

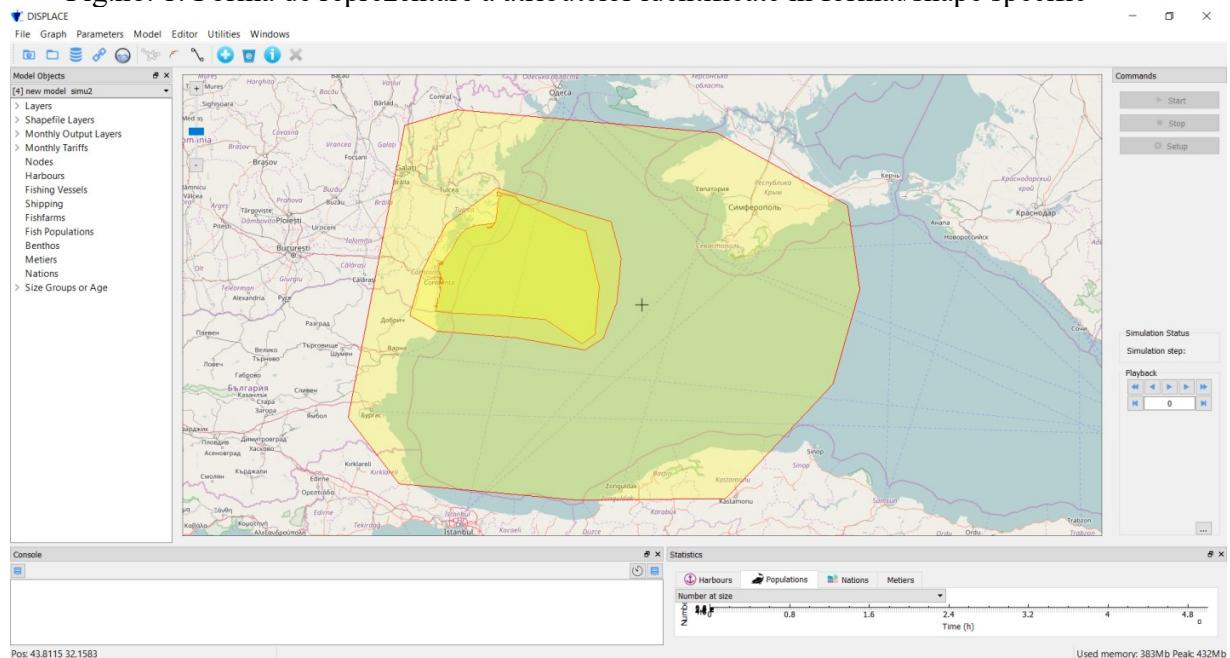
## Anexa 15

### Metoda de aplicati spatiale DISPLACE. STUDIUL DE CAZ MAREA NEAGRA. Rezultate

Aceasta metoda a inceput cu faza de documentare, identificarea datelor necesare si a formatului specific introducerii lor, colectarea si inregistrarea datelor. Principale etape sunt prezentate:

- pregatirea datelor brute necesare pentru parametrizare; acestea sunt,
  - o Shape-uri (planuri/straturi/format) spatial extend (EEZ, zona pescuit (0-100 m), puncte nodale, porturi, vase de pescuit, linii de navigatie, ferme pescaresti, populatii piscicole, bentos, grupe de pesti pe varste, etc.)

Fig.no. 1. Forma de reprezentare a atributelor identificate in format/shape specific

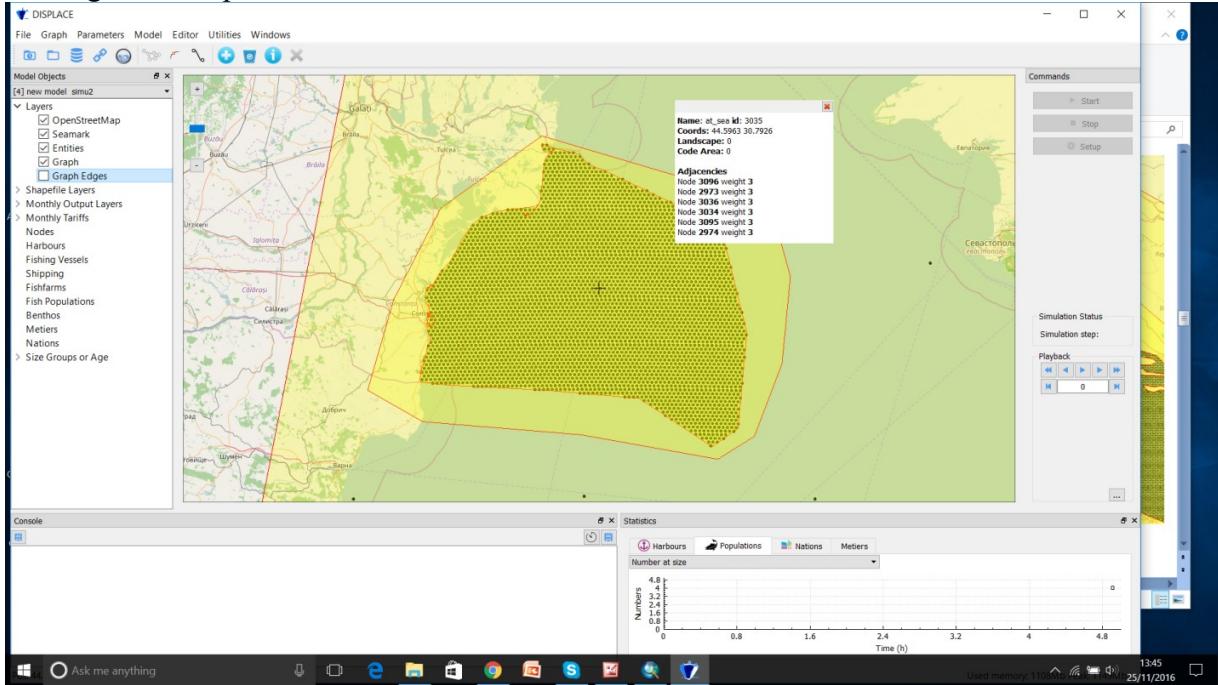


- o Lista de porturi cu coordonate in format.dat

Ports - Notepad	
File	Edit
Format	View
Help	
x;y;idx.port	
Sulina;45.162472;29.664304;1	
Sfantu Gheorghe;44.848133;29.608679;2	
Midia;44.333623;28.664278;3	
Constanta;44.115424;28.645057;4	
Mangalia;43.797394;28.579626;5	
Eforie;44.063822;28.642783;6	
Agigea;44.081738;28.642875;7	

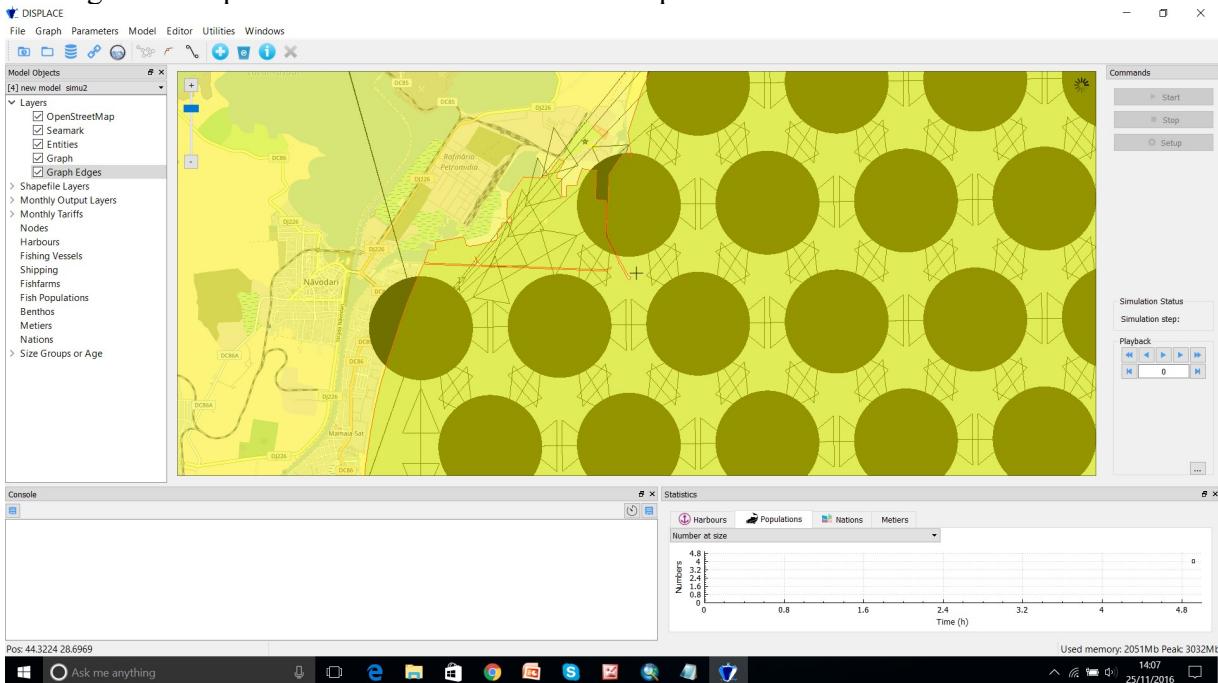
- o Crearea graficului (generare de noduri si linii de conectare noduri/muchii)

Fig.no. 2. Reprezentarea nodurilor si liniilor de conectare intre ele



- Conectarea nodurilor la porturi

Fig.no. 3. Reprezentarea conectarii nodurilor la porturi



- Organizarea datelor privind activitatea de pescuit (informatii despre captura la nivel de porturi, numar nave, dimensiuni, consum, persoane implicate, captura pe tip de unelte,

informatii privind pretul pentru speciile comerciale, etc) conform formatului impus de soft-ul utilizat (tabel excel)

- Organizarea datelor privind populatiile de pesti pentru speciile selectate conform formatului cerut

Fig.no. 1 (Table) Fish species and attributes necessary for spatial processing and representation

YE AR	COD E	Species	VB_LI NF	VB_ K	VB_T 0	M	Fc	Fm sy	SSB (t)	SSB	T	T_R O	%_ RO
2009	SPR	Sprat	13.6	0.272	-1.19				626036				
2009	ANE	Anchovy	15.3	0.431	-0.82				672590				
2009	HMM	Horse mackerel	18.4	0.351	-0.41				40292				
2009	WHG	Whiting	20.5	0.352	-1.18				737.8	11117.94			
2009	TUR	Turbot	86.3	0.15	-1.86				15751.4				
2009	DGS	Dogfish	146.8	0.158	3.23				5497				
2010	SPR	Sprat	12.6	0.534	-1.56	0.93			395969				
2010	ANE	Anchovy	15.5	0.369	-1.93	0.836			663637.7				
2010	HMM	Horse mackerel	20.1	0.302	-0.47	0.78			28732				
2010	WHG	Whiting	31.6	0.155	-1.34	0.457			510.5	14062.52			
2010	TUR	Turbot	82.9	0.21	-1.64	0.36			18412.5				
2010	DGS	Dogfish	134.7	0.153	-1.14	0.31			4493				
2011	SPR	Sprat	13.7	0.277	-1.16	0.498			330258		120708	131	0.11
2011	ANE	Anchovy	15.3	0.221	-3.13	0.71			669281.7		279300	41	0.01
2011	HMM	Horse mackerel	17.4	0.279	-0.44	0.7716			38165		18559	23	0.12
2011	WHG	Whiting	21.1	0.315	-0.78	0.501			13492.6	14062.52	8249	27	0.33
2011	TUR	Turbot	86.3	0.145	-1.97	0.245			3730		1659	43	2.59
2011	DGS	Dogfish	136.3	0.192	3.23	0.258			634.1		104	4	3.85
2012	SPR	Sprat	12.1	0.349	-1.17	0.683	0.75	0.64	315993		35025	88	0.25
2012	ANE	Anchovy	14.7	0.277	-1.86	0.7048	1.2	0.56			171036	18	0.01
2012	HMM	Horse mackerel	16.8	0.268	-1.81	0.758	1.42	0.4	36595		24931	20	0.08
2012	WHG	Whiting	18.9	0.295	-1.19	0.5675	0.95	0.4	12978.8	9460.489	6346	15	0.24
2012	TUR	Turbot	86.3	0.217	-0.49	0.3674	0.85	0.26	3499		1704	43	2.52
2012	DGS	Dogfish	134.7	0.153	-1.14	0.257	0.239	0.177	625.4		70	2	2.86
2013	SPR	Sprat	12.1	0.341	-1.59	0.6932	0.446	0.64	327305		27355	99	0.36
2013	ANE	Anchovy	14.7	0.232	-2.37	0.6278	1.2	0.56			326130	111	0.03
2013	HMM	Horse mackerel	16.8	0.471	-1.11	0.957	1.42	0.4	21581		20114	26	0.13
2013	WHG	Whiting	18.4	0.289	-1.08	0.574	1.15	0.4	13979.1	11561.92	8341	19	0.23
2013	TUR	Turbot	76.8	0.391	-0.48	0.558	1.33	0.26	2466		1522	43	2.83
2013	DGS	Dogfish	155.7	0.134	-0.93	0.2265	0.112	0.03	670.1		83	9	10.84
2014	SPR	Sprat	12.6	0.247	-1.58	0.498	0.45	0.64			58380	85	0.15
2014	ANE	Anchovy	14.2	0.252	-0.82	0.66831	1.01	0.49			157462	62	0.04
2014	HMM	Horse mackerel	16.8	0.503	-1.11	0.95	1.5	0.79	18453		12357	7	0.06
2014	WHG	Whiting	18.4	0.238	-1.33	0.584	1.08	0.79	12023.8	12201.41	8819	10	0.11

2014	TUR	Turbot	89.4	0.196	-1.11	0.339	1.4	0.26	1973		1159	43	3.71
2014	DGS	Dogfish	152.6	0.134	-0.97	0.273	0.24	0.03	616.1		75	2	2.67

M= Natural mortality

F<sub>c</sub> = current fishing mortality

F<sub>msy</sub> - fishing mortality for maximum sustainable yield

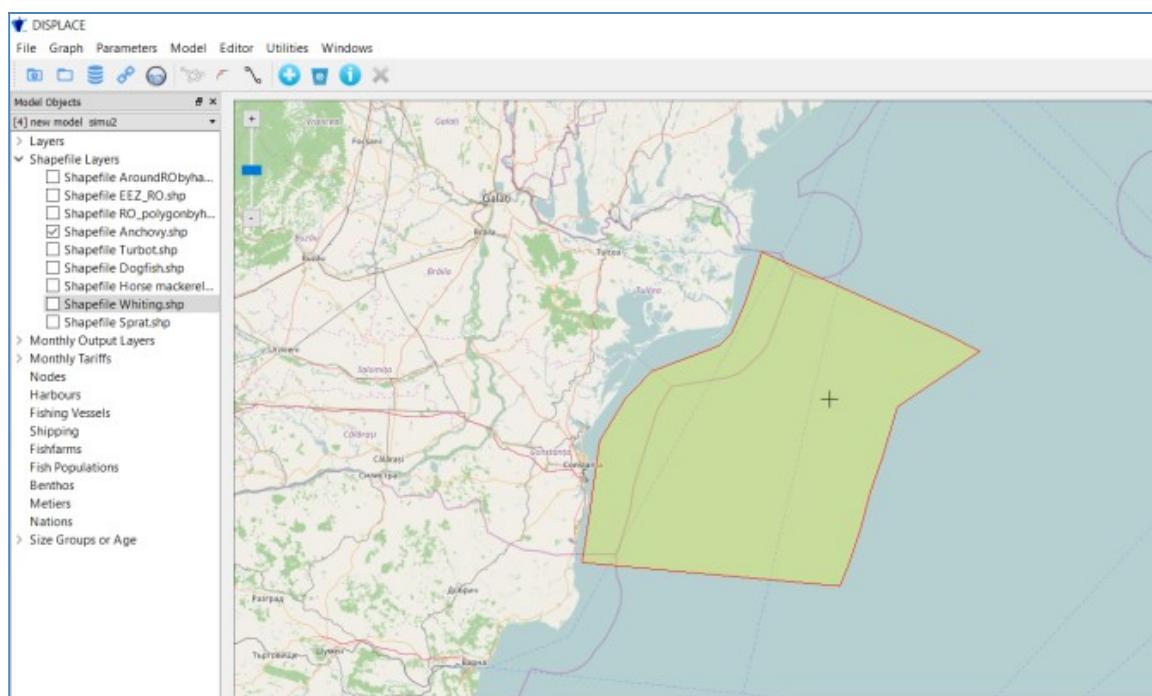
T= (total catch on stock)-BS

T\_R= (Romanian catch on stock)

%\_RO = %of the RO catch from stock)

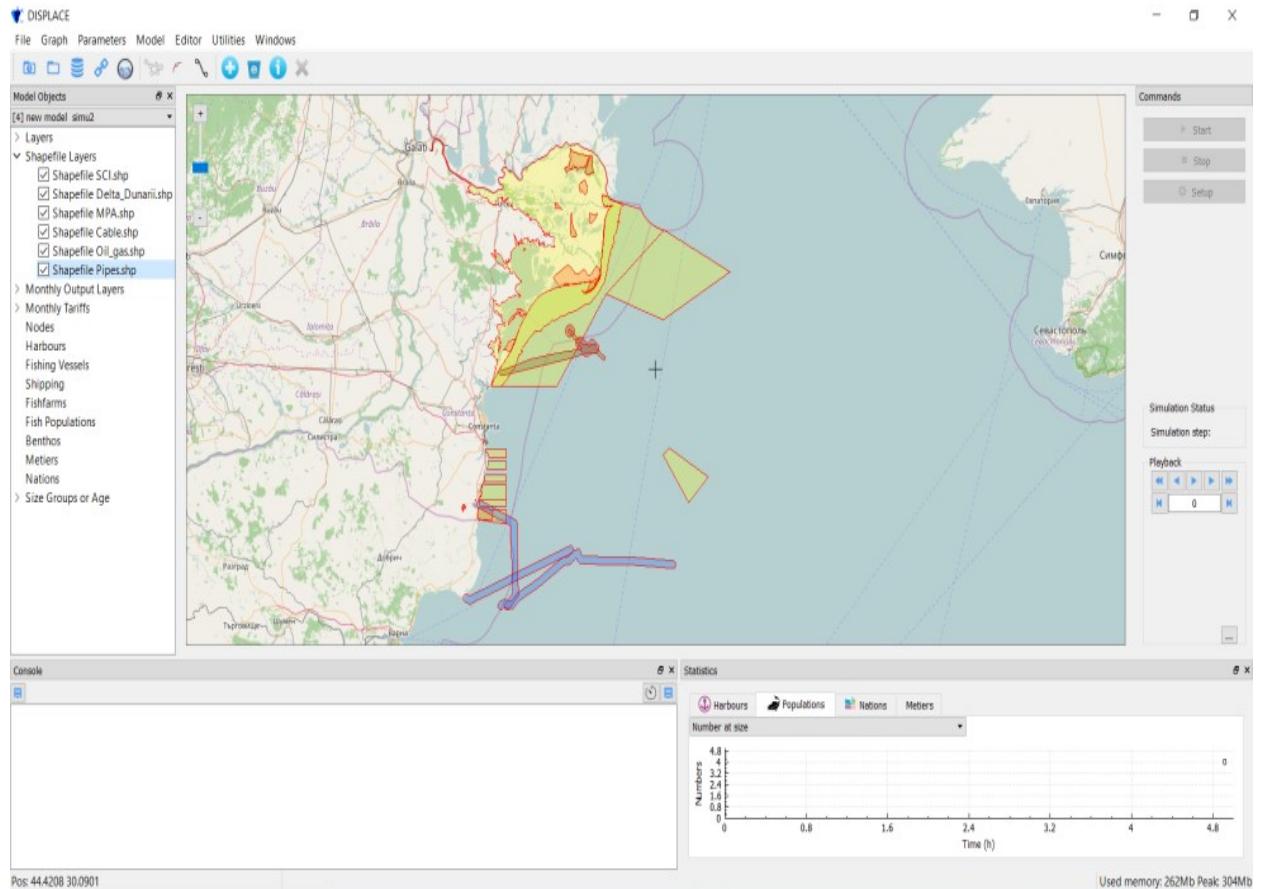
- Generarea shape-urilor privind efortul de pescuit pe baza datelor VMS
  - \*Generarea shape-urilor cu distributia speciilor selectate - distributia speciilor

Fig.no.4 (Table) Distributia spatiala a hamsiei (incluzand populatie, arii de hraniere, reproducere, crestere larvara si captura costiera)



\*Pregatirea shape-urilor privind datele de management - care limiteaza activitatile de pescuit (arii marine protejate, situri Natura 2000, cabluri si conducte submarine, alte activitati marine, etc.)

Fig.no.5. Reprezentare pentru date de management – legate de zonele care limiteaza activitatile de pescuit (arii marine protejate, situri Natura 2000, cabluri si conducte submarine, alte activitati marine, etc.)



\*Pregatire shape-urilor habitate (grid 10 x 10 km), care sunt in faza incipienta de completare date.