LOCAL COMPONENT VERIFICATION REPORT: RIPARIAN ZONES STATUS LAYER 2012

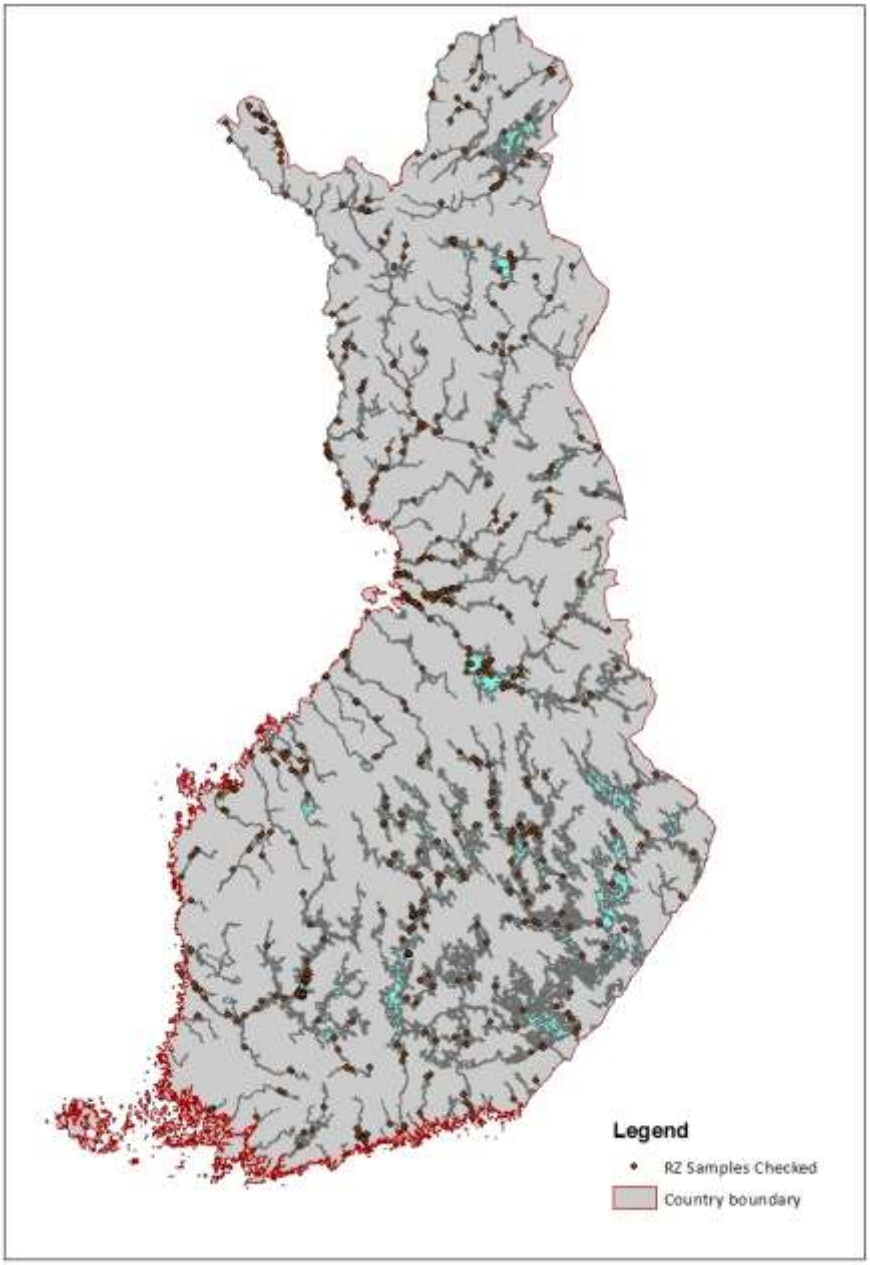
I. Metadata

DATASET	*Riparian Zones status layer 2012*
Country	*Finland*
Institution carrying out the work	*Finnish Environment Institute*
Data preparation	*Iida Autio, iida.autio@ymparisto.fi,*
Visual inspection of samples	*Iida Autio, iida.autio@ymparisto.fi,* Minna Kallio, minna.kallio@ymparisto.fi
Evaluation	*Iida Autio, iida.autio@ymparisto.fi,* Minna Kallio, minna.kallio@ymparisto.fi
Reference data provided centrally	IMAGE2012 VHR satellite image mosaic
	GoogleEarth Imagery
In situ data used	**National Orthophoto database/The National Land Survey** Natural color/black and white ortophotos Resolution: 0.25-0.5m Reference years: 2010-2015 (partial coverages)
	The National Road and Street Database, Digiroad Vector dataset Reference year: 2017 (compared to data from 2011-2013)
	National high resolution Corine Land Cover 2012 National Corine raster dataset Resolution 20x20m Reference year: 2012
	National Corine Land Cover change layers 2000-2006 and 2006-2012 Resolution 0.5ha
	The Finnish Land Parcel Information System (FLPIS) Based on farming subsidy reports Information of the dominant plant species of the field plots Vector data Reference year: 2011
	Soil Extraction Permits Database Vector data Reference year: constantly updated but data contains information on duration of the permits
	Building and Dwelling register (BDR) Population Information System Vector data Reference year 2015
	Topographic Database/The National Land Survey Compilations of object groups Vector data Reference year: 2012
	Topographic map series/The National Land Survey Raster data Reference year: 2017
	Copernicus high resolution imperviousness layer 2012 (HRL Imperviousness) + Sample polygon data The percentage of soil sealing was calculated for each sample and used to guide the validation of the Urban Fabric classes

	ESRI/The Narional Land Survey basemap 1:2500
	Digital Elevation Model/ The National Land Survey & SYKE Resolution 10x10m Raster data Reference year: 2015
	Laser Scanned Tree Cover Density Resolution 2x2m Raster Data Reference year: 2018
	Shoreline 10 and River network Bsed on the Topographic database/National Land Survey of Finland Vector data Reference year: 2016
Notes	Some datasets are newer than the recommended reference year 2012. This has been taken into account while using the data in the validation process.
Software used for verification	LACO-WIKI, (+ GoogleEarth, QGIS 2.18.10), ArcMap 10.5.1, Google street view
Internal quality control done by	Pekka Härmä, pekka.harma@ymparisto.fi; Minna Kallio, minna.kallio@ymparisto.fi
Date and place of writing the report	DD.04.2018, Helsinki

II. Overall characterization of the dataset

DATASET	RZ	Riparian Zones status layer 2012
Area covered within country	13.00%	4 400 457 hectares
Number of valid classes appearing in the country	65	
Number of samples selected	573	max. 10 samples/class
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	293	
Overall Accuracy	52,71 %	
Overall Accuracy (CI)	± 0,0323	
CORRECTNESS OF DELINEATION		
Detail of delineation	74,69 %	Correct: 428; Too coarse: 52; Too detailed: 93
Correctness of delineated area	15,18 %	Correct: 87; Unnecessary parts included: 368; Missing parts: 36; Both missing parts and unnecessary parts included: 82
Positional accuracy	94,59 %	Correct: 542; Shifted: 31
OVERVIEW FIGURE OF NATURA 2000 STATUS LAYER		



DATASET	RZ	Riparian Zones status layer 2012

GENERAL REMARKS ON THE RIPARIAN ZONES STATUS LAYER

Overall feedback on the quality of the dataset:

The urban classes (1000) are fairly well identified in the Riparian Zone status layer. Especially this applies to the truly urban land use classes such as urban fabric, industrial areas, road and rail network and transport infrastructure. The "green" land use classes (green urban area and sports and leisure facilities) also correspond to the reference data but the tree cover density (T.C.D.) is misinterpreted in many cases. While general classification is mostly correct, the delineation of the polygons is poor. Unnecessary areas are included in majority of the sample polygons. Roads and railways are an exception as their delineation is quite exact.

Arable land and the more general agricultural LC/LU class 2331 are well identified in the dataset but their delineation is not very accurate as unnecessary parts are included (forests and low density urban areas).

Delineation of the forest polygons (3000) does not follow patterns of forest type and therefore most of them should be redelineated and reclassified. This applies to both tree species and soil moisture factors. The Potential Riparian Zone (PRZ) is ignored in the validation as national reference data doesn't support the delineation of PRZ. Only forests that are located in the moist low areas along the water systems and clearly affected by the adjacent water are classified as riparian and fluvial forests. There is a strong correlation between the forest polygons of the RZ status layer and the wetland polygons of the Topographic Database of the National Land Survey so this has clearly been used in the production of the dataset. It should be documented in METADATA that featrues of national data is included (superimposed) into output as such. This is visible in output in many cases.

Grassland classes (4000) are not well identified in the data and often the class is confused with forest or arable land. The national reference data is not sufficient to support the validation of the class. Especially difficult it is to distinguish between mesic grassland and freshwater marsh as well as mesic and managed grasslands. Transitional woodland and wooded grassland both occur in abandoned arable land and are often confused.

Validation of heathland and scrub classes (5000) and sparsely vegetated areas (6000) is problematic as distinguishing these classes (e.g. 5111, 6111, 6221, also 7212) from each other is often challenging from satellite images or even more precise national reference data. The high class user's accuracy isn't always an indication of a successful mapping but uncertainties in validation.
Sparsely vegetated LC/LU classes 6211, 6213, 6221 at the waterfront are also difficult to validate since there are differences in water levels between satellite images and national reference data. In many cases national reference data indicates that the area should be water even though satellite image shows land area.

Freshwater marshes (7000) are misclassified with e.g. forest classes but their validation is also difficult without sufficient reference data.

Both natural and artificial water bodies (9000 & 10000) are quite well identified in the feature layer with a few exceptions.

Overall feedback on the RZ classification and nomenclature guidelines:

There are several issues in the RZ classification and the nomenclature guidelines that should be considered to improve the quality and usability of the dataset.

There are big differences in the dataset in terms of coherence with the Urban Atlas status layer. Especially this applies to the urban classes. It is mentioned in the RZ nomenclature, that inside the Urban Atlas Core Regions, Urban Atlas is integrated to the RZ and elsewhere used as reference. This approach is problematic since it causes big differences in precision: in some areas the RZ layer is very generalized and polygons include several LC/LU classes of >MMU while in other areas they are very detailed. Also UA Core regions are not clearly described in the RZ nomenclature guidelines and no information is available on

them in other sources.

Forest classes have attributes describing the four levels T.C.D. This could be considered as a 5th level of classification and is possibly too detailed. These were not taken into account when validating the correctness of the LC/LU classes

Validation of the grassland and wetland classes is complicated by the fact that the descriptions of these classes are somewhat confusing in the RZ nomenclature guideline. First of all, the RZ nomenclature guideline is not clear on the description (e.g. type and amount of vegetation and its management status) of classes 7111 and 7112 as they're described together under the headline of "7.1.1.1 Inland freshwater marshes". Also there are several exceptions and elaborations for classes 7111, 7112 as well as 4222 in the Nordic countries and Scandinavia and these are somewhat contradictory. It could be argued that the classification of marsh areas and grasslands in the RZ dataset is too ambitious. Their distinctive properties (management status, the height of grassy vegetation and humidity of soil) are both hard to describe and impossible to detect on satellite images or even on aerial images or other more precise national reference data.

The nomenclature specifies that in Nordic countries areas close to water are classified as freshwater marshes since they're not likely to be peat producing. This is not an accurate assumption since there are many large peat bogs next to lakes in Finland. This presumably causes a systematical error in classification of the freshwater marsh and peat bog classes.

Both classes "Heathland and moorlands" (5111) and "Sparsely vegetated areas" (6111) are mentioned to form mosaics of different land use classes with at least 70% coverage of the respective class. In Nordic conditions this applies also to peat bogs. This makes it difficult to determine the right delineation of a polygon, as in many cases an area could be either divided into smaller homogenous LC/LU classes or treated as a mosaic. The acceptance of mosaics is also an indication that the classification is too ambitious. If the LC/LU cannot be classified to the most detailed level, more general classification should be considered.

The existence of class 8111 (Salt marshes without reeds) in Finland is questionable. RZ nomenclature guideline specifies that "the Baltic Sea has only brackish coastal waters, which qualify for inland freshwater marshes" but still class 8111 is present in the dataset. There are coastal meadows in the Baltic Sea coastal areas that have salt tolerant plants, but according to the nomenclature also these should be considered freshwater marshes (or alternatively mesic grasslands).

SUMMARY STATISTICS OF RIPARIAN ZONES STATUS LAYER

RZ Class	Number of polygons	Area (ha)	%
1111	262	428	0,01 %
1112	792	3283	0,07 %
1113	4613	15127	0,34 %
1120	102	2973	0,07 %
1121	40854	107349	2,44 %
1210	1	90	0,00 %
1211	3791	7532	0,17 %
1212	440	996	0,02 %
1213	27	141	0,00 %
1214	12	236	0,01 %
1311	571	1512	0,03 %
1321	19	9	0,00 %
1410	3	14	0,00 %
1411	71	203	0,00 %
1412	451	1164	0,03 %
1420	4	103	0,00 %
1421	178	870	0,02 %
1422	417	1244	0,03 %
2111	33224	290451	6,60 %
2121	18	49	0,00 %
2221	1	1	0,00 %
2222	4	8	0,00 %
2331	261	6119	0,14 %
3000	655	5250	0,12 %
3111	27480	84154	1,91 %
3121	7570	17707	0,40 %
3131	9992	35365	0,80 %
3151	1	2	0,00 %
3211	89731	343494	7,81 %
3221	29601	92976	2,11 %
3231	51324	235360	5,35 %
3232	1	9	0,00 %
3311	74909	241168	5,48 %
3321	22118	68522	1,56 %
3331	33805	133926	3,04 %
3411	60736	203551	4,63 %
3412	30	71	0,00 %
3431	2	23	0,00 %
4111	1636	4020	0,09 %
4112	5939	11160	0,25 %
4122	1	2	0,00 %
4211	5	12	0,00 %
4212	237	919	0,02 %
4222	634	2672	0,06 %
4223	2	2	0,00 %
5111	424	7433	0,17 %
5112	105	413	0,01 %
6111	658	2326	0,05 %
6112	1	1	0,00 %

6211	160	395	0,01 %
6213	272	701	0,02 %
6221	1169	2934	0,07 %
7111	12033	44445	1,01 %
7112	16	45	0,00 %
7121	17	126	0,00 %
7210	58	885	0,02 %
7211	337	6597	0,15 %
7212	12595	143107	3,25 %
7221	1	1	0,00 %
8111	44	151	0,00 %
9000	115	13379	0,30 %
9111	3811	88680	2,02 %
9112	1	2	0,00 %
9113	4	22	0,00 %
9121	26	35	0,00 %
9211	6316	2168178	49,27 %
9212	20	23	0,00 %
9213	7	65	0,00 %
9214	1	4	0,00 %
9215	11	100	0,00 %
9221	2	40	0,00 %
10111	95	104	0,00 %
SUM	**540824**	**4400457**	**100,00 %**

III. Characterization of the dataset by LC/LU class - RZ 2012

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	1111	Continuous Urban Fabric (IMD ≥80-100%)
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	7	
Class user's accuracy	70,00 %	
Class user's accuracy (CI)	± 0,2994	
Class producer's accuracy	87,50 %	
Class producer's accuracy (CI)	± 0,2194	
CORRECTNESS OF DELINEATION		
Detail of delineation	80,00 %	Correct: 8; Too coarse: 0; Too detailed: 2
Correctness of delineated area	20,00 %	Correct: 2; Unnecessary parts included: 7; Missing parts: 0; Both missing parts and unnecessary parts included: 1
Positional accuracy	70,00 %	Correct: 7; Shifted: 3
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassifications with classes 1112, 1113 and 3311. Larger than MMU features of 1113 and roads >MMW are not always excluded. Polygons are often shifted.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; The National Road and Street Database, Digiroad; Topographic Database/The National Land Survey; Copernicus high resolution imperviousness layer (HRL Imperviousness), Building and Dwelling register (BDR)	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Typical appearance of the class is residential areas near and in city centers. Public/commercial/industrial component not clearly distinguishable from residential buildings is often included.	
EXAMPLE (typical mistakes / typical appearance):		

Residential areas together with industrial/public/commercial buildings.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	1112	Discontinuous dense urban fabric (S.L. 50% - 80%)
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	5	
Class user's accuracy	50,00 %	
Class user's accuracy (CI)	± 0,3267	
Class producer's accuracy	62,50 %	
Class producer's accuracy (CI)	± 0,2652	
CORRECTNESS OF DELINEATION		
Detail of delineation	50,00 %	Correct: 5; Too coarse: 0; Too detailed: 5
Correctness of delineated area	30,00 %	Correct: 3; Unnecessary parts included: 6; Missing parts: 0; Both missing parts and unnecessary parts included: 1
Positional accuracy	80,00 %	Correct: 8; Shifted: 2
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassifications with classes 1111, 1121 and 1120. Roads >MMW are not always excluded from the class area. Polygons are often too detailed as they have small twists that have no consistency with reference data. There is an inconsistency in the class name: in the RZ dataset the class name includes "+ industrial, commercial, public, military and private units", but this is not the case in the RZ nomenclature guideline.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; The National Road and Street Database, Digiroad; Topographic Database/The National Land Survey; Building and Dwelling Register (BDR); Copernicus high resolution imperviousness layer (HRL Imperviousness)	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Typical appearance of the class is the suburban areas fairly close to city centers.	
EXAMPLE (typical mistakes / typical appearance):		

Delineation is too detailed: polygon has unnecessary twists The road should be excluded.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	1113	Industrial or commercial units
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	7	
Class user's accuracy	70,00 %	
Class user's accuracy (CI)	± 0,2994	
Class producer's accuracy	35,00 %	
Class producer's accuracy (CI)	± 0,1439	
CORRECTNESS OF DELINEATION		
Detail of delineation	40,00 %	Correct: 4; Too coarse: 2; Too detailed: 4
Correctness of delineated area	10,00 %	Correct: 1; Unnecessary parts included: 6; Missing parts: 2; Both missing parts and unnecessary parts included: 1
Positional accuracy	100,00 %	Correct: 10; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassifications with classes 1121 and 1120. Features >MMU of 1121 as well as roads are not always excluded from the class area. There are small twists in the delineation which don't have correspondence in reference data.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; The National Road and Street Database, Digiroad; Topographic Database/The National Land Survey; Building and Dwelling Register (BDR); Copernicus high resolution imperviousness layer (HRL Imperviousness)	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Typical appearance of the class is different sized industrial facilities both in cities and in the rural areas.	
EXAMPLE (typical mistakes / typical appearance):		

Typical appearance: an industrial area. Delineation is peculiar with unnecessary detailed twists.

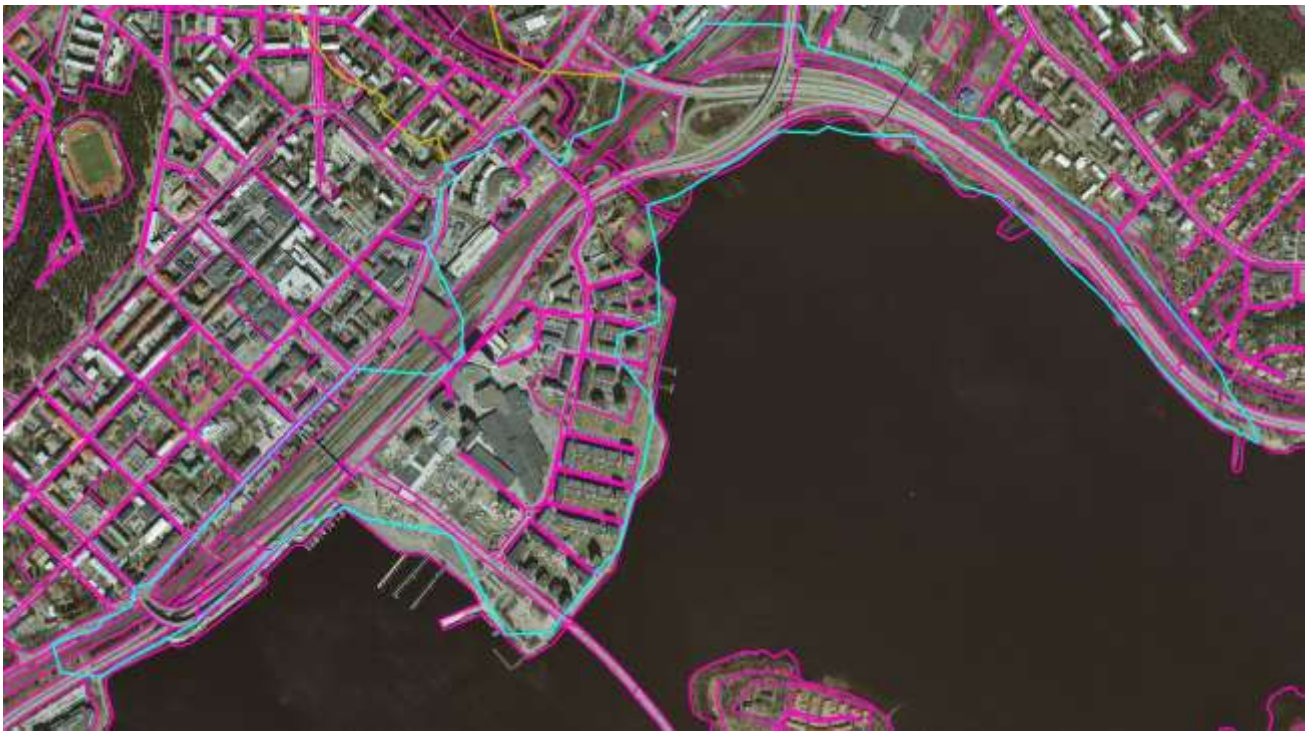
DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	1120	Discontinuous low density urban fabric (S.L. 10% - 30%)
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	8	
Class user's accuracy	80,00 %	
Class user's accuracy (CI)	0,261333	
Class producer's accuracy	57,14 %	
Class producer's accuracy (CI)	± 0,2048	
CORRECTNESS OF DELINEATION		
Detail of delineation	10,00 %	Correct: 1; Too coarse: 9; Too detailed: 0
Correctness of delineated area	0,00 %	Correct: 0; Unnecessary parts included: 7; Missing parts: 0; Both missing parts and unnecessary parts included: 3
Positional accuracy	100,00 %	Correct: 10; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	The delineation of the class is very crude. Large areas of e.g. 1112, 1113, 3000, 4110, 9211 and roads (1211) are not excluded from the polygon. Delineation doesn't follow Urban Atlas.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; The National Road and Street Database, Digiroad; Topographic Database/The National Land Survey; Building and Dwelling Register (BDR); Copernicus high resolution imperviousness layer (HRL Imperviousness)	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Typical appearance of the class is residential areas in the suburban area of cities or residential rural areas.	
EXAMPLE (typical mistakes / typical appearance):		

Large areas of other classes are included. UA (pink lines) is not followed in delineation.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	1121	Low density urban fabric (IM.D. 0-30%)
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	8	
Class user's accuracy	80,00 %	
Class user's accuracy (CI)	± 0,2613	
Class producer's accuracy	40,00 %	
Class producer's accuracy (CI)	± 0,1407	
CORRECTNESS OF DELINEATION		
Detail of delineation	60,00 %	Correct: 6; Too coarse: 0; Too detailed: 4
Correctness of delineated area	10,00 %	Correct: 1; Unnecessary parts included: 7; Missing parts: 1; Both missing parts and unnecessary parts included: 1
Positional accuracy	90,00 %	Correct: 9; Shifted: 1
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassifications with classes 3231 and 2111. There are features >MMU of e.g. 3000, 2111 and roads (1211) not excluded from the class area. Often houses that are in the woods are not mapped.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; The National Road and Street Database, Digiroad; Topographic Database/The National Land Survey; Building and Dwelling Register (BDR); Copernicus high resolution imperviousness layer (HRL Imperviousness); National high resolution Corine Land Cover 2012; The Finnish Land Parcel Information System (FLPIS)	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Typical appearance of the class is the residential rural areas. Often the areas are in the vicinity of forests and agricultural land.	
EXAMPLE (typical mistakes / typical appearance):		

Arable land and is included.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	1210	Transport infrastructure
Number of samples selected for the class	1	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	0	
Class user's accuracy	0,00 %	
Class user's accuracy (CI)	± 0,0000	
Class producer's accuracy	0,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	0,00 %	Correct: 0; Too coarse: 1; Too detailed: 0
Correctness of delineated area	0,00 %	Correct: 0; Unnecessary parts included: 1; Missing parts: 0; Both missing parts and unnecessary parts included: 0
Positional accuracy	100,00 %	Correct: 1; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	The only sample of the class is misclassification with 1112. The area includes transport infrastructure such as roads, railways and railway stations but the sampling point lands on 1112. The delineation is not in line with Urban Atlas.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; The National Road and Street Database, Digiroad; Topographic Database/The National Land Survey; Building and Dwelling Register (BDR); National high resolution Corine Land Cover 2012	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)		
EXAMPLE (typical mistakes / typical appearance):		



Large polygon with unnecessary parts. Nod delineated with UA.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	1211	Road networks and associated land
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	10	
Class user's accuracy	100,00 %	
Class user's accuracy (CI)	± 0,0000	
Class producer's accuracy	90,91 %	
Class producer's accuracy (CI)	± 0,1620	
CORRECTNESS OF DELINEATION		
Detail of delineation	80,00 %	Correct: 8; Too coarse: 0; Too detailed: 2
Correctness of delineated area	60,00 %	Correct: 6; Unnecessary parts included: 2; Missing parts: 2; Both missing parts and unnecessary parts included: 0
Positional accuracy	80,00 %	Correct: 8; Shifted: 2
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	The class is well identified in the dataset. The delineation of the road network is not always accurate especially in the urban areas.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; The National Road and Street Database, Digiroad; Topographic Database/The National Land Survey; Building and Dwelling Register (BDR); National high resolution Corine Land Cover 2012	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Class includes all kinds of roads both in urban and rural areas.	
EXAMPLE (typical mistakes / typical appearance):		

A part of a large urban road polygon showing inaccuracies in the road network.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	1212	Railways and associated land
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	10	
Class user's accuracy	100,00 %	
Class user's accuracy (CI)	± 0,0000	
Class producer's accuracy	1000,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	20,00 %	Correct: 2; Too coarse: 0; Too detailed: 8
Correctness of delineated area	80,00 %	Correct: 8; Unnecessary parts included: 2; Missing parts: 0; Both missing parts and unnecessary parts included: 0
Positional accuracy	100,00 %	Correct: 10; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	The class is well identified in the dataset. The polygons include unnecessary extensions and twists.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; The National Road and Street Database, Digiroad; Topographic Database/The National Land Survey; Building and Dwelling Register (BDR); National high resolution Corine Land Cover 2012	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Both inner city and cross city railways.	
EXAMPLE (typical mistakes / typical appearance):		

Example of a railway polygon with too much detail in delineation (twists).

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	1213	Port areas
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	10	
Class user's accuracy	100,00 %	
Class user's accuracy (CI)	± 0,0000	
Class producer's accuracy	90,91 %	
Class producer's accuracy (CI)	± 0,1620	
CORRECTNESS OF DELINEATION		
Detail of delineation	70,00 %	Correct: 7; Too coarse: 2; Too detailed: 1
Correctness of delineated area	30,00 %	Correct: 3; Unnecessary parts included: 4; Missing parts: 2; Both missing parts and unnecessary parts included: 1
Positional accuracy	100,00 %	Correct: 10; Shifted: 3
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	The class is well identified in the dataset. Features >MMU of e.g. 1113 and 1211 are often not excluded from the class area as port and industrial activities are connected.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; The National Road and Street Database, Digiroad; Topographic Database/The National Land Survey; Building and Dwelling Register (BDR); National high resolution Corine Land Cover 2012	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)		
EXAMPLE (typical mistakes / typical appearance):		

A typical sample polygon in an area where port and industrial activities are combined.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	1214	Airports
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	9	
Class user's accuracy	90,00 %	
Class user's accuracy (CI)	± 0,1960	
Class producer's accuracy	90,00 %	
Class producer's accuracy (CI)	± 0,1775	
CORRECTNESS OF DELINEATION		
Detail of delineation	70,00 %	Correct: 7; Too coarse: 0; Too detailed: 3
Correctness of delineated area	10,00 %	Correct: 1; Unnecessary parts included: 2; Missing parts: 7; Both missing parts and unnecessary parts included: 0
Positional accuracy	100,00 %	Correct: 10; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Features >MMU of e.g. 3000 and 4000 are often not excluded from the class area. According to the nomenclature, grasslands in the airport area should be interpreted as associated land.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; The National Road and Street Database, Digiroad; Topographic Database/The National Land Survey; Building and Dwelling Register (BDR); National high resolution Corine Land Cover 2012	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)		
EXAMPLE (typical mistakes / typical appearance):		

Areas of associated land are excluded (Riparian Zone in light blue).

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	1311	Mineral extraction, dump and construction sites
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	6	
Class user's accuracy	60,00 %	
Class user's accuracy (CI)	± 0,3201	
Class producer's accuracy	75,00 %	
Class producer's accuracy (CI)	± 0,2646	
CORRECTNESS OF DELINEATION		
Detail of delineation	60,00 %	Correct: 6; Too coarse: 0; Too detailed: 4
Correctness of delineated area	10,00 %	Correct: 1; Unnecessary parts included: 6; Missing parts: 2; Both missing parts and unnecessary parts included: 1
Positional accuracy	90,00 %	Correct: 9; Shifted: 1
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassifications with classes 1321, 9213, 3211 & 1311. Inaccuracies in delineation with bordering forest areas.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; The National Road and Street Database, Digiroad; Topographic Database/The National Land Survey; Soil Extraction Permits Database; National high resolution Corine Land Cover 2012	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Typical class appearance in samples are sand extraction areas.	
EXAMPLE (typical mistakes / typical appearance):		

A sand extraction area. Forest areas are included in the sample polygon.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	1321	Land without current use
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	1	
Class user's accuracy	10,00 %	
Class user's accuracy (CI)	± 0,1960	
Class producer's accuracy	50,00 %	
Class producer's accuracy (CI)	± 0,6930	
CORRECTNESS OF DELINEATION		
Detail of delineation	90,00 %	Correct: 9; Too coarse: 1; Too detailed: 0
Correctness of delineated area	10,00 %	Correct: 1; Unnecessary parts included: 9; Missing parts: 0; Both missing parts and unnecessary parts included: 0
Positional accuracy	60,00 %	Correct: 6; Shifted: 4
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassifications with classes 1112, 1120, 1411, 1412 and 1410. The class is mostly confused with green urban areas.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; The National Road and Street Database, Digiroad; Topographic Database/The National Land Survey; Building and Dwelling Register (BDR); Soil Extraction Permits Database; National high resolution Corine Land Cover 2012; The Finnish Land Parcel Information System (FLPIS)	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	The correctly classified sample polygon is a small leftover land in urban context (green fields).	
EXAMPLE (typical mistakes / typical appearance):		

Wrong class code (1410).

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	1410	Green urban areas
Number of samples selected for the class	3	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	2	
Class user's accuracy	66,67 %	
Class user's accuracy (CI)	± 0,6533	
Class producer's accuracy	50,00 %	
Class producer's accuracy (CI)	± 0,4244	
CORRECTNESS OF DELINEATION		
Detail of delineation	0,00 %	Correct: 0; Too coarse: 3; Too detailed: 0
Correctness of delineated area	0,00 %	Correct: 0; Unnecessary parts included: 1; Missing parts: 0; Both missing parts and unnecessary parts included: 2
Positional accuracy	66,66 %	Correct: 2; Shifted: 1
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassifications with class 3411.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; The National Road and Street Database, Digiroad; Topographic Database/The National Land Survey; National high resolution Corine Land Cover 2012; Tree Cover Density	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)		
EXAMPLE (typical mistakes / typical appearance):		

Too coarse delineation.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	1411	Green urban areas T.C.D. = 30%
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	5	
Class user's accuracy	50,00 %	
Class user's accuracy (CI)	± 0,3267	
Class producer's accuracy	45,45 %	
Class producer's accuracy (CI)	± 0,2445	
CORRECTNESS OF DELINEATION		
Detail of delineation	90,00 %	Correct: 9; Too coarse: 0; Too detailed: 1
Correctness of delineated area	10,00 %	Correct: 1; Unnecessary parts included: 7; Missing parts: 0; Both missing parts and unnecessary parts included: 2
Positional accuracy	100,00 %	Correct: 10; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassifications with classes 4111, 1422, 1120 and 1412. Delineation with neighboring urban areas (1120) is often not accurate.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; The National Road and Street Database, Digiroad; Topographic Database/The National Land Survey; National high resolution Corine Land Cover 2012; Tree Cover Density	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Habitat of the green urban areas is typically forest. In Finland this class represents more suburban natural areas (extending from the surroundings) rather than highly managed urban gardens or castle parks.	
EXAMPLE (typical mistakes / typical appearance):		

Principally covered by forest habitat. Inaccuracies in delineation with neighboring urban fabric (1121).

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	1412	Green urban areas T.C.D. < 30%
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	6	
Class user's accuracy	60,00 %	
Class user's accuracy (CI)	± 0,3201	
Class producer's accuracy	60,00 %	
Class producer's accuracy (CI)	± 0,2500	
CORRECTNESS OF DELINEATION		
Detail of delineation	70,00 %	Correct: 7; Too coarse: 2; Too detailed: 1
Correctness of delineated area	20,00 %	Correct: 2; Unnecessary parts included: 4; Missing parts: 1; Both missing parts and unnecessary parts included: 3
Positional accuracy	90,00 %	Correct: 9; Shifted: 1
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassifications with classes 1411 and 2111. Inaccuracies in delineation with neighboring classes (e.g 3111, 1121, 1113).	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; The National Road and Street Database, Digiroad; Topographic Database/The National Land Survey; National high resolution Corine Land Cover 2012; Tree Cover Density	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Compared to 1411 this class is typically more heavily maintained and is located in more urban areas.	
EXAMPLE (typical mistakes / typical appearance):		

A highly managed park with some missing and unnecessary parts.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	14200	Sports and leisure facilities
Number of samples selected for the class	4	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	4	
Class user's accuracy	100,00 %	
Class user's accuracy (CI)	± 0,0000	
Class producer's accuracy	100,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	0,00 %	Correct: 0; Too coarse: 4; Too detailed: 0
Correctness of delineated area	25,00 %	Correct: 1; Unnecessary parts included: 0; Missing parts: 0; Both missing parts and unnecessary parts included: 3
Positional accuracy	100,00 %	Correct: 4; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Delineation of the class is too coarse and thus it is quite inaccurate.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; The National Road and Street Database, Digiroad; Topographic Database/The National Land Survey; National high resolution Corine Land Cover 2012	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Typically golf courses and trotting-tracks.	
EXAMPLE (typical mistakes / typical appearance):		

A trotting-track. Eastern part is unnecessary and parts of the associated land are missing.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	1421	Sports and leisure facilities T.C.D. = 30%
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	3	
Class user's accuracy	30,00 %	
Class user's accuracy (CI)	± 0,2994	
Class producer's accuracy	100,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	60,00 %	Correct: 6; Too coarse: 0; Too detailed: 4
Correctness of delineated area	10,00 %	Correct: 1; Unnecessary parts included: 7; Missing parts: 2; Both missing parts and unnecessary parts included: 0
Positional accuracy	100,00 %	Correct: 10; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassifications with classes 1421 and 1113. Tree cover density is often underestimated.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; The National Road and Street Database, Digiroad; Topographic Database/The National Land Survey; National high resolution Corine Land Cover 2012; Tree Cover Density	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Golf cources are overpresented in the data.	
EXAMPLE (typical mistakes / typical appearance):		

A wrong class code. A golf course where T.C.D is underestimated.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	1422	Sports and leisure facilities T.C.D. < 30%
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	8	
Class user's accuracy	80,00 %	
Class user's accuracy (CI)	± 0,2613	
Class producer's accuracy	50,00 %	
Class producer's accuracy (CI)	± 0,1659	
CORRECTNESS OF DELINEATION		
Detail of delineation	90,00 %	Correct: 9; Too coarse: 1; Too detailed: 0
Correctness of delineated area	10,00 %	Correct: 1; Unnecessary parts included: 2; Missing parts: 5; Both missing parts and unnecessary parts included: 2
Positional accuracy	80,00 %	Correct: 8; Shifted: 2
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassifications with classes 1211 and 1410. Areas of 1422 are often left out (misclassified as e.g. 2111 and 1121).	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; The National Road and Street Database, Digiroad; Topographic Database/The National Land Survey; National high resolution Corine Land Cover 2012; Tree Cover Density	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Data is quite varied (golf courses, sports fields, allotment gardens, marinas, amusement parks).	
EXAMPLE (typical mistakes / typical appearance):		

An allotment where a large area is left out in the southern side.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	2111	Non-irrigated arable land
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	8	
Class user's accuracy	80,00 %	
Class user's accuracy (CI)	± 0,2613	
Class producer's accuracy	47,06 %	
Class producer's accuracy (CI)	± 0,1765	
CORRECTNESS OF DELINEATION		
Detail of delineation	70 %	Correct 7 - Too coarse 0 - Too detailed 3
Correctness of delineated area	0 %	Correct 0 - Missing and unnecessary parts 3 - Missing parts 0 - Unnecessary parts included 7
Positional accuracy	100 %	Correct 10 - Shifted 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Wrong delineation often includes forests, grassland or built-up areas.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; The Finnish Land Parcel Information System (FLPIS)	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Class consists typically of cultivations of different crops, improved grasslands in rotation (<5 year cycle) or fields laid in fallow.	
EXAMPLE (typical mistake):		

Typical appearance: correct class but wrong delineation (forest included).

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	2121	Greenhouses
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	4	
Class user's accuracy	40,00 %	
Class user's accuracy (CI)	± 0,3201	
Class producer's accuracy	100,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	50 %	Correct 5 - Too coarse 0 - Too detailed 5
Correctness of delineated area	20 %	Correct 2 - Missing and unnecessary parts 0 - Missing parts 0 - Unnecessary parts included 8
Positional accuracy	100 %	Correct 10 - Shifted 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Missclassifications with fur farms (1113). Features > MMU of 2111 are not always excluded.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; The Finnish Land Parcel Information System (FLPIS)	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)		
EXAMPLE (typical error):		

Fur farm (1113).

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	2221	High stem fruit trees (extensively managed)
Number of samples selected for the class	1	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	0	
Class user's accuracy	0,00 %	
Class user's accuracy (CI)	± 0,0000	
Class producer's accuracy	0,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	100 %	Correct 1 - Too coarse 0 - Too detailed 0
Correctness of delineated area	0 %	Correct 0 - Missing and unnecessary parts 0 - Missing parts 0 - Unnecessary parts included 1
Positional accuracy	100 %	Correct 1 - Shifted 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Only 1 sample	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; The Finnish Land Parcel Information System (FLPIS)	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)		
EXAMPLE (typical appearance):		

Trees are in rows because they grow in ditches (abandoned grasslands).

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	2222	Low stem fruit trees and berry plantations
Number of samples selected for the class	4	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	0	
Class user's accuracy	0,00 %	
Class user's accuracy (CI)	± 0,0000	
Class producer's accuracy	0,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	100 %	Correct 4 - Too coarse 0 - Too detailed 0
Correctness of delineated area	0 %	Correct 0 - Missing and unnecessary parts 0 - Missing parts 0 - Unnecessary parts included 4
Positional accuracy	100 %	Correct 4 - Shifted 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Only 4 samples. Misclassifications with 3411 and 1121.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; The Finnish Land Parcel Information System (FLPIS)	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)		
EXAMPLE (typical appearance):		

Typical mistake: wrong class (3411).

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	2331	Land principally occupied by agriculture with significant areas of natural vegetation
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	7	
Class user's accuracy	70,00 %	
Class user's accuracy (CI)	± 0,2994	
Class producer's accuracy	87,50 %	
Class producer's accuracy (CI)	± 0,2194	
CORRECTNESS OF DELINEATION		
Detail of delineation	0 %	Correct 0 - Too coarse 10 - Too detailed 0
Correctness of delineated area	0 %	Correct 0 - Missing and unnecessary parts 1 - Missing parts 0 - Unnecessary parts included 9
Positional accuracy	100 %	Correct 10 - Shifted 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassifications with forest (e.g. 3331, 3131, 3411). Too coarse delineation and unnecessary forest and 1121 are included.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; The Finnish Land Parcel Information System (FLPIS)	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)		
EXAMPLE (typical mistakes / typical appearance):		

Too coarse delineation. Areas of e.g. 3000 could be mapped separately.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	3000	Woodland and forest
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	10	
Class user's accuracy	100,00 %	
Class user's accuracy (CI)	± 0,0000	
Class producer's accuracy	100,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	100 %	Correct 10 - Too coarse 0 - Too detailed 0
Correctness of delineated area	10 %	Correct 1 - Missing and unnecessary parts 2 - Missing parts 0 - Unnecessary parts included 7
Positional accuracy	50 %	Correct 5 - Shifted 5
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	The Potential Riparian Zone is ignored in data and validation. Some shifting and unnecessary parts from neighboring polygons are included (e.g. 2111, 1121). Houses that are admist the trees are not noticed as 1121.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Forest mosaic of various types of forests.	
EXAMPLE (typical mistake):		

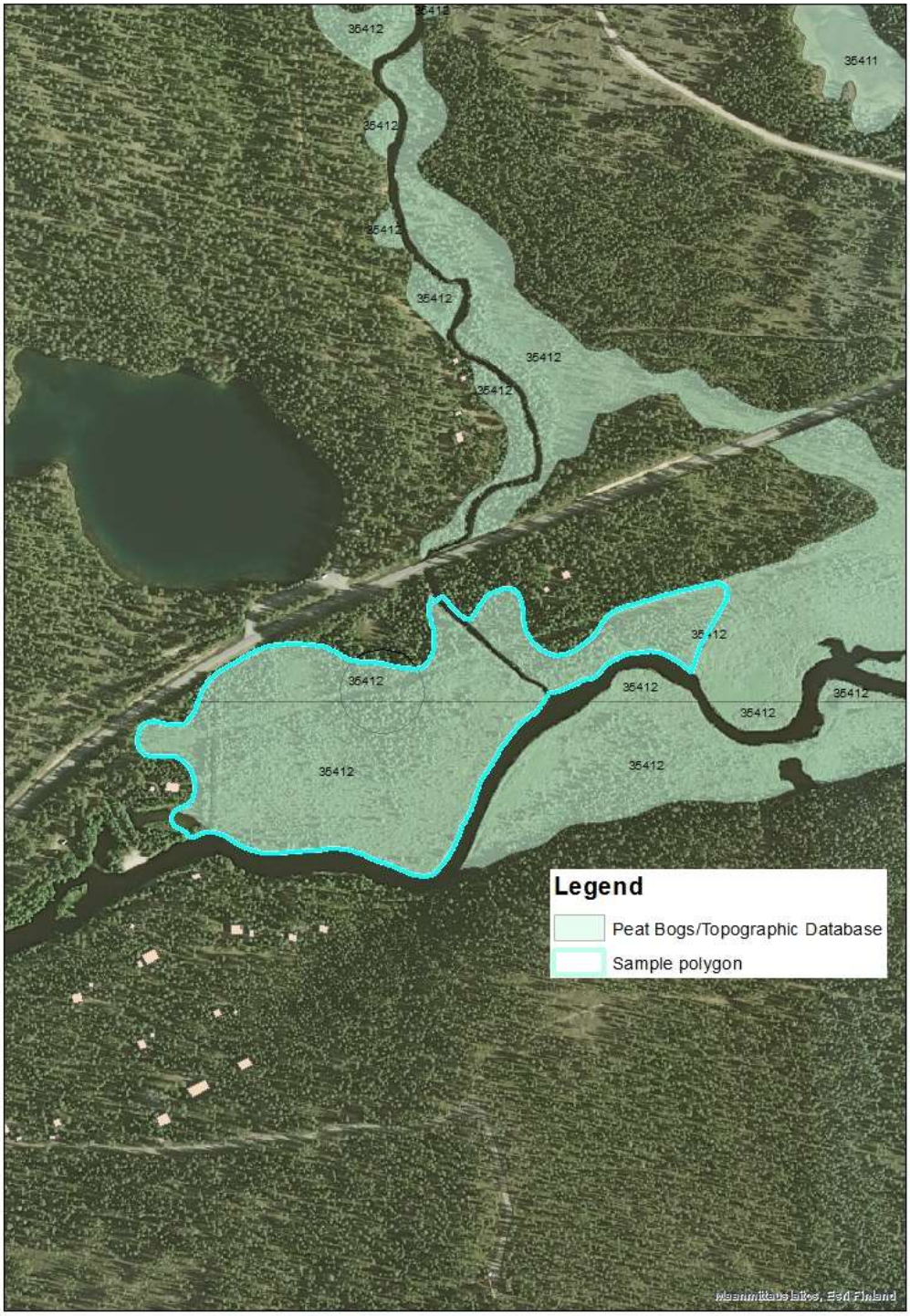
Polygon includes >MMU areas of 1121 and strips of 1113 and 2111 from bordering polygons.
Also road delineation is questionable.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	3111	Riparian and fluvial Broadleaved forest
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	0	
Class user's accuracy	0,00 %	
Class user's accuracy (CI)	± 0,0000	
Class producer's accuracy	0,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	100 %	Correct 10 - Too coarse 0 - Too detailed 0
Correctness of delineated area	0 %	Correct 0 - Missing and unnecessary parts 0 - Missing parts 0 - Unnecessary parts included 10
Positional accuracy	100 %	Correct 10 - Shifted 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	All sample polygons are at least partly in the Potential Riparian Zone but this is ignored in the validation as national reference data doesn't support the delineation of PRZ. Delineation of the polygons does not follow forest patterns.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Forest mosaic according to soil moisture and tree species.	
EXAMPLE (typical error):		

Forest delineation does not follow forest patterns.

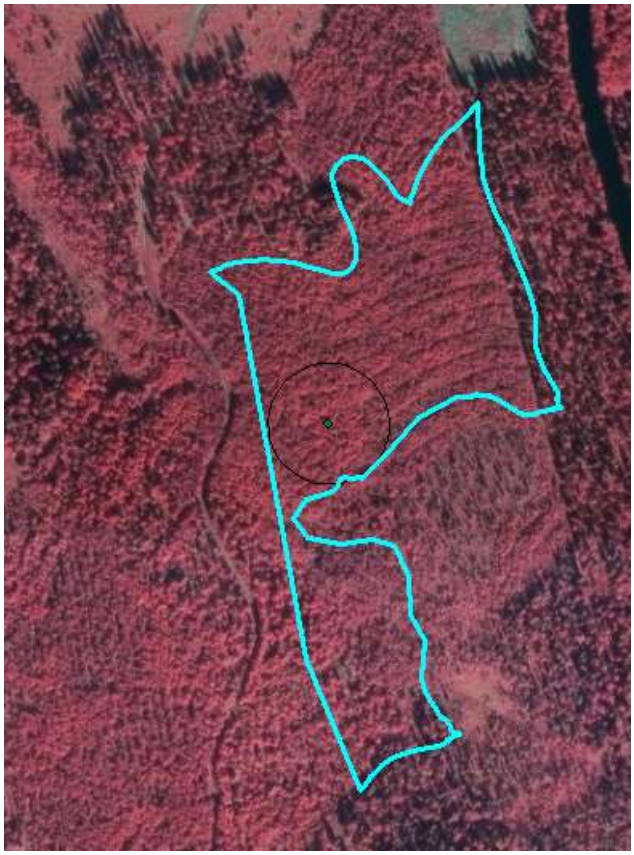
DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	3121	Broadleaved swamp forest
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	3	
Class user's accuracy	30,00 %	
Class user's accuracy (CI)	± 0,2994	
Class producer's accuracy	100,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	80 %	Correct 8 - Too coarse 0 - Too detailed 2
Correctness of delineated area	0 %	Correct 0 - Missing and unnecessary parts 0 - Missing parts 0 - Unnecessary parts included 10
Positional accuracy	100 %	Correct 10 - Shifted 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	National reference data doesn't support the delineation of PRZ and it seems to be ignored also in the Riparian Zones status layer. Delineation of the polygons does not follow forest patterns. Formation of polygons can include unnecessary twists.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Forest mosaic according to soil moisture and tree species. It is apparent that the peat bog layer in Topographic Database of the National Land Survey has been used in the production of RZ dataset.	
EXAMPLE (typical appearance):		

There are often unnecessary twists in the delineation boundary.



Peat bog layer of the Topographic Database used as a reference data for delineation of RZ.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	3131	Other natural & semi natural broadleaved forest
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	3	
Class user's accuracy	30,00 %	
Class user's accuracy (CI)	± 0,2994	
Class producer's accuracy	21,43 %	
Class producer's accuracy (CI)	± 0,1932	
CORRECTNESS OF DELINEATION		
Detail of delineation	90 %	Correct 9 - Too coarse 0 - Too detailed 1
Correctness of delineated area	0 %	Correct 0 - Missing and unnecessary parts 1 - Missing parts 1 - Unnecessary parts included 8
Positional accuracy	100 %	Correct 10 - Shifted 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	National reference data doesn't support the delineation of PRZ and it seems to be ignored also in the Riparian Zones status layer. Delineation of the polygons does not follow forest patterns.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Forest mosaic according to soil moisture and tree species.	
EXAMPLE (typical appearance):		



DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	3211	Riparian and fluvial coniferous forest
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	0	
Class user's accuracy	0,00 %	
Class user's accuracy (CI)	± 0,0000	
Class producer's accuracy	0,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	80 %	Correct 8 - Too coarse 0 - Too detailed 2
Correctness of delineated area	0 %	Correct 0 - Missing and unnecessary parts 0 - Missing parts 0 - Unnecessary parts included 10
Positional accuracy	100 %	Correct 10 - Shifted 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Potential Riparian Zone is ignored in the validation as national reference data doesn't support the delineation of PRZ. Delineation of the polygons does not follow forest patterns.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Forest mosaic according to soil moisture and tree species combination.	
EXAMPLE (typical error):		

No difference to neighbor polygons.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	3221	Coniferous swamp forest
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	5	
Class user's accuracy	50,00 %	
Class user's accuracy (CI)	± 0,3267	
Class producer's accuracy	27,78 %	
Class producer's accuracy (CI)	± 0,1651	
CORRECTNESS OF DELINEATION		
Detail of delineation	90 %	Correct 9 - Too coarse 0 - Too detailed 1
Correctness of delineated area	10 %	Correct 1 - Missing and unnecessary parts 1 - Missing parts 2 - Unnecessary parts included 6
Positional accuracy	100 %	Correct 10 - Shifted 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	National reference data doesn't support the delineation of PRZ and it seems to be ignored also in the Riparian Zones status layer. Delineation of the polygons does not follow forest patterns.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Forest mosaic according to soil moisture and tree species combination.	
EXAMPLE (typical appearance):		

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	3231	Other natural & semi natural coniferous forest
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	9	
Class user's accuracy	90,00 %	
Class user's accuracy (CI)	± 0,1960	
Class producer's accuracy	26,47 %	
Class producer's accuracy (CI)	± 0,0738	
CORRECTNESS OF DELINEATION		
Detail of delineation	60 %	Correct 6 - Too coarse 0 - Too detailed 4
Correctness of delineated area	20 %	Correct 2 - Missing and unnecessary parts 1 - Missing parts 2 - Unnecessary parts included 5
Positional accuracy	100 %	Correct 10 - Shifted 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	National reference data doesn't support the delineation of PRZ and it seems to be ignored also in the Riparian Zones status layer. Delineation of the polygons does not follow forest patterns.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Forest mosaic according to soil moisture and tree species combination.	
EXAMPLE (typical appearance):		

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	3311	Riparian and fluvial mixed forest
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	1	
Class user's accuracy	10,00 %	
Class user's accuracy (CI)	± 0,1960	
Class producer's accuracy	11,11 %	
Class producer's accuracy (CI)	± 0,2047	
CORRECTNESS OF DELINEATION		
Detail of delineation	90 %	Correct 9 - Too coarse 0 - Too detailed 1
Correctness of delineated area	0 %	Correct 0 - Missing and unnecessary parts 0 - Missing parts 0 - Unnecessary parts included 10
Positional accuracy	100 %	Correct 10 - Shifted 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Potential Riparian Zone is ignored in the validation as national reference data doesn't support the delineation of PRZ. Delineation of the polygons does not follow forest patterns.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Forest mosaic according to soil moisture and tree species combination.	
EXAMPLE (typical error):		

Delineation contains many types of forest.

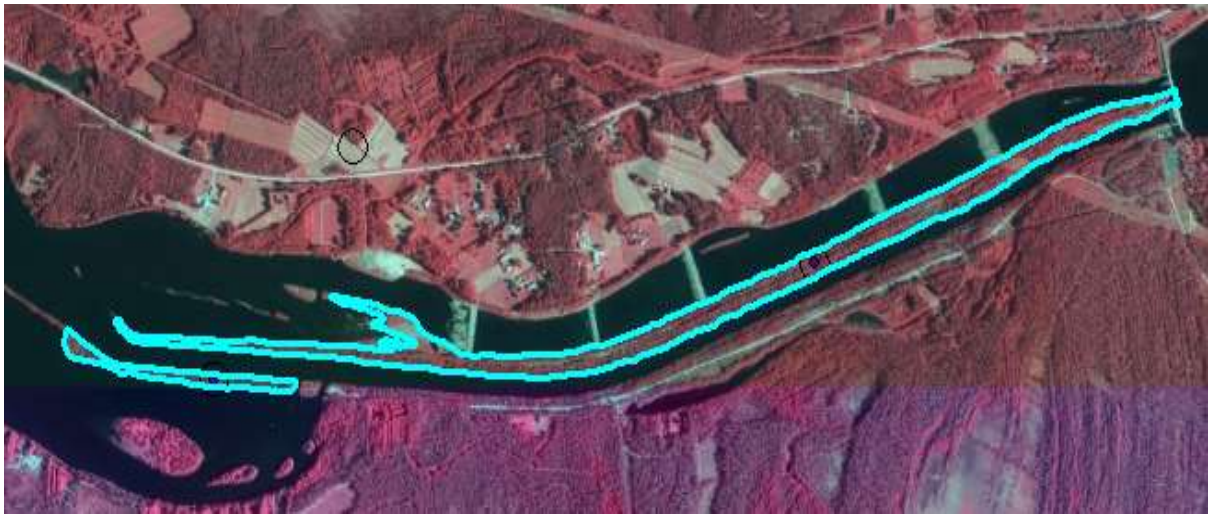
DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	3321	Mixed swamp forest
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	5	
Class user's accuracy	50,00 %	
Class user's accuracy (CI)	± 0,3267	
Class producer's accuracy	45,45 %	
Class producer's accuracy (CI)	± 0,2445	
CORRECTNESS OF DELINEATION		
Detail of delineation	100 %	Correct 10 - Too coarse 0 - Too detailed 0
Correctness of delineated area	10 %	Correct 1 - Missing and unnecessary parts 1 - Missing parts 0 - Unnecessary parts included 8
Positional accuracy	100 %	Correct 10 - Shifted 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	National reference data doesn't support the delineation of PRZ and it seems to be ignored also in the Riparian Zones status layer. Delineation of the polygons does not follow forest patterns.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Forest mosaic according to soil moisture and tree species combination.	
EXAMPLE (typical appearance):		

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	3331	Other natural & semi natural mixed forest
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	4	
Class user's accuracy	40,00 %	
Class user's accuracy (CI)	± 0,3201	
Class producer's accuracy	12,50 %	
Class producer's accuracy (CI)	± 0,0938	
CORRECTNESS OF DELINEATION		
Detail of delineation	100 %	Correct 10 - Too coarse 0 - Too detailed 0
Correctness of delineated area	10 %	Correct 1 - Missing and unnecessary parts 0 - Missing parts 1 - Unnecessary parts included 8
Positional accuracy	100 %	Correct 10 - Shifted 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	National reference data doesn't support the delineation of PRZ and it seems to be ignored also in the Riparian Zones status layer. Delineation of the polygons does not follow forest patterns. Misclassifications also with 1211.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Forest mosaic according to soil moisture and tree species combination.	
EXAMPLE (typical appearance):		

Delienation is not in line with actual forest types in the area.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	3411	Transitional woodland and scrub
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	6	
Class user's accuracy	60,00 %	
Class user's accuracy (CI)	± 0,3201	
Class producer's accuracy	17,65 %	
Class producer's accuracy (CI)	± 0,0918	
CORRECTNESS OF DELINEATION		
Detail of delineation	90 %	Correct 9 - Too coarse 1 - Too detailed 0
Correctness of delineated area	10 %	Correct 1 - Missing and unnecessary parts 5 - Missing parts 0 - Unnecessary parts included 4
Positional accuracy	100 %	Correct 10 - Shifted 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Delineation of the polygons does not follow forest/woodland patterns.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Forest regrowth or abandoned areas	
EXAMPLE (typical appearance):		

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	3412	Lines of trees and scrub
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	6	
Class user's accuracy	60,00 %	
Class user's accuracy (CI)	± 0,3201	
Class producer's accuracy	75,00 %	
Class producer's accuracy (CI)	± 0,2784	
CORRECTNESS OF DELINEATION		
Detail of delineation	90 %	Correct 9 - Too coarse 0 - Too detailed 1
Correctness of delineated area	30 %	Correct 3 - Missing and unnecessary parts 0 - Missing parts 0 - Unnecessary parts included 7
Positional accuracy	90 %	Correct 9 - Shifted 1
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Delineation of the polygons does not follow forest/woodland patterns. Sample polygons also include areas that otherwise follow the class descreption of 3412 but are located along rivers with Strahler Level ≥ 3-5.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Narrow islands	
EXAMPLE (typical error):		



River is a Strahler level >3.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	4111	Managed grasslands with trees and scrubs (T.C:D. ≥ 30%)
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	3	
Class user's accuracy	30,00 %	
Class user's accuracy (CI)	± 0,2994	
Class producer's accuracy	37,50 %	
Class producer's accuracy (CI)	± 0,2943	
CORRECTNESS OF DELINEATION		
Detail of delineation	90,00 %	Correct: 9; Too coarse: 0; Too detailed: 1
Correctness of delineated area	10,00 %	Correct: 1; Unnecessary parts included: 9; Missing parts: 0; Both missing parts and unnecessary parts included: 0
Positional accuracy	100,00 %	Correct: 10; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassifications with classes 1214, 1411, 3411, 3331 and 3412. Many of the mistakes in delineation occur with forest classes. Also, national reference data is not always sufficient to support the validation. E.g. it is difficult to distinguish between transitional woodland and a wooded grassland that both occur in abandoned arable land.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; The Finnish Land Parcel Information System (FLPIS); Tree Cover Density	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Typical appearance of the class is abandoned arable land with trees and bushes as well as pastures.	
EXAMPLE (typical mistakes / typical appearance):		

Wrong class (3331).

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	4112	Managed grasslands without trees and scrubs (T.C.D. < 30%)
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	4	
Class user's accuracy	40,00 %	
Class user's accuracy (CI)	± 0,3201	
Class producer's accuracy	44,44 %	
Class producer's accuracy (CI)	± 0,2895	
CORRECTNESS OF DELINEATION		
Detail of delineation	90,00 %	Correct: 9; Too coarse: 0; Too detailed: 1
Correctness of delineated area	10,00 %	Correct: 1; Unnecessary parts included: 8; Missing parts: 1; Both missing parts and unnecessary parts included: 0
Positional accuracy	100,00 %	Correct: 10; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassifications with classes 2111, 3131, 3311, 3411. National reference data is not always sufficient to support the validation.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; The Finnish Land Parcel Information System (FLPIS); Tree Cover Density	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Typical appearance of the class is abandoned arable land.	
EXAMPLE (typical mistakes / typical appearance):		

Typical class appearance on abandoned arable land. Unnecessary and missing parts.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	4211	Dry grassland with trees (T.C.D. ≥0%)
Number of samples selected for the class	5	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	0	
Class user's accuracy	0,00 %	
Class user's accuracy (CI)	± 0,0000	
Class producer's accuracy	0,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	10,00 %	Correct: 5; Too coarse:0; Too detailed: 0
Correctness of delineated area	0,00 %	Correct: 0; Unnecessary parts included: 5; Missing parts: 0; Both missing parts and unnecessary parts included: 0
Positional accuracy	100,00 %	Correct: 5; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassifications with classes 3221, 3311, 3411. None of the samples seem to be correctly classified but also the national reference data is not sufficient to identify this habitat.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; The Finnish Land Parcel Information System (FLPIS); Tree Cover Density	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)		
EXAMPLE (typical mistakes / typical appearance):		

Wrong class (riparian and fluvial forest).

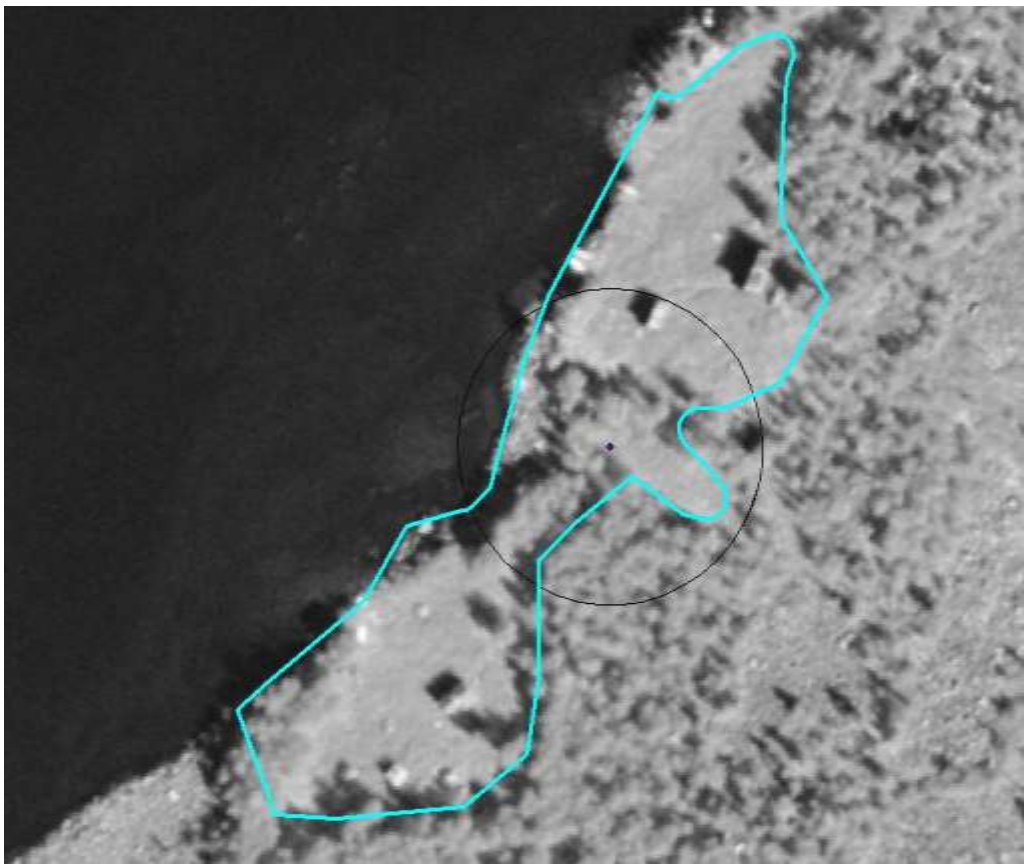
DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	4212	Mesic grasslands with trees (T.C.D. = 30%)
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	2	
Class user's accuracy	20,00 %	
Class user's accuracy (CI)	± 0,2613	
Class producer's accuracy	66,67 %	
Class producer's accuracy (CI)	± 0,5235	
CORRECTNESS OF DELINEATION		
Detail of delineation	80,00 %	Correct: 8; Too coarse: 0; Too detailed: 2
Correctness of delineated area	0,00 %	Correct: 0; Unnecessary parts included: 10; Missing parts: 0; Both missing parts and unnecessary parts included: 0
Positional accuracy	100,00 %	Correct: 10; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassifications with classes 2111, 3311, 3333, 3412, 7112. There is not enough national reference data to support the validation and confidently confirm the presence of the class.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; The Finnish Land Parcel Information System (FLPIS); Tree Cover Density	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	In Finland the class could typically be moist sedge and grass growing meadows and marshes in vicinity of fresh and brackish water. These are not distinguishable from national reference data.	
EXAMPLE (typical mistakes / typical appearance):		

Potential but not confirmed appearance of the class (also unnecessary areas included such as forest).

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	4222	Mesic grasslands without trees and scrubs (T.C.D. < 30%)
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	3	
Class user's accuracy	30,00 %	
Class user's accuracy (CI)	0,299395	
Class producer's accuracy	60,00 %	
Class producer's accuracy (CI)	± 0,3946	
CORRECTNESS OF DELINEATION		
Detail of delineation	90,00 %	Correct: 9; Too coarse: 0; Too detailed: 1
Correctness of delineated area	20,00 %	Correct: 2; Unnecessary parts included: 7; Missing parts: 0; Both missing parts and unnecessary parts included: 1
Positional accuracy	100,00 %	Correct: 10; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassifications with classes 3221, 3411, 4112, 7112. There is not enough national reference data to support the validation and confidently confirm the presence of the class.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; The Finnish Land Parcel Information System (FLPIS); Tree Cover Density	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	In Finland the class could typically be moist sedge and grass growing meadows and marshes in vicinity of fresh and brackish water. These are not distinguishable from national reference data.	
EXAMPLE (typical mistakes / typical appearance):		

Potential but not confirmed appearance of the class

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	4223	Alpine and subalpine grasslands without trees (T.C.D. < 30%)
Number of samples selected for the class	2	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	0	
Class user's accuracy	0,00 %	
Class user's accuracy (CI)	± 0,0000	
Class producer's accuracy	0,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	100,00 %	Correct: 2; Too coarse: 0; Too detailed: 0
Correctness of delineated area	0,00 %	Correct: 0; Unnecessary parts included: 2; Missing parts: 0; Both missing parts and unnecessary parts included: 0
Positional accuracy	100,00 %	Correct: 2; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Only 2 samples. Missclassifications with class 1121. The class is not present in the sample dataset.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database& Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; The Finnish Land Parcel Information System (FLPIS)	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)		
EXAMPLE (typical mistakes / typical appearance):		

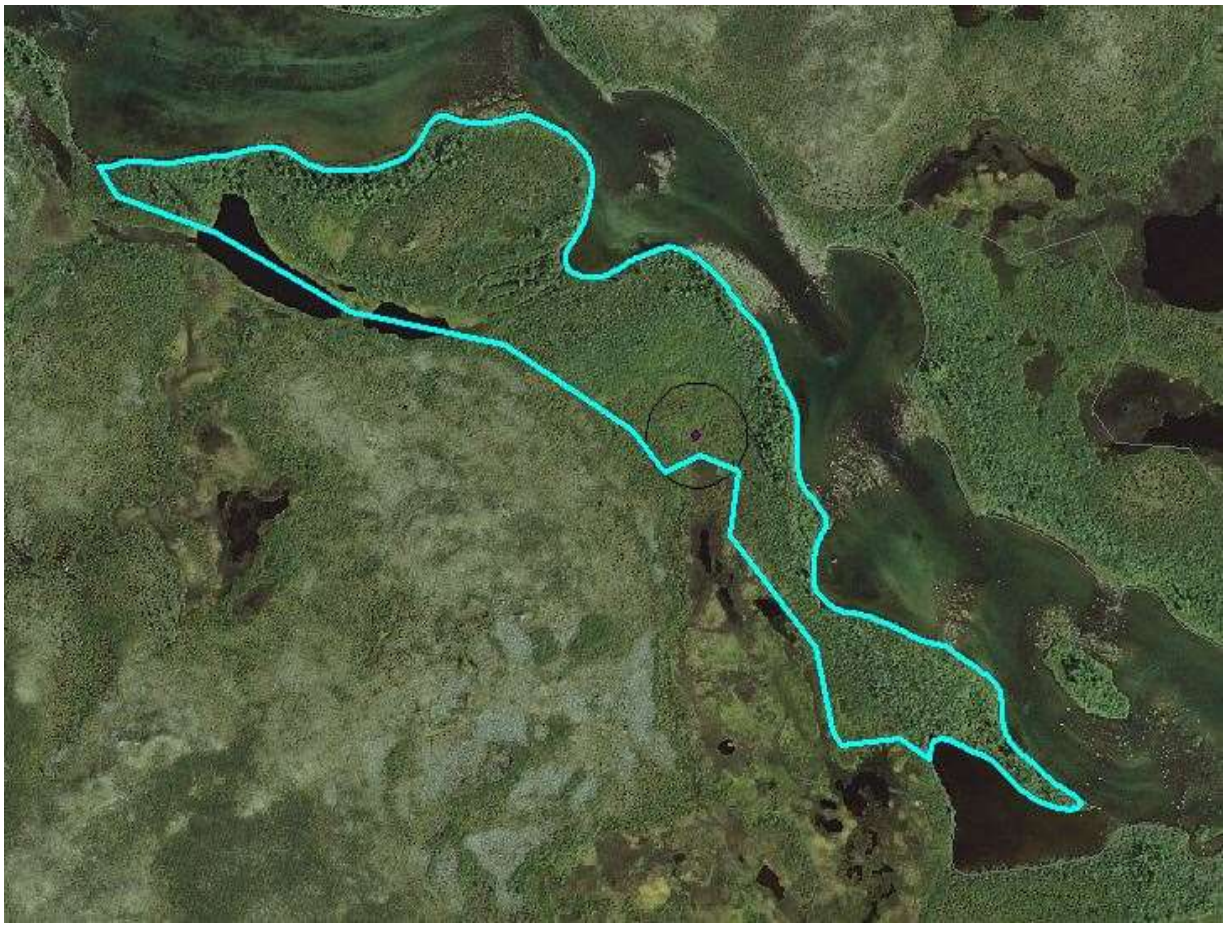


Wrong class (1121).

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	5111	Heathlands and Moorlands
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	9	
Class user's accuracy	90,00 %	
Class user's accuracy (CI)	± 0,1960	
Class producer's accuracy	64,29 %	
Class producer's accuracy (CI)	± 0,1939	
CORRECTNESS OF DELINEATION		
Detail of delineation	90,00 %	Correct: 9; Too coarse: 0; Too detailed: 1
Correctness of delineated area	0,00 %	Correct: 0; Unnecessary parts included: 1; Missing parts: 0; Both missing parts and unnecessary parts included: 9
Positional accuracy	100,00 %	Correct: 10; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Polygons are mostly large and include several different LC/LU classes. Their delineation is not possible to determine with the reference data available. Also mosaics are included in the class description which complicates the validation even further. The high class user's accuracy in this case isn't an indication of a successful mapping but of uncertainties in validation.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; Digital Elevation Model 2x2m	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Typical appearance of class is large heath and moorland areas in northern Finland (Lapland area).	
EXAMPLE (typical mistakes / typical appearance):		

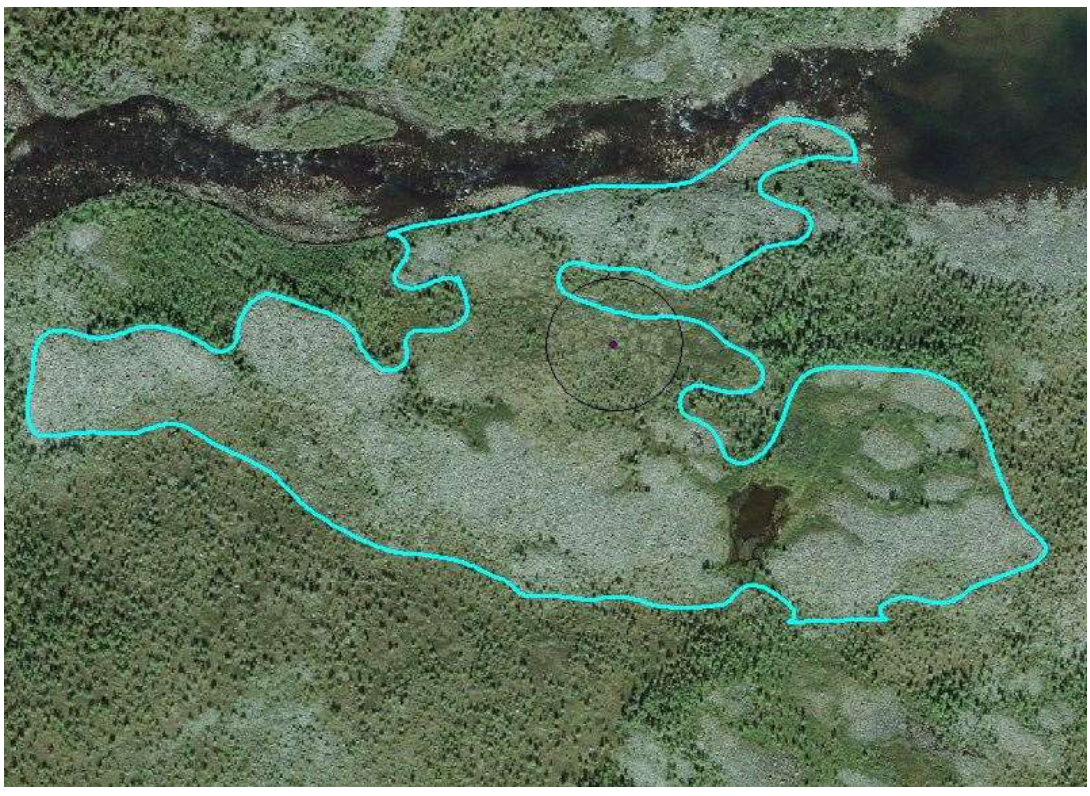
A large polygon with heath and moorland together with other LC/LU classes. It is not possible to delineate them correctly using available reference data.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	5112	Other scrub land
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	0	
Class user's accuracy	0,00 %	
Class user's accuracy (CI)	± 0,0000	
Class producer's accuracy	0,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	90,00 %	Correct: 9; Too coarse: 0; Too detailed: 1
Correctness of delineated area	10,00 %	Correct: 1; Unnecessary parts included: 8; Missing parts: 1; Both missing parts and unnecessary parts included: 0
Positional accuracy	1000,00 %	Correct: 10; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	National reference data is not sufficient to identify this class and support the validation.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; Digital Elevation Model 2x2m	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)		
EXAMPLE (typical mistakes / typical appearance):		



Probably wrong class (7212).

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	6111	Sparsely vegetated areas
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	9	
Class user's accuracy	90,00 %	
Class user's accuracy (CI)	± 0,1960	
Class producer's accuracy	100,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	90,00 %	Correct: 9; Too coarse: 0; Too detailed: 1
Correctness of delineated area	0,00 %	Correct: 0; Unnecessary parts included: 0; Missing parts: 0; Both missing parts and unnecessary parts included: 10
Positional accuracy	100,00 %	Correct: 10; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Polygons are mostly large and include several different LC/LU classes whose delineation is not possible to determine with the reference data available. Also mosaics are included in the class description which complicates the validation even further. The high class user's accuracy in this case isn't an indication of a successful mapping but of uncertainties in validation.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; Digital Elevation Model 2x2m	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)		
EXAMPLE (typical mistakes / typical appearance):		

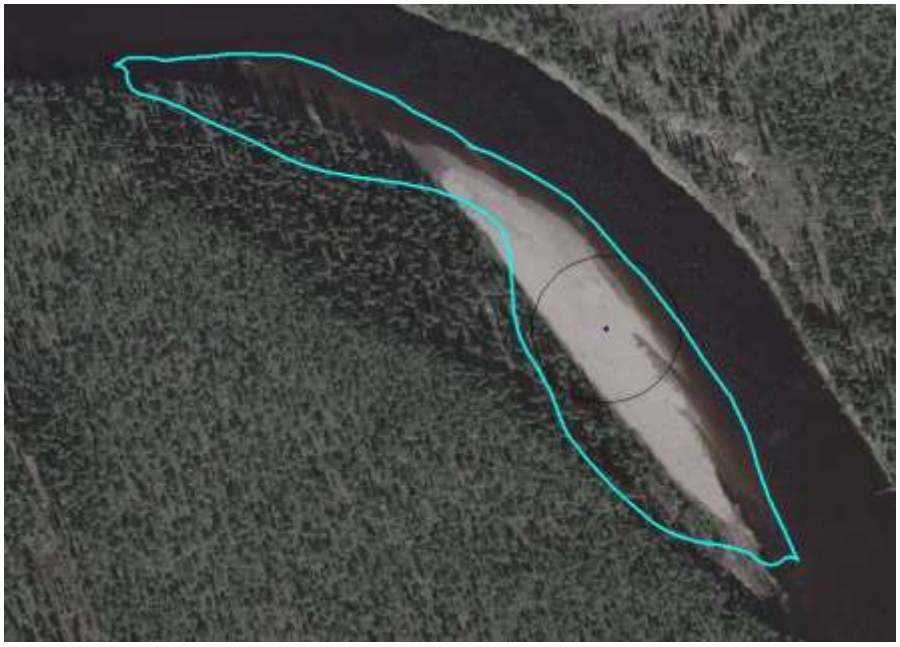


A mosaic of different land use types

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	6211	Beaches
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	1	
Class user's accuracy	10,00 %	
Class user's accuracy (CI)	± 0,1960	
Class producer's accuracy	33,33 %	
Class producer's accuracy (CI)	± 0,5235	
CORRECTNESS OF DELINEATION		
Detail of delineation	90,00 %	Correct: 9; Too coarse: 0; Too detailed: 1
Correctness of delineated area	10,00 %	Correct: 1; Unnecessary parts included: 9; Missing parts: 0; Both missing parts and unnecessary parts included: 0
Positional accuracy	90,00 %	Correct: 9; Shifted: 1
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	The mapping process hasn't been able to correctly identify 6211 in the sample dataset. Misclassifications with class 3411 occur, as often times there is too much vegetation in the sample area, or the soil type is not appropriate. Also misclassified with 4222/7112 but there is not enough national reference data to support the validation and confidently confirm the presence of these classes. In some cases national reference data indicates that the area should be water even though satellite image shows land area (possibly due to water level differences) which makes it difficult to identify the correct LC/LU class.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; Digital Elevation Model 2x2m; Shoreline 10 and River network	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Typical appearance of the class could be sandy beaches along brackish and fresh water coasts.	
EXAMPLE (typical mistakes / typical appearance):		

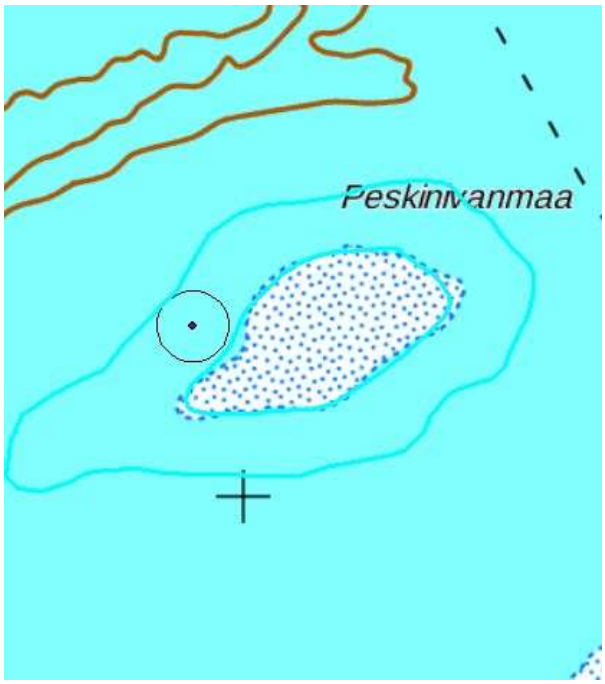
Wrong class: too much vegetation (3411).

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	6213	River banks
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	5	
Class user's accuracy	50,00 %	
Class user's accuracy (CI)	± 0,3201	
Class producer's accuracy	50,00 %	
Class producer's accuracy (CI)	± 0,3267	
CORRECTNESS OF DELINEATION		
Detail of delineation	80,00 %	Correct: 8; Too coarse:0; Too detailed: 2
Correctness of delineated area	0,00 %	Correct: 0; Unnecessary parts included: 9; Missing parts: 0; Both missing parts and unnecessary parts included: 1
Positional accuracy	100,00 %	Correct: 10; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassifications with classes 3411, 4111 and 6221. Delineation with bordering forest and water areas is not accurate and therefore features of these classes are not always excluded from the sample area. In some cases national reference data indicates that the area should be water even though satellite image shows land area (possibly due to water level differences) which makes it difficult to identify the correct LC/LU class.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; Digital Elevation Model 2x2m; Shoreline 10 and River network	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Typical appearance of the class is sandy or gravelly open areas in rivers in the northern Finland and Lapland area.	
EXAMPLE (typical mistakes / typical appearance):		



Wrong delineation: confusion with neighboring forest and water areas.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	6221	Bare rocks and rock debris
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	7	
Class user's accuracy	70,00 %	
Class user's accuracy (CI)	± 0,2994	
Class producer's accuracy	77,78 %	
Class producer's accuracy (CI)	± 0,2507	
CORRECTNESS OF DELINEATION		
Detail of delineation	90,00 %	Correct: 9; Too coarse: 0; Too detailed: 1
Correctness of delineated area	30,00 %	Correct: 3; Unnecessary parts included: 6; Missing parts: 0; Both missing parts and unnecessary parts included: 1
Positional accuracy	100,00 %	Correct: 10; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassifications with classes 3231, 3331 and 5111. In some cases national reference data indicates that the area should be water even though satellite image shows land area (possibly due to water level differences) which makes it difficult to identify the correct LC/LU class.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; Digital Elevation Model 2x2m; Shoreline 10 and River network	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)		
EXAMPLE (typical mistakes / typical appearance):		



Satellite image (left) and national reference data (topographic map, left) are contradictory and LCLU-class is hard to confirm.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	7111	Inland freshwater marshes without reeds
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	2	
Class user's accuracy	20,00 %	
Class user's accuracy (CI)	± 0,2613	
Class producer's accuracy	100,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	70,00 %	Correct: 7; Too coarse: 1; Too detailed: 2
Correctness of delineated area	10,00 %	Correct: 1; Unnecessary parts included: 9; Missing parts: 0; Both missing parts and unnecessary parts included: 0
Positional accuracy	100,00 %	Correct: 10; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	There is not enough national reference data to support the validation and confidently confirm the presence of the class. Data exists for reed beds that are clearly located in water areas but not for coastal low lands without forest cover and these are corrected to 7112. The description of this class is also not clear in the RZ nomenclature guideline, as 7111 and 7112 are described together. Several specifications are made for the Nordic countries that are partly contradictory. Also the nomenclature specifies that in Nordic countries areas close to water are classified as freshwater marshes since they're not likely to be peat producing. This is not an accurate assumption since there are many large peat bogs next to lakes in Finland. Samples also include polygons in large artificial lake areas in northern Finland where water levels fluctuate heavily. They could be closer to a mudflat but should not be mapped using same principles as natural water areas.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; The Finnish Land Parcel Information System (FLPIS); Tree Cover Density; Shoreline 10 and River network	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)		
EXAMPLE (typical mistakes / typical appearance):		

Wrong class: area is adjacent to a large lake but is still a peat bog (7212).

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	7112	Inland freshwater marshes with reeds
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	5	
Class user's accuracy	50,00 %	
Class user's accuracy (CI)	± 0,3267	
Class producer's accuracy	13,51 %	
Class producer's accuracy (CI)	± 0,0818	
CORRECTNESS OF DELINEATION		
Detail of delineation	80,00 %	Correct: 8; Too coarse: 0; Too detailed: 2
Correctness of delineated area	0,00 %	Correct: 0; Unnecessary parts included: 8; Missing parts: 1; Both missing parts and unnecessary parts included: 1
Positional accuracy	100,00 %	Correct: 10; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassifications with classes 3221 and 3331. Even where the classification is validated to be correct, it should be treated with precaution. There is not enough national reference data to support the validation and confidently confirm the presence of the class. Especially this applies to distinguishing fresh water mars with reeds from mesic grassland as it is very difficult to identify the management status, the height of grassy vegetation and humidity of soil from satellite or even aerial images. Data exists for reed beds that are clearly located in water areas but not for coastal low lands without forest cover. Also the description of this class is confusing in the RZ nomenclature guidelines (cf. 7111).	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; The Finnish Land Parcel Information System (FLPIS); Tree Cover Density; Shoreline 10 and River network	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)		
EXAMPLE (typical mistakes / typical appearance):		

Class could be correct but this cannot be confidently determined from the data available.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	7121	Inland saline marshes without reeds
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	0	
Class user's accuracy	0,00 %	
Class user's accuracy (CI)	± 0,0000	
Class producer's accuracy	0,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	50,00 %	Correct: 5; Too coarse:4; Too detailed: 1
Correctness of delineated area	0,00 %	Correct: 0; Unnecessary parts included: 10; Missing parts: 0; Both missing parts and unnecessary parts included: 0
Positional accuracy	100,00 %	Correct: 5; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	This class doesn't exist in Finland. It is mapped to appear in the narrow coastal strip between forest and other wetland classes but this is incorrect. The classification of most samples has been corrected to 7112 but the same uncertainties apply as in actual class 7112.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; The Finnish Land Parcel Information System (FLPIS); Tree Cover Density; Shoreline 10 and River network	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)		
EXAMPLE (typical mistakes / typical appearance):		

Typical appearance of the class in the data: a narrow strip of land between higher vegetation and other freshwater marsh classes. It is incorrect. Also delineation is very coarse.

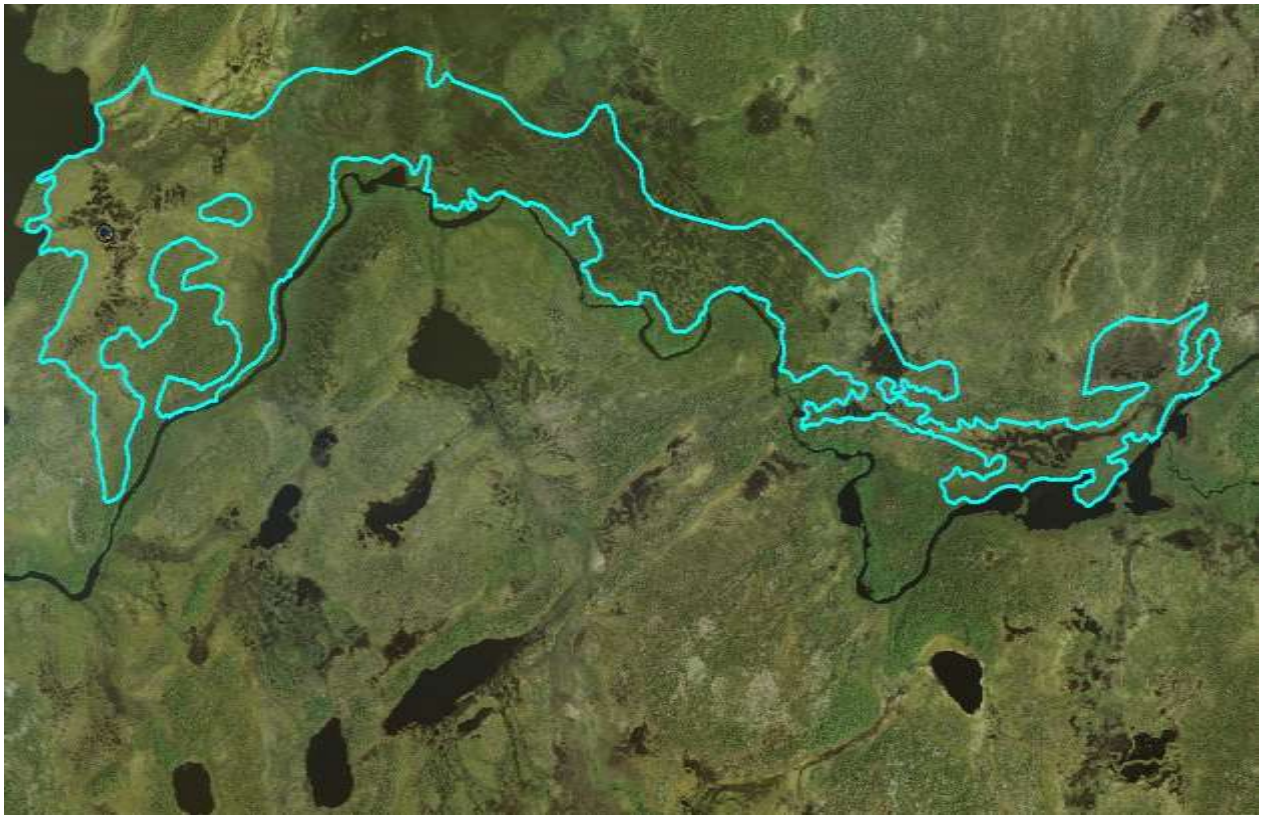
DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	7210	Peat Bogs
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	7	
Class user's accuracy	70,00 %	
Class user's accuracy (CI)	± 0,2994	
Class producer's accuracy	100,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	80,00 %	Correct: 8; Too coarse: 2; Too detailed: 0
Correctness of delineated area	0,00 %	Correct: 0; Unnecessary parts included: 9; Missing parts: 0; Both missing parts and unnecessary parts included: 1
Positional accuracy	100,00 %	Correct: 10; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassifications with forest classes 3221, 3231 and 3411. Also features >MMU are not excluded from the class area.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; Tree Cover Density; Shoreline 10 and River network	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Being a lower level (3) class it includes several types of bogs from unexploited to ditched and exploited areas with different sizes.	
EXAMPLE (typical mistakes / typical appearance):		

A large unexploited, partly ditched peat bog with unnecessary areas (3411 & 3221).

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	7211	Exploited peat bog
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	0	
Class user's accuracy	0,00 %	
Class user's accuracy (CI)	0	
Class producer's accuracy	0,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	90,00 %	Correct: 9; Too coarse: 0; Too detailed: 1
Correctness of delineated area	10,00 %	Correct: 1; Unnecessary parts included: 9; Missing parts: 0; Both missing parts and unnecessary parts included: 0
Positional accuracy	100,00 %	Correct: 10; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	The mapping process hasn't been able to correctly identify 7211 in the sample dataset even thoug it is quite common in Finland. Misclassification with classes 3221, 3411, 4112 and 7212. In many cases the area might have previously been peat extraction site as the ditches are visible in aerial images, but it's already growing forest and thus should be classified as 3411 or 3221.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; Digital Elevation Model 2x2m	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)		
EXAMPLE (typical mistakes / typical appearance):		

Wrong class code: transitional woodland on a ditched peat bog.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	7212	Unexploited peat bog
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	9	
Class user's accuracy	90,00 %	
Class user's accuracy (CI)	± 0,1960	
Class producer's accuracy	45,00 %	
Class producer's accuracy (CI)	± 0,1382	
CORRECTNESS OF DELINEATION		
Detail of delineation	80,00 %	Correct: 8; Too coarse: 0; Too detailed: 2
Correctness of delineated area	20,00 %	Correct: 2; Unnecessary parts included: 4; Missing parts: 1; Both missing parts and unnecessary parts included: 3
Positional accuracy	100,00 %	Correct: 2; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassification with 3221. There are inaccuracies in delineation with neighboring forest classes.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; Digital Elevation Model 2x2m	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Typical appearance of the class in samples is quite large peat bogs in northern Finland.	
EXAMPLE (typical mistakes / typical appearance):		



A large peat bog in Lapland area.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	8111	Salt marshes without reeds
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	0	
Class user's accuracy	0,00 %	
Class user's accuracy (CI)	± 0,0000	
Class producer's accuracy	0,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	80,00 %	Correct: 8; Too coarse: 0; Too detailed: 2
Correctness of delineated area	20,00 %	Correct: 2; Unnecessary parts included: 8; Missing parts: 0; Both missing parts and unnecessary parts included: 0
Positional accuracy	100,00 %	Correct: 2; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	The existence of this class in Finland is questionable. RZ nomenclature guideline indicates that "the Baltic Sea has only brackish coastal waters, which qualify for inland freshwater marshes". There are coastal meadows in the Baltic sea coastal areas, that have salt tolerant plants but according to the nomenclature also these should be considered freshwater marshes or mesic grasslands. The classification of most samples has been corrected to 7112 but the same uncertainties apply as in actual class 7112.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; The Finnish Land Parcel Information System (FLPIS); Tree Cover Density; Shoreline 10 and River network	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)		
EXAMPLE (typical mistakes / typical appearance):		

Wrong class: a coastal marsh or grassland in brackish water. Correct class cannot be confidently determined from the data available.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	9000	Rivers and lakes
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	9	
Class user's accuracy	90,00 %	
Class user's accuracy (CI)	± 0,1960	
Class producer's accuracy	100,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	60,00 %	Correct: 6; Too coarse: 4; Too detailed: 0
Correctness of delineated area	50,00 %	Correct: 5; Unnecessary parts included: 4; Missing parts: 0; Both missing parts and unnecessary parts included: 1
Positional accuracy	70,00 %	Correct: 7; Shifted: 3
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassification with class 1213. This is a level 1 class and therefore it includes a varied set of different water systems. The delineation is partly inaccurate, too coasre and shifted.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; Shoreline 10 and River network; Digital Elevation Model 2x2m	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Different sized lakes and rivers.	
EXAMPLE (typical mistakes / typical appearance):		

A large lake polygon.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	9111	Permanent interconnected running water courses
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	10	
Class user's accuracy	100,00 %	
Class user's accuracy (CI)	± 0,1960	
Class producer's accuracy	71,43 %	
Class producer's accuracy (CI)	± 0,1915	
CORRECTNESS OF DELINEATION		
Detail of delineation	100,00 %	Correct: 10; Too coarse: 0; Too detailed: 0
Correctness of delineated area	60,00 %	Correct: 6; Unnecessary parts included: 2; Missing parts: 0; Both missing parts and unnecessary parts included: 2
Positional accuracy	90,00 %	Correct: 9; Shifted: 1
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	This class is well identified in the RZ status layer. In some polygons the delineation is not precise.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; Shoreline 10 and River network; Digital Elevation Model 2x2m	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Typical appearance of the class is large river polygons	
EXAMPLE (typical mistakes / typical appearance):		

A large river polygon in the northern part of Finland.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	9112	Intermittently running water courses
Number of samples selected for the class	1	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	0	
Class user's accuracy	0,00 %	
Class user's accuracy (CI)	± 0,0000	
Class producer's accuracy	0,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	100,00 %	Correct: 1; Too coarse: 0; Too detailed: 0
Correctness of delineated area	0,00 %	Correct: 0; Unnecessary parts included: 1; Missing parts: 0; Both missing parts and unnecessary parts included: 0
Positional accuracy	100,00 %	Correct: 1; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Only 1 sample.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; Shoreline 10 and River network; Digital Elevation Model 2x2m	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)		
EXAMPLE (typical mistakes / typical appearance):		

Wrong class code (7112).

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	9113	Highly modified natural water courses and canals
Number of samples selected for the class	4	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	2	
Class user's accuracy	50,00 %	
Class user's accuracy (CI)	± 0,5658	
Class producer's accuracy	66,67 %	
Class producer's accuracy (CI)	± 0,5029	
CORRECTNESS OF DELINEATION		
Detail of delineation	25,00 %	Correct: 1; Too coarse:0; Too detailed: 3
Correctness of delineated area	0,00 %	Correct: 0; Unnecessary parts included: 3; Missing parts: 1; Both missing parts and unnecessary parts included: 0
Positional accuracy	75,00 %	Correct: 3; Shifted: 1
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassification with 9211 and 9213. Delineation of polygons is often too detailed as small twists are included that do not correspond to reality.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; Shoreline 10 and River network; Digital Elevation Model 2x2m	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Typical appearance of class in samples is canals.	
EXAMPLE (typical mistakes / typical appearance):		

Typical appearance of class: a canal. Also small twists are visible at the borders of the polygon.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	9121	Permanent separated water bodies belonging to the river system
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	7	
Class user's accuracy	70,00 %	
Class user's accuracy (CI)	± 0,2994	
Class producer's accuracy	100,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	70,00 %	Correct: 7; Too coarse: 2; Too detailed: 1
Correctness of delineated area	60,00 %	Correct: 6; Unnecessary parts included: 4; Missing parts: 0; Both missing parts and unnecessary parts included: 0
Positional accuracy	100,00 %	Correct: 10; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassifications with classes 7112 and 9211.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; Shoreline 10 and River network; Digital Elevation Model 2x2m	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	The origin of the water bodies in the class samples is not known but assessed by the shape and location of the samples, they seem to be oxbow lakes cut off from the river system. Mostly located in northern Finland.	
EXAMPLE (typical mistakes / typical appearance):		

Typical appearance: an oxbow lake in northern finland.

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	9211	Permanent natural water bodies
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	10	
Class user's accuracy	100,00 %	
Class user's accuracy (CI)	0	
Class producer's accuracy	76,92 %	
Class producer's accuracy (CI)	± 0,1933	
CORRECTNESS OF DELINEATION		
Detail of delineation	90,00 %	Correct: 9; Too coarse: 1; Too detailed: 0
Correctness of delineated area	20,00 %	Correct: 2; Unnecessary parts included: 4; Missing parts: 1; Both missing parts and unnecessary parts included: 3
Positional accuracy	100,00 %	Correct: 10; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	This class is well identified in the dataset. Delineation is often inaccurate and especially in the shallow inlets freshwater marshes are included in the polygons.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; Shoreline 10 and River network; Digital Elevation Model 2x2m	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Typical appearance of the class is large natural lakes.	
EXAMPLE (typical mistakes / typical appearance):		

A typical appearance of the class: a large lake area (left) with unnecessary marshes included in the small inlets (right)

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	9212	Temporary natural water bodies
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	0	
Class user's accuracy	0,00 %	
Class user's accuracy (CI)	± 0,0000	
Class producer's accuracy	0,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	90,00 %	Correct: 9; Too coarse: 0; Too detailed: 1
Correctness of delineated area	0,00 %	Correct: 0; Unnecessary parts included: 10; Missing parts: 0; Both missing parts and unnecessary parts included: 0
Positional accuracy	90,00 %	Correct: 9; Shifted: 1
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	This class has not been identified in the dataset. Most sample polygons are located at the coastal areas of lakes. The classification of most samples has been corrected to 7112 but the same uncertainties apply as in actual class 7112. Misclassifications also with classes 3211, 3411 and 6221. The class description in the RZ nomenclature guidelines is not very clear but it could be argued that the class doesn't appear in Finland.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; Shoreline 10 and River network; Digital Elevation Model 2x2m	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	The class dercription in the RZ nomenclature guidelines is not very clear but it could be argued thet the class doesn't appear in Finland.	
EXAMPLE (typical mistakes / typical appearance):		

A sample polygon located in the lakeside, possibly a freashwater marsh (7112).

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	9213	Ponds and lakes with completely man-made structure
Number of samples selected for the class	7	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	3	
Class user's accuracy	42,86 %	
Class user's accuracy (CI)	± 0,3960	
Class producer's accuracy	100,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	57,00 %	Correct: 4; Too coarse: 0; Too detailed: 3
Correctness of delineated area	0,00 %	Correct: 0; Unnecessary parts included: 6; Missing parts: 1; Both missing parts and unnecessary parts included: 0
Positional accuracy	100,00 %	Correct: 7; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassification with classes 9111, 9113 and 9215. Features of e.g. forest and field are not excluded from the class area. None of the class samples are completely man made (no concrete structures) but rather dug ponds located next to a water area and thus filled with natural water.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; Shoreline 10 and River network; Digital Elevation Model 2x2m	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Artificial ponds that have been dug and are filled naturally from surrounding water courses (e.g. retention pools to improve water quality in adjacent water systems).	
EXAMPLE (typical mistakes / typical appearance):		

Typical appearance of class: man made water body (not completely artificial)

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	9214	Intensively managed fish ponds
Number of samples selected for the class	1	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	0	
Class user's accuracy	0,00 %	
Class user's accuracy (CI)	± 0,0000	
Class producer's accuracy	0,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	0,00 %	Correct: 0; Too coarse: 0; Too detailed: 1
Correctness of delineated area	0,00 %	Correct: 0; Unnecessary parts included: 1; Missing parts: 0; Both missing parts and unnecessary parts included: 0
Positional accuracy	100,00 %	Correct: 1; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	There is only one sample of this class and it has been incorrectrly classified (should be 1113).	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; Shoreline 10 and River network; Digital Elevation Model 2x2m	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Class appears in Finland but hasn't been identified in the dataset.	
EXAMPLE (typical mistakes / typical appearance):		

Wrong class: 1113 (a waste water treatment plant)

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	9215	Standing water bodies of extractive industrial sites
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	7	
Class user's accuracy	70,00 %	
Class user's accuracy (CI)	± 0,2994	
Class producer's accuracy	87,50 %	
Class producer's accuracy (CI)	± 0,2194	
CORRECTNESS OF DELINEATION		
Detail of delineation	50,00 %	Correct: 5; Too coarse: 2; Too detailed: 3
Correctness of delineated area	20,00 %	Correct: 2; Unnecessary parts included: 6; Missing parts: 1; Both missing parts and unnecessary parts included: 1
Positional accuracy	90,00 %	Correct: 9; Shifted: 1
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassification with classes 1113 and 1311. Delineation of class samples is not accurate.	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; Shoreline 10 and River network; Digital Elevation Model 2x2m; Soil Extraction Permits Database	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Typical appearance of class is water bodies close to active extraction sites.	
EXAMPLE (typical mistakes / typical appearance):		

A water body in an extraction site

DATASET	RZ	Riparian Zones status layer 2012
LC/LU CLASS	10111	Marine (other)
Number of samples selected for the class	10	
CORRECTNESS OF LC/LU CODE		
Number of correctly interpreted samples	8	
Class user's accuracy	80,00 %	
Class user's accuracy (CI)	± 0,2613	
Class producer's accuracy	100,00 %	
Class producer's accuracy (CI)	± 0,0000	
CORRECTNESS OF DELINEATION		
Detail of delineation	80,00 %	Correct: 8; Too coarse: 0; Too detailed: 2
Correctness of delineated area	20,00 %	Correct: 2; Unnecessary parts included: 4; Missing parts: 1; Both missing parts and unnecessary parts included: 3
Positional accuracy	100,00 %	Correct: 2; Shifted: 0
CHARACTERIZATION OF THE CLASS		
Typical mistakes (misclassification, wrong delineation, etc.) describe in detail	Misclassification with 1113 and 7112. Delineation is not always precise. This class is quite well identified in the RZ feature layer. Often the delineation between fresh and marine water is contradictory with national reference data (in places where rivers are running into the Baltic sea).	
Typical reference information used / minimum required for decision	Orthophotos close to year 2012; Topographic Database & Topographic map series/The National Land Survey; National high resolution Corine Land Cover 2012; Corine Land Cover change layers 2000-2006 and 2006-2012; Shoreline 10 and River network; Digital Elevation Model 2x2m	
Typical appearance of the class in samples (habitats, cultivation type, land use etc)	Typical appearance of the class in samples is narrow strips of water at the Baltic sea coast.	
EXAMPLE (typical mistakes / typical appearance):		

A narrow strip in the coastal area.