

Assessment of ecosystem services WP 4

Aija Vanaga Association Baltic Coasts







Aim and timeline

- To perform expert assessment of ecosystem services.
- To monitor ecosystem services before and after implementation of the Project actions to identify and estimate environmental and economic impacts

Timeline for ecosystem service monitoring

Monitoring plan 2023

Preassessment 2025 Post assessment and Ecosystem service economic valuation

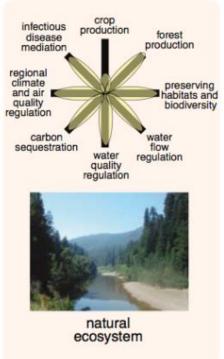
2027

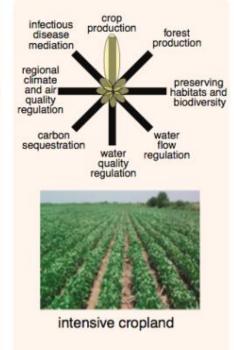




Ecosystem services and assessment

Ecosystem services - the contributions that ecosystems make to human well-being

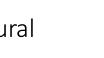




Provisioning Services: These are the products obtained from ecosystems, such as food, water, timber, and other raw materials.



Provisioning services (Division and group)	Indicators	Measurement	Unit
Wild plants for nutrition, materials	Wild berries	Blueberries; Cranberries; Lingonberries	Kg/ha
	Plants	Medical plants	No of species
Wild animals for nutrition, materials	Wild animals	animals for hunting	Kg/ha
	Fish		Kg/ha
Fibres and other materials for direct use or processing	Wood Sphagnum Peat		Kg/ha
Non-mineral substances or ecosystem properties used for nutrition, materials or energy	Wind energy Solar energy		KW/h



Regulation and maintenance services: that play a crucial role in regulating natural processes.

Regulation & Maintenance services (Division and group)	Indicators	Measurement				
Mediation of wastes or toxic substances of anthropogenic origin by living processes	Pollution filtration					
Mediation of nuisances of anthropogenic origin	Noise reduction	Forest density				
Lifecycle maintenance, habitat and gene pool	Seed distribution	Diversity of insect pollinators				
protection	Life cycle maintenance, habitat and gene pool protection	Number of plant species; beetles and insect species bird species; mammal species				
Regulation of physical, chemical, biological conditions	Pest and disease control	Limiting the spread of invasive species				
	Regulation of temperature and humidity					
	Climate change mitigation					
	Carbon sequestration potential					
Transformation of biochemical or physical inputs to ecosystems	Filtering wastes or sequestering pollutants					



Cultural services: Ecosystems contribute to human well-being through cultural, recreational, and aesthetic experiences. This includes spiritual and religious values, as well as tourism and recreation.

Cultural services (Division and group)	Indicators	Measurement
Physical and experiential interactions with	Active recreation	Potential number of visitors
natural environment	Passive leisure (recreation) opportunities	Potential number of visitors
Intellectual and representative interactions with natural environment	Scientific research and educational opportunities	Number of researches
Spiritual, symbolic and other interactions with natural environment	Elements or features of living systems whose inter-generational existence or conservation is important to people	

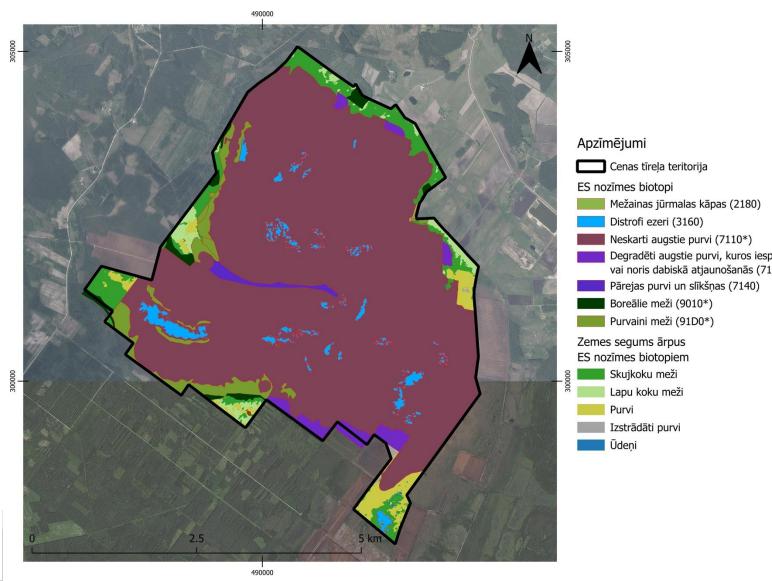




Apzīmējumi _ | Cenas tirela teritorija Distrofi ezeri (3160) Šaurlapu kūdrenis Mežu tipi Pārejas purvi un slīkšņas (7140) Platlapju kūdrenis Purvājs ES nozīmes biotopi Läns Niedrājs Aktīvi augstie purvi Mežainas piejūras kāpas (2180) Damaksnis Mětru ărenis (7110*) Slapjais damaksnis Šaurlapu ārenis Degraděti augstie purvi, Purvaini meži (91D0*) kuros iespējama vai Platlapju ärenis Veci vai dabiski boreāli Zemes kategorija noris dabiskā meži (9010*) Viršu kūdrenis atjaunošanās (7120) Purvi, lauces Mětru kūdrenis

Maps for ecosystem assessment





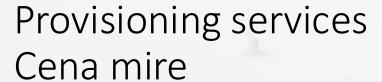
Assessed ecosystem services

Ecosystem services	Identified	Assessed
Provisional services	11	9
Regulation and Maintenance services	20	12
Cultural services	7	4





			C	I:-	_		9010- Ved Vai	9100	3160		Degradětí	7140 Pārejas			
			Cenas t	ıreııs	5		dabiski boreáli	Purvaini	Distrofi	7110*Aksvi	augstie purvi,		Meži	D.m.d	Izstrādāti
							meži;	meži;	ezeri	augstie purvi;	kuros	slikšņas		Purvi	purvi
							27.83 ha	86.2 ha	67.59 ha	1815.65 ha	50.39 ha	17.14 ha	123,222902	93,45	4.63 ha
cija	Nodaja	Grupa	Klase	CICES kods	Indikators	Datu lapas									
			Savvajas augi (sausemes un	1.1.5.1	Antriechasaugi	A5_Arstniecibas augi (DAP)	4	4	1	4	4	2	4	4	0
	Вотнам		üdens, tostarp sēnes, alģes), ko izmanto uzturā	1.1.5.1		A1_Ogu raza (DAP) Dzērvenes A1_Ogu raza (DAP) Brūklenes	1	3	0	3	4	0	0	0	0
					Meda ogas	A1_Ogu raza (DAP) Brukenes A1_Ogu raza (DAP) Mellenes	1	1	0	0	1	0	1	0	0
Apgādes cakalpojumi			 	1.1.5.2	Kokune	A6_Koksnes kraja (DAP)	3	3	0	0	0	0	4	0	0
		Savvajas augi (sauszernes	Škiedras un citi materiili no			R_A6_Apgade_Sfagnu segums (LIFE			-		_				
		un üdern) usturam, materilillem vai enenģijai	savvajas augiem tiešai lietošanai	1.1.5.2	Sfagni	REstone)	0	5	1	5	3	4	0	3	0
			vai apstriidei (läņemot ģenētiskos materišku)	1.1.5.2	Galilā kūdra	R_A9_Apgade_Gaisa kudra (LIFE REstore)	0	0	0	0	0	0	0	0	2
			materiality	1.1.5.2	Turnilā kūdra	R_A10_Apgade_Turnsa kudra (LIFE REstore)	0	0	0	0	0	0	0	0	2
			Savvajas augi (sausemes un ūdem, tostarp sēnes, alģes), ko lamanto enerģijas leguvei	1.1.5.3	Kolome	A7_Koksnes krāja enerģitikai (Finanšu ministrija)	3	3	0	0	0	0	4	0	0
	Dubiski ablotiskie ekosističnu	Neminerālas vielas vai ekosistēmas īpalības, ko	Wija enerģija	43.23	vegt		0	0	0	0	0	0	0	0	0
	pakalpojumi	izmanto uzturši, kši materišku vai enenģijas avotu	Saules enerģija	4.3.2.4	Saules erveriĝija		0	0	0	1	1	1	0	1	5
-	Biolytmiski vai fizikali pilirvaidojumi	Attirišana no antropoglinas izcelames piesilinjojuma val toksiskilim vielilim	Filtnišana/sekvestnikcija/uzglab šliana/akumušicija, ko veic mikroorganismi, alģies, augi un dzīvnieki.	2.1.1.2	Augunes spēja adsorbēt un uzkrāt barības elementus (smagos metālus)	R_B1_Regulacija_Augsnes speja absorbet (LIFE Restore)	1	3	3	5	4	2	3	4	1
		Antropoglinu tnaucijumu noviršana	Trokšiņu mazināšiana	2122	Meža audzes biezība	R_B3_Regulacija_Meza audzes bieziba (LIFE Restore)	3	3	0	1	2	0	5	1	0
		Dzives cida uzturišiana, biotopuun genofonda sizsandriba	Sáldu izplatřšana	2222	Kulosiņu-apputeksmitāju daudzveidība un sastopamība	B3_Apputeksnesana (DAP)	3	3	1	1	2	1	3	2	0
	Fiziska, kjimiska un biskojiska		Populáciju un dzīvotrju suglaktičiana (tostarp genofonda aksandcība)	2223	Augu sugu skaits	R_B7_Regulacija_augu sugu skalts (LIFE Restore)	4	4	1	5	5	3	4	3	1
					Epigeisko skrejvaboju sugu skaits	Regulacija_Epigeisko skrejvabolu skaits (LIFE Restore)	4	4	0	3	3	4	4	3	0
Regulējošie					Īpaši aizsargājamo putru sugu skaits	R_B6_Regulacija_lpasi aizsargajamie putni (LIFE Restore)	2	3	2	4	5	4	3	4	0
		Kaitāldu un sāmību kontrole	Kaitāliju kontrole (tostarp inveztvās sugas)	2231	Jātnieciņu populācijas blīvums	Regulacija_Jatniecinu populacija (LIFE Restore)	1	2	0	2	3	3	2	2	0
	apsitāliju regulācija				Invectivo sugu izplatības ierobežošana	B4_invazivo sugu ierobezosana (DAP)	5	5	5	5	4	5	5	5	4
		Atmosfénie sastáva un klimatokie apstáklj	Almosféries un dostinu kjimiská sustáva regulátiuna	226.1	Gaisa temperatūra un iztvalkošana	R_B12_Regulacija_gaisa temperatura un iztvaikosana (LIFE Restore)	5	3	4	5	4	5	3	2	1
					Klimata izmaigu mazināšana	R_B13_Regulacija_klimata izmainu mazinasana (LIFE Restore)	4	4	0	0	0	0	5	1	0
					Plesaistīto aerosolu vai piesārņojošo vielu daudzums	R_B2_Regulacija_Piesaistito aerosoli daudzums (LIFE Restore)	4	4	5	3	5	5	4	4	0
					Oglekļa piesaistes potenciāta indekss	E_B12_indikators_C piesaistes potenciāls (LIFE Ekosistēmu pakalpojumi)	4	4	0	2	2	2	5	2	1
tūras kalpojumi	Tieliä (uz vietas) mijadartiba ar dzīvajām sistāmām	Fiziskā un pieredzes mijedarbība ar dabisko vidi	kas jauj valid darbības, kuras uzdabo veselību vai sniedz	3.1.1.1	Aktiva atpūta	C1-4_Kultura (DAP)	3	3	4	5	5	5	3	2	1
			Dzīvo sistēmu naksturlielumi, kunsi uzlabo veselību vai sniedz baudu, izmentojot pasitvu mijiedarbību	31.12	Pasilva atpūta, putnu vārošana	C1-4_Kultura (DAP); E_C1_indikators_kultura_putnu_vero sana (LIFE Ekosistēmu pakalpojumi)	3	3	2	4	5	5	3	4	1
		Intelektuālā un reprezentatīvā mijedarbība ar dabisko vidi	Dzīvo sistēmu naksturojums, kas jauj valvt zinātnisku izpēti vai papildināt/uztunēt zināšienu bāzi	3.1.2.1	Zinātniskā darbība		2	2	5	5	5	5	2	2	1
	Netieša mijadarbība ar dzīvām sistēmām (nav nepieciešamība būt uz vietas)	Gartgā, simboliskā un cita veida mijedarbība ar dabisko vidi	Dufvo sistēmu iezīmes, kam ir simboliska nozīme	32.1.1			4	4	5	5	5	5	4	5	1

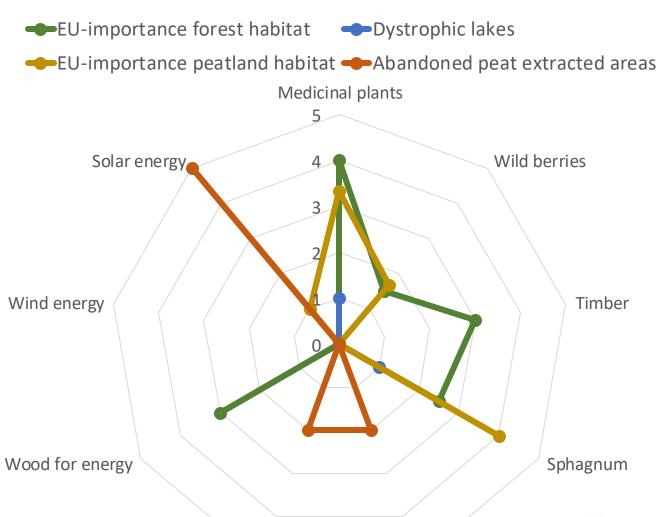


- Forests are essential for the local bioeconomy through renewable resources like timber, energy wood, and non-timber forest products.
- Peatland habitats maintain their importance in supplying specialized materials (e.g., sphagnum and medical plants)
- Provisioning services from water bodies are minimal, these ecosystems have different non-material primary values.





Provisioning ecosystem services



Light peat

Dark peat

Regulation and maintenance ecosystem services

- Peatland ecosystems play a crucial role, particularly in microclimate control, pollution reduction, pest and disease control.
- Forests support ecosystem resilience, acting as buffers for pests and as crucial habitats for genetic diversity maintenance.
- Water bodies contribute to environmental quality, notably in pollution dilution, but less so in carbon functions compared to peatlands.
- While abandoned peat areas have lost much of their regulatory capacity, their partial service recovery potential reinforces the value of ecological restoration.

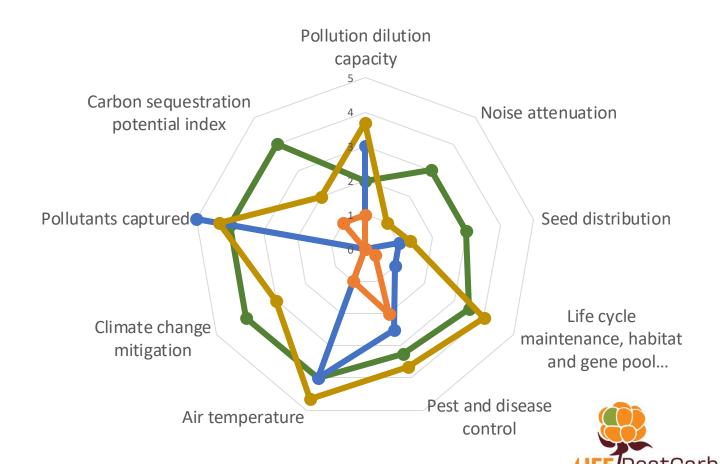




Regulation and Maintenance ecosystem services

→EU-importance forest habitat **→**Dystrophic lakes

EU-importance peatland habitat —Abandoned peat extracted areas





Cultural ecosystem services

- Peatland serve as key multifunctional landscape that provides cultural ecosystem services.
- Forest and lake enrich cultural identity, offering unique opportunity nature-based mental restoration.
- The potential of abandoned peatlands to provide cultural ecosystem services is very low.

Cultural ecosystem services

EU-importance forest habitat **D**ystrophic lakes

→ EU-importance peatland habitat → Abandoned peat extracted areas

