

Fish Facts

Clown Triggerfish

Category: Triggerfish, Species Name: *Ballistoides conspicillum*, L=19.7 in, 50 cm

Also known as the big spotted triggerfish. Inhabits outer reef areas and feeds upon crustaceans and mollusks by crushing them with powerful teeth. They are voracious eaters, and divers report seeing the clown triggerfish devour beds of pearl oysters.

Do not eat this fish. According to an 1878 account, "the poisonous flesh acts primarily upon the nervous tissue of the stomach, occasioning violent spasms of that organ, and shortly afterwards all the muscles of the body. The frame becomes rocked with spasms, the tongue thickened, the eye fixed, the breathing laborious, and the patient expires in a paroxysm of extreme suffering."

Not edible.

Range is Indo-Pacific and East Africa to Somoa.



Red Emperor

Category: Snapper, Species Name: *Lutjanus sebae*, L=23.6 in, 60 cm

Called seaperch in Australia. Inhabits the areas around lagoon coral reefs and sandy bottoms.

The red emperor is a valuable food fish and considered a great sporting fish that fights with fury when hooked. The flesh of an old fish is just as tender to eat as that of the very young.

Range is from the Indo-Pacific to East Africa.



Giant Maori Wrasse

Category: Wrasse, Species Name: *Cheilinus undulatus*, L=90.2 in, 229 cm

This is the largest of all the wrasse. It is found in dense reef areas, feeding on a wide variety of mollusks, fishes, sea urchins, crustaceans, and other invertebrates. In spite of its immense size, divers find it a very wary fish.

Edibility is considered poor.

Range is the Indo-Pacific and the Red Sea.



Blue Angelfish

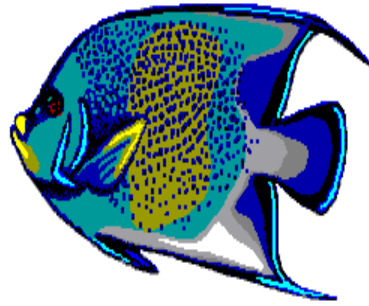
Category: Angelfish, Species Name: *Pomacanthus nauarchus*, L=11.8 in, 30 cm

Habitat is around boulders, caves, coral ledges and crevices in shallow waters. Swims alone or in groups.

Its color changes dramatically from juvenile to adult. The mature adult fish can startle divers by producing a powerful drumming or thumping sound intended to warn off predators.

Edibility is good.

Range is the entire Indo-Pacific region.



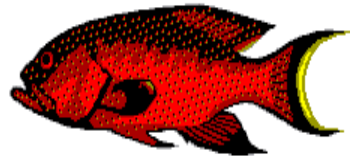
Lunartail Rockcod

Category: Cod, Species Name: *Variola louti*, L=31.5 in, 80 cm

Also known as the coronation trout. It is found around coral reefs from shallow to very deep waters. Feeds primarily on small fishes.

Although this rockcod is considered a good game and food fish, the large ones may contain a toxin and should not be eaten. There is no way to discern whether the fish contains toxin.

Range is the Indo-Pacific and the Red Sea.



Firefish

Category: Scorpionfish, Species Name: *Pterois volitans*, L=15.0 in, 38 cm

Also known as the turkeyfish. Inhabits reef caves and crevices. The firefish is usually stationary during the day, but feeds actively at night. Favorite foods are crustaceans.

The dorsal spines of the firefish are needle-like and contain venom. They can inflict an extremely painful wound.

Edibility is poor.

Range is from Western Australia to Malaysia.



Ornate Butterflyfish

Category: Butterflyfish, Species Name: *Chaetodon Ornatissimus*, L=7.5 in, 19 cm

Normally seen in pairs around dense coral areas from very shallow to moderate depths. The butterflyfish feeds mainly on coral polyps and anemones.

Edibility is poor.

Range is Indo-Pacific from Sri Lanka to Polynesia.



Swell Shark

Category: Shark, Species Name: *Cephaloscyllium ventriosum*, L=40.2 in, 102 cm

Inhabits shallow reef caves and crevices and kelp beds along the coast and offshore islands. This shark feeds at night on fishes and crustaceans and is totally harmless to divers.

For defense, the swell shark inflates its stomach with water to tightly lodge itself in a reef crevice.

Edibility is poor.

Range is from Monterey Bay to Acapulco. Also found in Chile.



Bat Ray

Category: Ray, Species Name: *Myliobatis californica*, L=22.0 in, 56 cm

Also known as the grinder ray because of its flat grinding teeth used to crush its meal of crustaceans or invertebrates. Inhabits bays, sloughs, and kelp beds with sandy bottoms.

The bat ray digs up food with its wings and snout, and will even bite off overhanging ledges to get at prey. It hunts singly or in groups. When resting, it buries itself in sand with just the eyes protruding.

Edibility is poor.

Range is from Oregon to the Gulf of California.



California Moray

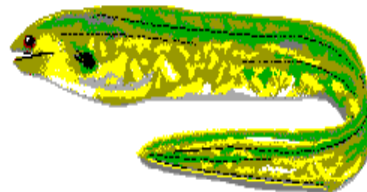
Category: Eel, Species Name: *Gymnothorax mordax*, L=59.1 in, 150 cm

This fish hides in a shallow-water lair with just its head protruding during the day. At night it feeds on octopuses, crustaceans, and small fish close by.

If caught, it will bite anything nearby with its large fang-like teeth. Divers can be bitten by a moray eel when sticking their hands into crevices or holes in search of lobster or abalone.

Edibility is good.

Range is from Southern California to Southern Baja.



Lingcod

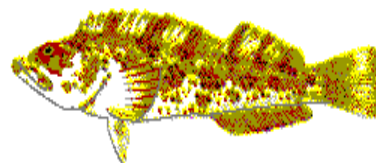
Category: Cod, Species Name: *Ophiodon elongatus*, L=59.1 in, 150 cm

Widely found from near the shore to very deep waters. Young fish stay on sand or mud bottoms of bays and inshore areas. The lingcod is a voracious predator, eating many different fishes and octopuses.

This fish changes color when stressed. The flesh color also changes, from a greenish hue when caught to white when cooked.

Edibility is good; Lingcod is a popular sport and commercial fish.

Range is Alaska to Northern Baja California.



Cabezon

Category: Sculpin, Species Name: *Scorpaenichthys marmoratus*, L=39.0 in, 99 cm

Often called the great marbled sculpin. Found over rocky or shell-encrusted bottoms from shallow to moderately deep waters. It feeds primarily on crustaceans and mollusks.

The male cabezon will not budge while guarding its nest and can even be touched by divers.

Edibility is good; the flesh is bluish-green but turns white when cooked. The eggs of the cabezon are poisonous.

Range is from Alaska to Central Baja.



Atlantic Spadefish

Category: Spadefish, Species Name: *Chaetodiperus faber*, L=35.4 in, 90 cm

Found in mid-water areas around reefs, wrecks and bridges. The tiny, all-black juveniles drift motionless in the shallows, looking like leaves and pods of mangrove.

Edibility is good.

Range is Bermuda, New England to Brazil, and the Gulf of Mexico.



Nurse Shark

Category: Shark, Species Name: *Ginglymostoma cirratum*, L=157.5 in, 400 cm

Frequently found under rock or reef ledges. Carnivorous with well-developed organs for scent and vibration detection.

Like all sharks, the nurse shark has a skeleton of cartilage rather than bone. Instead of scales, its body is covered with tiny razor-sharp denticles. The teeth are specialized forms of denticles. Sharks must continually swim or will slowly sink because they have no air bladder.

Edibility is poor.

Range is from Rhode Island to Brazil, including the Gulf of Mexico.



Spotted Eagle Ray

Category: Ray, Species Name: *Aetobatus narinari*, L=78.7 in, 200 cm

Found in reef areas and sandy bottoms. The spotted eagle ray has a poisonous spine on its tail and incredibly powerful jaws to crush oysters, clams, and numerous crustaceans. Divers report large schools during breeding season.

This ray is an active swimmer and often leaps into the air. The slapping sound it makes on the water is thought to mark a territory.

Edibility is poor.

Range is throughout the tropics.



Yellowtail Snapper

Category: Snapper, Species Name: *Ocyurus chrysurus*, L=29.5 in, 75 cm

Prefers to congregate in loose groups in the open water above reef areas. Has well-developed teeth and usually feeds at night on small fishes, crustaceans, and plankton.

The yellowtail snapper repeatedly snaps its jaws after it has been caught. Divers have been injured by these fish.

This is an excellent game fish with tenacious fighting ability and tasty flesh.

Range is Bermuda, New England to Brazil, and the Gulf of Mexico.



Redband Parrotfish

Category: Parrotfish, Species Name: *Sparisoma Aurofrenatum*, L=11.0 in, 28 cm

Inhabits reef areas. The parrotfish's teeth are fused together, enabling them to scrape away hard coral outer skeletons to get at polyps inside. These fish are thought to be a major factor in reef recycling.

Occasionally a female will change sex, increase in size, and take on a distinct appearance as a terminal-phase male. This is usually done to replace a missing male.

Edibility is poor.

Range is Bermuda and Florida to Brazil.



Great Barracuda

Category: Barracuda, Species Name: *Sphyræna barracuda*, L=59.1 in, 150 cm

Young barracuda live in inshore seagrass beds, while adults range from inshore channels to the open ocean. The barracuda feeds on a wide variety of fishes.

It frequently drifts just below the surface and is known to approach divers at very close range. The long underslung jaw with its very sharp teeth can be disconcerting. Attacks on humans have reportedly been in cloudy water when the victim is wearing bright diving gear or attempting to spear the fish.

Edibility is good for small specimens, but large barracuda can carry a fatal toxin. There is no visible way to tell if the fish is harmful to eat.

Range is worldwide.



French Grunt

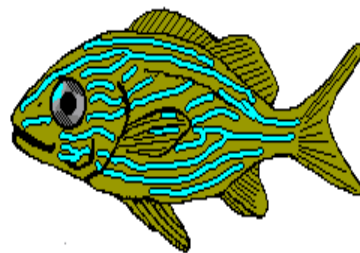
Category: Grunt, Species Name: *Haemulon flavolineatum*, L=11.8 in, 30 cm

The French grunt drifts in large groups in sheltered reef areas during the day. It forages nearby for other fish at night.

The fish produces a grunt-like sound by grinding teeth located in the throat. The sound is amplified by the adjacent swim bladder. During territorial skirmishes, male grunts will face and push each other with open mouths.

Edibility is excellent.

Range is Bermuda, South Carolina to Brazil, and the Gulf of Mexico.



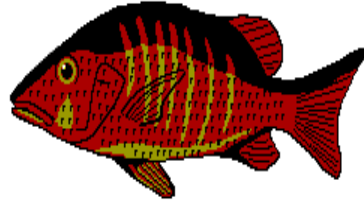
Dog Snapper

Category: Snapper, Species Name: *Lutjanus jocu*, L=35.4 in, 90 cm

This fish is named for its elongated canine teeth at the front of the upper jaw. It is solitary and wary and stays in the deep reef or submerged wreck areas. Not very common anywhere.

Edibility is good if the fish is small. However, a large dog snapper may contain a fatal toxin. These fish repeatedly snap their jaws shut after removal from a hook or net.

Range is New England to Brazil and the Gulf of Mexico.



Nassau Grouper

Category: Grouper, Species Name: *Epinephelus striatus*, L=35.8 in, 91 cm

Found around shallow coral reefs and seagrass beds, feeding mainly on fishes.

This is the most friendly of all groupers. If offered food, it will return again and again, looking for more.

As a defense, the Nassau grouper can change colors to blend perfectly into any background, from white to solid black.

Range is Bermuda, North Carolina to Brazil, and the Gulf of Mexico.



Bluehead Wrasse

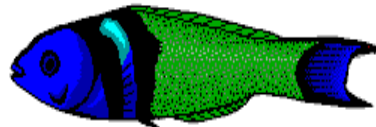
Category: Wrasse, Species Name: *Thalassoma bifasciatum*, L=5.9 in, 15 cm

Found in coral reefs, rocky flats, reef sand, and seagrass habitats. This is one of the most successful "cleaner fish" in the tropical West Atlantic. It feeds on the parasites of other fish, who come to the wrasse to be cleaned.

Most bluehead wrasses are yellow. The head of the terminal-phase male (about 4% of the population) is blue.

Edibility is poor.

Range is large, including both sides of the Atlantic, Bermuda, Bahamas, and Florida to Curacao, plus the Gulf of Mexico.



Yellow Jack

Category: Jack, Species Name: *Gnathanodon speciosus*, L=35.4 in, 90 cm

Inhabits reef and mid-water areas, feeding on invertebrates and small fishes. The adult is one of the few jacks without teeth.

The young fish seek out larger predators, such as sharks, for protection. Divers have reported young jacks wanting to join up with them!

Edibility is excellent.

Range is Indo-Pacific and Southern California to Panama.



Redtail Surfperch

Category: Surfperch, Species Name: *Amphistichus rhodoterus*, L=15.7 in, 40 cm

Inhabits exposed sandy shorelines to shallow depths. Feeds on sand-dwelling crustaceans and mollusks.

While almost all other marine fishes fertilize and scatter large numbers of eggs outside the body, the surfperch nourishes offspring inside the ovary and spawns them live and sexually active into the surf.

A favorite sport fish for surf anglers. Edibility is very good.

Range is from Vancouver Island to Central California.



White Sea Bass

Category: Croaker, Species Name: *Atractoscion nobilis*, L=59.1 in, 150 cm

Schools are found over rocky bottoms and around kelp forest canopies. Not a true bass, this is the largest of the croakers on the Pacific Coast. It feeds in mid-water on squid, anchovies, and sardines.

Croakers make a remarkable "boop-boop-boop" sound, and submarine commanders discovered they could hide the sound of their engines behind the racket.

The large calcareous "earstones" in this fish's inner ear canals were considered good luck charms by early Europeans and were used by American Indians in jewelry.

Excellent edibility if you can find one. White sea bass were heavily fished in the 1950s but are now rarely caught.

Range is from Alaska to Southern Baja.



Rock Greenling

Category: Greenling, Species Name: *Hexagrammos lagocephalus*, L=23.6 in, 60 cm

Inhabits rocky areas along shallow exposed coast line.

Greenlings can change their color to blend with the surrounding sunlit rock and seaweed. Their scales are very rough and give the body a sandpaper-like texture.

An 1886 description of a greenling comes from naturalist J.K. Lord. He was overcome by its beauty, and said "its sides...rival in beauty many a tropical flower...[and are] adorned with colors not only conspicuous for their brilliancy, but grouped and blended in a manner one sees only represented in the plumage of a bird, the wing of a butterfly, or the petals of an orchid...red, blue, orange, and green are so mingled that the only thing I can think of as a comparison is a floating flower bed, and even the gardener's art, in grouping, is but a bungle contrasted with nature's painting."

Edibility is good.

Range is from the Bering Sea to Southern California.



Senorita

Category: Wrasse, Species Name: *Oxyjulis californica*, L=9.8 in, 25 cm

Found almost everywhere by divers, this fish lives either in schools or alone. It is a voracious eater that feeds constantly. It is also a very successful "cleaner fish", and a single Senorita may be surrounded by dozens of fishes waiting to be cleaned of parasites. Divers report them teaming up to clean a large sea bass or Mola.

This fish does not reverse sex as most wrasses do. When disturbed, it burrows in the bottom sediment. It also sleeps there with its head protruding from the sand.

Edibility is poor.

Range is Northern California to Central Baja.



Surf Smelt

Category: Smelt, Species Name: *Hypomesus pretiosus*, L=9.8 in, 25 cm

Also called the day smelt because of the timing of its spawning runs. Inhabits the surf line, feeding on small fishes and invertebrates.

Surf smelt ride a wave onto the beach, lay and fertilize their eggs, and catch a return wave to the sea. The fry hatch approximately two weeks later during high tide.

This fish is a favorite among surf anglers. Edibility is good.

Range is from Alaska to Southern California.



Listing for the the program that produced this printout

```
unit Ffactwin;

{ This application shows how to display Paradox style memo and graphic
  fields in a form. Table1's DatabaseName property should point to the
  Delphi sample database. Table1's TableName property should be set to
  the BIOLIFE table. }

{ Additional note by the Author of Yapi

  The program has been modified for printout using Yapi (yet another printer
  interface).
  The modifications are as follows:
    To the form:
      1. A yapi paper was dropped on the form
      2. Three tabs were dropped on the paper and moved into position
         These were for:
           The start position of the indented memo
           The end position for the indented memo
           The start position for the pictures
      3. Four yapi text were placed on the form, renamed and their
         fonts setup. The yapi text for the "memo" was set to wrap
         between tabs.
      5. A yapi image was placed on the form for the pictures
      6. A footer was dropped on the form and setup
      7. A report button was placed on the form
    To the software
      All of the code is in a single method "ReportButtonClick"
      which is an event for the report button.
}

interface

uses
  SysUtils, Windows, Messages, Classes, Graphics, Controls,
  Forms, StdCtrls, DBCtrls, DBGrids, DB, DBTables, Buttons, Grids, ExtCtrls,
  yapi;

type
  TForm1 = class(TForm)
    Panel1: TPanel;
    Label1: TLabel;
    DBImage1: TDBImage;
    DBLabel1: TDBText;
    DBMemo1: TDBMemo;
    DataSource1: TDataSource;
    Table1: TTable;
    Table1Common_Name: TStringField;
    Table1Graphic: TBlobField;
    DBGrid1: TDBGrid;
    BitBtn1: TBitBtn;
    Table1Category: TStringField;
    Table1SpeciesName: TStringField;
    Table1Lengthcm: TFloatField;
    Table1Length_In: TFloatField;
    Table1Notes: TMemoField;
    ReportButton: TButton;
    Paper: TyapiPaper;
    Image: TyapiImage;
    yapiTab1: TyapiTab;
    Title: TyapiText;
    Memo: TyapiText;
    yapiTab2: TyapiTab;
    yapiTab3: TyapiTab;
    Heading: TyapiText;
    Text: TyapiText;
    Fixed: TyapiText;
    Footery: TyapiHeaderFooter;
    procedure ReportButtonClick(Sender: TObject);
  private
    { Private declarations }
  public
    { Public declarations }
  end;
```

```

var
    Form1: TForm1;

implementation

{$R *.DFM}

procedure TForm1.ReportButtonClick(Sender: TObject);
var
    list:Tstringlist;
    i:Integer;
    s:string;
begin
    paper.clear;
    Heading.writeln('Fish Facts');
    Heading.writeln;
    paper.drawline(memo.font);
    Table1.First;
    while not Table1.eof do begin
        Title.writeln(Table1.fieldbyname('Common_name').asString);
        Text.writeln(
            'Category: '+
            Table1.fieldbyname('Category').asString+', '+
            'Species Name: '+
            Table1.fieldbyname('Species Name').asString+', '+
            'L='+format('%.1f',[Table1.fieldbyname('Length_In').asfloat])+
            ' in, '+
            format('%.0f',[Table1.fieldbyname('Length (cm)').asfloat])+
            ' cm');
        memo.writeln;
        s:=Table1.fieldbyname('Notes').asString;
        memo.writeattab(s,1);
        Image.writeattab(3,DBImage1.Picture);
        memo.writeln;
        memo.writeln;
        paper.drawline(memo.font);
        Table1.next
    end;
    Table1.First;
    paper.drawline(memo.font);
    Heading.writeln(
        'Listing for the the program that produced this printout');
    list:=Tstringlist.create;
    list.loadfromfile('FFactwin.pas');
    for i:=0 to list.count-1 do
        fixed.writeln(list[i]);
    list.free;
    paper.preview;
end;

end.

{
    the most deceptive line in this program is

        memo.writeattab(s,1);

This line takes the multiline contents of the memo and word wraps it
between tabs 1 and 2. There are two "write" on the same line. The write
of the memo and the write of the picture. Note that the line spacing
algorithm allows for the maximum of the memo height or the picture height.
}

```