

CHAPTER THREE

TUNA SPECIES

3.1 GENERAL

According to the Encyclopaedia Britannica, “Tuna is also called TUNNY (Genus Thunnus), any of a number of oceanic fishes, some very large, that are of great commercial value as food. They are related to mackerels and are commonly placed with them in the family Scombridae (order Perciformes). Tunas vary considerably, both within and among species. Their classification is also variable and may differ from one authority to another.

Tunas are elongated, rather robust fishes, streamlined and with a rounded body tapering to a slender tail base and a forked or crescent-shaped tail. In colour, tunas are generally dark above and silvery below, often with an iridescent shine. They have a conspicuous keel on either side of the tail base, a row of small finlets

behind dorsal and anal fins, and a corselet of enlarged scales in the shoulder region. Another notable feature is a well-developed network of blood vessels below the skin that acts as a temperature-regulating device associated with long-term, slow swimming. Owing to this vascular system, tunas are unique among fishes in their ability to maintain the temperature of their bodies above that of the surrounding water, sometimes by as much as 14° C (20° F).

Tunas migrate long distances over all the world's oceans and occupy tropical, temperate, and even some cooler waters. Tunas feed on fishes, squid, shellfish, and a variety of planktonic organisms. They spawn in the open sea over very large areas.”

The seven species of tunas in the genus *Thunnus* are the Bluefin tuna, Albacore, Yellowfin tuna, Southern Bluefin tuna, Bigeye tuna, Blackfin tuna, and Longtail tuna. These different species range from moderate to very large in size.

3.2 COMMERCIAL SPECIES

I would like to describe the commercially important species of tuna. Characteristics of these species are found in **Appendix 1**.

3.2.1 SKIPJACK TUNA

Skipjack tuna (*Katsuwonus pelamis*) accounts for the greatest proportion of the world catch of tunas. In 1994 nearly 1.6 million tons of Skipjack were caught, representing nearly 50% of the catch of all tuna species. Almost all of this catch is sold for canning.

Skipjack is the most ubiquitous of the tunas, being available broadly throughout most tropical and subtropical regions of the world, and occurring in commercial quantities as far north as 45 degree North and as far south as 40 degree South. Skipjack is among the smallest of the tunas, and has a relatively short lifespan. Like most tunas it breeds easily. Scientific studies have consistently indicated that catches of the species can be expected to increase if fishing effort is intensified, and this indeed what has happened in every ocean of world.

3.2.2 YELLOWFIN TUNA

Yellowfin tuna (*Thunnus albacares*) is commercially the second most important species of tuna. In 1993 it accounted for about 1.2 million tons, or

37% of the total catch. Yellowfin is the premier species for canning, but more and more of the catch is being sold in fresh markets.

3.2.3 BIGEYE TUNA

The third most important species in terms of catch volume is Bigeye tuna (*Thunnus obesus*), which is similar in appearance to Yellowfin. It is reported that at some sizes the two are almost indistinguishable. However, unlike Yellowfin, Bigeye tunas are primarily creatures of the deep sea, spending most of their lives in cold waters below the upper mixed layers of the ocean. They are caught mainly by longline gear. The species common name refers to one of its anatomical adaptations to life in sea waters, a large eye, which allows the fish to see better in dim light. Another one of the sea adaptations, is a high fat content for insulation from the coldwater, which increases the value of Bigeye in the Japanese *Sashimi* market.

There is currently a great deal of concern that Bigeye stocks in both the Atlantic and Pacific Oceans are certainly fully exploited and cannot sustain any increase in catch. There is further concern, particularly in the Eastern Pacific that the ever-increasing catches of small Bigeye will reduce recruitment to the longline

fishery, and consequently overall yield. These analyses lead us to expect no increase, and possibly a decrease instead, in Bigeye catches by the end of the century.

3.2.4 ALBACORE TUNA

Another of the species is the Albacore tuna (*Thunnus alalunge*) which is found in most sub-tropical and temperate waters of the world. The Albacore tends to live longer than the tropical tunas. They do not reach the large sizes of the Yellowfin and Bigeye. Most of the Albacore caught is canned, although markets are growing rapidly for fresh fish. It is the only tuna that can be labeled as “white meat” tuna. Demand for this product is high, and supplies are variable and limited. Thus the Albacore usually fetches higher prices than Yellowfin and Skipjack.

3.2.5 BLUEFIN TUNA

Taxonomists recognise two species of Bluefin tuna (*Thunnus thynnus*). There is the Southern Bluefin which is found through out the temperate waters of the southern hemisphere, and the Northern Bluefin which is found in the

north Pacific and the north Atlantic. Both species spawn in fairly restricted areas and undertake extensive migrations. However the catch for them has been falling. There is concern that due to increasing fishing efforts, stocks are overfished. It seems likely that catches will not remain at current levels but decline even further. Much of the concern over the status of the Bluefin is due to the very high value of the species in the Japanese *sashimi* market. It makes it economically worthwhile to increase fishing efforts even at very low stock levels.