

13 Yelloweye Rockfish, *Sebastes ruberrimus*



Adult yelloweye rockfish (*Sebastes ruberrimus*). Photo credit: Janna Nichols.

History of the Fishery

Yelloweye rockfish, *Sebastes ruberrimus*, are highly prized by both commercial and recreational fishers in California for their large size, beauty and table fare quality. Starting in 2001, yelloweye rockfish were designated as overfished (current stock size is 40 percent or less of the unfished stock size) and as a result increased regulations for the recreational and commercial fisheries were put in place to reduce the catch of yelloweye rockfish. By 2003, yelloweye rockfish were not allowed to be retained by either recreational or commercial fishers and are only taken as bycatch.

Species specific commercial landing data for yelloweye rockfish are not available prior to 1969 when it was given its own market category; before then, all species of rockfish were grouped together under the general term of “rockfish.” The peak of commercial landings for yelloweye rockfish occurred in 1971, when 1,568,000 pounds (712 metric tons) were landed in California (Figure 13-1).

Historically, a majority of commercially caught yelloweye rockfish were landed in the ports of Fields Landing and Eureka (Humboldt County). Commercial ports in Morro Bay, Fort Bragg, and Crescent City (San Luis Obispo, Mendocino and Del Norte counties, respectively) rounded out the top five ports in total landings since 1969. The gears most commonly used to catch yelloweye rockfish in the commercial fishery were trawl nets, set long lines, and simple hook and line equipment, accounting for 88 percent of the yelloweye rockfish caught since 1969. The highest value from the commercial yelloweye rockfish fishery occurred in 1979 totaling \$345,969.

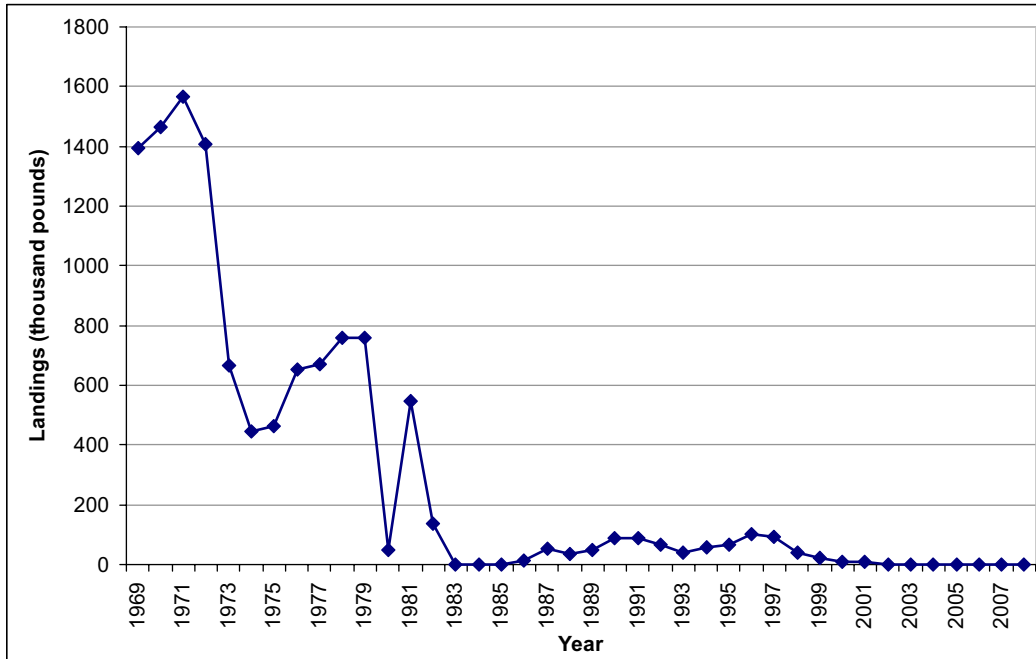


Figure 13-1. Yelloweye rockfish commercial landings, 1969-2008. Data Source: CFIS data. Data not available prior to 1969.

Consistent recorded data for the recreational yelloweye rockfish fishery began in 1980. Similar to the commercial data, the recreational fishery data for yelloweye rockfish prior to 1980 were grouped into a general rockfish category. Since 1980, there have been two different recreational sampling programs: the Marine Recreational Fisheries Statistical Survey (MRFSS) (1980-2003) and the California Recreational Fisheries Survey (CRFS) (2004-2008). Due to changes in the sampling protocol and how the data are used to estimate landings these two surveys are not comparable. An evaluation of the Marine Recreational Fishery Statistical Survey (MRFSS) from 1980-2003 showed yelloweye rockfish catch peaked in 1985 with an estimated 275,578 pounds (125 metric tons) of fish landed (Figure 13-2). Yelloweye rockfish catch decreased significantly after the no retention regulation for yelloweye rockfish was put in place in 2003. Additionally, depth management restrictions were created in the form of Rockfish Conservation Areas (RCAs). The RCA depth closures prevented commercial and recreational fishing for groundfish on the shelf between 30-50 fathoms and 150-200 fathoms (55-91 meters and 274-366 meters), depending on regional management area, along the California coastline. The depth closures include prime yelloweye rockfish habitat, thus limiting the catch of yelloweye rockfish along with other shelf species. The largest estimate of incidental recreational catch reported in the CRFS data (2004-2008) occurred in 2007 with an estimated 8313 pounds (4 metric tons) (Figure 13-3).

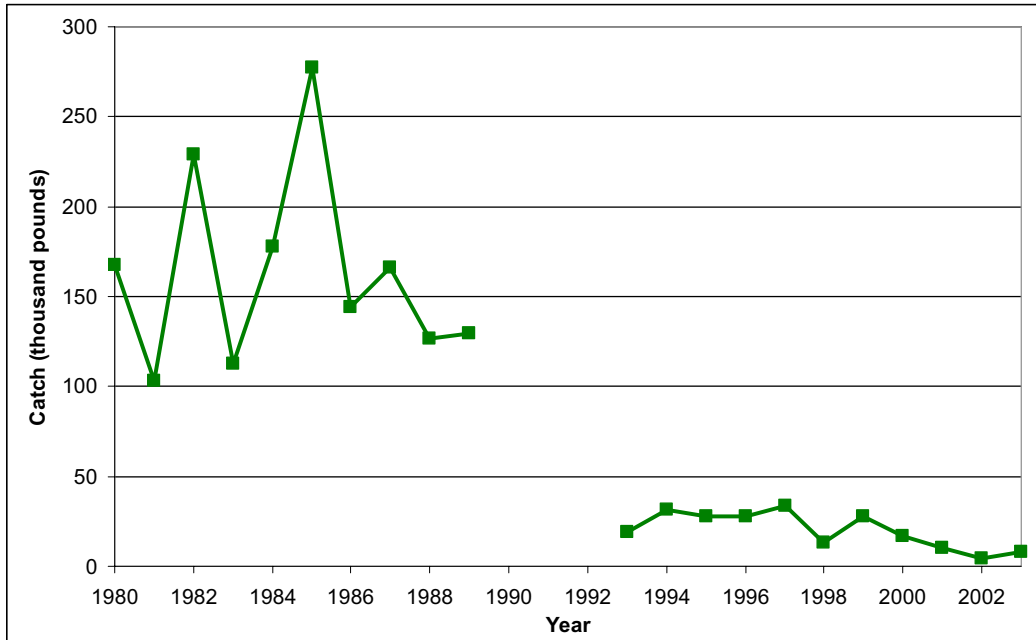


Figure 13-2. Yelloweye rockfish recreational catch, 1980-2003. Data Source: MRFSS data, all fishing modes and gear types combined. Data not available for 1990 through 1992. CPFV data not available for central and northern California for 1993-1995.

According to CRFS, in recent years a majority of the yelloweye rockfish were landed from Point Arena (Mendocino County) to the California/Oregon border. In addition, CRFS estimates show that approximately 99 percent of the total harvested catch came from boat modes [commercial passenger fishing vessels (CPFV) and private/rental boats]. The CPFV fleet caught 50 percent of the total yelloweye rockfish since 1980 with private/rental boats catching 49 percent. The primary reason for such high catch values from boat based anglers is the average depth range for the species, which often makes them inaccessible to shore based anglers.

An evaluation of the average length and average weight of yelloweye rockfish from the recreational fishery shows a gradual trend of decreasing size and length from 1980 to 2002. Conversely, the trends for both size and length from 2003 to 2008 show a slight increase (Figures 13-4 and 13-5). The average length for the past 28 years is approximately 16.5 inches (41.7 centimeters). The average weight for the same time period is 3.5 pounds (1.6 kilograms). Due to catch restrictions since 2002, catch-per-unit-effort (CPUE) data for the recreational fishery no longer accurately reflect the real changes in population abundance, and discard estimates are highly uncertain.

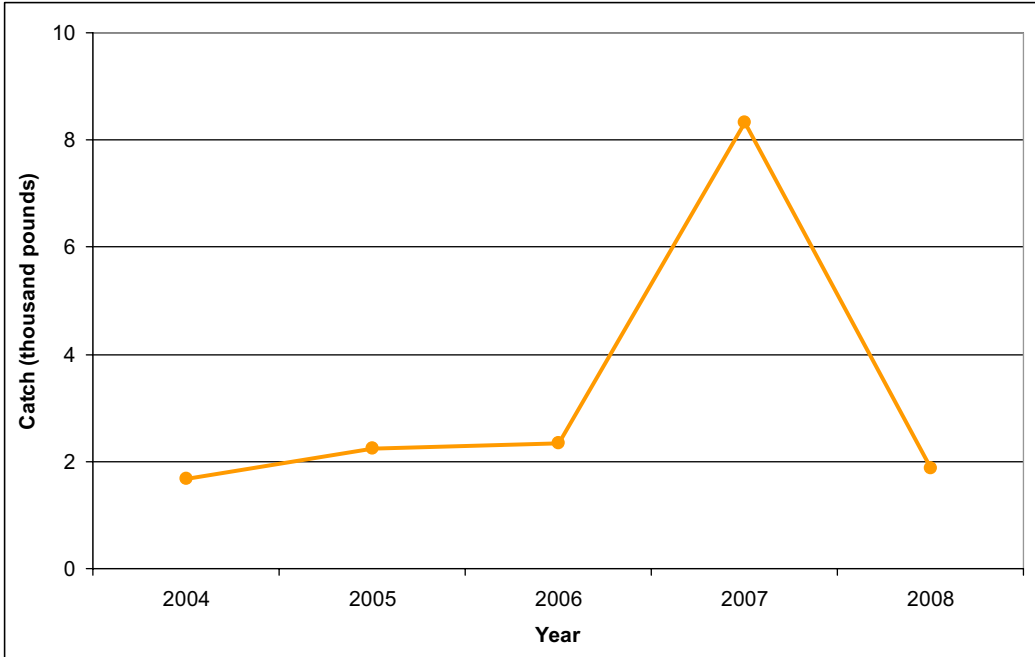


Figure 13-3. Yelloweye rockfish recreational catch, 2004-2008. Data Source: CRFS data, all fishing modes and gear types combined.

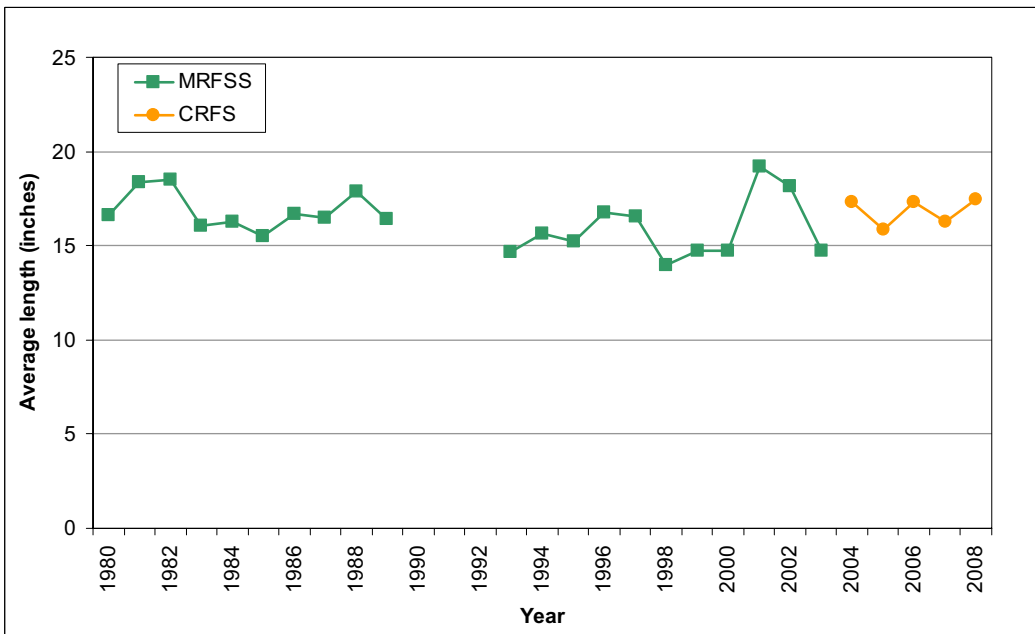


Figure 13-4: Yelloweye rockfish average length for the recreational fishery, 1980-2008. Data source: MRFSS (1980-2003) and CRFS (2004-2008) data, all fishing modes and gear types combined. Data not available for 1990 through 1992. CPFV data not available for central and northern California for 1993-1995.

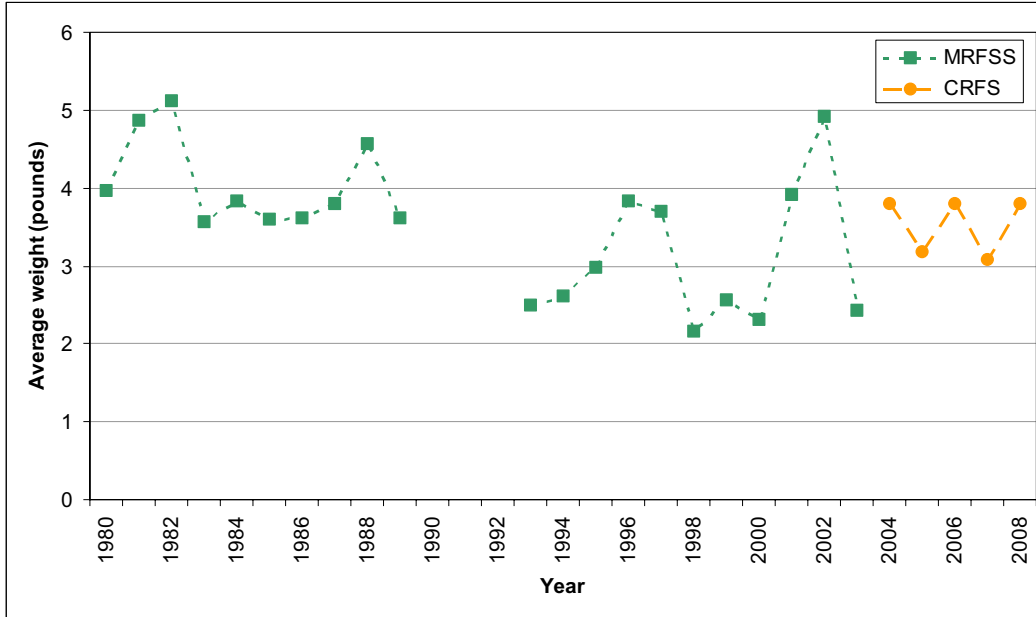


Figure 13-5: Yelloweye rockfish average weight for the recreational fishery, 1980-2008. Data source: MRFSS (1980-2003) and CRFS (2004-2008) data, all fishing modes and gear types combined. Data not available for 1990 through 1992. CPFV data not available for the central and northern California for 1993-1995.

Status of Biological Knowledge

Zoologist Frank Cramer first identified yelloweye rockfish in 1895. As with many fish species, the yelloweye rockfish has several common names including red-turkey rockfish, goldeneye rockfish, Pacific red snapper, red cod and yellowbelly among others. They are easily identified by their deep red to orange body color and distinctive bright yellow eyes. Coloration in juvenile yelloweye rockfish consists of a deep red body color with bright white to yellow horizontal stripes running the length of the body (Figure 13-6).



Figure 13-6. Juvenile yelloweye rockfish. Photo credit: Andy Murch.

When yelloweye rockfish mature into adults their color lightens, the stripes disappear and the fin tips turn black. They have an extremely long lifespan with some specimens aged up to 120 years. Yelloweye rockfish are also late maturing fish, becoming sexually mature at approximately 20 to 22 years of age. The primary food sources for these opportunistic feeders consist of other rockfish, herring, crab and shrimp. Their range extends from the Aleutian Islands off the coast of Alaska to the northern portion of Baja California, Mexico. It is generally accepted that the stock structure consists of a single coastwide population. Spawning for yelloweye rockfish occurs in late fall or early winter.

Females have the ability to retain sperm internally and wait to fertilize the eggs later. Yelloweye rockfish are ovoviviparous (meaning the eggs hatch inside of the mother and are born live as larvae later), the young larvae do not emerge until May or June. Yelloweye rockfish are commonly found near high relief rocky areas both inshore and offshore, such as reefs with high rugosity, offshore pinnacles and steep cliffs. They are most common inshore at depths of 60 to 1800 feet (18 to 548 meters).

Status of the Population

In 2001, the first yelloweye rockfish stock assessment was completed assessing the status of the stock from Lopez Point (Monterey County) to the California/Oregon border. The assessment also modeled the status of the stock along the Oregon coast; Washington state was not included in the assessment due to data limitations. The assessment concluded that the stock status for Northern California was approximately 7 percent of the unfished spawning biomass, and 13 percent of unfished biomass off the coast of Oregon. As a result, yelloweye rockfish were declared overfished by the National Marine Fisheries Service (NMFS) in 2002. The 2001 stock assessment for yelloweye rockfish was updated in 2002 and 2005 and was expanded coastwide (U.S./Canada border to the U.S./Mexico border). In 2006, a new assessment of yelloweye rockfish (updated in 2007) was completed, estimating that the spawning biomass for the entire west coast of the United States was approximately 16 percent of the unfished spawning biomass. The 2006 yelloweye rockfish rebuilding plan states that rebuilding the stock to a point where it is sustainable would take approximately 75 years (2084).

Management Considerations

Yelloweye rockfish became a federally designated groundfish in 1982 after the Pacific Fisheries Management Council (PFMC) adopted the Pacific Coast Groundfish Fishery Management Plan. Since then yelloweye rockfish are managed under the joint jurisdiction of the state and the federal governments. Prior to 1982, this species was managed by California Department of Fish and Game (Department) through regulations adopted by the state legislature and the California Fish and Game Commission. Beginning in 1983, the Department along with PFMC began managing the entire rockfish fishery as the *Sebastes* complex. Yelloweye rockfish were a part of the *Sebastes* complex until 2000 when the complex was separated into three depth based groups. These groups consisted of nearshore, shelf and slope rockfish. This allowed for fine scale managing and proportioning of rockfish stocks for the commercial and recreational sectors. Up until 2002, yelloweye rockfish were managed as part of the shelf rockfish group. After the 2002 stock assessment, yelloweye rockfish were managed using their own coastwide Acceptable Biological Catch (ABC), optimum yield (OY), and harvest guideline (HG). In the case of overfished species, the OY level is adjusted to rebuild the species population to a sustainable level while considering impacts of low harvest levels on fishing communities. Strict management measures in state and federal waters were adopted for both the commercial and recreational sectors

that prohibit retention (allow only bycatch) in order to rebuild the stock as quickly as possible.

The 2006 yelloweye rockfish rebuilding plan specified a harvest “ramp down” strategy before resuming a constant coastwide HG (15 short tons; 14 metric tons) in 2011. The ramp down strategy involved a gradually declining HG from 25 to 15 short tons (23 to 14 metric tons) during the years 2007 to 2010. The strategy was adopted by the PFMC in 2006 to mitigate impacts of a more severe reduction on the commercial and recreational fisheries that would occur without the ramp down approach. This ramp down period is being used to work with commercial and recreational constituents and develop additional yelloweye rockfish protection measures. In addition, it provided an opportunity for coastal communities to prepare for anticipated economic losses due to shortened rockfish seasons. In 2007, the California recreational HG for yelloweye rockfish was exceeded despite early closures for the Northern and North-Central groundfish management areas that comprise the area from California/Oregon border to Point Arena. The Department implemented a new methodology in 2008 to track the recreational catch of overfished species including yelloweye rockfish. The new tracking system reduced the time needed to initiate and implement emergency inseason regulatory changes. In 2008, the new tracking system indicated the HG for the recreational yelloweye rockfish fishery would once again be exceeded if the season continued at the current rate. Since most of the yelloweye rockfish were caught in northern California, an emergency closure was instituted in September 2008 from the California/Oregon border to Point Arena. These closures prevented stock rebuilding from being jeopardized by keeping the catch within the OY.

The Department and PFMC are working together to develop and adopt various management measures to keep the catch of yelloweye rockfish within the designated OY and rebuild the population. Examples of management measures for the recreational sector include area closures, depth restrictions, and bag limits. For the commercial fishery, license and permit regulations, gear restrictions, seasonal and area closures, and depth restrictions are used.

The previous yelloweye rockfish stock assessments and updates are considered data poor. Additional data are needed to strengthen stock assessments in the future. Sex-specific age and length information from both the recreational and commercial fishery would be extremely useful. Lastly, the development of ongoing non-lethal fishery-independent studies is needed to determine the changes that are occurring in stock abundance and location and how they may relate to environmental factors, without contributing to stock mortality.

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Further Reading

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| Yelloweye rockfish commercial landings and value, 1969-2008. | | | | | |
|--|-----------|-----------|------|--------|-----------|
| Year | Pounds | Value | Year | Pounds | Value |
| 1969 | 1,396,144 | \$91,588 | 1989 | 49,631 | \$32,630 |
| 1970 | 1,466,606 | \$110,436 | 1990 | 86,607 | \$70,064 |
| 1971 | 1,567,622 | \$119,342 | 1991 | 86,866 | \$70,305 |
| 1972 | 1,408,373 | \$125,412 | 1992 | 64,620 | \$50,875 |
| 1973 | 665,361 | \$99,643 | 1993 | 40,158 | \$33,669 |
| 1974 | 445,630 | \$88,859 | 1994 | 56,754 | \$58,283 |
| 1975 | 462,003 | \$109,293 | 1995 | 66,949 | \$85,871 |
| 1976 | 651,610 | \$182,306 | 1996 | 99,667 | \$132,317 |
| 1977 | 672,337 | \$225,448 | 1997 | 92,249 | \$98,222 |
| 1978 | 760,206 | \$302,653 | 1998 | 38,202 | \$50,752 |
| 1979 | 757,324 | \$345,969 | 1999 | 21,106 | \$36,785 |
| 1980 | 49,093 | \$20,760 | 2000 | 7,278 | \$16,259 |
| 1981 | 547,551 | \$279,725 | 2001 | 8,457 | \$19,920 |

| Yelloweye rockfish commercial landings and value, 1969-2008. | | | | | |
|---|---------------|--------------|-------------|---------------|--------------|
| Year | Pounds | Value | Year | Pounds | Value |
| 1982 | 138,968 | \$29,961 | 2002 | 146 | \$130 |
| 1983 | 1,986 | \$468 | 2003 | 22 | \$20 |
| 1984 | 659 | \$235 | 2004 | 43 | \$46 |
| 1985 | 848 | \$243 | 2005 | 46 | \$23 |
| 1986 | 11,558 | \$8,828 | 2006 | 10 | \$6 |
| 1987 | 51,291 | \$31,779 | 2007 | 401 | \$800 |
| 1988 | 35,670 | \$22,627 | 2008 | 54 | \$16 |

Data source: CFIS data, all gear types combined. Data not available prior to 1969.

| Yelloweye rockfish recreational catch, 1980-2003. | | | |
|--|---------------|-------------|---------------|
| Year | Pounds | Year | Pounds |
| 1980 | 167,327 | 1992 | --- |
| 1981 | 103,474 | 1993 | 18,663 |
| 1982 | 228,810 | 1994 | 31,756 |
| 1983 | 112,415 | 1995 | 27,690 |
| 1984 | 178,124 | 1996 | 27,510 |
| 1985 | 277,370 | 1997 | 33,352 |
| 1986 | 144,347 | 1998 | 12,829 |
| 1987 | 165,781 | 1999 | 27,753 |
| 1988 | 126,815 | 2000 | 16,601 |
| 1989 | 129,357 | 2001 | 10,171 |
| 1990 | --- | 2002 | 4,582 |
| 1991 | --- | 2003 | 8,098 |

Data source: MRFSS data, all fishing modes and gear types combined. Data not available for 1990-1992. CPFV data not available for central and northern California for 1993-1995.

| Yelloweye rockfish recreational catch, 2004-2008. | | | |
|--|---------------|-------------|---------------|
| Year | Pounds | Year | Pounds |
| 2004 | 1,665 | 2007 | 8,314 |
| 2005 | 2,239 | 2008 | 1,871 |
| 2006 | 2,336 | | |

Data source: CRFS data, all fishing modes and gear types combined.