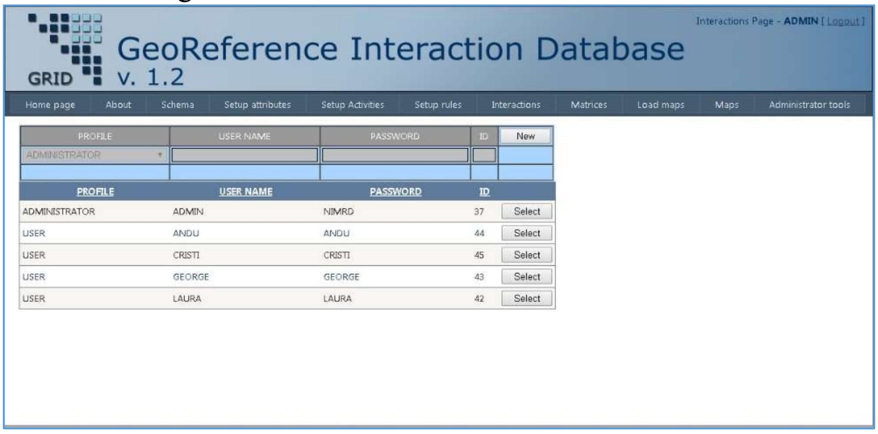
Anexa 11

Metoda de aplicatii spatiale GRID. STUDIUL DE CAZ MAREA NEAGRA. REZULTATE

In perioada octombrie – decembrie 2016 s-a realizat customizarea pentru studiu de caz **Black Sea**. Actvitatea a constat in:

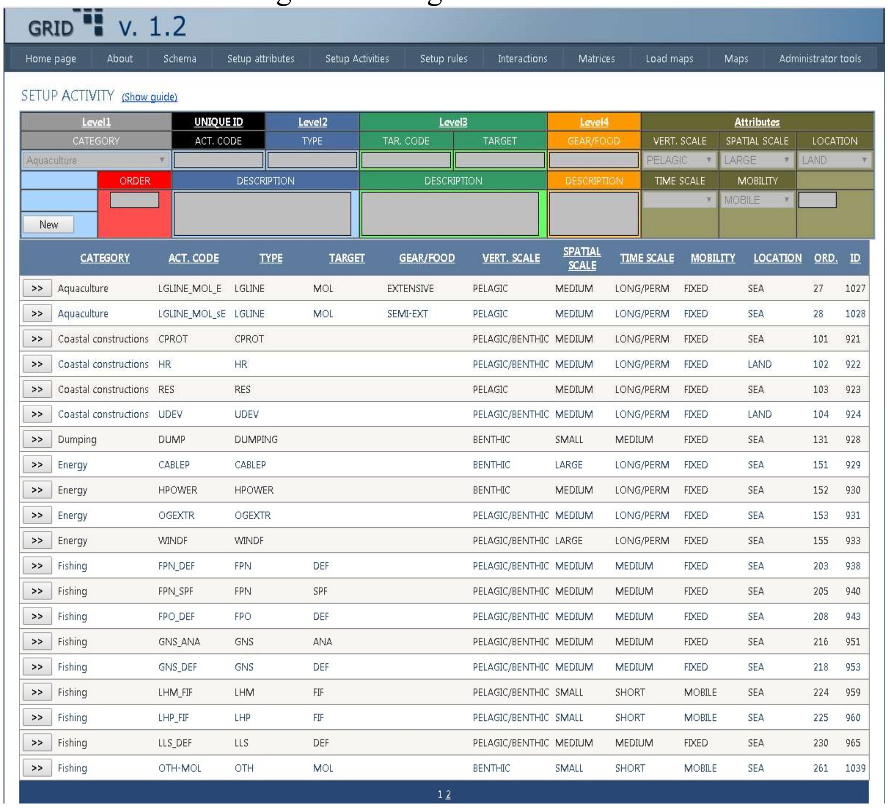
Fig.no.1. Creearea conturilor de utilizatori



PROFILE	USER NAME	PASSWORD	ID	
ADMINISTRATOR	ADMIN	NIMRD	37	Select
USER	ANDU	ANDU	44	Select
USER	CRISTI	CRISTI	45	Select
USER	GEORGE	GEORGE	43	Select
USER	LAURA	LAURA	42	Select

– selectarea categoriilor de activitati (Fig.nr.2)

Fig.no.2. Categorii de activitati



	CATEGORY	ACT. CODE	TYPE	TARGET	GEAR/FOOD	VERT. SCALE	SPATIAL SCALE	TIME SCALE	MOBILITY	LOCATION	ORD.	ID
>>	Aquaculture	LGLINE_MOL_E	LGLINE	MOL	EXTENSIVE	PELAGIC	MEDIUM	LONG/PERM	FIXED	SEA	27	1027
>>	Aquaculture	LGLINE_MOL_sE	LGLINE	MOL	SEMI-EXT	PELAGIC	MEDIUM	LONG/PERM	FIXED	SEA	28	1028
>>	Coastal constructions	CPROT	CPROT			PELAGIC/BENTHIC	MEDIUM	LONG/PERM	FIXED	SEA	101	921
>>	Coastal constructions	HR	HR			PELAGIC/BENTHIC	MEDIUM	LONG/PERM	FIXED	LAND	102	922
>>	Coastal constructions	RES	RES			PELAGIC	MEDIUM	LONG/PERM	FIXED	SEA	103	923
>>	Coastal constructions	UDEV	UDEV			PELAGIC/BENTHIC	MEDIUM	LONG/PERM	FIXED	LAND	104	924
>>	Dumping	DUMP	DUMPING			BENTHIC	SMALL	MEDIUM	FIXED	SEA	131	928
>>	Energy	CABLEP	CABLEP			BENTHIC	LARGE	LONG/PERM	FIXED	SEA	151	929
>>	Energy	HPOWER	HPOWER			BENTHIC	MEDIUM	LONG/PERM	FIXED	SEA	152	930
>>	Energy	OGEXTR	OGEXTR			PELAGIC/BENTHIC	MEDIUM	LONG/PERM	FIXED	SEA	153	931
>>	Energy	WINDF	WINDF			PELAGIC/BENTHIC	LARGE	LONG/PERM	FIXED	SEA	155	933
>>	Fishing	FPN_DEF	FPN	DEF		PELAGIC/BENTHIC	MEDIUM	MEDIUM	FIXED	SEA	203	938
>>	Fishing	FPN_SPF	FPN	SPF		PELAGIC/BENTHIC	MEDIUM	MEDIUM	FIXED	SEA	205	940
>>	Fishing	FPO_DEF	FPO	DEF		PELAGIC/BENTHIC	MEDIUM	MEDIUM	FIXED	SEA	208	943
>>	Fishing	GNS_ANA	GNS	ANA		PELAGIC/BENTHIC	MEDIUM	MEDIUM	FIXED	SEA	216	951
>>	Fishing	GNS_DEF	GNS	DEF		PELAGIC/BENTHIC	MEDIUM	MEDIUM	FIXED	SEA	218	953
>>	Fishing	LHM_FIF	LHM	FIF		PELAGIC/BENTHIC	SMALL	SHORT	MOBILE	SEA	224	959
>>	Fishing	LHP_FIF	LHP	FIF		PELAGIC/BENTHIC	SMALL	SHORT	MOBILE	SEA	225	960
>>	Fishing	LLS_DEF	LLS	DEF		PELAGIC/BENTHIC	MEDIUM	MEDIUM	FIXED	SEA	230	965
>>	Fishing	OTH-MOL	OTH	MOL		BENTHIC	SMALL	SHORT	MOBILE	SEA	261	1039

1 2

- pregatirea shape-urilor (Sistem de coordonate WGS84 Datum GCS_WGS_1984) pentru delimitari (boundary)/activitati, analiza si incarcarea (up-load) in GRID

- incarcat shape-uri/planuri/straturi ce definesc principalele utilizari ale spatiului marin, pe diferite categorii:

  - Pescarie – tipuri de pescuit

  - Constructii
    - porturi comerciale si turistice,
    - diguri / constructii pentru protectia costiera,
    - innisipari plaje

  - Sector energetic
    - exploatari petrol/gaze naturale,
    - conducte gaz/petrol,
    - cabluri submarine,
    - parcuri eoliene

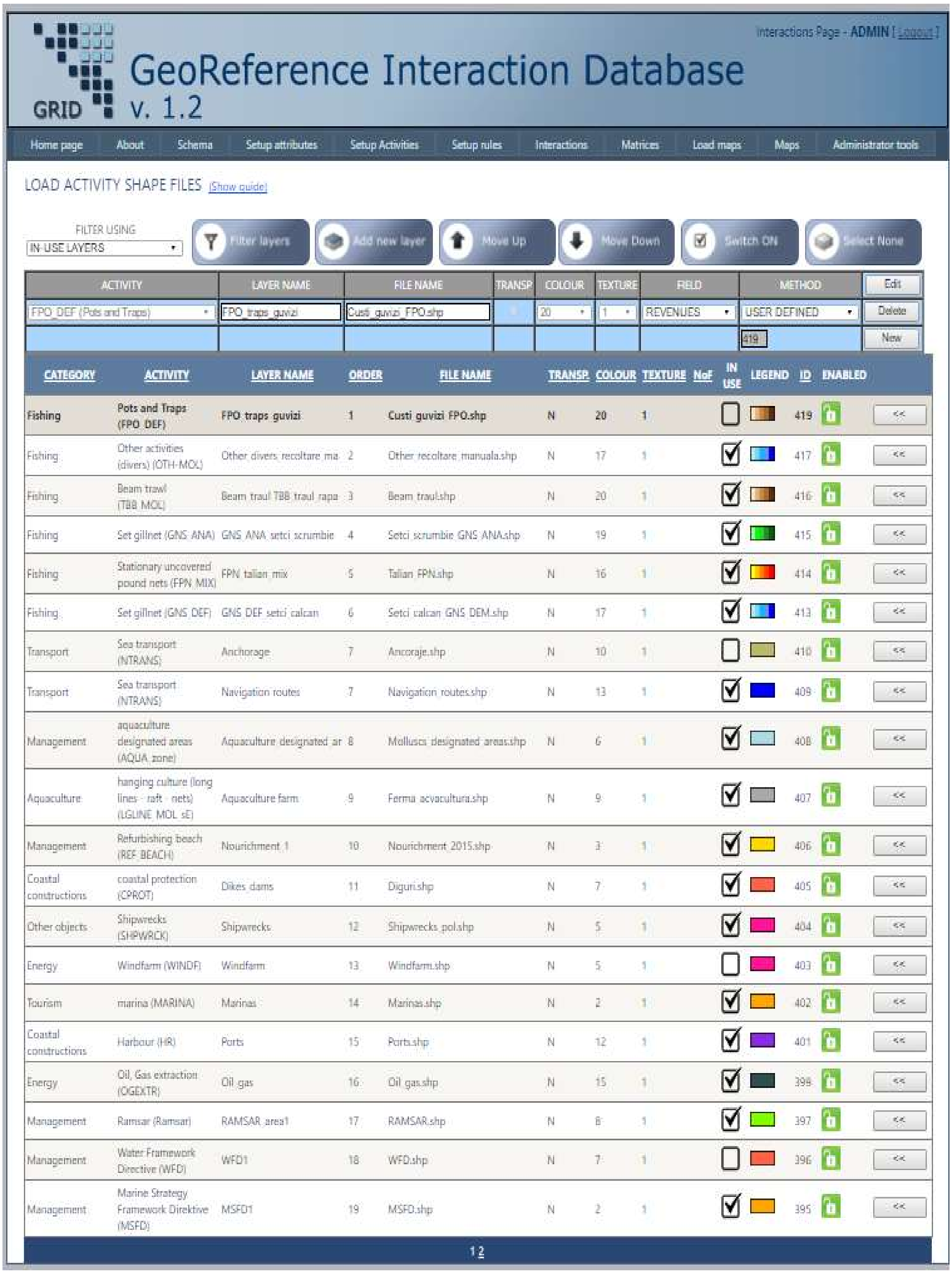
  - Turism
    - sectoare de plaja,
    - zone de scufundari turistice,
    - porturi turistice

  - Transport
    - linii de transport,
    - zone de ancoraj

  - Management pentru
    - corpurile de apa din Directiva Cadru Apa (WFD),
    - corpurile de apa din Directiva Marina (MSFD),
    - ariile protejate (Natura 2000, rezervatii marine, rezervatii Ramsar),
    - sectoarele desemnate de Directiva Moluste destinate colectarii si acvaculturii

  - Alte activitati
    - zone arheologice, cu artefacte subacvatice
    - zone cu nave esuate

Fig.nr.3. Activitatile si utilizarile spatiului marin identificate si inregistrate



CATEGORY	ACTIVITY	LAYER NAME	ORDER	FILE NAME	TRANSP.	COLOUR	TEXTURE	NoF	IN USE	LEGEND	ID	ENABLED	
Fishing	**Pots and Traps (FPO DEF)**	**FPO traps guvizi**	**1**	**Custi guvizi FPO.shp**	**N**	**20**	**1**		☐		**419**		<<
Fishing	Other activities (divers) (OTH-MOL)	Other divers recoltare ma	2	Other recoltare manuala.shp	N	17	1		☑		417		<<
Fishing	Beam trawl (TBB MOL)	Beam traul TBB traul rapa	3	Beam traul.shp	N	20	1		☑		416		<<
Fishing	Set gillnet (GNS ANA)	GNS ANA setci scrumbie	4	Setci scrumbie GNS ANA.shp	N	19	1		☑		415		<<
Fishing	Stationary uncovered pound nets (FPN MIX)	FPN talian mix	5	Talian FPN.shp	N	16	1		☑		414		<<
Fishing	Set gillnet (GNS DEF)	GNS DEF setci calcan	6	Setci calcan GNS DEM.shp	N	17	1		☑		413		<<
Transport	Sea transport (NTRANS)	Anchorage	7	Ancoraje.shp	N	10	1		☐		410		<<
Transport	Sea transport (NTRANS)	Navigation routes	7	Navigation routes.shp	N	13	1		☑		409		<<
Management	aquaculture designated areas (AQUA zone)	Aquaculture designated ar	8	Molluscs designated areas.shp	N	6	1		☑		408		<<
Aquaculture	hanging culture (long lines - raft - nets) (LGLINE MOL sE)	Aquaculture farm	9	Ferma acvacultura.shp	N	9	1		☑		407		<<
Management	Refurbishing beach (REF BEACH)	Nourichment 1	10	Nourichment 2015.shp	N	3	1		☑		406		<<
Coastal constructions	coastal protection (CPROT)	Dikes dams	11	Diguri.shp	N	7	1		☑		405		<<
Other objects	Shipwrecks (SHPWRCK)	Shipwrecks	12	Shipwrecks pol.shp	N	5	1		☑		404		<<
Energy	Windfarm (WINDF)	Windfarm	13	Windfarm.shp	N	5	1		☐		403		<<
Tourism	marina (MARINA)	Marinas	14	Marinas.shp	N	2	1		☑		402		<<
Coastal constructions	Harbour (HR)	Ports	15	Ports.shp	N	12	1		☑		401		<<
Energy	Oil, Gas extraction (OGEXTR)	Oil gas	16	Oil gas.shp	N	15	1		☑		398		<<
Management	Ramsar (Ramsar)	RAMSAR area1	17	RAMSAR.shp	N	8	1		☑		397		<<
Management	Water Framework Directive (WFD)	WFD1	18	WFD.shp	N	7	1		☐		396		<<
Management	Marine Strategy Framework Direktive (MSFD)	MSFD1	19	MSFD.shp	N	2	1		☑		395		<<

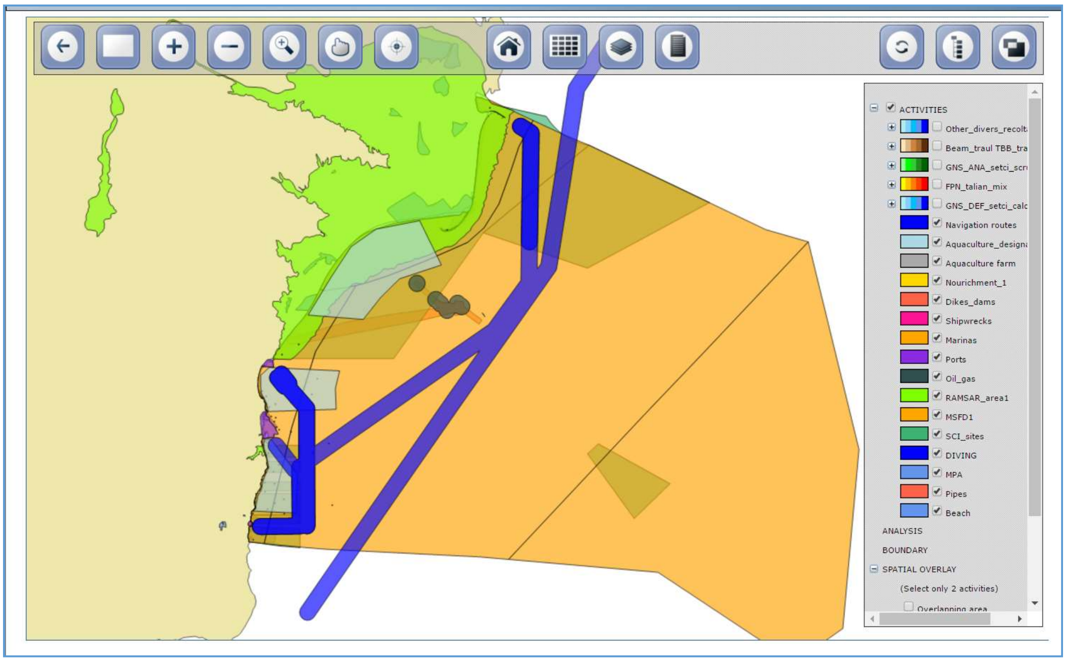


Fig.nr.4. Reprezentarea zonelor de pescuit functie de locatiile specific,
unelte de pescuit si activitati marine

Pentru sectorul de pescuit s-au introdus zonele de pescuit in functie de uneltele folosite (confom Tabelului de mai jos) cu atribute: Efort de pescuit in zile (EFFORT), Venituri rezultate (REVENUES), Persoane implicate (PERSONS), productie in kg (PRODUCTION). Reprezentarea in portalul WEB-GIS s-a realizat clasificat in functie de aceste atribute.

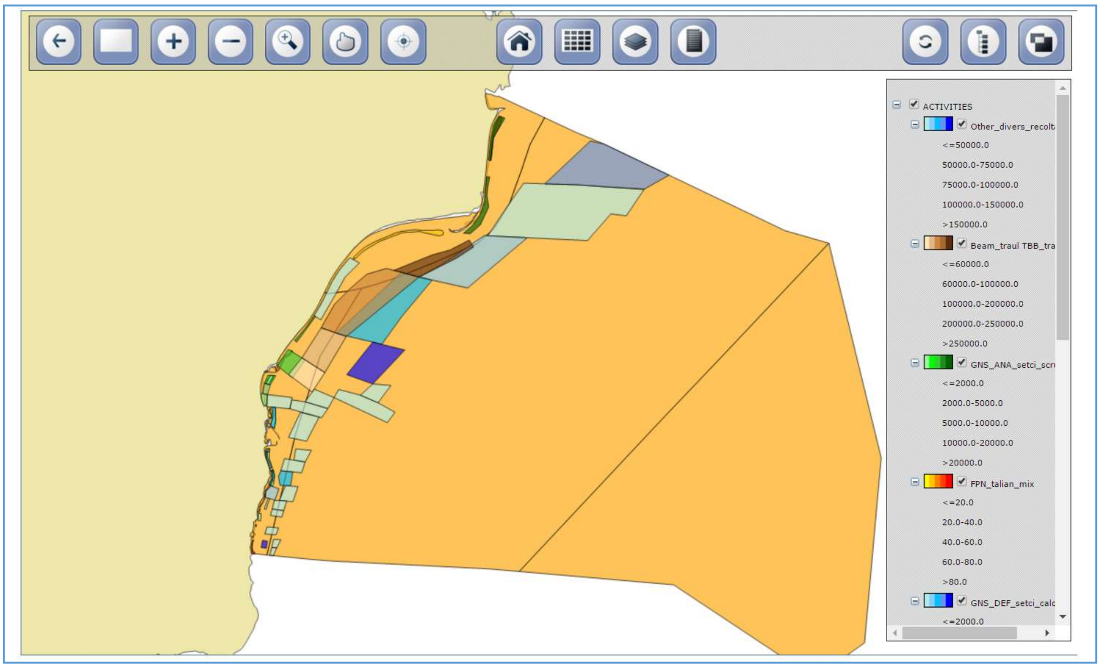


Fig.nr.5. Reprezentarea Zonelor de pescuit functie de principalele unelte de pescuit

Fig. no. 6. (Table) Atributele necesare reprezentarii spatiale functie de locatii si uneltele de pescuit folosite

Locatie	Tip_unealta	Abreviere	Specii	Adancime_min	Adancime_max	Production	Revenues	People	Effort
Periteasca	Beam traul	TBB	gasteropode	17	30	266123	157012	7	65
Periboina	Beam traul	TBB	gasteropode	17	30	177415	104675	5	55
Vadu	Beam traul	TBB	gasteropode	17	30	88708	52337	4	45
Cap Midia	Beam traul	TBB	gastropode	17	30	59138	34891	3	40
Navodari	Custi guvizi	FPO	gasteropode	10	15	350	886	1	18
Constanta	Custi guvizi	FPO	gasteropode	10	15	850	2151	2	22
Agigea	Custi guvizi	FPO	gasteropode	8	14	650	965	2	17
Eforie	Custi guvizi	FPO	gasteropode	9	18	920	23328	2	20
Tuzla	Custi guvizi	FPO	gasteropode	10	15	1762	4458	2	25
Mamaia	Navod plaja	SB	mixt	2	3	821	1190	4	6
Olimp	Paragate guvizi	LLS	gobiide	10	16	220	557	1	4
Neptun	Paragate guvizi	LLS	gobiide	10	16	25	633	1	4
Jupiter	Paragate guvizi	LLS	gobiide	10	16	180	265	1	3
Saturn	Paragate guvizi	LLS	gobiide	10	16	290	734	2	7
Vama Veche	Paragate guvizi	LLS	gobiide	10	16	226	572	2	6
Periboina	Recoltare manuala	OTH	moluste gasteropode	3	14	25692	15158	3	45
Navodari	Recoltare manuala	OTH	moluste gasteropode	5	15	30000	17700	3	50
Mamaia	Recoltare manuala	OTH	moluste gasteropode	10	25	50000	29500	4	67
Constanta	Recoltare manuala	OTH	moluste gasteropode	10	15	85000	50150	3	83
Agigea	Recoltare manuala	OTH	moluste gasteropode	10	12	123000	72570	3	98
Eforie	Recoltare manuala	OTH	moluste gasteropode	7	10	55000	32450	3	43
Tuzla	Recoltare manuala	OTH	moluste gasteropode	6	10	78000	46020	3	51
Costinesti	Recoltare manuala	OTH	moluste gasteropode	8	23	63000	37170	3	57
Olimp	Recoltare manuala	OTH	moluste gasteropode	12	14	490000	28910	3	41
2 Mai	Recoltare manuala	OTH	moluste gasteropode	20	30	167000	98530	4	75
Sulina	Setci	GNS	demersal	35	52	8500	57035		53
Sfantu Gheorghe	Setci	GNS	demersal	35	52	1700	11407	4	20
Periteasca	Setci	GNS	demersal	30	45	2500	16775	7	31
Periboina	Setci	GNS	demersal	20	35	7250	48648	9	46
Vadu	Setci calcan	GNS	demersal	35	40	10500	70455	16	64

Cap Midia	Setci calcan	GNS	demersal	40	45	1030	6911	5	9
Navodari	Setci calcan	GNS	demersal	35	48	900	6039	4	7
Hanul Piratilor	Setci calcan	GNS	demersal	30	35	450	30196	3	6
Mamaia	Setci calcan	GNS	demersal	25	35	700	4697	4	8
Constanta	Setci calcan	GNS	demersal	30	35	500	3355	3	9
Agigea	Setci calcan	GNS	demersal	35	40	350	2349	2	7
Eforie	Setci calcan	GNS	demersal	30	40	400	2684	4	6
Tuzla	Setci calcan	GNS	demersal	30	35	7250	48648	8	30
Costinesti	Setci calcan	GNS	demersal	35	45	450	3020	3	11
Olimp	Setci calcan	GNS	demersal	23	35	240	1610	2	5
Neptun	Setci calcan	GNS	demersal	25	35	120	805	2	5
Saturn	Setci calcan	GNS	demersal	23	35	70	604	2	4
2 Mai	Setci calcan	GNS	demersal	35	40	180	1208	2	6
Vama Veche	Setci calcan	GNS	demersal	35	40	110	738	2	4
Cap Midia	Setci guvizi	GNS	demersal	4	9	450	662	1	15
Mamaia	Setci guvizi	GNS	demersal	10	20	400	588	1	14
Costinesti	Setci guvizi	GNS	demersal	7	17	780	1147	2	20
Olimp	Setci guvizi	GNS	demersal	10	15	320	470	1	7
Eforie	Setci rechin	GNS	demersal	30	35	554	1961	2	6
Costinesti	Setci rechin	GNS	demersal	45	55	400	1416	2	4
Sulina	Setci scrumbie	GNS	anadrom	2	16	12400	27032	5	30
Sfantu Gheorghe	Setci scrumbie	GNS	anadrom	2	16	8560	20630	5	18
Vadu	Setci scrumbie	GNS	anadrom	2	4	4700	11327	4	20
Cap Midia	Setci scrumbie	GNS	anadrom	2	20	2380	5736	2	19
Navodari	Setci scrumbie	GNS	anadrom	4	10	1159	2527	3	19
Hanul Piratilor	Setci scrumbie	GNS	anadrom	4	10	870	1897	2	17
Mamaia	Setci scrumbie	GNS	anadrom	2	10	900	1954	4	18
Constanta	Setci scrumbie	GNS	anadrom	8	16	850	1853	3	16
Agigea	Setci scrumbie	GNS	anadrom	6	12	500	1090	2	15
Eforie	Setci scrumbie	GNS	anadrom	6	12	450	981	2	13
Tuzla	Setci scrumbie	GNS	anadrom	8	15	750	1635	3	23
Costinesti	Setci scrumbie	GNS	anadrom	8	25	880	1918	3	21
Jupiter	Setci scrumbie	GNS	anadrom	5	12	470	1024	3	18
Sulina	Talian	FPN	mixt	6	7	22500	54225	6	97
Periteasca	Talian	FPN	mixt	6	7	5600	13496	5	25
Cap Midia	Talian	FPN	mixt	5	6	16700	40247	5	75
Navodari	Talian	FPN	mixt	6	7	11900	28679	4	68
Hanul Piratilor	Talian	FPN	mixt	6	7	15800	38078	4	80
Mamaia	Talian	FPN	mixt	7	8	6529	15735	3	45
Constanta	Talian	FPN	mixt	5	6	6600	15906	3	42
Agigea	Talian	FPN	mixt	7	8	8900	21449	4	46

Eforie	Talian	FPN	mixt	7	9	5300	12773	3	41
Tuzla	Talian	FPN	mixt	8	9	6800	16388	4	47
Costinesti	Talian	FPN	mixt	7	9	10732	25864	4	77
Olimp	Talian	FPN	mixt	6	7	8700	20967	4	60
Neptun	Talian	FPN	mixt	6	7	5350	12893	3	43
Saturn	Talian	FPN	mixt	7	8	6700	16147	4	44
2 Mai	Talian	FPN	mixt	6	9	15300	36873	5	85
Vama Veche	Talian	FPN	mixt	7	9	17200	41452	7	92
Periteasca	Traul pelagic	OTM	mixt	20	70	17902	39742	4	31
Vadu	Traul pelagic	OTM	mixt	20	70	14850	32867	4	25
Mamaia	Traul pelagic	OTM	mixt	15	30	12323	27357	4	7
Olimp	Volte/Taparine	LHM	mixt	8	17	700	1029	2	23
Neptun	Volte/Taparine	LHM	mixt	8	17	850	1250	2	32
Jupiter	Volte/Taparine	LHM	mixt	6	15	650	956	2	29
Saturn	Volte/Taparine	LHM	mixt	8	17	750	1103	2	32

- stabilirea regulilor de interactiune intre activitati/utilizari ale spatiului marin/costier
    - Pescarie/acvacultura – alte utilizari (economice, sociale, etc.)
    - Alte utilizari (economice, sociale, etc.) – pescarie/acvacultura

In aceasta faza s-au stabilit:
- tipul de concurenta intre activitati (spatiu/resurse sau domenul socio-economic)
- tipul de interactiune (negativ/neutral/pozitiva) si scorul (note de la 1 la 5)
- generarea matricilor de interactiune intre activitatile de pescuit si acvacultura si celelalte utilizari ale spatiului marin

Fig.no.7.Matricea reprezentarii relatiilor (armonice sau conflictuale intre pescuit, acvacultura si alte activitati maritime

	OGEXTR	FPO_DEF	FYK_DEF	GNS_DEF	GTR_DEF	OTB_DEF	OTM_SPF	TBB_DEF	DRB_MOL	HHM_MOL
CABLEP	0	6	0	6	6	6	6	6	6	6
OGEXTR		5	0	0	5	5	5	5	5	0
FPO_DEF			4	4	4	4	4	4	0	0
FYK_DEF				4	4	2	4	4	4	0
GNS_DEF					4	4	4	4	4	4