GREEN SEAS BLUE SEAS

CALIFORNIA CURRENT, CHANGING BY DEGREES

STARRY FLOUNDER *Platichthys stellatus;* BLOOD STAR *Henricia leviuscula;*
BAT STAR *Asterina miniata;* GIANT SPINED STAR *Pisaster giganteus;*
SUNFLOWER STAR *Pycnopodia helianthoides;* OCHRE STAR *Pisaster ochraceus;*
GIANT GREEN ANEMONE *Anthopleura xanthogrammica;* PURPLE SEA URCHIN *Strongylocentrotus purpuratus;* SPONGE *Haliclona sp.*

MARKET SQUID *Doryteuthis (formerly Loligo) opalescens*

DUNGENESS CRAB *Cancer magister*
STARRY FLOUNDER *Platichthys stellatus*

KING SALMON *Oncorhynchus tshawytscha*
ANCHOVY *Engraulis mordax*

NOAA SHIP *David Starr Jordan*
CALIFORNIA GULL *Larus californicus*
ARGO FLOAT

CRYSTAL JELLYFISH *Aequorea victoria*
PURPLE STRIPED JELLYFISH *Chrysaora colorata*
MOON JELLYFISH *Aurelia sp.*
PROWFISH *Aetopcus maculatus*

BASKING SHARK *Cetorhinus maximus*
KRILL *Euphausia pacifica;*
JACK MACKEREL *Trachurus symmetricus*

LINGCOD *Ophiodon elongatus*

BLACK-FOOTED ALBATROSS *Phoebastria nigripes*
PACIFIC POMPANO (butterfish) *Peprilus simillimus*
XANTU MURRLET *Synthliboramphus hypoleucus*
RHINO AUKLET *Prychoramphus aleuticus*

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ANCHOVY *Engraulis mordax*

LEATHERBACK TURTLE *Dermochelys coriacea*
MOON JELLYFISH *Aurelia sp.*
EASTERN PACIFIC BROWN SEA NETTLE *Chrysaora fuscescens*

GREAT WHITE SHARK *Carcharadon carcharias*
NORTHERN ELEPHANT SEAL *Mirounga angustirostris*

CHINA ROCKFISH *Sebastes nebulosus*
GIANT KELP *Macrocystis pyrifera*

ALBACORE *Thunnus alalunga*
MARKET SQUID *Doryteuthis (formerly Loligo) opalescens*

ABALONE FREE-DIVER FROM JAPAN *Homo sapiens*
RED ABALONE *Haliotis rufescens*
SARCASTIC FRINGEHEAD BLENNY *Neoclinus blanchardi*
SUNBURST ANEMONE *Anthopleura sola*
WHITE PLUME ANEMONE *Metridium senile*

INVERTEBRATE PLANKTON AND ICHTHYOPLANKTON
LION'S MANE NUDIBRANCH *Melibe leonina;* OCEAN SUNFISH *Mola mola;*
PACIFIC GRENADIER *Coryphaenoides acrolepis;* DIATOMS;
DINOFLAGELATTE; PACIFIC BLACK SMELT *Bathylagus pacificus;*
BRACHIOPOD; SAURY EGG *Colabsis saira*

CABEZON *Scorpaenichthys marmoratus*
HARBOR SEAL *Phoca vitulina*
BULL KELP *Nereocystis luetkeana*
KELP POACHER *Agonomatus mozinoi*

ANCHOVY *Engraulis mordax*
ALBACORE TUNA *Thunnus alalunga*

FLAG ROCKFISH *Sebastes rubrivinctus*
CALIFORNIA HALIBUT *Paralichthys californicus*

MOLA MOLA (OCEAN SUNFISH) *Mola mola*

PACIFIC SARDINE *Sardinops sagax*
SEINER
PURSE SEINE NET

SEA OTTER *Enhydra lutris;*
PURPLE SEA URCHIN *Strongylocentratus purpuratus;*
RED SEA URCHIN *Strongylocentratus franciscanus;* SEA FAN *Muricea appressa;*
SEA PEACH *Halocynthia aurantia;* ACORN BARNACLE *Balanus glandula*
CALIFORNIA SEA CUCUMBER *Parastichopus californicus*

SPERM WHALE *Physeter macrocephalus*
JUMBO (HUMBOLDT) SQUID *Dosidicus gigas*

MAHI MAHI (DORADO, COMMON DOLPHINFISH) *Coryphaena hippurus*
CALIFORNIA FLYINGFISH *Cheilopogon pinnatibarbatus*

SWORDFISH *Xiphias gladius*
ALBACORE *Thunnus alalunga*
THRESHER SHARK *Alopias pelagicus*
PACIFIC SARDINE *Sardinops sagax*

PACIFIC MACKEREL *Scomber japonicus*
PACIFIC SARDINE *Sardinops sagax*
COMMON MURRE *Uria aalge*

CALIFORNIA SEA LION *Zalophus californianus*
GIANT KELP *Macrocystis pyrifera*

STEINBECK'S *Western Flyer*
PACIFIC SARDINE *Sardinops sagax*

STRIPED MARLIN *Tetrapturus audax*
PACIFIC SARDINE *Sardinops sagax*
YELLOWFIN TUNA *Thunnus albacares*
SKIPJACK TUNA *Katsuonus pelamis*

LOGGERHEAD TURTLE *Caretta caretta*
PELAGIC RED CRAB *Pleuroncodes planipes*

BLUE WHALE *Balaenoptera musculus*

RED-TAILED TROPIC BIRD *Phaethon rubricauda*
R/V *Black Douglas*
WESTERN GULL *Larus occidentalis*
COOK'S PETREL *Pterodroma cookii*

LOGGERHEAD TURTLE *Caretta caretta*
PACIFIC SARDINE *Sardinops sagax*

SEINER *Sardinops*
BROWN PELICAN *Pelecanus occidentalis*
WESTERN GULL *Larus occidentalis*
CANNERY ROW IN MONTEREY, CALIFORNIA

CALIFORNIA SHEEPHEAD *Semicossyphus pulcher*
GIANT SEA BASS *Stereolepis gigas*
GIANT KELP *Macrocystis pyrifera*

LOGGERHEAD TURTLE *Caretta caretta*
PURPLE STRIPED JELLYFISH *Chrysaora colorata*
PACIFIC SARDINE *Sardinops sagax*

OPAH (MOON FISH) *Lampris guttatus*

GARIBALDI JUVENILE AND ADULT *Hypsypops rubicundus*
BOCACCIO *Sebastes paucispinis*
GIANT KELP *Macrocystis pyrifera*

SHORT-BEAKED COMMON DOLPHIN *Delphinus delphis*
PACIFIC SARDINE *Sardinops sagax*

HARD-HAT ABALONE DIVER *Homo sapiens*
GIANT KELPFISH *Heterostichus rostratus*
GIANT KELP *Macrocystis pyrifera*

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http://swfsc.noaa.gov/greenseas-blueseas

The NOAA Fisheries Service poster "Green Seas Blue Seas: California Current, Changing by Degrees" depicts changing oceanographic regimes along the U.S. west coast using different shades of color: green for high ocean productivity and blue for low ocean productivity. The images illustrate the different species that flourish as ocean conditions change in the California Current, which flows along the west coast from British Columbia to Baja California. The poster also illustrates the heritage of fishing and fisheries research through images of historic and current vessels, technologies and people. Together, these images depict the connectivity between humans, marine animals, and climate change, following the legendary sardine fishery that crashed off Monterey, California, in the 1940's, and eventually returned as the system recovered through enhanced scientific knowledge, better management, and changing ocean conditions.

Original artwork by Ray Troll. Poster design by Karen Lybrand. The "Green Seas Blue Seas" poster was produced by NOAA Fisheries Service's Southwest Fisheries Science Center, which provides scientific advice for the conservation and management of fisheries and protected species in the California Current, throughout the Pacific Ocean, and in the Southern Ocean off Antarctica. Additional funding was provided from the NOAA Preserve America Initiative and the NOAA Fisheries Service Internal Education Fund.