

## **YACHTSMAN'S BEHAVIOURAL CARD**

### **INTRODUCTION**

The environment is a common good, a capital raising welfare and economic, a treasure with a very high economic value that if is badly handled and wasted, will be no more recovered.

Clean water, not degraded coasts, flora and fauna which inhabit the sea, are not an unalterable gift that keeps so for fate or luck, but the civil commitment of all. That's why protecting our wellness goes hand in hand with the care for the environment that welcomes us.

In reading this list of best practices and in deciding to adopt them as rules of conduct, you can find inspiration for a conscious growth towards a new kind of "women and men of the sea", a charming sustainable yachtsman.

The good practices of the sustainable yachtsman, in this Behavioural Card, are divided by moments — that is the ensemble of the actions in the life of a person passionate about sea and navigation.

### **CHOOSING THE BOAT**

- Choose Shipyards which rigorously respect the International Regulation and can provide technical data about the performances of the boat depending on its use and the level of wellness on board beyond the aesthetic appearance and the speed.
- Choose configurations for future environmentally friendly solutions (for energy accumulators by renewable sources, integrated communications via web, for new solutions or new propelled solutions etc.).
- Consider the boat management from its production until the demolition, preferring shipyards which use environmentally friendly products of with low environmental impact.
- Check about the presence of the integrated tank for the collection of sewage or the possibility to install it later. It is required for having the seal of approval in order to enter in the marine protected areas. It is also possible to install small systems of chemical treatment of biological waste or wastewater.
- Control the efficiency and the performances of the motor as well as the plan for its maintenance in order to restrict the emissions of dangerous gases (NOx, CO), hydrocarbons (diesel, gasoline) and fine dusts.

- Choose wind or photovoltaic installation already installed or with the configuration for the installation of alternative energy sources, even only accessory for the onboard accumulators
- Not choose an innovative boat or transform your own boat with little methods, it does not lead to consequences; it is only a lost opportunity to give your own contribution for changing things.

### **The marina can help you by:**

- Showing a detailed description of the shipyards and the materials used for building new “eco-friendly boats”;
- Showing a list of “green motors” manufacturers;
- Give information about the manufacturers which produce tank for collecting sewage.

### **ASHORE AND BEFORE SET OUT**

The life ashore in a Marina is anyway a place where to keep a virtuous behaviour, as a well-aware person, respectful of the environment and other people.

- Use the toilets ashore, avoiding in any case the waste of water, preferring biodegradable cleaners. In this way you do not increase the organic load in area with little water turnover
- Empty the tanks for the collection of sewage through the special pumping systems. Always verify the presence of specific equipment in landings.
- Avoid wasting electricity and fresh water for cleaning the boat (e.g. not using for a long time the vacuum cleaner or other cleaning machines, installing water-stop systems on water hose).
- If possible use organic detergents for saltwater boat washing, rinsing only in the end with fresh water.
- Avoid, if not strictly necessary, the ignition of the engine and electrical generator to reduce noise pollution in respect of other people and Marina life.
- Be care full with the connection to the power supply columns and use the power connection ashore to recharge the electronic devices.
- Although the ashore connection, limit the luminous pollution (e.g. are really necessary the underwater spotlights?)

- Do the pantry favouring food without packaging, avoiding disposable cutlery and using biodegradable cleaning or specific for salt water.
  - If you want to eat fish, buy the local one and do not purchase endangered species (date mussels, pinna nobilis)
  - If possible, make freeze the ice packs for conserving fruit and vegetables for some days in a cool bag, without using the fridge.
  - Do not exceed with the supply of water bottle: if the tanks are working and you use it carefully, the water remains drinkable and always good to boil or to make coffee and tea.
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- While you fill the water tanks, be careful not to pollute it with debris on deck or dirty hose; It's a good idea to have your own end in the filler, maybe even with a filter cartridge as domestic ones.
  - Lay in water proportionally to the reserves on land and then program the consumable amount over the next few days depending on the route and destinations planned.
  - The excessive concentration of organic substance in confined areas and with little water turnover causes Eutrophication phenomena with an increment in the growth of algae and aquatic plants, progressive depletion of fish stocks and a general degradation of water quality which reduce and preclude their use. The main effects that occur are:
    - Deterioration in the quality of water with clouding phenomena of the fund, the general loss of transparency and colouring of the water (from red to green);
    - Production of pongs
    - Deaths of fish and benthos fauna;
    - Extreme simplification of community (decrease of biodiversity);
    - Impossibility to use water for drinking;
    - Damage to economic activities, especially tourist industry (limitations for bathing).
  - The drain on sea of the sewage can cause a microbiological pollution with proliferation and spread of pathogens with hygienical sanitary risk.
  - The electricity production with power unit, consuming a non renewable resource, also produces air pollution and increase the concentration of CO<sub>2</sub>.  
This is the same for the motors of the boats, proportionally with their size.
  - Noise and vibrations (caused by motors or radio devices) in water spread quickly than in air, creating an acoustic pollution even at long distance by the source. The main consequences are noticed in the departure of the water fauna.
  - The food supplies not appropriate with the life on board can cause a lot of garbage, in particular plastic container and risk to be wasted if not well preserved during the trip.

- Water is a precious thing and its waste causes an excessive energetic effort to restore the provision where there was not or where must be collected or carry.

**How the Marina can help you with water:**

- The Harbour offers for the Customers and the Guests public toilets cleaned and efficient.  
The water in the public toilets is timing as well the electricity.  
Estimated time : 1 minute for water and 3 minutes for electricity.

## WASTE SEPARATION AREAS

We create waste separation areas are so separate

1) **Separate collection urban solid wastes** - on the borderline with Marifari – where are placed the following bins :

**WHITE BIN**  
**For the separate collection of PAPER**



Insert only	Do not insert
<ul style="list-style-type: none"><li>• Newspapers - Books</li><li>• Exercise books – Comic Strip</li></ul>	<ul style="list-style-type: none"><li>• All no paper garbage (obviously!)</li><li>• Dirty or oiled paper</li></ul>

<ul style="list-style-type: none"> <li>• Magazines - Tetrapak</li> <li>• Leaflet</li> <li>• Poster board boxes (as the ones for biscuits, for pasta, etc.)</li> <li>• Cardboard (only domestic consumption): if it does not fit break it and bent it</li> </ul>	<ul style="list-style-type: none"> <li>• Used paper napkins</li> <li>• Photographs</li> <li>• Glasses and dishes made of plastified papers</li> </ul> <p>All this must be throw in the DARK GREY bins Be careful! Most people throw the plastic bag in the paper bin. Avoid it.</p>
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## YELLOW BIN

**For the separate collection of some material such as:**

**PLASTIC - ALUMINIUM - OTHER METAL**



Insert only	Do not insert
<ul style="list-style-type: none"> <li>• Plastic bottles (PET) ( <b>to reduce the volume, deflate it and close the top</b>)</li> <li>• Bottles for detergent and soap ( <b>to reduce the volume, deflate it and close the top</b>)</li> <li>• Plastic bags</li> <li>• Plastic food packaging (e.g. for fruit and vegetables, sausage, ice-cream trays)</li> <li>• Film and wrapping film</li> <li>• Plastic flats and bags for food such as for pasta, rice, fries, crackers, candies</li> <li>• Plastic dishes and glasses (<b>from the 1<sup>st</sup> of May 2012!</b>)</li> <li>• Aluminum foil and trays for food</li> <li>• Beer or other cans (<b>better if you press</b></li> </ul>	<ul style="list-style-type: none"> <li>• Pottery</li> <li>• Light bulbs, mirrors</li> <li>• <b>Plastic flatware (from the 1st of May it is possible to throw plastic dishes and glasses but not the flatware!)</b></li> <li>• Old iron</li> <li>• Glues, glazes and paints</li> </ul>

<p><b>them before)</b></p> <ul style="list-style-type: none"> <li>• Tins and cans for food as peeled tomatoes, tuna, vegetables (<b>better wash them before)</b></li> <li>• Polystyrene</li> <li>• Glasses and trays for yogurt and cheese</li> </ul>	
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### DARK GREY BINS :

**it is for the UNSORTED WASTE COLLECTION**



Insert only	Do not insert
All what is not specified in the WHITE and YELLOW bins	Paints, Glues, Medicines, Common Battery, car batteries, motors drain, clothing, shoes, bags, paper board, building waste (flake of plaster, tiles, bathroom fixtures), bulky goods (domestic electrical appliance, furniture) for dispose these waste see <b>COLLECTION CENTER ACAM</b>

### BROWN BIN

**For the collect of the domestic organic waste, coke or uncooked leftovers**



**Throw the organic waste only inside biodegradable bags**

**DO NOT LEAVE THE BAGS OUTSIDE THE BIN**

Insert only	Do not insert
<ul style="list-style-type: none"> <li>• Cold food waste</li> <li>• Cooked and uncooked meat</li> <li>• Fish bones</li> <li>• Waste and filters of coffee, tea and chamomile tea</li> <li>• Fruit and vegetables waste</li> <li>• Pasta, rice and bread</li> <li>• Eggshell , mussel and crustaceans shell</li> <li>• Wet paper pieces ,oily or dirty for food (e.g. napkins or kitchen roll)</li> <li>• Used paper towel</li> <li>• Corks</li> <li>• Toothpicks and ice-cream canes</li> <li>• Pizza's box if oily</li> </ul>	<ul style="list-style-type: none"> <li>• Plastic Bags</li> <li>• Aluminum foil</li> <li>• Cat litters</li> <li>• Cleaning remaining</li> <li>• Coal and soot</li> <li>• Paper or other material soaked with chemicals</li> <li>• Diapers and tampons</li> <li>• Bandages and medicaments</li> <li>• Cigarette butt</li> <li>• Dirty sawdust</li> <li>• Artificial flowers</li> </ul>

### **GLASS**



Throw it in the green bell-shaped

Insert only	Do not insert
Bottles for water and beverage Pots Jars Containers in general	Mirrors Light bulbs and neon Pottery Painted metals Corks Metal and plastic

Separate collection industrial waste- Mirabello Shipyard area – where are placed the following bins

### MOTOR DRAIN OIL



Used oil is a hazardous waste pollutant. They are synthetic or mineral lubricants for engines of cars, boats, motorbikes or trucks. The imperative to follow to protect the environment is: a correct collection and disposal procedure, followed by a possible regeneration that can give new life to new uses for an important resource.

For these reasons both waste oils for engines and those used in kitchen must be disposed appropriately, collected in appropriate containers and not simply thrown in recycling bins. Their collection and their treatment in order to recycling must be carried out by specialized companies which belong to the National Associations.

### The risks of used oil

The oil used for internal combustion engines is a hazardous waste. If disposed improperly or used improperly, can be highly pollutant. If the oil is pour on the ground, **it settled a very thin film** that forms **a barrier layer that prevents water from reaching** the roots of plants and blocks the intake

of nutrients. Moreover, if the used oil poured on the ground reaches the water table forms a **layer** that moves with the **water table itself** and can reach the drinking water wells even very far causing serious public health consequences. If dispersed into the water it creates a thin, impermeable coating that impedes the underlying fauna and flora to breathe. To get an idea of how bad it is, just think that 4 kilos of waste oil, the equivalent of a normal sump for a car, if poured in water, polluted a surface as big as a football field. If it is burned improperly, used oil instills in atmosphere toxic pollutants which can cause poisoning and diseases.

**There is therefore in the Shipyard** an assigned area for the collection of such oils, properly highlighted, where private companies, authorized by the competent authorities to collect waste oils in the structure, for put them away in their stores. Collection of used lubricants from the producers is carried out directly or through sub-gatherers. Once conferred on the Consortium's deposits, waste oils are analyzed to determine the qualitative characteristics and decide the proper disposal channel. The collection service is free to the User; the only cost on charge is the disposal of oil collector. For this purpose please note that **Mirabello Shipyard Office number is (0187/733907)** where with a minimum expense you can dispose the used lubricant container.

Little Container (up to 5 kg) € 2,00 each

Medium Container (up to 10 Kg) € 5,00 each

Big Container (up to 25 Kg) € 10,00 each

For container up to 180/200 liters will be made the weighing of the empty.

The substances defined as “other emulsions” such as oil emulsified with water and/or gasoil, the cost is 0,80 Euros per liter

**It is absolutely forbidden to lay down the EMPTY container in the ecological collection in Marifari area.**

## **USED UP LEAD-ACID BATTERIES**



These batteries are particularly harmful products for our health and the environment. When the batteries have exhausted their cycle are said to be used up. Lead acid batteries are made from 67% of lead, from 23% sulfuric acid, and 10% plastic. These components have a high polluting power if they are dispersed into the environment.

Recovery and recycling of **used lead acid batteries** is a mandatory, essential for sustainable development of our country.

Common batteries, portable accumulator energy, contain some heavy metals that if are not recycled properly, can cause serious damages to the environment, such as chromium, cadmium, zinc, lead, nickel, copper, mercury, that when ending their life cycle, **spent batteries**, must be **disposed** in special containers placed in Mirabello Shipyard.

### **Waste Electrical and Electronic Equipment Directive and Bulky**

These are all appliances and technological products of every kind and size, that need a plug, cells or batteries to work

For example: refrigerators, washing machines, televisions, computers, monitors, mobile phones, cameras, boilers

#### **How to recycle**

The steps to be undertaken for proper recycling of WEEE are four: separate collection, safety, treatment and recovery.

The correct recycle process begins with the separate collection of technological wastes by the final user (consumer, company).

Users can confer their WEEE for free by using the service provided by Acam Ambiente La Spezia, which remembers that bulky wastes and WEEE can be collected in the recycling areas “Piramide” and “Stagnoni” placed in viale Fieschi ( Fabiano Basso), along the straight road leading to Porto

Venere, and in via della Concia, località Stagnoni. Another solution is the on-call collection, booking at the toll free number of ACAM Ambiente : Phone Number : **800 487711**.

### **PRUNING CUTTINGS**



#### **GREEN PRUNING CUTTINGS and LEAVES**

It is waste resulting from pruning of trees, flowers, grass cuttings and public gardens and cutting of grass in the Harbour islands.

The waste must be collected in the recycling area near the lighthouse of Marifari

### **REFUELING OPERATIONS**

In the supply operations it is necessary to pay close attention to prevent spills and contamination of the boat.

- Choose stations which have automatic locking in case of "overflow".
- Pay attention anyway during the phase of supply to prevent leakage of the fuel from the tank filler and from the pressure relief device for the "overflow".
- Prepare appropriate absorbent materials near the refueling filler in order to prevent the pour into the sea of diesel or gasoline eventually leaked. Avoid however the use of water or cleanings that can increase the fuel dispersion into the environment.
- One only liter of fuel in the sea, straggle for various square meters and pollutes 1 million liters of water.
- Hydrocarbons can easily pass through from water into tissues and are deadly for fish eggs and in the early stages of life. This could seriously compromise the health of fish populations, with a consequent reduction in long-term in economic returns for fishing activities.
- To remove hydrocarbon oil spills in the sea, various techniques are used, but it should be noted that the dispersants, according to new national legislation, must be approved by a series of

biological assays, which protocols have been tested and established by the work of the ad Hoc Group of ISPRA UNICHIM for toxicity of marine and salty waters.

### WHILE SAILING

**During sailing the attention to consumption and waste must be at most, as well as the commitment to report sightings of contamination into the environment or of marine animals in a spot.**

- Pay attention to the speed in roadstead, as in tourist landings and harbours: 3 knots limit the waves that may affect coastal elements, limit the noise that may disturb the shallow water community and certainly the other yachtsmen.
- Do not pour directly into the sea any kind of waste (biodegradable and not, solid and liquid) as well as the on-board toilets discharges (direct or discharges of sewage tank) or the bilge water in bathing areas, in proximity of ports, marinas or areas reserved for the mooring buoy (see in brief the limitations, in the next page).
- Always use environmentally friendly toilet paper, does not pollute and does not damage the pump of the electric marine water closet. Or alternatively install a small basket with a hygienic bags dispenser to collect toilet paper used and dispose of it with waste.
- Limit the consumption of fresh water, use cleaning appropriate for sea water and biodegradable and choice a desalination implant. Use filter for the fresh water load so you can also use for cooking in order to avoid buying water in plastic bottles.
- Use the pasta/rice water for washing tableware (starch and heat are good degreasers) or sea water using biodegradable detergents.
- Arrange on board a separate waste collection and make sure no object/material can be thrown, even randomly, in the sea.
- **Reduce, recycle, reuse and repair are the "4R"** and allow a proper waste management even on board, especially plastic packaging of foodstuffs, glass jars and paper. In particular, there are some precautions to be followed for some bulky waste typical of boating.
- Consider in the on board security plan the non dispersion in sea of hydrocarbons or other pollutants in case of non-fatal accidents (lockers and tanks easily sealed).
- Do not ever stand near boat discharges, both when sailing and in short stops for bathing; carbon monoxide is insidious.
- Notify as soon as possible to the local Coast Guard or other security forces **(through channel 16 of the VHF or by phoning the number 1530)**, in case you spot spills of pollutants.

- In presence of marine mammals (dolphins or whales) do not get into water or give food to animals and respect the free movement of cetaceans by keeping a distance of at least 50 m, reducing engine rpm, the volume of radio devices and turn off any instrument that emits ultrasonic waves in water (Echo sounding).
- Inform the Coast Guard or the staff of the closer Marine Protected Area if you spot whales and marine reptiles beached or entangled in fishing nets

### **BULKY WASTES TYPICAL OF BOATING AND THEIR DESTINATION**

The pieces of fiberglass, the ropes and the bulky sails will be crushed for incineration, the buoys and fenders can be recycled with plastic, cans of paint and honing residues should be treated as hazardous substances, in fishing nets lead should be separated from the plot, compasses should not be discarded in the undifferentiated because of the toxic phosphorescent materials waste and finally expired rockets must be delivered to the Coast Guard or to the Harbour which will deliver them to the competent authorities, by filling out a form that has already arranged which you will find in the Harbour Office.

### **GENERAL REGULATORY RESTRICTIONS TO THE DISCHARGE OF SEWAGE FROM BOATS**

The older pleasure unit, authorized to carry up to 15 persons and equipped with toilets, can make the overboard discharge of untreated sewage under the Marpol legislation only beyond 3 miles from the coast, in navigation with fixed route and the maximum allowed speed not less than 4 knots. Pleasure units built after August 2005, on the other hand, if approved for the transport of less than 15 people can enter into the sea waste water treated only 200 meters beyond the shore and 100 meters from reefs (if they are not treated, over 3 miles), in navigation with fixed route and speed of not less than 4 knots; if approved for the transport of 15 or more people can only enter treated waste water beyond 3 miles from the coast (12 miles for the untreated wastewater) in fixed route and navigation at a speed not less than 4 knots. With effect from 1<sup>st</sup> of August 2005, to the newly construction units, authorized to carry more than 15 persons, the Convention applies "Marpol 73/78" shall mean the manufacturer shall implement a system of waste collection. In the decision, in the light of international standards dictated by Convention "Marpol 73/78 ", stress the maritime authorities to issue specific orders to regulate the discharge of sewage from vessels and boats. The Coast Guards that have already adopted the directive provide for controls and penalties

from 200 up to 1,000 Euro and where there are Marine Protected Areas has been introduced the obligation to pour the sewage in the appropriate collection systems.

- High speed in Harbour cause waves that erode the coastline and frighten wildlife and bathers.

- The presence of floating solid waste can be a risk to navigation and harm or kill organisms and aquatic mammals.
- The penalties for discharge of waste in areas not allowed are over 2,000 Euros, but the damage caused has a decidedly greater economic value.
- The degradation terms of wastes are unsuspiciously long (see box below).
- Water is a precious good and its waste increases the costs to the community.
- To harm cetaceans is chemical pollution from waste and sewage poured into the sea, in the form of organic compounds or heavy metals ions focuses in their meat, or the acoustic one, caused by navigation, seismic surveys, from drilling to extract oil.

### **TIMES OF DEGRADATION IN THE SEA FOR MACROSCOPIC WASTE**

Tissue paper 3 months;  
Polystyrene 1000 years;  
Cotton-bud from 20 to 30 years;  
Glass Bottles: 1000 years;  
Match 6 months ;  
Plastic Bottles never completely;  
Cigarette butts from 1 to 5 years;  
Chewing gum 5 years;  
Plastic bags from 10 to 20 years;  
Fruit peel 1 months;  
Nylon products from 30 to 40 years;  
Apple core from 3 to 6 months;  
Aluminium cans 500 years  
Tampons and diapers 200 years;  
Banana peel 2 years;  
Phone cards and badges 1000 years;  
Daily 6 months;  
Wool 8 – 10 months;  
Common cloth 10 months;  
Synthetic fabrics 500 years.

### **TO ANCHOR**

Where there are no tourist landings or buoys for a berth it is well to recognize the appropriate anchoring areas, avoiding those that have phanerogams or fragile rocks.

- Always carefully consider the type of bottom where anchor, remembering that some ground, like rocky, are bad holding
- Anyway try not to damage the ground.
- Avoid dropping anchor on sea bottom colonized by *Posidonia oceanica*, because it can easily damage the sea grass bed, the only defense for sandy coasts against billows.
- Anchoring on a sea grass beds of phanerogams offers no safety: once ripped the plant roots from the sandy ground the anchor loses its grip.
- Bring the boat to the peak again before weigh the anchor, in order to avoid that the chain and the anchor plow the ground.
- The *Posidonia oceanica* is a true plant with roots, trunk, leaves, flowers and fruits, and therefore not a seaweed, as many mistakenly believe. The *Posidonia* and its sea grass bed are very important for the sea life: 1 hectare of these can accommodate up to 350 different species of animals and 1 m<sup>2</sup> of submerged grass produces with photosynthesis up to 14 liters of oxygen per day. They are very sensitive areas, because just to stop anywhere on the matte (substrate made of rhizomes, roots and sediment trapped) in order to the sea to work on it and root out large portions of the sea grass bed. Just think that 1 m<sup>2</sup> of sea grass bed that disappears is equivalent to a loss (less supply of oxygen, nourishment and erosion of coasts).
- If during the anchoring before the dip of anchor is still moving forward with headway or if you insert the reverse and you rig by tracing arcs you risk to break out the anchor and plow the ground damaging it.

## SAILING IN PROTECTED AREAS

### THE ENVIRONMENT ON THE AREA OF THE GULF OF LA SPEZIA

#### The environmental features and the sensitivity areas

The High-Tyrrhenian area has a wide variety and wealth of high conservation value habitats, as is evident from the concentration of national parks and marine protected areas present in this area. There are marine protected areas, including the Cetacean Sanctuary

In addition to the Park, there is in Cinque Terre the **Marine Protected Area** that extends from Riomaggiore on west to Levanto to east. The Marine Protected Area was established in December 1997 and its purpose is the protection of the sea as a natural habitat of various organisms. From Punta Mesco to Capo Montenero, thanks to the establishment of the Marine Protected Area, the waters are back to being rich in life and it has been noticed that some rare species are there more frequently. For example, you can find some rare species of gorgonian even a few meters deep and even the black coral.

The Marine Protected Area includes **two integral reserve areas** where are only allowed scientific research activities, rowing and underwater guided visits prior authorization of the Park, and two **general reserve areas** that allowed sailing and motor boats at low speed, the mooring in buoy areas

specially indicated. In the general reserve areas is permitted fishing, both small-scale fishing and certain fishing tourism.

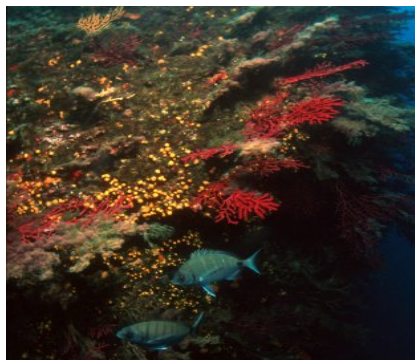
Next to the Marine Protected Area, in the territory of the Cinque Terre Marine Reserve was established also the **Cetacean Sanctuary**. The Cetacean Sanctuary was founded in 1999 as a result of an international collaboration agreement between Italy, France and the Principality of Monaco. In the stretch of sea between Côte d'Azur, Corsica, Sardinia and the southern Sardinia exist the favorable environmental and climatic conditions for the transition of cetaceans such as whales, common minke whales, sperm whales and dolphins (short-beaked common dolphin, common bottlenose dolphins, stenellas, pilot whales). These are relatively cold and calm waters, with currents which carry on plankton and krill, the main food of many cetaceans. The relatively calm waters also allow a certain ease of mating.

The establishment of Marine Protected Areas, such as Parco Nazionale delle Cinque Terre, limiting the navigation, intensive fishing activities and the resulting pollution, makes possible to preserve the flora and fauna and an entire food chain. As long as the food chain remains intact, the entire habitat degradation is limited.

The chance of seeing **rare marine species**, or more simply, to see a good number of fish – shows the liveliness of the marine habitat of the Cinque Terre, and given the purely rocky seabed, with ravines and caves, within the Marine Protected Area have grown over time white and red gorgonians.

The main elements that characterize the most this territory and in which boating activities have a high impact are mostly the **ground biocoenosis**: the coralline, the sea grass beds of *Posidonia oceanica*, and marine mammals. At the same time are affected by the nautical activities even **superficial parts of the sea**, the air-water interface, the photic zone, so sensitive for the basis of the trophic pyramid.

#### **Ground biocoenosis**



- The coralline is a biocenosis created by the activities of organisms that produce calcium carbonate structures and is typical of the rocky ground in the Mediterranean Sea. Among the organisms constructors of this structure there are mainly calcareous algae. Among the animals builders there are sponges, madrepores, gorgonians, bryozoans, bivalves and annelids. The deposit of limestone remains of these organisms form an agglomeration of a considerable three-dimensionality, as full of cracks and cavities, the optimal substrate to host numerous other species of plant and animal organisms

The coralline has a considerable importance for its biodiversity. But it is just as vulnerable to pollution (e.g. industrial and residential discharge) and anthropogenic pressures (e.g., fishing, anchoring).



- **The Posidonia oceanica** is one of the four natural phanerogams in the Mediterranean Sea. The marine phanerogams, as colonizer of seabed inconsistent sandy and muddy, present in the Mediterranean Sea their maximum development.

Recognized as the most typical Mediterranean endemism, Posidonia plays an important role in the ecology of shoreline, heavily contributing to maintain the balance and the richness of this environment. It is a high-productivity ecosystems, with an important role of oxygenation of the water, which hosts many species in their juvenile stages (thereby also recolonization of other habitat) and that provides several other services.

Few are organisms that feed on Posidonia leaves directly. Many are those who feed of epiphytic (bacteria, micro and macro flora) of leaves and rhizomes.

Furthermore the disintegrated remaining are a source of food for all scavenger organisms. It is also a high biodiversity habitats with distinct and overlapping ecological sectors.

These simple considerations highlight the ecological significance of a species, whose preservation affects economic activity directly related to tourism and fishing.

- The *Posidonia oceanica* is a true plant with roots, trunk, leaves, flowers and fruits, and therefore not a seaweed, as many mistakenly believe. The *Posidonia* and its sea grass bed are very important for the sea life: 1 hectare of these can accommodate up to 350 different species of animals and 1 m<sup>2</sup> of submerged grass produces with photosynthesis up to 14 liters of oxygen per day. They are very sensitive areas, because just to stop anywhere on the mat (substrate made of rhizomes, roots and sediment trapped) in order to the sea to work on it and root out large portions of the sea grass bed. Just think that 1 m<sup>2</sup> of sea grass bed that disappears is equivalent to a loss (less supply of oxygen, nourishment and erosion of coasts).

### **The sea surface**

As per EU Habitats directive, among the protected habitats perform a great importance the "open sea and tidal areas". These areas are particularly affected by anthropic pollution related to the pleasure navigation. Hydrocarbons discharged in the sea even in small amount, form in surface a thin film that prevents the air-water gas exchange causing oxygen depletion phenomena, especially in case of prolonged persistence as in harbour for the low spare. The surface film also restricts or prevents the penetration of light energy, key factor for the life of seaweed and vegetable organisms (decreased photosynthetic activity and then primary production), sticks to the organisms living at the level of the air-water interface and prevents normal vital signs.

### **The great marine vertebrates CETACEANS**

The high concentration of cetaceans is due to the huge amount of nutrients that return from the seabed thanks to strong currents of comeback called "upwelling" which trigger food chains which are plentiful and varied, creating conditions more favorable for their nutrition.

Among the main species there are:

- Fin whale (*Balaenoptera physalus*), 20-22 meters long, slate grey, has a cuneiform head and a particular outline in the floatation;
- Sperm whale (*Physeter macrocephalus*), its body is dark grey and can be 18 meters long, has a big and square head and a peculiar puff bent ahead on the left
- Ziphius (*Ziphius cavirostris*), 5-7 meters long, grey cappuccino color and the snout "duck's beak"
- Grampus (*Grampus griseus*), with the body covered with scratches
- Long-finned pilot whale (*Globicephala melas*), 6-7 meters long, ebony color, has a peculiar shape in the head, which originate the name
- Striped dolphin (*Stenella coeruleoalba*) 2 meters long, with thin body, dark grey on the back and blend white on the belly, with dark stripes on the hips;
- Short-beaked common dolphin (*Delphinus delphis*), un common species with black back and a strange hourglass design on the hips
- Common bottlenose dolphin (*Tursiops truncatus*), dolphin exhibited in aquarium and dolphinarium

Cetaceans are the essential link of a biological chain whose interruption may have serious consequences for the environment. This risk exists due to the damage that the species have suffered in the past and are still suffering due to over-hunting and the increase of pollution of the seas.

They are particularly sensitive to environmental degradation. Even water sounds, if issued at high power on ultra sound band by echo sounding, from fishing sonar or sonar of military units cause damages to these species: many beaching are caused precisely by the disorientation that these animals suffer for the actions of these emissions .

### **Marine protected areas and the cetacean sanctuary**



**The law which rules the Marine Protected Areas is more restrictive than in the other parts of the sea, in order to protect the eco system with naturalistic peculiarities**

-Consult updated maps, and contact the operators of Marine Protected Areas or the local Port Authorities before starting navigation with the boat. It is necessary to know the rules and boundaries.

-Comply with the regulations of the Company Manager. Marine Protected Areas are divided into different areas A B C, subjected to different levels of protection and marked by yellow buoys and beacons with flashing light at night (see box below).

-Monitoring may not always be a cost for society: the commitment of all Mariners is also to be vigilant and report any dangers or positive events for the marine ecosystem to Coast Guards or law enforcement agencies.

**A** There shall be no activity, including sailing, drop the anchor, berthing and swim. In some very rare cases are allowed rowing sailing, swimming and diving, controlled and managed by local authorities, maritime Directions or Port Authorities.

**B** usually allowed and managed by operators: sailing or rowing boats, motor navigation for crafts and low speed boats, mooring in buoys set up camps, anchoring in limited areas identified and reported, bathing, fishing while underwater fishing is forbidden.

**C** governed by local managers as point B.

- Capture, collect and damage the plant and animal species or remove minerals and archaeological evidences creates enormous damage in Protected Areas, which keep the last fragments of nature intact.

- Alter the geophysical environment and chemical hydrobiological characteristics of water creates a danger for facies and ecological niches typical of that area.

- Offences committed against a Protected Marine Area are always criminal offences. In the consolidated law of the Penal Code, article 733 says: damage to archaeological heritage, historic or artistic. Anyone who destroys, deteriorates or otherwise damages a monument or another thing of which is known the significant value, shall be punished, if the fact is a damage to the archaeological heritage, historical or national art, with the arrest of up to one year.

Article 734 of the Criminal Code says as follows: "destruction or disfigurement of natural beauty. Whosoever, through obstruction, demolition, or in any other way, destroys or alters the natural beauty of places subject to special protection by the authority, shall be punished with a monetary penalty".

### RECREATIONAL SPORT ACTIVITIES

Swimming activity, exploration with mask fins and snorkel or dive, navigation with floating or motor vehicles as jet ski, must be done with seriousness and conscience, keeping the game and not putting at risk the environment that hosts us.

- Swim away from the boat no more than ten meters.

-For snorkeling (swimming slowly on the surface with fins and snorkel mask) or scuba diving, in addition to technical skills, you have to be reported by a float a few meters away.

-During exploration do not disconnect or break anything, if you want to see the shell of a dead body you can pick it up and then put it back where it was: the fragments of skeletons of these animals make sands beautiful.

- Don't sacrifice animals making them dry under the sun's rays. For starfish, sea urchins, seahorses, jellyfish and small crabs, this is not a game, but only cruelty.

-Fish using tools allowed to amateur fisherman, not by professionals. You eat what you catch, or release it immediately. For small minnows suffer slowly in a bucket filled with water hot as stock is not a game, but only cruelty.

-If you use air beds or small inflatable dinghies, do not go too far from the boat more than a few tens of meters and not leave trawling ropes in sea.

-To use the jet skis (water scooter) or tenders, you have to have the license and be over 18. To use this in Harbour areas, the speed must be minimal (less than 3 knots) and you should not have leaks of lubricants or fuels.

-To use the tender, you need nautical practice and it is better to be in company of an adult.

-In both cases (with tender or water scooter) the use must always take account of the safety of others and join in respect for the marine ecosystem. Must be avoided noise or waves and violent turmoil.

-Surfing is a tiring sport; you need to be trained. Therefore never straying too much from the boat or offshore. If you go towards the beach you have to use the passages.

-For sport of water-skiing or towing inflatable suitable media (note: the inner tubes or air beds are not) you should have all the safety equipment and large mirrors, you have to surf at speeds not up to 10 knots, far from the coast and bathing areas, without prejudice to special corridors, to draw passengers to a maximum of 12 meters of distance.

-The areas under the coast have the banks often delicate, create turbulence and waves encourages erosion and wildlife removal.

-Removal of background animals steals food or "scavengers" decomposers, useful organisms to maintain the delicate balance of the marine ecosystem; rubbing the rocks with foot prevents the algal substrate to take root.

- Marine organisms disturbed from lifting of waves to high speeds under coast often are pups (juveniles or larval stages of crustaceans) and if disturbed will populate another part of the world.

## **CARE AND MAINTENANCE OF THE BOAT**

**Control efficiency, intelligent and environmentally friendly maintenance and the choice of right products make a safe boat for those responsible and sustainable for the marine eco system.**

-Carefully and periodically run the engine maintenance and on-board generators to avoid leaks or overconsumption of oil/fuel.

-Recheck during maintenance weight distribution on board of the boat, in order to avoid unnecessary consumption of fuel on a cruise.

-Check the efficiency of all equipment and on-board equipment.

-Where possible, replace the lamps with low consumption and insert switches to fractionate the circuits.

-Carry out the recovery of exhaust oils, filters, batteries and the cells in the proper ecological islands. Do not contaminate used oil with other chemicals (gasoline, diesel fuel, solvents, and degreasers). Contaminated oil cannot be poured into the collection of waste oil. Leave it to drain for at least 24 hours the oil filters and fuel before being discharged.

-Prepare a notebook of board where mark all checks and expiry dates of the checks.

-Choose a shipyard provided with collecting systems and purification of dust and washing water of the hull (with high concentrations of dissolved metals), in compliance with environmental and safety standards.

-Use ecological anti-fouling paints (devoid of zinc, lead and chromium) or zero release. Read carefully the product characteristics on the spec sheet especially in reference to return, in order to avoid waste of material, and the method of storage and disposal.

-Prefer the application of ecological cleaning systems (without phosphorous and surfactants) or natural rather than chemical ones and possibly purchase them on tap or with the least packaging content.