

6 STANDARDS FOR ESI MAP SYMBOLIZATION

On ESI maps, the distribution of oil-sensitive fish and wildlife is shown by patterns, symbols, and colors representing ecological groupings. There are descriptive data on the back of each map and a key that identifies the colors and patterns used in the atlas.

The back of the map summarizes the GIS data tables discussed in Chapter 4. For example, the back of the map lists only the species' common names, but the scientific names are included in the digital database and the introductory pages of the hard-copy atlas. For endangered or threatened species, a red box surrounds the icons on the maps. The specific state and/or Federal (S/F) threatened and/or endangered (T/E) status is shown on the back of the map. The conservation status information may be listed in the atlas tables, and is included in the databases. See Figure 7 for an example of the tabular data shown on the back of the map.

Shoreline Sensitivity Ranking Index

Over time, the color schemes that represent the shoreline habitats have varied somewhat, but have followed a general trend with least sensitive always dark and most sensitive always red. To standardize the maps, we have modified the color scheme to range in a gradient from cool to hot colors. The numeric ESI values and ESI types associated with each color have varied from atlas to atlas in the past, depending upon the number of subclasses used. The current standard color scheme, from least sensitive to most sensitive, is shown in Table 23.

These colors have been tested and optimized to provide the best contrast and color reproduction using color photocopiers when used as a narrow band of color along the shoreline. These colors are standard on all current NOAA sensitivity maps. If more than fifteen shoreline types are mapped, you may need to use the same color for subclasses on the maps.

In some areas, the shoreline segment will be composed of two or three different ESI types (riprap behind a sand beach). In this situation, the shoreline color must reflect both of these features. Each shoreline combination has a unique line pattern that includes the

BIOLOGICAL RESOURCES:

BIRD:

RAR#	Species	S/F	T/E	Concen	J	F	M	A	M	J	J	A	S	O	N	D	Nesting	Laying	Hatching	Fledging
3	Common loon			MED	X	X	X	X	X						X	X	-	-	-	-
	Northern gannet			MED	X	X	X	X	X	x			X	X	x	x	-	-	-	-
	Red-throated loon			MED	X	X	X	X	X						X	X	-	-	-	-
	Scoter			MED	X	X	X	X	X						X	X	-	-	-	-
166	American oystercatcher			LOW	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Black skimmer			LOW	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Black-bellied plover			LOW	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Bonaparte's gull				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Caspian tern												X	X	X	-	-	-	-	
	Least tern			LOW	X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	-	-	-
	Peregrine falcon	S/F	E/E		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-

FISH:

RAR#	Species	S/F	T/E	Concen	J	F	M	A	M	J	J	A	S	O	N	D	Spawning	Outmig.	Larvae	Juveniles	Adults
290	Alewife				2	2	2	2	3	3	3	3	3	3	3	2	-	OCT-NOV	-	JAN-DEC	JAN-SEP
	Bay anchovy				5	5	5	5	5	5	5	5	5	5	5	5	APR-SEP	-	APR-OCT	JAN-DEC	JAN-DEC
290	Gray snapper				2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	JUL-NOV	-
	Striped bass				2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	JAN-DEC	JAN-DEC
	Striped mullet				3	3	3	3	4	4	4	4	4	4	3	3	-	NOV-DEC	DEC-APR	JAN-DEC	JAN-DEC
	Summer flounder				4	4	4	4	4	4	4	4	4	4	4	4	-	JAN-FEB	DEC-APR	JAN-DEC	JAN-DEC

HABITAT:

RAR#	Species	S/F	T/E	Concen	J	F	M	A	M	J	J	A	S	O	N	D	Spawning	Larvae	Mating	Juveniles	Adults
4	Carolina grasswort	S	T		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
6	Seabeach amaranth	S/F	T/T		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-
290	American oystercatcher (eastern)	S/F	T/E	Concen	3	3	3	3	3	3	3	3	3	3	3	3	MAY-NOV	MAY-NOV	-	JAN-DEC	JAN-DEC
	Atlantic bay scallop				4	4	4	4	4	4	4	4	4	4	4	4	-	AUG-DEC	-	JAN-DEC	JAN-DEC
	Blue crab				4	4	5	5	5	4	4	4	4	4	4	4	-	APR-SEP	MAR-OCT	JAN-DEC	JAN-DEC
	Brackishwater clam				4	4	4	4	4	4	4	4	4	4	4	4	MAY-MAY	MAR-JUN	-	JAN-DEC	JAN-DEC

Figure 8. Example of the data associated with the biological resources on the ESI maps.

Table 23. Color scheme used for representing the shoreline habitat rankings on maps.








ESI RANK	COLOR	CMYK	RGB
1A/1B	Dark Purple	56/94/0/13	119/38/105
2A/2B	Light Purple	38/44/0/0	174/153/191
3A/3B	Blue	88/19/0/0	0/151/212
3C/4	Light Blue	50/0/0/0	146/209/241
5	Light Blue Green	50/0/25/0	152/206/201
6A	Green	100/0/100/0	0/149/32
6B	Light Green	22/0/100/0	221/214/0
7	Olive	0/0/100/25	214/186/0
8A	Yellow	0/0/100/0	255/232/0
8B	Peach	0/34/28/0	254/189/170
8C/8D/8E/8F	Light Orange	0/17/81/0	247/205/75
9A/9B/9C	Orange	1/42/99/0	248/163/0
10A	Red	0/100/100/0	214/0/24
10B/10E	Light Magenta	0/50/0/0	245/162/188
10C	Dark Red	0/81/56/13	209/77/80
10D	Brown	0/56/69/25	197/114/70

appropriate colors. That is, when the shoreline is coded as a 6/3, for riprap behind a sand beach, the line pattern is defined as green on the landward half and blue on the seaward half of the shoreline. Some of the ESI features, such as marshes and tidal flats, are polygons. These polygons have either a solid fill pattern of the appropriate color or USGS symbology using the associated color. Only the shoreline-bounding edges of the land polygons have an ESI line type and are color-coded for that particular ESI.

Biological Features Symbolization

The points and polygons representing the animal groups use the same colors as the traditional ESI maps, except for mammals (changed from yellow to brown to be more visible in color copies). The polygons for each element use the following colors and hatch patterns are shown in Table 24.

Table 24. Symbolization for the biological features shown on ESI maps.

ELEMENT	COLOR	HATCH PATTERN ANGLE	SYMBOL	CMYK	RGB
Birds	Green	45		56/0/100/0	136/185/0
Habitats	Violet	90		18/73/5/0	168/0/102
Fish	Cyan	135		100/0/0/0	0/159/230
Invertebrates	Light orange	45		0/31/100/0	255/184/0
Marine mammals	Light brown	0		19/44/88/0	215/153/52
Reptiles and amphibians	Red	135		0/100/56/0	216/0/67
Terrestrial mammals	Light brown	90		19/44/88/0	215/153/52

Polygons representing the distribution of biological resources are filled with a hatched pattern, and icons are placed in or connected to the boundary of the polygon. When more than one biological element (e.g., fish and birds) is included in the same polygon, a black-hatch polygon is used. Figure 8 includes a symbol set for ESI mapping applications.

Widely distributed resources are listed in a box labeled “common throughout.” Otherwise, the maps will be too cluttered. This same convention was used extensively and successfully on the original ESI maps.

Human-Use Features

Nearly all human-use features are represented as points on the map. The only exceptions are managed lands (i.e., parks, preserves, reserves, and refuges), which are shown as polygons, and bridges, international boundaries, and other unclosed polygons which are shown as lines. The symbol for the human-use feature is offset from the feature with a leader line drawn from the symbol to the feature. For polygon and line features, the boundary of the feature is drawn using a dashed line, and the symbol for the feature is placed somewhere inside the boundary. When revealing the exact location may endanger

resources (such as historical and archaeological sites), the maps have icons that typically obscure the location. If there are many points clustered in the same area, either only a few icons are placed on the map products or they are moved in order to display all of the features. In the GIS database, the data provider uses discretion when disclosing location-sensitive resources. In some instances, the data may be displayed on the map products only, with the resources removed from the digital database. Users should consult the ESI atlas introductory pages and GIS metadata to determine the availability of human-use resource information that may be location-sensitive.

SENSITIVE BIOLOGICAL RESOURCES














<p>BIRD</p> <ul style="list-style-type: none">  Alcid / Pelagic Bird  Diving Bird  Gull / Tern  Passerine Bird  Raptor  Shorebird  Wading Bird  Waterfowl <p>TERRESTRIAL MAMMAL</p> <ul style="list-style-type: none">  Bat  Bear  Deer  Small Mammal 	<p>MARINE MAMMAL</p> <ul style="list-style-type: none">  Dolphin  Manatee  Polar Bear  Sea Otter  Seal / Sea Lion  Whale <p>REPTILE / AMPHIBIAN</p> <ul style="list-style-type: none">  Alligator / Crocodile  Turtle  Other Reptiles / Amphibians <p>FISH</p> <ul style="list-style-type: none">  Fish  Nursery Area 	<p>SHELLFISH AND INSECT</p> <ul style="list-style-type: none">  Bivalve  Crab  Echinoderm  Gastropod  Lobster/ Crayfish  Shrimp  Squid/ Octopus  Insect  Insect <p>HABITAT</p> <ul style="list-style-type: none">  Coral/ Hardbottom Reef  Floating Aquatic Vegetation  Rare Plant  Submerged Aquatic Vegetation
<h2 style="text-align: center;">HUMAN-USE FEATURES</h2>		
<ul style="list-style-type: none">  Access  Airport  Aquaculture  Archaeological Site  Beach  Boat Ramp  Camping  Coast Guard  Commercial Fishing  Critical Habitat  Diving  ESI/RSI Change  Facility 	<ul style="list-style-type: none">  Factory  Ferry  Hazardous Waste Site  Historical Site  Hoist  Indian Reservation / Tribal Land  Lock/Dam  Logging  Marina  Marine Sanctuary  Mining  National Park  NOAA Data Buoy 	<ul style="list-style-type: none">  Park  Recreational Fishing  Special Management Area  Subsistence Fishing  Surfing  Washover  Water Discharge  Water Intake  Water Quality  Water Supply  Wildlife Refuge, Reserve, Preserve  National or State Boundary  Park or Refuge Boundary

Figure 9. ESI symbols that represent biological and human-use resources.