Twinning Project MK 13 IPA EN 02 17

“Strengthening the capacities for effective implementation of the acquis in the field of nature protection”

INTERNSHIP TO FINLAND

23.06.-07.07.2019

Report D 2.5. - 1

Participants:

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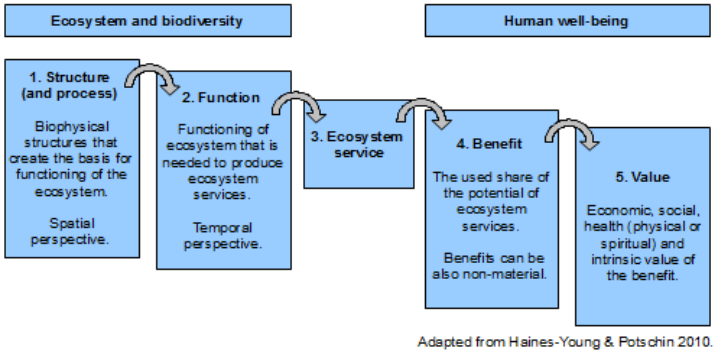
Daily program:

Date and time	***Place and host***	***Topic***
		Sunday 23.06.2019
11:45-20:00	Petri Ahlroth Marita Arvela Porkalla peninsula	Arrival in Helsinki, Vantaa Airport. Field trip to Porkalla peninsula and visiting the recreational costal area. The coasts of Porkalla peninsula are popular bird-watching areas because of a large number of sea birds that are nesting in Porkala archipelago. The islands and the mainland are mostly rocky and rugged. This area belongs to a bigger Natura 2000 area in Kirkunummi municipality that was designated as SPA (Special protected area) under the requirements of the Birds Directive and SCI (Site of community importance) under the requirements of the Habitats Directive. The site is managed by Metsahallitus (Parks and wildlife Finland) and Metsahallitus is providing facilities in the area for recreational activities. Bird species that can be observed in the area are Canada Goose (*Branta Canadensis*), Barnaclo goose (*Branta leucopsis*), Great Black-backed Gull (*Larus marinus*), Goosander (*Mergus merganser*), Mew gull (*Larus canus*), Ruddy turnstone (*Arenaria interpres*), Common tern (*Sterna hirundo*) etc. The representatives from the MOEPP had opportunity to observe some of the bird species with telescope and binoculars. Also, some mammal species can be seen in the area like White deer and Moose.  

		
Monday 24.6.2019		
09.00-10.00	Jukka Pekka Jappinen Finnish Environment Institute SYKE	The program in Finnish Environment Institute-SYKE started with short presentation of the main role and responsibilities of the institute in the field of nature protection in Finland. SYKE, Finnish Environmental Institute is working under Ministry of Environment.The number of employed staff is 580. The activities of SYKE take place in seven centres: the Freshwater, Marine Research, Biodiversity, Consumption and Production, Environmental Policy, Data and Information and Laboratory centers. Biodiversity center has 80 people. The representatives from the Ministry of Environment and Physical Planning from North Macedonia gave a brief introduction and explanation of the current situation with nature protection in the country, who are the main responsible institutions and other stakeholders that are involved in questions related to nature protection and conservation.
10.00-12.00	Finnish Environment Institute SYKE Ari-Pekka Auvinen	During this meeting several topics were explained and presented. **Topic 1: Biodiversity.fi and indicators** The internet portal **Biodiversity.fi** has been developed as a Finnish National CBD Clearing House Mechanism (CHM) under the Convention on Biological Diversity. It aims at synthesizing the knowledge on the status of biodiversity, ecosystem services, and for instance, to serve as the national webpage of Nagoya Protocol on genetic resources and Cartagena Protocol on biosafety. The information processed for this portal is also the basis for national reporting to the CBD. Web service Biodiversity.fi. provides up-to-date research-based information on the state and development of biological diversity in Finland. Biodiversity.fi is used as a national indicator collection reflecting the state and development of biodiversity in

		Finland. It has been developed in close cooperation between Finnish research institutes, state authorities, universities and non-governmental organizations (NGOs). The set of national indicators in Finland was developed in the time period 2006-2009 in the frame of a Research project financed by the Ministry of the Environment. The indicators of Biodiversity.fi have been classified according to the widely used international DPSIR (Drivers, Pressures, State, Impact, Responses) indicator framework and they are divided into categories according to the main habitat types present in Finland: -Forests -Mires -Baltic Sea -Inland waters -Farmlands -Alpine habitats -Urban areas -Shores -Rocky and esker habitats. These categories have been divided into subcategories and they are updated depending of the types, every 3, 5 or 10 years. https://www.biodiversity.fi/en/home **Topic 2: Ecosystem service indicators** In 2013 the Finnish environment institute SYKE developed indicators for ecosystem services. Firstly the classification of ecosystem services was done based on the International Common International Classification of Ecosystem Services (CICES). Services are classified into: provisioning services, regulating services and cultural services. On each ecosystem service four indicators were provided based on the Cascade model: on the ecosystem structure and process, function, ecosystem service, benefit that humans derive from the service and its value to people.  Adapted from Haines-Young & Potschin 2010. **Topic 3: Genetic resources and legislation** Internationally the use of genetic resources is guided by the Nagoya Protocol which entered into force in Finland in 2016.

		The legislation related to the Protocol is applied to the genetic resources of plants, animals and microbes whenever they are obtained for research and development purposes.
12:00-13:00		Lunch break
12:00-14:00	Finnish Environment Institute SYKE Jukka Pekka Japinnen	**Topic 4: CBD in Finland and Biodiversity action plan** Finland's 6th country report was developed and submitted to the CBD secretariat on 21st of March 2019. The report contains an assessment of the implementation status of all the 105 actions of the National Biodiversity Action Plan. It also includes an assessment of how far Finland's national strategic biodiversity goals have been met and what has been Finland's contribution towards the global Aichi Biodiversity Targets.
14:00-16:00		Writing the report
Tuesday 25.06.2019		
09:00-13:00	Field trip to Raasepori Minna Pekkonen Juha Pöyry Terhi Ryttäri Finnish Environment Institute SYKE	**Topic 1: Ecosystem hotel project** Field trip to Raasepori, the first Ecosystem hotel pilot site and presentation of the objectives and activities of the project which started in 2014 and ends in 2019 and is implemented by SYKE. The first Ecosystem Hotel was established to protect a valuable roadside ecosystem through the process of a highway construction at Raasepori area. The main partner in the pilot case is the company Rudus Ltd, which provides the first Ecosystem Hotel site and conducts the species transfers together with collaborators. The target ecosystem consists of heat-tolerant plants (Dianthus arenarius –EN, Thymus serpyllum-NT) and insects that inhabit open, sun-exposed eskers and dry meadows. The transfers from the roadside were conducted using an excavator and the main goal is that all the transferred plant species will produce seeds and form viable populations at their new location. After this the species will be retuned back to the roadside. The long-term objective of Ecosystem hotel project is to restore the ecosystem back to the original site after the disruptive project has been completed. Finnish Broadcasting Company (YLE) joined at the visit of the site and interviewed the experts from SYKE and personnel from Rudus Ltd.

Dianthus arenarius, Endangered plant in Finland

Thymus serpillym, Near threatened plant in Finland

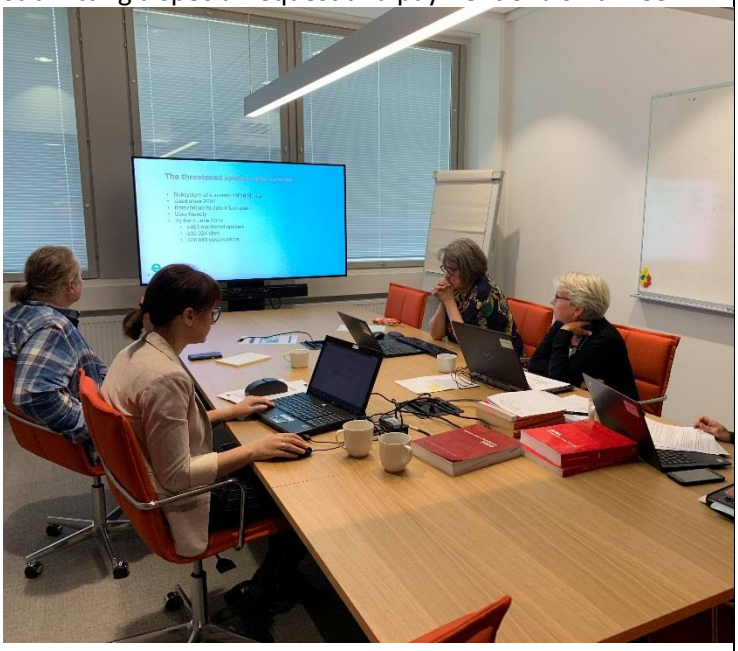
13:00-14:00		Lunch
14:00-16:00	Finnish Environment Institute SYKE Terhi Ryttäri	**Topic 2: Invasive alien species in Finland** In 2012 Finland has developed a National strategy on invasive species and 157 invasive alien species were identified. Government decree on Invasive Alien Species on National Concern was adopted in 2015 and updated in 2019. The most spread invasive plant alien species in Finland are *Lupinus alaskanus* and *Lupinus polyphyllos.* Also, Japanese rose (*Rosa rugosa*) is widely spread in the costal areas. Some activities for removing plant alien species were undertaken under the frame of different projects but there is no specific financing from the state regarding this issue. Most of the work is done with the help of volunteers and NGOs. Other invasive plant species that are occurring in Finand are: *Senecio cannabifolius, Elodea Canadensis, Heracleum mantegazzianum, Impatiens glandulifera, Lysichiton americanus, Acer pseudoplatanus, Robina pceudoacacia* etc.  *Lupinus polyphylos, Invasive plant in Finland*
Wednesday 26.06.2019		
09:00-11:00	Finnish Environment Institute SYKE Petteri Vihervaara	**Topic 1: Finnish ecosystem projects** In 2012 Finland joined to the Working Group on Mapping and Assessment of Ecosystems and their Services (MAES). Action 5 of the EU Biodiversity Strategy to 2020 foresees that Member States shall, with the assistance of the Commission, map and assess the state of ecosystems and their services in their national territory by 2014. The mapping of ecosystems is largely dependent on the availability of land-cover/land-use datasets at various spatial resolutions. The most comprehensive dataset for terrestrial and freshwater ecosystems at EU level is Corine Land Cover (CLC).

		Classification of ecosystem services is done under the CICES and cascade model (structure, function, benefit, value). Finland has actively participated in ESMERALDA project which continues the previous ecosystem service assessment works such as TEEB for Finland study (Towards Sustainable and Genuinely Green Economy - The value and social significance of ecosystem services in Finland), and development of the Finnish Ecosystem Services Indicators – a national framework that integrates CICES classification and Cascade model. MAES related developments in Finland can be categorized under four classes: 1. Networking and information sharing (National network of involved stakeholders was established at SYKE in 2016. The portal Biodiversity fi. is presenting mapping results under the associated indicator categories). 2. Supporting land use planning 3. Integrated Natural Capital Accounting 4. Preparing for ecosystem condition assessment **Topic 2: Group of earth observations and GEO BON** GEO is a global network of more than 100 national governments and in excess of 100 Participating Organizations that promotes open, coordinated and sustained data sharing and infrastructure for better research, policy making, decisions and action across many disciplines. GEO's priority engagement areas include the United Nations 2030 Agenda for Sustainable Development, the Paris Agreement, and the Sendai Framework for Disaster Risk Reduction**.** The priority areas are: -Biodiversity and ecosystem sustainability - Disaster resilience -Energy and mineral resource management -Food security and sustainable agriculture - Public health Surveillance -Infrastructure and transport management -Sustainable urban development -Water resoyrce management **GEO BON** The mission of GEO BON (Biodiversity observation network) is to improve the acquisition, coordination and delivery of biodiversity observations and related services to users including decision makers and the scientific community. GEO BON is focusing its efforts on the implementation and adoption of the **Essential Biodiversity Variables (EBVs)** and related monitoring guidelines and interoperable data

		management systems and through targeted capacity building efforts at the national and regional. **Essential Biodiversity Variables (EBVs)** have been suggested to harmonize biodiversity monitoring worldwide. They are defined as Minimum set of measurements, complementary to one another, that can capture major dimensions of biodiversity change. These were developed by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and the Group on Earth Observations Biodiversity Observation Network (GEO BON) to enhance the monitoring activities worldwide. 6 working groups are operating within GEO BON: -Genetic composition - Species populations -Species traits -Community composition -Ecosystem structure -Ecosystem function Finland's has developed state indicators for biodiversity which correspond with EBVs and works on ways of improving national biodiversity monitoring by using available remote sensing (RS) applications. Rapidly emerging new technologies from drones to airborne laser scanning and new satellite sensors providing imagery with very high resolution (VHR) open a whole new world of opportunities for monitoring the state of biodiversity and ecosystems at low cost.
11:00-12:00	Finnish Environment Institute SYKE Peter Kullberg	**Topic 3: Environment Information System** The project concept for development of new advanced and effective Environment Information System which main aim will be to facilitate and upgrade the environmental information methods was presented. This environmental system will support environmental policies by providing solutions ranging from collecting environmental information to decision-making. SYKE regularly submits data to the European Environment Agency (EEA) and takes part in preparation of different reports to the European commission.
12:00-13:00		Lunch break
13:00-14:00	Pekka Hurskainen Finnish environment institute SYKE	**Topic 4: Earth Observation Applications for Monitoring of the Environment** Remote sensing and other environmental monitoring techniques have been developed in Finland but there is a need of improvements in monitoring of ecosystems condition. Finnish environmental research infrastructure development project ENVIBASE has improved facilities to use new Earth Observation data (e.g. Sentinels, Copernicus data services). **Topic 5: IBC-CARBON Project**

		The project is funded by Strategic Research Council, 2018–2020/2023 and is linked to SDG targets: - Goal 13: Take urgent action to combat climate change and its impacts - Goal 15: Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss. The main goal of the project is to develop biodiversity and carbon sink indicators based on Earth Observation and field data. As key biodiversity indicator species for boreal forests is taken to Aspen (Populus tremmula). New observation methods to map aspen and forest structure were developed in the frame of the project. **Topic 6: Copernicus land products for monitoring of land cover** This dataset helps to assess the effectiveness of the Natura 2000 network in Finland. **Topic 7: Satellite data products in SYKE** SYKE is collaborating with the National Satellite Data Centre (NSDC) Three types of satellites are used: SENTINEL-1, SENTINEL-2, SENTINEL-3. Usability and accessibility of satellite data in Finland is easier with ready products and WMS services: • Regular user does not need to preprocess images • Facilitates more timely and regular use of satellite data • Significantly more users looking at different products • Users can do added value services. **Topic 8: LiDAR data for Environmental Monitoring** New national Lidar champagne will start in Finland in 2020. New data products are developed with combining existing data sources by the GIS department in SYKE. The new LiDAR-based DEM has been crucial for timely and efficient flood mapping and monitoring done at SYKE. Also, the new methodologies will improve the forest mapping (3D mapping and forest structural unevenness).
14:00-16:00	Finnish Environment Institute, SYKE Juha Pöyry Marjaana Toivonen Mikko Kuussaari	**Topic 9: Pollinator protection** A two year pilot project for monitoring of pollinators and assessment of the economic value of pollination for agriculture in Finland is implemented by SYKE. This project is funded by the Ministry of Agriculture and Forestry. In the frame if this project status and trends in populations will be estimated and monitoring methodologies will be developed with focus on bumblebees as the most important pollinators. On 1 June 2018, the European Commission adopted a Communication on the first-ever EU initiative on pollinators. The Initiative sets strategic objectives and a set of actions to be taken by the EU and its Member States to address the decline of pollinators in the EU and contribute to global conservation efforts.

		Topic 10: Urban ecology **OpenNESS – Operationalisation of Natural capital and Ecosystem Services: From concepts to real-world applications** OpenNESS was an European Union framework programme (2012 -2017) that was coordinated by Finnish Environment Institute (SYKE). In the consortium of OpenNESS programme participated 35 partners from 14 different European countries. The main objective of the program was to develop innovative and practical ways of applying ecosystem services and nature conservation in land, water and urban management. Within this program the Urban Ecology Research Group (UERG) was established and it took part in development of sustainable urban planning case study. Case study was developed for one large-scale urban development project – Sibbesborg. The aim of this case is to explore the ways in which ecosystem services can be taken explicitly into account in the planning process. A special focus is given on green infrastructure and new tools to manage open green space as part of urban realm.
Thursday 27.4.2018		
09:00-11:00	Annika Uddstrom Kimmo Syrjannen Finnish Environment Institute SYKE	**Topic 1: Endangered species and red list assessment** First extensive evaluation in Finland was done in 1986 and the second assessment was done in 1994 according IUCN criteria. Assessment of threatened species is repeated in 10 year intervals. The fifth assessment of threatened species in Finland was published in March 8th 2019. The work was coordinated by the Finnish Environment Institute (SYKE), and it involved 180 experts from universities, museums of natural history, Natural Resources Institute Finland, Finnish Environment Institute (SYKE), Metsähallitus and the Finnish Mammalogical Society. A new assessment of threatened species indicates an increasing loss of biodiversity in Finnish nature. Of the 22 000 species evaluated, 11.9% were classified as threatened, compared to 10.5% in the previous assessment. All species groups include threatened species, and the highest proportion can be found among birds and bryophytes (mosses). The primary cause of threat is the decline and deterioration of natural habitat. The proportion of threatened species is also large among lichens, vascular plants, butterflies and moths, and hymenopteras. Changes in the forest environment are the most significant cause of threat to species and they include forest management activities, as well as the reduction of old-

		growth forests and large trees, as well as decreasing amounts of dead and decaying wood. The second most common threat to species is the overgrowing of open habitats.
11:00-12:00	Heidi Kaipiancn-Vare Lisa Tuominen-Roto Finnish Environment Institute SYKE	**Topic 2: HERTTA data base for endangered and threatened species** Threatened and endangered species database in Finland called HERTTA is maintained by Finnish Environment Institute SYKE. This data base contains data for endangered species and threatened species in Finland and spatial data for species occurrences. The system provides information also on hydrology, water resources, environment load, maps, code lists etc. Updated data for 500 species is extracted yearly from the system and a copy is sent to Metsahalitus and other regional environmental authorities and forest organizations. Field observation forms for different taxonomic groups are used for fulfilling and updating the data. The data is considered as sensitive and is accessible to public by submitting a special request and payment of a small fee. 
12:00-13:00		Lunch break
13:00-15:00		Discussions and writing the report
		Friday 28.07.2019
09:00-11:00	Kimmo Syrjanen Finnish environmental institute SYKE	**Topic 1: METSO program and projects related to forest conservation in South Finland** In Southern Finland most forests are privately owned and commercially used and METSO Program (2008-2025) was established for protection of valuable forest habitats.

		METSO is coordinated by the Ministry of the Environment, in cooperation with the Ministry of Agriculture and Forestry. The program is set to run until 2025. The main goals of METSO are to improve protected area network, to increase biodiversity in commercial forests, to increase the collaboration between forestry and environment sector and landowners and to enhance biodiversity knowledge, communication and education. The program aims to activate voluntary-based conservation agreements between forest owners and authorities. Land owners can voluntarily offer their forests to permanent or fixed-term conservation. Forest owners benefit by having ecologically valuable features on their land managed by experts and without cost. The site selection criteria define what kind of ecologically valuable habitats are to be protected in the program. The criteria are based on the ecological structure of forests and on forest habitats important for biodiversity and ecosystem services. Sites are especially favored where habitats are well preserved in their natural state or could easily be restored, where they host rare or endangered species, or where they are important for ecological connectivity. Zonation is a conservation planning framework and software and helps in recognizing the most valuable forest habitats. On a smaller scale, measures are particularly taken to conserve forests that are rich in biodiversity because they contain features such as decaying wood, burnt or charred wood, mature broad-leaved trees, large aspen trees, nutrient-rich soils, springs, brooks, and other natural water features. The protection and sustainable management of forests is also important for achieving the goals of the Paris Climate Agreement in Finland. With regulation of the carbon balance (positive carbon balance) the forests serve as a carbon sink and don't release the carbon dioxide into the atmosphere. Various research and development projects are developed under the METSO program in Finland and the funding is provided by the Ministry of the Environment and the Ministry of Agriculture and Forestry.
11:00-12:00	Kimmo Syrjanen Finnish environmental institute SYKE	Discussions
12:00-13:00		Lunch break
13:00-16:00	Kimmo Syrjanen Finnish environmental institute SYKE	Conclusions for the SYKE visit and writing the report
Saturday 29.06.2019		
		Free time- Visiting Suomenlinna

		Suomenlinna (Castle of Finland) is an inhabited sea fortress built on six islands. The fortress is one of the most popular visitor attractions in Finland with about one million visitors every year. The fortress is also a neighborhood with about 800 residents. The construction of the fortress began in the mid -18th century when Finland was still part of Sweden. Since 1991 Suomenlinna is a UNESCO world heritage site as an outstanding monument to military architecture. A government agency under the Ministry of education and culture is responsible for the restoration, maintenance and development of the fortress as well as managing it as visitor attraction.
Sunday 30.06.2019		
Move to Tikkurila Free time		
Monday 01.07.2019		
09:00-10:00	Metshallitus office Erkki Virolainen	**Topic 1: National information system for Habitats and Species and introduction on data of Laajalahti nature reserve** Several information systems for management of protected areas, Natura 2000 areas, habitats and species are owned and maintained by Metsahallitus. Geographic information system for protected area management = ULJAS is financed by Ministry of Environment and used by all government nature conservation organizations. Subsystems of ULJAS that are owned and maintained by Metsahalitus are: SATJ = Protected area information system which contains information on established protected areas (PA) and sites reserved for conservation, SASS = Protected area management planning and monitoring system used for management of Natura 2000 sites and NATA assessment, SAKTI = Protected area habitat management system, LajiGIS = Species information management system and PAVE = System for constructions, routes, trails and archaeological sites. The Laajalahti Nature reserve was established in Espoo in 1979 to protect extensive shallow costal bay and its shores and surroundings. The reserve is 200ha in extend and it's managed by Metsahallitus. The reserve is at same time Natura 2000 area, Importand bird area and Ramsar area.

10:00- 12:00	Erkki Virolainen Laajahti reserve	Drive and field trip to Laajalahti nature reserve Laajalahti bay is an internationally important bird wetland. Many bird species nest in the reserve and every spring and autumn the bay provides a resting place for thousands of migrating birds. 275 bird species have been recorded in the area. Laajalahti is popular bird watching place in the greater Helsinki area. Extensive reed-beds are spread along the northern and western shores of the bay and provide nesting sites for many birds. In the western part of the reserve the reed- beds merge into water meadows and scrub. The water meadows are grazed each summer by cows and sheep. Grazing is used as management measure to prevent overgrowth of pastures. Villa Elfik is run by the City of Espoo as a ,,nature house" with educational exhibitions and classrooms for children. Visitors can learn about Laajalahti from the nature trail, 700 metre long which leads to a bird watching tower. Another 3 km long trais leads to another bird watching tower. Bird species that can be observed in the nature reserve are: *Podiceps cristatus, Mergus albellus*, *Vanellus vanellus*, *Adrea cinerea, Mergus merganser* etc. 
12:00- 13:00		**Lunch break**
13:00- 14:00	Erkki Virolainen Vanhankaupunginlahti	**V**anhankaupunginlahti is the largest nature reserve in Helsinki with over 300 different species of birds. The area serves as a nesting ground for approximately 120 species and as staging area for thousands of migrating birds. The landscapes are dominated by the common reed. The bay also includes a diverse range of other habitats: groves, alder marshes, coastal meadows, small ponds and fields. Management measures are conducted in the area in order to preserve its conservation values. The coastal meadows are managed by grazing. There are bird watching towers and platforms for observations. As an internationally valuable

		bird wetland the area is part of the Natura 2000 network and a wetland of international importance under the Ramsar convention. 
14:00 16:00	Erkki Virolainen Lammassaari ja Kuusiluoto	Visiting Lammassaari and Kuusiluoto which are city owned public recreational areas. The island summer huts are privately owned. There are bird watching platforms and towers for the visitors. The pastures are maintained by grazing and in summer time the area serves as a sheep pasture. 
Tuesday 02.07.2019		
08:00-13:00	Erkki Virolainen Soderskar Protected Area	Trip by boat to Soderskar, Porvoo. The Soderskar Protected Area is part of the Soderskar and Langoren archipelago and Natura 2000 area in the Baltic Sea. It is Ramsar area and IBA as well. The area has natural and cultural heritage values and it is protected and managed by Metsahallitus. The Island, together with its water area, was established as a protected area in 1930. Metsähallitus Natural Heritage Services in 2014 implemented a project for

		developing the preconditions for nature and culture tourism in the Porvoo outer archipelago. The Soderskar archipelago is an important area for the protection and research of sea birds, and there are some restrictions on exploring the area and landing there in order to minimize disturbance to the nesting birds. The cultural heritage values are based on the area's diverse history: Soderskar Island is part of the Finnish maritime history and it has served as a wartime fortress. The Soderskar lighthouse is privately owned and used for tourism purposes.
13:00-15:00	Erkki Virolainen Sipoonkorpi National Park	Field trip in Sipoonkorpi National Park, visiting 2 km long trail. Sipoonkorpi National Park is located within the municipalities of Sipoo, Vantaa and Helsinki. Valuable forest habitats are present in the park and also mires and small bogs. Some of the forests are valuable old forests which are practically in their natural state. The area's flora and fauna is diverse and abundant and includes endangered as well as rare plant, mushroom and animal species. Forest pastures and meadows are kept clear by having horses and cows graze in them. Grazing animals are required for maintaining the traditional landscapes by keeping the meadows open and securing the biodiversity of these habitats.
Wednesday 03.07.2019		
07:00-12:00		Traveling to Joensuu by train from Tikkurila
12:00-13:30	Maarit Simila Metsahallitus	Drive from Joensuu to National Park Koli. National Park Koli was established in 1991 to conserve national landscape, hill nature, slash-and-burn culture and natural heritage landscapes. The area of the park was expanded in 1996 and today the total surface area is around 3000ha. The view opening up from Ukko-Koli Hill to Lake Pielinen is one of the most famous national landscapes in Finland. The peak of Ukko-Koli is 354 metres above sea level and 253 metres above the surface of Lake Pielinen.
13:30-16:00	Maarit Simila Metsahallitus	Several sites were visited in Koli National Park in order to introduce restoration and management measures of different habitats. Most of the forests in the National Park Koli were in commercial use before the park was established. The restoration actions in the park were realized by the EU-funded LIFE Nature project ,,Life to Koli-restoration of the forests and meadows in the National Park" and the aim was to ensure a favorable protection level of valuable habitat types and species in Natura 2000 areas in Koli.

		Visiting the Inkolonaho meadow which is maintained with using traditional mowing methods. Some plant species (*Campanula patula, Campanula rotundifolia, Campanula glomerata, Gymnadenia conopsea*) typical for this habitat type are now well spread. Visiting the traditional local slash-and-burn area kept by Metsahallitus. New field are created every year by burning selected areas of felled forest. This is an old method of clearing natural forests for agriculture and in this way more nutrients are released into the soil and the PH level is increased. After that the areas are sown with different crops. Visiting one forest mire that was restored with regulation of the water balance after it was drained and some wetland species were lost.  
16:00-18:00	Maarit Simila Metsahallitus	Information center Ukko-Koli **Topic 1: Habitat and species data base (Laji GIS)** LajiGIS = Species information management system is a subsystem of the wider Geographic information system for protected areas. LajiGIS contains: • Species nomenclature, taxonomy and conservation status (e.g. national red-list, EU Habitat Directive annex listing) • Data from terrestrial, freshwater and marine inventories, surveys and monitoring • Threats and pressures on species occurrences • Proposed and implemented management measures • Inventory/survey needs for annual work planning It is used for species and habitats monitoring and preparation of action plans with practical conservation measures on smaller scale (restoration of mires and forest bogs, meadows etc.). The system contains ready-made modules for preparation of action plans.
18:00		Accomodation in Kolin Ryynanen
Thursday: 04.07.2019		

09:00-11:00	Tommi Kinnunen Metsahallitus	Visiting the Nature Centre Ukko. The Koli Nature Centre Ukko offers Finland's best known national landscape, the hills of Eastern Finland and heritage sites. Thing that can be seen and done at the center are the Koli Heritage Exhibition, temporary exhibitions, audiovisual presentations, guided tours for groups, reference library, a media studio, children's playroom etc. The Nature Centre is managed by Metsähallitus. 
11:00-14:00	Tommi Kinnunen Metsahallitus	Visiting the heritage farms in NP Koli, Ollila, Turula and Matilla. The farms are maintained in the same way they were in olden days. At heritage farms traditional domestic crops and plants are grown in the fields and gardens and the same types animals are kept at farms as were previously: horses, cows, sheep and chickens. The purpose of heritage farms is to preserve those plant and animal species that require an environment such as meadow or a pasture which can only be developed by traditional farming. The cattle carry out valuable nature management work keeping the landscape open.

		 Metsahallitus has also developed The Shepherd Weeks concept in Finland as a new way of nature management. The arrangement involves volunteer shepherds travelling to the locations for a week each to care for the sheep that maintain the landscapes. Visiting a gene reserve forest of birch. The gene reserve forest of birch (*Betula pendula and Betula pubescens*) was established in 2005 by the Finnish forest research institute and is managed using slash-and-burn methods. In the management of gene reserve forests the aim is that the forest regenerates naturally from seed of local origin. Lunch at Matilla café.
14:00-16:00	Tommi Kinnunen Metsahallitus	**Topic 1: NATA application and other planning applications in Metsahallitus for protected areas** SASS and SAKTI information systems are used for master and operational management planning of Natura 2000 areas and other protected areas and NATA (Natura 2000 site condition assessment). These systems are also used by other organisations (MoE, regional environmental administration, SYKE and etc.) NATA-site condition assessment of Natura 2000 sites is a legal obligation that takes place before the planning process begins. It has also legal status as tool to implement the Habitats and Birds Directive. It includes updating of Standard Data Forms, defining key values and significant threats, defining conservation and other objectives + needed conservation measures by site, including need for compiling management or other plans. NATA assessments are completed for 970 Natura 2000 sites in Finland and all have to be completed by 2021.
Friday: 05.07.2019		
09:00-14:00	**Tommi Kinnunen Metsahallitus**	Visiting the Kolinuuron Kierros Nature Trail, 3.5 km Circle Trail. Presentation of the Management plan and its implementation in Koli National Park.

		 Visiting the ,,Devil's Church" a 33-metre-long Z-shaped boulder cave to which several mystical stories are connected.
14:00-15:00		Lunch break
15:13-20:00		Traveling from Joensuu to Tikkurila
Saturday: 06.07.2019		
Free time & Reporting		
Sunday: 07.07.2019		
Flight back to Skopje		

Recommendations based on the findings during the internship to Finland:

1) A competent expert body for nature conservation (agency or institute) should be established under the Ministry of environment and physical planning with sufficient state funding and personnel. The staff shall include conservation biologists, ecologists, foresters and other professions in the natural sciences with capability to deal the complex issues related to nature conservation and future obligations according EU requirements.
2) Separate Administration for protected areas shall be established under the Ministry of environment and physical planning with responsibility of financing, managing and using protected areas in a sustainable way.
3) National information system for nature with GIS should be established with effective tools for systematic collection, storage, monitoring and analysis of biodiversity data.
4) Trainings for employees who will be in charge for maintaining the system should be conducted via different international projects and initiatives.
5) To develop national indicators for biodiversity and ecosystem services compatible with Biodiversity Essential Variables developed by IPBES and GEO BON.
6) To develop national strategy on invasive alien species for recognizing the alien species and proposing adequate measures. Later special legislation on invasive alien species should be developed.
7) Ecosystem services should be taken into account in the urban planning process.
8) It is important to raise public awareness for nature and biodiversity protection via different campaigns, educational programs, events, media, info centers, and better education starting with the smallest children and decision makers.
9) Development of user friendly educational applications for species recognition can be helpful for presenting the citizen science in the society.
10) The process of proclamation and re-proclamation of protected areas should be simplified by excluding complex administrative procedures and documents.
11) All protected areas should be re-proclaimed and harmonized with IUCN categorization.
12) Different categories of protected areas should have different system of zonation depending of the type, total area, natural values and management requirements of the protected area. Same zones can't be applied in different protected areas.
13) Development of separate information systems for protected areas and Natura 2000 areas (like SAKTI, SASS in Finland..) with ready-made modules where data is automatically available will facilitate and enhance the process of preparation of management and action plans. In that case management plans can be prepared by the staff.
14) Conducting pre-condition assessment of the protected sites is a useful tool for management of protected areas. With this smart approach management actions will be focused on practical management measures for habitat and species conservation.
15) Capacities of protected areas administrations should be strengthened with employment of biologists, foresters, ecologists etc. Conservation biologists should have knowledge on the habitat types and species that are characteristic to the protected area and ability to work independently in the field as well as familiarity with local stakeholders.
16) Investments for improving the facilities for recreational and educational activities into the protected areas are urgent. The prices for accommodation in protected areas should be acceptable with special discounts for school children.
17) Special programs should be introduced to encourage people to participate in management and monitoring of protected areas.

18) Different EU financial instruments for nature protection should be used in the pre accession period.