

## Yellowtail Rockfish

### Background

The yellowtail rockfish (*Sebastes flavidus*) is an important component of the rockfish catch in the commercial trawl fishery off British Columbia. It ranges from southern California to the Gulf of Alaska. The principal area of commercial abundance is northern California to northern B.C.

Yellowtail rockfish are treated as two stocks in British Columbia. The southern or "Boundary" stock is shared with the United States fishery and is assumed to extend from northern Washington State to central Vancouver Island. The "Coastal" stock includes the area from central Vancouver Island to the Alaska border. Limited tagging work has indicated that at least a few individuals travel long distances, from southeast Alaska to central B.C. and from central B.C. to the central Washington coast.

Yellowtail rockfish begin recruiting to the fishery at age 5 but can live to over 50. Mating takes place in mid-fall and free-swimming larvae are released in late winter or early spring. Males and females mature between the ages of 5 and 14 years. Maximum size is 3 to 4 kg.

Commercial catches are made in depths of 100-200 metres using bottom and midwater trawls. The hook-and-line fishery produces minor landings. Total annual Canadian landings have recently averaged about 5,000 tonnes. Most landings come from Queen Charlotte Sound and the south and central coast of Vancouver Island. Since 1980, managers have used a combination of coastwide or area quotas in combination with trip limits. Annual quotas are usually filled. Individual vessel quotas have been in place since 1997.



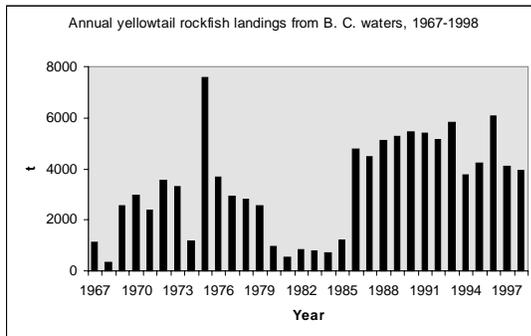
### COASTAL (AREAS 3D, 5A-5E) and BOUNDARY (3C) stocks of YELLOWTAIL ROCKFISH

### Summary

- Combined B. C. landings have been relatively stable over the last 10 years at approximately 5,000 tonnes.
- Population biomass appears to be decreasing in both Boundary and Coastal stocks but both assessments are imprecise owing to the lack of an appropriate index of abundance.
- Recruitment appears to have been poor in both stocks in the 1990's.
- Quotas for the Coastal stock were reduced in 1998 to 3,459 tonnes from 4,514. The quota for Canadian landings from the Boundary stock was raised from 719 to 1,005 tonnes in 1998 but the 1998 quota now includes by-catch from the offshore hake fishery. If recruitment continues to be poor, there is a high risk of continued decline in biomass.

### *The Fishery*

Reliable landings data for the commercial fishery for yellowtail rockfish are available since the late 1960s. Landings increased from about 1,000 tonnes in the 1960s to more than 5,000 tonnes in the early 1990s. The average annual coastwide landings of yellowtail rockfish from 1967 to 1997 are about 3,300 tonnes. Yellowtail rockfish are caught in a directed trawl fishery and are also a by-catch component of the fisheries for hake, other rockfishes and lingcod.



Off the southwest coast of Vancouver Island, U.S. and Canadian trawlers jointly exploit, in their respective zones, one stock of yellowtail rockfish. Total landings have varied around 3,000 tonnes since 1979. Much of the landings are incidental to the midwater fishery for hake by both nations. A small percentage is captured as by-catch in the U.S. shrimp trawl fishery.

Landings from the rest of the coast, central Vancouver Island and north, are assumed to come from the Coastal stock. These have averaged 2,800 tonnes since 1967, but since 1988 have averaged 4,000 tonnes.

Although preliminary genetics research provides a basis for separating the

northern Washington stocks from the more southern populations, stock boundaries themselves are poorly understood.

### *Resource Status*

The southern Boundary stock appears to be declining in abundance, due principally to poor recruitment in recent years. The assessment is based on biomass estimates from U.S. triennial trawl surveys, hake by-catch indices from the Canadian joint-venture fishery, and catch-at-age information. Effective quota recommendations from both nations were lowered for 1997 and remained low for 1999. Combined landings were only 1,517 tonnes in 1997. Stock abundance appears to be about 25% of the pre-fished biomass. The current Canadian recommendation for a combined yield range is 1,100-2,400 tonnes.

Although much less data are available for the Coastal stock, it also appears to be declining in abundance after a sustained period of poor recruitment. It was also assessed using catch-at-age analysis but results are not conclusive. The recommended yield range was lowered from 2,750-5,100 to 2,000-4,025 for 1998 and 1999 owing to the progressive reduction in average age in the 1990s.

Large-scale surveys are impractical, partly owing to the behaviour of this species, which adopts both near- and off-bottom habitats. Neither swept-area nor acoustic estimation alone is appropriate.

### *Outlook*

Stock abundance indices for both stocks of yellowtail rockfish stock are

declining. Current exploitable biomass is well below 50 % and possibly as low as 25 % for the Boundary stocks and may be similar for the Coastal stock. It is not known when the current period of poor recruitment will end.

### ***For More Information***

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### ***References***

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