

# Recommendations for MSP output data harmonization and publishing

Data model

Harmonizing process

Baltic MSP web-map (BASEMAPS)

# Based on:

## Pan Baltic SCOPE kick-off meeting (Data sharing activity workgroup meeting)

User needs and requirements

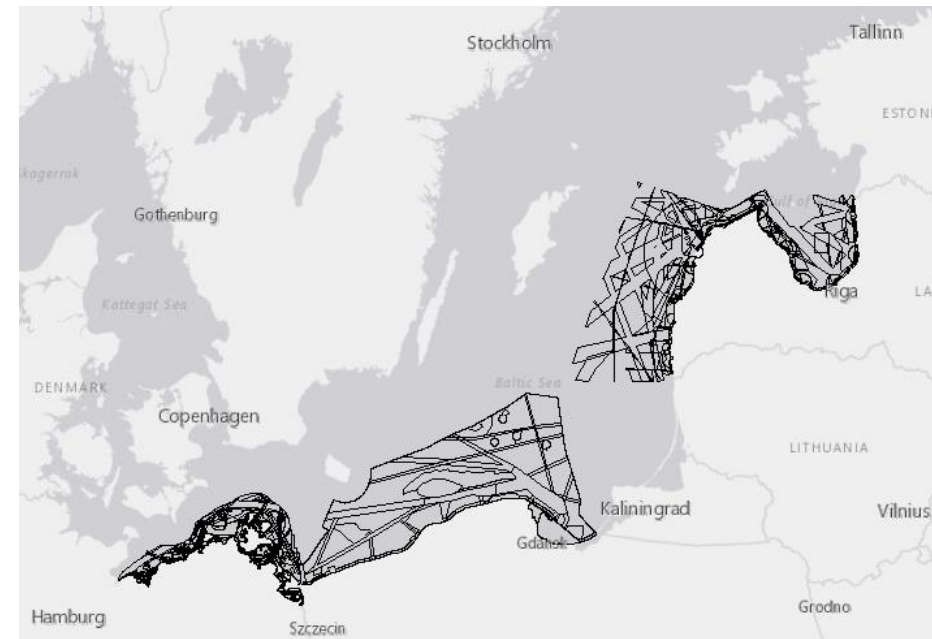
Needs for cartographic representation



2018.02.15

### Recommendations for transboundary MSP output data Draft of proposal

Identified geometry in MSP data structure	pUse [SeaUse CodeList] [ 0...1]	aUse [CodeList] [multiple options possible - 0...*]	rUse [CodeList] [multiple options possible - 0...*]	fUse [CodeList] [multiple options possible - 0...*]	UseDsc [CharacterString]
xxx	Selection from seaUse code list	Selection from seaUse code list	Selection from seaUse code list	Selection from seaUse code list	Requirements & restrictions within sea use area
Examples:					
	installations-owf	Aquaculture - mussel		shipping, fishing	Areas suitable for OWP development
		fishing-bottom trawling		cables	Areas important for sea bottom trawling
				shipping	Areas prohibited for navigations



# Goals:

Harmonized Baltic Sea MSP output data

Homogeneous cartographic representation

Baltic MSP web-map meeting needs and requirements

# MSP output data model for Planned sea use

Sea use ID	Plan area ID	Country	Name	Code	...	Priority use	Allowed uses	Restricted uses	Forbidden uses	Geometry
1	...	Poland	...	...	...	coast	...	...	...	...
2	...	Poland	...	...	...	extraction	...	...	...	...
3	...	Latvia	...	...	...	transport	...	...	...	...
4	...	Latvia	...	...	...	coast	...	...	...	...
5	...	Germany	...	...	...	transport	...	...	...	...
6	...	Germany	...	...	...	fishing	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...

Country specific MSP data

Multiple options possible

Multiple geometry types possible

## Problems?

# MSP output data model for Planned sea use

attribute code	sea use description	PL_data_2										
aquaculture	aquaculture	FID	Shape	Akwen Name	F PODST	vis	Label name	Link DOC	F DOP Pr	F DOP Poz	Label Old	F Group
aquaculture-fish	fish	0	Polygon	C_1	C	0	C-1	..\\Karty Synergii i Konfliktow\\C\\C-1.do	O, R, S	T, B, I, D, N, Kp, W	OB-1	C
aquaculture-mussel	mussel	1	Polygon	C_2	C	0	C-2	..\\Karty Synergii i Konfliktow\\C\\C-2.do	O, R, S	T, B, I, D, N, Kp, W	OB-2	C
aquaculture-plant	plant	2	Polygon	C_3	C	0	C-3	..\\Karty Synergii i Konfliktow\\C\\C-3.do	O, R, S	T, B, I, D, N, Kp, W	OB-3	C
coast	coast protection	3	Polygon	C_4	C	0	C-4	..\\Karty Synergii i Konfliktow\\C\\C-4.do	O, R, S	T, B, I, D, N, Kp, W	OB-3A	C
coast-deposit	reserved areas for coast protection or prospective sand deposit area)	4	Polygon	C_5	C	0	C-5	..\\Karty Synergii i Konfliktow\\C\\C-5.do	O, R, S	T, Ip, B, I, D, N, Kp	OB-4	C
		5	Polygon	C_6	C	0	C-6	..\\Karty Synergii i Konfliktow\\C\\C-6.do	O, R, S	T, B, I, D, N, Kp, W	OB-5	C
		6	Polygon	C_7	C	0	C-7	..\\Karty Synergii i Konfliktow\\C\\C-7.do	B, O, R	S, T, Ip, I, D, N, Kp, W	OB-5A	C
extraction	raw material extraction areas	7	Polygon	C_8	C	4	C-8	..\\Karty Synergii i Konfliktow\\C\\C-8.do	B, R, S	O, T, B, D, N, Kp, W	OB-6	C
extraction-co2	CO2	8	Polygon	C_9	C	0	C-9	..\\Karty Synergii i Konfliktow\\C\\C-9.do	Ip, R, S	O, T, D, N, Kp, W	OB-8	C
extraction-gas	gas	9	Polygon	P_26	P	0	P-26	..\\Karty Synergii i Konfliktow\\P\\P-26.do	B, R, K	T, O, I, D, N, S	PR-13A	P
extraction-oil	oil	10	Polygon	P_25	P	0	P-25	..\\Karty Synergii i Konfliktow\\P\\P-25.do	B, R, K	T, I, N, D, S, O	PR-13	P
extraction-sand	sand and gravel	11	Polygon	P_23	P	0	P-23	..\\Karty Synergii i Konfliktow\\P\\P-23.do	B, R, K	T, I, N, D, S, O	PR-14A	P
fishing	fishing	12	Polygon	P_22	P	0	P-22	..\\Karty Synergii i Konfliktow\\P\\P-22.do	B, R, K	T, I, N, D, S, O	PR-14	P
		13	Polygon	P_24	P	0	P-24	..\\Karty Synergii i Konfliktow\\P\\P-24.do	T, O	R, I, B, N, S, Kp, D	PR-8	P
fishing-industrial	industrial fishing	14	Polygon	P_19	P	0	P-19	..\\Karty Synergii i Konfliktow\\P\\P-19.do	B, R, K	T, I, N, D, S, O	PR-15A	P
fishing-recreational	recreational fishing	15	Polygon	P_21	P	0	P-21	..\\Karty Synergii i Konfliktow\\P\\P-21.do	B, R, O	T, I, D, N, S, Kp	PR-7B	P
fishing-small-boat	small boat fishing	16	Polygon	P_18	P	0	P-18	..\\Karty Synergii i Konfliktow\\P\\P-18.do	B, R, K	T, I, N, D, S, O	PR-15	P
general	future reservation for undefined act general use	17	Polygon	P_17	P	0	P-17	..\\Karty Synergii i Konfliktow\\P\\P-17.do	B, R, O	T, I, D, N, S, Kp	PR-9	P
		18	Polygon	P_20	P	0	P-20	..\\Karty Synergii i Konfliktow\\P\\P-20.do	R, O, T	I, B, N, S, Kp, D	PR-7A	P
		19	Polygon	P_13	P	0	P-13	..\\Karty Synergii i Konfliktow\\P\\P-13.do	B, R, O	T, I, D, N, S, Kp	PR-16A	P
heritage	underwater cultural heritage	20	Polygon	P_15	P	0	P-15	..\\Karty Synergii i Konfliktow\\P\\P-15.do	B, R, O	T, I, D, N, S, Kp	PR-4	P
heritage-landscape	landscape protection	21	Polygon	P_12	P	0	P-12	..\\Karty Synergii i Konfliktow\\P\\P-12.do	B, R, O	T, I, N, D, S, Kp	PR-16	P
heritage-wreck	wreck	22	Polygon	P_14	P	0	P-14	..\\Karty Synergii i Konfliktow\\P\\P-14.do	B, R, O	T, I, D, N, S, Kp	PR-17	P
installations	installations and infrastructures	23	Polygon	P_16	P	0	P-16	..\\Karty Synergii i Konfliktow\\P\\P-16.do	R, T, I	B, O, S, N, D, Kp	PR-10	P
installations-owf	offshore wind farm	24	Polygon	P_5	P	0	P-5	..\\Karty Synergii i Konfliktow\\P\\P-5.doc	B, O, R	T, I, N, D, S, C, Kp	PR-12	P
installations-platform	platform	25	Polygon	P_4	P	4	P-4	..\\Karty Synergii i Konfliktow\\P\\P-4.doc	R, O, T	C, S, B, D, N, Kp	PR-11	P
installations-wave	wave energy	26	Polygon	P_8	P	0	P-8	..\\Karty Synergii i Konfliktow\\P\\P-8.doc	B, R, O	T, I, D, N, S, Kp	PR-18	P
line	submarine cable and pipeline route	27	Polygon	P_3	P	0	P-3	..\\Karty Synergii i Konfliktow\\P\\P-3.doc	B, R, O	T, I, D, N, S, C, K	PR-6	P
line-electricity	electricity cable	28	Polygon	M_1	M	0	M-1	..\\Karty Synergii i Konfliktow\\M\\M-1.do	T, Ip, C, S, R	O, Kp, B, I, A, D, N, W	WRG-1	M
line-pipeline	pipeline	29	Polygon	P_11	P	0	P-11	..\\Karty Synergii i Konfliktow\\P\\P-11.do	B, R, O	T, I, D, N, S, Kp	PR-5	P
line-telecom	telecommunication cable	30	Polygon	P_9	P	0	P-9	..\\Karty Synergii i Konfliktow\\P\\P-9.doc	O, R, T	I, B, C, N, S, Kp, D, Ip	PR-1	P
military	military areas	31	Polygon	P_2	P	0	P-2	..\\Karty Synergii i Konfliktow\\P\\P-2.doc	B, R, O	T, I, D, N, S, C, Kp	PR-2B	P
military-training	military training areas	32	Polygon	P_10	P	0	P-10	..\\Karty Synergii i Konfliktow\\P\\P-10.do	O, R, T	I, B, C, N, S, Kp, D	PR-3	P
		33	Polygon	P_1	P	0	P-1	..\\Karty Synergii i Konfliktow\\P\\P-1.doc	B, R, O	T, I, D, N, S, C, Kp, Ip	PR-2A	P
		34	Polygon	In_2	In	0	In-2	..\\Karty Synergii i Konfliktow\\In\\In-2.doc	T, C, O	R, S, R, I, D, N, Kp, W	IP-2	I
nature	nature and species conservation					träningsområden	sofilasharjoitusalueet	зоны военных учений				
nature-biodiversity	biodiversity					skyddade områden	luonnon- ja lajiensuojelu	защита видов и охрана природы				
						biodiversitet	luonnon monimuotoisuus	биоразнообразие				

# Data model 1 overview:

Relational database, can be easily implemented with any ORDBMS (e.g. PostgreSQL)

Complicated to edit data in GIS desktop software, because of many relations (including N:M relation „Uses”)

Complicated to publish OGC web services

# MSP output data model for Planned sea use

## Planned sea uses

## ID

## Name

## Code

...

## MULTIPOLYGON

MSP area

## Priority use

## Use description

aquaculture

aquaculture-fish

## aquaculture-mussel

aquaculture-plant

coast

## coast-deposit

extraction

extraction-co2

... (56 attributes more)

## Relational database proposal 2

PL Data											
File	Phase	Alkwen Name	F POSIT	Unit	Label name	Link DOC	F POP Ph	F POP Pos	Label OS	F Gro	
Polypren-1	C	0-1	1	Many	Symgyl	Conf-HistPolypren-1-0-1.D	S	1	1	0	0
Polypren-2	C	0-1	1	Many	Symgyl	Conf-HistPolypren-2-0-1.D	S	1	1	0	0
Polypren-3	C	0-1	1	Many	Symgyl	Conf-HistPolypren-3-0-1.D	S	1	1	0	0
Polypren-4	C	0-1	1	Many	Symgyl	Conf-HistPolypren-4-0-1.D	S	1	1	0	0
Polypren-5	C	0-1	1	Many	Symgyl	Conf-HistPolypren-5-0-1.D	S	1	1	0	0
Polypren-6	C	0-1	1	Many	Symgyl	Conf-HistPolypren-6-0-1.D	S	1	1	0	0
Polypren-7	C	0-1	1	Many	Symgyl	Conf-HistPolypren-7-0-1.D	S	1	1	0	0
Polypren-8	C	0-1	1	Many	Symgyl	Conf-HistPolypren-8-0-1.D	S	1	1	0	0
Polypren-9	C	0-1	1	Many	Symgyl	Conf-HistPolypren-9-0-1.D	S	1	1	0	0
Polypren-10	C	0-1	1	Many	Symgyl	Conf-HistPolypren-10-0-1.D	S	1	1	0	0
Polypren-11	C	0-1	1	Many	Symgyl	Conf-HistPolypren-11-0-1.D	S	1	1	0	0
Polypren-12	C	0-1	1	Many	Symgyl	Conf-HistPolypren-12-0-1.D	S	1	1	0	0
Polypren-13	C	0-1	1	Many	Symgyl	Conf-HistPolypren-13-0-1.D	S	1	1	0	0
Polypren-14	C	0-1	1	Many	Symgyl	Conf-HistPolypren-14-0-1.D	S	1	1	0	0
Polypren-15	C	0-1	1	Many	Symgyl	Conf-HistPolypren-15-0-1.D	S	1	1	0	0
Polypren-16	C	0-1	1	Many	Symgyl	Conf-HistPolypren-16-0-1.D	S	1	1	0	0
Polypren-17	C	0-1	1	Many	Symgyl	Conf-HistPolypren-17-0-1.D	S	1	1	0	0
Polypren-18	C	0-1	1	Many	Symgyl	Conf-HistPolypren-18-0-1.D	S	1	1	0	0
Polypren-19	C	0-1	1	Many	Symgyl	Conf-HistPolypren-19-0-1.D	S	1	1	0	0
Polypren-20	C	0-1	1	Many	Symgyl	Conf-HistPolypren-20-0-1.D	S	1	1	0	0
Polypren-21	C	0-1	1	Many	Symgyl	Conf-HistPolypren-21-0-1.D	S	1	1	0	0
Polypren-22	C	0-1	1	Many	Symgyl	Conf-HistPolypren-22-0-1.D	S	1	1	0	0
Polypren-23	C	0-1	1	Many	Symgyl	Conf-HistPolypren-23-0-1.D	S	1	1	0	0
Polypren-24	C	0-1	1	Many	Symgyl	Conf-HistPolypren-24-0-1.D	S	1	1	0	0
Polypren-25	C	0-1	1	Many	Symgyl	Conf-HistPolypren-25-0-1.D	S	1	1	0	0
Polypren-26	C	0-1	1	Many	Symgyl	Conf-HistPolypren-26-0-1.D	S	1	1	0	0
Polypren-27	C	0-1	1	Many	Symgyl	Conf-HistPolypren-27-0-1.D	S	1	1	0	0
Polypren-28	C	0-1	1	Many	Symgyl	Conf-HistPolypren-28-0-1.D	S	1	1	0	0
Polypren-29	C	0-1	1	Many	Symgyl	Conf-HistPolypren-29-0-1.D	S	1	1	0	0
Polypren-30	C	0-1	1	Many	Symgyl	Conf-HistPolypren-30-0-1.D	S	1	1	0	0
Polypren-31	C	0-1	1	Many	Symgyl	Conf-HistPolypren-31-0-1.D	S	1	1	0	0
Polypren-32	C	0-1	1	Many	Symgyl	Conf-HistPolypren-32-0-1.D	S	1	1	0	0
Polypren-33	C	0-1	1	Many	Symgyl	Conf-HistPolypren-33-0-1.D	S	1	1	0	0
Polypren-34	C	0-1	1	Many	Symgyl	Conf-HistPolypren-34-0-1.D	S	1	1	0	0
Polypren-35	C	0-1	1	Many	Symgyl	Conf-HistPolypren-35-0-1.D	S	1	1	0	0
Polypren-36	C	0-1	1	Many	Symgyl	Conf-HistPolypren-36-0-1.D	S	1	1	0	0
Polypren-37	C	0-1	1	Many	Symgyl	Conf-HistPolypren-37-0-1.D	S	1	1	0	0
Polypren-38	C	0-1	1	Many	Symgyl	Conf-HistPolypren-38-0-1.D	S	1	1	0	0
Polypren-39	C	0-1	1	Many	Symgyl	Conf-HistPolypren-39-0-1.D	S	1	1	0	0
Polypren-40	C	0-1	1	Many	Symgyl	Conf-HistPolypren-40-0-1.D	S	1	1	0	0
Polypren-41	C	0-1	1	Many	Symgyl	Conf-HistPolypren-41-0-1.D	S	1	1	0	0
Polypren-42	C	0-1	1	Many	Symgyl	Conf-HistPolypren-42-0-1.D	S	1	1	0	0
Polypren-43	C	0-1	1	Many	Symgyl	Conf-HistPolypren-43-0-1.D	S	1	1	0	0
Polypren-44	C	0-1	1	Many	Symgyl	Conf-HistPolypren-44-0-1.D	S	1	1	0	0
Polypren-45	C	0-1	1	Many	Symgyl	Conf-HistPolypren-45-0-1.D	S	1	1	0	0
Polypren-46	C	0-1	1	Many	Symgyl	Conf-HistPolypren-46-0-1.D	S	1	1	0	0
Polypren-47	C	0-1	1	Many	Symgyl	Conf-HistPolypren-47-0-1.D	S	1	1	0	0
Polypren-48	C	0-1	1	Many	Symgyl	Conf-HistPolypren-48-0-1.D	S	1	1	0	0
Polypren-49	C	0-1	1	Many	Symgyl	Conf-HistPolypren-49-0-1.D	S	1	1	0	0
Polypren-50	C	0-1	1	Many	Symgyl	Conf-HistPolypren-50-0-1.D	S	1	1	0	0
Polypren-51	C	0-1	1	Many	Symgyl	Conf-HistPolypren-51-0-1.D	S	1	1	0	0
Polypren-52	C	0-1	1	Many	Symgyl	Conf-HistPolypren-52-0-1.D	S	1	1	0	0
Polypren-53	C	0-1	1	Many	Symgyl	Conf-HistPolypren-53-0-1.D	S	1	1	0	0
Polypren-54	C	0-1	1	Many	Symgyl	Conf-HistPolypren-54-0-1.D	S	1	1	0	0
Polypren-55	C	0-1	1	Many	Symgyl	Conf-HistPolypren-55-0-1.D	S	1	1	0	0
Polypren-56	C	0-1	1	Many	Symgyl	Conf-HistPolypren-56-0-1.D	S	1	1	0	0
Polypren-57	C	0-1	1	Many	Symgyl	Conf-HistPolypren-57-0-1.D	S	1	1	0	0
Polypren-58	C	0-1	1	Many	Symgyl	Conf-HistPolypren-58-0-1.D	S	1	1	0	0
Polypren-59	C	0-1	1	Many	Symgyl	Conf-HistPolypren-59-0-1.D	S	1	1	0	0
Polypren-60	C	0-1	1	Many	Symgyl	Conf-HistPolypren-60-0-1.D	S	1	1	0	0
Polypren-61	C	0-1	1	Many	Symgyl	Conf-HistPolypren-61-0-1.D	S	1	1	0	0
Polypren-62	C	0-1	1	Many	Symgyl	Conf-HistPolypren-62-0-1.D	S	1	1	0	0
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Polypren-66	C	0-1	1	Many	Symgyl	Conf-HistPolypren-66-0-1.D	S	1	1	0	0
Polypren-67	C	0-1	1	Many	Symgyl	Conf-HistPolypren-67-0-1.D	S	1	1	0	0
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Polypren-69	C	0-1	1	Many	Symgyl	Conf-HistPolypren-69-0-1.D	S	1	1	0	0
Polypren-70	C	0-1	1	Many	Symgyl	Conf-HistPolypren-70-0-1.D	S	1	1	0	0
Polypren-71	C	0-1	1	Many	Symgyl	Conf-HistPolypren-71-0-1.D	S	1	1	0	0
Polypren-72	C	0-1	1	Many	Symgyl	Conf-HistPolypren-72-0-1.D	S	1	1	0	0
Polypren-73	C	0-1	1	Many	Symgyl	Conf-HistPolypren-73-0-1.D	S	1	1	0	0
Polypren-74	C	0-1	1	Many	Symgyl	Conf-HistPolypren-74-0-1.D	S	1	1	0	0
Polypren-75	C	0-1	1	Many	Symgyl	Conf-HistPolypren-75-0-1.D	S	1	1	0	0
Polypren-76	C	0-1	1	Many	Symgyl	Conf-HistPolypren-76-0-1.D	S	1	1	0	0
Polypren-77	C	0-1	1	Many	Symgyl	Conf-HistPolypren-77-0-1.D	S	1	1	0	0
Polypren-78	C	0-1	1	Many	Symgyl	Conf-HistPolypren-78-0-1.D	S	1	1	0	0
Polypren-79	C	0-1	1	Many	Symgyl	Conf-HistPolypren-79-0-1.D	S	1	1	0	0
Polypren-80	C	0-1	1	Many	Symgyl	Conf-HistPolypren-80-0-1.D	S	1	1	0	0
Polypren-81	C	0-1	1	Many	Symgyl	Conf-HistPolypren-81-0-1.D	S	1	1	0	0
Polypren-82	C	0-1	1	Many	Symgyl	Conf-HistPolypren-82-0-1.D	S	1	1	0	0
Polypren-83	C	0-1	1	Many	Symgyl	Conf-HistPolypren-83-0-1.D	S	1	1	0	0
Polypren-84	C	0-1	1	Many	Symgyl	Conf-HistPolypren-84-0-1.D	S	1	1	0	0
Polypren-85	C	0-1	1	Many	Symgyl	Conf-HistPolypren-85-0-1.D	S	1	1	0	0
Polypren-86	C	0-1	1	Many	Symgyl	Conf-HistPolypren-86-0-1.D	S	1	1	0	0
Polypren-87	C	0-1	1	Many	Symgyl	Conf-HistPolypren-87-0-1.D	S	1	1	0	0
Polypren-88	C	0-1	1	Many	Symgyl	Conf-HistPolypren-88-0-1.D	S	1	1	0	0
Polypren-89	C	0-1	1	Many	Symgyl	Conf-HistPolypren-89-0-1.D	S	1	1	0	0
Polypren-90	C	0-1	1	Many	Symgyl	Conf-HistPolypren-90-0-1.D	S	1	1	0	0
Polypren-91	C	0-1	1	Many	Symgyl	Conf-HistPolypren-91-0-1.D	S	1	1	0	0
Polypren-92	C	0-1	1	Many	Symgyl	Conf-HistPolypren-92-0-1.D	S	1	1	0	0
Polypren-93	C	0-1	1	Many	Symgyl	Conf-HistPolypren-93-0-1.D	S	1	1	0	0
Polypren-94	C	0-1	1	Many	Symgyl	Conf-HistPolypren-94-0-1.D	S	1	1	0	0
Polypren-95	C	0-1	1	Many	Symgyl	Conf-HistPolypren-95-0-1.D	S	1	1	0	0
Polypren-96	C	0-1	1	Many	Symgyl	Conf-HistPolypren-96-0-1.D	S	1	1	0	0
Polypren-97	C	0-1	1	Many	Symgyl	Conf-HistPolypren-97-0-1.D	S	1	1	0	0
Polypren-98	C	0-1	1	Many	Symgyl	Conf-HistPolypren-98-0-1.D	S	1	1	0	0
Polypren-99	C	0-1	1	Many	Symgyl	Conf-HistPolypren-99-0-1.D	S	1	1	0	0
Polypren-100	C	0-1	1	Many	Symgyl	Conf-HistPolypren-100-0-1.D	S	1	1	0	0

## Sea uses

## ID

## Code

## Description

## Danish

## Estonian

## Finnish

...

[illegible]

► **MSP areas**

## ID

## planId

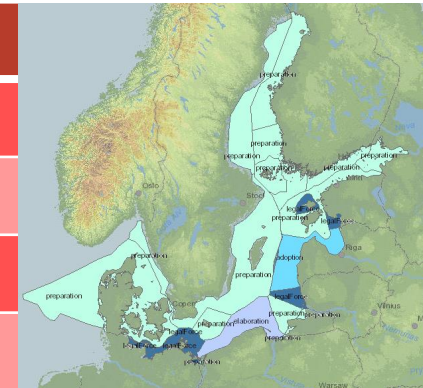
## officialTitle

levelOfSpatial  
Plan

## processStep

...

# Geometry



## The same National MSP table model for line and point plans

# MSP output data model for Planned sea use

National MSP table with added attributes (from proposal 2)

ID	Name	Code	...	Geom	MSP area	Priority use	Use description	aquacul ture	aquacul ture- fish	aquacul ture- mussel	aquacul ture- plant	coast	coast- deposit	extracti on	extracti on-co2	...
1	...	...	...	...	12	44	...	a	a	a	a			f	f	...
2	...	...	...	...	8	60	...					a				...
3	...	...	...	...	20	25	...					r	r	a	a	...
4	...	...	...	...	5	17	...	f	f	f	f	r	r			...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

National MSP attributes

Links to  
MSP area and  
Sea use tables

Text  
desc.  
of sea  
use

Allowed, restricted, forbidden uses attributes

PL_data_2									
PL	Shape	Access Name	F. POINT	via	Label name	Link DOC	F. DOP. Py	F. DOP. Pos	Label Ord
1	8	Poligon C-1	C	D.C.1	1. Warty Synergiz. Konfliktow C-1. ab	D. R. S.	T. B. L. O. N. Kp. W.	OB-1	C
1	Poligon C-2	C	D.C.2	1. Warty Synergiz. Konfliktow C-2. ab	D. R. S.	T. B. L. O. N. Kp. W.	OB-2	C	
2	Poligon C-3	C	D.C.3	1. Warty Synergiz. Konfliktow C-3. ab	D. R. S.	T. B. L. O. N. Kp. W.	OB-3	C	
3	Poligon C-4	C	D.C.4	1. Warty Synergiz. Konfliktow C-4. ab	D. R. S.	T. B. L. O. N. Kp. W.	OB-3a	C	
4	Poligon C-5	C	D.C.5	1. Warty Synergiz. Konfliktow C-5. ab	D. R. S.	T. B. L. O. N. Kp. W.	OB-4	C	
5	Poligon C-6	C	D.C.6	1. Warty Synergiz. Konfliktow C-6. ab	D. R. S.	T. B. L. O. N. Kp. W.	OB-5	C	
6	Poligon C-7	C	D.C.7	1. Warty Synergiz. Konfliktow C-7. ab	D. R. S.	T. B. L. O. N. Kp. W.	OB-5a	C	
7	Poligon C-8	C	D.C.8	1. Warty Synergiz. Konfliktow C-8. ab	D. R. S.	T. B. L. O. N. Kp. W.	OB-6	C	
8	Poligon C-9	C	D.C.9	1. Warty Synergiz. Konfliktow C-9. ab	D. R. S.	T. B. L. O. N. Kp. W.	OB-8	C	
9	Poligon P-26	P	D.P.26	1. Warty Synergiz. Konfliktow P-26. ab	D. R. S.	T. B. L. O. N. S.	PR-13a	P	
10	Poligon P-25	P	D.P.25	1. Warty Synergiz. Konfliktow P-25. ab	D. R. S.	T. B. L. O. N. S.	PR-13	P	
11	Poligon P-23	P	D.P.23	1. Warty Synergiz. Konfliktow P-23. ab	D. R. S.	T. B. L. O. N. S.	PR-14a	P	
12	Poligon P-22	P	D.P.22	1. Warty Synergiz. Konfliktow P-22. ab	D. R. S.	T. B. L. O. N. S.	PR-14	P	
13	Poligon P-24	P	D.P.24	1. Warty Synergiz. Konfliktow P-24. ab	D. R. S.	T. B. L. O. N. S. Kp. D.	PR-9	P	
14	Poligon P-19	P	D.P.19	1. Warty Synergiz. Konfliktow P-19. ab	D. R. S.	T. B. L. O. N. S.	PR-15a	P	
15	Poligon P-21	P	D.P.21	1. Warty Synergiz. Konfliktow P-21. ab	D. R. S.	T. B. L. O. N. S. Kp.	PR-7b	P	
16	Poligon P-18	P	D.P.18	1. Warty Synergiz. Konfliktow P-18. ab	D. R. S.	T. B. L. O. N. S.	PR-15	P	
17	Poligon P-17	P	D.P.17	1. Warty Synergiz. Konfliktow P-17. ab	D. R. S.	T. B. L. O. N. S. Kp.	PR-9	P	
18	Poligon P-20	P	D.P.20	1. Warty Synergiz. Konfliktow P-20. ab	D. R. S.	T. B. L. O. N. S. Kp. D.	PR-14a	P	
19	Poligon P-13	P	D.P.13	1. Warty Synergiz. Konfliktow P-13. ab	D. R. S.	T. B. L. O. N. S. Kp.	PR-16a	P	
20	Poligon P-16	P	D.P.16	1. Warty Synergiz. Konfliktow P-16. ab	D. R. S.	T. B. L. O. N. S. Kp.	PR-4	P	
21	Poligon P-12	P	D.P.12	1. Warty Synergiz. Konfliktow P-12. ab	D. R. S.	T. B. L. O. N. S. Kp.	PR-16	P	
22	Poligon P-14	P	D.P.14	1. Warty Synergiz. Konfliktow P-14. ab	D. R. S.	T. B. L. O. N. S. Kp.	PR-17	P	
23	Poligon P-15	P	D.P.15	1. Warty Synergiz. Konfliktow P-15. ab	D. R. S.	T. B. L. O. N. S. Kp.	PR-10	P	
24	Poligon P-5	P	D.P.5	1. Warty Synergiz. Konfliktow P-5. ab	D. R. S.	T. B. L. O. N. S. Kp.	PR-12	P	
25	Poligon P-4	P	D.P.4	1. Warty Synergiz. Konfliktow P-4. ab	D. R. S.	T. B. L. O. N. S. Kp.	PR-11	P	
26	Poligon P-3	P	D.P.3	1. Warty Synergiz. Konfliktow P-3. ab	D. R. S.	T. B. L. O. N. S. Kp.	PR-18	P	
27	Poligon P-1	P	D.P.1	1. Warty Synergiz. Konfliktow P-1. ab	D. R. S.	T. B. L. O. N. S. Kp.	PR-6	P	
28	Poligon M-1	M	D.M.1	1. Warty Synergiz. Konfliktow M-1. ab	D. R. S.	T. B. L. O. N. S. Kp. D.	PR-1	M	
29	Poligon P-11	P	D.P.11	1. Warty Synergiz. Konfliktow P-11. ab	D. R. S.	T. B. L. O. N. S. Kp.	PR-5	P	
30	Poligon P-9	P	D.P.9	1. Warty Synergiz. Konfliktow P-9. ab	D. R. S.	T. B. L. O. N. S. Kp. D.	PR-1	P	
31	Poligon P-2	P	D.P.2	1. Warty Synergiz. Konfliktow P-2. ab	D. R. S.	T. B. L. O. N. S. Kp.	PR-2b	P	
32	Poligon P-10	P	D.P.10	1. Warty Synergiz. Konfliktow P-10. ab	D. R. S.	T. B. L. O. N. S. Kp. D.	PR-3	P	
33	Poligon P-7	P	D.P.7	1. Warty Synergiz. Konfliktow P-7. ab	D. R. S.	T. B. L. O. N. S. Kp.	PR-2a	P	
34	Poligon M-2	M	D.M.2	1. Warty Synergiz. Konfliktow M-2. ab	D. R. S.	T. B. L. O. N. S. Kp. W.	PR-2	M	

Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name
Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name
Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name
Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name
Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name
Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name
Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name
Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name
Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name
Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name	Access Name





# Data model 2 overview:

Relational database, can be easily implemented with any ORDBMS (e.g. PostgreSQL)

Easier to edit in GIS Desktop software (only 2 relations 1:1)

Many attributes in the main table

Easier publish OGC web services

# Benefits:

National MSP datasets can preserve country specific attributes

Planned sea use objects can be symbolized using Priority use attribute value and Sea use type (priority, allowed, restricted, forbidden)

Planned sea uses can be filtered for display and download by Priority use attribute value and Sea use type

# How to harmonize Planned sea use datasets?

Step 1: Prepare static MSP areas and Sea use datasets, that will be used as related tables for Planned sea uses.

Sea uses	MSP areas
ID	ID
Code	planId
Description	officialTitle
Danish	levelOfSpatialPlan
Estonian	processStep
Finnish	...
...	Geometry

## Step 2: Prepare national MSP datasets (polygon, line, point classes).

National MSP polygons
ID
Name
Code
... (all country MSP specific attributes)...
MULTIPOLYGON

### Step 3a: Implement relational database for Planned sea uses and related datasets.

Step 3b (data model 2 only): Implement attribute schema to store MSP area and Sea use types. This schema will be added later to national MSP datasets to create Planned sea uses datasets.

[illegible]

# How to harmonize Planned sea use datasets?

Step 4: Implement a web-based form to fill in Planned sea use attribute information.

Step 5: Fill in Planned sea use attribute information. (Using web-based form or, if data model 2, using GIS desktop software).

Step 6: If filled in using web-based form, then export to GIS format.

Step 7: Publish OGC services.

# Web-based form to fill in Planned sea use attribute information

## Harmonize national MSP dataset

### Upload MSP dataset

Upload

PL\_data\_2

FID	Shape	Akwén Name	F PODST	vis	Label name	Link DOC	F DOP Pr	F DOP Poz	Label Old	F Group
0	Polygon	C_1	C	0	C-1	..\\Karty Synergii i Konfliktow\\CIC-1.do	O, R, S	T, B, I, D, N, Kp, W	OB-1	C
1	Polygon	C_2	C	0	C-2	..\\Karty Synergii i Konfliktow\\CIC-2.do	O, R, S	T, B, I, D, N, Kp, W	OB-2	C
2	Polygon	C_3	C	0	C-3	..\\Karty Synergii i Konfliktow\\CIC-3.do	O, R, S	T, B, I, D, N, Kp, W	OB-3	C
3	Polygon	C_4	C	0	C-4	..\\Karty Synergii i Konfliktow\\CIC-4.do	O, R, S	T, B, I, D, N, Kp, W	OB-3A	C
4	Polygon	C_5	C	0	C-5	..\\Karty Synergii i Konfliktow\\CIC-5.do	O, R, S	T, B, I, D, N, Kp, W	OB-4	C
5	Polygon	C_6	C	0	C-6	..\\Karty Synergii i Konfliktow\\CIC-6.do	O, R, S	T, B, I, D, N, Kp, W	OB-5	C
6	Polygon	C_7	C	0	C-7	..\\Karty Synergii i Konfliktow\\CIC-7.do	B, O, R	S, T, B, I, D, N, Kp, W	OB-5A	C
7	Polygon	C_8	C	4	C-8	..\\Karty Synergii i Konfliktow\\CIC-8.do	B, R, S	O, T, B, D, N, Kp, W	OB-6	C
8	Polygon	C_9	C	0	C-9	..\\Karty Synergii i Konfliktow\\CIC-9.do	lp, R, S	O, T, D, N, Kp, W	OB-8	C
9	Polygon	P_26	P	0	P-26	..\\Karty Synergii i Konfliktow\\PIP-26.do	B, R, K	T, O, I, D, N, S	PR-13A	P
10	Polygon	P_25	P	0	P-25	..\\Karty Synergii i Konfliktow\\PIP-25.do	B, R, K	T, I, N, D, S, O	PR-13	P
11	Polygon	P_23	P	0	P-23	..\\Karty Synergii i Konfliktow\\PIP-23.do	B, R, K	T, I, N, D, S, O	PR-14A	P
12	Polygon	P_22	P	0	P-22	..\\Karty Synergii i Konfliktow\\PIP-22.do	B, R, K	T, I, N, D, S, O	PR-14	P
13	Polygon	P_24	P	0	P-24	..\\Karty Synergii i Konfliktow\\PIP-24.do	T, O	R, I, B, N, S, Kp, D	PR-8	P
14	Polygon	P_19	P	0	P-19	..\\Karty Synergii i Konfliktow\\PIP-19.do	B, R, K	T, I, N, D, S, O	PR-15A	P
15	Polygon	P_21	P	0	P-21	..\\Karty Synergii i Konfliktow\\PIP-21.do	B, R, O	T, I, D, N, S, Kp	PR-7B	P
16	Polygon	P_18	P	0	P-18	..\\Karty Synergii i Konfliktow\\PIP-18.do	B, R, K	T, I, N, D, S, O	PR-15	P
17	Polygon	P_17	P	0	P-17	..\\Karty Synergii i Konfliktow\\PIP-17.do	B, R, O	T, I, D, N, S, Kp	PR-9	P
18	Polygon	P_20	P	0	P-20	..\\Karty Synergii i Konfliktow\\PIP-20.do	R, O, T	I, B, N, S, Kp, D	PR-7A	P
19	Polygon	P_13	P	0	P-13	..\\Karty Synergii i Konfliktow\\PIP-13.do	B, R, O	T, I, D, N, S, Kp	PR-16A	P
20	Polygon	P_15	P	0	P-15	..\\Karty Synergii i Konfliktow\\PIP-15.do	B, R, O	T, I, D, N, S, Kp	PR-4	P
21	Polygon	P_12	P	0	P-12	..\\Karty Synergii i Konfliktow\\PIP-12.do	B, R, O	T, I, N, D, S, Kp	PR-16	P
22	Polygon	P_14	P	0	P-14	..\\Karty Synergii i Konfliktow\\PIP-14.do	B, R, O	T, I, D, N, S, Kp	PR-17	P
23	Polygon	P_16	P	0	P-16	..\\Karty Synergii i Konfliktow\\PIP-16.do	R, T, I	B, O, S, N, D, Kp	PR-10	P
24	Polygon	P_5	P	0	P-5	..\\Karty Synergii i Konfliktow\\PIP-5.doc	B, O, R	T, I, N, D, S, C, Kp	PR-12	P
25	Polygon	P_4	P	4	P-4	..\\Karty Synergii i Konfliktow\\PIP-4.doc	R, O, T	C, S, B, D, N, Kp	PR-11	P
26	Polygon	P_8	P	0	P-8	..\\Karty Synergii i Konfliktow\\PIP-8.doc	B, R, O	T, I, D, N, S, Kp	PR-18	P
27	Polygon	P_3	P	0	P-3	..\\Karty Synergii i Konfliktow\\PIP-3.doc	B, R, O	T, I, D, N, S, C, Kp	PR-6	P
28	Polygon	M_1	M	0	M-1	..\\Karty Synergii i Konfliktow\\MM-1.do	T, lp, C, S, R	O, Kp, B, I, A, D, N, W	WRG-1	M
29	Polygon	P_11	P	0	P-11	..\\Karty Synergii i Konfliktow\\PIP-11.do	B, R, O	T, I, D, N, S, Kp	PR-5	P
30	Polygon	P_9	P	0	P-9	..\\Karty Synergii i Konfliktow\\PIP-9.doc	O, R, T	I, B, C, N, S, Kp, D, lp	PR-1	P
31	Polygon	P_2	P	0	P-2	..\\Karty Synergii i Konfliktow\\PIP-2.doc	B, R, O	T, I, D, N, S, C, Kp	PR-2B	P
32	Polygon	P_10	P	0	P-10	..\\Karty Synergii i Konfliktow\\PIP-10.doc	O, R, T	I, B, C, N, S, Kp, D	PR-3	P
33	Polygon	P_1	P	0	P-1	..\\Karty Synergii i Konfliktow\\PIP-1.doc	B, R, O	T, I, D, N, S, C, Kp, lp	PR-2A	P
34	Polygon	In_2	In	0	In-2	..\\Karty Synergii i Konfliktow\\In-2.doc	T, C, O	R, S, B, I, D, N, Kp, W	IP-2	I

Select all

Unselect all

Save

### Choose a priority use

aquaculture

aquaculture-fish

aquaculture-mussel

aquaculture-plant

coast

...

### Enter use description

### Choose allowed uses

- ☐ aquaculture
- ☐ aquaculture-fish
- ☐ aquaculture-mussel
- ☐ aquaculture-plant
- ☐ coast
- ☐ ...

### Choose restricted uses

- ☐ aquaculture
- ☐ aquaculture-fish
- ☐ aquaculture-mussel
- ☐ aquaculture-plant
- ☐ coast
- ☐ ...

### Choose forbidden uses


- ☐ aquaculture
- ☐ aquaculture-fish
- ☐ aquaculture-mussel
- ☐ aquaculture-plant
- ☐ coast
- ☐ ...

Export planned  
sea use dataset

# Publishing Planned sea use datasets?

- Step 1: Prepare map document (e.g. MXD in ArcMap) with Planned sea uses layers (one for each: polygon, line and point if needed).
- Step 2: Define cartographic representation for each layer based on Priority use attribute.
- Step 3: Publish map document with Planned sea use layers (polygon, line, point) as one OGC WMS service.
- Step 4: Publish Planned sea uses datasets (polygon, line, point) as one OGC WFS service.
- Step 5: Publish static MSP areas dataset as OGC WFS service and Sea use table.

# Baltic MSP web-map (BASEMAPS)

 **Baltic LINes**

☐ Administrative borders

☐ Maritime transport

☐ Installations and Infrastructures

☐ Nature

☐ Extraction areas

☐ Cables and pipelines

☐ Underwater cultural heritage

☐ Military training areas

☐ MSP national plans

[Collapse layer list](#) [Hide all layers](#)

Country

☐ Denmark

☐ Estonia

☐ Finland

☐ Germany

☒ Latvia

☐ Lithuania

☒ Poland

☐ Russia

☐ Sweden

Use type

☐ Priority use

☐ Allowed use

☐ Restricted use

☐ Forbidden use

Sea use

☐ ...

☐ heritage-landscape

☐ installations

☐ installations-platform

☐ line

☐ heritage

☐ heritage-wreck

☒ installations-owf

☐ installations-wave

☐ ...

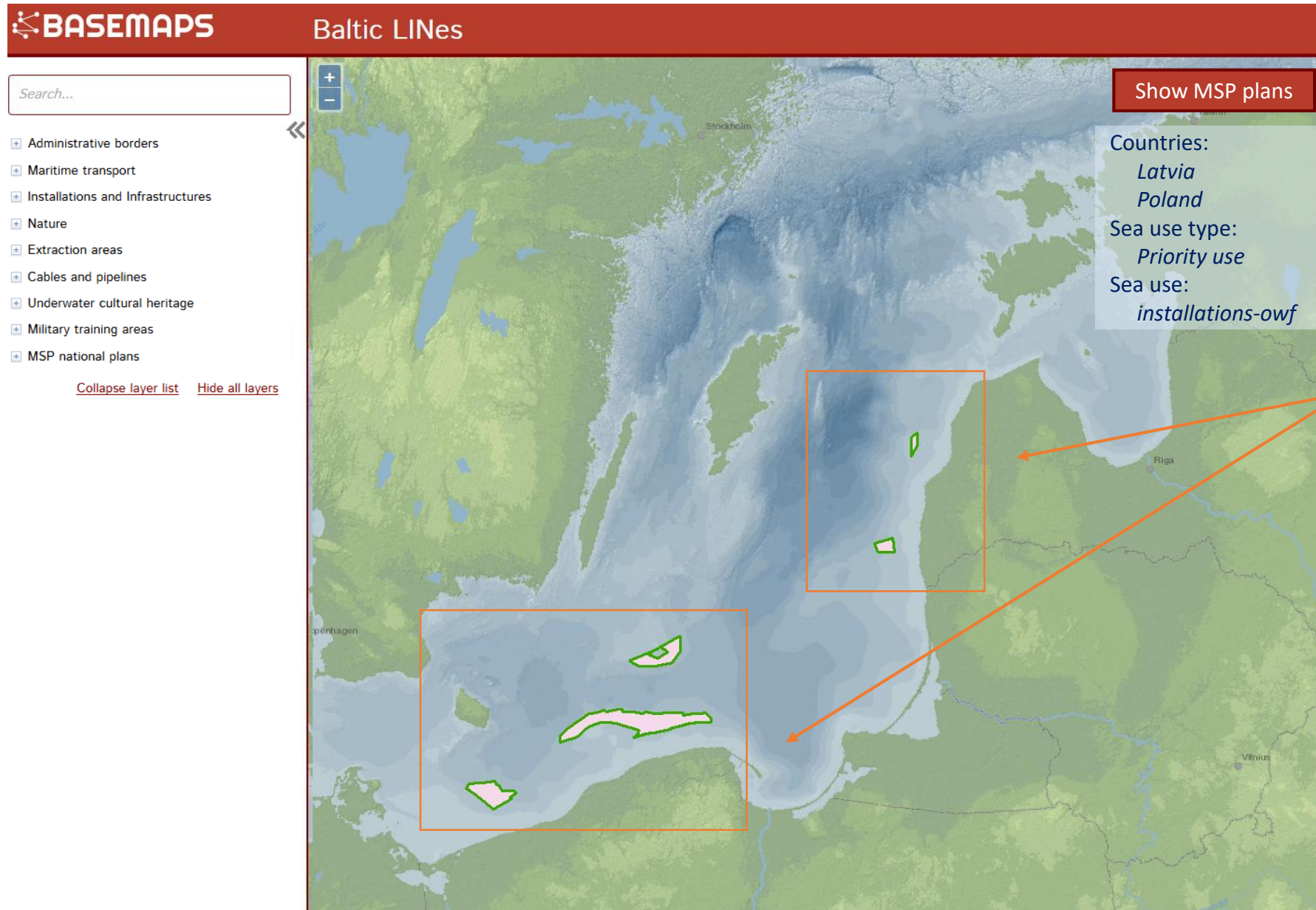
Show MSP plans

Show

GetFeature  
request sent to  
WFS service



# Baltic MSP web-map (BASEMAPS)



WFS features  
rendered using  
predefined  
homogenous  
symbology

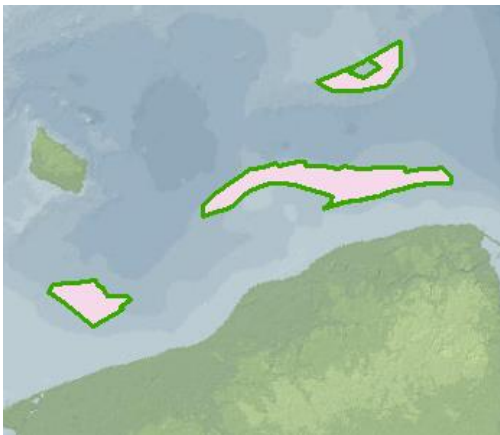


# Suggestions for cartographic representation (for WFS)

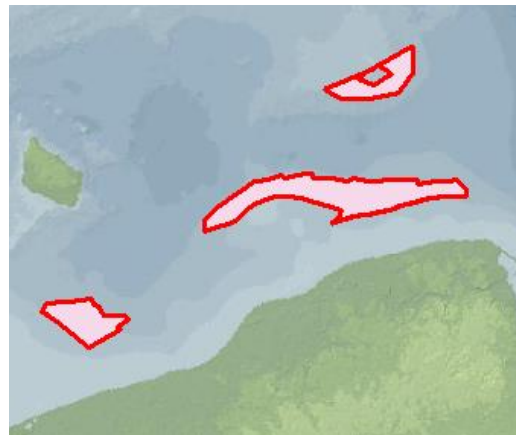
Homogenous symbology for all Sea uses.  
Applied in BASEMAPS on run-time rendering.

For polygon data only fill symbol (solid color, transparency, pattern, gradient). No contour line.

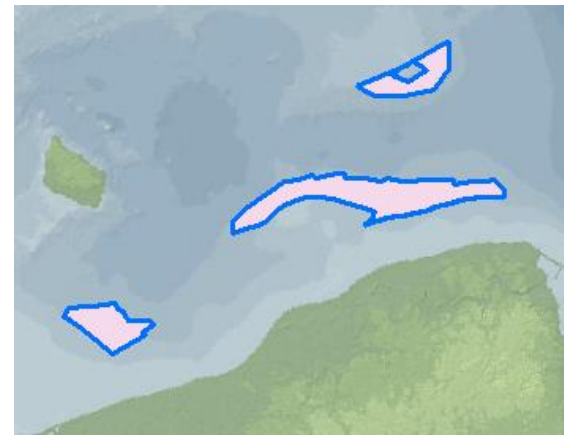
Homogenous symbology for Sea use type – a countour line.  
E.g: Priority use – rgb(56, 168, 0). Forbidden use – rgb(255, 0, 0).



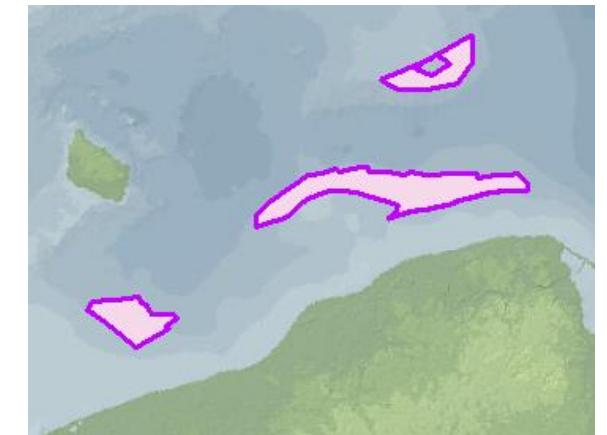
Priority use



Forbidden use



Allowed use



Restricted use

# Baltic MSP web-map (BASEMAPS)

National plans overview (WMS)

Include MSP plans in BASEMAPS

Display national MSP plan WMS layer (for whole area overview)

Show WMS layer info and metadata

The screenshot displays the BASEMAPS web-map interface for the Baltic region. The interface includes a search bar at the top left, a list of layers on the left, and a main map area on the right. The layers list is organized by country, with Latvia and Poland currently expanded. Under Latvia, the 'Planned sea use (polygon)' layer is checked. Under Poland, the 'Planned sea use (polygon)' layer is also checked. An inset map in the bottom left corner provides a detailed view of the coastal area near Copenhagen. A 'Show MSP plans' button is located in the top right corner of the map area.

**BASEMAPS** Baltic LINES

Search...

- ☐ Administrative borders
- ☐ Maritime transport
- ☐ Installations and Infrastructures
- ☐ Nature
- ☐ Extraction areas
- ☐ Cables and pipelines
- ☐ Underwater cultural heritage
- ☐ Military training areas
- ☒ **MSP national plans**
  - ☐ Denmark
  - ☐ Estonia
  - ☐ Finland
  - ☐ Germany
  - ☒ **Latvia**
    - ☒ **Planned sea use (polygon)**
    - ☐ Planned sea use (line)
    - ☐ Planned sea use (point)
  - ☐ Lithuania
  - ☒ **Poland**
    - ☒ **Planned sea use (polygon)**
    - ☐ Planned sea use (line)
    - ☐ Planned sea use (point)
  - ☐ Russia
  - ☐ Sweden

[Collapse layer list](#) [Hide all layers](#)

Stockholm

Riga

Copenhagen

Vilnius

Show MSP plans

# Suggestions for cartographic representation (for WMS)

Symbology for all Sea uses defined and published with the WMS services.

Homogenous Sea uses symbology (same as used for WFS) if possible.

# Thank you.