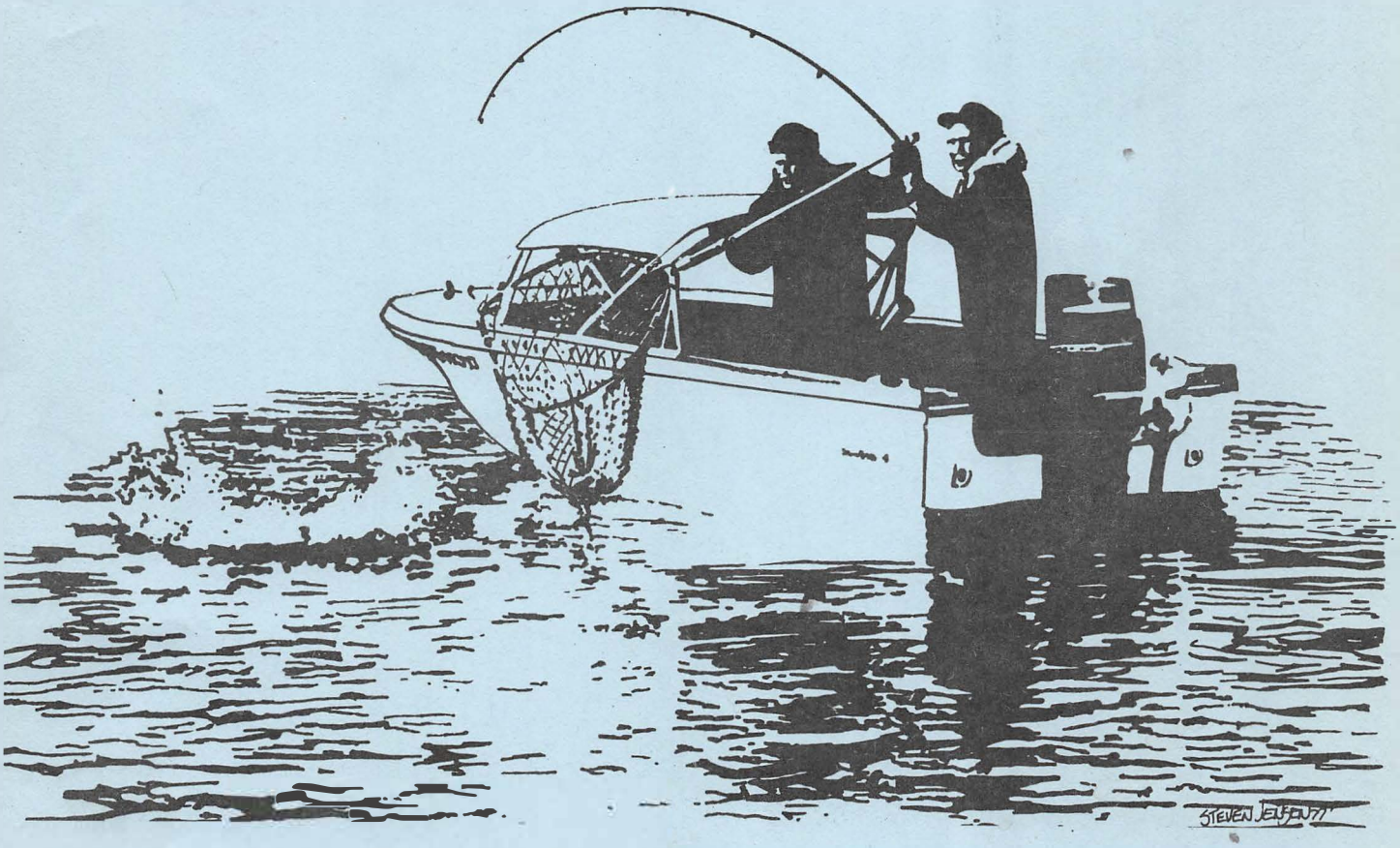
Selected Reprints on Angling for Puget Sound Bottom Fishes

Edited by

Percy M. Washington, Fishery Research Biologist



NATIONAL OCEANIC ATMOSPHERIC ADMINISTRATION
National Marine Fisheries Service
Northwest and Alaska Fisheries Center
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NORTHWEST AND ALASKA FISHERIES CENTER PROCESSED REPORT*

Selected Reprints on Angling for Puget Sound Bottomfishes

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Percy M. Washington

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Northwest and Alaska Fisheries Center
Resource Ecology and Fisheries Management Division

*This report does not constitute a publication and is for information only. All data herein are to be considered provisional.

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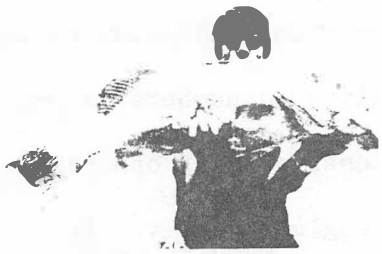
INTRODUCTION

Traditional "trophy" salmon fisheries in the Pacific Northwest have overshadowed the utilization of other fishery resources as recreational fishery targets. Fishery researchers have assumed, based on incidental catches, that the numerous fish species available in seemingly good numbers in Oregon and Washington coastal waters could provide additional angling opportunities and rewarding catches to hundreds of thousands of anglers yearly. These species (rockfishes (Sebastes), hexagrammids, gadoids, flatfishes, etc.) are similar to types of fishes that are the targets of extensive recreational fisheries in other parts of the country, supporting large party-boat operations and also private boat, and pier and jetty angling. These species attract less of the attention of marine anglers in the Northwest. Even unsuccessful salmon anglers (the average catch of salmon per angler trip in Puget Sound in 1971 was 0.25), when they divert their attention from salmon to bottom species, are relatively unsuccessful because they neither know where or how to fish for them. One assumption is that with the development and dissemination of information on "what, where, and how" to angle for the available bottom species in Pacific Northwest waters, many thousands of additional angling days could be developed.

This report includes ten papers written by the Northwest and Alaska Fisheries Center's Marine Recreational Fisheries Task. The intent of these papers was to provide the angling public with basic information on how and where to catch fish, proper care of fish after capture, and some methods of preparation.

Bottomfish:Overlooked Gems in Puget Sound



DOUG OLANDER AND FRIEND

By DOUGLAS R. "DOUG" OLANDER

EDITOR'S NOTE: This is the first in a series of articles on bottom-fishing, particularly that of Puget Sound. It is authored by Douglas Olander, currently employed as a fisheries technician at the National Marine Fisheries Service. Olander also is working for his Master of Science degree at the University of Washington in Recreation Fisheries. His primary interest is Puget Sound. Those readers who would be willing to share their knowledge of Puget Sound bottom-fishing may contact him by phoning 442-4527. Information will be confidential if requested.

Let's start with a quiz: Define Bottomfish — (a) Something to go after when "real" gamefish (like salmon) don't bite, (b) Ugly, prickly fish that don't fight when hooked, (c) Pests that occasionally take salmon baits, (d) All of the above, (e) None of the above.

If you're a Washington or Oregon saltwater angler, you undoubtedly chose (d). If you were from any other coastal state, from Maine to Florida to Texas to California, you probably chose (e).

Outside the Pacific Northwest large numbers of anglers fish specifically for "bottomfish," preferring them to such renown gamefish as striped bass, sailfish or albacore. To these fishermen, the great varieties of bottomfish are challenging gamefish, on appropriate tackle, and valuable food fish. Yet apparently many anglers in this area have little conception of how popular (and what big business) the exciting and rewarding sport of bottomfishing has become in other coastal states.

The term "bottomfish" typically lumps together many unrealated species which exist on or near the bottom. They may vary geographically, but the techniques which catch them often are similar. Some are caught from shore, jetties, bridges and piers. More successful are small-boat anglers, but it is the partyboat or "headboat" which owes its national popularity to bottom-fish. These 60- to 100-foot vessels carry 25-30 people, typically charging $10 for an all-day fishing trip.

My last fishing trip in Florida, in 1972, was aboard a partyboat which took us 100 miles into the Gulf of Mexico off St. Petersburg. The cost was $30 per person and, though scheduled as a 2½-day trip, it took my wife and me only a few hours to catch over 185 pounds of fish, mostly grouper and snapper.

We left the dock Friday at midnight and were on the fishing grounds around 8 a.m. Saturday. Late that morning we hit fish in 120 feet of water. All around the boat, rods were bent as anglers strained against "mango" snapper and black grouper, averaging 8-15 pounds (though I did haul in a 28-pounder). This lasted until late afternoon, around which time a school of young, brilliantly blue-green and gold dolphins appeared around the boat, striking anything in sight...even bare hooks. I grabbed my ultra-light spinning outfit and, with trembling hands, tied on a small bucktail jig. In a half-hour I caught 10 of the flashy acrobats. We left for home just after midnight, far ahead of schedule, with sore arms and full fish boxes.

Most Florida bottomfishing occurs around Miami, my former home, and the Keys. I experienced a marked decline in sportfishing success during the 1960's as population and fishing pressure increased, yet bottom-fishing remained popular.

Here, bright-pink mutton snappers to 25 pounds are prized, along with many species of grouper in the 3-80 pound range (a few species attaining hundreds of pounds). Mullet heads and strips, or any small live fish, are fished in water 60 to 250 feet deep.

"Deep jigging," a popular technique using heavy spinning gear, produces large fish. Bucktail jigs rigged with strips of baitfish or whole fish are dropped to bottom, jigged up several times, lowered to bottom again, and so on. Big fish often will follow such baits far up off the bottom, finally striking with a tremendous downward rush. I've lost many large fish with these lures, unable to stop them with the spinning gear, but this is exciting and challenging fishing.

Night fishing for bottomfish is especially popular during the summer in Florida, generally over shallow reefs in 30 to 70 feet of water. Light tackle is best for smaller, numerous mangrove snappers and the beautiful yellowtail snappers. A few of the monstrous cubera snappers — which can exceed 100 pounds — are taken at night each spring when they move inshore from the depths to spawn.

Many Florida bottomfish readily strike artificials. In small outboards we fished off the Keys where big bottomfish lurk over shallow coral reefs along the upper edge of the Continental Shelf. Here, in 40 or 50 feet of clear water, huge jacks, groupers, snappers, and other species may charge off the reef to attack large cup-faced lures "chugged" along the surface. Fishing off Key Largo this way, my friend once battled a tremendous fish on light spinning gear for 45 minutes before the fish suddenly stopped fighting. He hauled in the bloody head of an amberjack, chopped off behind the pectoral fins by a shark. Even this half weighed 40 pounds.

Go Light for Bottomfish

By DOUG OLANDER
Natl. Marine Fisheries Serv.

Consider this hypothetical dialogue between two bottomfishing anglers in a boat on Puget Sound:

"I've got another on. Wish these things would FIGHT."

" 'S'matter, Al? Catching more but enjoying it less?C'mon —get rid of that heavy salmon gear. Here — try one of my ULTRALIGHT OUTFITS."

A few minutes later —

"Got another. Hey look at him take out line, will ya? Gee, you're right, Joe, catching rockfish on these ultralights really IS more fun."

"Naturally, Al. Remember, use ULTRALIGHT GEAR — For the fight you can feel!"

* * *

"Joe" is right. Most of Puget Sound's bottomfish — rockfish, flatfish (sole and flounder), greenling, perch and true cod — are usually caught on tackle that is far too heavy to give them a sporting chance. you may be leaving the RIGHT tackle at home.

Unless fishing for halibut or large lingcod, most Washington anglers going after the abundant Puget Sound and coastal bottomfishes are defeating themselves from the start by using lines testing over 10 pounds. Lighter lines will catch most of those bottomfish commonly taken on heavy lines. Why not make catching these fish a real test of your skill as an angler? ...you'll have more fun, too.

To clear up the local myth that bottomfish are poor fighters, another false belief which lingers in the Pacific Northwest must be cast aside. This is the notion that small, light spinning and baitcasting reels are restricted to freshwater use. In fact, this tackle is great for salt water. ANY reel, of course, should be thoroughly rinsed with fresh water after being used in the sea, and periodically oiled, cleaned and given new line.

Tackle typically used for bass and trout is just the ticket for bottomfish. I favor spinning gear — often a tiny ultralight outfit with 4-pound line. When heavier gear is needed, I go to a light outfit with 10-pound monofilament. Most light tackle outfits with at least 100-150 yards of light line are fine for most bottomfishing.

I seldom lose fish by breaking light lines. The trick lies in keeping my drag loose, my rod tip high, and gently working up each fish. The wispier the line, the greater the challenge becomes.

Such tackle adds excitement to bottomfishing many ways in addition to the skill the lightness of the line itself requires. For one thing, the light tackle bottomfish angler can fight the FISH, not the sinkers, since on light lines less sinker weight is required to get the bait down to the fish. Also, winching up fish from the depths on heavy tackle subjects them to drastic pressure changes, which disables them. On lighter gear, the ascent is gradual, allowing the fish to fight more while being coaxed upward.

Why cheat yourself out of a lot of good action when you bottomfish? It can and should be exciting fishing — so get smart like "Al" and switch to light tackle.

California anglers esteem their bottomfishes. In fact as a group, rockfish and "basses" are the most numerous sportfish caught in California. While many are taken from small, private boats, partyboats again get the most bottomfishermen to the most fish. Some partyboats fish shallow waters near kelp beds, "chumming" by throwing out baitfish until the swirls of feeding fish are spotted. To the excited predators, anglers then toss out more baitfish...with hooks in them. These common, near-shore bottomfish caught in Southern California are kelp, sand and calico bass (actually in the same family as Florida's groupers). Though not large, they are scrappy on light tackle. To the surprise of many regular partyboat anglers, I took limits of these fish off San Clemente by retrieving a Rapala lure slowly along the surface.

A different bottom-fishing sport in California is offshore rockfish fishing aboard partyboats where there is at least 300 feet of water. Using heavy tackle, no less than 2 pounds of lead sinkers carry down four or five baited hooks on a single line. Several species of large rockfish with open mouths, inflated stomachs and popped eyes due to intense pressure changes often are hauled up by sweating, puffing anglers. Several varieties in the 15- to 30-pound class and occasionally larger lingcod are taken.

True snappers, family Lutjanidae, are cuaght in America's warm Atlantic waters, while Washington's "red snappers" (and "rock cod") are in fact rock fishes of the family Scorpaenidae, so highly valued in California's sportfishery.

As a true bottom-fisherman, I have found excellent sport along both U.S. coasts. Virtually all these bottom-fish are fine eating. (Incidentally, I've tasted many Atlantic and Pacific species, but NONE are as fine as Washington's rockfish or lingcod on the table.)

Not only are this region's bottom species delicious, but they're incredibly abundant and readily available. Future articles will concentrate on Washington's bottomfishes (and fishing for them)...a tremendous, untapped resource.

Commonly Found Throughout Puget Sound

Pacific Cod: Prime Angler, 'Gourmet' Target

by Percy Washington
NOOA, NMFS,
N.W. Fisheries Center

The Pacific cod, commonly referred to as "true" or "gray" cod, is commonly found throughout Puget Sound. While frequently taken on hook and line by salmon fishermen, this species is a white flesh fish of excellent quality and is held in high esteem by those who know. The fish are easily recognized by the brown to gray coloration on their back, which shades to lighter tones on the sides and bellies. Numerous brown spots are generally present on their back and sides. Along with color as an identifying characteristic is a barbel (a fleshy protuberance) located on its lower jaw and three distinct dorsal (back) fins and two anal (belly) fins.

Life Cycle

The Pacific cod's life cycle, though less romantic than the salmon's, is no less of interest. Spawning takes place mainly in winter when tremendous numbers of eggs (millions per female) are released by each female cod and fertilized by attendant males. The small eggs (approximately 1/64-inch in diameter at time of "laying") sink to the bottom in fairly deep water where they hatch in 8 to 10 days. The newly hatched young (larvae), which are now about 2/10-inch in length, absorb their yolk sac in a week to 10 days and begin feeding on microscopic animal life. Growth is rapid and fish in productive areas may reach an average length of 24 inches in three years. By this time the life cycle begins anew as most have reached maturity.

In general, cod are known to move into deep water in autumn and return to shallow water in spring. Tagging studies indicate that cod congregate for spawning and disperse for feeding.

Varied Diet

Cod feed on a wide variety of food items including worms, crabs, molluscs (clams, mussels, etc.) shrimps, herring, sandlance, walleye pollock, flat fishes and smaller cod. In other words, cod are almost always ready to eat anything that moves or looks edible, including baited hooks or artificial lures.

In the past I have taken a few nice Pacific cod in the channel at Shilshole (up to 5 pounds). My greatest successes have been in areas like the Possession inner bar area, north or President Point and Jefferson Head. In late spring off Possession, I once found schools with individual fish up to 12 pounds.

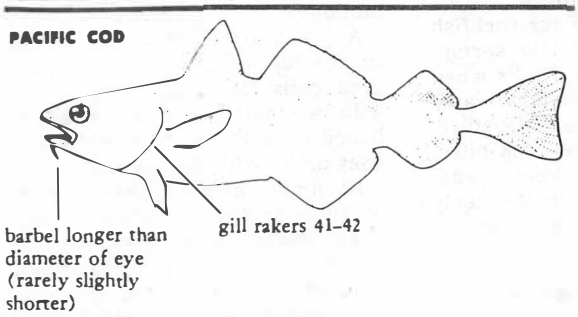
The principle method of fishing in that area is the drift mooching technique using a moderately light line (6-10 pound test), a light rod (I use my light steelhead casting gear) and 1 to 3 ounces of lead. The bait used at the time was fresh herring whole or plug cut with a fair amount of action. While probably not as choosy as salmon, cod are a bit more choosy than the ever-present dog fish. The bait should be fished about two or three turns off bottom (which necessitates shortening the leader to 18-24 inches) and moved up and down.

Hard to Beat

On the dinner table, cod are hard to beat. For best quality cod (both eating and preserving), "bleed" it immediately after capture by breaking a gill arch (stringers come in handy at this point to keep cleanup to a minimum). When it has been bled, place the fish in a fish box and keep it cool until you are ready to butcher. I like to fillet my fish (removing all skin and bones) to prepare them for eating fresh or for freezing in packages of family-sized portions — cuts waste both in cold storage space and meat loss due to too much fish thawed.

Some good cod dishes you might like to try are steamed cod and greens, and steamed cod (chilled bits) in a tossed green salad with your favorite dressing. Having tried steamed fish, I seldom cook it any other way. The cod and greens recipe requires a maximum of six minutes cooking time (three for the fish), and a brown sauce (butter and flour—not browned, won-ton soup base and water (one to one), parsley and shredded fresh ginger root.

Hope you'll like both the angling and eating experience provided by this common, yet little used fish.



Often-Ignored Black Rockfish: Feisty Scrapper, Fine Eating!

by Greg Bargmann
Sport Fishery Biologist
NMFS, NOAA

What would you think of a fish that is a strong fighter, is relatively common and also is quality eating? Black rockfish fit this description and offer excellent fishing for the northwest angler. Also called "black sea bass," or "nero," Sebastes Melanops, as they are known to scientists, get relatively little attention from Puget Sound fishermen even though they can be easily caught with bait or lure.

Black rockfish are similar in appearance to the freshwater bass and, as the name implies, are black over the entire head and body, except for the belly which is slate gray. It has rather large eyes, and when the fish's mouth is closed the upper jaw (maxillary) extends to the rear of the eye, in contrast to the blue rockfish, which is similar in appearance but has a maxillary which does not extend past the middle of the eye.

Black rockfish are one of the larger rockfishes found in the Northwest, and while 5-pounders are not uncommon, the largest ever recorded in Washington weighed 10½ pounds!

Sneaky Critters

Black rockfish strike differently than most other kings of bottomfish which have a sudden vigorous strike. Black rockfish often just suck in the herring gently and hold it. To the angler, it feels as if the line had just grazed against some kelp on a rock. The fisherman should pay close attention and respond to any hesitation in the line with a sharp set or the fish will end up the better for the encounter.

Despite their somewhat gentle strike, black rockfish are real battlers. A large one will will fight without letup, going off on long runs. Your first black rockfish will definitely dispel any notions you may have had about all bottomfish being dull and lifeless when hooked.

In addition to their fighting qualities, black rockfish provide excellent eating as their firm white flesh can be cooked in many ways, all of which lead to a good meal. My favorite method of cooking them is to wrap the flesh in tin foil with butter, salt and pepper and a little lemon and barbecuing over hot coals. Fish cooks rapidly, so it is necessary to cook the flesh only a few minutes.

Bag Limits Generous

The present Washington State limit for rockfish is 15 fish. **(Ray Buckley of the State Department of Fisheries reports that the rockfish bag limit may be substantially reduced in the near future.)** This generous limit allows for plenty of meat to be brought home for the freezer, but why take more than you will need? By keeping only the fish you need and releasing the rest, this fine resource can be preserved for future evenings of enjoyment.

Black Rockfish Found Here

Found throughout the marine waters of Washington, they are most common in coastal waters north of Grays Harbor and along shore in the outer Straits of Juan de Fuca. Hood Canal and the San Juan Islands have sizeable populations, but within Puget Sound their numbers and distribution are more limited. Hot spots in the Sound include the Tacoma Narrows, Colvos Passage, Mukilteo and Scatchet Head. Elliott Bay is a good location, especially just off the ends of the piers. The breakwater along Shilshole Bay contains a few of these fish as does the Edmonds breakwater and the Mukilteo oil piers.

Time for Fishing

The best time for black rockfish fishing is during the late spring, summer or early fall. That's when the fish move into shallow water and actively feed around structure on the bottom, such as rock piles, sunken ships and kelp beds. Fishing is often best in the early morning or late evening just before dark.

They Live Off Bottom

Unlike most bottomfish, black rockfish are not always found near the bottom. They are a midwater species and can be found at almost any level in the water including the surface.. They become more active near dark and are often found feeding on the surface at that time. Just before dark, black rockfish have been observed to lunge out of the water in pursuit of a lure. Along the Straits of Juan de Fuca it is not unusual to find a school of black rockfish feeding right on the surface.

Light Gear Most Fun

Since they are generally found in shallow water, heavy gear is not needed for black rockfish. A light steelhead rod or other light action rod is hard to beat. What is needed is a rod with a sensitive tip to feel the first strike, but with sufficient backbone to keep the fish from heading for the bottom and wrapping the line around a convenient rock.

Techniques for black rockfish resemble those for salmon angling. While mooching a whole herring is probably the most productive method, brightly colored jigs and large flies are also very effective. Best results are obtained with flies that have black color on them. Black marabou with a tinsel body is a popular pattern.

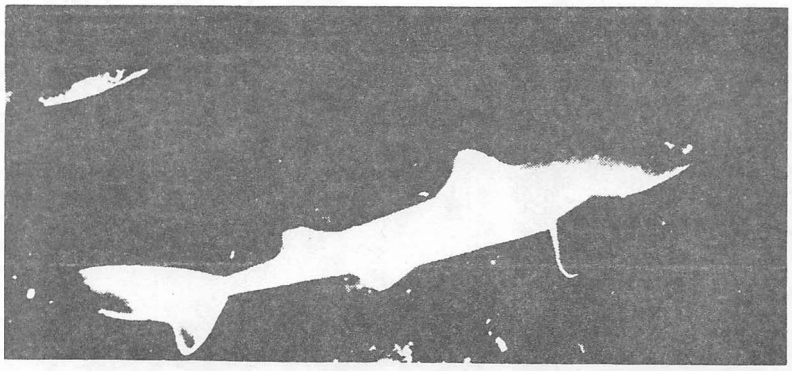
Once you have selected a likely spot, try drift mooching techniques along the bottom. Flies and jigs can be cast out, allowed to settle, then retrieved with quick irregular jerks. Remember, black rockfish prefer a moving bait so it is best if you keep your bait or lure in motion.

A technique that is often successful in the Scatchet Head area calls for using a short line with a small black jig which is fished near the surface while the boat drifts with the current.

At night, black rockfish seem to be attracted to light. So, any area where lights shine on the water, such as ferry docks, could produce evening fishing. This is a new type of fishing experience in this area, and the possibilities are unknown.

What About Dogfish?

by Percy M. Washington, Jr.



School of dogfish in Puget Sound. A variety of small shark, their common name is "Spiny Dogfish." Note spines that transport a painful venom at the base of each dorsal fin (photos by William High, National Marine Fisheries Service).

There is a need for fish meal substitutes now that the anchovy off Peru and the sardines off Africa have fallen off in numbers — there is a real worldwide protein "crunch." In view of this shortage, the local dogfish situation is brought to mind. There are many salmon anglers who become very upset when they catch dogfish, which don't seem to be in short supply. Because of their apparent abundance, there are cries of "something should be done about dogfish."

With the need for new sources of protein, and since everybody is able to catch as many dogfish as they like (often many more than they like), almost automatically a push is on to make them a "cheap" source of animal protein.

Their common name is "spiny dogfish," but they are often called several other names that are unprintable. They are a member of the shark family. The dogfish is quite a long-lived individual, living 30 or more years. The young are born swimming; that is to say adults are live-bearers. It takes about 9 years from the time a dogfish is born until it can reproduce. The gestation period, or the time that the young are carried by the female, is 22 months. This is the longest of any vertebrate animal, the elephant being closest with a 21-month gestation period.

The mature dogfish first gives birth to two or three "pups." This number increases, as the dogfish increases in size with age, to about 17 pups by the time that it is 20 years old or more. Relative to other fish, there isn't much reproduction per individual going on during those 20 years.

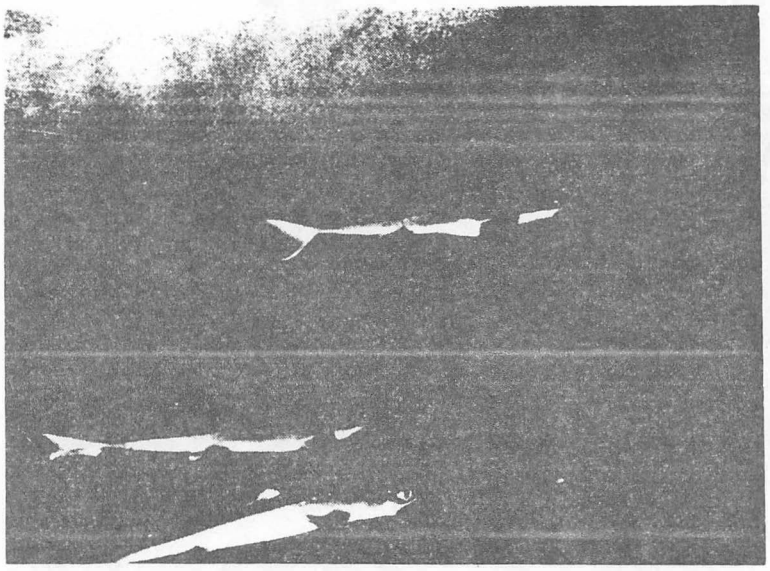
The dogfish sexes often appear to be segregated. For instance, off the south end of Whidbey Island on the Indian Point-Scatchet Head side, there is usually a concentration consisting of large females, while on the Possession Point side you catch only males of various sizes. An early fall migration results in the females and males being found intermingled, but still somewhat segregated off Cultus Bay. In late fall the females are inseminated and the sexes separate. Some 22 months later, in the early fall, the females give birth.

The dogfish is near the top of the food chain. It eats every living or dead thing around including salmon and herring. Moreover, it has very few predators of its own, including other sharks (the seven-gill brown-spotted cow shark, which is not common inside Puget Sound, and the six-gill shark which is) and man.

The dogfish has been a valuable resource here in the past. From 1930 to 1950, the dogfish was harvested by commercial fishermen, mostly for its liver and the oil which it contained. The oil from shark livers contains vitamin A, and the livers were highly sought after until chemists came up with a process for synthesizing vitamin A that was cheaper than processing shark

Dogfish can be a sizeable part of the sport or commercial catch in Puget Sound, as these gill net fishermen find out near Deception Pass (Washington Department of Fisheries photo).

Percy Washington is program manager of the marine recreational fisheries task unit at the Northwest Fisheries Center (National Marine Fisheries Service) in Seattle.



livers. The fishery was subsequently discontinued. The dogfish population, as a result of the early fisheries, was knocked down to a level at which it did very little harm. Little was heard about them for some 20 years, by which time the population had rebuilt in numbers.

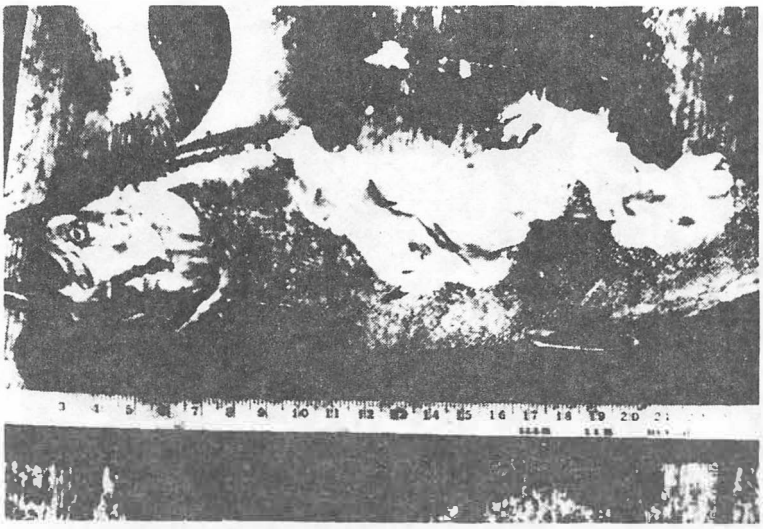
The dogfish does have certain qualities which might make it desirable as a source of food for fish. Some experts on fish food formulations say they can make a very high quality meal out of dogfish. However, preliminary results of work done by the University of Washington for the Washington Department of Fisheries and work by the National Marine Fisheries Service indicate possible problems with this approach. For example, the NMFS studies show that dogfish apparently don't grow as well on 100 percent dogfish diets as on lower percent formulations.

The cost of using dogfish may also be quite prohibitive. The dogfish has a very abrasive skin, due to its hard, sharp, placoid scales. In fact, the skin has been used as sandpaper by both modern and primitive peoples. This abrasiveness is too tough for existing reduction equipment in most local reduction plants—the machinery would be quickly worn out. Not only this, but the skin would necessitate additional handling, reducing the amount processors would be willing to pay commercial fishermen. Fish used in most fishmeal processes are generally handled as little as possible by using such laborsaving devices as suction tubes to pull fish out of the hold of vessels. The dogfish has a way of getting stuck in hoses and causing other problems.

dogfish could cause somewhat of a community relations problem for the processor—the process used in some Pacific Northwest plants incorporates a flame-drying process and the resultant odor could waft over the countryside upsetting neighbors, not to mention perhaps having the Environmental Protection Agency investigating the processors.

Next, consider the problems facing prospective dogfish fishermen. First, certain capital investments in gear are necessary so that dogfish can be handled economically. Then comes the reality that processors are presently only willing to pay about $20 per ton for dogfish, and an average plant needs 50 to 70 tons a day. The fisherman can't make a living or a profit at that price. Therefore, some government agency would probably have to come up with a subsidy, which some people have estimated at anywhere from $30 to $60 per ton. The Canadians are subsidizing their fishing fleet to the tune of about $50 per ton of dogfish in hopes of bringing the dogfish population under control. The management agency is also giving allowances for other more preferred species of fish in terms of increased quotas. Now local fishermen may go fishing for the dogfish under this type subsidy, but the taxpayer would be footing the bill for resolution of the dogfish problem.

A question that comes to mind is, "What about the numbers of dogfish available in Puget Sound?" Well, if you remember what was said about the price per ton and a 50-70 tons a day consumption rate per processing plant, this adds up conservatively to several thousand tons a year. Present population estimates indicate that there are somewhere between 2 and 3 million dogfish in Puget Sound. Assuming an average of 5 to 8 pounds



Large gillnet-caught chinook salmon that has been partially eaten by dogfish (Washington Department of Fisheries photo).

Dogfish

. . . continued

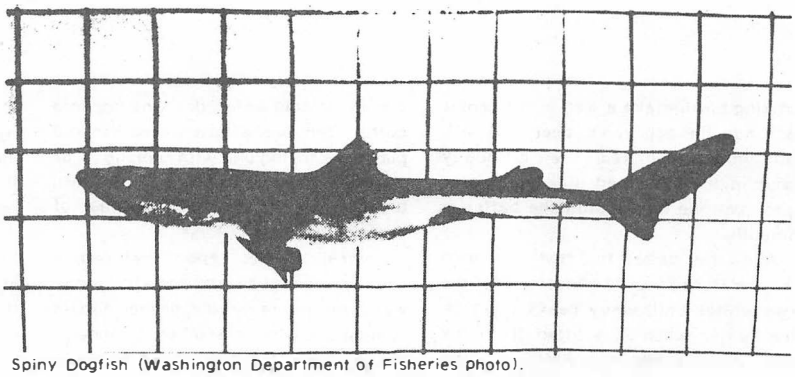
per fish, this is somewhat short of projected needs for fish meal. The question then becomes, "How do we manage this limited stock so that we have a rational fishery and still supply the needs of the processor?" Assume for a moment that money has been invested in a meal plant, to make dogfish use feasible, a subsidy has been provided to get fishermen interested in fishing for dogfish, and they've geared up. There is a need for the fishmeal, but economics dictates that under these conditions, we just can't fish dogfish down to "commercial extinction" or to where there is little value in the remaining stocks.

It has been suggested that when we "fish out" Puget Sound's dogfish, we could move outside off the coast and fish where there are seemingly limitless numbers of them. Well, this is negated by the need for the dogfish to be in the plant within the day. Otherwise their value deteriorates along with their bodies. The longer it takes to get to the plant from the fishing grounds, the less value the product has. Added to this would be the increased cost of getting the dogfish to port. An alternative is to manage the dogfish stocks as other commercial fish stocks are managed—that is by directing management goals toward maximum sustained yield (MSY).

The problem with the MSY management concept is that the dogfish reproductive rate is so low. Management schemes would require low annual catch rates which could not hope to satisfy processor requirements for raw fish if dogfish alone were used.

In short, Puget Sound dogfish are probably not a very good bet to base an investment in a meal industry, due to the size of the population and its low reproduction rate. Moreover, the MSY approach would also be completely at odds with the desires of sport fishermen. Catches would be too low to allow any "control" over the size of the dogfish population.

There are other possible solutions to the problem. Quite briefly, here is the outline of two other alternatives that could be considered. Suppose we were to go along with the anglers, forget about MSY and long-term meal considerations, and use commercial fishing gear to reduce the population to the point where it would be less of a nuisance. This program would be one of decimation, effectively reducing the total number of dogfish as well as the biomass. This probably would have to be a limited term subsidized program in which the catch would be processed into meal for use as a "filler" by the state's hatchery programs. However, it would be a situation in which the effort would have to be sufficient to reduce the dogfish population size in a short period of time. In the long run, this would possibly be of greatest benefit in terms of dollars and far more desirable for fishery resources due to a reduction in dogfish predation and competition.



Spiny Dogfish (Washington Department of Fisheries photo).

The problem with this approach (as with the others) is its possible detrimental effects on other fish populations, which would be subject to capture in a fishery of this type (rockfish, flatfish, cod, etc., are growing in importance as recreational fishes).

A second alternative is sort of nonviable at this point, at least locally, and has to do with the possibility of human consumption of dogfish. A major portion of the people in the Puget Sound area have grown up feeling that the dogfish is a "trauma fish." It "goofs up" your bait, it destroys your line, it "hassles" your day in a lot of cases, and the fact is, most people would rather eat anything but dogfish. But some fishermen you'd swear are magicians the way they keep turning herring into dogfish before your eyes.

The dogfish is fished quite heavily in and around Great Britain where it is used as food. There is even concern about depletion of the resource. Other Europeans also utilize it as a food fish. If you were to go to Great Britain and ask for fish and chips, there's a reasonable chance that you would get dogfish (it's called "grayfish" and other euphemisms, there). And the Canadian Fishery for dogfish mentioned earlier is producing dogfish for human consumption, and exporting it. Unfortunately, people in the Puget Sound area have developed an aversion toward this green-eyed critter. And therein lies the main problem in marketing it locally as a food fish.

Dogfish flesh is dry, but it's firm and bland, so that it takes on the characteristics of whatever you cook with it. Attitudes toward eating dogfish could take a turn in the future and, should the upward trend in the price of animal protein continue in retail stores, people might be more interested in trying something like dogfish. Much of the problem that has to be overcome is more mental than actual as far as the quality of the dogfish is concerned.

Dr. James Pennell is an entomologist with the Cooperative Extension Service—Washington State University's Puyallup Station. Dr. Pennell is an Englishman and finds dogfish quite to his liking. He has a method of properly butchering the dogfish and preparing "shark steaks" or "bowser dinners." This involves cutting off the head and tail, eviscerating the dogfish, removing the dorsal fins and spines, then skinning and removing the fillets. It's quite important that dogfish be bled and eviscerated soon after capture. The blood and organs contain urea, the principal problem agent affecting the eating qualities of the flesh.

The flesh is washed, dipped in your favorite batter, and deep fat fried. Dr. Pennell's recipe for the batter calls for one cup of flour, one egg yolk, four tablespoons of beer (optional), a quarter teaspoon of salt, six tablespoons of cold water, and two egg whites. Pour the flour into a large

mixing bowl, make a well in the center and add the egg yolks, beer and salt. Stir until well mixed. Then gradually pour in the combined milk and water and continue to stir until the batter is smooth.

Allow the batter to "rest" at room temperature about 30 minutes. Beat the egg whites until wavy peaks form on the beater when it is lifted from the bowl. Gently fold egg white into the batter. Wash fillets of fish—3" by 5" pieces—in cold water, dry, and flop into batter. Remove batter-covered fish and place in a frying pan with cooking oil or shortening and cook at about 375° until brown. The result is a fine meal of dogfish.

Several articles report that people have tried dogfish and their response was generally favorable, or they had no opinion one way or another. In none of the cases was distaste for the animal's flesh expressed. Some have tried the taste test in which different types of fish were cooked and wrapped in such a way that the test panel could not visually tell the difference. In general, the response was favorable.

There is some hope for rational use of the dogfish resource. A resource, which after all, does belong to the people of the state and does merit positive consideration of its best and proper use.

Ling Cod: Unlikely Salt Water Prize

(Ed. note: Percy Washington is a sport fishery research biologist at the Northwest Fisheries Center of the National Oceanic and Atmospheric Administration, Seattle.)

by Percy Washington

My introduction to ling cod was entirely accidental. I hooked and landed a 5-pounder off the west side of Blake Island one summer evening while fishing for sea-run cutthroat. What do you do with a critter with a mouth like the inside of a hollow pincushion? We kept it only to retrieve the lure from its mouth when it stopped snapping!

Some years later, in a moment of reflection after a fine meal of this fish's superb-tasting flesh, I realized my error. But that was after I'd been snookered out of a 35-pounder by a sly Westport charter skipper. Oh well, no use crying over unbuttoned fish. But I think I'd come to blows with the guy today if my "ling" didn't show up in my gunny bag.

I take my ling fishing seriously these days, and have set about perfecting my techniques for finding and catching the species consistently. Generally, ling cod taken by hook-and-line are caught by the fortunate salmon angler whose errant bait strays too near that big mouth full of teeth. And it is also not uncommon to capture a ling that's trying to make off with the unwitting fish that just took your bait.

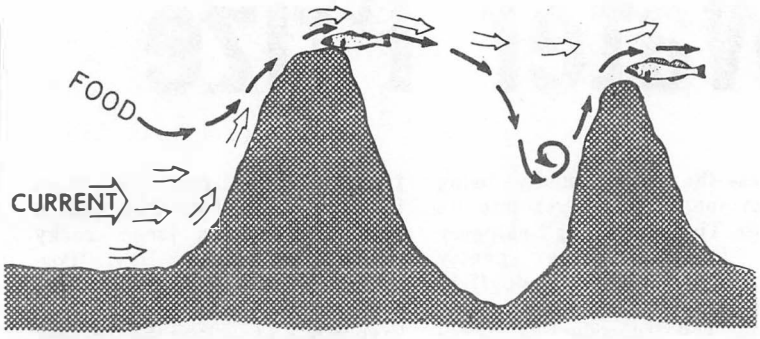
Ling cod have various character traits that make it difficult for them to survive to old age. It always amazes people how old a sizeable ling cod is. For example, a 25-pound female would be about 12 years old, while a male would be considerably older and seldom exceed 25 pounds. Right! They do grow slowly. Among the traits which keep them from reaching 12 or more years is the ling cod's willingness to eat anything that moves—the limit usually being things too large to get into its mouth. That "anything" category can include some pretty improbable lures, dogfish, rockfish, flatfish, etc.

Ling cod reproduction takes place in shallow water—another life-shortening trait. The females move inshore in the winter months (December-March) and lay their eggs. The larger the fish, the greater the number of eggs—up to 30-pound egg masses. The egg mass is fertilized and guarded by the male, which attacks ferociously anything that approaches his clutch. Most animals would be driven off, but fierce lings are scarcely a match for a scuba diver with a spear gun. The unguarded nest quickly falls prey to sculpins, greenlings and sea urchins, to mention a few predators, or siltation. This is one reason the State Department of Fisheries has stopped winter diver fisheries for ling in Puget Sound.

Although ling cod exhibit definite migratory tendencies at certain times of the year, they are generally "homebodies" and may be found on the same rock pile until removed. When caught, replacement of that "ultimate predator" may take years. In Puget Sound, hard or rocky bottom areas are limited and, therefore, so is the ling cod population, since ling generally live in and around areas with rock bottoms such as those found around reefs and kelp beds. I guess I'm making a case for the "limit your catch" concept, since humans seem to be the greatest ling cod predator. I believe the three-fish limit is more than generous. There is nothing wrong with going back in a few weeks to find others. But fishing for ling cod and catching them in Puget Sound with any regularity is difficult.

Many methods are successfully employed to put ling cod in the freezer. I believe the most important part of catching ling is locating them. In large, rocky areas like Admiralty Bay, "Possession," and the Narrows, there are good numbers of ling cod. (But keep in mind how long the fish took in the making). I like to fish areas with extreme tidal currents and hard, irregular bottoms. Generally, I'll go over a chart and look for rocky, fast dropoffs into deep water (up to 400 feet) and

BILL DINGUS, Seattle, shows off a fine example of Puget Sound ling cod. This heavy specimen came from the waters of Possession Point near Mukilteo. Ling cod in this area generally run a bit smaller, but this 26-pound, 8½-ouncer shows that anything can happen. (Percy Washington photo)



LING COD have big appetites and they satisfy their hunger in a very efficient manner. As the illustration indicates, they find a place where food is likely to turn up and just wait for the chance to scoop up a morsel as the current pushes it near.

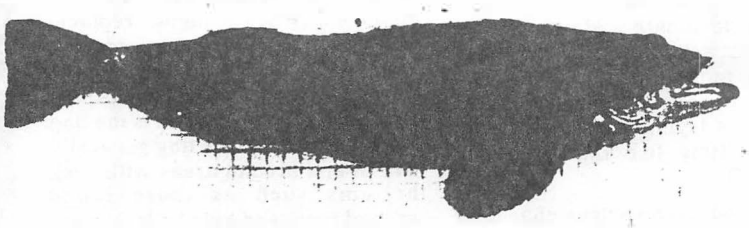
position myself for a drift by using whatever "piloting" method is available to pinpoint the spot—generally a range or group of ranges, a range and a bearing, or a range and a depth or prominent bottom feature (this latter technique requires a fathometer).

Once I've located a likely area, I find that "walking" a lure up a "hill" will produce at or near the hilltop. The other side of the hill is hit or miss for various reasons. I'd guess the "ultimate predator" would take the best food-getting position. And, to me, that would be at the top of the hill. The illustration shows what probably happens as a food item is borne into a hillside by a current. My guess is that the item would leave the bottom on the downcurrent side, making it a very poor bottom-feeding spot. A feeding ling cod should readily address any offering at or near the top of the hill. There are exceptions, of course, to all these generalizations. But for lings in the 15-pound and over category, this strategy has worked best for me.

One problem all fishermen encounter is the time lost to snarled gear. To fish the areas I've just described, the bait must be dropped "free fall." Dropping gear to 200 or 300 feet as fast as it will go usually leaves it wrapped up tight and near the bottom in such a state that even a dogfish wouldn't take it. One trick used to keep gear from snarling is to use a wire spreader which is not available on the market in the size I use, but here's how it is made: **(Page 13)**

Any number of types of terminal tackle will work: small flashers, large spoons, tuna jigs, etc. Plain, weighted jigs are great ling-getters, but they also make mighty expensive anchors at $5 a hangup. Unfortunately, inexpensive gear does not exist on the market, but it can be made at a fraction of the cost. See example: (Page 14)

The bodies of aluminum,

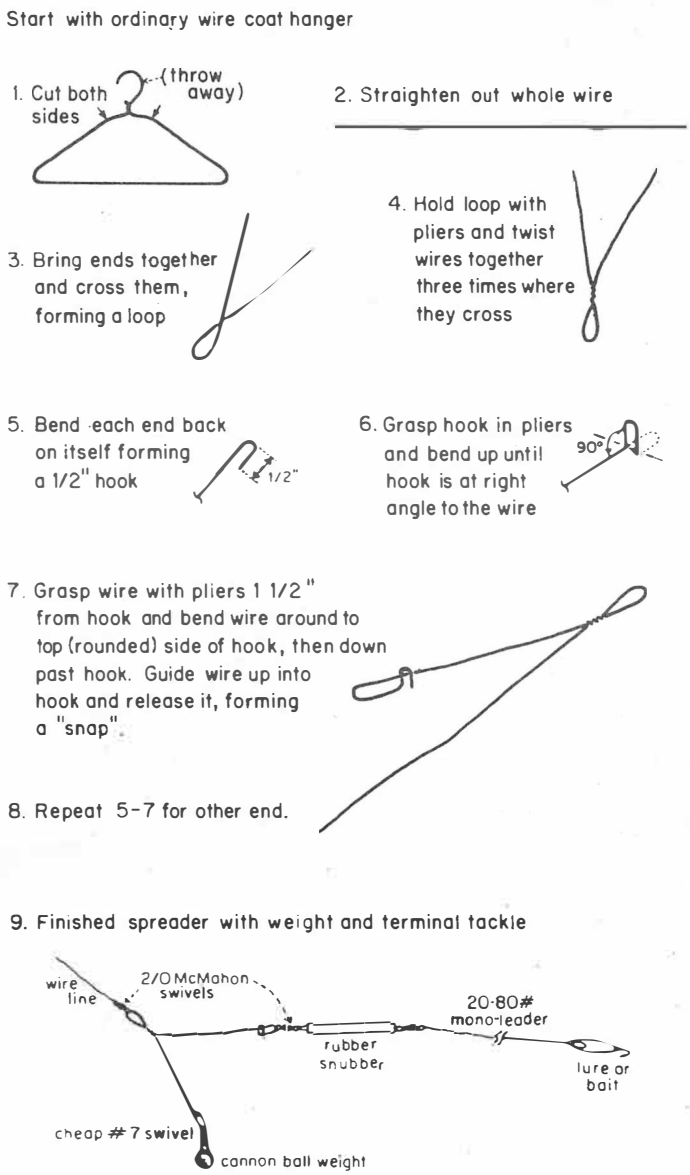


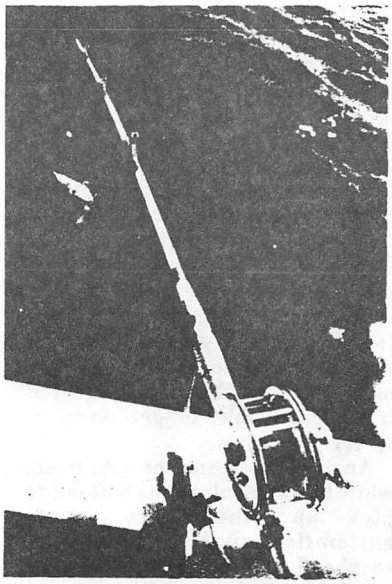
LING COD have the ability, like many other sea creatures, to change color to match their surroundings. The difference in coloration of the habitat of the ling cod shown in the picture at the top of the page demonstrates how the ling has taken on a mottled skin tone, while the fish pictured here has a flat, dark appearance, reflecting its surroundings. (Percy Washington photo)

chrome, copper or other finishes, polished or not, are equally effective. This lure is fished without any additional weights or paraphernalia. The technique is to jig it by jerking the rod tip up, then dropping it. (I said lings ate strange things, didn't I?)

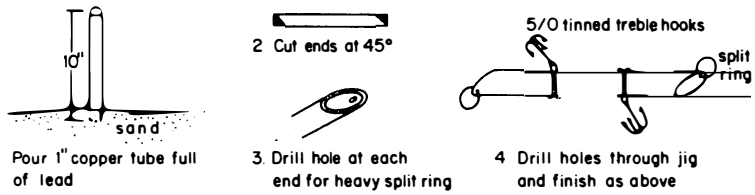
It must be obvious by now that the gear required is a little more substantial than a trout rod. A rod that could also serve as a chin-up bar, pool cue or (better) and has the characteristics of a limber wrecking bar, will more than fit the bill, but the rod should have at least a roller tip. Numerous tackle companies make "inexpensive" rods, but without exception the tip top should be replaced with a good quality large roller guide (manufactured locally and available at better shops) that will hold the line on the roller at any angle or altitude under any condition. The larger roller guide serves the purpose of reducing friction, line wear, and the tendency of wire line to kink as line is reeled in under stress.

The reel is an item of personal preference, but I find it convenient to use one with multiplying gears—say 3 or 3½ to 1. Anglers should put on dacron line or some other





THIS IS the kind of gear that ling cod fishing demands—a hardy rod with roller guides to handle wire line, a high capacity reel with plenty of cranking power and a wire spreader to keep weight and bait from snarling on the way down and after it gets there. (Percy Washington photo)



THIS ILLUSTRATION shows the few, easy steps it takes to make an effective ling cod jig. Once an angler has the materials, it takes little time to make several of these jigs.

suitable backing to a two- to three-inch diameter, depending on the type of reel used (that will save about one-half to one hour cranking time in a day's fishing), and then put on wire line. I like 60-pound wire because the 0.18-inch diameter of the line makes it easy to fish great depths with minimal weight. I put on 1,000 feet of braided wire as a matter of course, even if I only use the first 400 feet. Certainly, monel wire will work, but is difficult to find. Dacron, while it doesn't stretch, requires a lot more line to reach bottom. That is, it's a lot thicker than wire. Mono, like dacron, requires a lot of line to reach bottom in current, but it also stretches so that with a lot of line out, the angler can't feel what's going on down there. If mono must be used, I'd recommend a "hard" mono for the job. One of the disadvantages of wire is its tendency to "sing" in heavy current, but that's moot if it's not possible to get down to where the fish are.

Anglers should not be surprised, while bouncing along the bottom, to pick up other very edible bottomfish such as bocaccio, rasphead and canary rockfish, or maybe halibut or Pacific cod.

How To Use Artificial Lures

Introduction

In the Puget Sound area, sport fishing in marine waters is primarily and traditionally focused on salmonid species. In all likelihood, salmonid fisheries will continue to attract the greatest attention of the marine angler. However, bottomfish angling represents a substantial and increasing portion of the total marine recreational fishery effort.

Increases in recreational use of the bottom fishery resources are due to a number of factors--of which the relative ease of capture, relatively low capital outlay for gear, minimum requisite experience, and excellent family recreational opportunities seem to be major. In addition, one cannot discount the economics of fresh, high quality, sport-caught bottomfish flesh to augment food supplies or the fact that good bottom fishing is well within a reasonable distance of major Puget Sound metropolitan areas.

Few people, however, have looked upon rockfish or other marine species as anything but food fish. The average salmon angler regards most of their fighting qualities as listless at best. But those few who have matched the gear to the quarry have been rewarded with ferocious strikes and thumb burning lunges for freedom by these feisty little predators.

Species Plus Habitat Equals Tactics

In choosing the proper gear for the occasion, one should keep in mind the age-old golfer adage of: "You wouldn't use a nine iron to tee off, would you?" I've already mentioned scaling the gear to the fish species. Now let me also add the habitat of the fish (particularly depth and type of bottom) as a determining factor in gear choice.

Some species are associated with a specific type of environment. For example, if we were to choose copper rockfish for our quarry, we would look in shallow water (less than 50 feet) around rocks. Water movement usually scours away silt and mud to create this type of habitat. In association with rocky areas in shallow water are also found one or more species of giant kelp, which further enhances the habitat. Rocks and kelp provide the best habitat for copper rockfish.

The attendant current creates difficulties in the choice of line type and diameter, lure size and shape, and, at times, rod and reel type. Given lightweight spinning gear with 8 to 10 pound test line, an angler should encounter little difficulty in the above mentioned environment. The light rod will enable one to fish a light line without breaking off the fish. The light line will allow the use of small lures in current and deep water. Balanced gear lends sensitivity to the "pickup" power to the strike and maximum control and enjoyment while fighting the fish.

Certain other species are encountered in other habitat types and at different depths (Figure 1), and gear must be selected to fit the problems of fish size,depth, current, and terminal tackle size (Table 1 and Figure 1).

Notice that the table introduces wire and dacron lines. Also notice the gear size, sinker weight, lure size, and depths involved. The angler could not hope to get the response from a lure at the end of 300 feet of mono that he or she would from wire or dacron--and this applies to sensitivity (feeling the strikes), setting the hook or fishing the lure (jigging). With medium to lightweight equipment, dacron line allows much greater control for the same breaking strength mono line.

Numerous methods are used to angle for the various species of marine fish found in Puget Sound but space limitations won't permit mentioning all of them. I will, however, attempt to briefly explain a few types of tackle (Figure 2) and the strategies employed.

For shallow water species of rockfish, we drift along the shoreline in 30 feet of water and locate the fish by casting jigs and rubber worms 360° around the boat--allowing the lure to drop to the bottom, and then working the lure back toward the boat with a jig retrieve. Jigs, spinner jigs, spinners, flies, and plugs are employed for off-bottom species (black and yellowtail rockfish). Cast them to the schools, allow to sink, and retrieve fairly rapidly. Cod are successfully taken with light bait-casting gear with dacron line and jigs, rubber worms, combinations, and hoochies that are jigged. Deep-water rockfish, ling cod, and halibut can be taken on medium to heavy gear by jigging with a wide array of lures.

Summary

Bottom angling effectiveness and enjoyment can be increased by use of the proper gear at the right time and place. Size and type of gear and lure should be fitted to the environmental conditions (current speed and depth) and to the species.

Table 1.--Fishing depths and types of fishing gear used to catch different species of rockfish in Puget Sound

Species	Fishing depths (ft)	Type of rod and reel 1/	Type and size of line (lb) 2/	Type and weight of sinker (oz) 3/	Lure 4/
Ling Cod	20-200	1,2,3	1,2,3	1,2,3	1,2,5,6,7,4, 1/4, 5/4
Halibut	20-350	1,2	1,2,3	1,2,3	2,5,6,7
Yelloweye rockfish	100-450	1,2,3	1,2,3	1,2,3	2,4,5,6,7, 5/4, 7/9, 5/9
Bocaccio	75-225	1,2,3,4	1,2,3	1,2,3	1,2,4,5,6,7,9, 1/4, 5/9 7/9
Black rockfish	20-100	1,2,3,4,5	1,2,3,4	1,2,3	1,2,3,4,6,7,8,9,10, 1/4 1/8, 2/4, 7/9
Yellowtail rockfish	20-150	1,2,3,4,5	1,2,3,4	1,2,3	1,2,3,4,5,6,7,8,9,10, 1/4, 1/8, 2/4, 2/8, 4/5 7/9
Copper rockfish	10-150	1,2,3,4,5	1,2,3,4	1,2,3	1,2,3,4,5,6,7,8,9,10 1/4, 1/8, 1/9, 2/4, 4/9
Brown rockfish	20-225	1,2,3,4,5	1,2,3,4	1,2,3	1,2,3,4,5,6,7,8,9,10 1/4, 1/8, 1/9, 2/4, 4/9
Pacific cod	5-350	1,2,3,4,5	1,2,3,4	1,2,3	1,2,3,4,5,6,7,8,9,10 1/4, 1/8, 1/9, 2/4, 4/9

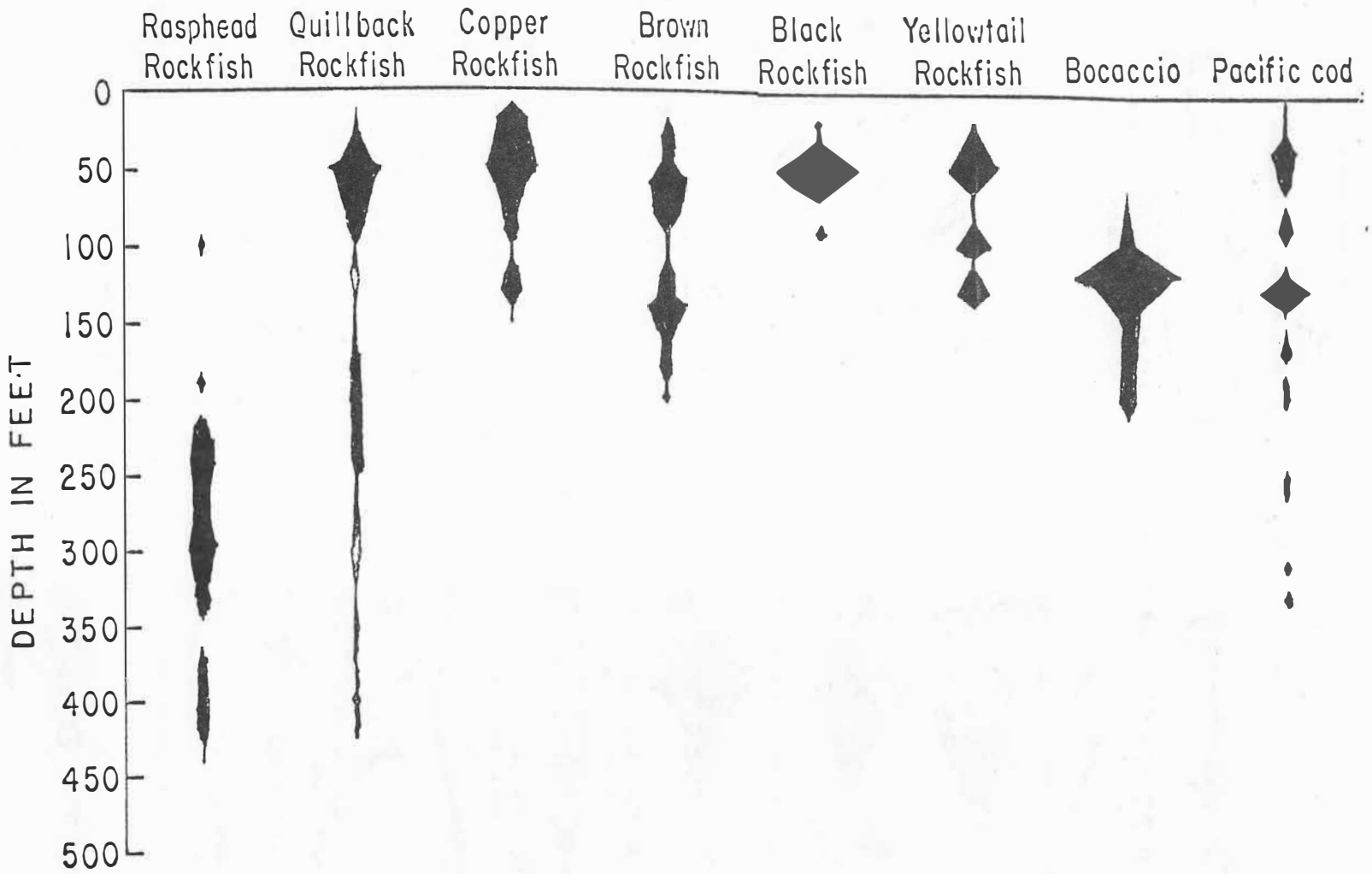
1/ No. code designates the following:
1 = heavy rod and level-wind reel
2 = medium rod and level-wind reel
3 = light rod and level-wind reel
4 = spinning rod and reel
5 = fly rod and reel

2/ No. code designates the following:
1 = Wire (40-100)
2 = Dacron (15-80)
3 = Mono (4-17)
4 = Fly

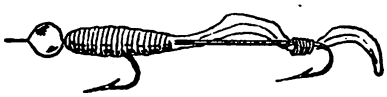
3/ No. code designates the following
1 = Cannonball (16-48)
2 = Mooch (1/2-8)
3 = Lure only

4/ No. code designates the following:
1 = Jig (bass type)
2 = Spoon
3 = Fly (salmon)
4 = Rubber worm
5 = Tuna jig
6 = Pipe jig
7 = Stingsilda
8 = Pork rind
9 = Hoochie
10 = Fly (trout)

VERTICAL DISTRIBUTION IN PUGET SOUND OF SOME MARINE FISHES OF RECREATIONAL IMPORTANCE

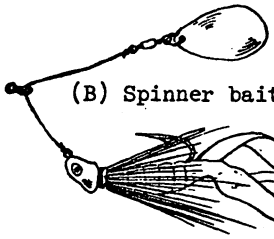


Marine Fish Terminal Rigs and Tackle
by
P. Washington
Recreational Fishery Research Biologist

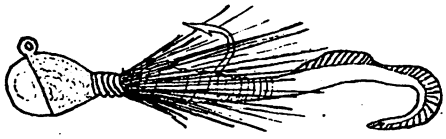


A) Rubber worm with peach corkie

(J) Spoon (Canadian Wonder, McMahon, etc.)



(B) Spinner bait with rubber worm

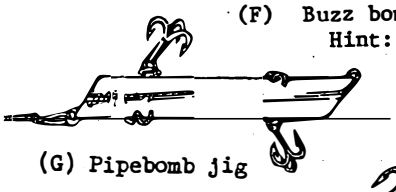


(C) Bucktail jig with rubber worm

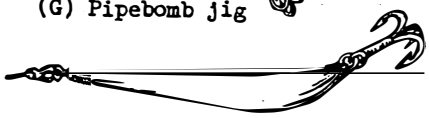
(D) Tuna jig with peach corkie
Hint: use bait also

(E) Sting silda
Hint: add a chunk of squid or octopus

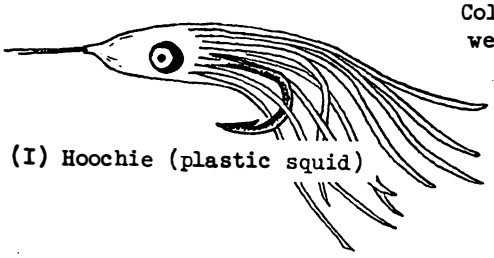
(F) Buzz bomb jig
Hint: same as (E)



(G) Pipebomb jig

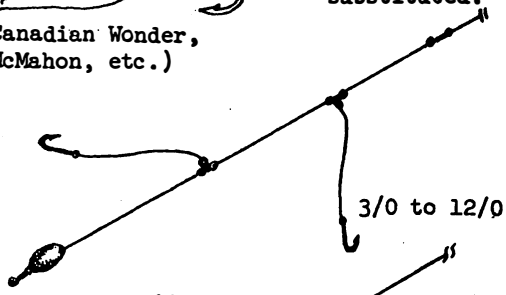


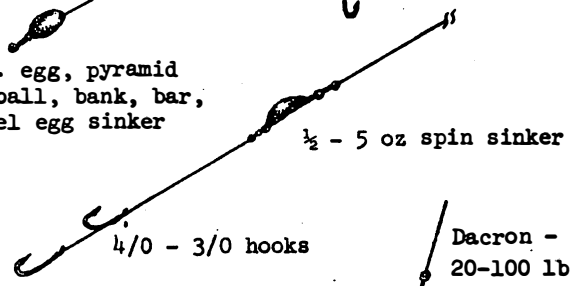
(H) Pilk (Norwegian)



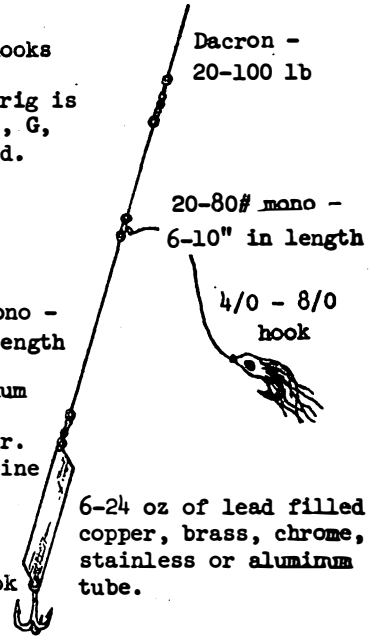
(I) Hoochie (plastic squid)

(1) Multiple hook rig (only 2 hooks are legal in WA). Bait is used but A & G can be substituted.

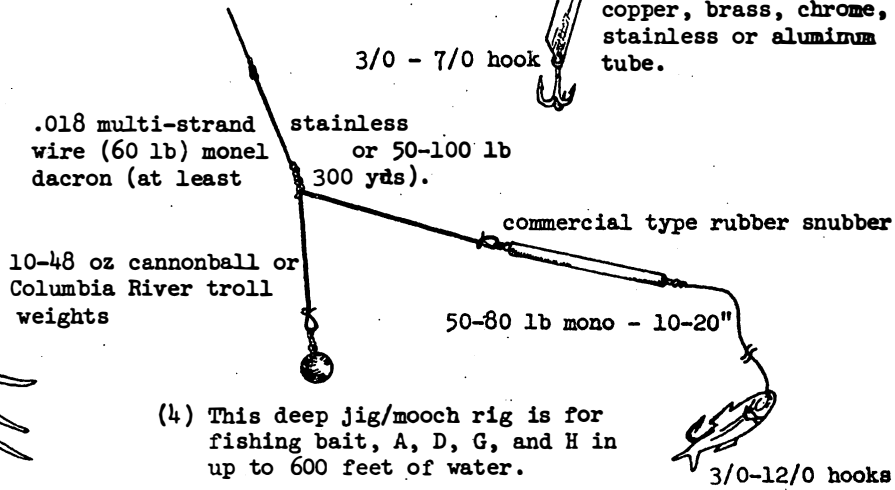




(2) Double hook mooch type rig is used for bait, but A, D, G, and H can be substituted.



(3) Jig rig is given maximum fishing effort with A, G, or bait on a dropper. With jig gear dacron line is recommended.



(4) This deep jig/mooch rig is for fishing bait, A, D, G, and H in up to 600 feet of water.

A Quick Way to Skin a Dab

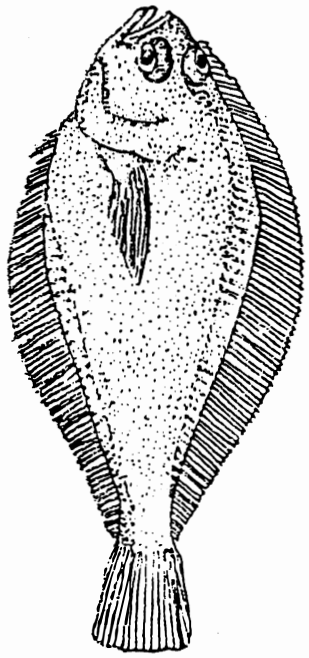
Sand dabs — small flounder — are one of the mainstays of Puget Sound bottomfishing.

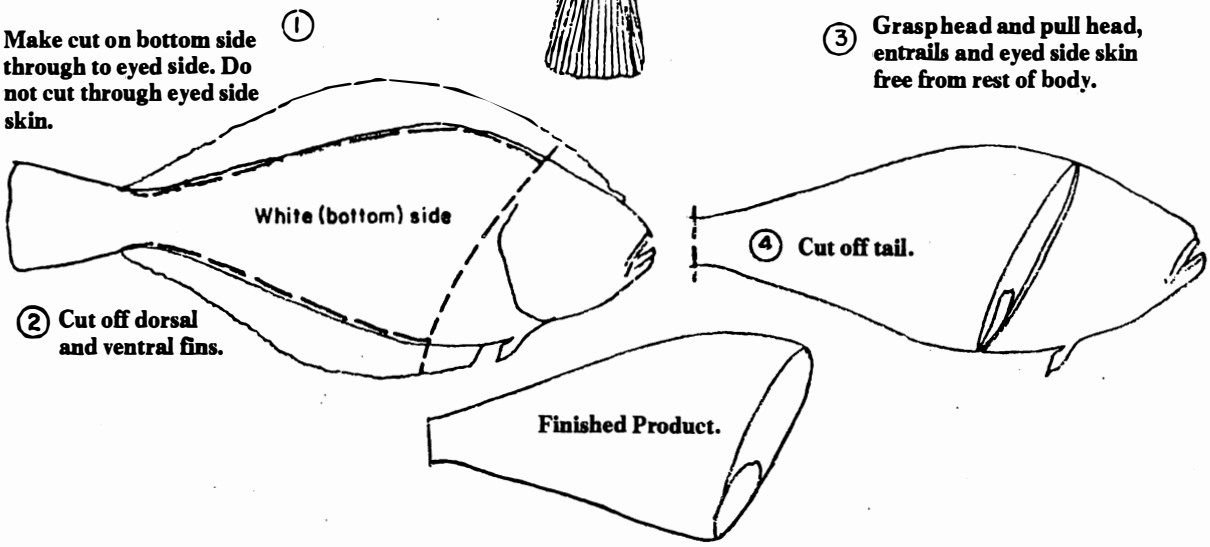
They are one of the few bottomfish available to bank fishermen casting off the public beaches of Puget Sound, particularly in the sandy Everett-to-Olympia region, and boat fishermen who rest their herring on the bottom a second too long will land their share.

Although not much of a scrapper and rarely larger than a dinner plate, sand dabs are delicious in the skillet, but they have one major flaw . . . most people find them tough to clean.

The accompanying illustration, prepared by Percy Washington, marine recreational fisheries program manager for the National Marine Fisheries Service, shows a quick, simple and efficient method.

Lay the fish on a skinning board white side (belly) up. Make the cut as shown, being careful not to cut through the skin (dark side) on the far side. Cut off the dorsal and ventral fins. With one hand hold the body and with the other pull on the fish's head. The head, skin and entrails should come away. Cut off the tail and the sand dab is ready for the skillet. The bone and skin easily come away after the fish is cooked●





Plastic Worms
(For Bottomfish)

By Fred VanderWerff, National Marine Fisheries Biological Technician

Plastic worms have been important to freshwater bass fishermen for many years. Results of a marine gamefish project of the National Marine Fisheries Service, show plastic worms have also earned a solid place in the salt chuck. Many species of rockfish, greenling, perch and flatfish cannot resist the wiggling treat when properly presented.

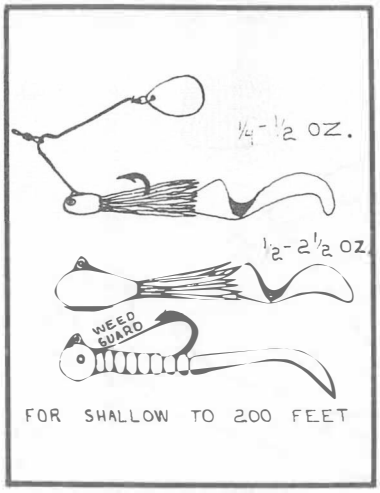
The big breakthrough in plastics has been the advent of the "curly tail" type worm. This lure is constructed with a thin, sickle-shaped, fluttering tail that produces a very lifelike action when drawn through the water.

Most Puget Sound anglers catch marine fish on herring, clams, pile worms and sand worms without ever exploring the possibilities of artificial lures. The plastic worms have the advantage of a variety of sizes and a complete spectrum of color. They also can be rigged to fish at any desired depth.

My first experience with the potent plastic worm for rockfish was when fishing shallow kelp beds. Our plan of attack was to drift along the outside edge, cast in and slowly retrieve. My brother-in-law insisted on using his old standby bucktail jig, while I used the new plastic worm on a ½-ounce leadhead. At the end of the first hour of fishing the score was plastic worm 15, bucktail 3.

Rigging the sickle-tail worm on a leadhead weighing ½ to 2½ ounces is effective for covering the bottom out to 50 feet deep. If greater depth is required, rigging the plastic worm on a short mooching leader with 2 to 5 ounces of lead should keep your lure in effective range of most rockfish out to 200 feet deep. When trying to fish effectively in a running tide or deeper than 200 feet, wire line and cannon balls up to 4 pounds are necessities.

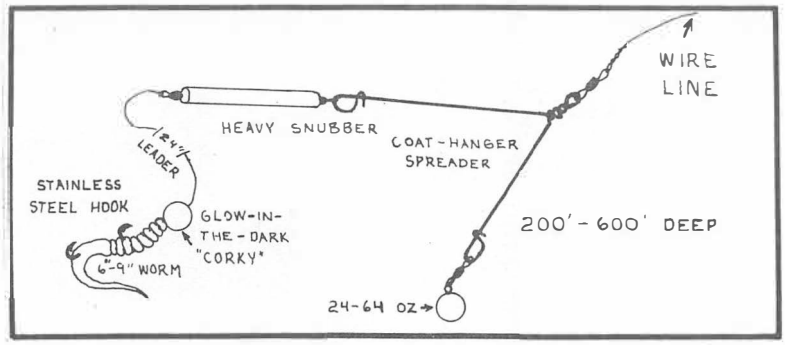
Rockfish generally prefer the larger plastic worm in lengths of 6 to 9 inches. My favorite colors are white, chartreuse, purple, blue and black. For shallow water fishing, the lighter colors have the best visibility, but in deeper water the lighter shades are filtered out and the dark colors produce better results.



Don't be afraid to experiment with color. At times the purple worm in shallow water has produced tremendous results. Oddball colors also have had their day. I recall an incident at Deception Pass when dark green was the big winner.

Other species of bottomfish also have a fondness for curly-tail type worms. Pacific cod have shown a definite preference for a blue plastic worm mooched behind 3 ounces of lead in 40 to 90 feet of water. Various species of flounder have been caught on the small 3- to 4-inch worm. All species of sculpins will attack this lure with a vengeance, including the very tasty cabezon, which shows a preference for the dark green worm. Pile and striped perch have fallen for white and yellow 1-inch sickle-tail worms jigged along the bottom. Kelp and whitespotted greenling also prefer the small size used for perch. Small lingcod have incidentally been caught along with rockfish on a variety of colors.

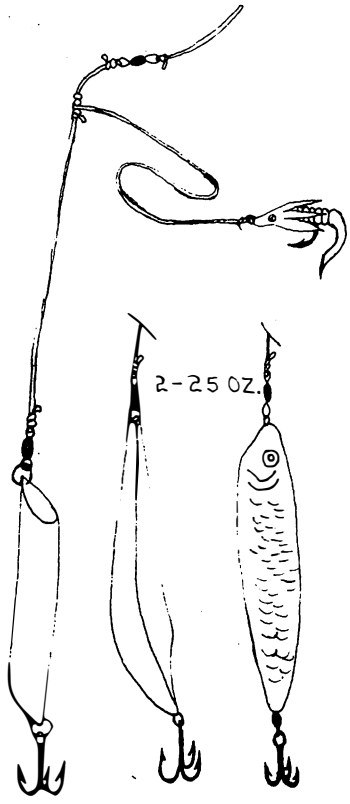
We have learned a few helpful hints about fishing the plastic worm. When fishing the worm in deep water, string a large glow-in-the-dark steelhead bobber next to the head of the worm. This has a twofold advantage. It will help the worm stay off the bottom and it adds visibility. When mooching the worm, forget about using 6- to 8-foot salmon leaders and tie the lure 2 feet behind your lead. This will keep the

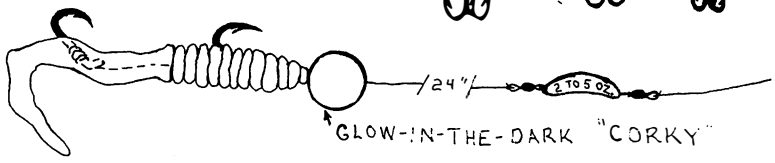


Plastic Worms For Bottomfish

wiggling worm within striking distance of most bottomfish. Stainless steel or cadmium-plated hooks will have a much longer life in salt water than bronzed or nickel-plated ones. Rusty hooks imbedded in plastic worms will discolor the plastic and ruin the worm. The soft plastic worm will get torn and chewed up, but don't throw the used worms away. They can be mended with a heated knife blade or a wood burner with a thin blade.

The "curly-tail" type worm can be purchased locally or kits are available to make your own. If you make your own, I suggest using hardener additive because bottomfish can be rough on plastic worms.





FISHING HOLES

Black 'Seabass'

An Expert's System For Puget Sound Action

By Fred VanderWerff

Fishing for research during a marine game fish project of the National Marine Fisheries Service, I learned some tactics for catching black rockfish (**Seabastes melanops**) that should prove productive for sport fishermen in Puget Sound.

A prerequisite to catching any fish is knowing how to find them. The black rockfish — or black sea bass, its common misnomer — prefers a rocky or hard bottom with fast, to moderate current. Some type of broken structure, a sharp contour, sheer drop, underwater ridge or valley, with easy access to deeper water can be a key to locating habitat.

I borrow heavily from the latest freshwater bass fishing techniques on "structure" fishing to locate productive areas. The same principles apply here. Structure can by any fish-attracting object such as a sunken wreck, a pier, or a kelp bed. In searching a new area, a nautical chart with soundings on it can eliminate unproductive areas and pinpoint possibilities. An echo sounder is a tremendous asset.

Black rockfish range from the bottom to surface and are sometimes visible on an echo sounder screen, or print-out. But more important is the fact that the sounder can define the bottom characteristics necessary for locating fish.

The black rockfish is inclined to move horizontally and vertically around any given structure. This means, if you find a productive area, the fish may not be in the exact position every time, but they are likely to be somewhere near, shallower or deeper.

The amount of school movement seems to depend on season, brightness of sunlight and tidal stage. They tend to be inshore in the summer and fall and deeper in the winter and spring. Night fishing for black rockfish can be a tremendous experience when they are right under the surface. They are usually found in the deepest water in the bright sunlight. Sometimes a cloudy morning produces good mid-depth fishing, but when the sun comes out it's all over.

The tides have a variable effect on black rockfish movements. I personally prefer a strong ebb tide, which seems to bring them up in the water column. At certain locations black rockfish will disappear when the tide is slack. Generally, a moving stage of the tide is more productive than slack tide.

A few central Puget Sound areas that consistently meet all the requirements are the Possession Point area; Blakely Rock, Edmonds, Shilshole breakwalls and the Tacoma Narrows (see map.)

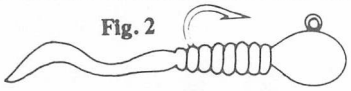
The second step in catching black rockfish is to present a lure or bait at the right depth and to have adequate tackle to land them when they bite.

I have taken black rockfish with tackle ranging from ultra-light spinning gear to heavy salmon gear. Weight of rod, reel, and line are always a personal choice. I prefer a medium steelhead outfit, either baitcasting or spinning, that will cast a half-ounce lure. Flycasters shouldn't feel left out because the black rockfish is probably the easiest rockfish to seduce on the long rod. You'll have to work out the details yourself, because my experience covering fly fishing for them is limited, but I know they can be taken on flies, especially at night when they are on the surface.

When I joined the marine game fish project, they had collected relatively few specimens of black rockfish. To date we have recorded over 300 for our studies, and I feel directly responsible for the lures and techniques used in our experimental fishing. Again, I borrowed from my freshwater bass fishing experience.

Two lures, in particular, have proven themselves daily. First is the curly-tail plastic worm, rigged on a half-ounce leadhead jig (Figure 2).

Fig. 2



When cast into a school of black rockfish, this lure rarely will reach the bottom.

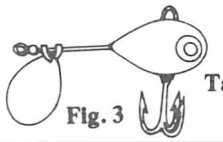
After a cast is made, keep some tension on the line so you'll feel a fish hit as the lure falls. If a strike occurs, and the fish isn't hooked, start retrieving slowly to keep the jig at that depth. Multiple strikes on a single cast are common.

Black rockfish are notorious for hitting a lure without getting hooked, which can be hard on the blood pressure. My choice in colors for the plastic worm varies between

white and black. Four to six inches long is about standard. If my worms are getting the tail pulled off, I'll go to a shorter worm. The time to switch colors is when the blacks seem to quit hitting.

(See, "Plastic Worms For Bottomfish," May/June 1976 issue.)

My second favorite lure was a reject from my freshwater largemouth bass tackle box. Developed in the south to imitate a crippled shad, the lure resembles a lead teardrop with a spinner at the tail (Figure 3). The spinner is mounted on a shaft protruding from the rear, which produces a seductive wiggle as the lure falls through the water. Black rockfish tend to hit this type as the lures drop past their noses, so if you miss a strike let the lead body-tail spinner fall back and maybe they'll hit again.



Weighted Tail Spinner

Fig. 3

This lure works best when the black rockfish are somewhere in mid-water because the treble hook is suspended underneath and has the agonizing tendency to snag bottom. I learned that the hard way, and the other members of our crew nearly laughed themselves sick the first few times I tried the tail-spinner.

Color doesn't seem to make any difference on this lure. Three of our crew, all fishing simultaneously with yellow, white and black, were all greeted with positive responses from the fish. I tried changing the colors of the spinner blades from nickel to brass and copper. All colors were rated equally delicious by black rockfish.

The lead body-tail spinner is manufactured in sizes from one-quarter to one ounce. I've used all sizes, but prefer the quarter-ounce. That might seem small, but because of its compact construction, it will cast well and sink deep with up to 15-pound test line.

The tail spinner is made for freshwater use, so it's a good idea to change nickel-plated hardware for corrision resistant stainless steel or cadmium plate for salt water use. The tail spinner might be a rare item in local sporting goods stores. Check the bass specialty shops; if all else fails, borrow a mail order catalog from a bass fishing friend. Most major mail order catalogs have a complete selection.

I didn't mention bait for black rockfish because I don't use any. Herring can be effective in the smaller sizes, but I don't consider it worth the bother. Searching for black rockfish is more productive when casting and retrieving than when mooching because more area is covered.

The black rockfish in Puget Sound run between one and eight pounds. Bragging size is over five pounds. They tend to run in schools of the same size, so if you catch blacks too small for your liking, try fishing a little deeper in the same area and possibly you'll find a school of bigger fish.

An added bonus is that black rockfish are loosely associated with yellowtail rockfish which, in my opinion, are even better fighters. Yellowtails tend to be found a little deeper than blacks but are susceptible to the same lures. On occasion, we have been able to catch blacks by casting out of one side of the boat and yellowtails out of the other.

After the smoke has cleared and you have some black rockfish thumping in your cooler, visions of a fish dinner should appear in your head. One suggestion you might follow for better-tasting fillets is to bleed your catch while they're still alive. The simple operation of stunning the fish, with a rap on the head, and cutting the throat at the isthmus (gill arch) will effectively drain most of the blood out of the flesh (Figure 4).

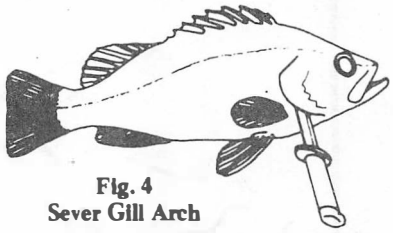
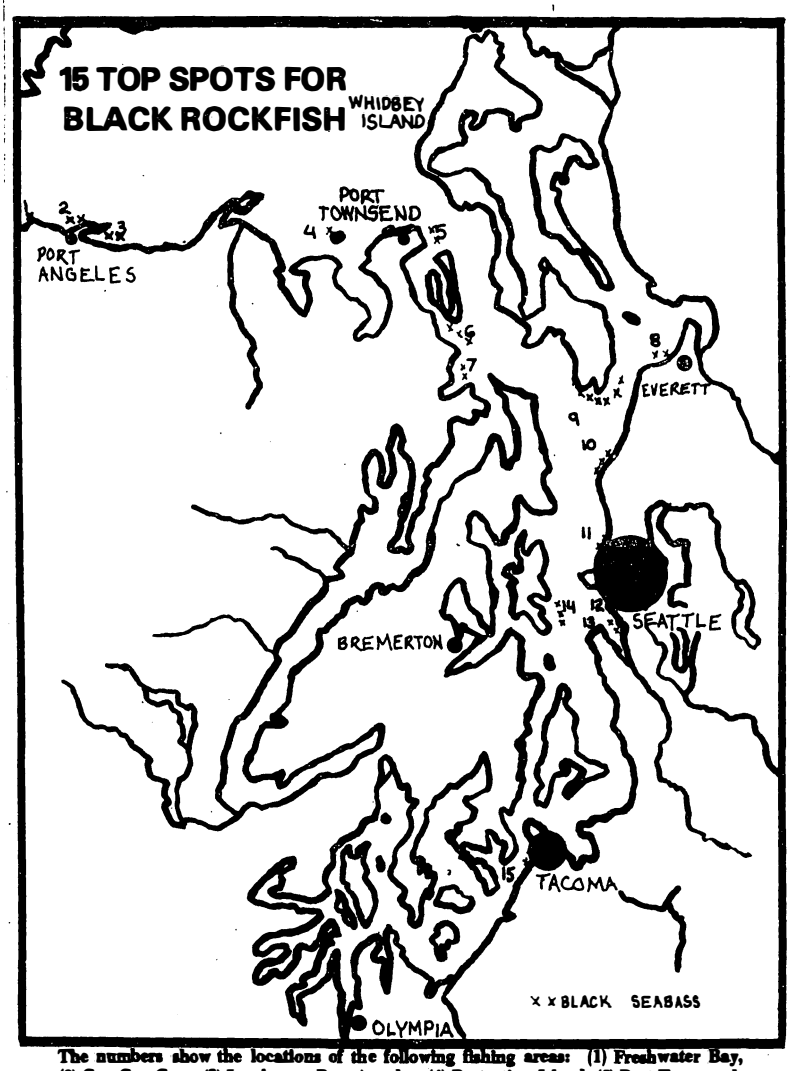


Fig. 4
Sever Gill Arch

This leads to tastier fillets when they're fresh and retention of flavor if frozen. Rockfish fillets are delicious in a great many recipes. Finding enough help with cooking and eating your catch shouldn't be a problem●



The numbers show the locations of the following fishing areas: (1) Freshwater Bay, (2) Can Can Cove, (3) Log boom, Port Angeles, (4) Protection Island, (5) Port Townsend, West Buoy, (6) Olele Point, (7) Mats Mats, (8) Mukilteo, (9) Possession Bar, (10) Edmonds Breakwater, (11) Shilshole Breakwater, (12) Blakely Rock, (13) Elliot Bay, East Side, (14) Elliot Bay, West Side, (15) Tacoma Narrows.