lasts for an extremely long time due to the slow development of the forest, that may even reach 50-60 years. In the framework of the proposed measure the first intervention of the restoration of the existing Quercus woods can be planned, what is not achievable in the course of ordinary maintenance, and it is taken for granted, that future sustainability

interventions necessary for conservation can be conducted in the framework of the ordinary management.

Objectives:

26 ha Euro-Siberian steppic woods with Quercus spp. habitat restoration on the HUFH20009 "Gönyűi-homokvidék" SAC.

Value of Community interest to be compensated for:

Euro-Siberian steppic woods with Quercus spp.

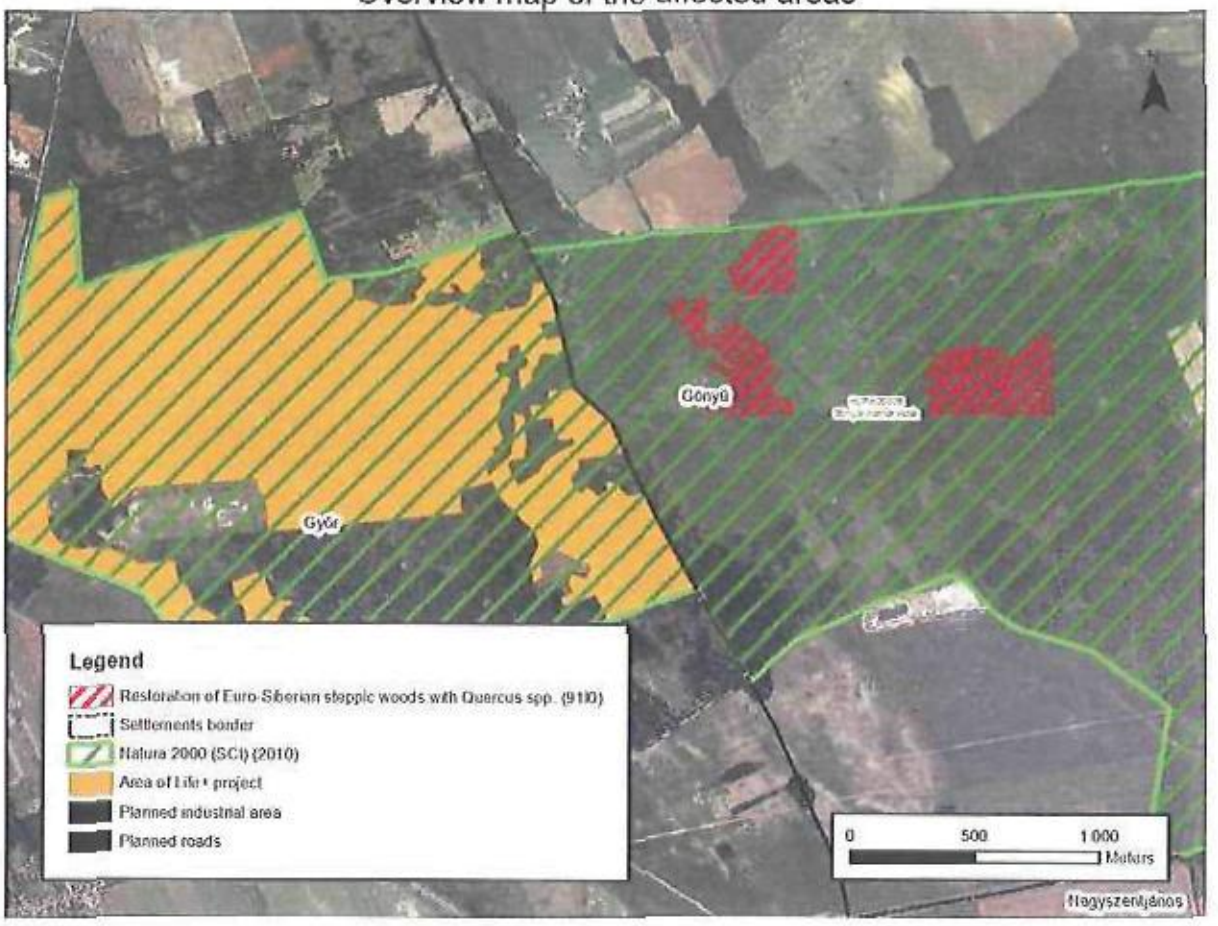
The Measure may be beneficial for the following species of community interest:

Nyctalus noctula (making habitat more suitable for the species)
Myotis myotis (making habitat more suitable for the species)
Lucanus cervus (making habitat more suitable for the species)
Cerambyx cerdo (making habitat more suitable for the species)

Affected forest parts:

| *Settlement* | *land registry number* | *Forest part* | *Area (ha)* | *Proprietor* | *Forest manager* | *Comments* |
|---|---|---|---|---|---|---|
| Gönyű | 051 | 1 D | 1,83 | Hungarian State: KAEG Zrt. | KAEG Zrt. | |
| Gönyű | 051 | 4 C | 5,83 | Hungarian State: KAEG Zrt. | KAEG Zrt. | |
| Gönyű | 051 | 4 P | 7,13 | Hungarian State: KAEG Zrt. | KAEG Zrt. | |
| Gönyű | 051 | 5 V | 4,7 | Hungarian State: KAEG Zrt. | KAEG Zrt. | |
| Gönyű | 051 | 5 R | 4,49 | Hungarian State: KAEG Zrt. | KAEG Zrt. | |
| Gönyű | 051 | 5 T | 2,95 | Hungarian State: KAEG Zrt. | KAEG Zrt. | |
| Total: | | | 26,93 | | | |

Overview map of the affected areas




Exposition of Restoration and Improvement Measures Required for the Area:

The first step of the measure is an individual plan, developed for forest parts. In each forest part specimens to remain and to be terminated have to be identified and marked on the field. In the development of the leaks priority shall be given to avoid leaks larger than 1,5 tree length in one way. Perpendicular leaks shall be designated by the possibilities and the conditions of the forest. Throughout the forest parts primarily acacia and tree of heaven specimens shall be terminated (even all of them). The one time removal of the pine trees is not recommended, because of the risk of the complete stock collapsing; meanwhile several specimens can be cut. After the planning and receiving authorisation marked trees must be terminated. In case of the tree of heaven and acacia liquidation of the tree is recommended either by injection or by ringing, in order to avoid future offset.

Technical risks of the measure:

Restoration interventions are hampered by the cockchafer infestation generally present in the area, what may destroy a significant portion of the new growth. Protection against cockchafer is available only to a limited extent, by not efficient methods, due to the standing legal regulation. Efficient solutions bring forth the problem, that these would destroy not just the cockchafer, but all arthropod species, including those to be protected, like the great capricorn beetle (Cerambyx cerdo) and stag beetle (Lucanus cervus). The solution therefore is repetition of supplement and deployment until successful abodance. Another problem may result from wild boar damages, but complete closure of the species is not

recommended, as it is one of the greatest consumer of cockchafer larvae. Local problems may be solved by temporary game fences.

Time Schedule of the Measure:

| Intervention | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | ... | 2026 |
|---|---|---|---|---|---|---|---|---|
| Investment | | | | | | | | |
| restoration of habitat | | | | | | | | |
| Planning, authorization | | | | | | | | |
| logging, cutting cleanse | | | | | | | | |
| Deployment | | | | | | | | |
| Maintenance | | | | | | | | |

The implementation of the investment is achieved in several phases. The construction of the first one would start in 2012 and would include the Northern and the Souther industrial roads and the section of the Eastern bypass road between the two industrial roads. Second phase will be perceivably commenced in 2015. Restoration of forest communities is an extremely lengthy, multiple process, particularly so, if the existing elements of stock are also meant to be secured.

Estimated budget of the measure:

Upon consultation of the forest manager earlier estimated budget needs an apparent supervision, since local experience shows that during the restoration at least three major supplements are necessary. Removal of non-indigenous tree species currently present in the area also require several, repetitive interventions.

| Activity | Quantity | Unit price | Estimated cost (million HUF) |
|---|---|---|---|
| Planning, evaluation | 1 | HUF | |
| Authorization | 1 | HUF | |
| logging and cutting cleanse (removal of unwanted species) | 26,9 ha | HUF/ha | |
| Restoration and maintenance for 12 years by utilisation of chemicals (sowing of acorn and white poplar sapling, socket drilling,planting, line- and spacing treatment manually) | 26,9 ha | HUF/ha | |
| Game fence (temporary) | 4 km | HUF/m | |
| **Total:** | | | |

It must be emphasised however, that these are estimated costs, and the actual costs may be subject to changes in the course of the effective implementation, depending on the year, period and form thereof.

The milestones and indicators of the measure:

| Milestone | Indicator |
|---|---|
| Planning (deadline: June 30, 2011) | Intervention plan by forest parts |

| Milestone | Indicator |
|---|---|
| Authorization (deadline: August 30, 2011) | Official permissions |
| logging (deadline: February 28, 2013) | documentation of logging |
| Deployment, supplementation(deadline: 31 December, 2016) | documentation of supplementing work done. Preliminary monitoring reports Successful first afforestation (official procedure) Completion of afforestation (official procedure) |
| Maintenance (deadline continuous) | Preliminary monitoring reports Summary report of the outcomes of the measure |

## Measure 3: Invasive Plants Extermination In The Surroundings Of New Habitats To Be Established In The Site Of HUFH20009 "Gönyűi Homokvidék"

Success potential of the planned habitat establishing and restoration measures is strengthened, if the invasive plants endangering the natural habitats are eliminated not just in the area of intervention, but also in the surroundings thereof. The possibility of re-infestation of the areas reconstructed by the measure is decreased. In the framework of this measure, a 100 meter perimeter is subject to the arboreal and herbaceous invasive plants removal, wherever it is necessary, around the Euro-Siberian steppic woods established by means of Measure 2. The measure is not affecting areas covered by Life+ project. This measure may not overlap with other measures, in order to avoid double financing.

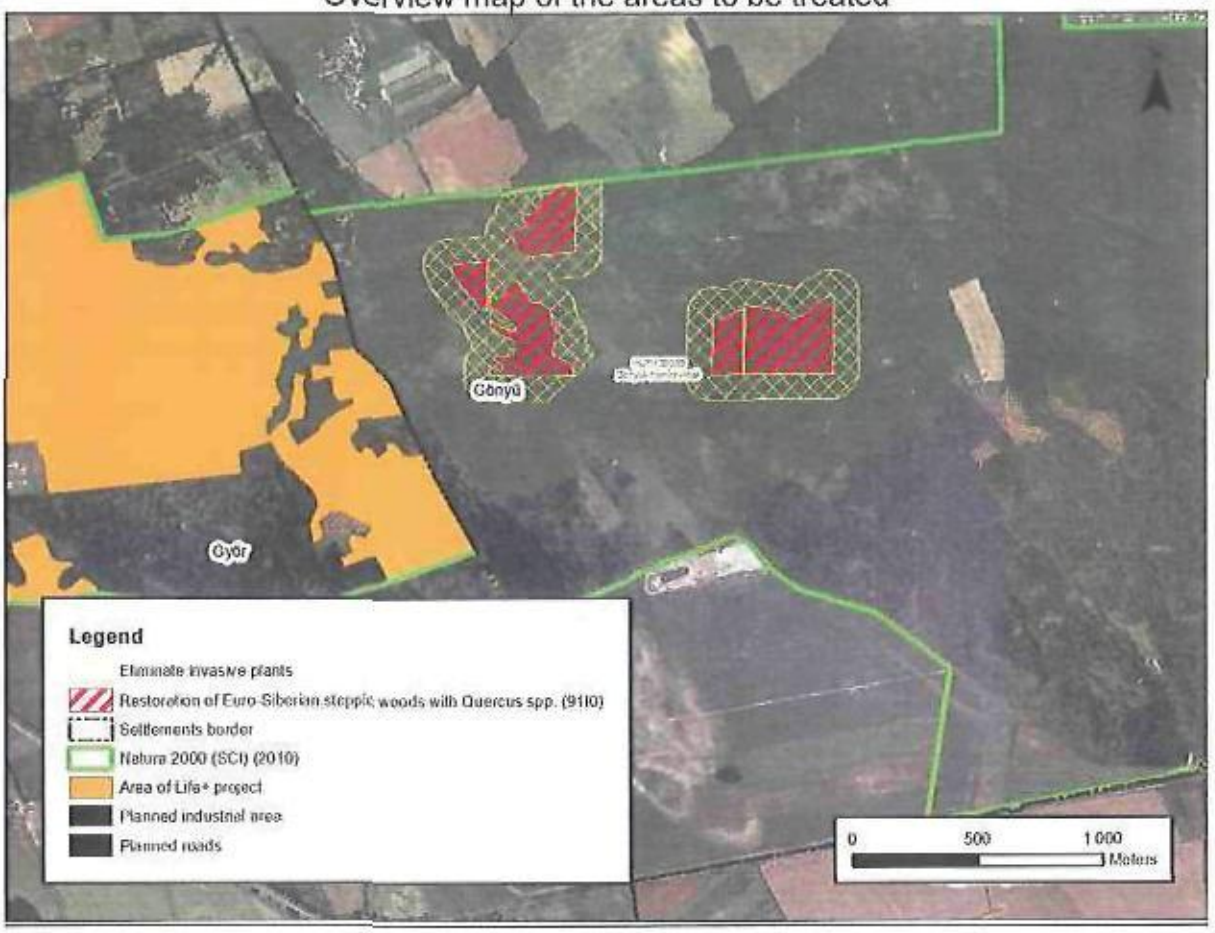
Objectives:

Support of measures to establish new habitats on the HUF20009 "Gönyűi homokvidék" SAC by termination of the source of potential invasion plants (Ailanthus altissima, Asclepias syriaca, Celtis occidentalis, Eleagnus angustifolia, Solidago gigantea) from the neighbouring areas.

Affected areas:

| Settlement | Forest part | Branch of cultivation | Area (ha) | Proprietor | Forest manager | Comments |
|---|---|---|---|---|---|---|
| Győr | 1 B, C, E, D, F,2 A, 3 C, D, E, G, 4 A, B, TI1, I, U, Q, R, S, T, N | forest | 28 | Hungarian State: KAEG Zrt. | KAEG Zrt. | |
| Győr | 5 P, O, Q, 6D, E, F, 8 J, N, M, 7 A | forest | 19 | Hungarian State: KAEG Zrt. | KAEG Zrt. | |
| Total: | | | 47 | | | |

Overview map of the areas to be treated




Exposition of the implementation of the measure:
After the area has been measured, the detailed intervention plan has been set up (marking the time of intervention and the best methods (injection, plastering, manual and mechanical spraying) by parts of the territory, in the light of the invasive species present and the level of infestation) and the necessary official permissions have been acquired, the termination of unwanted species may be started. In case of Celtis occidentalis mechanical intervention (cutting) is usually sufficient, other species may require combined mechanical and chemical interventions. In case of applying chemicals extra care must be taken to the preservation of the surrounding habitats, for the controllability of the work adding colouring substance to the applied lubricating chemical is suggested. Treatments have to be performed by annual repetition for three years, in order to avoid reappearance from after-crop or from seed.

Technical risks of the measure:
Technical risks are not perceived in the implementation of the measure, these interventions are based on long standing methods.
Time Schedule of the Measure:

| Intervention | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|
| Investment | | | | | | | | |
| Restoration of habitat | | | | | | | | |
| Planning, authorization | | | | | | | | |

| Intervention | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|
| non-indigenous arboreal plants extermination | | | | | | | | |
| herbaceous invasive plants removal | | | | | | | | |

The implementation of the investment is achieved in several phases. The construction of the first one would start in 2012 and would include the Northern and the Souther industrial roads and the section of the Eastern bypass road between the two industrial roads. Second phase will be perceivably commenced in 2015. The invasive plants extermination cannot be done in one year, according to the up-to-date practice, such intervention needs minimum two, optimally three years. Any shorter period for the intervention may result in the remaining single organisms re-infesting the complete area again.

Estimated budget of the measure:

| Activity | Quantity | Unit price | Estimated cost (million HUF) |
|---|---|---|---|
| Planning, evaluation, authorization | | HUF | |
| non-indigenous arboreal vegetation extermination (mechanical and chemical extermination for 3 years) | 47 ha | HUF/ha/3 years | |
| herbaceous invasive plants removal (mechanical and chemical extermination for 3 years) | 47 ha | HUF/ha/3 years | |
| Total: | | | |

It must be emphasised however, that these are estimated costs, and the actual costs may be subject to changes in the course of the effective implementation of the actual interventions.

The milestones and indicators of the measure:

| Milestone | Indicator |
|---|---|
| Planning (deadline: March 30, 2011) | Detailed intervention plan and the documentation of the request for authorization |
| Authorization (deadline: May 30, 2011) | Official permissions |
| Exterminations (deadline: 30 October, 2014) | Documentation of the work preliminary monitoring reports |
| Description of conditions and evaluation of changes (deadline: 31 December, 2015) | Preliminary monitoring reports report of the outcomes of the measure |

## Measure 4: Enlargement Of The Special Area Of Conservation HUDI20040 "Gödöllői-dombság Peremhegyei"

The Annex I habitats of the site are more than a 100 years old forests, developed on sand from offset. Dominant tree species are the Pedunculate oak, smaller quantity of Sessile oaks, Downy oaks, Field maples, Tatar maples, Small-leaved Limes and South European Flowering Ashes are mixed. Invasive trees are hardly infested the area, there are several 250-300 years old oak groups in the area. The level of shrubs in the area is natural, compounded, reach in species, grass level is of medium value, species native from plain to

montane levels of steppic woods can be found in it, such as Burning bushes (Dictamnus albus), Broadleaf Solomon's-seal (Polygonatum latifolium), common Solomon's-seal (Polygonatum multiflorum). Planted forests based on stocks of Sessile oaks and turkey oaks also around 90-100 years old, with natural shrub levels. The undergrowth is slightly empty, yet regenerating. Plantation like forests appear in the area in smaller amounts, groups of red oaks, Scots pines and acacia. There is a significant population of Annex II species, the great capricorn beetle (Cerambyx cerdo) and the stag beetle (Lucanus cervus) living in the forest block.

Affected land registry numbers:

| Settlement | Affected land registry number | Branch of cultivation | Total size (ha) | N2000 site (ha) | Proprietor | size of 9110 habitat (ha) |
|---|---|---|---|---|---|---|
| Gödöllő | 4849/2 | forest | 5,1637 | 5,1637 | Hungarian State: Szent István University | |
| Gödöllő | 4850 | road | 0,1670 | 0,1670 | Hungarian State: Szent István University | |
| Gödöllő | 4851 | forest | 5,9748 | 5,9748 | Hungarian State: Szent István University | |
| Gödöllő | 4852 | road | 0,3454 | 0,3454 | Hungarian State: Szent István University | |
| Gödöllő | 4859 | forest | 4,7308 | 4,7308 | Hungarian State: Szent István University | 4,73 |
| Gödöllő | 4860 | road | 0,976 | 0,976 | Hungarian State: Szent István University | |
| Gödöllő | 4861 | forest | 0,6763 | 0,6763 | Hungarian State: Szent István University | 0,68 |
| Gödöllő | 4862 | road | 0,2506 | 0,2506 | Hungarian State: Szent István University | |
| Gödöllő | 4863 | forest | 4,3549 | 4,3549 | Hungarian State: Szent István University | |
| Gödöllő | 4864 | road | 0,1213 | 0,1213 | Hungarian State: Szent István University | |
| Gödöllő | 4865 a | forest | 1,9254 | 1,9254 | Hungarian State: Szent István University | |
| Gödöllő | 4865 b | garden | 2,5869 | 2,5869 | Hungarian State: Szent István University | |
| Gödöllő | 4866 | road | 0,2047 | 0,2047 | Hungarian State: Szent István University | |
| Gödöllő | 4867 | forest | 5,0960 | 5,0960 | Hungarian State: Szent István University | 4,54 |
| Gödöllő | 4868 | road | 0,0908 | 0,0908 | Hungarian State: Szent István University | |
| Gödöllő | 4869 | forest | 2,3701 | 2,3701 | Hungarian State: Szent István University | 1,89 |
| Gödöllő | 4870 | road | 0,1338 | 0,1338 | Hungarian State: Szent István University | |
| Gödöllő | 4871 | forest | 6,1105 | 6,1105 | Hungarian State: Szent István University | 2,37 |

| Settle-ment | Affected land re-gistry number | Branch of culti-vation | Total size (ha) | N2000 site (ha) | Proprietor | size of 91I0 habitat (ha) |
|---|---|---|---|---|---|---|
| Total: | | | 41,279 | 41,279 | | 14,21 |

Annex I habitat type:
Euro-Siberian steppic woods with Quercus spp(91I0) - 14,21 ha

Annex II species:
Lucanus cervus
Cerambyx cerdo

Overview map of the area to be designated


Time Schedule of the Measure:

| Intervention | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|
| Investment | | | | | | | | |
| Natura 2000 designation | | | | | | | | |

The implementation of the investment is achieved in several phases. The construction of the first one would start in 2012 and would include the Northern and the Souther industrial roads and the section of the Eastern bypass road between the two industrial roads. Second phase will be perceivably commenced in 2015.

Estimated budget of the measure:

| Activity | Quantity | Unit price | Estimated cost (million HUF) |
|---|---|---|---|
| Preparation of designation, official procedures | | HUF | |
| **Total:** | | | |

The budget does not cover costs of potential compensation of the proprietors.

The milestones and indicators of the measure:

| Milestone | Indicator |
|---|---|
| Natura 2000 designation (deadline: June 30, 2011) | Governmental and Ministerial Degrees Proposal for the European Commission Land registry entry (It will be realised later, since it is subject to a separate official procedure.) |

## Monitoring Of The Outcomes Of The Proposed Measures

Beyond the documentation of the phases of implementation we consider necessary the monitoring of the planned habitat-establishing, - restoration and –improving interventions conducted in the framework of the compensatory measures via regularly repeated examinations. During these examinations outcomes must be examined compared to the original situation and to a selected reference area (in the vicinity of the area of intervention, in the same production site). Primarily standard sampling methods of monitoring systems already in use in Hungary shall be applied in these monitoring examinations.

Most important questions to be answered:

How does the conditions (contents, structure, function) of the established habitat relates to those of the reference habitat?

How does the established and restored conditions (contents, structure, function) change during the measure (examination of succession)?

How does the the fauna of the established and restored habitat change due to the intervention?

How successful have been the removal of invasive plants?

Are there any reappearance observable in the managed areas?

Are there any improvement observable in the situation of the species of community interest or those under protection according to national legal regulations?

How the situation of the habitats and the species would change after the finalisation of the interventions (sustainability examination)?

Would regular maintenance treatment be necessary?

Examined objects

- habitat (structure and function) alteration (preparation of habitat-maps in case of new designations)
- Plants (species of community interests and those protected by means of national legal regulations)
- Plants (invasive ones)
- Alterations of Terrestrial arthropod communities
- Alterations of Orthoptera communities
- Reptiles
- Birds (for forests only)

Methodology of Sampling

In case of habitats the methodology of Hungarian Natura 2000 monitoring applied for grasslands and forests is applicable (structure and function monitoring – intensive). For plants, the protocol of National Biodiversity Monitoring System developed for protected and rare species is applicable, while maintaining, that the stock of all plants affected in the intervention area must be examined by point mapping. In case of invasive plants a similar method should apply, but spot and point mapping shall be combined for the marking of the occurrences. In case of invasive plants, quantity should be marked in the percentage of the area covered with reference to the particular sport. In case of Terrestrial arthropods, the Orthoptera communities and reptiles also the NBmR protocol shall be applicable. In case of birds, the Ordinary Birds Monitoring (MMM) methods shall be applied, as developed by the Hungarian Ornithology and Nature Protection Association.

Number of sampling locations

Habitats: 2 sampling location by areas of interventions and/or 1 sampling location per every 20 hectare

Plants (protected and invasive species): complete area of intervention

Terrestrial arthropods and Orthopterae: sampling locations shall be the same used for habitats

Reptiles: min. 2 pcs of 1000 m transect by intervention areas

Birds: complete area of intervention

Frequency of sampling

Habitats: for grasslands annually, for forests in every 5 years, and/or the fifth year after the closure of the compensatory measure