



FACTS ON THE
BLUEFIN TUNA AND
DAMAGING FISHING
OPERATIONS IN THE
MEDITERRANEAN

The Bluefin Bonanza

SEA SHEPHERD CREW BRIEFING
OPERATION BLUE RAGE 2010

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INTRODUCTION

“Science may have found the cure for many evils, but it has found no remedy for the worst of them all - the apathy of human beings.”

Helen Keller, 1880-1968

Imagine gigantic bulldozers cutting down every single tree in Europe. The trees are ground up and exported to make cheap paper in Asia. The operation is heavily subsidised by the European Union (EU), even though it is clear that, once gone, the trees will never return. All types and sizes of trees are taken from common land, protected areas, parks, gardens: everything, from everywhere. Small trees are cut down before they have chance to grow. Loggers defend their illegal operations with violence and threats, but mostly operate at night and out of sight, cutting down entire woodlands in a single operation. Would this be tolerated? There would be a huge movement of people attempting to stop the massacre. People would take direct action. Politicians could not get away with ignoring the issue and the mainstream environmental non-governmental organisations (NGOs) would at least be able to negotiate to save some trees, in exchange for not opposing the logging of many others. That would be something, at least.

But the Mediterranean does not even have that small something. In fact, the clear-felling of the entire Mediterranean Sea is happening right under our noses and only a handful of people are actively opposing it. Every single day, fishermen plunder this unique region, inhabited by numerous species

including whales, dolphins, sharks, shrimp, rays, turtles, seals, swordfish, tuna, mackerel, lobsters, octopuses, whiting, hake, sardines and anchovy. The sea used to be abundant with life, yet in the last 50 years industrial fishing, in particular trawling and purse seine fishing for bluefin tuna, has decimated the populations of marine wildlife. The bluefin tuna is so heavily overfished, it is expected that the breeding population of the fish will have disappeared from the Mediterranean by 2012. The tigers, lions and sharks have always been hailed as the biggest and fastest predators on earth, but the bluefin tuna are up there too. They are the world's largest living bony fish and, after the sailfish, one of the fastest hunters to roam the great seas. Allowing their extinction to take place, at the hands of corporations looking to make quick money, will have disastrous consequences for the future.

With *Sea Shepherd* moving into the Mediterranean this year, a new chapter has been opened. Europe has a huge environmental conservation movement which needs to be woken up and directed to where its energy will be best put to use, to stop the slaughter and protect what little there is left. *Operation Blue Rage* will have an impact. It will boldly go where no one has gone before. It will be a slap in the face for the pirate fishermen, some of whom

are known to have close ties with Spanish, Italian and Turkish Mafia. It is time that the EU, which has been financing the whole operation for the last 40 years, is held accountable for its actions. The campaign will save tuna. Even if only a few fish are saved, it is likely to mean the difference between survival and extinction of this species. The bluefin tuna is so threatened that every day we are able to stay out at sea, every day we can intervene against illegal fishermen, is a day won for the bluefin. During this campaign, we will experience violence from the fishermen, we will be threatened, we will be cursed and we will make many enemies. Yet we will make a difference, we will save fish and we will make sure that this bluefin bonanza is made famous throughout the world. In fact, people's willingness to directly intervene against the fishermen might be the last chance this species has of surviving. This booklet is not a scientific paper; it is not a journalistic piece of work either. It is a starting point for people interested in what is happening in the Mediterranean and in particular with regard to the

bluefin tuna. Care has been taken to ensure the accuracy of the facts and figures, but here is the disclaimer: mistakes can still occur. This briefing is aimed at giving a basic understanding of what industrial fishing is doing to the region, from which you are encouraged to do your own research. Use of words such as 'stock' or 'resource' for populations of fish or fish 'products' in this booklet in no way indicates my personal view on these animals. The words are used to reflect the way in which the industry and politicians continue to view fish as a resource with only commercial value, rather than as the magnificent animals that they are.

If you have any questions or comments, please get in touch.

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1 MEDITERRANEAN



Geography

The Mediterranean Sea is almost completely surrounded by land and links Europe, Africa and the Middle East. Although officially part of the Atlantic Ocean, it is seen as a separate sea, connected to the Atlantic in the west by the Strait of Gibraltar, a narrow gap only 14 km wide, to the Black Sea in the north-east by the even narrower Bosphorus, and to the Red Sea in the south-east by the Suez Canal.

The Mediterranean Sea is a relatively young sea. A report published in the paper *Nature* in 2009 concluded that the Mediterranean basin was flooded around 5.33 million years ago in just two years. Known for its deep blue colour and clear water, it is on average 1.5 km deep and the deepest recorded point is 5.26 km, in the Calypso Deep in the Ionian Sea.

23 countries and territories border the Mediterranean. These are, clockwise: Spain, France, Monaco, Italy, Malta, Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, Albania, Greece, Turkey, Cyprus, Syria, Lebanon, Israel, the Gaza Strip of the Palestinian Territories, Egypt, Libya, Tunisia, Algeria, Morocco and the British overseas territory of Gibraltar. The total length of the coastline is about 46,000 km and the sea covers an area of around 2.5 million km². Between the islands of Sic-

ily and Tunisia, a shallow ridge on the ocean bed divides the Mediterranean into the Western and Eastern Mediterranean Seas.

Marine wildlife

The Mediterranean region is rich in terms of biodiversity and marine wildlife and abounds with unique species of flora and fauna. Being nearly land-locked, it is a perfect spot for various migratory species to over-winter and breed. With such a narrow connection to the rest of the world's oceans, tides are small and the typical Mediterranean climate ensures hot, dry summers and mild, wet winters.

Cetaceans

Besides diminishing populations of bluefin tuna, swordfish and albacore, cetaceans such as the striped dolphin, common dolphin, risso's dolphin, bottlenose dolphin, harbour porpoise, long-finned pilot whale, cuvier's beaked whale, sperm whale and fin whale inhabit the Mediterranean. Species occasionally found include the killer whale, false killer whale, rough-toothed dolphin and minke whale. The area north of Sardinia is believed to be

a major feeding ground for cetaceans, especially fin whales. It was for this reason that, in 1999, an area of around 87,500 km² bordering the coasts and waters of France, Monaco and Italy was given special protection as the Pelagos Sanctuary for the Conservation of Marine Mammals in the Mediterranean.

Turtles

The green, leatherback and loggerhead turtles are the most common species nesting in the Eastern Mediterranean. Collisions with the ever increasing number of vessels, obstructive fishing gear, pollution and direct exploitation for human consumption are the biggest threats facing the turtles in the region. All species of turtle are listed as endangered, with the leatherback earmarked as critically endangered. Some species, such as the leatherback and green turtle, are also protected by the Convention on International Trade in Endangered Species (CITES).

Sharks, rays and skates

Many elasmobranchs also inhabit the Mediterranean Sea. This group of shark, ray and skate species is often taken as by-catch in fisheries. As a result, many populations that were previously abundant in the Mediterranean are now heavily depleted.

The Mediterranean populations of both the common thresher shark and porbeagle shark have diminished by 99% in last 100 years. The latter is listed as critically endangered and, despite its listing in various conservation legislation, the EU, Norway and Faroe Islands still allocate fishing quotas regardless. The blue shark, populations of which

have declined by 97% since the 1960s, is one of the most heavily fished sharks in the world, with 10-20 million individuals believed to be caught worldwide every year. The blue shark is a commercialised by-catch, meaning that once accidentally caught, especially in the tuna and swordfish fisheries, it is often sold.

Spurdog, or spiny dogfish, is highly valued for its meat in various European countries, including France, Germany, Belgium, Italy and the UK. Rapid population declines have been observed in recent years and the species was proposed by the EU for inclusion in the CITES Appendix II in 2006, but it failed to pass the vote. Although the population is in serious danger of collapse, the EU fisheries council continues to allocate by-catch quotas well above scientific recommendations.

Other threatened shark species in the Mediterranean include the angular roughshark, angelshark, scalloped hammerhead and great hammerhead sharks. The basking shark is probably the most protected shark worldwide. Even with an EU fishing ban in place, the basking shark continues to be threatened by fishing operations in the Mediterranean. The devil fish is another common victim. Although listed as critically endangered, it is often discarded as unwanted by-catch. Small spotted catsharks often await the same fate; they are not protected or listed by any conservation measures. Skates, often large in body size, with a slow growth rate and low fecundity, are especially vulnerable to fishing exploitation. The blue skate is critically endangered in the Mediterranean, with many juveniles taken as by-catch. Other related species often taken as by-catch include the blackchin guitarfish and common torpedo.



The Mediterranean Sea is the most dangerous place on earth for sharks, rays and skates, with 42% of these species listed as endangered. Over 97% of the Mediterranean populations of large predatory sharks, such as hammerhead and thresher, have been killed off in the last 200 years.

Tuna

The bluefin tuna is a highly migratory species, finding its way into the Mediterranean Sea from the Atlantic every summer in advance of the spawning season. There, a labyrinth of nets and lines awaits it. For centuries, bluefin tuna has been caught in the Mediterranean, yet it is only since the industrial fishing revolution of the 1960s that the species has been heavily exploited. Currently, mainly juveniles are caught and, as a fish which reaches sexual maturity at a late stage, it is especially vulnerable to overfishing. In the last 50 years, over 85% of the bluefin population in the Eastern Atlantic and Mediterranean has been killed off. Other tuna species caught in the Mediterranean include bullet tuna and yellowfin tuna.

Swordfish

Swordfish is another species which migrates from the Atlantic into the Mediterranean via the Strait of Gibraltar every year. The Moroccan and Italian swordfish fisheries, especially, are a serious threat

and although the swordfish is currently not listed as a threatened species, it has recently been added to the 'red list' of various organisations, as a fish that is caught in unsustainable fisheries.

Mediterranean monk seal

The current Mediterranean monk seal population is estimated to be between 350 and 450 individuals. Overfishing of fish prey, the threats of obstructive fishing gear, pollution and other human disturbance have led to a serious threat of extinction. Most of these seals are currently found on islands in the Ionian and Aegean Seas, and along the coasts of Greece and western Turkey, with some individuals spotted in Senegal, the Gambia and the Cape Verde Islands, as well as in Portugal and Atlantic France. Since 1996, monk seals have been listed as critically endangered by the International Union for the Conservation of Nature (IUCN).

Many others

Many other species of shrimp, mackerel, lobster, octopus, whiting, hake, sardine and sprat also inhabit the Mediterranean Sea and the neighbouring Black Sea. Thousands of industrial trawlers scrounge both seas for them. Other common target species include anchovy, mugilids, anglerfish, pandora, cuttlefish and flounder. In recent years, the deep-sea coral communities in the Mediterra-





nean have been damaged on a large scale by the increased use of bottom trawling. Some trawlers continue to operate illegally in prohibited areas, leaving the seabed in ruins forever.

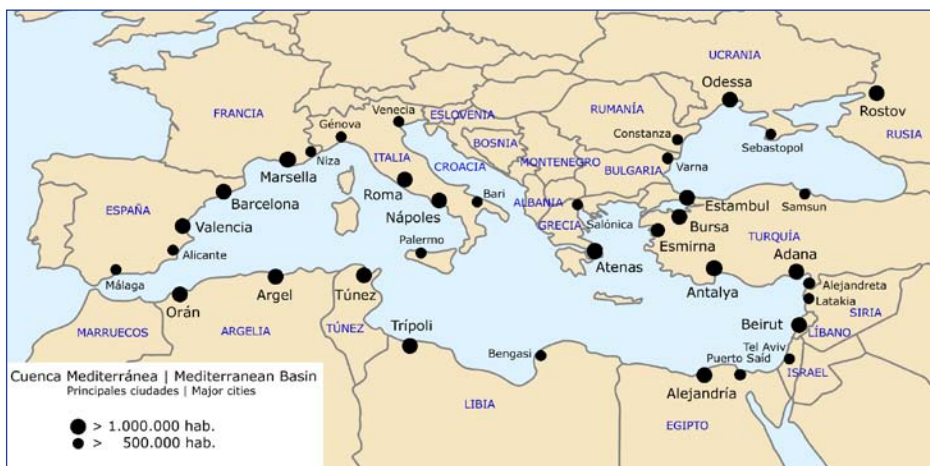
Human presence

The Mediterranean connects three of the world's continents, is one of the oldest inhabited regions in the world and the birthplace of civilisation in Europe. Here, about 230,000 years ago, one of the first settlements of Neanderthals in Europe is believed to have been established. Modern humans started moving in from Asia about 50-40,000 years ago and the first agricultural settlements can be dated to around the 9th millennium BC when food

crops, such as wheat, chickpeas, and olives were grown. Sheep and goats were also kept by these settlers. Poppy and oats were grown from the 6th millennium BC onwards and settlements slowly started moving to the western regions. Merchant trade routes ensured an early interaction between cultures and have existed in the Mediterranean throughout recorded history.

From very early on, the bluefin tuna has served an important role in Mediterranean cultures. Cave drawings found in Southern Spain show that Neanderthals hunted fish, and for centuries tuna fishing and tuna salting were strong pillars of Roman industries. With tuna as a prized fish, both for its size and taste, it is no surprise the Romans were willing to defend this important commodity, and many battles were fought over access to parts of the Mediterranean Sea. Salted tuna, a common part of the Roman diet, was often taken to sea to feed troops as the preserved meat kept for a long time.

Bluefin became an important export product for many Mediterranean countries. The *Almadraba*, the age old ritual of catching tuna in a maze of nets before spear killing them, still takes place in Andalusia, Southern Spain. In parts of Sicily the same tradition is called *Mattanza*. However, the problems and current threats to the fragile Mediterranean bluefin populations have their origins in the development of new high-tech fishing gear in the 1960s, when the concept of large scale industrial fishing was first introduced.





2 BLUEFIN TUNA

The bluefin tuna (*Thunnus thynnus*) are finfish belonging to the Thunnini, a sub-species of the much bigger mackerel family (Scombridae), which also includes the mackerels, bonitos and skipjacks. There are three species of bluefin tuna: the Atlantic or Northern bluefin tuna, the Pacific bluefin tuna and the Southern bluefin tuna. While the Southern bluefin population around Australia and in the Indian Ocean is listed as being at extremely high risk of extinction in the wild, the Atlantic Bluefin tuna has no listing at all, due to insufficient data on the populations.

Appearance

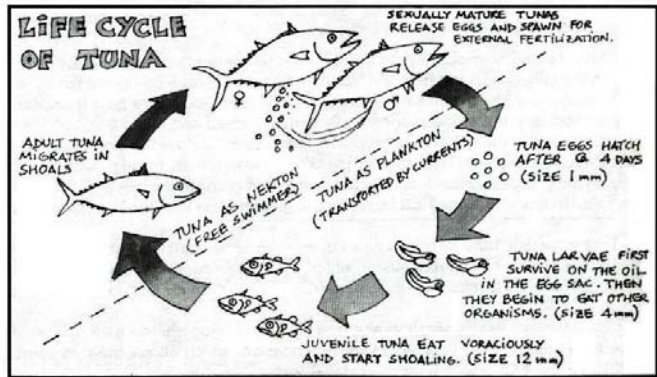
The design of a bluefin's body is probably the most hydrodynamic of any fish, with fins which ensure its manoeuvrability and stability. Two dorsal fins on its back can also lie flush in special grooves; the other dorsal fin and nearby anal fin are long and pointed; seven to ten yellow finlets run between these fins and the tail. The tuna's body narrows towards the tail; this is called the *caudal peduncle* and three stabilising keels are attached on each side. Tuna, unlike most other fish, hardly move their body to propel themselves through the water; instead, most of the movement is in the tail, allowing the tuna to move with greater efficiency by reducing drag.

Tuna differ greatly in size. Skipjacks and blackfins are less than a metre in length, while bluefins can be as long as four metres and weigh up to three-quarters of a tonne.

Reproduction

Like most sea creatures, bluefin tuna migrate from feeding grounds to their spawning grounds. The spawning areas of the Atlantic bluefin populations are in the warmer Mediterranean Sea around the Balearic Islands and in the Gulf of Mexico. Female bluefins lay about 100,000 eggs per kilogram of bodyweight. One fish can lay up to 40 million eggs

during one spawning season; however, only a small percentage of these will survive to adulthood. Bluefins reach their sexual maturity at between five and eight years old. While some species, such as the bigeye and albacore, live only about ten years, the bluefin can make it to 30. The fact that the bluefin reaches sexual maturity at a late stage makes it especially vulnerable to overfishing.



Speed

The tuna's advanced aquadynamic design makes it possible for the fish to swim up to 40 miles per hour. As a warm blooded fish, the circulatory and respiratory system of the tuna enables it to regulate its body temperature, which can be up to 25 degrees higher than that of the surrounding water. The extra heat generated, mixed into the oxygen-rich blood, gives an extra boost to the tuna's muscles, which in turn help it swim faster. Of course, for all this extra power the fish needs more oxygen. Tuna need to swim constantly, at a speed of at least one body length per second, in order to pass enough oxygen over their gills to meet the demand. Thermoregulation, the ability to regulate body temperature, allows the bluefin to live in colder waters, such as the North Atlantic. This ability is also shared by the mako shark, broadbill swordfish, great white shark and porbeagle.

Food

As top predators, bluefin tuna have an important function in the ecosystem, controlling smaller species below them. Tuna feed on many different creatures. Common victims are mackerel, herring, eels, whiting, hake and squid. Crustaceans such as shrimp are also part of the diet. In turn, tuna are hunted by billfish, orca whales, pilot whales, some sharks and, above all, humans.

Migration

Bluefin tuna migrate thousands of miles annually. They are considered epipelagic-to-midwater fish, inhabiting the upper and middle parts of the open

oceans, generally feeding at depths of up to 500 metres but sometimes as deep as 1,000 metres. With the exception of the polar regions, bluefin tuna are found in all the world's oceans. As a result of extensive recent studies, we now know that bluefins roam large distances. Scientists found that fish tagged in the Bahamas, for example, might later be recovered as far away as Norway. Some fish, crossing the Atlantic, were found to travel over 7,000 km in less than 100 days.

Populations

According to some, there are two separate populations of bluefin, one in the Western Atlantic and the other in the Eastern Atlantic and Mediterranean. However, with as many as 30% of bluefins crossing between the American and European populations, it is arguable whether they are really two separate groups, and whether the way they are currently managed by two separate fisheries management organisations is the best way. In recent tagging studies, scientists found that bluefins which have not yet reached sexual maturity cross the Atlantic on many occasions, mixing up the American and European populations, whereas those aged eight years or over tend to congregate at the same feeding grounds, yet split off to return to their separate Eastern and Western breeding grounds. Tuna travel in small schools ranging from a handful up to 40 fish. These schools tend to be formed according to fish size, yet can include several tuna species. Some very large tuna fish have been known to live solitary lives, travelling and feeding alone. The state of current bluefin tuna populations will be examined in more detail in the next chapter.

3 FISHING



Fishing is a major activity in the Mediterranean. The EU fishing fleet totalled 88,500 vessels in 2007 and the majority of these operate in the Mediterranean Sea. The bluefin fishery and the trawler fleets are the most destructive fishing operations in the region. Within the European Union it is Spain, France, Italy and Greece that are responsible for the vast majority of bluefin landings. Turkey has the biggest bluefin fleet of all countries, but it is not part of the Union. Other culprits are Croatia and Morocco. Every day, thousands of vessels set out, putting out driftnets, setting out longlines or operating trawlers. The fishermen are literally destroying the Mediterranean Sea and all life within it. Illegal, unregulated and unreported (IUU) fishing has been widespread for years, and numerous reports from organisations such as Oceana and WWF have pointed to the urgency of the situation. All over Europe, parliaments are united in their unwillingness to deal with these problems effectively, resulting in half-arsed measures which do nothing to help a desperate situation. It is only a matter of time before the fragile populations of bluefin tuna collapse and other endangered species are also lost forever.

There are various types of tuna fishery. The *Al-madraba* is the old school way in which fishermen have caught tuna off the coasts of Andalusia and Sicily for centuries. The purse seine technique is the most effective fishing technique, catching an entire school of tuna in a single haul. Other methods, such as the use of driftnets, are illegal, but still used all over the region. Driftnet and longline fish-

eries often target other species besides tuna, such as swordfish.

Purse Seine

Purse seine is a relatively new method of catching tuna and other pelagic species such as sardines. Although similar techniques had been previously

been used, it was in the 1950s, when a mechanised pulley was introduced to haul in the nets, that purse seining became what it is today. In the case of the tuna fishery, an entire school of fish is first encircled by a net, with both ends brought back together to create a cylinder shape. A line fed through rings along the bottom of the net is pulled tight, closing the net like a purse, and preventing the fish from sounding (swimming down) to escape capture. In many cases, the net is then transferred to a tug which pulls the purse to a nearby tuna farm, where the fish will be transferred to a pen for fattening. Tuna farming will be examined in detail in the next chapter.

From 1996 to 2006, purse seiners were responsible for around 50% of all the bluefin catches in the Mediterranean. In the last few years, this has increased to nearly 70%. Looking at the entire purse seine fleet, its catch capacity is over double the yearly quotas set by the International Commission for the Conservation of Atlantic Tunas (ICCAT), which is supposed to manage the tuna fishery. Since 1997, over 250 new purse seine vessels have been built; these now make up nearly 40% of the entire fleet. A report by WWF estimated that in 2008, 614 purse seine vessels operated in the Mediterranean Sea to catch bluefin. 40% of these vessels were Turkish flagged, while other fleets with large parts of the total capacity were Italian, Croatian and Libyan flagged vessels.

The huge financial investment in the expansion of the purse seine fleet over the past ten years has to be recouped somehow and this is achieved by reckless overfishing. Many landings are illegal, much of the transfer of fish to other vessels at sea goes unnoticed and all countries catch well above their allowed quota. The industrial scale and efficiency of the purse seine fleets is directly responsible for the overfishing of the bluefin populations and is leaving the fish with precious little chance of survival.

France

France is currently the largest supplier of live tuna to Spanish tuna farms. It operates a fleet of 40 purse seiners from the Gulf of Lyon. In recent years French purse seiners have extended their operations to most parts of the Mediterranean, in particular the area to the south of Malta and off the coasts of Libya and Cyprus.



Turkey

The total number of vessels in the Turkish fleet differs considerably, depending on who you ask, with estimates ranging from 500 to 700. Of the 614 purse seine vessels which made up the total bluefin fleet in the Mediterranean Sea in 2008, 40% were Turkish flagged. Many illegal vessels operate from Turkey and independent sources have found that most catches are unreported. In recent years, Turkish and Italian media have reported the landing of many bluefin juveniles. ICCAT regulations state a minimum legal landing size of 30 kg to allow the bluefin to enjoy at least one reproduction cycle before being killed. This ongoing landing of fish under minimum size is bringing the end of the fishery closer than ever. Almost the entire Turkish bluefin catch is transferred to pens at tuna farms where the animals will be fattened.

The misreporting of catches is a longstanding issue in the Mediterranean. One of the reasons that ICCAT has been such a hugely ineffective management instrument is that for years, nations have been supplying incorrect or insufficient data regarding bluefin catches, and this falsification has gone unchallenged. In some instances, catch information has not been supplied at all. In Turkey's case, the use of fraudulent catch data is widespread.



For example, according to the numbers given to ICCAT by the Turkish government in 2008, the total bluefin tuna catch by the Turkish fleet for that year was 879 tonnes, 99% of Turkey's total annual catch quota. Aside from the numerous illegal vessels operating as part of the fleet, the Turkish government acknowledges having issued fishing licenses for at least 98 fishing vessels, most of which are purse seiners of 30-50 metres length with a capacity of 200-300 tonnes each. It doesn't take a mathematical genius to see that the numbers just don't add up.

Turkey's irresponsible fishing will be the cause for the extinction of the bluefin tuna in the near future unless drastic action is taken, and fast.

Italy

Italy accounts for about 17% of the total purse seine fleet in the Mediterranean and is second in place for its contribution to the great Mediterranean purse seine plague. Since 1997, Italy has built 27 new vessels, bringing its total fleet up to 102. The total capacity of the Italian purse seine fleet is just over 7,500 tonnes, about 14% of the entire potential bluefin catch in the Mediterranean. This tonnage is also double Italy's 2007 ICCAT quota.

The largest catch of the Italian fleet was declared in 1997, which has raised suspicions about the un-

der-reporting of more recent catches, as the fleet has since grown in size, capacity and efficiency. An independent study of four Italian purse seiners found that each had caught over three times their individual vessel quotas for 2001. Of all the EU countries, Italy is the worst offender when it comes to under-reporting catches and overfishing, landing up to three times its overall quota.

Croatia

The purse seine fleet of Croatia makes up about 14% of the total bluefin purse seine fleet. The total catch capacity of the vessels is said to be around seven times the quota allocated by ICCAT for 2008. Croatia continues to construct new large purse seiners to add to its already too large fleet. Bluefin caught by the Croatian fleet ends up mostly in the tuna farms of Malta and Croatia.

Libya

Many vessels from France, Italy, Turkey, UK and the Netherlands have been re-flagged by Libya. As a country which is not bound by EU regulations, Libya has been hosting vessels which otherwise would have to adhere to conservation measures such as converting to less damaging types of fishing gear or reporting actual landings. The first Libyan purse seine vessel became active in 2002, when a French





vessel was re-flagged. Since then, the country has been building up a substantial fleet in a very short period of time.

Reported catches of bluefin tuna have been decreasing in recent years, yet the fleet has expanded rapidly, pointing to a serious under-reporting of actual catch numbers. The current fleet consists of around 40 vessels, with a total capacity of around 4,250 tonnes, which was three times the allocated ICCAT quota for Libya in 2008. Over three-quarters of the Libyan fleet consists of re-flagged purse seiners.

Algeria

Algeria has rapidly built up its purse seine fleet from nothing in recent years. There were no purse seine vessels at all targeting bluefin in 2005, yet by 2008 Algeria had 14 active vessels, built in Spain and Turkey with, in some cases, technical assistance from the French. The total estimated capacity for these vessels is much higher than Algeria's total quota for the 2008 season, which would also have to be shared by other fleets targeting bluefin, such as longliners.

Other countries operating purse seine fleets are Greece, Malta, Spain and Tunisia.

Driftnet

The use of driftnets is still common practice around the world, including the Mediterranean. Driftnets pose a major threat to marine wildlife. These 'walls of death', which can be up to 50 kilometres long, catch everything that lies in their path, causing much unwanted by-catch. Driftnets are particularly dangerous for cetaceans, such as whales and dolphins, which need to surface to be able to breathe. In recognition of the destructiveness of this fishing method, the United Nations banned the use of driftnets on the high seas in 1992.

The UN driftnet ban covered most of the Mediterranean, but was not enforced. In 1997, the EU passed a separate ban, prohibiting the use of driftnets longer than 2.5 km or to catch certain species, such as bluefin tuna, swordfish and albacore. However, it would take another five years for the ban to actually come into force for all EU registered vessels, from 1 January 2002. As recently as 2007, amendments were made to the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (AC-COBAMS) to once again ban the use of driftnets. Since 1989, numerous rules and regulations have been passed by various bodies, but with a total lack of enforcement, the driftnets continue to be used and, in fact, their use is increasing.

France

The driftnet fishing method is called *thonaille* in French and its use can be dated back to ancient times, when the technique was called *courantille* and the bluefin was still found very close to the coast. This artisan method of coastal fishing became obsolete when the tuna populations around the French coastline disappeared in the 1960s and the fishery was extended further out to sea.

When the UN driftnet ban came into force in 1992, the EEC approved a similar ban, prohibiting the use of nets longer than 2.5 km in European waters. It mostly affected the Italian fleet as the French fleet already fished with shorter nets. The French were, however, affected by the second EU ban, which came into force in 2002. Besides length restrictions, it also banned the use of the nets to catch certain species such as bluefin tuna, swordfish and albacore. The French fishermen, however, found a way to circumvent the ban. With government backing, they exploited a loophole in EU legislation which failed to clearly define what a driftnet is. The French appealed the decision taken by the



EU while they continued to use illegal driftnets and the government passed a decree, authorising their *thonaille* vessels to operate under 'special fishing permits'. This decision violated EU rules and when three NGOs took the government to court over the issue, the government decision was overruled. This did nothing to stop the French government from continuing to give fishing quotas to the illegal driftnetters.

While the French continued to argue over definitions, thousands of cetaceans, sharks and turtles died in French driftnets, partly inside the protected Pelagos Sanctuary, north of Sardinia. It would take until 2007 before the EU Fisheries Council passed new rules, leaving no doubt as to what constitutes a driftnet and, in effect, banning the use of all *thonailles*.

In 2007, Oceana concluded that the French fleet consisted of 92 *thonaille* vessels. A quarter of the fleet entered into service after the EU driftnet ban came into force in 2002. Some of these vessels were newly constructed with help from the Financial Instrument for Fisheries Guidance (FIFG), the EU fisheries funding programme, when the EU driftnet ban was already in force. On top of this,

Oceana observed that some ports which were not supposed to host driftnet vessels had driftnets on their docks, suggesting that the nets were being used opportunistically by other vessels.

The French continue to use illegal driftnets on a large scale and they continue to operate inside the Pelagos Sanctuary, a protected area inhabited by endangered fin whales, sperm whales, pilot whales and various dolphin species.

Italy

For the last 15 years, Italy has received millions in EU grants to eliminate the illegal use of driftnets by its swordfish fleet, yet the practice continues to this day. Vessels use fishing gear other than that allowed by their fishing permits, and many vessels are now converted so they can opportunistically switch to different types of fishing gear, including driftnets.

The first EU regulation limiting the use of driftnets, which came into force in 1992, had an important economic impact on the Italian swordfish driftnet fishery. Funds were allocated to Italy through the FIFG to help it dismantle and convert its driftnet fleet which, during its heyday in the early 1990s, numbered around 700 vessels. The conversion was largely voluntary, which meant that most vessels continued to use the nets. Various new regulations were passed, but it was not until a second EU driftnet ban was on the cards that the Italian government was given a new stimulus to dismantle and convert its driftnet fleet. Between 1997 and 1999, €7.9 million was allocated for this purpose. In 2000, it seemed that around 85% of the driftnet vessels had converted to other fishing gear.

After 2002, when the new ban was already in force, the Italian government announced that a further €6 million was to be given out for conversion of the remaining driftnet vessels operating illegally. The money was given to the driftnetters with few checks and, unsurprisingly, nothing much happened. Oceana estimates that there are still 137 illegal Italian driftnetters. Italy's non-compliance with the driftnet ban has resulted in an infringement procedure, started by the European Commission. The United States has also warned Italy that its fishing products will not be welcome if the illegal driftnet operations continue.

After the measures to stop driftnet use by Italian vessels were implemented in the period from 1995-2000, it is believed that many driftnets and other equipment were sold to Morocco. As the measures were introduced in Italy, a sharp increase in the use of the illegal driftnets was observed in



Morocco. The country quickly became the second largest provider of swordfish in the Mediterranean. Roughly 65% of the swordfish from the Moroccan fishery now ends up on the Italian markets.

Longline

A longline is a line with thousands of baited hooks, targeting mostly swordfish, bluefin tuna, albacore and hake. As the baited hooks are indiscriminate, longlines pose a major threat to marine wildlife, including sea birds. Thousands of dead turtles, dolphins and sharks are pulled up every year, strangled by the lines. Various international regulations and resolutions are trying to end the damage done by the lines, but so far with little effect.

It is not uncommon for longlines to reach lengths of 50-60 km. In the Mediterranean, an important habitat for species such as swordfish and tuna, the widespread use of longlines, along with drift-nets and purse seines, leaves these fish with little chance of survival. Longlines are used by fleets from all around the Mediterranean. As fishermen in the region opportunistically change to using different types of fishing gear at different times, the number of longline vessels changes constantly.

By-catch

Longlining is an incredibly wasteful operation, killing thousands of animals, some of which are critically endangered and protected, such as the loggerhead turtle, the Mediterranean populations of which are struggling to survive. Every year, more than 250,000 endangered loggerhead and leatherback turtles are caught by longlines worldwide. Around half of the turtles which come in contact with the lines do not survive.

Sharks are other common victims of the longline swordfish fishery. The blue and mako shark, both classed as 'near threatened', are regularly found on the lines. As one WWF report states:

From 1990-2000, Portuguese swordfish longliners in the North Atlantic caught around 3 tonnes of blue shark for every 1 tonne of swordfish. Similarly, blue shark and mako shark made up 68% of landings by Spanish swordfish longliners in the Atlantic Ocean in 1999, while blue shark made up around 25% of landings by Spanish swordfish longliners in the Mediterranean.

An estimated 100,000 sharks are currently killed every year by the large Moroccan driftnet and



longline fleets catching, on average, one shark for every two swordfish.

Longline fishing is a major threat to sea birds, regularly catching albatrosses, gannets, fulmars, gulls and various species of shearwaters. In 1997, it was reported that 200 Cory's shearwaters were killed by a single Spanish longline vessel in one day. Longline fleets across the Mediterranean find thousands of dead sea birds in their lines every year.

The fleets

Spain has one of the biggest longline fleets, operating from the Strait of Gibraltar to the Balearic Islands and along the Algerian coast. Portugal has a longline fleet, as well as France, which operates in the Gulf of Lyon, mostly targeting hake. Italy has another substantial fleet, with hundreds of vessels operating from Sicily, Puglia, Sardinia, Campania and Liguria. In addition, thousands of smaller boats, using longlines closer inshore, operate around most coastal areas of Italy. This fleet mostly targets swordfish and albacore. Italian longliners cover parts of the Adriatic, Aegean, Ligurian and Tyrrhenian Seas. Vessels operate around Crete and Cyprus, in waters close to Egypt and along the rest of the north African coast. A Japanese longline fleet



has also been known to operate within the Mediterranean. For years, ICCAT has given Japan one of the highest quotas outside the EU.

Greece's longline fleet is made up of many smaller vessels, looking for swordfish, bluefin tuna and albacore. Malta, Turkey, Cyprus, Libya, and Tunisia all have longline fleets, targeting mostly bluefin tuna and swordfish. Algeria has been using longlines since the early 1970s. Since the introduction of the country's new fishery development plans, newly built purse seiners have increased the capacity of its fleet drastically. However, Algeria's quota as allocated by ICCAT has not risen.

Almadraba and Mattanza

The *Almadraba*, a traditional Andalusian fishing technique whereby nets are set in a maze to trap tuna fish, takes place mostly around the Strait of Gibraltar. The fishery accounts for 1-2% of the total bluefin tuna catch in the Mediterranean. The fish from this fishery, being traditionally hand caught, attracts the highest prices. This type of fishing has been practised for over 3,000 years and is hailed by many as the only 'sustainable' way of tuna fishing. One of the reasons for this is that the net sizes have stayed the same and capacity cannot be increased, thus only a limited number of tuna can be killed in a single catch.

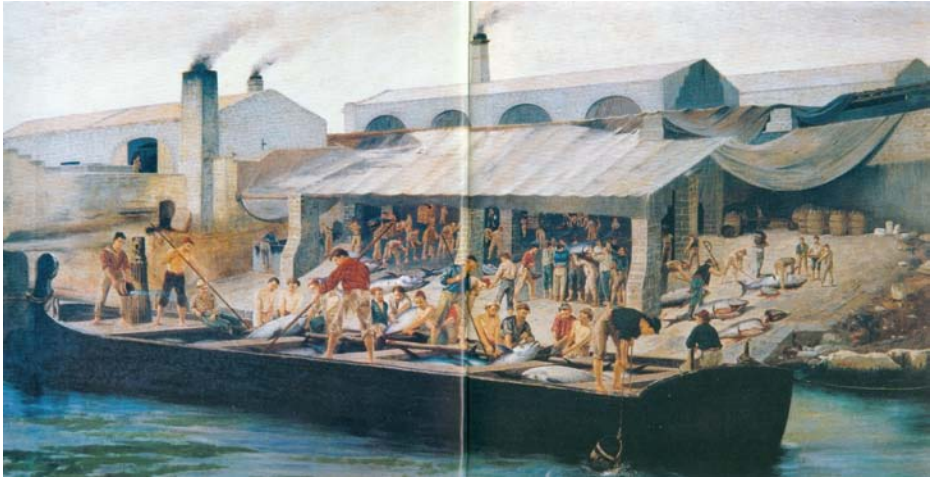
Harvesting of the tuna, etching by Jean-Pierre Houël, 1782



The tuna find their way into a net which runs from the sea towards the coast, and from there into a maze of nets. This eventually leads to a central chamber called the *copo*. Once the tuna are caught in this chamber, the net floor is raised, and the animals are slaughtered as they are brought up to the surface. Boats surround the net and the fish are hauled onto the vessels by fishermen waiting with hooks and spears.

In Sicily, the same fishing technique is called *tonnara*. It has been used for centuries and is based around a tuna harvesting festival called the *Mattanza*. All *Mattanzas* are now found on the west of Sicily, around the Egadi Islands. The fish are led into a huge trap called the *tonnara* and while the fishermen, called *tonnarotti*, sing traditional songs, the animals are killed in the *camera della morte* (chamber of death). Around 4,000-6,000 fish are caught during the *Almadraba* and *Mattanza* every year.

The tonnara at Favignana, off Sicily, painted by Antonio Varni, 1876





4 FARMING

Tuna farming, also known as tuna fattening or tuna penning, is an activity in which schools of young tuna are caught by purse seiners and kept in 'pens', or 'ranges' to be fed up to 25 times their own body weight in order to fatten them enough to meet market demands. Almost all farmed tuna from the Mediterranean ends up in Japan. Large financial investments from Japanese companies as well as EU subsidies have ensured that this relatively new arm of the fishing industry, which is badly regulated and relies on catching wild tuna from already dwindling populations, is now the major contributor to overfishing of the bluefin population in the region.

The process

Purse seiners are purpose-built ships which can net entire schools of tuna. Once a school is caught, the fish are transferred to a special towing cage, towed by tug boat to a tuna farm, where they are transferred again and the fattening process can begin. This process usually lasts six or seven months, as the peak in demand by the Japanese market occurs towards the end of the year. In Croatia, where generally much smaller fish are caged, the fattening can take up to 20 months.

The fattening process of bluefin tuna is extremely wasteful, with between 10 and 25 kg of fish (also known as baitfish) consumed to produce only 1 kg of tuna. The tuna are mostly fed small to medium sized pelagic species, such as anchovy, round sar-

dinelle, mackerel and herring. Local populations of these fish have also shown huge declines since the rapid growth of tuna farming started over ten years ago. In some cases, baitfish are imported from other parts of the world in order to meet the demand. Once the fattening period comes to an end, the fish are individually culled by divers and shipped to shore. The quality of the fish is then inspected and the dead fish are transferred onto Japanese freezer vessels (known as reefers) or stored in freezer storage facilities for the European market. The industry operates all year round. Tuna is frozen and packaged in purpose built factories and chartered flights ensure that markets on the other side of the world will see the tuna on the same day it is lifted from the pen and killed.

A growing industry

The first tuna farm was opened in the Mediterranean in 1996, located just off the coast of Spain. By 2003, fish farming in the Mediterranean had increased almost threefold. Driven by the market demand for cheap tuna and financed by the EU and Japanese businesses, the growth of tuna farms in the Mediterranean is proving to be the nail in the coffin for the Atlantic bluefin tuna. Over 70 farms are currently registered with ICCAT, with an unknown number of illegal farms operating alongside. Malta has the highest concentration of tuna farms of any country. While the country only has a small fishing fleet, it houses many tuna farms, including the largest tuna farm in the world, owned by Az-zopardi Fisheries. Thousands of tuna are brought to Malta by foreign fishermen to be fattened and exported. In 2008, Malta exported €6.3 million worth of Bluefin tuna in 11 months, according to figures released by its parliament. A report by the Federation of Maltese Aquaculture Producers (FMAP) stated that the industry had doubled its turnover in the two year period to 2007. Tuna is now the third most exported commodity, according to the federation.

Tuna farming has also expanded rapidly outside the Mediterranean, with operations in Australia (Port Lincoln), Mexico (Baja California), USA and Japan. Around 1996, the first farm was established in Australia, fattening Southern bluefin tuna. Production reached a total of 9,245 tonnes in 2002, a threefold increase in only five years. Mexican tuna farms deal with bigeye and yellowfin tuna, while the USA and Canada take in schools of Atlantic bluefin tuna.

EU and Japanese funding

The European Union is supporting the development of the tuna farms by handing out subsidies to the fishing communities now making a bomb from satiating the market's voracious appetite for cheap bluefin. Subsidies are also used for the building of tuna processing factories and construction of new vessels, in addition to the fleets which are already running way over quota. While the authorities in Brussels have openly declared their support for a moratorium on bluefin fishing in the Mediterranean by backing the recent CITES proposal, their subsidies and lack of will to enforce existing conservation measures properly continue to allow ever increasing numbers of tuna to be caught, caged, fattened and killed.

Japanese companies have strong vested interests in keeping up the supply of cheap bluefin from the

Mediterranean. Almost all exports from tuna farms go through Japanese trading companies. Torei-Toyo Reizo (the tuna arm of Mitsubishi), Takayama, Kayo, Maruha and Mitsui all have their fingers in the tuna farming industry. In some countries, such as Croatia, Japanese capital has been used to establish new farms. For a while, Japan showed concern over the dwindling populations of bluefin in the Mediterranean as their national longline fleet, which operates in the region, reported declining catches. Some Japanese companies were also worried about the traceability of the fish and the contamination of the farmed tuna meat by pollutants, such as antibiotics. However, this arm of the industry surpasses all other fishing method in terms of financial returns, and Japanese corporations have opted to prioritise short term profit over any consideration of sustainability.



Farmed to extinction

Bluefin tuna farms do not breed and rear fish in captivity. They rely on wild tuna, caught from already declining stocks by purse seining fleets which have massively expanded in recent years. Bluefin tuna farming is bringing the species to the brink of extinction. Over 70 farms have opened up in the Mediterranean in less than 15 years, now operating along the Spanish, Turkish and Maltese coasts. With a total capacity of over 60,000 tonnes, these farms alone can hold twice the total catch quota.

Besides the overfishing of the bluefin tuna to fill the farms, their feed, which consists of smaller fish, is also fished from local stocks. Serious concerns have already been expressed about the Mediterranean populations of anchovy, which are overex-

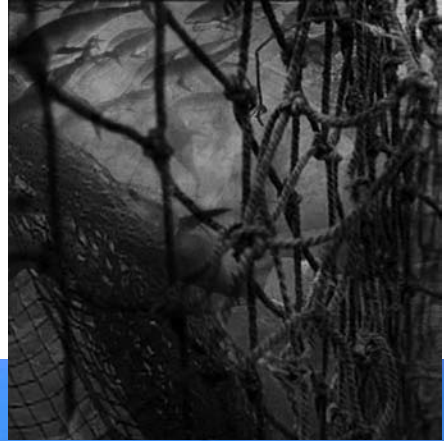
THE MEDITERRANEAN BASIN





exploited in many regions and are often used to feed the farmed tuna. Tuna fattening in the Mediterranean is raising a whole range of issues, often with insufficient research to measure their true impacts. There is hardly any monitoring of what goes on in the farms. Pens often hold more fish than allowed and the majority of farms operate at levels of overproduction, which affects the local environment as well as the well-being of the animals themselves. Many illegal fishing vessels, such as those from Turkey, land their catch in farms. Once penned, there is no way of tracing the origins of individual fish. The production also has a massive ecological footprint as it relies on fish to be flown to their markets, which are mainly located on the other side of the globe. Governments and some mainstream conservation groups say that aquaculture, where fish are bred and reared in captivity, is the way to go, with the need for the industry to just 'clean up'. But can such a badly regulated part of an already heavily corrupted and largely illegal industry really 'clean

up'? Bluefin tuna stocks are under immense pressure and heavily overexploited and tuna farming is the main culprit. Governments have failed the bluefin tuna by letting this lucrative industry spiral out of control. Fishermen and tuna farmers are criminals for fishing and farming the species to extinction for profit.



5 CONSUMPTION

The growth of the bluefin tuna fisheries goes hand in hand with the growing demand from the market. Japan is the biggest importer of the fish, currently taking about 80% of the bluefin catch from the Mediterranean region. The remaining fish are sold to other Asian nations and the European markets. The market in Europe seems likely to decline in the near future, with conservation groups putting increasing pressure on many retailers to pull bluefin off the menu, already with good results.



Japan's lucrative appetite

Seafood makes up almost a quarter of Japan's imports and half of its exports of food products. It is the largest amount of any type of edible import and the country imports enough seafood for each of its citizens to consume around 70kg every year. From the days of the Samurai, when bluefin was considered unclean and many would not choose to eat it, to its current status as one of the most popular and the highly priced sushi ingredients in Japan, the *Maguro* (as bluefin is known in Japan) has surely come a long way. Before the 1970s, bluefin was mostly caught as a sport fish outside the Mediterranean and was commonly known as 'horse mackerel'. It even used to be sold to companies for the production of cat food or in some instances simply thrown away. In the early 1980s, when new technologies were introduced enabling storage of the flesh for greater lengths of time, the bluefin tuna experienced a rise in popularity among Japanese consumers. Ever since, business has been booming.

Japan's Mitsubishi corporation handles nearly half of the world's bluefin tuna market. It currently buys up, freezes and stores around 20,000 tonnes of bluefin every year for 'investment' purposes. Profiting from extinction seem to be at the heart of the operation. The company says it freezes the fish 'to even out peaks and troughs in supply' but the actual effect is that it is driving up prices and creating a scarcity in supply. Besides Japan, the United States is also a big importer and exporter of bluefin tuna. More than half of the US catch is exported to Japan. The country also imports bluefin from Malta, Canada, Spain and, yes, Japan.



Sushi frenzy

Bluefin tuna mostly ends up in the sushi bars and restaurants of urban Japan and other Asian countries. The bluefin tuna is the most highly priced item on the menu and one of most popular sushi dishes. It has grown to become the icon of sushi, with chefs being expected to serve a good *Maguro* sushi. Yellowfin tuna is also served and known in Japanese as *Ahi* (ah-hee). Many parts of the bluefin, sometimes nicknamed *black diamond* for its shiny skin, are used for different types of sushi, which are categorised on their fat content.

Akami (ah-kah-me) is the meat which is cut from the sides of the fish. Unless one asks for specific parts of bluefin meat, this is what is served as *Maguro*. This meat is known to be quite firm and has less fat content than other parts. *Toro* (toh-roh) is the meat cut from the bluefin's belly, of which there are two types. Firstly, there is *Otoro* (oh-toh-roh), which is sometimes labelled *o-toro* and is cut from the very underside of the belly. It is the most expensive part of the tuna and due to its high fat content, is almost at the point of falling apart. It can 'literally melt in your mouth', according to sushi lovers. *Chutoro* (choo-toh-roh), which is sometimes labeled *chu-toro*, is the other part. This is the meat which lies in between the *Akami* and the *Otoro* and is often preferred by consumers as it is not as fatty. Served on its own or as a sushi roll, *Maguro* is often accompanied by wasabi and soy sauce. Sometimes the *Maguro* is marinated in soy sauce, which was common practice in the past to preserve the tuna meat. Some bluefin tuna contain high levels



of mercury. As the bluefin occupies a position near the top of the food chain, mercury can accumulate in its body over a long period of time. Various health authorities have warned that consuming tuna regularly can lead to mercury poisoning. An independent study carried out in the US found that the majority of samples of bluefin tuna purchased at restaurants and supermarkets contained mercury levels well above safe limits. Japanese consumers are sensitive about food safety, especially since the first cases of Minamata disease appeared in 1956. The disease, which causes a severe neurological syndrome, is the result of mercury poisoning from eating contaminated seafood.





6 ILLEGALITY

It is estimated that around half of the Mediterranean bluefin tuna catch is caught illegally. There are numerous ICCAT regulations and international treaties, as well as specific protected areas but, with a total lack of adequate enforcement, the Mediterranean continues to be fished to death, in spite of all the new laws and regulations.

There are no Economic Exclusion Zones (EEZ) in the Mediterranean and the jurisdictional waters extend less than 12 miles from the coast in places, such as around Turkey and Cyprus. The majority of the fishing grounds are therefore located in international waters and shared by many countries, with the responsibility to properly manage the fishery left to bodies which have no real enforcement powers, such as ICCAT. Some purse seine fleets, such as the one from Turkey, operate almost entirely illegally.

The French Navy patrol boat *Arago* occasionally inspects tuna fishing vessels. In one operation, where 24 boats in the Eastern Mediterranean were subjected to surprise visits, the Turkish were found to be the biggest culprits. The Navy report stated:

The Turkish didn't seem to apply the regulations. Registration documents were either not filled in or simply did not exist. There are no ICCAT observers in the purse

seiners or the vessels are simply not registered with ICCAT.

ICCAT rules state that every vessel larger than 24 metres must carry a regional observer. The French found only one observer across the entire fleet, and they questioned his honesty.

After the inspections he would find all sorts of explanations or false arguments to try to justify non-compliance with ICCAT recommendations. Moreover, the estimations of the amount of fish in the cages given by him were on average ten times lower than those estimated by the navy divers.

During the operation, the Navy detailed some 22 breaches of ICCAT regulations, including unlicensed fishing, poor or absent record keeping and taking of juveniles.

The French Navy patrol is a rarity but its findings

are good examples of the problems facing this fishery-gone-out-of-control. With the absence of proper enforcement, together with the high profits which are to be made from bluefin tuna, poachers are willing to take the risks in continuing their illegal operations.

What is considered illegal?

According to the regulations set by ICCAT for the bluefin tuna fishery in the Mediterranean, the following practices are considered illegal:

- **Fishing with a vessel not registered with ICCAT**
- **Fishing out of the allowed season, which in 2010 ends on 15th June**
- **Fishing while the vessel's flag state has reached its allowable quota**
- **Catching juveniles smaller than 30kg**
- **Transferring fish, while at sea, to a reefer (refrigerated vessel)**
- **Using driftnets (all use of driftnets is banned)**
- **Using spotter planes or helicopters to find tuna schools**
- **Using nets with smaller mesh opening than permitted**
- **Making false catch declarations**
- **Landing fish outside of the individual allowable quota**
- **Farming more tuna in a pen than is allowed**

Most of these activities happen frequently, but are hard to prove. Some, such as transferring fish to reefers, might happen at night or while at open sea, with no one else around. The landing of fish outside of the individual allowable quota, or farming more tuna in a pen than is allowed, often takes place at private docks or grounds, which can be inaccessible to independent observers.



International treaties

Various international treaties ought to give protection to the bluefin tuna and other threatened marine species in the Mediterranean. The European Union is a signatory party to the following Conventions and, as such, has a responsibility to uphold them:

Barcelona Convention for the Protection of the Marine Environment and the Coastal Regions of the Mediterranean – this led to the establishment of the Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean. Contracting parties include all the countries with a Mediterranean shoreline as well as the EU. Threatened species can be included in the annexes of this convention, which should (in theory) offer them better protection.

Bern Convention on the Conservation of European Wildlife and Natural Habitats – this aims to protect wild flora and fauna and especially endangered species. Listing species under the relevant annexes should (in theory) offer them better protection.

Bonn Convention on the Conservation of Migratory Species of Wild Animals – this aims to improve international co-operation to protect migratory species, which often fly, swim or travel across national boundaries. Listing threatened species under the relevant annexes should (in theory) offer them better protection.

CITES is the Convention on International Trade in Endangered Species of Wild Fauna and Flora – this regulates the trade of endangered species of wild flora and fauna. Some marine species that are frequently caught by the illegal driftnets and longlines which are used for the swordfish and bluefin tuna

fishery, are protected by CITES. Leatherback and green turtles are protected under an Appendix I listing, as well as the fin whale, which is threatened by the use of illegal fishing gear.

Protected areas

Even though most of the Mediterranean Sea is international waters, there are some internationally agreed protected areas. Most of these areas cover small patches of coastal waters, of which most are listed on the Specially Protected Areas of Mediterranean Interest (SPAMI) list of the Barcelona Convention. In 2008, four new areas were added to the SPAMI list, bringing the total listing to 21 Specially Protected Areas (SPAs). Various types of human activity are prohibited in the SPAs, such as fishing. Besides various small protected areas along the Spanish, French and Italian coasts, Malta has established a 25 mile fishing zone around the island. In practice, however, this means a zone to protect illegal fishermen rather than the fish.

Pelagos Sanctuary

The Pelagos Sanctuary for Mediterranean Marine Mammals, previously known as the Ligurian Sea Cetacean Sanctuary, is the largest of the SPAMI sites. The sanctuary was established in 1999 and covers parts of the Mediterranean seas of France, Italy and Monaco. It measures approximately 87,500 km², lies north of Sardinia and completely surrounds the island of Corsica. Various species of cetaceans inhabit the sanctuary: fin whales, sperm whales, Cuvier's beaked whales, pilot whales, striped dolphins, common dolphins, bottlenose dolphins and Risso's dolphins. The area is believed to be the main feeding ground for fin whales in the Mediterranean, with water currents creating conditions that favour phytoplankton growth and the consequent abundance of krill.

An ICCAT report from 2007 estimated that 100 drift-net vessels continue to use this type of fishing gear illegally inside the sanctuary area.

Other illegal activities

Other prohibited activities include rioting, ramming and damaging conservation vessels and assaulting activists who work to protect the fragile biodiversity of the Mediterranean.

In 2007, during a campaign by the marine conservation organisation Oceana, a group of seven French driftnetters attacked Oceana's vessel, the *Oceana*

Ranger. Oceana was documenting an illegal drift-net being hauled on board a vessel when other fishing vessels appeared. Flare guns were shot at the *Oceana Ranger* and prop foulers deployed, and fishermen threatened to board the Oceana vessel unless camera equipment was handed over. The incident received a lot of media attention and various politicians expressed their support for Oceana's work. Five of the seven French vessels involved were named as *Shark IV*, *Adeline Kevin*, *Gallus*, *Orchidee II* and *La Santa II*.

Rioting fishermen descended on Brussels and Paris in May 2008, protesting increased fuel prices. In Brussels, cars were overturned, stones thrown and several police officers injured. The European Commission's agriculture offices and a bank were damaged. One fishermen was arrested while attempting to throw a molotov cocktail. In Paris, fishermen clashed with riot police at the agriculture ministry and four police officers suffered injuries when flares were shot from the crowd. A week prior to the riots, fishermen blockaded ports and oil depots around France, causing fuel shortages in some towns.

At the height of the bluefin season in 2008, three Turkish vessels surrounded the Greenpeace ship *Arctic Sunrise* while it was documenting the activities of Turkish vessels. One of tuna boats, *Cinar Ibrahim*, collided with the Greenpeace ship. The fishermen then started hurling lead fishing weights at the Greenpeace ship, damaging the Greenpeace helicopter. Gunfire was also heard, though no one was injured. The Turkish vessels involved were named as *Cinar Ibrahim*, *Sursan 1* and *Kul Balikcilik*. During other Greenpeace actions in 2009, activists' attempts to board tuna boats failed when Maltese fishermen retaliated aggressively and reportedly assaulted some of the Greenpeace crew.





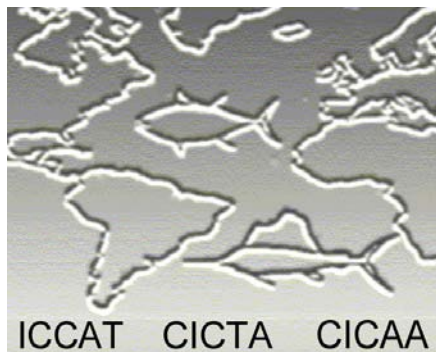
7 POLITICS

ICCAT: international conspiracy to catch all tuna

"Not providing data or providing incomplete or inaccurate data and then questioning the scientists on their assessments seems to be a favourite game at ICCAT meetings." Sergi Tudela, WWF.

On a global scale, there has been a huge increase in industrial fishing fleets since the 1960s, due largely to technological innovations in the development of industrial fishing gear. Fish prices have dropped, demand has risen and, as a result, bluefin tuna populations off Brazil and in the North Sea are heavily depleted. As these fishing areas have been exhausted, attention has moved to other waters and the tuna populations in the eastern Mediterranean and western Atlantic are now also under serious threat of going the same way. In 1966, 17 countries signed the International Convention for the Conservation of Atlantic Tunas. The aim of the Convention was: "to co-operate in maintaining the populations of tuna and tuna-like fishes

at levels which will permit the maximum sustainable catch for food and other purposes." The Convention also planned for the setting up of a commission which could make binding recommendations for catch quotas on the basis of all scientific evidence available, unless a majority of contracting parties objected. In the last 40 years, this latter option seems to have become common practice, with disastrous consequences for the bluefin tuna. The International Commission for the Conservation of Atlantic Tunas (ICCAT) was established in 1969



as a direct outcome of the Convention. The tagline was: "Science underpins the management decisions made by ICCAT." The new committee's priority was to halt the collapse of diminishing western Atlantic bluefin tuna populations and thus remove the threat to the industry. A scientific body was established to work within ICCAT. Named the Standing Committee on Research and Statistics (SCRS), it became responsible for analysing scientific data on the health of tuna stocks in order to make recommendations on the yearly catch quotas. Currently, 27 nations from all continents, plus the European Union, are represented within ICCAT. A small number of other countries are part of the process as 'co-operating parties', with limited power. ICCAT currently manages 30 species, including Atlantic bluefin, albacore, yellowfin and bigeye tuna. Swordfish, spotted Spanish mackerel, king mackerel, white marlin, blue marlin and sailfish are also on the list.

The Wild West

From the early 1980s, as a result of investment in larger vessels and high-tech gear, some funded with the help of EU subsidies, and with military sonar equipment also becoming more widely available for civilian use, the supply and consequent demand for bluefin increased sharply, mainly in the Asian markets. During this period, ICCAT repeatedly set catch quotas for western Atlantic bluefin higher than the levels recommended by its own scientists. The scientists at SCRS recommended that the western Atlantic quota should be "reduced to as near zero as possible." Yet the Total Allowable Catch (TAC) set by ICCAT in 1982 was 1,160 tonnes, more than doubling to 2,660 tonnes the following year.

In 1991, it looked as though a Convention on International Trade in Endangered Species (CITES) listing for the bluefin tuna was a real possibility. The Convention regulates the trade of endangered species of wild flora and fauna. Notable listed animal species include pandas, gorillas, chimpanzees, tigers and elephants. CITES is one of the few measures authorities and enforcers have to curb the trade in threatened animals and in fighting poaching. A listing in Appendix I of the legislation would result in an international trade ban and make trading in bluefin illegal.

This move was proposed by Sweden, but after forceful lobbying work by countries such as Japan and the US, the proposal was withdrawn. It is interesting to note that ICCAT reduced its quotas slightly when the CITES ban was on the cards but, after 1992, the quotas continued on their previ-

ous course and began to rise steadily again. From 2003, however, catches began to crash below the allowed quota, indicating a serious decline in the bluefin populations in the western Atlantic. In 2006, for instance, only about 29% of the TAC was actually caught.

Moving in on the med

As soon as the tuna populations in the western Atlantic showed serious signs of being overfished, the industry started looking at the eastern Atlantic and Mediterranean. Although traditional, small scale tuna fisheries have been active in this region for centuries, big business now spotted opportunities to move in. Reported catch levels in the Mediterranean started to rise during the mid-1990s. In 1996, the first tuna farm was established, just off the coast of Spain. In the same year, the total declared catches amounted to 43,000 tonnes, even though SCRS scientists had recommended a TAC of just 25,000 tonnes.

Two years later, in 1998, the scientists stood by their advice that the TAC for the coming years should be 25,000 tonnes. ICCAT, however, decided on a TAC of 32,000 tonnes for 1999 and 29,500 tonnes for 2000. In the following years, ICCAT continued to set the quotas much higher than the recommendations from their own scientists. Eastern Atlantic and Mediterranean bluefin tuna quotas were back up to 32,000 tonnes for the period 2003-2006. Even though actual reported catches differed from year to year, the SCRS estimated actual landings of the fish in this period were in the region of 50,000 tonnes per year, well over quota.

Farming problems

The total capacity of the 70 or so tuna farms which now operate in the Mediterranean is more than twice the TAC. In turn, the tuna fishing fleet itself has a lot more capacity than the allowable quotas set by ICCAT.





Scientific findings and reports from environmental groups, such as the WWF, show that the real catches during 2004 and 2005 were 40% higher than the quotas set by ICCAT. Deliberate misreporting and laundering of bluefin tuna catches, with unreported catches increasingly processed at sea for shipment to Japan, have become widespread practices. ICCAT's scientists at the SCRS have continued to make tough recommendations, which are largely ignored. ICCAT voted in favour of an EU proposal for the 2007 quota of 29,500 tonnes, even though SCRS recommended a TAC of 15,000 tonnes in order to let stocks recover.

Bad year for the bluefin

2008 was a bad year for the bluefin. In April, WWF published a comprehensive report which concluded that the bluefin tuna purse seine fleet operating in the Mediterranean and eastern Atlantic had a capacity of twice the allowed quota levels and more than four times the levels recommended by SCRS. To add to this bluefin bonanza, a further 25 new vessels were under construction, ready to join the fleet later in the year. The European Common Fisheries Policy (CFP), which is designed to oversee a controlled and regulated EU fishing fleet, proved itself to be completely useless. Under the policy, subsidies are available for scrapping vessels, to encourage the dismantling of the enormous European fishing fleet. However, since the revision of the CFP in 2002, when a new scheme for scrapping subsidies came in, very few fishermen have actually made use of this provision; the European fleet is growing and modernising and, for the bluefin tuna, this is very bad news indeed.

In June 2008, 15 days before the official end of the bluefin fishing season in the Mediterranean, which normally runs from late April to late June, the European Commission closed the fishery to industrial vessels. A ban on fishing for bluefin tuna in Mediterranean waters was announced for large industrial vessels after widespread evidence of illegal fishing. In the discussion which followed some countries, such as France, complained that

their vessels were unable to catch even a small percentage of their allowable catch while others, including Italy, were said to have caught between 100 and 240 per cent over their quotas already. Italy announced it would take legal action against the European Commission. Shortly after the decision was made public, various fishing vessels from other, non-EU Mediterranean countries seized the opportunity and moved into the fishing grounds vacated by their European counterparts.

Back at the SCRS, the scientists estimated that the bluefin catch in 2007 was 61,000 tonnes, twice the total allowable catch for that year, and four times the sustainable level. Some environmental groups even called this a conservative estimate, pointing out that illegal, unregulated and unreported (IUU) fishing was resulting in even higher total catch. The members of ICCAT continued to set quotas with total disregard for the scientific recommendations of their own SCRS. As Sergi Tudela of the WWF put it: "Not providing data or providing incomplete or inaccurate data and then questioning the SCRS on its assessments seems to be a favourite game at ICCAT meetings." The SCRS warned of "further reduction in spawning stock biomass with high risk of fisheries and stock collapse."

International disgrace

An independent performance review of ICCAT in September 2008 left little doubt about the severity of the situation. Management of the East Atlantic and Mediterranean bluefin fishery is described as an "international disgrace" with "indications that collapse could be a real possibility." The report recommended that ICCAT should immediately suspend all fishing until its members could show that they "can control and report on their catch." Additional recommended measures included closure of spawning grounds in spawning periods. The report concludes with the words: "It is difficult to describe this as responsible fisheries management."

A month later, WWF published a report on Italy's bluefin tuna fishery which exposed serious and repeated violations by its purse seine fleet of the regulations set by ICCAT and the European Commission (EC). According to the report, Italy's fleet caught more than five times the reported levels in 2007, which rather undermines Italy's claim that it was under quota in 2008. Other documented offences include continued illegal use of spotter planes to spot schools of tuna, an abundance of unregistered and unlicensed vessels and unrecorded diversions of catch to tuna farms in Croatia, Malta and Tunisia.

In October 2008, a majority of government representatives attending the World Conservation Congress (including Spain and Japan) voiced their countries' support for a resolution to suspend the Mediterranean bluefin tuna fishery until it could be brought under control, establish protected areas in main spawning areas, close the fishery during the May-June spawning period and maintain catch quotas in line with scientific advice. A month later, the Spanish Parliament called on its government to take the lead in establishing bluefin tuna sanctuaries in the three most important spawning grounds. Under pressure from the European Parliament, the European Commission produced a short summary of the results of a secret report on the findings of an investigation into the tuna fishing industry. A few of the findings were as follows:

- **Extensive consultations with fishermen and improved control measures had had little effect on the low priority given by industry to ICCAT rules.**
- **The level of apparent infringements detected in the tugs and the purse seiner fleet was considerable.**
- **The illegal use of spotter planes for searching bluefin tuna concentrations was still widespread.**
- **Regarding the recording and reporting of bluefin tuna catches, the ICCAT rules had not been generally respected.**

Corporate media spin

In November 2008, the world's largest trader of bluefin, the Japanese Mitsubishi empire, made a sudden statement that it would "reassess its involvement in the business if it cannot be made sustainable." The company claimed to:

support lower quotas, shorter seasons, increases in the minimum size of tuna that can be fished, and the protection of tuna spawning grounds as well as a full moratorium if the scientific data and recommendations presented by SCRS indicate that such is required for the recovery of the fishery, and if implemented as an international rule that is fair, effective and enforceable.

This was an incredible statement, coming from a heartless corporation which continued to make use

of the fact that international rules on the high seas are not 'enforceable' to buy up as much fresh and frozen tuna as it could all over the world. In this bit of neatly orchestrated media spin, Mitsubishi presented itself as caring about the issue, and to many it seemed as if all the lobbying work to improve the situation for the bluefin was actually achieving something. Unfortunately, these fine words do not appear to have had the slightest effect on Japan's profiteering approach to the tuna industry.

If we fail...

In November 2008, during the opening of ICCAT's annual meeting in Marrakech, Morocco, ICCAT chairman Fábio Hazin warned delegates that this was the Convention's "very last chance to prove that we can do our job properly. If we fail, other institutions will take over." Indeed, the focus did move to another institution, after the ICCAT meeting failed to set sustainable quotas for the 2009 season and protect the fragile – and by now nearly collapsed – bluefin tuna population. During the ICCAT meeting, a proposal was put forward by US, Canada, Mexico, Norway, Iceland and Brazil, calling for a TAC of 15,000 tonnes and closure of the fishery for the full spawning period of May, June and July. Japan supported the proposal at first, but then moved to back the EU proposal, which set a TAC of 25,500 tonnes. The latter proposal was



passed, with many nations accusing the EU of playing games of 'trade-related bullying'. Since then, many eyes have turned to CITES.

As the organisation responsible for managing the Atlantic bluefin tuna fishery, ICCAT has been doing, to put it mildly, a very bad job. Catch quotas have persistently been set much higher than scientific recommendations, putting huge pressure on al-

ready depleted populations of tuna and ICCAT has manifestly failed in its own aim of “maintaining the populations of tuna and tuna-like fishes at levels which will permit the maximum sustainable catch for food and other purposes.” By failing to act as a responsible fisheries management organisation, ICCAT is creating bigger problems for not just itself but the entire Mediterranean region, with IUU fishing more widespread than ever and actual catches of bluefin in some cases five times higher than allowed.

The cites process

“We don’t believe the bluefin tuna is endangered to that extent.” Masanori Miyahara, Japanese fisheries negotiator.

Due to the ineffectiveness of ICCAT in halting illegal fishing and unreported landings of bluefin, some NGOs and nations began to look at other options. It was Sweden which initially sought protection for the bluefin under the legislation of CITES, but the proposal failed in 1992. Unfortunately, the proposal only had the support of Israel and Switzerland at the time it was presented. Because of intense pressure, lobbying and protests, Sweden withdrew the proposal.

The second attempt to use CITES to protect bluefin tuna came 17 years later, in 2009, this time from the small European state of Monaco which proposed to add the Atlantic bluefin tuna to the Appendix I listing of the CITES legislation. Prince Albert of Monaco made a public appeal and the plan received initial support from the UK, US and France. Later, the EU Parliament and Russia also backed the plan. France’s support for the ban came with strings attached. This was no surprise, as the decision by

President Nicolas Sarkozy to back the ban followed news that angry fishermen might seek to embarrass his centre-right party, the Union for a Popular Movement, by blockading French ports before the regional elections in March 2010. The French ecology minister and his counterpart at the French agriculture and fisheries ministry said support was conditional on an 18-month delay in implementation “to obtain additional scientific data.” This would have pushed the ban into 2011, allowing two more fishing seasons to pass without a ban. The French were also adamant that a ban should not affect the sales of bluefin caught by line and pole or longline within Europe. Spain, France and Italy were all looking at huge compensation funds to aid their tuna fishermen if the ban ever came into force.

Over 80% of bluefin tuna caught in the Mediterranean and Atlantic is exported to Japan, so it was no surprise that this country would want to do everything in its power to stop the international trade ban. Japan’s top fisheries negotiator, Masanori Miyahara, made it clear that Japan was not interested in joining in any agreement to ban international trade of the bluefin. The New York Times quoted Miyahara as saying that Japan would ignore the ban and leave its market open to continued imports. “It’s a pity,” he said, “but it’s a matter of principle.” According to Miyahara, Japan felt that ICCAT, not CITES, was the organisation to manage bluefin tuna catches. “We don’t believe the bluefin tuna is endangered to that extent,” he added.

Canada, China, South Korea and a group of developing nations chose to side with Japan. Interestingly, many of the developing countries voting with Japan on the tuna issue also supported Japan in recent voting rounds at the International Whaling Commission (IWC). Japan has been criticised for some years for giving favourable aid packages to countries in return for supporting votes at international institutions such as the IWC and United Nations.

The CITES conference, which took place in Doha, Qatar from 13-25 March 2010 and brought together delegates from 175 countries to make decisions on the protection of various endangered species, such as the polar bear, bluefin tuna and various shark species, turned out to be a huge disappointment. The meeting failed to add bluefin to the CITES Appendix I listing. The vote was 68 to 20 with 30 European abstentions. With the usual back room politics in full swing, it seems that the decision by





some countries to oppose the ban was largely influenced by the fact that the ban would have been a first for a major commercial fishery. CITES legislation does not leave much room for interpretation: if a species is listed under an international trade ban, than any trade in that species will be illegal. This is something the industry is keen to avoid at all costs, always looking for a way to continue with business as usual. With other fisheries showing similar signs of large scale mismanagement and overfishing, some nations with fishing communities argued that a ban in one area would have left them vulnerable to bans too. Once again, the needs of the industry took precedence over the need for adequate protection of the fragile fish populations, even at a Convention supposedly committed to controlling international trade in endangered species.

With bluefin tuna failed by CITES, those lobbying for the ban are already looking for other options for curbing the trade in the fish. In the Netherlands, the Party for the Animals submitted legislation to Parliament calling on the EU to dismantle the industry in its own waters. This plan is also being discussed in other EU countries.

The EU – funding destruction

It is hard to understand why governments worldwide continue to pay billions in subsidies to their fishermen to keep them fishing, even when reports of serious overfishing and stock collapse dominate the headlines. The industry continues to sail a steady course which will strip the oceans of life and put itself out of business.

Within the EU, Spain, France, Italy and Greece are the biggest beneficiaries of the EU funds and at the same time account for the most landings of

fish, which in 2006 amounted to a total value of € million, about two-thirds of the entire EU landings value. The majority, both in number and tonnage, of the 88,500 vessels which made up the EU fleet in 2007 also operated from these countries. Combined, they have received over €2 billion in EU funding in the last ten years. €20 million of this was for the construction of new vessels, even though the EU fleet is supposed to shrink dramatically in order to reach a sustainable size. This overcapacity of fishing fleets is a global problem, with a recent estimate concluding that the global fishing fleet currently has two and a half times the capacity it can 'sustainably' fish.

Spain, France, Italy and Greece will receive a further €5 billion a year until 2013, when the EU's current fisheries policy will be amended and new reforms will come into effect. Currently, almost the entire EU fleet runs at a loss before subsidy, with a few operators making minimal profits. Up to the end of 2006, it was the Financial Instrument for Fisheries Guidance (FIFG) which provided the 'structural aid' to the EU's fishing industry. In 2007, to the FIFG was replaced by the European Fisheries Fund (EFF). The total budget allocated for the EFF from 2007 to 2013 is €3 billion.

On top of paying for fishing operators, port infrastructure, seafood processing and fish farming, the EU also pours millions into promoting the industry and giving the public the notion that eating fish is good for your health and the environment. One clear sign that the EU fleet has been treating its own marine environment in a disastrous way by overfishing it to record levels is that, currently, two-thirds of seafood eaten by European consumers





needs to be imported from outside the EU. China, Indonesia and India are big exporters of farmed fish, a lot of which currently ends up on the European markets.

For a long time, the European Union has prided itself on its treaties, regulations and policies to manage the fisheries. With fish, and fishing fleets, moving across national boundaries, the fishing issue is one of particular sensitivity with so many nations depending on the same resource.

In fact, collective fisheries management was one of the pillars of the founding of the EU. Article 38 of the 1957 Treaty of Rome, which created the European Community (now

European Union), stated that there should be a common policy for fisheries. It wasn't until 1970, however, that the first EU fishery rules were established. With important reviews in 1992 and 2002, the policy was adapted to become the Common Fisheries Policy (CFP). For the past ten years, this policy has been widely criticised by both scientists and fishermen. It is clear that with all the policies the EU has implemented since 1970, little has been done to curb the problems of overfishing, fleet overcapacity, heavy subsidies, low economic resilience of the industry and the decline in volume of fish caught. Calls for conservation measures have been largely ignored and recently even the European Commission acknowledged that the CFP has failed to protect the marine wildlife and habitats adequately. The EU continues to pour billions into the cruel, corrupt, badly regulated and unsustainable fishing industry. With 80% of all species in EU waters overfished (as now acknowledged by the European Commission) and EU trawlers destroying the waters in the North Eastern Atlantic, Mediterranean and along Africa's western coast, the continued handouts are directly driving the clear-felling of the oceans.



GLOSSARY

ACCOBAMS – The Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic area.

Aquaculture – Breeding and rearing fish in captivity.

Artisanal – Small scale and traditional fishing activity is normally referred to as artisanal fishing. Mostly, though not always, artisanal fishing has less impact on marine environments.

By-catch – Accidental and usually unwanted catch of species other than those targeted in a particular fishing operation.

CFP – The Common Fisheries Policy is the fisheries policy of the European Union. It facilitates the quotas set for member states on what they are allowed to catch as well as give financial incentives to the fishing industry (ec.europa.eu/fisheries/cfp_en.htm).

CITES – Convention on International Trade in Endangered Species. Regulates the trade of endangered species of wild flora and fauna (www.cites.org).

EC – The European Commission is the executive body of the European Union. It is responsible for proposing legislation, implementing decisions, upholding the Union's treaties and the general day-to-day running of the Union (ec.europa.eu).

EEZ – Economic Exclusion Zones are zones which extend 200 miles out to sea, from a country's coast. Within these zones, countries have various rights over the use of the marine resources.

EFF – European Fisheries Fund is the EU fund which is allocated for supporting the fishing sector. It was set up in 2007 to replace the FIGF.

Elasmobranchs – The group of fishes that include sharks and rays. Elasmobranchs are cartilaginous fishes, meaning they have skeletons made of cartilage instead of bone.

Endemic – Endemic species are species that are native to an area, as opposed to being alien or invasive species.

EU – The European Union, is an economic and political union of countries primarily located in Europe. Made up of 27 member states it is committed to regional integration, co-operation and economic and social development. The EU was established in 1993 as a continuation of the European Community, which was originally founded in 1957 (europa.eu).

EU Fisheries Council – Council of European Fisheries ministers, making decisions on policy, allocation of funds and quotas.

FAO – The Food and Agriculture Organization of the United Nations is an agency that leads international efforts to defeat hunger. It acts as a neutral forum where agreements and policy are negotiated. It also helps countries to modernise and improve agriculture, forestry and fisheries practices (www.fao.org).

FEAP – European Federation of Aquaculture Producers is the international organisation that is composed of the National Aquaculture Associations of European countries (<http://www.feap.info/feap/>).

Fecundity – The ability to reproduce or the reproductive rate of a population of fish.

FIGF – Financial Instrument for Fisheries Guidance, replaced by the EU Fisheries Fund (EFF) in 2007.

Fishery – An entity engaged in the process of catching, processing and/or marketing of fish. Also refers to the place where fish are caught or the people involved and can be applied to a combination of fish and fishers in a region, the latter fishing for similar species with similar gear types.

GFCM – General Fisheries Commission for the Mediterranean. International organisation in which 23 Member states along with the European Union work to “promote the development, conservation, rational management and best utilization of living marine resources, as well as the sustainable development of aquaculture in the Mediterranean, Black Sea and connecting waters.” Set up by the FAO in 1952.

ICCAT – International Commission for the Conservation of Atlantic Tunas. ICCAT is the Regional Fisheries Management Organisation (RFMO) which regulates the bluefin tuna fishery as well as fisheries targeting swordfish, marlin, sailfish and fish from the mackerel family (www.iccat.int). Sometimes referred to as the International Conspiracy to Catch All Tuna.

IUCN – International Union for the Conservation of Nature. One of the oldest international conservation organisations dedicated to preserving natural resources. Has observer status at the UN General Assembly and maintains the Red List of endangered species of flora and fauna (www.iucn.org).

IUU – Illegal, Unreported and Unregulated fishing (also see www.illegal-fishing.info).

IWC – International Whaling Commission is an international body which was originally founded to regulate the whaling industry and oversee the conservation of whale stocks. It is currently made up of 84 member states and is supposedly overseeing the signatories' compliance with the global moratorium on commercial whaling, which came into force in 1986 (www.iwcoffice.org).

Juveniles – Juvenile fish are those that have not yet reached maturity.

MPA – Marine Protected Areas are protected areas, the boundaries of which include some area of ocean. IUCN defines MPAs as: "any area of the intertidal or sub-tidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment" (<http://j.mp/vp0AI>).

MSY – In fishing terms, Maximum Sustainable Yield is the largest amount that can be taken from a fish stock, without affecting its size. The concept of MSY is that only the individuals that would normally be added to the population (growth) are taken, thus maintaining population levels. The use of MSY has come under heavy criticism in recent years as is not always easy to apply in practice, has been an ineffective and unreliable measure in fisheries management and has, in fact, only added to the problem of overfishing.

Oceana – Marine conservation organisation founded in 2001 after various group including the American Ocean Campaign and Pew Charitable Trusts

merged. Has offices in the US, Belgium, Spain, Chile and Belize (www.oceana.org).

Pelagic – Literally means living in the open sea rather than in coastal, inland waters or near the bottom of the sea. In fishing terms, it refers to those fishing practices which target species living in the open ocean, rather than deep sea species, or those living near the seabed, which are referred to as demersal species.

Population – A collection of inter-breeding organisms of a particular species.

Quota – Fishing quotas are amounts of fish one is allowed to catch, as set by governments or fisheries management organisations. As a kind of regulated catch share, quotas are set in an effort to regulate fishing. A quota system which is commonly used is the Total Allowable Catch (TAC).

RFMO – A Regional Fisheries Management Organisation, sometimes referred to as a regional fisheries organisation, is an international organisation dedicated to the sustainable management of fishery resources in a particular region of international waters, or of highly migratory species.

Schools – A group of fish swimming in the same direction in a coordinated manner.

Spawning – When female fish produce and/or deposit large amounts of eggs in the water in order to reproduce. The young that hatch from these eggs are known as spawn. Aquatic animals such as amphibians and fish reproduce by spawning.

SCRS – Standing Committee on Research and Statistics, the scientific committee of the ICCAT responsible for analysing scientific data on the health of fish stocks in order to make recommendations on the yearly catch quotas (www.iccat.int/en/SCRS.htm).

SPAMI – Specially Protected Areas of Mediterranean Interest, as put in place under the Barcelona Convention.

Stock – Fish stocks are sub-populations of a particular species of fish, for which certain factors such as growth, mortality and fishing mortality are significant factors in determining population dynamics.

TAC – Total Allowable Catch is a quota system in which quotas are set, for example by institutions such as ICCAT and the EU, for how much of each species can be caught, and where each country is given a quota based upon the total available and their traditional share of the catch.

UN – The United Nations is an international organisation made up of 192 member states whose stated aims are to facilitate co-operation in international law, security, economic development,

social progress, human rights, and the achieving of world peace. It was founded in 1945 and organisations such as the IWC, ICCAT, CITES and IUCN work within its framework and are partly funded by it (www.un.org).

WWF – The World Wide Fund for Nature (WWF) is an international NGO working on issues regarding conservation, research and restoration of the environment. (www.wwf.org)



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The clear-felling of the Mediterranean Sea is happening right under our noses. Every single day, fishermen plunder this unique region, inhabited by numerous species including whales, dolphins, sharks, shrimp, rays, turtles, seals, swordfish, tuna, mackerel, lobsters, octopuses, whiting, hake, sardines and anchovy. The sea used to be abundant with life, yet in the last 50 years industrial fishing, in particular trawling and purse seine fishing for bluefin tuna, has decimated the populations of marine wildlife. This booklet is a starting point for people interested in the Mediterranean, what industrial fishing is doing to the region and in particular with regard to the bluefin tuna.

