

# Typography | Visual Communication Design

## Coursework Project: Elementary School Poster

Designed a 30x20 inch poster highlighting ocean facts. The piece is intended to display a large amount of information in an accessible format while appealing to the young audience.

### *Constraints:*

- Must use all copy provided in Word document
- All copy must be legible

### *Contributions:*

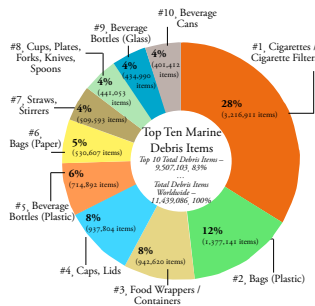
- Designed all vector elements
- Determined appropriate font size, family, and alignment to best display information
- Created web and print poster

### **Software Used**

Adobe Creative Suite: InDesign, Illustrator

### **Skills Used**

Gestalt Principles  
Typography



### Rubbish/Contamination

In one year, 3x as much rubbish is dumped into the world's oceans as the weight of fish caught. • 80% of all pollution in seas and oceans comes from land-based activities. • Death and disease caused by polluted coastal waters costs the global economy \$12.8 billion a year. The annual economic impact of hepatitis from tainted seafood alone is \$7.2 billion. • Plastic waste kills up to 1 million sea birds, 100,000 sea mammals and countless fish each year. Plastic remains in our ecosystem for years, harming thousands of sea creatures everyday.

### Coastlines

The total length of the world's coastlines is about 315,000 miles, enough to circle the Equator 12 times. As coastal zones become more and more crowded, the quality of coastal water will suffer, the wildlife will be displaced, and the shorelines will erode. 60% of the Pacific and 35% of the Atlantic Coast shoreline are eroding at a rate of a meter every year. More than half the world's population live within a 100 km or 60 miles distance from the coast. This is more than 2.7 billion people. Rapid urbanization will lead to more coastal megacities containing 10 million or more people. By the end of the millennium 13 out of 15 of the world's largest cities will be located on or near the coast. Growing population in coastal areas leads to more marine pollution and distribution of coastal habitats. Some 6.5 million tons (6,500,000,000 kilo) of litter finds its way into the sea each year (close to one-half of all Americans live in coastal counties). By 2010, 80% of people will live within 60 miles of the coast. • Three-quarters of the world's mega-cities are by the sea. • The Gulf Stream off the Atlantic seaboard of the United States flows at a rate nearly 300 times faster than the typical flow of the Amazon river, the world's largest river

As many as 100 million sharks are killed each year for their meat and fins, which are used for shark fin soup. Hunters typically catch the sharks, de-finn them while alive and throw them back into the ocean where they either drown or bleed to death. • Global by-catch (unintended destruction caused by the use of non-selective fishing gear, such as trawl nets, longlines and gillnets) amounts to 20 million tons a year. • The annual global by-catch mortality of small whales, dolphins and porpoises alone is estimated to be more than 300,000 individuals. • The High Seas (areas of the ocean beyond national jurisdiction) cover almost 50% of the Earth's surface. They are the least protected part of the world. • Although there are some treaties that protect ocean-going species such as whales, as well as some fisheries agreements, there are no protected areas in the High Seas.

AVERAGE DEPTH: 12,200 FEET (3,720 M)

### Carbon Dioxide Absorption

Oceans absorb between 30% and 50% of the carbon dioxide produced by burning fossil fuel. Carbon dioxide is transported downwards by plankton. Any change in the temperature of the ocean water, influences the ability of plankton to make up carbon dioxide. This has consequences for the ecosystem, because plankton form the base of the food web.

### Density

The density of ocean water varies. It becomes more dense as it becomes colder, right down to its freezing point of -1.9° C. (This is unlike fresh water, which is most dense at 4° C, well above its freezing point). Water pressure at the deepest point in the ocean is more than 8 tons per square inch, the equivalent of one person trying to hold 50 jumbo jets.

### Water Temperature

Under the enormous pressures of the deep ocean, sea water can reach very high temperatures without boiling. A water temperature of 400° C has been measured at one hydrothermal vent. The average temperature of all ocean water is about 3.5° C. Almost all of the deep ocean temperatures are only a little warmer than freezing (39° F). The average temperature of the oceans is 2° C, about 39° F.

### Volcanic Activity

**Mountains:** The ocean ridges form a great mountain range, almost 40,000 miles (64,000 km) long, that weaves its way through all the major oceans. It is the largest single feature on Earth. **Highest Mountain:** Mauna Kea, Hawaii, rises 33,474 feet (10,203 m) from its base on the ocean floor; only 13,680 feet (4,170 m) are above sea level. • **Volcanic Activity** 90% of all volcanic activity on Earth occurs in the ocean. The largest known concentration of active volcanoes (approximately 1,133) on the sea floor is located in the South Pacific. • The longest continuous mountain chain known to exist in the Universe resides in the ocean at more than 40,000 miles long. • The Monterey Bay Submarine Canyon is deeper and larger in volume than the Grand Canyon. • Mount Everest (the highest point on the Earth's surface at 5,490 miles) is more than 1 mile shorter than the Challenger Deep (the deepest point in the ocean at 6.86 miles)

DEEPEST POINT: 36,198 FEET (11,033 M) IN THE MARIANA TRENCH IN THE WESTERN PACIFIC.

Area: About 140 million square miles (362 million sq. km), or nearly 71% of the Earth's surface.

• More than 3.5 billion people depend on the ocean for their primary source of food. In 20 years, this number could double to 7 billion.

• More than 90% of the trade between countries is carried by ships and about half the communications between nations use underwater cables. • Fishing for wild shrimp represents 2% of global seafood but one-third of total by-catch. The ratio of by-catch from shrimp fishing ranges from 5:1 in temperate zones to 10:1 and more in the tropics.

### Rising Sea Level

The sea level has risen with an average of 4-10 inches (10 to 25 cm) over the past 100 years and scientists expect this rate to increase. Sea levels will continue rising even if the climate has stabilized, because the ocean reacts slowly to changes. 10,000 years ago the ocean level was about 330 ft (110 m) lower than it is now. If all the world's ice melted, the oceans would rise 200 feet (66 m).

### Ice

Antarctica has as much ice as the Atlantic Ocean has water. 10% of the earth's surface is covered with ice. The Arctic Ocean is the smallest ocean, holding only one percent of the Earth's seawater. This is still more than 25 times as much water as all rivers and fresh water lakes. • The average thickness of the Arctic ice sheet is about 9 to 10 feet, thick as 65 feet. In the were to melt, the sea level all over the world would rise 500 to 600 feet. As a result, 85 - 90% of the would be covered with water as compared to the current 71%. • The U.S. would be split by the Mississippi which would connect the Lakes with the Gulf of Mexico. • The Arctic produces 10,000 icebergs annually. The amount produced in the Antarctic regions is 100,000. Icebergs normally have a four-year life-span; they begin entering shipping lanes after about three years. • The Antarctic ice sheet that forms and melts over the ocean each year is nearly twice the size of the United States.

### Reefs

Over 60% of the world's coral reefs are threatened as a result of pollution, sedimentation and bleaching due to rising water temperatures caused by global warming. Global Coral Monitoring Network (GCRMN) states that currently 37% of all coral reef worldwide has disappeared and around 2050, only 30% will be left. • Tropical coral reefs border the shores of 109 countries, the majority of which are among the world's least developed. Significant reef degradation has occurred in 93 countries. • Although coral reefs comprise less than 0.5% of the ocean floor, it is estimated that more than 90% of marine species are directly or indirectly dependent on them. • There are about 4,000 coral reef fish species worldwide, accounting for approximately 1/4 of all marine fish. • Nearly 60% of the world's remaining reefs are at significant risk of being lost in the next 3 decades. • The major causes of coral reef decline are coastal development, sedimentation, destructive fishing practices, pollution, tourism and global warming. • Less than 1/2 of a percent of marine habitats are protected – compared with 11.5% of global land area. • The Great Barrier Reef, measuring 1,243 miles, is the largest living structure on Earth. It can be seen from the Moon. • Studies show that protecting critical marine habitats – such as warm and cold-water coral reefs, seagrass beds and mangroves – can dramatically increase fish size and quantity.

### Oil

Oil is one of the ocean's greatest resources. It gives us heat for our homes, endless consumer products, and the ability to run the engines of cars, planes, and boats for auto transport all over the world. Nearly one-third of the world's oil comes from offshore fields in our oceans which, as we've seen can have devastating effects on our ocean's ecosystems. The transport of ocean oil from the Arabian Gulf, The North Sea, and the Gulf of Mexico reaches all corners of the globe on a daily basis. Oil was also borne from the sea. Millions of years ago, countless marine microscopic plants (phytoplankton) and animals (zooplankton) lived in the ancient seas as they do today. As they died, the skeletal remains of these tiny organisms settled to the sea floor, mixed with mud and silt, and over millions of years, formed organic-rich sedimentary layers. Other sediments continued to be deposited and further buried the organic-rich sediment layer to depths of thousands of feet, compressing the layers into a rock that would become the source for oil. Over the years, as the depth of the burial increased, pressure increased, along with the temperature. Under such conditions, and over long periods of time, the original skeletal remains of phytoplankton and zooplankton changed, breaking down into simpler substances called hydrocarbons – compounds of hydrogen and carbon. This process still continues, although it will be millions of years before the next batch of oil is done cooking. A single quart of motor oil can contaminate up to 2 million gallons of drinking water. Over the past decade, an average of 600,000 barrels of oil a year has been accidentally spilled from ships, the equivalent of 12 disasters the size of the sinking of the oil tanker Prestige in 2002. More oil reaches the oceans each year as a result of leaking automobiles and other non-point sources than was spilled in Prince William Sound by the Exxon Valdez.

The blue whale, the largest animal on our planet ever (exceeding the size of the greatest dinosaurs) still lives in the ocean; it's heart is the size of a Volkswagen.

The gray whale migrates more than 10,000 miles each year, the longest migration of any mammal.

### Salinity

Some scientists estimate that the oceans contain as much as 50 quadrillion tons (50 million billion tons = 50,000,000,000,000,000) of dissolved solids. If the salt in the ocean could be removed and spread evenly over the Earth's land surface it would form a layer more than 500 feet (166 m) thick, about the height of a 40-story office building. The ocean's principal dissolved solids are sodium salts (sodium chloride or common salt), calcium salts (calcium carbonate or lime, and calcium sulfate), potassium salts (potassium sulfate), and magnesium salts (magnesium chloride, magnesium sulfate, and magnesium bromide). Atlantic sea water is heavier than Pacific sea water due to its higher salt content. The freezing point of sea water depends on its salt content. Typical ocean water has about 35 grams of salt per liter and freezes at -1.9° C.

### Gold!

The world's oceans contain nearly 20 million tons of gold. If all the gold suspended in the world's seawater were mined, each person on Earth could have about 9 pounds of gold.

# The Ocean Interesting Facts & Relationships

greatest percentage of the world's  
by humans. • Most of the world's  
are being fished at levels above their  
sustainable yield; some regions are severely  
• The Grand Banks, the pride of New  
fishing for centuries, are closed due to  
g. • Each year, illegal longline fishing,  
involves lines up to 80 miles long, with  
hundreds of baited hooks, kills over 300,000  
fish, including 100,000 albatrosses.  
• Illegal by-catch (unintended destruction  
by the use of non-selective fishing  
such as trawl nets, longlines and  
s) amounts to 20 million tons a year.  
• Annual global by-catch mortality  
of all whales, dolphins and  
fish alone is estimated to be  
more than 300,000 individuals.

Area: About 140 mil.

sq. km), or nearly 71%

- More than 3.5 billion people live around the ocean for their primary source of food. In 20 years, this number could double.

- More than 90% of the world's trade is carried by ships and 95% of international communications between continents is carried by underwater cables. • Fishing represents 2% of global seafood production and 1% of total by-catch. The ratio of fish to shrimp fishing ranges from 1:1 in some zones to 10:1 and more in others.

ocean occupy nearly 71% of our planet's surface • More than 97% of all our planet's water is in the ocean • The top ten feet of the ocean hold as much heat as our entire atmosphere • The color blue is most absorbed by microscopic plants, called phytoplankton

destruction  
fishing



The sea provides the biggest source of food for humans. Each year, some 70 to 75 million tons of fish are caught, this amount around 29 million tons are sold. Fish production exceeds the demand and is produced in two ways: by catching wild fish and by growing 34% of the world's fish in aquaculture.

Dolphins and