Cod: A Biography of the Fish That Changed the World Study Guide

Cod: A Biography of the Fish That Changed the World by Mark Kurlansky

BOOKRAGS

Contents

Plot Summary

Gadus morhua, or cod, has been an important commercial fish for about six hundred years. As early as 1620, cod fishing was as the center of international conflict as various nations attempted to monopolize rich fishing grounds. Cod's prolific reproductive rates were seen for hundreds of years as a guarantee that the species would never be negatively impacted by human activity. However, numerous technological improvements and widespread increase in the scale of fishing operations have systematically reduced the various global cod fisheries to commercial insignificance. Today, cod is a depleted fishery and rapidly is becoming increasingly scarce.

The book presents an assortment of information related to cod, the primary topic. Cod biology and natural history is presented in fairly limited terms and even that with a focus on cod's commercial significance. In this respect, the book is more of a biography of cod-human interaction than cod itself. For the purposes of most of the book, cod refers to G. morhua only—the Atlantic cod—but at times the species line is blurred, and cod is considered to be a large-scale commercial product that, at various times and places, has included additional closely-related species. Since much of the book considers the history and causes of population decline the non-specific use of the term cod can be at times confusing.

Part I of the book is largely concerned with the presentation of cod from a biological point of view—what the fish is, how it lives, how it spawns, what it eats, and so forth. Part I also explains the initial use of cod as a food for humans and examines the early widespread commercialization of cod fishing. Of course, cod was and is not the only important fish species, but the book does not delve into related fisheries markets in any great detail. Part I ends with a presentation of several hostilities between nations erupting over access to, or control of, cod fishing grounds.

Part II of the book is largely concerned with cod reproduction rates and fishing techniques. Cod are prolific and, for many years, were considered impervious to population decline due to human activities. As late as the 1860s, scientists, including Thomas Henry Huxley, were arguing that cod reproduction was sufficiently robust to guarantee extensive cod fisheries for any number of years. Huxley was wrong, though, and did not foresee the extensive improvements in fishing techniques and equipment that within a few decades would render many of the world's richest cod fisheries devoid of cod.

Part III of the book is largely concerned with the more-recent developments of cod fishing, ending c. 1998. During the period discussed, various international treaties extended national exclusionary zones to 200 miles and excluded international fishing within these waters. The same period saw vast increases in fishing fleets, vast improvements in fishing techniques, and equally vast decreases in cod catches. By the time of the book's publication cod has become an elusive and declining species, no longer of supreme commercial significance in many major fishery management areas.

Part I - A Fish Tale

Part I - A Fish Tale Summary and Analysis

Gadus morhua, or cod, has been an important commercial fish for about six hundred years. As early as 1620, cod fishing was the center of international conflict as various nations attempted to monopolize rich fishing grounds. Cod's prolific reproductive rates were seen for hundreds of years as a guarantee that the species would never be negatively impacted by human activity. However, numerous technological improvements and a widespread increase in the scale of fishing operations have systematically reduced the various global cod fisheries to commercial insignificance. Today, cod is a depleted fishery and rapidly is becoming increasingly scarce.

The book begins with typical front matter and then a Prologue, titled Sentry on the Headlands (So Close to Ireland). The prologue is followed by the text, proper, which is divided into three parts. Part I - A Fish Tale, is sub-divided into six named and enumerated chapters: 1 - The Race to Codlandia, 2 - With Mouth Wide Open, 3 - The Cod Rush, 4 - 1620: The Rock and the Cod, 5 - Certain Inalienable Rights, and 6 - A Cod War Heard 'Round the World. At seventy-five pages, it is the largest part of the book and is primarily concerned with the biology of cod and the lengthy history of commercial cod fishing.

The non-fiction book's prologue opens with an element of in medias res, a technique usually found in fiction. Sam Lee, Leonard Stack, Bernard Chafe, and the author board a fishing skiff in Petty Harbour, Newfoundland, during early autumn. It is early morning and they travel into open water. The trip is somewhat dangerous in that the water temperature is 45° and the skiff has little freeboard. Yet men have been fishing like this for centuries. The skiff is one of two fishing skiffs participating in Newfoundland's Sentinel Fishery. Amid a total ban on cod fishing, the Sentinel Fishery seeks to monitor local cod populations for size and numbers. The men use handline fishing techniques to catch several dozen cod. Each fish is measured, tagged, and logged before it is released. The men take a break from their work to prepare and eat a lunch of cod. While they rest, they discuss times past—how there used to be fish and even whales in the ocean. Now, there is apparently nothing. The cod they catch are tiny. One generation previously, Newfoundland's economy was based on fishing; now, nobody makes a living as a commercial fisherman.

The Vikings were the earliest known cod fishermen. Their known dispersal patterns are a neat overlay over cod dispersal patterns. Vikings ate cod fresh or preserved them by air drying. Hundreds of years later, the Basques began to enjoy commercial success with cod cured by salting and air drying. Their salted cod, or saltfish, enjoyed widespread European consumption largely because of various diet proscriptions on fast days established by the Catholic Church—cod was allowed when other meats were not. Cod fishing continued to gain commercial importance as time passed, yet only the Basque fishery knew where to find the best cod, and they kept it a close secret. By

1480, British and Germanic, or Hanseatic, fishermen were in near open warfare over access to some Icelandic cod fisheries. By 1497, John Cabot had reported huge populations of cod in North American—probably Newfoundland—waters. By c. 1544, Jacques Cartier discovered the mouth of the St. Lawrence, where he noted the presence of about 1,000 Basque fishing vessels.

The cod is designed to survive. It is omnivorous, hardy, cold-tolerant, and disease resistant. Although an advanced predator of anything small enough to fit into its mouth, the cod is not a fighting fish—not a good sportfish. Once hooked, it can simply be hauled in without resistance. Cod are groundfish, a large group of fishes that live on or near the ocean's bottom. There, they eat what they find and swim slowly. Cod, like most groundfish, contain nearly no fat. Live, they are about 18% protein, while dried they are composed of an astonishing 80% protein. Almost all of a cod can be eaten—the internal organs, the roe, the skin, and even the bones can be prepared and eaten. The text presents various theories on the origin of the name cod, none of which are consistent across languages. Codfish are composed of ten biological families and over two-hundred biological species, of which only six are commercially significant: Atlantic cod, haddock, pollock, whiting, hake, and—recently—Pacific cod. Various cultures and locations prefer various types of codfish, but the Atlantic cod has enjoyed a long and widespread popularity. Atlantic cod are found most frequently in fairly shallow oceanic areas where cold water currents mix with warm water currents; in particular, they are plentiful off the North American Grand Banks. Other cod fisheries of commercial significance are found near the British Isles, Scandinavia, Russia, and Iceland. Cod are fecund, each female producing millions of eggs during a reproductive season.

During the 1500s, North America was explored by Europeans who began commercial exploitation of the region's natural resources. From c. 1500 to c. 1550, French political power was ascendant; by 1597, English political power was ascendant. During c. 1532, English and Germanic (Hanseatic) conflict over access to Icelandic fisheries was commonplace. During this time salt curing of cod became more important than simple air drying, and the book presents a digression on various types of salt. By the 1620s, much of North America's eastern coast had been explored by Europeans and English ships were often found fishing North American coastal waters. The Pilgrims settle at Plymouth and establish fishing stations including Gloucester, in 1623. Their main protein source was cod. By 1629, they had well-developed fisheries, and by 1640 North American fishery operations were commercially successful. These operations extended from, roughly, Massachusetts to Newfoundland. By the 1750s, New England commercial power, concentrated in Massachusetts, was formidable. Nearly all locals recognized the base of their success was cod, and codfish became emblematic, nearly fetishistic, of commercial success. The largest cod market was the West Indies. There, slave plantations grew sugar and the slaves subsisted on cod. This allowed New England to specialize in cheap cures for inferior fish, while the best catch and the best cures brought top-dollar in Bilbao, Spain. Gradually, a triangle trade arose where slaves and cod were shipped to the West Indies, and sugar cane—mostly for rum production—was shipped to New England.

Meanwhile, schooners were developed to rapidly ship goods or catch fish, and other fishery improvements were made. Simultaneously, international political wrangling over access to fisheries began, and political friction between New England and England began. The road to the American Revolution is presented in some detail; in general, the causes are said to have been taxation and trade restriction—in other words, commercial infringement by England upon the American colonies. After the revolution, John Adams made strong demands for protectionist American access to cod fisheries; his demands were successfully met. Once again, after the War of 1812, John Quincy Adams strongly defended American fisheries interests. As West Indies slavery ended, however, so did the West Indies high demand for cheap cod. Global market changes occurred and most cod began to be sold to developing domestic markets. The best cod product was still shipped to the Mediterranean where it brought high prices. The prolonged trade in cod led to a class of nouveau riche colloquially known as the cod aristocracy.

Part II - Limits

Part II - Limits Summary and Analysis

Part II - Limits, is sub-divided into four named and enumerated chapters: 7 - A Few New Ideas Versus Nine Million Eggs, 8 - The Last Two Ideas, 9 - Iceland Discovers the Finite Universe, and 10 - Three Wars to Close the Open Sea. Most of the chapter titles provide risible and sarcastic comment on the chapter contents. Part II is largely concerned with the population dynamics of cod fisheries.

Fishing on the Grand Banks has always been, and still is, treacherous. The water is often shoaling; drifting ice poses hazards; the weather is unpredictable and frequently violent, and the temperatures are lethally cold. Dense fog is common, making navigation sometimes difficult. The sea is unforgiving and minor accidents can quickly turn deadly. Even though modern techniques have reduced the danger, it is still present; indeed, modern equipment poses a unique health hazard in itself. Throughout the history of fishing the Grand Banks, death has been common as have stories of legendary survival. Until c. 1930, the typical method of fishing the Grand Banks was to travel to the fishing grounds in a ship which would then put off several two-man fishing dories. After making the catch, the dories would return to the ship for recovery.

As early as 1815, the French fishing fleet was modernizing and began using a technique of fishing called longlining, instead of handlining. In longlining a single long line—often miles long—is attached to hundreds of short lines, each with a baited hook. The line is let out and then periodically serviced by having caught fish removed and hooks rebaited. It is productive, but expensive, and beyond the reach of an individual fisherman. By 1861, however, longlining was widely practiced. Longlining greatly increased catches and led some fishermen to question whether cod and other fisheries were being overexploited.

From c. 1862 through c. 1883, most scientists, including famous men like Huxley, argued that nature was indomitable. They argued that human activity was minuscule in its impact on natural resources, and that natural resources, such as cod, could be harvested with abandon literally forever without the slightest impact. After all, a female cod spawns millions of eggs and could theoretically nearly single-handedly spawn the next entire generation of cod. This type of thinking permeated British society through the end of the nineteenth century and led to modernization of fishing fleets and techniques. During this period gillnetting and bottom dragging became common practices and the modern factory ship for catch processing was first introduced. Yet there was still little change in the way fish were preserved for market—salting and drying were still the only methods widely available.

New England was slow to adopt modern fishing techniques. As late as the early 1900s, New England fisheries saw sail-powered schooners deploying dories for handline fishing—while by the 1890s, Europe was modernized. It was not until c. 1920, that New

England was more-or-less modernized. The deployment of modern fishing methods and technology is one of the "last two ideas" in cod fishing that inform the title of Chapter 8; the other idea is that of preservation by freezing. Clarence Birdseye was fascinated with keeping food fresh by various preserving techniques and pioneered the process of fast freezing food. He founded the General Seafoods Company in 1925, a few years after the c. 1921 widespread adoption of fish filleting machines. The combination of automated filleting and flash freezing led to entirely new ways of exploiting fisheries. As frozen fish fillets and frozen fish sticks began to fill up market shelves, the identities of food fish species became blurred—"cod" fillets often were not really cod. The global fish catch escalated rapidly to a peak c. the 1950s and continued on until c. 1970. The global fishing industry was characterized by massive factory ships and great advances in technology.

However, as early as 1902, British fisheries were declining. In Iceland, cod fishing had been commercially significant since c. 1855, though Iceland did not commence modern fishing until c. 1905. Yet by the 1920s, the Icelandic fisheries were also declining. Major interruptions in global fishing were caused by World War I and World War II; after both of these pauses the fisheries were found to have rebounded to a remarkable degree. Thus, c. 1950 represents about the pinnacle of Atlantic cod fishing catches—or the so-called "golden years." Chapter Ten presents a chronological review of national claims of exclusive access to coastal waters. In 1822, many countries claimed to own waters out to a three-mile limit. In 1958, Iceland extended claims to twelve miles as a protectionist maneuver designed to exclude British fishing. The move was unique for the time and caused aggressive hostilities between Iceland and England, such as ramming and sabotage—the first so-called cod war. Iceland extended their claimed exclusive limit to 50 miles in 1972, and again to 200 miles in 1975. Both of these announcements were followed by another cod war with England, involving net cutting and ramming. But in 1976, the European Community, forerunner to the European Union, announced its adoption of a 200-mile national limit and the rest of the world soon followed. This put the vast majority of fisheries areas within national waters. From c. 1984 through the present, most nations further controlled their fisheries through systems of quotas and moratoria. These systems are designed to allow fishery populations to maintain levels of maximum sustained yields.

Part III - The Last Hunters

Part III - The Last Hunters Summary and Analysis

Part III - The Last Hunters, is sub-divided into four named and enumerated chapters: 11 - Requiem for the Grand Banks, 12 - The Dangerous Waters of Nature's Resilience, 13 - Bracing for the Spanish Armada, and 14 - Bracing for the Canadian Armada. At forty-two pages, it is the shortest part of the book. Part III is followed by a section titled A Cook's Tale: Six Centuries of Cod Recipes. This segment, about the same length as Part III, contains various recipes gathered from the past several hundred years. The text ends with a bibliography, acknowledgments, and a useful index. Part III is largely concerned with the gradual implementation of quotas and moratoria in an attempt to stem the tide of fishery collapse, as well as the severe economic hardship such quotas cause in fishing communities.

Chapter Eleven begins with a history of Newfoundland, noting that it was transferred to Canada in 1948. In 1977, Canada and the United States adopted a 200-mile exclusive national limit, which excluded international fishing vessels from the Grand Banks, the prime Atlantic cod fishery. Spanish vessels were the largest group of newly-excluded fishing vessels. During c. 1980, Canada developed two major national fishing corporations, building huge new fleets and on-shore processing facilities. But even as the offshore fisheries were struggling to maintain catch levels, the inshore fisheries began to collapse catastrophically. During this period, attorneys like Cabot Martin joined with inshore fishermen like Sam Lee to sue the Canadian government for a moratorium on offshore bottom dragging fishing. Such lawsuits were unsuccessful, however. Canada continued to aggressively develop the fishing fleet and develop domestic and international markets. But by the early 1990s, it was evident that cod fisheries were collapsing. Catches were decreasing precipitously even as fishing techniques became more aggressive. Cod fishing was becoming economically inviable. Canada began to impose fishing quotas as early as 1990—but they proved insufficient. In 1994, a cod fishing moratorium was declared. The led to economic disaster for fishing communities and over the next years their economies changed quickly. The moratorium also established a monitoring program—the Sentinel Fishery—described in the Prologue of the book.

The natural question arising from the collapse of the cod fishery wonders when the cod fishery will recover—when are the cod coming back? Programs such as the Sentinel Fishery attempt to predict this, but measuring cod populations has proved very difficult. Various extended moratoria have been attempted but with varying degrees of success. Studies have been conducted but conclusions are tentative and often contradictory. Many scientists believe that the cod fishery may never recover. They theorize that the cod's collapse allowed competing species to invade cod areas and establish themselves, permanently displacing cod. They point to increased crab populations or greatly increased ranges of other fish species as evidence. At present, cod fishery recovery remains an unknown. Cod fish farming has been attempted with some

success, but this also raised questions. Farmed cod are known to have reduced genetic variability and some fear this might spread to the larger wild cod populations if cod farming continues unabated. The future of cod looks fairly bleak and has led to some strange ideas. For example, seals are known to be cod predators and thus seal hunts have been expanded. Meanwhile, commercial cod fishing has largely moved from the Atlantic to the Pacific as the Pacific cod begins to replace the Atlantic cod as a market product.

Overfishing—not only of cod but of many fish species—is a real global problem. The book suggests that 60% of commercial fish species are either fully exploited, overexploited, or depleted. This has serious cultural implications for places such as England, where "fish and chips" are more than simply a food; they approach a way of life. In recent years, fish sold has not always been cod. And England estimates that fully 70% of British fisheries are overfished. Global fish catches continue to plummet. In response, European Union policies have been often contradictory and always difficult. Xenophobia, national interests, and fisheries management all cause conflict. Quotas are commonplace and by-catch laws and management continue to be contentious issues.

In the final analysis, fishing communities like Gloucester have been forced to change, often radically. Their economic base has vanished and local citizens must find other work. Even major fish food companies have abandoned local suppliers in favor of international suppliers. Fishing restrictions and commercial difficulties are the realities faced by modern fishermen. One response has been to change fishing targets from groundfish to pelagic fish—fish that live in the middle strata of the water column. These new fish species receive various acceptance in markets, however, and fish food companies must develop new markets. In brief, fishermen are a vanishing breed. The industry has become acrimonious; there is more than enough blame to go around, but real fixes are in vanishingly short supply. The book ends by presenting several brief anecdotes involving fishing—most demonstrate that the current generation involuntarily has abandoned fishing as a way of life.

The final segment of the book presents a sort of grab-bag of data about cod, including eleven brief entries dealing with everything from chowder to legends. These articles are interspersed with dozens of recipes for cod derived from about six-hundred years of culinary knowledge. Coupled with the various black-and-white illustrations sprinkled through the text, the concluding segment gives a wonderful texture and grounding to the book.

Characters

Mark Kurlansky

Mark Kurlansky, the author, has worked on commercial fishing boats for several years. He has worked as a journalist for the Chicago Tribune and the International Herald Tribune. His work also has appeared in various national magazines including Harper's, Audubon, and the New York Times Magazine. Kurlansky also contributes a column on food history to Food & Wine. Kurlansky has previously published A Continent of Islands: Searching for the Caribbean Destiny, A Chosen Few: The Resurrection of European Jewry, The Basque History of the World, and Salt. Kurlansky does not appear directly in most of the book but is present during several interviews that open the book's initial chapters. He provides virtually no auto-biographical data beyond the cover blurb and what can be incidentally gleaned or inferred from the text.

John Cabot

Giovanni Caboto (c. 1450 - c. 1498) was an Italian navigator and explorer more commonly known in English as John Cabot. He is often credited as the first European to discover North America, in 1497. He probably landed on the island of Newfoundland. Cabot's discovery of America came as he was searching for a water-route to Hy-Brazil, a mythical island or land. Cabot reported Newfoundland to be a place rich in natural resources, primarily because of its incredible cod fishery. The book presents Cabot as one of the first to realize North American cod's significant commercial potential.

John Adams

John Adams (1735 - 1826) was an influential founding father of the United States of America and served as the fledgling nation's second president and first vice president. The book does not consider Adams' lengthy political career in any great detail except to note that he was a constant and vocal promoter of fishing rights and America's national interests in various fisheries. Adams' negotiation of a treaty with France in 1782 insured American access to critical fisheries, and this involvement is considered at some length in the book.

Clarence Birdseye

Clarence Birdseye (1886 - 1956) was an American inventor and is today considered to be the founder of the modern frozen food industry for his work on food preservation techniques. The book presents Birdseye as an eccentric genius obsessed with the processes of decay in food; a fair amount of biographical data is presented for Birdseye, most of it centered on the process of freezing fresh fish for long-term preservation. Birdseye established fast-freezing techniques for fish c. 1922 and thereafter founded

Birdseye Seafoods Inc. Birdseye continued to develop better freezing techniques and his inventions were utilized c. 1925 onward by the General Seafood Corporation, later General Foods. Birdseye's inventions and methods insured that frozen fish fillets would become a significant food item across America and the world.

William Hooper

William Hooper, born c. 1944, is a large and powerful man and is the skipper of the 135-foot boat Daisy Christiane. He began professional commercial fishing, a family vocation, at the age of 11. The author presents several conversations involving Hooper during Chapter 13. Hooper's boat, of which he is a share fisherman, is designed for large-scale fishing operations and the cost of maintenance requires frequent success to break even. Recent limits on fishing operations have caused Hooper to face near insolvency and his company boat faces an uncertain future. The book presents Hooper as typical of a dying breed of modern fisherman, struggling to survive in the space between shrinking quotas and vanishing fish.

Sam Lee

The book opens with an anecdotal fishing trip involving Sam Lee and a few of his friends. Lee participates in a limited cod catch designed to monitor the local cod population—commercial, and even most private, cod fishing in the area is prohibited. Lee continues to appear throughout the book and is the primary example of the modern fisherman—witty, intelligent, and determined. Lee unofficially represents many thousands of fishermen who are struggling for a financial existence despite national fishing quotas and severely depleted fishing stocks. Lee is presented as something of an expert on cod—how to catch it, how to prepare it, and how it should be cooked and eaten. Even though he appears throughout the book, little biographical data is offered—he owns a new bright red jacket, fishes with professional skill, and appears well-liked and respected by all who know him. On several occasions Lee professes to have known about impending fisheries collapses before they were officially acknowledged. Given his intimate familiarity with the sea and fishing, such statements are entirely credible.

Leonard Stack and Bernard Chafe

Leonard Stack and Bernard Chafe are two friends and fishing associates of Sam Lee. The book opens with an anecdotal fishing trip involving the three men. Stack and Chafe do not appear in the book beyond the opening chapter; there, they are presented as expert fishermen and small-boat handlers. Both participate in a limited cod catch designed to monitor the local cod population—commercial, and even most private, cod fishing in the area is prohibited. The men exude a fishy charm and ambiance and are presented as typical hard-working, wise-cracking, efficient fishermen who face a future of depleted fisheries and grim financial expectations.

Cabot Martin

Cabot Martin is a Newfoundland lawyer who offers pro bono legal counsel to inshore fishermen, including Sam Lee and his associates. Martin helped found the Newfoundland Inshore Fisheries Association to represent the rights of inshore fishermen who are negatively impacted by large-scale, off-shore fishing operations—primarily huge international trawlers catching fish by bottom dragging. Martin unsuccessfully sued the Canadian government in 1989, hoping to obtain an injunction against bottom dragging. By 1999 he had come to believe that legal action against the government was ineffective and suggested that direct protest action against commercial interests would be effective. Martin, like Sam Lee and others, believes that cod populations will eventually rebound. In the meantime, he is engaged in open-water pen farming of codfish and has enjoyed some success in that pursuit.

Thomas Henry Huxley

Thomas Henry Huxley (1825 - 1895) was an English biologist and advocate of Darwin's then-new theory of evolution by means of natural selection. Huxley, internationally famous, has been the subject of numerous biographies; the book presents little biographical data on him beyond establishing his weighty credentials with contemporaneous scientists and British politicians, and stating some of his scientific opinion. Huxley championed the notion of natural supremacy—the idea that nature would always prove powerful and victorious; thus, activities such as human fishing could not be construed to negatively impact natural resources over the long term. Huxley argued that over-fishing was not really possible because fish were able to reproduce at a much faster rate than they could be caught. Unfortunately, history has proved at least this theory of Huxley's to be incorrect.

Henry David Thoreau

Henry David Thoreau (1817 - 1862) was an American author and naturalist. Thoreau, internationally famous, has been the subject of numerous biographies; the book presents little biographical data on Thoreau but cites him several times as a voice of prescient reasoning in conservation science. The book notes that Thoreau thought the cod were so-named because of the species' ability to produce so many seed-like eggs. The book also offers a lengthy quotation from Thoreau, depicting the Provincetown cod fishery in 1851 (refer to p. 102) and another lengthy quotation regarding Walden Pond's cows feeding on cod heads (refer to pp. 241-242).

Objects/Places

Cod

Cod is the common name for fish of the genus Gadus (family Gadidae). It is also used as the common name for a variety of closely-related fishes. In the text, cod is used usually to mean fish of the species G. morhua, or the Atlantic cod; however, it also is used more inclusively to mean any fish of the genus Gadus, including G. morhua, G. macrocephalus (the Pacific cod), and G. ogac (the Greenland cod). Occasionally the book will use cod in a generic way to refer to cod and cod-like fish including, for example, haddock and whiting.

Haddock, Whiting, and Hake

Haddock (Melanogrammus aeglefinus and Whiting (Merlangius merlangus) are fish species related to cod inasmuch as they are visually similar, often caught in proximity to cod, and often sold as cod. The term Hake is less distinct in meaning and refers to fish in the family Gadidae and the family Merlucciidae—in other words, all cod are hake but not all hake are cod. In addition to the names mentioned here, the book presents a few other fish species or groups including Plaice and Redfish.

Groundfish

Groundfish are fish of many species that live on or near the bottom of the ocean; cod, haddock, sole, flounder, and halibut are all commercially significant groundfish. Typically not strong and fast swimmers, groundfish usually are caught by bottom dragging, a non-discriminating process. The fish that are being actively pursued—such as cod—are termed the catch, while fish that are caught only incidentally are called the by-catch. By-catch is often discarded even though the individual fish are likely killed by the process of being caught.

Basques

The Basques are an ethnically distinct people inhabiting a region spanning portions of north-central Spain and southwestern France. They speak a particularly distinct language and enjoy a distinct and rich cultural heritage. They have consistently highly valued high-quality salt cod as a delicacy, and their involvement in cod fishery development and history is considered at some length during Part One of the book.

The Grand Banks

The Grand Banks are an extensive series of underwater plateaus off the southeast coast of Newfoundland. They are relatively shallow, lying in from 80 to 300 feet of water. The cold Labrador Current mingles with the warm Gulf Stream over the area of the Grand Banks, making them rich in nutrients and aquatic life. The Grand Banks have been, historically, the site of the most-significant cod fisheries, though in recent years cod populations have declined catastrophically due to over-fishing. The book presents the Grand Banks and several other important cod fisheries.

Handlining

Handlining, or handline fishing, is one of the oldest methods of fishing. It is still commonly used to take fish that do not fight overmuch when caught—such as cod. In handlining, a single fishing line is outfitted with a hook and sinker and dropped to an appropriate depth—frequently to the bottom. The line is then moved up and down in a series of short movements, visually attracting fish. When a fish is hooked, the line is drawn in hand-over-hand.

Longlining

Longlining, or longline fishing, is a method of fishing where a very long line—often miles long—is laid along the surface of the water and kept afloat by a series of buoys, which also serve as visual markers. Numerous short, hooked, and baited lines are attached to the longline at intervals of about three feet. The longline is run out and left for a period of time, and then small boats move along it recovering caught fish and re-baiting the many hooks.

Bottom Dragging

Bottom dragging is a method of fishing where a large net is dragged just above the floor of the ocean, often moving along on large metal rollers, in order to scoop up all fish that get caught in the net's open mouth. The net's mesh size putatively allows fish that are too small to pass through the back of the net, though in actual use, this escape mechanism is rarely sufficient to avoid much by-catch. Bottom dragging is very productive and simultaneously very destructive to fish populations. The book suggests that global cod population declines are largely the result of the increasing use of bottom dragging to catch cod.

Cure

Fresh cod must be eaten immediately or processed in some way to stabilize the meat for shipment to market and possible longer-term storage. Such stabilization processes

are known as cures, and the book presents several methods of cure. In general, cod cures consist of two principle processes—salting and drying. Every cure consists of one or the other of these processes, and most cures consist of both of them. The book presents various cures and discusses the exact processes and histories of some cures in considerable detail.

Cod Wars

Cod has historically been such a significant commercial product that from time to time nations—or fishermen from nations—have engaged in informal wars over access to the best cod fishing grounds. These so-called cod wars usually consist of aggressive techniques to exclude some fishing craft but typically have not resulted in shooting or open warfare. The latter half of the book considers the history and effects of several cod wars.

Themes

Cod Helped Shape Human History

Part I of the book examines in considerable detail the interaction between humans and cod, nearly exclusively from the viewpoint that cod are an important food and have often been a significant commercial commodity. Several centuries ago, cod's ready availability as a desirable food item led to early commercial exploitation of cod fisheries. Early curing techniques typically used air drying of prepared fish and led to the establishment of various colonies or outposts. Later curing methods utilized salting and, with other foods, led to secondary commercial development of salt extraction. Various nationalities became ascendant in the cod trade as global markets developed or declined—the earliest dominant national force in the cod trade was focused in the Basque region of Spain; ironic, considering that Spain has never had a good local cod fishery.

Cod's commercial significance led to rapid affluence in early American colonies and other locations and by the early 1700s cod fishing success led to an emerging and so-called cod aristocracy of nouveau riche, concentrated along the New England and Newfoundland coastal regions. Cod gained in significance throughout the 1800s and by the late 1800s was a dominant factor in global commercial patterns and a significant source of protein for many cultures. This began to change only with the rapid and nearly catastrophic collapse of the Atlantic cod fishery during the early years of the 1900s. Due to overfishing, many areas became commercially inviable. Today, cod remains severely depleted. However, the book's initially presented theme, that cod has helped significantly to shape human history, is strongly supported throughout the book.

There's a Finite Amount of Cod, After All

Throughout history, many have espoused the belief that cod would prove impervious to overfishing. After all, a mature female of the species can produce millions of eggs, year after year—indeed, a few fecund females should be able to produce more eggs than all the fishermen of the world can harvest in fish. An early and influential champion of nature's supposed inexhaustibility was Thomas Huxley who c. 1860 vehemently and successfully argued that fisheries should not be subject to catch quotas. Huxley's international weighty reputation caused quotas to not be imposed for decades. Meanwhile, ever-increasing fishing fleets were using ever-more-efficient fishing techniques to land larger and larger catches. But the happy day of infinite cod was drawing rapidly to a close. The book chronicles the gradual peaking and then declining of Atlantic cod catches through the 1870s and 1880s, noting that the traditional cod fishing grounds yielded fewer fish each year, even though more ships, better techniques, and bigger nets were used. By the early 1900s it had become obvious—painfully obvious—that cod could be depleted after all. Still, the initial response to the cod fishery collapse frequently was denial. Many argued that the cod had simply "gone elsewhere"; they had not vanished, they had relocated. To prove this theory, the vast

fishing fleets located other cod fishing grounds and enjoyed successes—at least, temporarily. The book establishes the fact that there is a finite amount of cod with great credibility. Today, the exhaustion of the Atlantic cod fishery stock by overfishing is an established fact, and this forms one of the book's primary themes.

Cod Won't Recover by Itself

The book presents conservation science as a secondary theme and gradually introduces the concept throughout the middle half of the text. Chapter 12 in particular focuses on the theme that cod might not be able to rebound, even if humans stop fishing for it. After the Atlantic cod fishery collapses of the early 1900s, many reasonably theorized that the best course of action would be to simply stop taking so many cod out of the oceans. Harvesting fewer fish would mean that more would survive to reproduce and, so the theory goes, within a half-dozen or so years, cod populations should return to normal. But perhaps not. The book argues that this theory is not valid and relies on the irrefutable fact that strict quotas have been tried and have failed. Cod populations have not rebounded as anticipated. The book presents several theories about why this might be so—the most-plausible of which being that competitors for cod's food have enjoyed great population surges which have largely displaced cod. Also, cod reproductive success is tightly correlated to age such that many young cod do not reproduce as effectively, or as much, as a few older cod. In any event, theories abound about cod's failure to rebound, but the fact is they haven't. The book presents several possible mechanisms whereby cod populations could be assisted to recover, but so far these are only unproven ideas. The theme that cod won't recover by itself runs throughout the second half of the book and serves as a grim reminder of humanity's responsibility to the environment.

Style

Perspective

Mark Kurlansky, the author, has worked on commercial fishing boats for several years. He has worked as a journalist for the Chicago Tribune and the International Herald Tribune. His work also has appeared in various national magazines including Harper's, Audubon, and the New York Times Magazine. Kurlansky also contributes a column on food history to Food & Wine. Kurlansky has previously published A Continent of Islands: Searching for the Caribbean Destiny, A Chosen Few: The Resurrection of European Jewry, The Basque History of the World, and Salt. Many of his apparent interests, and several of his professional publications, make him well suited to present the history of cod as a staple food for several nations through the past several hundred years. This is especially apparent in the book's heavy focus on Basque involvement in the history of cod and in the processes of salting cod for preservation, including a lengthy commentary on the types and qualities of salts used.

The book is delivered from the abstracted third-person, omniscient, point of view common to modern journalism. The text is obviously intended for a broad audience and the construction offers no particular hindrance to any reader of the high-school level or above. Little material is controversial and topics that might be controversial are typically treated in a so-called politically-correct way. For example, slavery is mentioned as it influenced the early American cod fisheries—but it is also soundly condemned.

Tone

The book's tone is fairly journalistic and is concerned mostly with the presentation of objective facts in an enjoyable way. The book does not have an obvious primary narrative driver beyond the subject of cod, and thus the tone has a somewhat scattered feel at points. The early portions of the book feature a fairly pro-American stance and significant American events, for example the American Revolution, are retrospectively presented, more or less, as inevitable events. The construction of the narrative is also rather hodgepodge, and topics only tangentially related to cod and fishing are presented with quite a bit of extraneous detail. Of course, this fairly scattered narrative construction can be interpreted as merely inclusive, for the topic always eventually comes back to cod, and the book is imminently readable and enjoyable.

Part One of the book, featuring six chapters, presents a lighthearted tone featuring various anecdotes and interesting factoids. It is readable and quite compelling. Part Two features a more serious tone and includes material that is historically more recent and more controversial. It is based only somewhat on the book's prior materials. Part Three continues to present an increasingly serious tone and delivers a large amount of contemporaneous or near-contemporaneous materials. To a certain extent, it relies on information presented in earlier chapters.

Structure

The 294-page book is divided into three named and enumerated parts following a fairly lengthy prologue. Part One: A Fish Tale is sub-divided into six chapters; Part Two: Limits is sub-divided into four chapters; and Part Three: The Last Hunters is divided into four chapters. The text proper is followed by about forty pages of cod recipes derived from works spanning about six centuries. Recipes are enjoyable inasmuch as they are often presented in their original syntax and language, lending a rich variety to the reading experience. The text ends with a bibliography, acknowledgments, and a useful index. The fourteen chapters are named and enumerated and are presented primarily as topical units. Within each chapter events are typically presented in roughly chronological order, but each new chapter—that is, each new topic—will once again present events chronologically. This results in the book traversing historic time repeatedly; although it is not difficult to follow, it does make it somewhat difficult to link various topical developments together for an overall historic viewpoint. Nevertheless, the construction technique is successful and enjoyable.

Quotes

"A medieval fisherman is said to have hauled up a three-foot-long cod, which was common enough at the time. And the fact that the cod could talk was not especially surprising. But what was astonishing was that it spoke an unknown language. It spoke Basque.
This Basque folktale shows not only the Basque attitude to their orphan language, indecipherable to the rest of the world, but also their tie to the Atlantic cod, Gadus morhua, a fish that has never been found in Basque or even Spanish waters." (pp. 17-18)

"The hero, Gadus morhua, is not a nice guy.
It is built to survive. Fecund, impervious to disease and cold, feeding on most any food source, traveling to shallow waters and close to shore, it was the perfect commercial fish, and the Basques had found its richest grounds. Cod should have lasted forever, and for a very long time it was assumed that it would. As late as 1885, the Canadian Ministry of Agriculture said, 'Unless the order of nature is overthrown, for centuries to come our fisheries will continue to be fertile.'" (p. 32)

"When Europeans first arrived, North America had a wealth of game and fish unparalleled in Europe. Flocks of birds, notably the passenger pigeon, which is now extinct, would darken the sky for hours as they passed overhead. In 1649, Adriaen van der Donck, the colonial governor of New Amsterdam, wrote from what is now New York that nearby waters had six-foot lobsters. Even a century after Cabot, Englishmen wrote of catching five-foot codfish off Maine, and there are persistent accounts in Canada of 'codfish as big as a man.' In 1838, a 180-pounder was caught on Georges Bank, and in May 1895, a six-foot cod weighing 211 pounds was hauled in on a line off the Massachusetts coast. Cabot's men may well have been able to scoop cod out of the sea in baskets." (p. 49)

"Of all the unlikely American success stories of the epoch, none is more improbably than that of the Pilgrims. They set sail to pursue their religion and live on fishing in a new world. The fact that they arrived at the onset of winter is the first hint of how little they knew about survival. Still, they had gone to New England for fishing and not farming, and though doubtless they had never thought about this, New England does have the good fortune, unlike Newfoundland, to have a winter inshore fishing season. So why were the Pilgrims starving in the richest fishing grounds ever recorded?" (p. 68)

"By the eighteenth century, cod had lifted New England from a distant colony of starving settlers to an international commercial power. Massachusetts had elevated cod from commodity to fetish. The members of the 'codfish aristocracy,' those who traced their family fortunes to the seventeenth-century cod fisheries, had openly worshipped the fish as the symbol of their wealth. A codfish appeared on official crests from the seal of the Plymouth Land Company and the 1776 New Hampshire State seal to the emblem of the

eighteenth-century Salem Gazette—a shield held by two Indians with a codfish overhead. Many of the first American coins issued from 1776 to 1778 had codfish on them, and a 1755 two-penny tax stamp for the Massachusetts Bay Colony bore a codfish and the words staple of Massachusetts." (pp. 78-79)

"All revolutions are to some degree about money. During France's revolution, the comte de Mirabeau said, 'In the last analysis the people will judge the Revolution by this fact alone—does it take more or less money? Are they better off? Do they have more work? And is that work better paid?' But he was not a radical in that Revolution." (p. 93)

"From the seventeenth century to the 1930s, the common way to fish for cod and other groundfish was to go out to the Banks in a ship and then drop off small dories with two-man crews. The Portuguese, who were infamous on the Grand Banks for the harshness of their working conditions, used one-man dories. Europeans would cross the ocean in large barks built for deck space and large holds; New Englanders and Nova Scotians went out in schooners that could swiftly run back to shore to land fish; but all the dories were the same: twenty-foot deckles skiffs. The dorymen would generally use oars, and occasionally sail power, but they had to provide their own sails. Often they or their wives made them by sewing together flour sacks." (p. 114)

"Well into the twentieth century, Lunenburg, Nova Scotia's, Grand Banks fleet stayed with sail power. 'The Lunenburg cure,' heavily salted on the schooners and then dried on flakes along the rocky sheltered coastline, was traded in the Caribbean. The town of Lunenburg was built on a hill running down to a sheltered harbor. On one of the upper streets stands a Presbyterian church with a huge gilded cod on its weather vane. Along the waterfront, the wooden-shingled houses are brick red, a color that originally came from mixing clay with cod-liver oil to protect the wood against the salt of the waterfront. It is the look of Nova Scotia—brick red wood, dark green pine, charcoal sea." (p. 128)

"The British responded by using the new wireless on their trawlers to alert each other to Coast Guard activities. Most famous were the so-called Grandmother messages of 1928. Three messages—'Grandmother is well,' then 'Grandmother is still well,' and finally 'Grandmother is beginning to feel bad'—were used to indicate when a Coast Guard vessel was leaving its harbor. Finally, in 1936, coded wireless messages were outlawed in Icelandic waters. But the Grandmother messages continued, with code systems often organized by British seafood companies." (p. 153)

"In 1974, Icelandic cod stocks appeared to be in trouble again, in spite of the fifty-mile limit. The percentage of large cod in the catch had declined dramatically. Icelandic biologists claimed that a decade earlier eighteen-year-old cods were commonplace, whereas by 1974 it was rare to find a code older than twelve. This meant the reproductive capacity of the stock was greatly reduced. Even British scientists agreed with these findings." (p. 167)

"But once the 200-mile limit was established in 1977, the Canadian government saw a chance to make fishing a viable economic base for Newfoundland. First, though, it

needed to settle its borders with the United States and drive off the Europeans. Then it would have a truly exclusive zone." (p. 179)

"What we gain in hake, we lose in herring -English proverb
Cod coming back, fisherman say - minister under pressure to end moratoriums in waters off Newfoundland - front-page headline, Toronto Globe & Mail, October 5, 1996
Newfoundlanders debated over when 'the cod was coming back.' Few dared ask if. Or what happens to the ocean if they don't come back? Or whether commercial fishing was going to continue at all. The position that the cod would return was most candidly argued by Sam Lee: 'They're coming back because they have to.'" (p. 191)

"According to the British government, 70 percent of the species in British waters are being overfished. In the North Sea, the catch has dropped from 287,000 metric tons in 1981 to 86,000 in 1991. Like Canada's northern stock, British cod are now reaching maturity at a much younger age than the normal three to five years, and large cod are increasingly rare." (pp. 209-210)

"Today, Gloucester has as much in common with its neighbor on Cape Ann, Rockport, as Newlyn has with Mousehole. Rockport is a pretty little town with a pretty little harbor full of expensive yachts. The waterfront shops sell crafts and snacks for 'New Englanders who really wish to visit the sea-side.' Gloucester could have been Newlyn's sister. It is a rough, downhill fishing town. Fine old wooden merchant's houses view the sea from up on the hills, while nineteenth- and twentieth-century brick buildings—the look of old blue-collar New England—dominate the lower part of town around a well-sheltered and busy waterfront. Bottom draggers, a few longliners, gillnetters, and lobster boats line the docks. In early morning they head out, a few at a time, and from four o'clock on they come back, trailed by gulls as they make their way with their catches toward the landing docks of the seafood companies. The companies are small. Birdseye's old company, which became Postum, which became General Foods, was then sold to O'Donnell Usen, which left for Florida. Seafood companies don't need to be in fishing ports anymore. Their fish arrives in freezer containers, often from other oceans. Gorton's is still in Gloucester, the largest plant with the biggest sign, but the company hasn't bought a fish from a Gloucester fisherman in years. Gorton's buys no Atlantic cod from anyone anymore. In 1933, with the invention of the filleting machine, redfish, which had always been tossed overboard, became a major catch, and by 1951 represented 70 percent of all fish landed in Gloucester. But in 1966, Gorton's bought its last Gloucester redfish too, closing down the plant on what had been called 'redfish wharf.'" (pp. 219-220)

Topics for Discussion

Prior to reading the book, did you have a strong preference for cod? After reading the book, did your preference changed?

Do you think that cod fishing is simply an archaic method of obtaining food? Is there any viable long-term future in harvesting fish from the oceans?

Cod is a type of groundfish, living close to the ocean floor and feeding on nearly anything. What other traits make cod such a successful organism?

The book argues that fisheries should be proactively managed to sustain maximum long-term yield. Do you think that fisheries can be adequately studied and managed to attain such a desirable goal? Why or why not?

The book's construction presents very uniform paragraphs with simple and accessible sentences. Do you find reading such repetitive construction easy or difficult? If you were writing the book, would you retain this approach?

The book features a wide range of topics only marginally related to cod. Does such supporting material add to the book's appeal? Why or why not?

The non-fiction segments of the book are interspersed with recipes derived from several hundred years of codfish consumption. Discuss how the recipes interact with the book to ground it as, essentially, a work of food history. Would you be likely to use one of the included recipes? Why or why not?

Have you ever fished for cod? Have you ever landed a cod? Have you ever eaten cod? Discuss your relationship to this traditional food fish; how does using cod make you feel? Have you ever taken cod-liver oil? How was that experience?