



California Department of Fish and Game
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 Monterey, CA 93940

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DFG Improves Recreational Spiny Lobster Fishery Monitoring and Outreach

by Travis Buck, Marine Biologist

Each year, a mysterious phenomenon appears in late September or early October along the coastline of southern California. Thousands of lights dot the nighttime waters with glowing colors, hovering on the surface and emitting ghostly hues in the depths.

Actually, the lights are not all that mysterious. They belong to the thousands of recreational hoopnetters and divers on the hunt for California spiny lobster during the season opener.

Although the Department of Fish and Game (DFG) has gathered considerable information about the spiny lobster commercial fishery from landing receipts and logbooks, there is little information about the magnitude of recreational lobster catch and fishing effort.

In 2007, DFG hired additional staff to implement a number of new programs and studies that will monitor recreational lobster gear, catch, and fishing effort. The new information will help determine how many recreational fishermen pursue spiny lobster each season and how successful they are, both essential pieces of information for fishery management.

DFG biologists conducted a pre-season hoop net study in 2007 to compare the efficiency of two types of popular hoop nets and quantify their success rates. A creel survey, where fishermen are interviewed at

their hoopnetting or diving locations, was also implemented during the 2007-2008 recreational lobster fishing season to determine the number of lobster fishermen in southern California. DFG samplers collected information about the total catch, catch locations, gear



The author shows off a nice California spiny lobster during the 2007 pre-season comparative hoop net study. DFG file photo

types and the success rates of the various gear types.

New for the 2008-2009 season, spiny lobster report cards were introduced to expand data collection efforts. DFG also redoubled efforts to provide information to the public about spiny lobster fishing regulations and life history with assistance from California Sea Grant.

Hoop Net Comparison Study

In August and September 2007, DFG marine biologists Doug Neilson and Travis Buck conducted a night-time hoop net study near the entrance of San Diego Bay to test the efficiency of two types of hoop nets commonly used in the recreational lobster fishery. Traditional hoop nets are basket-shaped, but lay flat on the bottom during deployment. The other net, more recently developed, maintains its rigid, conical shape during both deployment and recovery. A total of 96 nets (48 of each type) were deployed at Zuniga Jetty over seven nights. The study showed that the rigid hoop nets caught 57 percent more spiny lobster than the traditional hoop nets. A scientific paper that describes the hoop net study results is set for publication in *California Fish and Game*, a peer-reviewed, quarterly journal.

The new net design increases fishing success by requiring

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Time to Return Your 2008 Abalone Report Card

by Jerry Kashiwada, Associate Marine Biologist
and Mary Patyten, Research Writer

This year, be sure to send your Abalone Report Card to the Department of Fish and Game (DFG) by Jan. 31, 2009 even if you did not take any abalone. All returned cards, even blank ones, provide data necessary for annual take estimates. Card holders are asked to send their Abalone Report Cards to:

California Department of Fish and Game
19160 South Harbor Drive
Fort Bragg, CA 95436-5718

Report cards provide valuable information about catch and fishing activity, and are an important tool for ensuring compliance with bag limits and other rules. Although the new tags largely address the problem of enforcing the annual take of 24 abalone per year, Abalone Report Cards are still needed to record the number of abalone taken during the year and to provide details regarding where and when the abalone were taken.

You Hold Their Future in Your Hands

New brochure instructs divers and rock pickers how to protect the red abalone resource

The California Department of Fish and Game (DFG) and California Sea Grant teamed up in 2008 to produce a new brochure based on research findings by DFG Senior Biologist Specialist Laura Rogers-Bennett and Robert T. Leaf, a Moss Landing Marine Laboratories graduate student at the time of the research project. The study suggests that the red abalone minimum legal size limit (7 inches measured along the longest shell diameter) adequately protects the size class that most benefits population growth. The brochure provides instruction to less experienced divers and rock pickers regarding how to properly “pop” an abalone from a rock without mortally wounding it. The brochure also instructs divers how to return an abalone to the sea properly if it is too small to keep, so that it can resume its place as a reproductive animal at the peak of its potential. The brochure is available at northern California DFG offices, at select retail outlets, and on the DFG Web site at www.dfg.ca.gov/marine/pdfs/abalone_brochure.pdf.



For example, Abalone Report Cards returned to the DFG for the 2006 season provided essential data used to estimate that 264,000 abalone were taken that year. Data from report cards also can be used to calculate the number of abalone taken at individual sites.

Before the Abalone Report Card was instated, estimates of the annual recreational abalone catch were based on random telephone surveys, and fluctuated widely between years. Using data from Abalone Report Cards, annual abalone catch estimates have improved substantially, and now differ less than 11 percent between years.

Forgetting to fill out a report card may result in a citation from a DFG warden; however, much more serious penalties await abalone poachers. Wardens rank abalone poaching among the most frequent and prolific of wildlife violations in California. Almost every year DFG wardens successfully make a significant abalone poaching case or two where fines are steep, and jail time is often imposed.

Although poaching hits the abalone resource hard, simply neglecting to fill out and return an Abalone Report Card as required by law can hurt the resource as well, in that it causes an underestimation of the number of abalone taken, and hampers DFG efforts to manage the fishery.

To improve the accuracy of abalone take estimates and to help keep catches within allowable limits, the California Fish and Game Commission approved a set of changes in abalone fishing regulations for 2008.

The changes, which include a requirement for everyone—including those under the age of 16 and those fishing on Free Fishing Days—to tag abalone as well as record their catch on the Abalone Report Card, should reduce the number of people exceeding daily and annual limits and underreporting the number of abalone taken. Wardens believe the new tagging requirement has increased compliance with completing report card information.

However, the new tags are not without their problems. Reports indicate the tags tend to tear off after attachment to abalone and the information written on the card has a tendency to smudge. Most problems with tags tearing were related to the use of zip ties too large for the tag holes. Fishermen also tore the holes while trying to completely remove the pre-punched center from the tag hole.

To address these problems, DFG has improved the card material and tags for 2009. Next year, cards will be made from tougher Tyvek® paper, with larger tags that provide more room for writing information.

For more about California's red abalone and the abalone sport fishery, contact DFG associate marine biologist Jerry Kashiwada at (707) 964-5791, or visit the Abalone Resources Web page at:

www.dfg.ca.gov/marine/abalone.asp

Marine Management News Fish Identification Quiz!

by Mary Patyten, Research Writer



Welcome to the Marine Management News Fish Identification Quiz for January 2009! Here's your chance to show off your knowledge and win an official Department of Fish and Game (DFG) fish tagging cap (left). To win, simply send the correct answer via e-mail to AskMarine@dfg.ca.gov before January 31, 2009 correctly identifying:

- The species of the fish pictured below (scientific name **and** an accepted common name)
- The current daily bag limit, as given in the 2008-2009 recreational fishing regulations for California!

For this quiz, we'll also want to know the special bag limit for this fish in San Francisco and San Pablo bays. Be sure to type "January 2009 MMN Fish Quiz" as the "Subject" of your e-mail. The winner will be selected during a random drawing from all correct answers received by January 31, 2009.

This fish is unusual in that it is born fully formed and functional— a miniature of its parents— with up to 45 siblings during the birthing period from spring through early fall in California waters. Pregnant females seek out sheltered estuaries and protected embayments to give birth to an average of 27 young.

This species is predominantly a surf-dweller off sandy beaches, but has also been taken in rocky areas adjacent to sandy beaches and off the mouths of rivers and streams entering the sea. It is also commonly found in protected nearshore areas during the spawning season.

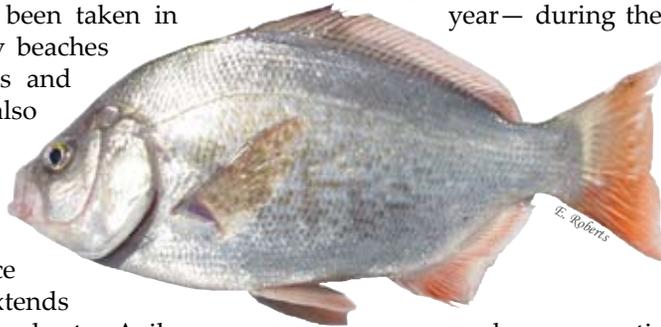
The preferred depth range for this fish is from the surface to 60 ft. Its geographic range extends from Vancouver Island, Canada to Avila Beach, California (San Luis Obispo County), but it is most abundant from Monterey Bay northward. It is the only marine species in this family group whose range does not extend southward into Baja California.

Males of this species are sexually mature at two years of age, while females reach maturity at four years. Mating takes place during the fall and winter months, and females may store sperm for up to three months before fertilization takes place. This species reaches a maximum length of just over 17 inches. Anglers often land fish weighing 1½ to 2 lb., and 3 lb. fish are not uncommon.

Both commercial and sport fisheries exist for this species in California. Landings in both fisheries have declined over the years, and regulations have been enacted to help stabilize populations.

The commercial fishery for this species, which is centered around the Crescent City/Eureka area, regularly closes from May 1 through July 15 each year— during the birthing season— and has done so since 1913.

This is the only species in this family group with a minimum size limit for the recreational fishery. The 10½ in. minimum size limit has been in place since 2002. In San Francisco and San Pablo

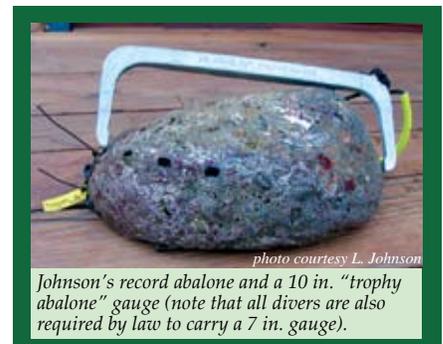
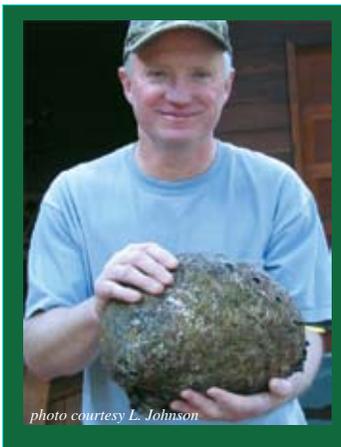


bays, recreational fishing for this species and others in the family group is specially regulated by a reduced daily bag limit. The fishery for this group is closed within the bays between April 1 and July 31 each year (except for one small, "shiny" exception).

If you think you know this species of fish, enter the prize drawing by sending an e-mail to the DFG at AskMarine@dfg.ca.gov with the correct scientific and common name, and the current daily bag limits. Note that you will need to provide both the general daily bag limit and the special daily bag limit within San Francisco and San Pablo bays. Again, be sure to type "January 2009 MMN Fish Quiz" in the "Subject" portion of your e-mail. Answers to the quiz and the winner's name will be published in the next issue of *Marine Management News*.

2008's Largest Red Abalone

This past April, Phillip Johnson (left) of Fort Bragg picked up the largest red abalone on record for 2008. The mollusk measured 11.20 in. (285 mm) long and weighed 8 lb. 10 oz. in the shell. Johnson had taken 150 abalone over 10 in. long during his 28 years of freediving, but number 151 ranks as the seventh largest abalone taken in California.



Surfperch and Suntans

A Day in the Life of a California Recreational Fisheries Survey Sampler

*by Mitchell Differding,
CRFS Fishery Technician*



*The author interviews two sandy beach anglers as part of his CRFS sampler duties
DFG photo by E. Roberts*

Mitchell Differding has worked for four years as a fishery technician for the California Recreational Fisheries Survey (CRFS), a joint project of the California Department of Fish and Game and the Pacific States Marine Fisheries Commission. As a CRFS sampler, Mitchell meets and greets anglers where they fish or return from fishing, at beaches, banks, jetties, piers and launch ramps. He interviews anglers, weighs and measures their catch and answer questions regarding fishing regulations. As he describes in this article, Mitchell eagerly faces the challenges of conducting a beach survey on California's North Coast...

 A clear blue sky with calm winds greets me this morning as I head off to work a beach assignment on a beautiful spring day. Today's assignment will cover three separate beaches from the Humboldt Bay south spit to Centerville Beach, south of the Eel River. Fishing is never a sure thing; there are no guarantees that the anglers will leave the beach with a limit, but they will definitely catch a suntan today. Sampling at these sites is always interesting because of the people I meet and the fish I see.

After four years of sampling recreational fisheries, I am very familiar with our local fisheries and know that most of the anglers I encounter today will be targeting redbtail surfperch, the primary species taken off sandy North Coast beaches. Surfperch fishing is dependent on the tides— as the tide rises, the fish congregate and move closer to shore. Most anglers will fish an incoming tide.

More than eighteen species of surfperch are found off California, many of them important to sport fisheries. Surfperch are a remarkable family of fish in

that they are livebearers. After breeding in the fall, the female surfperch incubates the young inside her body. The fully developed young are released live into the ocean in the spring spawning season when surfperch gather off beach areas. Redtail surfperch is the most popular fish for anglers on Humboldt County beaches because they are easy to target in their spawning aggregations and make fine table fare.

I arrive at the first beach, the Humboldt Bay south spit, and start a count of anglers currently fishing as I drive down the peninsula. When I sample a beach site, I always start by counting the number of anglers to determine the total amount of fishing effort for the day. After the anglers finish fishing, I will interview them and measure their catch.

I stop my truck to walk out to the beach every few miles when I can't see the water's edge from the road. Twenty minutes of counting anglers on the south spit brings me to the end of the peninsula and to the base of Humboldt Bay south jetty. After I finish my initial

"CRFS" continued on page 5

angler count I begin talking to anglers to get an idea of who has just started and who is nearly finished fishing for the day. I find that none of the anglers in this area are leaving soon, but intend to fish for the rest of this beautifully sunny day, so I walk back to my truck to drive to the next site.

The second beach site is Crab County Park, which encompasses the Eel River estuary and river banks. This is a remote site that sees much less fishing effort than the south spit; however, given the weather this spring day, I expect to find anglers here. As I make my way down the riverbank, I notice a couple of trucks parked on the sand and four anglers with lines in the water. I walk over and introduce myself and ask what they are fishing for and if they have caught anything. As I expect, they are fishing for redbtail surfperch. While they have no catch yet, they are happy to be outside on this beautiful spring day. As with the anglers on the south spit, they expect to be fishing for some time to come. With one more site yet to visit today I thank the anglers, record their presence on my data forms and head to the next site.

The third beach site in my assignment is Centerville Beach which is always busy on a sunny day. The beach is packed with people under umbrellas and on beach towels with their coolers, and with all-terrain vehicles (ATVs) parked close by. Several ATVs are being driven on the beach. From past experience I know that anglers use ATVs to drive down the beach to find good fishing spots, so I walk towards the riders and scan the beach for fishing activity. When I reach the riders, they report that they are not fishing today, but have done so in the past. One rider asks me about



Surf rods sit with butts in holders and baited lines waiting for a bite.
DFG photo by E. Roberts

this year's fishing regulations and I give him a copy of the 2008 regulations booklet and answer his questions. While everyone is enjoying the day at this beautiful beach, there is no fishing activity here so I leave to return to the first site at the south spit to see if those anglers have finished fishing.

Back at the south spit I find that the angler count has doubled since I left, making the beach look like a fishing bonanza. This time I expect to get some interviews.

I position myself near the parking lot and it isn't long before an angler approaches.

"Hello, my name is Mitchell and I work for the California Department of Fish and Game and the Pacific States Marine Fisheries Commission," I say by way of an introduction. "I am conducting a saltwater sport fishing survey today. Do you mind if I ask you a few questions?"

The angler, a man with silver-gray hair, agrees to be interviewed. He answers my questions about his fishing activity and catch. He tells me that he's been fishing here for five hours, and in addition to the six nice redbtail surfperch he's kept, he released three smaller redbtails that were under the 10½ inch size limit. I weigh and measure his catch, check that I've collected all the data I need, thank him, and move down the beach to the next angler.

For the next three hours I interview each angler as they quit fishing for the day. Catch rates vary from one angler to the next. A family of four report zero catch for the day, while a lone angler reports a catch of ten fish, half of the twenty fish bag limit. Six more interviews yield three fish and a lot of anglers

"CRFS" continued on page 9



Mitchell learns that surfperch are the hot bite on Humboldt Bay's south spit
DFG photo by E. Roberts



UPDATES

Marine Management News

DFG Begins Pismo Clam Sampling in Central and Southern California

by Dave Ono, Marine Biologist

After a hiatus of many years, the Department of Fish and Game (DFG) has begun surveys of Pismo clam (*Tivela stultorum*) populations at beaches in central and southern California. These beaches have historically provided a fishery for thousands of recreational clambers.

In 2009, DFG biologists will conduct Pismo clam surveys at Pismo Beach in San Luis Obispo County. Pismo Beach is probably the best known clamming area for Pismo clams in the state. The last DFG Pismo clam surveys took place here in the early 1990s. The surveys showed that Pismo clam populations had begun to nosedive as sea otters continued to forage along San Luis Obispo County beaches. DFG marine biologists are interested in determining how Pismo clam stocks have fared at Pismo Beach after sharing that sandy beach environment with sea otters over the past 28 years.

An initial survey in May 2008 at Sunset State Beach in Santa Cruz County found high densities of young Pismo clams, but no evidence of harvestable, legal-sized (5-inches and over) clams. Sunset State Beach and the adjacent Monterey County coastline is also home to foraging sea otters, which have been known to consume as many as 40 Pismo clams in two hours. The continuing presence of sea otters, along with changes in the oceanic regime that affect recruitment, may account for the absence of large, harvestable Pismo clams. Additional Pismo clam surveys have been planned for Monterey Bay beaches.

In fall 2008 DFG biologists also conducted Pismo clam surveys in Ventura and San Diego counties. Biologists targeted sites where earlier Pismo clam surveys had been performed in the mid-1990s and early 2000s by the DFG. Other popular Pismo clam beaches that historically provided significant harvests were also surveyed. Full results of the south and central coast DFG Pismo clam surveys will be presented in a future issue of *Marine Management News*.

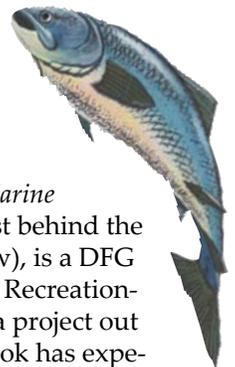
For more information about DFG Pismo clam surveys, contact DFG Marine Biologist Dave Ono at 805-568-1221 or e-mail dono@dfg.ca.gov.



DFG staff sift through sand while surveying Pismo clam populations.

DFG file photo

An Updated Look for Marine Management News



You may have noticed the new artwork headlining this issue of *Marine Management News* (pg. 1). The artist behind the artwork, Ashok Sadrozinski (below), is a DFG marine biologist working with the Recreational Fisheries Data project out of Belmont. Ashok has experienced California's diversity of marine life from the Mexican border (he holds a biology degree from U.C. San Diego) to the Oregon border (followed by a master's degree in fisheries biology from Humboldt State University), and finds that biology and art stem from a shared appreciation for the fascinating living systems that surround us.



Pismo Clam Sport Clamming Regulations:

Season: Open all year, **except** in Santa Cruz and Monterey counties closed May 1 through August 31.

Bag Limit: 10 Pismo clams

Minimum Size: Monterey County northward: 5 inches in greatest shell diameter; San Luis Obispo County southward: 4½ inches in greatest shell diameter

(reference CCR Title 14 Section 29.40)

Get Hooked on the Marine Region and MLPA Initiative Web Sites!

by Aaron Del Monte, Assistant Information Systems Analyst and Marine Region Webmaster

For the latest information on fishing regulations, marine resources, and news affecting our California coastline, your first stop should be the Department of Fish and Game (DFG) Marine Region Web site, located at www.dfg.ca.gov/marine. This comprehensive information source currently contains well over 2,000 Web pages readily available to the public. If you are new to this Web site, we invite you to explore the valuable resources we have created. For those who have already visited the site, be sure to check back regularly, since new features, updates, and press releases are added every week. Here are some recent, noteworthy updates:

Groundfish Central www.dfg.ca.gov/marine/groundfishcentral: This site links to groundfish information, including federal groundfish, associated state-managed species, and the commercial and recreational fisheries for these species. The DFG has completed a comprehensive upgrade of the Groundfish Central site, with improved navigation as well as updated and enhanced content throughout all Groundfish Central pages.

Remotely Operated Vehicle Surveys: Video Clips www.dfg.ca.gov/marine/fir/rovideo.asp: These video clips of selected species were recorded during DFG

remotely operated vehicle surveys off central and southern California.

Channel Islands MPAs: Report on the First 5 Years of Monitoring (2003-2008):

www.dfg.ca.gov/marine/channel_islands/fiveyears.asp: This report is based on preliminary results from selected projects conducted during the first 5 years of monitoring the Channel Islands marine protected areas. The selected projects relate to DFG priorities in the Channel Islands Marine Protected Areas Monitoring Plan.

Red Abalone Frequently Asked Questions (FAQs)

www.dfg.ca.gov/marine/faqindx.asp#redabalone: Do you have questions about red abalone regulations, including the requirements regarding tags and sending your report cards to DFG now that the season is closed? This section provides answers to the most frequently asked questions.

Here are some of our most popular pages:

California Ocean Sport Fishing Regulations Map

www.dfg.ca.gov/marine/fishing_map.asp: Going ocean fishing? This should be your first stop. Simply click

"Marine Region Website" *continued on page 11*

The Marine Life Protection Act (MLPA) Initiative Web Site

www.dfg.ca.gov/mlpa

The MLPA partnership between government agencies and private entities is striving to achieve the original MLPA goals. The 1999 MLPA directed the State to design and manage a network of marine protected areas (MPAs) in order to, among other things, protect marine life and habitats, marine ecosystems, and marine natural heritage, as well as improve the recreational, educational and study opportunities provided by marine ecosystems. This Web site, which includes many recent additions, contains up-to-date information about this exciting endeavor, including meeting information, public comments and documents for review. Current popular resources on the site include:

South Coast Region Meetings www.dfg.ca.gov/mlpa/meetings_sc.asp The planning process for the South Coast Region (Point Conception to the California-Mexico border) is currently under way. Meetings related to this process have been planned through the end of 2009. Use this page as a resource for meeting dates and locations, meeting agendas and meeting materials. In addition, meetings can be viewed in real-time via Internet webcasting, or you can view prior meetings in the video archive.

North Central Coast Region www.dfg.ca.gov/mlpa/northcentralhome.asp The North Central Coast Study Region (Alder Creek near Point Arena in Mendocino County, to Pigeon Point in San Mateo County) was the second of the five MLPA study regions to undergo the regional MPA planning and design process. Four alternative MPA proposals were forwarded in June 2008 to the California Fish and Game Commission, one of which was recommended as the preferred alternative. There are still opportunities for public comment on these proposals before the Commission makes its final decision (expected in February 2009).

Central Coast MPAs www.dfg.ca.gov/mlpa/ccmpas_list.asp California's Central Coast MPAs took effect September 21, 2007. From Pigeon Point (San Mateo County) south to Point Conception (Santa Barbara County), the series of 29 MPAs represent approximately 204 square miles of state waters. This page contains descriptions of all 29 MPAs, including maps, and also contains links to a printer-friendly guide and brochure.



Managing California's Groundfish Fishery for the Future

by Matt Michie, Marine Biologist

California's groundfish fishery is one of the largest and most important marine fisheries in the state, in terms of landings and value. Many groundfish species are important to commercial and/or recreational user groups. In addition, they are important to scuba and free divers for their observational value and to the general public for their intrinsic value.

The groundfish fishery includes all rockfishes, sablefish, thornyheads, lingcod, Dover sole and other flatfishes (not including halibut), Pacific whiting, and some sharks and rays. Commercial and recreational groundfish are managed to ensure long-term resource sustainability and provide economic, recreational, cultural and social benefits.

Many groundfish species are broadly distributed either geographically or by depth. Their geographic distributions may encompass the whole Pacific coast from Alaska to Baja California, Mexico, and their depth range may be only in shallow nearshore waters (to 120 feet) or descend to depths of over 10,000 feet. State jurisdiction in ocean waters spans from the coast to three miles offshore and federal jurisdiction spans from three miles to 200 miles offshore. As a result, the fishery is jointly managed by the California Department of Fish and Game (DFG) and in conjunction with the states of Oregon and Washington, Native American tribes and the NOAA Fisheries Service through the Pacific Fishery Management Council (PFMC). These agencies employ individuals trained in fisheries biology, statistics, economics or resource management.

Groundfish management is guided by fisheries management plans (FMPs) which describe the nature and challenges of a fishery and provide regulatory mechanisms for stock conservation founded in long term sustainability and sound science. The Nearshore Fishery Management Plan (NFMP), mandated by the Marine Life Management Act in 1998, provides the basis for managing California's nearshore finfish, many of which are groundfish, while in federal waters farther offshore, the Pacific Coast Groundfish Fishery Management Plan is used. In addition, PFMC and NOAA Fisheries Service are guided by the reauthorized (2006) Magnuson-Stevens Fishery Conservation Act which requires individual assessment of all fish stocks covered within the federal FMP.

Stock assessments are a critical management tool for monitoring the abundance of fish populations as well as for predicting the consequences of policy decisions. A stock assessment is a review of the size and health of fish populations to support management of a species or fishery. It considers all available information on abundance, distribution, age structure and other biological or



environmental factors and explores future outcomes of management alternatives and the associated uncertainty and risk of each action.

The extensive amount of information in fishery stock assessments comes from catch data, fishery-independent surveys and biological knowledge (called life history data). Assessments are used to set harvest limits based on whether the stock's status is determined to be "healthy", "precautionary" or "overfished." A stock is declared "overfished" when its population size decreases below a certain level. For most groundfish, this level is 25 percent of the population's "unfished biomass," or the size the stock would be if there was no fishing permitted; for NFMP species the "overfished" threshold is 30 percent unfished biomass. In the absence of sufficient information for an assessment, harvest limits are set based on historic landings.

The aim of a fishery stock assessment is to determine the historical and current status of a resource and to establish the level at which it may be sustainably used. Once a stock assessment is complete the appropriate harvest limit is determined for that particular fish stock. For most fisheries in state waters, state and federal harvest limits are the same. California's management guidelines can be set equal to, or more stringent than federal guidelines; however, they cannot be more lenient. For example, the cabezon and greenling fisheries are managed by DFG to stricter standards under the NFMP than the guidelines given by the PFMC.

In the case of "overfished" species, the harvest limit is set to a level aimed towards rebuilding the species population. Strict management measures are adopted for both commercial and recreational user groups when a fish stock is declared "overfished," because overfished stocks need to rebuild as quickly as possible. Because overfished species may live among healthy species and cannot be singled out for harvest, the harvest limit must be set low enough that overfished species are minimally impacted while preserving as much fishing opportunity as possible on healthy stocks. Often, fishing for healthy stocks is limited by depth, time, or area due to this inability to single out a target species.

Once an overall harvest limit is determined, the harvestable stock is allocated among all fishery sectors. Allocation among the user groups is not entirely a biological decision but also a political, social and economic one that may be based on the historical landings of each group. The Fish and Game Commission and the PFMC make allocation decisions for the state and the Pacific coast, respectively, and their outcomes can have long term effects on coastal communities.

"Groundfish" continued on page 9

"Groundfish" continued from page 8

Increasing our knowledge base, setting harvest limits, rebuilding "overfished" stocks, allocating limited resources to user groups and meeting the needs of fishing communities present many challenges for groundfish managers. Fortunately, most user groups share the DFG's goal of long-term sustainability.

For more information regarding the groundfish fishery please visit the DFG's Groundfish Central Web site:

www.dfg.ca.gov/marine/groundfishcentral



"CRFS" continued from page 5

saying, "You should have been here yesterday. Everyone limited out." Down by the jetty a few anglers are targeting groundfish and I measure a beautiful 6-pound cabezon and some black rockfish.

As evening approaches, angler effort dwindles and I have to travel farther down the spit to find anglers. At 5:30 p.m. effort drops to a handful of hardcore anglers who will fish until dark. I reach the end of the south spit and pause to go back over all my forms, editing them while the interviews are still fresh in my mind. The end tally for the day is 29 interviews from the 38 anglers I observed, and 24 redbait surfperch caught and kept. The redbait fishing wasn't spectacular today, but the weather was, and I'm sure that for most anglers catching the sun's rays was as enjoyable as the fishing. For me, today's work gave me the opportunity to interview interesting people who enjoy fishing and being outdoors as much as I do.

For more information on the California Recreational Fisheries Survey program, please visit the California Department of Fish and Game's website at:

www.dfg.ca.gov/marine/crfs.asp

and the Recreational Fisheries Information Network at:

www.recfin.org/crfs.htm

Creature Feature California Mussel

by DFG Staff



A. Bachar

California mussels are common along California's rocky beaches. They attach themselves to rocks, sometimes in great masses between tide lines where they are directly exposed to the surf. They may also attach to pier pilings on the outer coast along with the smaller bay mussel, and are infrequently found inside sheltered bays.

Distinguishing Characteristics

Shell covered with heavy, black, varnish-like coating (when worn off in older specimens, the blue shell beneath may be seen). Shells long, with hinge at small end. Exterior of shell with about 12 radiating ridges and numerous concentric growth lines. Interior of shell bluish-black, iridescent.

Life History & Other Notes

California mussels feed on plankton and other food particles suspended in the water. Spawning occurs year-round, with peaks in July and December. Fertilized eggs develop into free-swimming young that eventually change form and settle onto any available space. New arrivals unable to find open rock faces may attach themselves to other mussels, which may prevent the mussels beneath from feeding and eventually result in their deaths.

During the summer months, the microscopic organism *Alexandrium catenella* is eaten by mussels, which renders their viscera (guts) poisonous to humans. You can

call the California Department of Health Services' toll-free Biotoxin Information line before taking any shellfish, and find out sport harvest quarantine areas for bivalve shellfish throughout California. Their phone number is 800-553-4133, or 510-540-2605 if you are calling from Alameda or Contra Costa counties.

This Creature Feature is an excerpt from the California Finfish and Shellfish Identification Book available from the DFG Publications Office (916-322-8978 or publications@dfg.ca.gov). The identification book was created as part of the California Fishing Passport Program. For more information, visit:

www.fishingpassport.org

California Mussel

SCIENTIFIC NAME

Mytilus californianus

OTHER COMMON NAMES

big mussel, sea mussel, rock mussel

RANGE & HABITAT

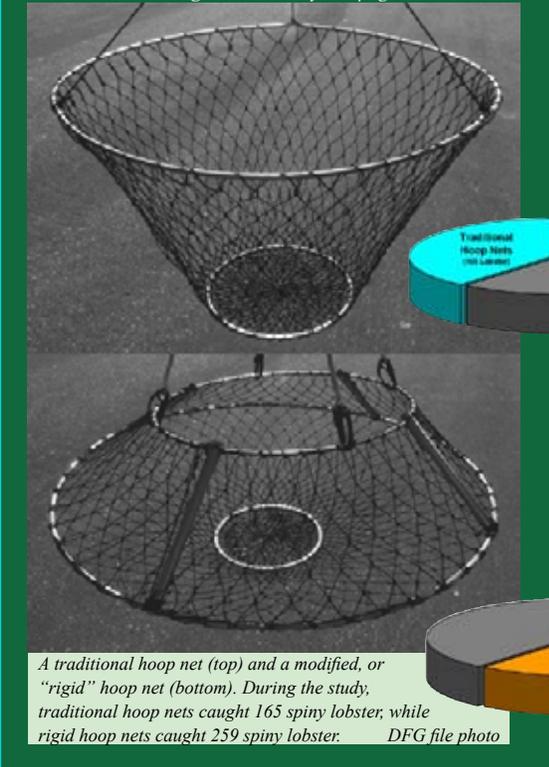
Statewide on rocky habitat,
sometimes on pilings

LENGTH

To 14 in.

DIET

Feeds on
suspended plankton
and detritus



A traditional hoop net (top) and a modified, or "rigid" hoop net (bottom). During the study, traditional hoop nets caught 165 spiny lobster, while rigid hoop nets caught 259 spiny lobster. DFG file photo

Samplers visited 416 sites and interviewed nearly 2,900 recreational lobster fishermen. Sampling during the first two months of the season produced important information that will be used to manage the fishery, including where, when, and how fishermen pursue spiny lobster and the biological characteristics of the catch.

Private boats appear to be the most popular transportation method to reach good southern California spiny lobster fishing grounds. Despite the popularity of some piers, they do not appear to be the place to go for a successful night of lobster fishing, since they yielded the lowest catch-per-unit-of-effort (CPUE) of any fishing mode observed. Scuba divers had a relatively high CPUE; however, based on the fishermen encountered during the survey, hoop netters appear to catch more lobster overall by virtue of greatly outnumbering divers.

Fishermen using traditional hoop nets outnumbered fishermen using rigid hoop nets 3 to 1, with 74 percent of the hoop net catch coming from traditional hoop nets. The length of lobster fishing trips did not usually differ by the type of net used, except in San Diego County where the average trip for rigid net users was a bit longer than other net users. On average, hoop nets caught 82 percent of the total spiny lobster catch during the survey.

Despite the large number of fishermen interviewed, few had caught their daily bag limit of seven spiny lobsters. Of the 2,883 lobster fishermen interviewed, only 24 (0.8 percent) had caught their limit; 61 percent came home empty handed. "Short or sub-legal sized lobster (under 3¼ in. carapace length) were encountered in all counties; in Orange County short lobsters comprised a surprising 28 percent of the county's total spiny lobster take. Lobster fishermen should take care to ensure they do not retain short lobster, as this could lead to big fines and harm the lobster breeding population. The median number of short lobster per county was 2.9 percent. San Diego County claimed the title for the most kept lobster, while the largest spiny lobsters came from Los Angeles and Ventura counties.

less skill on the part of the user. The increased efficiency of the popular, new net type and easy access to spiny lobster, along with an increased interest in spiny lobster fishing and aggressive marketing of hoop nets, may foreshadow an increase in the recreational catch. However, without knowing the extent of the rigid net's use by fishermen and thus its full impact on the recreational take, and without a full scientific assessment of the spiny lobster stock, it is difficult to determine how the modified gear might affect the sustainability of the spiny lobster population and fishery. Future data from this ongoing study may help to determine the rigid hoop net's impact.

Spiny Lobster Creel Survey

The 2007-2008 spiny lobster season marked the first time the DFG has conducted a spiny lobster creel survey since 1992. Samplers worked in pairs sampling piers, launch ramps, and shore entry sites from Santa Barbara County south to the U.S.-Mexico border.

One of the creel survey's main goals was to quantify the impact of catch and effort. Samplers recorded primary access points for the fishery, and the amount of effort and catch at these points. Samplers also recorded actual fishing locations and gathered spiny lobster biological data such as weight, sex, and shell (carapace) length. A related goal of the survey was to estimate the relative contribution of each gear type to the effort expended to catch lobster, and the resultant catch.

Future Spiny Lobster Research

In the future, these studies and projects will incorporate additional survey data from daytime California Recreational Fisheries Survey spiny lobster sampling, and from the ongoing DFG hoop net study at Zuniga Jetty in San Diego County. The data will also be compared to recent phone surveys as well as the 1992 creel survey. DFG plans to use 2007-2008 commercial log book and commercial landings data along with the recreational data to begin fully assessing the health of the California spiny lobster resource.

Spiny Lobster Report Card – New for 2008

In 2007, the Fish and Game Commission approved the use of a spiny lobster report card to provide information on recreational catch. The report card is now required for all recreational lobster fishermen, and will help DFG to determine the number of fishermen, fishing effort, catch locations, and gear used in the recreational spiny lobster fishery.

For further information about California spiny lobster and DFG lobster research, contact Travis Buck, DFG marine biologist, at 858-467-4214 or e-mail TBuck@dfg.ca.gov.

New Spiny Lobster Publication and FAQ

A new DFG/Sea Grant brochure that contains information about California spiny lobster life history and the sport fishery is available at southern California DFG offices, on the DFG Web site (www.dfg.ca.gov/marine/pdfs/lobsterbrochure.pdf) and at many tackle shops, dive shops, and sporting goods stores in southern California. For more information about the brochure, contact Travis Buck, DFG marine biologist, at 858-467-4214 or e-mail TBuck@dfg.ca.gov.

The spiny lobster "Frequently Asked Questions" (FAQ) section on the DFG Marine Region Web site has been updated with questions and answers about spiny lobster regulations. To read the FAQ, simply click on the "Frequently Asked Questions" link in the gray left-hand navigation bar on the Marine Region home page. The FAQ is located at www.dfg.ca.gov/marine/faqindx.asp#spinylobster.



For automatic, e-mail notification of in-season fishing regulation changes, new issues of the *Marine Management News* newsletter and more, sign up for the DFG Marine Region electronic news service at:

www.dfg.ca.gov/marine/subscribe.asp

"Marine Region Web Site" continued from page 7

the marine location where you plan to fish and you will access a compact list of sport fishing regulations for that area. The pages are printer-friendly, so you can print the regulations and take them with you on your next fishing trip. These pages are updated frequently.

Ocean Sport Fishing Regulations: www.dfg.ca.gov/marine/sportfishing_regs2008.asp This page features the Ocean Sport Fishing Regulations Booklet that was printed and distributed in February, 2008 and is in effect through February, 2009. This bookmarked PDF file features red, bolded, italicized bookmark headings that denote sections that have changed or are new. In addition to the booklet,

you will find links to in-season regulations changes, helpful illustrations and more.

Fishing Page: www.dfg.ca.gov/marine/fishing.asp

One of our most popular pages of all, this page contains links to the three resources listed above, as well as information on specific species, laws and regulations, permits and licenses, record fish and invertebrate trophies, fish identification guides, and a number of annual reports and data sets. Whether you are a recreational or commercial fisherman, you're sure to find some useful information on this page.

Thank you for using the Marine Region Web site as a resource for news, information and regulations. We hope you will visit our site again soon! 🐠🐡

Upcoming Commission and Council Meetings

2009 Fish and Game Commission

www.fgc.ca.gov/meetings/2009/2009mtgs.asp

February 5 - 6
Sacramento

March 5 - 6
Monterey

April 8 - 9
Crescent City

May 7 - 8
Upland

June 25 - 26
Stockton

August 6 - 7
Ventura

2009 Pacific Fishery Management Council California-based Meetings

www.pcouncil.org/events/future.html

April 4 - 9
Millbrae

September 12 - 17
Foster City

October 31 - November 5
Costa Mesa

For the latest information on upcoming fishery-related meetings, please go to our Calendar of Events at www.dfg.ca.gov/marine/calendar.asp or contact the Monterey DFG office at (831) 649-2870.

MARINE Management News

Marine Management News is published three times per year by the Marine Region of the California Department of Fish and Game for everyone interested in the management and conservation of California's living marine resources. Through this newsletter we hope to keep all associates and constituents interested in participating in and/or tracking the progress of the Marine Life Management Act (MLMA) informed of developments. The MLMA strongly emphasizes an open decision-making process that involves people interested in or affected by management measures.

For more information on the MLMA or to sign up to become more involved, please visit our web site at www.dfg.ca.gov/marine.

Newsletter Editor and Designer
Mary Patyten

Staff Writers and Contributors to This Issue
Travis Buck, Aaron Del Monte,
Mitchell Differding, Lucy Johnson,
Jerry Kashiwada, Matt Michie, Dave Ono,
Mary Patyten, Ed Roberts, Ashok Sadrozinski

Please direct all correspondence to:
California Department of Fish and Game
Marine Management News
19160 South Harbor Drive
Fort Bragg, California 95437

The Marine Life Management Act

California's Marine Life Management Act (MLMA) of 1998 is an innovative, collaborative, science-based approach to managing all of California's living marine resources. One of its major goals is the long-term sustainability of our resources and our fisheries. The MLMA recognizes and values the non-consumptive benefits of healthy marine life as well as the interests of those who are economically dependent upon them. Implementation and enforcement of the MLMA is the responsibility of the California Department of Fish and Game, whose mission is to conserve wildlife and the habitats upon which they depend through good science and informed citizen involvement. For more information visit www.dfg.ca.gov/marine.

DFG Marine Region mission:
*"To protect, maintain, enhance, and restore
California's marine ecosystems for their
ecological values and their use and
enjoyment by the public"*

Alternate communication formats of this document are available upon request. If reasonable accommodation is needed, call DFG at (916) 322-8911. The California Relay Service for the deaf or hearing impaired can be utilized from TDD phones at (800) 733-2929.