



Squid

Loligo opalescens

NATURAL HISTORY:

SQUID SWIM IN LARGE SCHOOLS AND LIVE IN THE OPEN OCEAN OR PELAGIC ZONE. SQUID SWIM BACKWARDS BY FORCING WATER OUT OF A TUBE BY THEIR HEAD. SQUID HAVE EIGHT ARMS AND TWO TENTACLES. THE TENTACLES ARE USED TO CAPTURE THE SMALL FISH UPON WHICH THEY FEED.

HABITAT:

Open ocean , surface to 1000' deep

FOOD:

Small fish such as anchovies

PREDATORS:

Mackerel, whales, many species of open ocean fish, sea lions

SIZE:

Average size about 6 inches

CURRENT ISSUES:

Squid populations may be threatened as the commercial fishing efforts grow in response to the increased demand for squid overseas.

 WYLAND  FOUNDATION

"The Squid"

Loligo opalescens



Wyland Ocean Challenge of America

Size: Average about 6 Inches

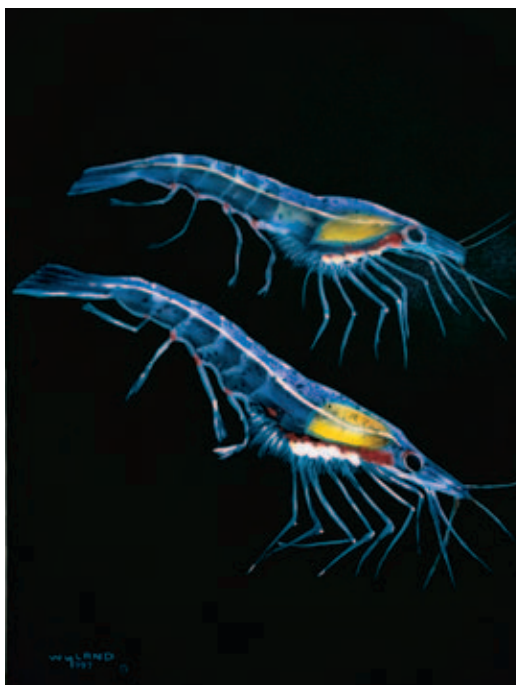
Orange County Marine Institute Curriculum

"The Squid"

Loligo opalescens


www.oceanchallenge.org

 THE WYLAND
OCEAN CHALLENGE

Krill

Euphausia superba

NATURAL HISTORY:

KRILL, SHRIMP-LIKE CRUSTACEANS, OCCUR IN VAST SWARMS. THESE CONGREGATIONS MAY EXTEND FOR MILES AND USUALLY OCCUR IN COLD SURFACE WATERS AT VERY HIGH LATITUDES IN THE SOUTHERN HEMISPHERE.

HABITAT:

Cold water at very high latitudes

FOOD:

Small zooplankton

PREDATORS:

Eaten by all baleen whales in southern hemisphere

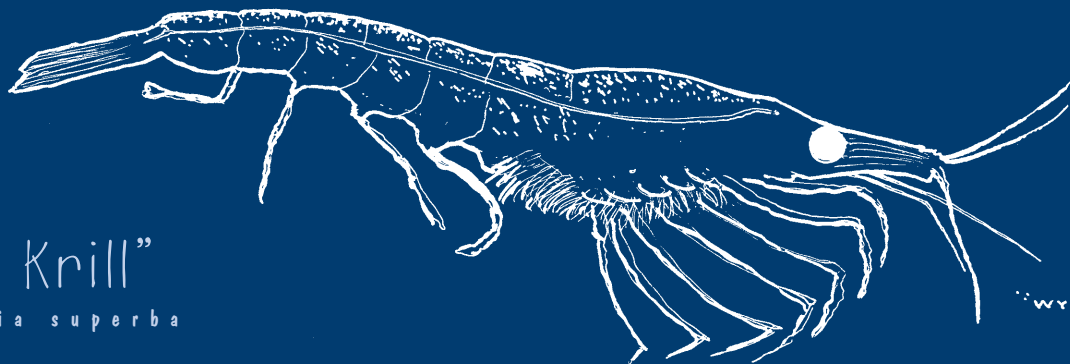
SIZE:

To a maximum size of 2.5 inches or 63.5 centimeters

WYLAND FOUNDATION

"The Krill"

Euphausia superba



Wyland Ocean Challenge of America

Maximum Size: 2.5 Inches

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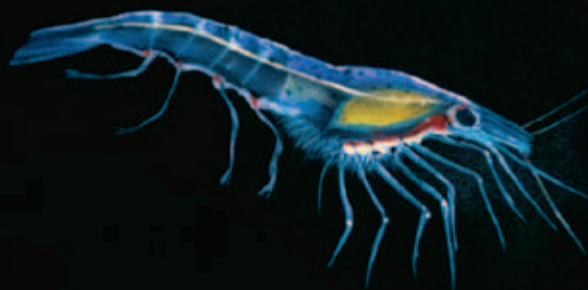
THE WYLAND
OCEAN CHALLENGE



"The Krill"

Euphausia superba

www.oceanchallenge.org





Pacific Mackerel

s c o m b e r j a p o n i c u s

NATURAL HISTORY:

PACIFIC MACKEREL ARE SCHOOLING FISH, USUALLY FOUND AT OR NEAR THE SURFACE AND ARE FAST AND CONTINUOUS SWIMMERS. AS A MID-WATER FISH TRYING TO AVOID PREDATORS, MACKEREL SHOW A TYPICAL COLORATION OF LIGHT UNDERBELLY (TO CAMOUFLAGE AGAINST THE LIGHTED SURFACE) AND A DARK PATTERNED BACK (TO BLEND AGAINST THE DARK BOTTOM).

HABITAT:

Mid-water species, temperate to tropical seas, found both nearshore and offshore

FOOD:

Small fishes, squids, copepods and krill

PREDATORS:

Sea lions, seals, bald eagles

SIZE:

Maximum size = 24 inches

HUMAN IMPACT:

Mackerel are heavily fished by both commercial and recreational fishermen. They provide a major link in the food chain as both a predator and prey.

WYLAND FOUNDATION

"The Pacific Mackerel"

Scomber japonicus



WYLAND ©

Wyland Ocean Challenge of America

Size: Maximum 24 Inches

Orange County Marine Institute Curriculum

"The Pacific Mackerel"
Scomber japonicus

www.oceanchallenge.org

WYLAND ©





Great White Shark

Carcharodon carcharias

NATURAL HISTORY:

White sharks often live alone, though they may gather in small groups. White sharks can go a month or more without eating. White sharks are often found lurking just beyond the surfzone, where they feed on seal and sea lions.

HABITAT:

Temperate and subtropical waters, inshore shallow waters

FOOD:

Small white sharks feed on salmon, hake, rockfish, lingcod, cabezon

PREDATORS:

None

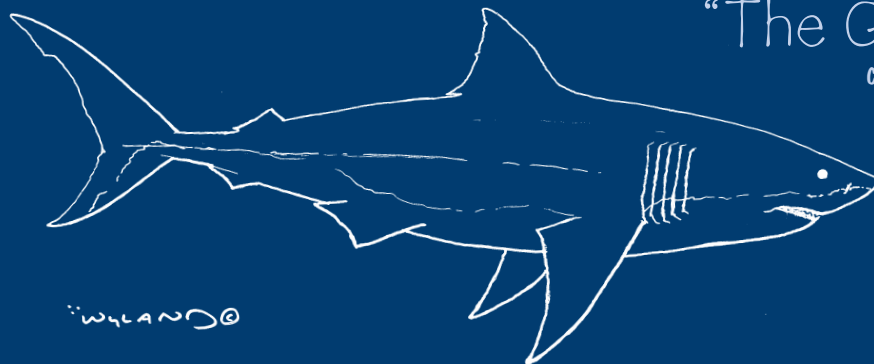
SIZE:

Maximum size to 19 feet

CURRENT ISSUES:

White shark populations suffer from low numbers and vulnerability to local depletion from increased fishing pressure and impacts from gill nets.

WYLAND FOUNDATION



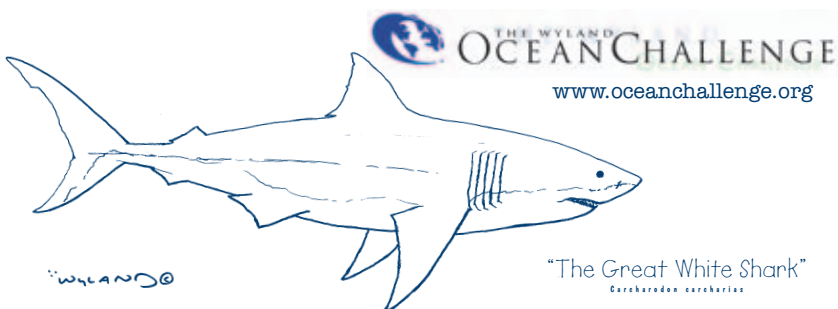
"The Great White Shark"

Carcharodon carcharias

Wyland Ocean Challenge of America

Size: Up to 19 feet

Orange County Marine Institute Curriculum


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"The Great White Shark"

Carcharodon carcharias





Sea Lion

Zalophus californianus

NATURAL HISTORY:

SEA LIONS LIVE IN NEARSHORE WATERS AND MAY BE FOUND ALONE OR IN LARGE GROUPS. THEY ARE PLAYFUL AND ACROBATIC SWIMMERS. SEA LIONS USE THEIR WHISKERS, CALLED VIBRISSAE, TO DETECT FISH TO EAT. SEA LIONS ARE MARINE MAMMALS AND NEED TO BREATHE AIR. THEY STAY WARM WITH A THIN LAYER OF BLUBBER AND A COAT OF FUR.

HABITAT:

Nearshore, subtropical waters, kelp forests, rocky reefs and islands

FOOD:

Fish and squid

PREDATORS:

White shark and orca (killer) whale

SIZE:

Maximum size to 11 feet

HUMAN IMPACTS:

Sea lions may become entangled in monofilament fishing line tossed overboard by fisherman or used in commercial gill nets.

WYLAND  FOUNDATION

"The Sea Lion"

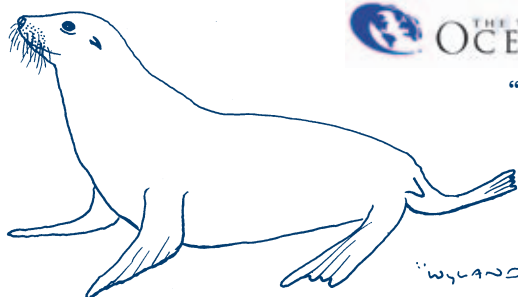
Zalophus californianus



Wyland Ocean Challenge of America

Size: Maximum 11 ft.

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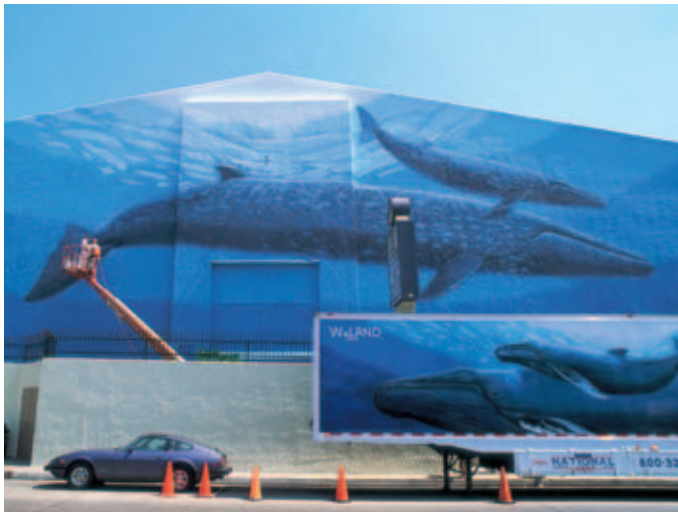
THE WYLAND
OCEAN CHALLENGE

"The Sea Lion"

Zalophus californianus

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Blue Whale

B a l a e n o p t e r a m u s c u l u s

NATURAL HISTORY:

BLUE WHALES ARE RELATIVELY SHALLOW FEEDERS, FEEDING ON KRILL IN THE TOP 300 FEET OF THE OCEAN. A SINGLE BLUE WHALE MAY EAT UP TO 16,000 POUNDS OF KRILL IN A SINGLE DAY. BLUE WHALES ARE MIGRATORY AND MAY BE FOUND WINTERING IN LOWER LATITUDES AND SPENDING THEIR SUMMERS IN THE COLD NORTHERN WATERS. BLUE WHALES, UNLIKE MOST OTHER WHALES, DO NOT LIFT THEIR TAILS HIGH OUT OF THE WATER BEFORE DIVING. INSTEAD, THEY DIVE GRADUALLY AT A SHALLOW ANGLE.

HABITAT:

Open ocean along edge of continental shelves, sometimes inshore

FOOD:

Krill, small fishes, pelagic crabs

PREDATORS:

Orca (killer) whale

SIZE:

Maximum size to 120 feet

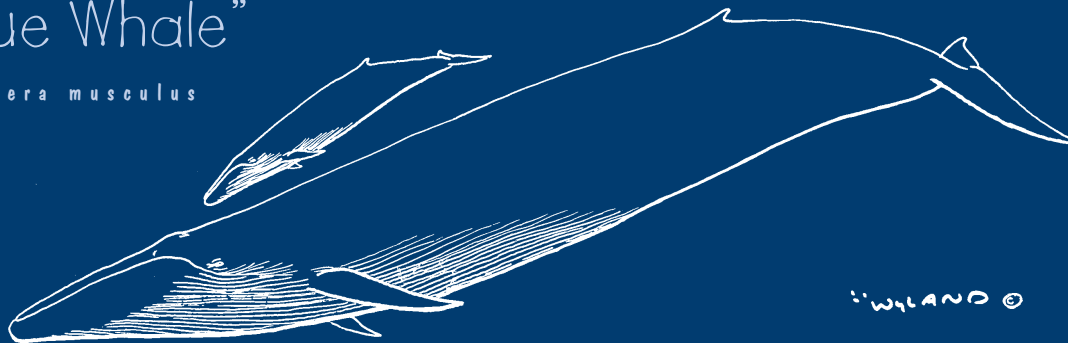
HUMAN IMPACTS:

Large boat propellers, oil rigs and underwater research equipment can produce sounds at frequencies that drown out sounds used by whales for communications.

WYLAND FOUNDATION

"The Blue Whale"

Balaenoptera musculus



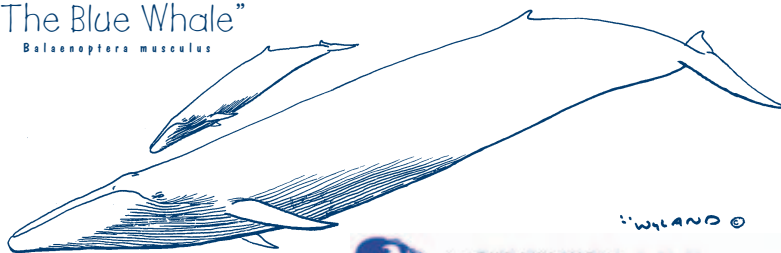
Wyland Ocean Challenge of America

Size: Maximum 120 ft.

Orange County Marine Institute Curriculum

"The Blue Whale"

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THE WYLAND
OCEAN CHALLENGE





FISH

FINS, FORMS, & FUNCTION

FIVE BASIC FINS:

DORSAL FIN, CAUDAL FIN, PECTORAL FINS, PELVIC FINS, ANAL FIN.

DORSAL FIN:

Located on the back of the fish, this fin helps the fish stay upright when it swims through the water.

CAUDAL FIN:

Caudal fin - otherwise known as the tail fin. Most fish use this tail for swimming power.

PECTORAL FINS:

Pectoral fins - a set of fins on the each side of the fish near the head. These fins can be used to steer, provide lift, and to brake. Some fish also use them for swimming.

PELVIC FINS:

A set of fins on the underside of the fish near the head. Pelvic fins help provide stability when swimming. Some bottom or reef dwelling fish will "sit" on their pelvic fins.

ANAL FIN:

A fin on the underside of the fish located near the back that helps with stability while swimming.

How To Draw Fish Using Basic Geometric Shapes

