

**COBSCOOK BAY SEA SCALLOPS:
THE FISHERY AND MARKETS**

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EXECUTIVE SUMMARY

The purpose of this study is to describe the fishery and market for Cobscook Bay sea scallops and help identify ways to increase the value of the fishery. Data were collected from interviews with fishermen, first buyers, dealers, wholesalers, restaurants, and retailers.

The Cobscook Bay scallop fishery is a small-scale, day-boat fishery. Most boats are between 30 and 40 feet in length and drag for scallops. Only a few Cobscook area license holders dive for scallops.

We estimate the total Cobscook Bay scallop catch for the 2004-05 season at approximately 155,000 lbs with a gross ex-vessel value of \$1 million. Approximately 43 Cobscook area license holders and 31 boats owned by Cobscook area residents actively fished for scallops in Cobscook Bay during the last two seasons. In addition, at least 7 boats from outside the area fish for scallops in Cobscook Bay.

About 85% of Cobscook scallops are sold by fishermen to first buyers or dealers, who then sell the scallops to wholesalers. Wholesalers sell the scallops to restaurants and retailers, mostly in the northeastern United States. Some Cobscook scallops are sold to final buyers in other parts of the country and even to Europe. Approximately 15% of landings are sold by fishermen directly to restaurants, households, and retailers, primarily in Washington County.

Freshness is the most important scallop characteristic desired by the restaurants and retailers interviewed. Besides freshness, buyers generally prefer dry, medium to large scallops, and several buyers express a preference for local scallops. Although most restaurants and retailers have a preference for fresh scallops, others are satisfied buying

frozen scallops. Several restaurants buy scallops fresh, but then freeze them. Some buyers prefer diver scallops. A few buyers emphasize the importance of scallops that are sustainably harvested with low environmental impacts and handled to protect food safety.

Interview participants provide suggestions and insights on ways to improve the dollar value of Cobscook Bay scallops. Forming a cooperative is the top suggestion from fishermen, followed by specialty or niche marketing. Suggestions from dealers include taking greater care in shucking and handling the scallops, not selling to dealers and wholesalers who soak the scallops, and taking measures to increase future landings. Wholesaler suggestions include group marketing (from fishermen to end users) and closing the fishery for 2-3 years to increase future landing volumes.

Scallop prices this season were higher than during the previous two seasons. Boat prices were reported ranging from \$5.00 to \$7.25/lb for boat run, \$7.00 to \$8.50/lb for 10-20 count, and \$7.25 to \$10.25/lb for U10s. Direct sales from fishermen to restaurants and households of boat run scallops were reported at prices ranging from \$60 to \$70 per gallon with approximately 9 lbs of scallops to a gallon.

The traditional dealer-wholesaler market channel supports a substantial price premium for large scallops from Cobscook Bay, but little or no premium for freshness or other quality attributes of smaller Cobscook day-boat scallops. This occurs despite the great importance consumers place on freshness. Final buyers have difficulty verifying scallop characteristics, such as freshness, level of soaking, origin, and method of catch. Except for the case of U10s, these characteristics appear to be poorly conveyed through traditional market channels. We conclude that there is additional potential for marketing initiatives that highlight Cobscook quality attributes and help raise boat prices.

INTRODUCTION

Research Objectives

This study is motivated by a desire to increase the dollar value and marketability of Cobscook Bay sea scallops, while managing the fishery for sustainability.

The main objectives of the current research are the following.

1. Describe the Cobscook Bay scallop fishery, including the fishermen, extent of fishing effort, methods, costs, volume and value of catch.
2. Describe the markets for Cobscook Bay scallops.

Secondary objectives are to assess the marketing and purchasing preferences among fishermen and buyers and obtain suggestions on ways to improve the value and marketability of Cobscook scallops. Through this research we hope to better understand the current state of the scallop fishery and marketing of scallops from Cobscook Bay, and to provide a foundation for exploration of alternative marketing options.

Background and Research Method

Qualitative and quantitative data were collected through interviews with scallop fishermen, first buyers, dealers, wholesalers, restaurants and retailers. Telephone and in-person interviews were conducted between December 2004 and June 2005. Interviews were structured by questionnaires containing both closed-ended and open-ended questions.

Commercial scallop license holders living in communities surrounding Cobscook Bay were identified from state records for 2003 and 2004. Towns included Eastport, Perry, Robbinston, Calais, Pembroke, Dennysville, Edmunds, Whiting, Trescott, and Lubec. Figures 1 and 2 depict the Cobscook Bay region and its location in the state of Maine. Table 1 lists the number of license holders and licenses for each license category

and year. Most Cobscook scallopers possess a scallop boat (dragger) license. Some scallopers hold a diver or tender license. A few hold more than one type of license.

Table 1. Cobscook area scallop license holders and licenses in 2003 and 2004.

	<i>2003 license holders</i>	<i>2004 license holders</i>
Dragger only	74	73
Diver only	8	3
Tender only	11	7
Dragger & diver	4	2
Dragger & tender	4	3
Dragger, diver & tender	1	1
Total license holders	102	89
	<i>2003 licenses</i>	<i>2004 licenses</i>
Total drag licenses	83	79
Total dive licenses	13	6
Total tender licenses	16	11

Twenty-three license holders in 2003 did not renew their scallop license in 2004. Ten license holders in 2004 did not have a license in 2003. All ten were draggers. The total number of scallop license holders fell by thirteen, from 102 in 2003, to 89 in 2004. Most of the decrease occurred in the diver and tender categories.

One hundred and twelve individuals residing in Cobscook area towns possessed a scallop license in either 2003 or 2004. Eighty-four held a scallop boat (dragger) license only; 8 held a hand fishing (diver) scallop license only; 11 held a scallop diving tender license or a sea urchin and scallop diving tender license only. Four individuals held a boat license and diver license, and four held a boat license and diving tender license. Only one fisherman held all 3 types of licenses. Four of the license holders (3 draggers and 1 diver) were known to have died before the start of the survey. Thus, the entire population of 2003 or 2004 commercial scallop license holders living in the Cobscook area consisted of 108 individuals.

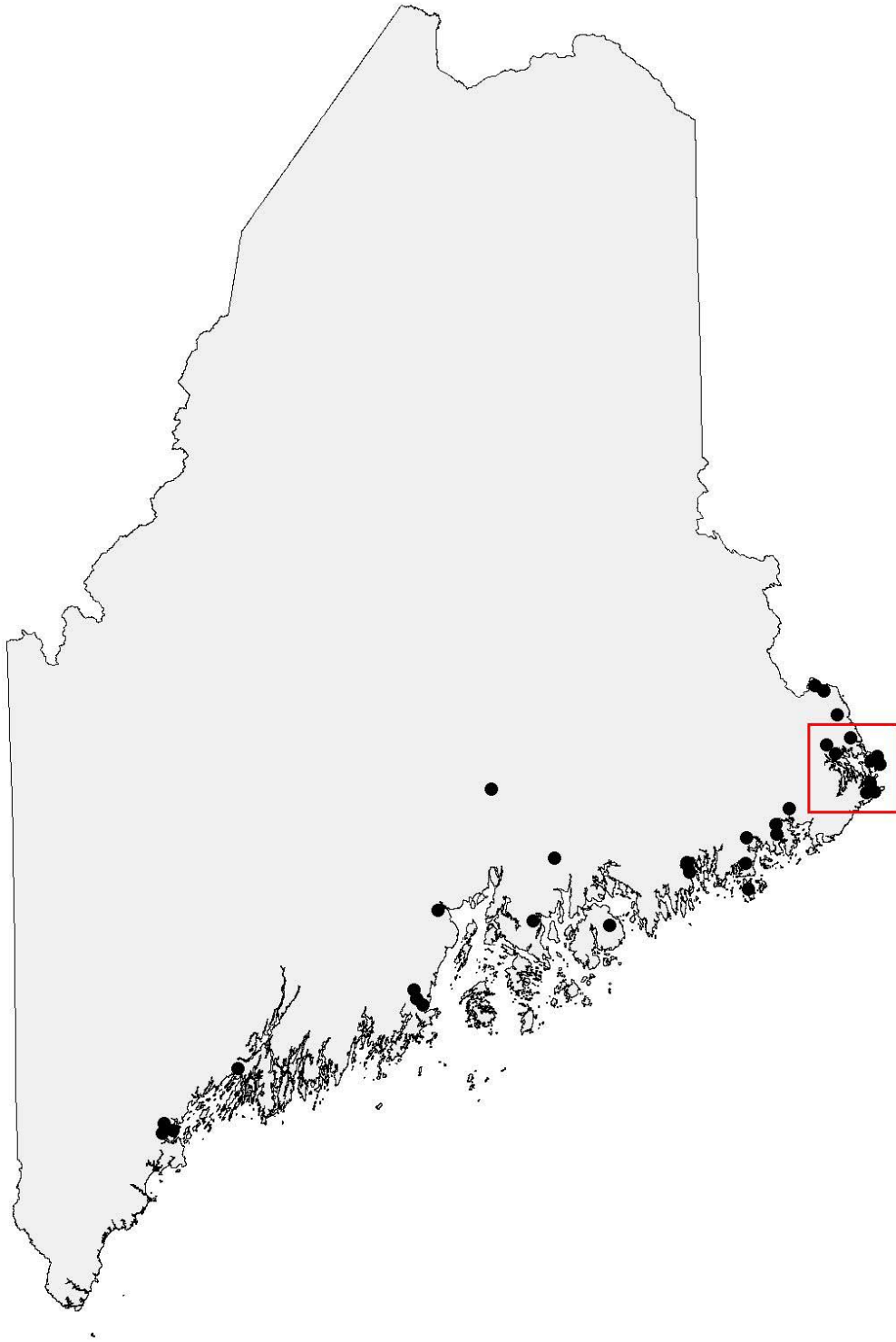


Figure 1. Location of Cobscook Bay and business interviews¹

¹ Box shows the Cobscook Bay region. Dots show the locations of businesses interviewed.



Figure 2. Map of the Cobscook Bay region.²

² Maps provided by the Cobscook Bay Resource Center.

A large sample of Cobscook scallopers was selected for interviews on the following basis. Phone numbers were obtained through fishermen's association membership lists, meeting attendance records, the local phone book, and word of mouth. No phone number could be obtained for 24 license holders. One juvenile (under 18 years of age) was removed from consideration. We attempted to interview all 83 of the remaining scallop license holders for whom we found phone numbers.

We were successful in contacting 61 of these 83 license holders. Thirty of the sixty-one reported that they did not scallop in Cobscook Bay during the last two seasons (2003-04 or 2004-05). At least two of these individuals fished for scallops recently, but not in Cobscook Bay. Thirty-one of the sixty-one individuals contacted reported that they had scalloped in Cobscook Bay during the last two seasons. Interviews were completed with 30 of the 31 current Cobscook Bay scallopers we were able to contact. Some additional data were also collected from 7 of the 30 license holders who did not scallop in Cobscook Bay during the last two seasons.

Since we were unable to conduct a full census of Cobscook scallopers, we rely on our sample of 61 contacts and 30 interviews to make inferences about the entire fishery. The large size of our sample (61) relative to the population (108) helps the reliability of the inferences we make. Because we did not use probability sampling procedures (in which every member of the population has a known, usually equal, probability of being contacted), however, we cannot calculate the precision or confidence of quantitative estimates for the entire fishery using methods of statistical inference. There are two suspected sources of bias in our sample. First, phone numbers were more likely to be obtained for scallopers who are members of the fishermen's association, attend meetings,

are well known in the community or have a phone number listed under their name in the phone book. We believe that younger, more transient, less active, and less well-established fishermen were less likely to be included in our sample frame (license holders with phone numbers). Second, some nonresponse bias may occur because we were not able to make contact with all 83 of the license holders for whom we had phone numbers. Although it is possible that the license holders who we were unable to reach were just too busy scalloping, we believe it is more likely that they are not active scallopers.

Six dealers who handled Cobscook scallops this past season were identified through the interviews with fishermen. Three of these dealers were interviewed, as well as two first buyers who work for one of the dealers. A fourth dealer was contacted only to get an estimate of the amount of scallops he handled. Three wholesaler/processors who handled Cobscook scallops recently were identified through interviews with fishermen, first buyers, and dealers. These three wholesaler/processors were interviewed. Two other wholesaler/processors with knowledge of the market for scallops were interviewed as well. Lists of restaurants and retail food stores in Washington County and other parts of Maine were compiled from various sources. Interviews were conducted with 16 restaurants and 6 retail food stores. We use these interviews to make inferences about the market for scallops, but data were not generated using probability sampling techniques. Figure 1 shows the locations of businesses interviewed.

For comparison and to assess relationships between Cobscook scallops and the larger market in the Northeast, prices posted by the National Marine Fisheries Service for the New Bedford Auction and Fulton Fish Market were monitored during the 2004-05 season. Daily prices were noted once or twice a week during the course of the season.

Individuals familiar with the two markets were contacted to provide a better understanding of what the posted prices represent.

RESULTS

Results are grouped here according to interview type. First, results of the fishermen interviews are presented, followed by dealers, wholesalers/processors, restaurants, and retailers. Lastly, prices from the New Bedford Auction and Fulton Fish Market are listed along with a brief description of the two markets.

Fishermen Interviews

Fishermen interviews included questions about the fishermen, their fishing method and equipment, costs, fishing intensity and frequency, handling of scallops, selling the catch, and their preferences and suggestions. Results of the fishermen interviews are broken into five categories: (1) the fishermen, fishing effort, methods, and costs; (2) landings; (3) handling of scallops; (4) marketing; (5) fishermen preferences and suggestions.

The fishermen, fishing effort, methods, and costs

The Cobscook Bay scallop fishery is a small, day-boat fishery. Most scallop boat license holders are both owner and captain of their boat. Only one boat owner interviewed does not run the boat he owns. Twenty four of the 30 fishermen interviewed are scallop boat captains, but three are captain on a boat they don't own. Twenty two of the 30 fishermen interviewed own the boat that they usually scallop on (as captain, sternman, diver, or dive tender). If this were a representative sample, we could estimate that 40 boats, owned by license holders living in the Cobscook area, are actively scalloping in Cobscook Bay. Because of suspected upward bias, the actual number of

active boats probably lies between 22 and 40. Our best point-estimate would be 31 boats (the midpoint of this range). This estimate does not include boats from outside the Cobscook area that fish for scallops in Cobscook Bay. According to one informant, there are at least 7 boats from away (Cutler, Bucks Harbor, Jonesport, and Milbridge) that fish for scallops in Cobscook Bay.

We found 31 individuals holding a boat, dive, or tender license who have scalloped in Cobscook Bay during the last two seasons (51% of those contacted). Extending this portion to the entire population of 2003 or 2004 license holders produces an estimate of 55 active scallopers. Because of upward bias, we believe the actual number of active Cobscook scallop license holders lies between 31 and 55 (or a best guess of 43).

Most Cobscook scallop fishermen drag for scallops, and some dive. A few fishermen both drag and dive. Of the 30 fishermen interviewed, 26 drag only (87%), 2 dive only – as tender or diver (6%), and 2 both drag and dive (6%). Of the 26 draggers, 2 mostly hand drag.

The type of boat used by a majority of Cobscook scallopers is a Novi boat, built of fiberglass or both wood and fiberglass. Most boats are between 30 and 40 feet in length. A few are 42 to 45 feet in length, and one scallop dragger reports using a boat that is 50 feet long. Divers and hand draggers often use smaller, trailered, fiberglass boats that are 20 to 22 feet in length. Most scallop boats were built between 1978 and 1991. One was reportedly built in 1964, and a few were built more recently than 1991. A variety of different engines are used in scallop boats. John Deere and Caterpillar diesel engines are the most common among those interviewed. Only four scallopers

interviewed have a gasoline engine in their boats (16% of responses). In the 30-50 ft. boats, engines range from 130 to 375 horsepower, and for the 20-22 ft. trailered boats, engines range from 50 to 130 horsepower.

The highest number of boat captains interviewed who actively scallop in Cobscook Bay identify Eastport (13) as their home port, followed by Lubec or North Lubec (8), Pembroke (1), Edmunds (1), and Trescott (1). Cobscook scallopers typically land their catch in their home port. Since these numbers are based on information collected from 60 license holders, the actual number of boats actively scalloping out of each port is probably higher. One buyer reports that there are 17 local boats fishing out of Eastport for scallops.

Cobscook scallopers fish for other species besides scallops and may engage in a variety of livelihood activities during the year. Only one scallop license holder interviewed does not have other fishing licenses. Ten of the thirty current scallopers interviewed (33%) hold a federal scallop license in addition to their state license. Many scallopers hold more than one license, and fish for multiple species, including urchins, lobsters, clams, whelks, periwinkles, halibut, herring, mussels, and crabs. Urchin (73%), lobster or lobster apprentice (73%), and commercial fishing (60%) are the most common additional fishing licenses held by current scallopers interviewed. Other livelihood activities, besides fishing, include working in salmon aquaculture, carpentry, the timber/paper industry, and truck driving.

The amount of time spent fishing on a typical scallop trip varies considerably by fisherman, type of boat, fishing method, and point in season. Most draggers report spending 5-10 hours fishing on a typical trip with an extra hour or two total boat time

(including travel & shucking). When scallops are plentiful early in the season and the catch limit can be reached quickly, fishing time tends to be less. One dragger reports needing only 3 hours of fishing time early in the season. Scallop divers typically spend 3-5 hours fishing on a trip.

For the 30-50 ft. boats with 130-390 hp engines, typical fuel usage per trip ranges from 17 to 70 gallons, with 25 to 40 gallons per trip the most common. Fishermen report fuel prices between \$1.32 for a prepaid, locked-in rate to \$2.39/gallon.

Crew share formulas are similar for most scallop boats. Typically the boat gets 40-50% of the day's revenue, and the crew split the rest (e.g., captain gets 25-30% and sternman gets 25-30%). Three respondents report the boat getting one-third, and the crew splitting the rest. Some respondents mentioned that the cost of fuel is taken off the top (before splitting the money among boat and crew). Two respondents said that \$1.00/lb paid to shuckers is taken off the top before the rest is split among boat and crew.

Crew size varies by boat, year, and time of the season, partly depending on catch expectations. The number of crew, including the boat captain, varies from one to four. A crew of two is most common, followed by a crew of three.

In deciding to fish for a certain species on any particular day, a fisherman has an expectation regarding the revenue generated from the trip, as well as costs and risks involved. Revenue is a function of the weight of the catch and the price (\$/lb) the fisherman receives. By asking what is the price (or dollars per day) below which it just is not worth going out, we are able to get an estimate of the costs of running a boat and paying the crew on a scalloping trip. Responses can be interpreted as break-even points. Partly because of the way the question was worded, some responses are given as revenue

per day, and others are given as a price or size of catch. For draggers (not including hand draggers) responses range from \$300 to \$800 per day. Most responses are between \$400 and \$500 per day. In terms of price, responses range from \$3.50 to \$6.50 per pound. It is uncertain what size catch is assumed for these responses. Assuming a catch of 100 lbs, these price responses would mean \$350 to \$650 in revenue per day. Some respondents indicated the minimum size of catch they need to make scalloping worthwhile. These responses range from 5 gallons (about 45 lbs) to 90 lbs. At a typical boat run price this season of \$6.50, these catch estimates would convert to \$293 to \$585 per day. Diver and hand dragger break-even points are a little lower than for standard scallop draggers. Diver and hand dragger responses vary from \$200 to \$500 per day. Some scallopers mentioned varying the size of their crew depending on catch expectations. In general, a larger crew is used earlier in the season, and a smaller crew is used later in the season. Crew costs and break-even points could be expected to vary accordingly.

Landings

Landings of scallops from Cobscook Bay vary from month to month and year to year depending on biological, economic, regulatory and weather conditions. The scallop season in Maine runs from December 1st to April 15th. All other times of the year are closed to scalloping in state waters. There is a daily catch limit of 15 gallons (the equivalent of about 135 lbs) of scallop meats enforced in Cobscook Bay.

The Maine Department of Marine Resources (DMR) provides data on monthly landings for each county in Maine. Landings data compiled by DMR are incomplete and unreliable, however, because reporting is not mandatory for scallop landings from state waters. For example, DMR data show a total of 103 lbs. of scallops landed in

Washington County for the entire month of December 2003. Cobscook landings are typically higher in December than any other month of the year, and 103 lbs could easily be landed by one boat in one day.

We produced estimates of scallop landings from Cobscook Bay through interview data. Fishermen were not asked directly what their total scallop catch was for the season. Instead, we asked how many days they fished during the 2003-04 and 2004-05 seasons, and how many days they reached the 15 gallon daily catch limit. Responses to these questions allow us to estimate landings.

We estimate landings in a very rough fashion, by calculating 135 lbs for every day the catch limit was reached and 80 lbs for every day fished that the catch limit was not reached for standard scallop draggers. Hand draggers and divers are estimated to catch 45 lbs per day fishing. Landings are calculated for captains only; if we used sternman responses too, we would be double counting some trips. The calculation of landings for the 2004-05 season is even more problematic, because most interviews took place before the season was over. If fishing effort and landings were evenly distributed throughout the season, landings for the season could be estimated relatively easily from data obtained part way through the season. For example, at 48 days into the 136 day season, an estimated landing figure of 1000 lbs, based on days fished as of the interview date (48 days), could be converted to an estimate for the entire season using the formula, $1000 \times \frac{136}{48}$. This estimate would be too high, however, if fishing effort and landings are concentrated early in the season, as is the case reported by fishermen and marketers. For this reason, an alternative formula was used, $L_S = L_P \times \left(2 - \frac{n}{136}\right)$, where L_S is landing

estimate for entire season, L_p is landing estimate obtained part way through the season, and n is the number of days elapsed since the start of the season. This formula multiplies the partial landing estimates by a sliding scale between 1 and 2. Landing estimates from early in the season are multiplied by a number close to 2, whereas landing estimates from late in the season are multiplied by a number just slightly over 1. A value of $n = 136$ is used for all interviews conducted after the last day of the season, producing a multiplier of 1 (no adjustment to landing estimates). This formula accounts for the fact that landings and effort are greater early in the season than late in the season.

Using this method, landings from our interview respondents are estimated at 75,725 lbs. of scallop meats in the 2003-04 season and 67,770 lbs. of scallop meats for the 2004-05 season. Assuming a representative (unbiased) sample, these figures can be converted to estimates for the entire fishery by multiplying them by 1.8 ($108 \div 60$). The resulting estimates for the entire fishery are 136,305 lbs. in 2003-04 and 121,987 lbs. in 2004-05. The presumed bias in our sample toward active scallopers suggests that the actual landings lie somewhere between 75,725 and 136,305 lbs. for 2003-04 and between 67,770 and 121,987 lbs. for 2004-05. These figures should be viewed with caution, however, given the crude method of generating the estimates, especially for the 2004-05 season. We cannot reliably calculate the precision of these estimates or a confidence interval. Also, these landing estimates do not account for landings by fishermen from Cutler, Bucks Harbor, Jonesport, or other areas, who fish in Cobscook Bay. Nor do they account for fishermen who may have started scalloping after the date we contacted them for an interview. With this in mind, however, these landing estimates are comparable to (a little lower than) the estimates obtained from first buyers/dealers (described later).

Handling of scallops

When scallops are hauled aboard, scallops with shells smaller than 4” are culled (thrown back in the water). Then the legal-sized scallops are shucked on board the vessel. Nearly all scallopers keep the scallop meats in 5 gallon buckets. Several report washing the scallops. A basket may be used for washing and picking through the scallops. Some say they keep seawater in the buckets with the scallop meats, but one respondent says he keeps the scallop meats dry. Several fishermen mention covering the buckets and keeping them in the wheelhouse.

Roughly half (54%) of respondents report sometimes grading the scallops into size categories (e.g., U10s, 10-20 count, 20-30 count) on board. This involves keeping the larger scallops in a separate container. Only a small minority (2 out of 28) bag the scallops on board, i.e., put them in 1 gallon freezer bags (for the peddle market). Forty-six percent of respondents do not grade or bag scallops on board. Often the first buyer or dealer will grade the scallops for the fishermen.

Marketing

First buyers or dealers will purchase scallops in three different grades (size categories) – large (under 10 scallop meats/lb.), mid-grade (10-20, 15-20, or 15 count/lb), and boat run (usually 20-30 count/lb.). Larger scallops fetch a higher price per pound. During most of the season, first buyers grade the scallops and pay the fishermen according to the weight in each grade. Fishermen report that some buyers, late in the season, stopped grading and only paid a boat run price for the entire catch.

Fishermen report selling most of their catch to first buyers or dealers in Eastport, Lubec, or Pembroke. Twenty-two fishermen provided estimates of the percentage

breakdown of their sales for this past season (2004-05). As shown in Table 2, a majority of fishermen sell 90 to 100% of their catch to a dealer or first buyer. Only 2 respondents sell less than 50% of their catch to a dealer or first buyer. Most fishermen also sell some of their catch direct to households, including neighbors, friends and family. Although a few fishermen report selling 40% or more of their catch directly to households, most sell less than 10% of their catch direct to households. Three respondents sell some of their catch (40%, 10%, and 5%) direct to restaurants. Weighting each percentage category by the number of responses indicates an average sales volume of 85% being sold to a dealer or first buyer.

Table 2. Distribution of fishermen's sales volume by market outlet¹

<i>Percentage of catch this season</i>	<i>Dealer or first buyer</i>	<i>Direct to restaurants</i>	<i>Direct to households</i>
100%	7	0	0
90-99%	8	0	0
80-89%	1	0	0
70-79%	2	0	0
60-69%	0	0	1
50-59%	2	0	2
40-49%	1	1	1
30-39%	0	0	0
20-29%	1	0	2
10-19%	0	1	2
1-9%	0	1	6

¹Numbers in table represent the number of fishermen (out of 22 responses) who gave estimates matching the row (percentage range) and column (sales outlet).

When fishermen sell to dealers or first buyers they typically bring their catch in 5 gallon buckets to the buyer, who grades and weighs the scallops. Although delivery to the dealer is most common, sometimes a first buyer or dealer will pickup from the fisherman. The dealer usually pays the fisherman immediately or the next day. Payment is made by check or cash. Fishermen identified 2 dealers based in Lubec, 2 in the Jonesport/Beals area, 1 in Milbridge, and 1 in Dennysville, who purchased scallops from

them this past season. These dealers may rely on first buyers in Eastport (on the breakwater), Pembroke, or Lubec to make the actual purchases from fishermen. According to fishermen and dealer interviews, there are 3 buyers on the Eastport breakwater the first couple weeks of the season, but only 2 buyers after that. Typically there are 3 to 5 buyers in Lubec, including the 2 dealers based there. There are 1 or 2 buyers in Pembroke, and 1 in Dennysville.

The peddle market involves direct sales by fishermen to restaurants and households. Fishermen may “cold-call” restaurants or have an established relationship with one or more restaurants. In either case, fishermen deliver scallops to local restaurants, usually in buckets, ungraded and unpackaged. The restaurant buyer looks them over, weighs them and agrees to pay an amount between the boat-to-dealer price and the wholesale-to-restaurant price. Some local restaurants buy 5 to 15 gallons at a time from Cobscook fishermen and freeze most of it for later in the season or year round use.

Several fishermen have lists of individuals to whom they have sold scallops in the past. Over the years fishermen have built up their own clientele. Usually fishermen sell to households only when the households have contacted them to place orders, rather than the fishermen calling around to solicit orders. Sales to households are usually made in 1 gallon (9 lb.) or ½ gallon (4.5 lb.) parcels, typically in plastic freezer bags. Usually households buy boat run scallops and pay a little more than the boat-to-dealer price. Households often pickup orders from the fishermen, but sometimes the fishermen will deliver.

Typically fishermen sell their catch fresh on the same day or the day after the scallops are landed. One fisherman reports freezing scallops himself and delivering to a restaurant throughout the year. No respondents mentioned selling directly to a wholesaler/processor, retail store, or via the Internet, although one local retailer reports buying scallops directly from Maine fishermen.

The typical distribution of scallop grades varies among fishermen and changes over the course of a season and from year to year. Fishermen have some ability to influence the size distribution, depending on where they fish. There may be a tradeoff between fishing for larger scallops and the total size of the catch. Scallop buyers may pay a separate price for U10s, 15 count, and boat run; only for U10s and boat run; or just pay for boat run. Twenty-four respondents gave estimates of the typical percentage of sales volume for each size category. Most respondents reported that typically 5-10% of their volume is U10s. Other responses were 2-3% and 10-50%. Only a few reported getting a separate price for a mid-grade, such as 10-20 count. If 10-20 ct. scallops are separated out, they reportedly range from 8% to 25% of the catch. Four respondents state that usually 100% of their catch is sold as boat run. Most reported selling between 75% and 98% of their catch as boat run.

Prices reported by fishermen were higher in the 2004-05 season than in the 2003-04 season (Table 3). Boat-to-dealer prices for 2003-04 were reported at between \$3.25 and \$5.50/lb for boat run and between “\$5 something” and \$8/lb for U10s. A typical peddle market price for 2003-04 was \$50/gal. Boat-to-dealer prices for 2004-05 were between \$5.00 and \$7.25/lb for boat run, between \$7.00 and \$8.50/lb for 10-20 or 15 count, and between \$7.25 and \$10.25 for U10s. Scallops sold on the peddle market are

typically sold as boat run and 2004-05 prices ranged from \$60 to \$70/gal. (9 lbs to the gallon). Some fishermen reported setting the peddle market price just slightly over boat-to-dealer (boat run) price (e.g., \$0.25 more per lb or rounding up to the nearest \$5 increment per gallon). Other fishermen reported setting the peddle market price \$1 to \$2 per pound over the boat-to-dealer (boat run) price.

Table 3. Prices reported by Cobscook scallop fishermen

	<i>2003-04 season</i>	<i>2004-05 season</i>
U10, boat-to-dealer prices	\$5.00 - \$8.00/lb	\$7.25 - \$10.25/lb
10-20 ct, boat-to-dealer prices	n/a	\$7.00 - \$8.50/lb
Boat Run, boat-to-dealer prices	\$3.25 - \$5.50/lb	\$5.00 - \$7.25/lb
Boat Run, peddle market prices	\$50/gal	\$60 - \$70/gal

Fishermen note that prices were high 6-10 years ago, but dropped during 2001 to 2003. Respondents attribute the decline in prices to the opening of offshore areas (Georges Bank) to scalloping and the 9/11 terrorist attacks. This season, however, fishermen report that prices have been higher than during the previous two seasons.

Scallop prices also fluctuate during a season. This season, one fisherman noted that price was at a low point the first few days of the season, starting around \$5.75/lb for boat run, but hit a temporary peak of about \$6.50/lb before Christmas. A general upward trend in prices seemed to continue through March. Boat run prices reportedly reached \$7.00 or \$7.25/lb in March, before sliding back to \$6.25/lb in early April.

Four fishermen say that the number of buyers in the Cobscook area has stayed about the same over the last few years, whereas another four fishermen report that the number of buyers is lower than it was a few years ago. One fisherman reports that the number of buyers increased recently.

Current landings in Cobscook are reportedly lower than they were 2-3 years ago, because legal-sized scallops are less abundant. With lower scallop landings, fewer buyers may find it worthwhile to go after Cobscook scallops. Typically as fewer and fewer vessels go out for scallops later in the season, fewer buyers show up to purchase scallops. Also, some buyers stopped grading later in the season. We do not know whether this is a result of less competition among buyers, not enough volume to make grading worthwhile, or some other reason.

Fishermen preferences and suggestions

Several fishermen say they typically stick with the same buyer. Others report that they shop around for the best price. Some sell to 2 or 3 different buyers regularly. Some fishermen have regular peddle market customers (households or restaurants). Many fishermen sell their catch on the same day and do not want the hassle of spending a lot of time shopping around or peddling.

Table 4. Fishermen’s preferred buyers

<i>Type of buyer</i>	<i>Number of fishermen mentioning</i>
Whoever pays the most	4
Happy with the way it is	4
Cash buyers	2
Cooperative	2
Restaurants	2
Buyers who grade	1
Direct to Boston or New York	1
More buyers at breakwater	1
Somebody local that creates jobs through processing or value-added	1
Buyers who will pick up	1
Buying station in Eastport	1
Households	1

Fishermen were asked what type of buyers they would like to be able to sell more to. Responses, listed in Table 4, were widely dispersed. “Whoever pays the most” and

“happy with the way it is” were the most frequent responses with four each. Cash buyers, a cooperative, and restaurants were each mentioned twice.

Fishermen were asked how they think Cobscook fishermen could get a better price for scallops. Responses are listed in Table 5. Some fishermen mentioned more than one idea. The idea of forming a cooperative was by far the most popular response, followed by finding specialty or niche markets for Cobscook scallops. Collective bargaining/pricing; and working together (such as by splitting a truck & gas) each were mentioned by more than one fisherman.

Table 5. Fishermen’s suggestions on how to get a better price for scallops.

<i>How to get a better price</i>	<i>Number of fishermen mentioning</i>
Cooperative	8
Specialty or niche markets	3
Collective bargaining/pricing	2
Work together and split truck, gas, etc.	2
Advertising or promotion	1
Direct to consumer	1
Increased competition from buyers	1
Keep Canadians out of U.S. market	1
Shut down offshore	1
Sell to the westward	1

Although not included in the interview results presented above, we recorded comments from several of the license holders who did not scallop in Cobscook Bay during the last two seasons. Reasons given for not scalloping include the following:

- Doing better fishing for urchins
- Tend for urchins; sometimes will take a few scallops for own consumption
- Lobstering has been late; then bad weather, so has not bothered changing gear
- Busy doing other things.
- The daily catch limit
- So many draggers on the water and so many regulations
- Low catches the last 2 seasons (but every few years the scallops come back)
- Too cold

Several respondents mentioned that they continue to renew their scallop license to keep the option open or in case there is ever a moratorium.

Among two license holders who currently scallop, but not in Cobscook Bay, one said that Cobscook is farther from home than where he goes scalloping. He only hand drags outside the Bay a couple times a year, mostly for his own consumption. The other stated that the daily catch limit is the main reason he scallops elsewhere (around Cape Cod and Rhode Island).

A few license holders not currently scalloping in Cobscook Bay gave additional comments. Suggestions on how Cobscook fishermen could get a better price for scallops include the following:

- Promote product from clean waters; maybe a scallop marketing board similar to the Lobster Promotion Council; do some research in areas like Florida and California; start advertising in November; target specific areas where people have money.
- Get rid of chain sweeps; provide a better product or larger meat counts; attach a name to it, like Passamaquoddy or Cobscook.
- Shut down the whole south shore.
- If the scallops get bigger.
- Niche markets; for all seafood the key is freshness.

One license holder recommends opening urchin season and scallop season at the same time to reduce the fishing pressure. Another license holder suggests outlawing chain sweeps. He believes that rock drags or kites would be better, in terms of reducing scallop mortality and sustaining the resource. Another fisherman thinks the meat count is very important for enforcement of the size limit, but that it should be changed to 45 ct./pint.

First Buyer and Dealer Interviews

The distinction between dealers, wholesalers and processors is not always clear. For the purpose of this study, dealers are firms located in the region where fish are landed

that buy from fishermen, consolidate multiple boat loads, and sell to wholesalers or other market outlets. Dealers have storage and handling facilities, as well as trucks. Most dealers have one or more first buyers who work for them and make the actual purchases from fishermen. First buyers may work from a truck or a shop.

Three of the 6 dealers identified as handling Cobscook scallops this season were interviewed. In addition, 2 first buyers who work for one of the dealers were interviewed. We contacted a fourth dealer who provided data on the quantity of scallops purchased from Cobscook Bay during the 2004-05 season. Results of these interviews are grouped by topics: (1) landings; (2) sourcing and marketing; (3) handling and processing; (4) qualities, price, and market outlets; (5) dealer suggestions.

Landings

Based on interviews with the dealers and fishermen, all 6 dealers are ranked in order of volume of Cobscook scallops they handled this season. Dealer #1 handled the most scallops, an estimated 80,000 lbs this season. Dealer #2 handled approximately 40,000 lbs this season. Dealer #3 was not interviewed. Dealer #4 handled between 5,000 and 10,000 lbs this season. Dealer #5 handled about 2400 lbs of Cobscook scallops this season. Dealer #6 was not interviewed. Assuming that the volume handled by Dealer #3 lies somewhere between Dealer #2 and #4, and that Dealer #6 handled less than Dealer #5, we can make a rough estimate of the landings of scallops from Cobscook Bay this season.

Assigning 25,000 lbs to Dealer #3 and 1,000 lbs to dealer #6, we arrive at a rough estimate of 155,900 lbs of scallops (shucked meats) landed from Cobscook Bay in the 2004-05 season. This figure is somewhat higher than the estimate of 67,770 to 121,987

lbs, derived from the fishermen's interviews. One would expect the dealer figure to be somewhat higher however, since these dealers also buy from boats based outside Cobscook (e.g., Cutler, Bucks Harbor, and Jonesport). Of course the rough nature of these estimates could also account for some of the discrepancy.

Three dealer or first buyer respondents said that landings were lower this season than the previous season. One dealer respondent said that his scallop volume was a little higher this year, but it could be that he was getting a higher portion of the catch.

Sourcing and marketing

The two "first buyers" interviewed do not purchase scallops from any other area besides Cobscook. One of the first buyers also purchases clams and periwinkles. All three dealers interviewed purchase scallops from other areas besides Cobscook. Two buy primarily from eastern Maine (Southwest Harbor or Gouldsboro to Eastport), and one also buys from Canadian fishermen (Deer Island, Campobello, Wolves). All three dealers handle various other species besides scallops. For the largest 2 dealers, scallops are a major portion of their business (one-half to two-thirds) during the Maine season.

Dealers sell most of the scallops they purchase to wholesaler/processors or direct to restaurants. One dealer sells primarily to a wholesaler in Hancock County and a wholesaler in Boston, but also has a few smaller accounts. One of the smaller accounts is a distributor in Maine who ships U10s to high end restaurants on the west coast. Another dealer sells mainly to major wholesalers in Portland and Boston. This dealer also does some local retail and restaurant sales, but mostly in the summer when he is buying Canadian scallops. The third dealer sells mostly to restaurants in Maine (primarily 5 lb bags of frozen scallops), including in Washington and Hancock Counties, mid-coast

Maine, and the Bangor area. This dealer also sells U10s to a Maine distributor who sells to upscale restaurants on the west coast.

According to dealers, Cobscook scallops that go to wholesalers in Boston and Portland are sold all over Massachusetts and New York, including to a supermarket chain in Massachusetts. The scallops sold to the Hancock County wholesaler go mostly to restaurants and retailers all over the state, although some get shipped to affiliated wholesalers out of state. The dealer who sells mostly to restaurants said that his Cobscook scallops are ultimately sold as “Maine scallops” to good restaurants in Maine, Boston, New York, or on the west coast.

Handling and processing

Before purchasing from fishermen, first buyers and dealers inspect the scallops to make sure they are of adequate quality. According to one buyer, quality control is more important for large scallops that fetch a premium. The scallops are placed in a basket to drain the water, weighed, and may be graded by size. First buyers who work for a dealer pay whatever price the dealer advises. The first buyer typically puts the scallops into fish totes (100 lbs each) and trucks them to the dealer every day, where they are iced, sized, and bagged. Some first buyers who have their own shop may ice, size, and bag the scallops before sending to the dealer.

None of the three dealers reports soaking the scallops. One dealer only sells fresh, and does not freeze. Another dealer sells mostly fresh, and freezes just a few. A third dealer holds scallops for a day or two if he has fresh orders, but freezes most of the scallops. He block freezes them in 5 lb bags.

Qualities, prices, and market outlets

Dealers were asked what scallop characteristics or qualities are important to them as buyers of scallops. One dealer says that freshness is his main objective and that day boats have good quality. He bags, ices, and sends trucks out 5 days each week. He does not freeze any scallops. Another dealer reports that the way scallops are shucked is important. If they are shucked too fast and get mangled or if the fishermen hold on to them for 3 or 4 days, the scallops lose quality and shelf-life. The third dealer mentions that size, color, and texture are important quality characteristics. He states that U10s go to the west coast or “fancy places” in Boston or New York and that good 10-20 ct scallops go to Maine restaurants.

After dealers responded to the open-ended question about important scallop qualities, they were asked specifically whether the following characteristics affect the price or market outlet for scallops: method of catch, origin of catch, freshness, portion that are whole vs. broken, color or texture, wet or dry, and fresh or frozen. One dealer has 3 or 4 divers come in, but not consistently, and he says that method of catch does not affect the price or outlet. Another dealer states that diver scallops are shelled a little better, but other than this it does not affect the price or market outlet. A third dealer reports that method of catch has an indirect effect, because divers bring in larger scallops that get a higher price and go to high-end outlets.

One dealer believes that origin of catch does not make a difference. A second dealer thinks that Cobscook scallops are higher quality than scallops from Cutler, Quoddy Head, Digby or Grand Manan, and are much better than scallops from the Cape. Another dealer says he would not touch scallops from China or Japan, but feels that

Canadian scallops and Maine scallops are comparable and that they are both better than New Bedford scallops. This dealer does not think there is any difference between Cobscook and other parts of eastern Maine or the Bay of Fundy.

Dealers comment that scallops should be a nice, whitish, cream color, not dark, dirty brown, or greenish, and that the texture of old or soaked scallops is rubbery. All three dealers state that being dry (not soaked) is an important quality factor. One dealer reports that Cobscook scallops do not usually get soaked as much as other scallops. This dealer does not freeze scallops. A second dealer indicates that the price difference between fresh and frozen is not much on big scallops, but is more significant on smaller scallops. A third dealer believes that the quality of frozen scallops is quite good if they are frozen when nice and fresh. This dealer buys fresh scallops for \$7 and sells frozen scallops to restaurants for \$8/lb.

Dealers set their prices in line with market forces. One dealer says that he talks to the wholesalers he sells to about the going prices and if other dealers are paying more or less. Another dealer reports that prices are determined primarily by fishing off the Cape. If there is bad weather and the offshore boats cannot go out, the price goes up. If new areas are opened off the Cape, the price goes down. A third dealer says that Maine scallop prices are closely linked to the New Bedford price. The Maine scallop price is usually higher than the New Bedford price, however, because of the difference in quality.

One dealer reports that he typically works on a \$0.25/lb mark-up on boat run, but a higher mark-up on the larger scallops. Another dealer says that he has had a \$0.50 to \$0.75/lb mark-up in prior years, but that lately he is only able to get a \$0.25 to \$0.35

mark-up. A third dealer reports a \$0.50 mark-up. One informant reports that first buyers usually work on a \$0.25/lb commission for the dealers.

Two dealers commented on market trends. One notes that the in-shell scallop market is becoming big. Fishermen are allowed to land in-shell scallops in Massachusetts, but not in Maine. Landings off the Cape have determined the trends in price, which dropped from \$6.75 six years ago to \$3.25 a couple years later. Another dealer reports that there has been a steady decline in landings of Maine scallops.

When asked about the effect of Cobscook scallop regulations on the marketing of scallops, one dealer said that they were good for the Bay, but hurt the market. A lot of the respondent's buyers were accustomed to getting large volumes from him in December through January, but now with lower volumes they have to look elsewhere. This dealer believes that the law went on a little too late to prevent the decline in scallops in the Bay. Another dealer says that it is harder for dealers because of low volumes. He stated that it is not worth sending a truck out for less than 200 lbs from his location.

Dealer suggestions

When asked what Cobscook scallopers could do to better meet the buyers' needs or improve the value and marketability of Cobscook scallops, one first buyer reports that the fishermen have done everything they have been asked to do. The other says: "I don't know. My guys come in and have beautiful scallops. No complaints." Two dealers had suggestions. One says that fishermen should take pride in their product, and make sure the scallops are shelled and cleaned well, and brought to market as soon as possible. This dealer says that there are people buying scallops on every street corner now, so the fishermen do not worry about quality as much. Another dealer has two main suggestions.

First he says there needs to be more volume, and he recommends shutting down the scallop fishery for two to three years to accomplish this. Second, he suggests that fishermen stop selling to dealers who soak the scallops. This dealer believes that other dealers are soaking the scallops and sending them to Boston. This respondent also likes the idea of promoting a Cobscook scallop label.

Wholesaler/Processor Interviews

Wholesaler/processors are firms that buy scallops and other seafood from multiple supply regions, often process (freeze or soak) a portion of their product, and sell primarily to restaurants and retailers. As mentioned previously, there is not always a clear distinction between a dealer and a wholesaler/processor. Some firms do not fit neatly in one category or the other. For example a dealer may process and sell some product direct to restaurants or retailers, as well as engage in retail sales. On the other hand, a wholesaler may buy directly from fishermen at times.

Three wholesaler/processors that purchase Cobscook scallops from dealers were identified and interviewed. These wholesalers are located in Hancock, Waldo, and Knox County. Two Portland wholesalers who reportedly do not handle scallops from Cobscook were also interviewed. The names of the Portland and Boston wholesalers who buy from Cobscook dealers were not obtained. Results from the wholesaler interviews are grouped according to the following topics: (1) sourcing and marketing; (2) handling and processing; (3) qualities, prices, and market outlets.

Sourcing and marketing

Most wholesalers obtain scallops from multiple east coast and international sources, including offshore scallops landed in Massachusetts, New Jersey, Maryland,

Virginia, the Carolinas, and Canada. Larger wholesalers purchase from offloaders who unload the big, offshore boats. Day boat scallops are purchased from dealers in Maine, Massachusetts, New Hampshire, and Canada. In addition to Canadian scallops, wholesalers import scallops from Asia and South America. All three wholesalers interviewed, who handle scallops from Cobscook Bay, purchase scallops from New Bedford and Canada, as well as from dealers in Maine. Two of the three obtain scallops from international sources as well.

Wholesaler/processors sell to other wholesalers, restaurants, and food retailers. Some wholesalers do retail business too. One of the wholesalers interviewed sells mostly to distributors in Europe, and other wholesalers nationwide. According to one wholesaler, Maine and Canadian scallops go to more premium buyers than most other scallops. Another wholesaler reports that Cobscook scallops go through the same market channels as the other scallops they handle.

Handling and processing

Wholesalers/processors may further grade, repackage, soak, and freeze scallops. They provide scallops in all different specifications and qualities according to the needs of their customers.

Soaking involves putting the scallops in a solution of water and sodium tripolyphosphate (STP). This practice increases the shelf-life of the scallops, and longer soaking increases the amount of water weight retained by the scallops (Gardner Pinfold; Seafood Business). The Food and Drug Administration (FDA) allows scallops with moisture content below 82% to be called “dry,” whereas scallops with a moisture content of 82% or greater are considered processed or “wet” (Seafood Business).

Scallops may be frozen in blocks or individually quick frozen (IQF). IQF scallops are reportedly preferred by final buyers.

One wholesaler/processor describes how they do a quality control inspection when the scallops first arrive at the plant, looking at moisture, odor, color, texture, and counts. Fresher scallops are given a very light soak in an overnight solution (with STP) and sold as “dry” scallops. Scallops that are not so fresh, such as from trip boats that go out for 12-13 days, get a full process (longer soaking in STP solution) and are sold as “wet” scallops. About 75% of their scallops are soaked in a light overnight solution and then frozen (IQF). Fresh scallops are sold in gallon containers, and IQF scallops are packed in 5 lb bags.

Of the three wholesaler/processors interviewed who handle scallops originating from Cobscook Bay, one sells 60% of scallops fresh and 40% frozen. Another sells 75% of scallops fresh (mostly dry, sometimes wet) and 25% frozen. The third sells 75% frozen and 25% fresh (both dry and wet). Most wholesaler/processors handle many different seafood products, not just scallops.

Qualities, prices, and market outlets

Wholesalers were asked what scallop characteristics or qualities are important to them as scallop buyers. One wholesaler says that freshness is the key, and the best quality is fully dry – right out of the shell. There are all different levels of processing, and even scallops labeled as “chemical free” have been soaked. This wholesaler distinguishes between scallops not soaked in any STP solution (fully dry) and those sold as dry or “chemical free” that have been soaked in a light STP solution. Another wholesaler reports that size and freshness are important, as well as U.S. or Canadian

origin. A third wholesaler mentions freshness and color, stating that Europeans and the Asian community prefer white scallops. A fourth wholesaler says that the customer determines what is important, depending on what they are going to do with them.

The fifth wholesaler interviewed is very particular about how the fishermen handle the scallops and tries to get them as close to their natural state as possible. He says that the scallops should be well-shucked with the muscle intact and get one saltwater wash with a deck hose, but should not be left sitting in saltwater. This wholesaler prefers that scallops are kept in metal tins and delivered within 12 hours of being pulled out of the water. Although this wholesaler often sells diver scallops, he believes that similar quality can be achieved from day-boat dragged scallops.

Two wholesalers responded to questions about specific scallop characteristics. Regarding scallop size, one wholesaler who handles a small amount of Cobscook scallops, states that U10s fetch a premium and go mostly to restaurants. The other says that dry Maine U10s are in high demand. Diver scallops get a premium because they tend to be large and very fresh. One wholesaler said that there is not much differentiation by region. He states that Digby day-boat scallops do not get a premium, because they are already 3-4 days old by the time they get to the wholesaler. Both wholesalers report that the level of processing or soaking has a big influence on price, and that there are different levels of soaking. Scallops from the multi-day, offshore boats usually get a full process.

Wholesalers report that there is a small difference in price between fresh and frozen scallops. One wholesaler's selling price is 8-10% higher for fresh, mostly because of transport and packaging costs. Frozen (IQF) scallops are packed as six 5 lb bags in a corrugated box and shipped in 20 ft. ocean freight containers to Europe. Fresh scallops

are sold mostly in gallons and require wax-saturated boxes and ice. Transport costs are high, because smaller quantities are shipped fresh. This wholesaler reports that it is cheaper to transport frozen scallops to Belgium than fresh scallops to Ohio. Some large boats freeze on board, and according to one wholesaler “frozen at sea” scallops get a premium. According to another wholesaler, chefs and supermarkets prefer IQF (over the traditional plate freezer) because they thaw out faster; they can take out exactly the amount they want without having to thaw out the entire 5 lb bag.

One wholesaler believes the Maine scallop is “stunning” in quality when handled properly and not soaked, but does not distinguish between Cobscook and other Maine scallops. This wholesaler thinks that marketing from the “cold, clear waters of Cobscook Bay” would have a lot of appeal. Another wholesaler says he considers Cobscook scallops the same as other Maine inshore scallops, but Cobscook is about the only area that is still getting any scallops. A third wholesaler believes that the Cobscook scallop is a good scallop, but his preference is for Bay of Fundy scallops. He believes that Bay of Fundy scallops have good firmness and density, better shelf-life, and less moisture than other scallops. It is not clear how much these qualities reflect the scallop itself or the way the scallop is handled. One wholesaler advises that it is important to pick a catchy name and work hard at promoting it.

Two wholesalers report that scallop price is largely determined by the New Bedford auction, but one says that to a certain extent it is also determined by him. There is some variation in price depending on payment terms. If the wholesaler must pay the seller immediately, especially cash, the price will be a little lower. One wholesaler states that their mark-ups vary depending on what they do with the product. This wholesaler

does not sell as many scallops in the U.S. lately, but is focusing on Europe, because other wholesalers “just won’t let you live” – implying that there is a lot of price competition and pressure to keep margins down.

Wholesalers confirm that prices are higher this year than the last couple years. One believes that demand is way up, but that a reduction in the off-shore days at sea (DAS) and Canadian quota is another reason for higher prices. He notes that Areas 1 and 2 on Georges Bank are opening up on June 15th this year. Another wholesaler says that a reduction in imports from China, Japan and the Philippines is one reason prices are higher this year. He thinks that reduced scallop yields in Asia and exchange rates were factors contributing to fewer imports.

Wholesaler suggestions

Three wholesalers gave suggestions on how Cobscook fishermen could improve the value and marketability of their scallops. Two think the fishery should be shut down for 2-3 years to let the stocks rebuild. Their reasoning is that scallop growth and higher volume would help the marketing of Maine scallops. Other suggestions include getting closer to the end user, getting 10 fishermen together to make calls to upscale restaurants or the city, and marketing within Maine to the best restaurants. One notes that Maine scallops already have a reputation for quality. Another wholesaler says that he has had success picking a catchy name and working hard at marketing it.

Restaurant Interviews

The names and contact information for numerous restaurants in Maine were obtained from a variety of sources. Washington County restaurants that serve scallops were targeted, as were middle- to high-end restaurants that serve scallops in other parts of

Maine. Ultimately, interviews were conducted with 12 Washington County restaurants, 2 in Hancock County, 1 in Knox County, and 1 in Cumberland County. Six of the sixteen restaurants are closed during all or most of the scallop season.

The distribution of scallop supply sources among restaurants is shown in Table 6. Among the restaurants interviewed, there is a roughly equal split between those that mostly or only buy scallops from fishermen and those that mostly or only buy from wholesalers or dealers. More restaurants rely exclusively on wholesalers or dealers (4) than rely exclusively on fishermen (2) to supply them with scallops. Most restaurants that buy from fishermen buy fresh and freeze the scallops themselves for later use. One restaurant reports buying frozen scallops directly from a fisherman who freezes the scallops himself.

Table 6. Scallop sourcing for restaurants

	<i>WC restaurants¹</i> <i>(out of 12 responses)</i>	<i>Restaurants outside WC²</i> <i>(out of 4 responses)</i>
Only direct from fishermen; Never wholesaler or dealer	2	0
Mostly direct from fishermen; Sometimes wholesaler or dealer	4	2
Sometimes direct from fishermen; Mostly wholesaler or dealer	2	1
Never direct from fishermen; Only wholesaler or dealer	4	1

¹Restaurants located in Washington County (WC)

²Restaurants located outside Washington County (WC)

Out of season it is more common for restaurants to buy from wholesalers or dealers, even among restaurants that are open year round. Restaurants that buy fresh, local scallops in season and freeze them, often run out at some point during the summer, and must buy from other sources. Two of the six restaurants that close in the winter buy fresh scallops from fishermen while the restaurant is closed and freeze them for later use.

A third restaurant is open for part of the scallop season, and buys fresh, local scallops then. The three remaining restaurants that close in the winter buy only from wholesalers or dealers.

The origin of the scallops purchased directly from fishermen includes Cobscook Bay, Maine waters other than Cobscook Bay, Massachusetts, and Canada. Some wholesale and dealer scallops were thought to come from Canada or Massachusetts offshore areas. One restaurateur reports that his frozen (IQF) scallops originate in Canada (Nova Scotia). Another restaurateur believes his scallops are from Maine waters, since he buys from a Maine wholesaler. This is unlikely, however, since he buys fresh scallops out of season. Several restaurateurs do not know the origin of the scallops they purchase from wholesalers. One restaurateur comments that because of the way scallops are marketed, it is not visible where they come from.

One restaurant reports that their wholesaler delivers daily. Others report receiving deliveries twice a week, once a week, or as needed. A majority of restaurants interviewed purchase scallops fresh, when buying from wholesalers or dealers, but a few purchase frozen scallops. Most restaurateurs report buying 20-30 ct scallops, but some report purchasing U10s, 15-20 ct, or 30-40 ct.

Restaurants usually buy from fishermen in bulk, 30 to 300 lbs at a time, delivered in buckets. A few restaurants buy scallops from fishermen in 1 gallon (8-9 lb) bags. Package size and type from wholesalers vary considerably, including 2 lb bags (frozen), 5 lb bags and boxes (frozen), 10 or 20 lb plastic containers (fresh), 35 lb sacks (like they come off the dock), 50 lb cases, and bulk. Restaurants that freeze scallops themselves put the scallops in 1-2 lb bags, 4-5 lb bags, 1 gallon (8-9 lb) bags, or 20 lb plastic tubs with

lids before freezing. Five pound bags seem to be the most common size for restaurants to freeze themselves.

Restaurateurs were asked whether they would like to be able to purchase scallops pre-packaged in a particular quantity. Most respondents say that they are happy with the package size they currently purchase. Of those who mentioned a preferred quantity in response to this question, most said 5 lb packages. Others said 2 lb portions, 10 lb packages, or bulk.

Some restaurants reported the price they were paying for scallops. Price comparisons are complicated by scallop quality differences, type of seller and package, and fluctuations over time. All restaurant interviews were conducted between late May and mid June. Four restaurants report paying between \$8.50 and \$8.95/lb for fresh scallops (20-30 or 30-40 ct) purchased from wholesalers this year. One restaurant reports paying \$7.00/lb for fresh, offshore scallops (20-30 ct) in a 35 lb sack from a wholesaler in Portland. Restaurants report paying between \$5.75 and \$7.50/lb, or \$60/gallon, for fresh scallops purchased directly from fishermen this year. One restaurant that purchases fresh, dry U10s from a wholesaler reports paying \$11/lb this year. Prices reported by restaurateurs are listed in Table 7.

Table 7. Scallop prices reported by restaurants this year.

<i>Type of scallop</i>	<i>Prices reported</i>
Fresh scallops from wholesalers (20-30ct, 30-40ct or boat run)	\$7.00, \$8.50, \$8.50, \$8.65, \$8.95/lb
Fresh scallops from fishermen (20-30ct, 30-40ct or boat run)	\$5.25 (Dec-Jan.), \$5.75 (Jan.), \$7-\$7.50, \$6-\$7.00/lb \$60/gallon
Frozen scallops from wholesalers (20-30ct, 30-40ct or boat run)	\$7.65 (compared to \$8.95 for fresh)
Fresh, dry U10s from wholesaler	\$11/lb

All 16 restaurateurs interviewed were asked an open-ended question without prompts: what scallop characteristics or qualities are most important to you? The frequency that different characteristics were mentioned are recorded in Table 8. Restaurants usually mentioned more than one characteristic. Freshness was the most frequently mentioned characteristic or quality.

After participants were given a chance to respond to the open-ended question, 13 restaurants were asked to review a list of different characteristics and indicate whether each is important or not. These characteristics included size or grade, method of catch (drag or dive), origin of catch, freshness, color or texture, wet or dry, fresh or frozen, sustainably harvested, and HACCP or other food safety assurances. It should be noted that the three restaurants not asked to review the list of characteristics were high-end restaurants outside of Washington County.

Table 8. Scallop characteristics mentioned by restaurants as most important.

<i>Characteristic</i>	<i>Number of restaurants mentioning without prompt</i>
Freshness	8
Taste or flavor	4
Smell (good, like ocean; no bad smell)	4
Color or look (good, not grey; whiteness)	4
Feel, texture, touch (not slimy; firm)	4
Size	4
Fresh, not frozen	2
Dry, not soaked	2
Consistency in size (for even cooking)	2
Clean or well-handled	2
Low environmental impact from harvesting	2

Almost all state that scallop size is important. Most respondents prefer medium sized scallops (20-30 or 30-40ct). Some prefer larger ones. Note, however, that two of the three restaurants not asked to review the list of characteristics buy U10 scallops.

Some restaurateurs say that it was important for the scallops to be uniformly sized. Only two of the thirteen respondents say that scallop size is not important to them.

Method of catch (drag or dive) is not important for most respondents. One restaurateur says “I’m for draggers.” Another says that in her personal opinion, they should stop dragging Cobscook Bay. A third reports that he likes to use the large, diver scallops as a specialty item on the dinner menu. Method of catch is only an issue for a minority of respondents.

Eleven of thirteen respondents say that the origin of catch is important to them. Most restaurateurs prefer local scallops. One said “the closer the better.” Some restaurants mention that their customers ask where the seafood comes from. One Washington County restaurant associated local with Maine scallops. One restaurateur prefers scallops from the Bay of Fundy.

One high-end restaurant in Hancock County tries to buy from local fishermen and farmers as much as possible and advertises that fact. He also features organic foods. The respondent expressed frustration that it has been difficult to get a steady supply of local scallops and that when he has bought from a wholesaler the quality has been inconsistent and he does not know where the scallops come from. Now he tries to buy from a local fisherman in winter and freeze the scallops himself. He commented that if he could find a good, consistent supplier out of season, it would be easier than taking up room in his freezer. This respondent reports that his clientele are very interested in where food comes from and prefer local, sustainable sources. He states that guests are looking for more and more data on the food they are eating, including where it comes from.

Another middle- to high-end Cumberland County restaurateur says that she stopped buying local Maine scallops out of concern for the environment. Now she mostly buys offshore scallops from a wholesaler. This respondent says it is ironic that many Maine restaurants are buying scallops imported from Asia, while Maine scallops are going to New York, Chicago, and other places.

All respondents say that freshness is important, and a majority prefers to buy fresh scallops, rather than frozen scallops. A few only prepare fresh scallops. Several restaurants prefer to buy fresh and freeze themselves. Some state that when they buy frozen scallops, they do not know how fresh they were before they were frozen or how long they have been frozen. One respondent believes that fresh scallops have a better texture and taste than frozen scallops. Another says that the eating quality of frozen scallops is comparable to fresh scallops. Whether ultimately kept fresh or frozen, the freshness of the scallop prior to consumption or freezing is very important to restaurateurs.

Most respondents believe that scallop color is important. Several restaurateurs say they like the scallops to be white, and some mention avoiding grey, brown, or yellow ones. One respondent says that the color should be consistent, and two say that color is not important.

Texture is also an important characteristic for several restaurateurs. In particular, respondents want the scallops to be firm, and not slimy or “smushy.”

There is some confusion among respondents as to the meaning of a “wet” vs. “dry” scallop. Some say they prefer wet, but by “wet” they mean “moist.” One respondent states that she likes the scallops to be “still in their own juices,” and that they

should not be rinsed with fresh water or patted dry before freezing. Another respondent says he prefers wet scallops, because they seem like better quality. Several respondents, however, report a preference for dry scallops. Most respondents do not want scallops that have been soaked in a solution. One respondent says that dry scallops are becoming scarcer. It is apparent from the interviews, that a significant portion of restaurateurs are not aware of the extent to which scallops have been soaked, or even that this is an issue.

Ten of 13 respondents say that whether the scallops come from a sustainable fishery that is not overfished and causes little environmental harm is an important consideration. Three respondents say either that it is not important or that they have not thought about it.

Although four respondents say that HACCP or food safety assurances have not been a concern or problem for them, the remainder believe that this is a significant concern. One restaurateur says he feels better about buying frozen scallops from a reputable supplier, because he does not want to take chances with food safety. Another states that the food safety concern is why he only buys from major wholesalers. Two restaurateurs say they have food safety concerns about the scallops they get from a wholesaler. Two respondents report that they only buy from fishermen they trust. One respondent says she can tell just by looking at the scallops whether they are good or not.

Most restaurateurs interviewed do not know whether the scallops they buy originate in Cobscook Bay. Of the four respondents who could comment on the quality of Cobscook scallops compared to other scallops, three believe that Cobscook scallops are of better (or the best) quality. One states that South Bay scallops in particular are the best quality, along with Grand Manan scallops. Another respondent reports that

Cobscook scallops were better quality until the last couple years when they were overfished and the size has gone down. One respondent could not make a comparison with Cobscook scallops, but was happy with the quality of his Fundy Bay scallops.

Retailer Interviews

Six retail stores were interviewed about their scallop purchases and preferences. One is an independent supermarket in Washington County. Three retail seafood stores, located in Washington County, Knox County, and Penobscot County, were interviewed. We also conducted interviews with two natural foods stores, a single branch in southern Maine and a regional office in Massachusetts.

The independent supermarket buys fresh, dry scallops mostly from Maine fishermen during the season. Out of season, the supermarket buys fresh, dry scallops from Canadian fishermen, a Canadian dealer and fish market, or from a Maine-based wholesaler. In the past, the supermarket has sometimes purchased frozen. Scallops are purchased from fishermen in 1 gallon freezer bags, and the fishermen deliver to the store.

One retail seafood store purchases exclusively from fishermen during the season, and another store purchases both from fishermen and a wholesaler in season. These two retail seafood stores purchase from wholesalers out of season. The third retail seafood store purchases scallops year round from wholesalers, who deliver daily. All three seafood retailers believe their scallops originate in either Maine, Massachusetts, or Canada. All three mostly buy fresh, dry scallops. One sometimes buys wet scallops.

The natural foods store in southern Maine has a long-term contract with a single wholesaler to supply fresh, dry scallops. The regional seafood buyer in Massachusetts supplies 30 natural foods stores in the northeast region. He buys scallops from a variety

of sources and types of sellers, looking for the best quality and reasonable prices. Most of the scallops he buys from boats, auctions, and offloaders in Massachusetts and Canada. He buys 99% fresh, and only dry scallops.

Scallop sizes vary among the six retailers interviewed. Two buy mostly 15-20 ct. scallops, and two others buy mostly 20-30 ct. scallops. Another retailer reports buying all different sizes: 10-20, 20-30, and 30-40 ct. scallops. One retailer says he does not know the exact size.

Five retailers responded to the question: what scallop characteristics or qualities are most important to you? Four of the five retailers mentioned freshness as one of the most important scallop qualities. Three mentioned size, and two mentioned color as very important. One retailer mentioned “dry” as one of the most important scallop qualities, and another retailer said that shelf-life and flavor are very important.

After responding to the open-ended question, retailers were asked to review a list of scallop characteristics and indicate whether each is important or not. The list of characteristics was the same as that presented to the restaurants.

Half the retailers do not think size is important for scallops. Two retailers prefer medium size or 20-30 ct. scallops, and one has a preference for larger, 15-20 ct., scallops. Two retailers prefer diver scallops, but the others do not think method of catch is important. Regarding origin of catch, two retailers express a preference for local scallops, one likes scallops from Maine waters, and another wants to buy scallops from Maine or Massachusetts. Two retailers do not feel that origin of catch is important. All six retailers indicate that freshness is an important quality. Interestingly, one retailer says that freshness is more important for the locals in the winter than for the summer tourists.

One retailer likes scallops to be off-white to yellowish, but most retailers interviewed do not think color is important.

All six retailers state that the amount of soaking (wet vs. dry) is an important factor. Retailers report a preference for dry scallops, but one retailer says that likes to offer both wet and dry scallops. Wet scallops are sold at a lower price. Five of six retailers prefer fresh rather than frozen scallops. One retailer says that there is not much difference between fresh and frozen, and another says he is willing to try frozen if it has a story (something to distinguish it) or is much cheaper. The two natural foods retailers both state that “sustainably harvested” (well-managed fishery, not being overfished, little environmental harm) is an important characteristic for them. Three of the retailers interviewed do not believe sustainability is an important consideration. Two retailers state that HACCP certification of vendors is important. Another reports that they make sure the scallops come in cold and are kept cold, while three retailers do not think food safety assurances are an important issue.

Three retailers express a preference for buying scallops directly from fishermen or right off the boat, but one prefers to buy from wholesalers. This respondent says he cannot depend on fishermen who fish a few days and then take a week off.

Two retailers suggested ways to make it easier for them to buy Cobscook scallops on a regular basis. One retailer says that quality would need to be perfect on a consistent basis. This retailer also likes the idea of a vendor willing to run quarterly specials. The second retailer believes that extending the season over a longer period would be helpful.

New Bedford Auction and Fulton Fish Market

For comparison with Cobscook scallop prices, New Bedford (Massachusetts) Whaling City Seafood Display Auction and Fulton Fish Market (New York City) prices this season are listed in Table 9. Differences in scallop quality, geographic location, and stages in the market channel must be considered when comparing prices.

According to informants familiar with these two markets, New Bedford Auction prices are ex-vessel prices. Sellers are large off-shore boats returning from multi-day trips to the Mid-Atlantic, the Great South Channel, and Georges Bank. Buyers are mostly large wholesalers/processors. Scallops are “dry” when unloaded and sold at New Bedford, but they are usually several (2-14) days old and will eventually be soaked. Boats unload at the New Bedford Auction’s dock and sell their catch at the Auction for no fee. Buyers are charged a fee of \$0.10/lb on the product they buy.

Fulton Fish Market prices are wholesale selling prices. They are the prices charged by wholesalers selling to restaurants and retailers at this market in New York City. New Bedford scallops sold at the Fulton Fish Market have been given a 2-3 day soak (according to one informant), which explains why the Fulton wholesale selling price is lower than the New Bedford ex-vessel price. Fulton prices are also posted for “dry” scallops landed in New Jersey.

New Bedford Auction prices for 20-30 count scallops ranged from \$6.63 to \$7.81/lb, a little higher than Cobscook boat-to-dealer prices for boat run. Prices at the New Bedford Auction for 10-20 count scallops ranged from \$6.10 to \$7.74/lb, and U10 or U12 scallops ranged from \$6.10 to \$8.57/lb. For the larger sizes, New Bedford Auction prices are lower than Cobscook prices.

Table 9. Scallop prices at the New Bedford Auction and Fulton Fish Market

<i>Date</i>	<i>New Bedford Auction</i>		<i>Fulton Fish Market</i>		
	<i>10-20 or 20-30 ct</i>	<i>U10 or U12</i>	<i>20-30 ct MA(N.Bed.)</i>	<i>20-30 ct NJ, dry</i>	<i>U10 NJ, dry</i>
11/22/04	\$6.50 ² -6.63 ³	\$6.51-6.60	\$5.25		
11/29/04	\$6.43 ²		\$5.25	\$7.00	\$8.50
12/01/04			\$5.25	\$7.00	\$8.00
12/07/04	\$6.45 ²	\$6.39-6.44	\$5.25	\$7.00	\$8.50
12/09/04	\$6.36 ²	\$6.10	\$5.25	\$7.00	\$8.50
12/16/04			\$5.25	\$7.00	\$8.50
12/20/04	\$6.52 ²	\$6.41-6.55	\$5.25	\$7.75	\$8.50
12/21/04	\$6.52 ² -6.54 ²	\$6.40-6.70			
12/22/04			\$5.25	\$7.50	\$8.50
12/28/04			\$5.25		
01/04/05	\$7.32 ²	\$7.23	\$5.25		
01/07/05		\$7.06	\$5.25		
01/14/05	\$6.69 ²	\$6.48			
01/15/05			\$5.25	\$7.00	\$8.50
01/21/05			\$5.25		
01/26/05	\$7.08 ²	\$6.75			
02/02/05	\$7.52 ² -7.70 ²	\$7.35	\$5.25	\$8.00	\$9.75
02/04/05			\$5.25	\$8.00	\$9.75
02/10/05	\$7.35 ² -7.37 ³				
02/17/05	\$7.55 ³ -7.70 ³	\$7.95-8.57			
02/18/05			\$5.25	\$8.00	\$9.75
02/23/05	\$7.74 ²	\$8.05-8.15			
02/24/05			\$5.50	\$8.00	\$9.50
03/04/05			\$5.50	\$8.25	\$9.50
03/17/05	\$7.68 ² -7.81 ³	\$8.03			
03/18/05			\$5.75	\$8.75	\$10.00
03/30/05	\$6.67 ²	\$6.75	\$5.50	\$7.75	\$8.50
04/05/05	\$6.86 ² -6.85 ³	\$7.53	\$5.50	\$7.75	\$8.50
04/08/05	\$6.99 ²	\$7.74	\$5.50	\$7.75	\$8.50
04/14/05	\$6.10 ² -6.88 ²	\$6.80-7.72	\$5.75	\$7.75	\$9.00
04/15/05			\$5.50	\$7.75	\$9.00
04/28/05	\$7.31 ²	\$7.50-7.55	\$5.50		\$8.50
05/31/05	\$7.19 ³ -7.40 ³	\$7.49-7.95			
06/02/05	\$7.15 ³ -7.20 ²	\$7.10-7.12	\$6.25	\$7.75	\$9.00
06/07/05	\$7.13 ² -7.25 ³	\$7.21-7.55	\$6.25	\$7.75	\$9.00

Source: U.S. Department of Commerce.

²10-20 count

³20-30 count

Wholesale selling prices for 20-30 count New Bedford scallops sold “wet” at the Fulton Fish Market ranged from \$5.25 to \$5.75/lb, a little lower than most Cobscook ex-vessel prices (for dry, boat run scallops) reported in the 2004-05 season. Fulton Fish Market wholesale selling prices for 20-30 count New Jersey dry scallops ranged from \$7.00 to \$8.75/lb, higher than Cobscook ex-vessel prices for boat run. Fulton Fish Market wholesale selling prices for U10 New Jersey dry scallops ranged from \$8.00 to \$10.00/lb, similar to Cobscook ex-vessel prices for U10s.

SUMMARY AND SYNTHESIS

In 2004, 89 Cobscook area residents held a license to fish for scallops. This number represents a decline from 102 resident license holders in 2003. One hundred and eight individuals held a scallop license in either 2003 or 2004. More than 80% of licenses are scallop boat (dragger) licenses. Some residents hold a scallop diver or dive tender license.

We estimate that 43 (or somewhere between 31 and 55) of the 2003 or 2004 license holders actually went scalloping in Cobscook Bay during the last two seasons. Not all license holders own their own boat. There are approximately 31 boats (or somewhere in the range of 22 to 40 boats) owned by Cobscook area license holders that have fished for scallops in Cobscook Bay during the last two seasons. According to one informant there are at least another 7 boats from other areas that fish for scallops in Cobscook Bay.

A majority of active Cobscook scallopers use a 30-40 ft. Novi boat to drag for scallops. A few boats are larger, and the boats used by divers and hand draggers are usually smaller. Cobscook scallop boats typically have a 2-person crew, including the

captain. A crew of three is common when catches are better early in the season, and a crew of four is rare. Occasionally scallop boats go out with a one-person crew.

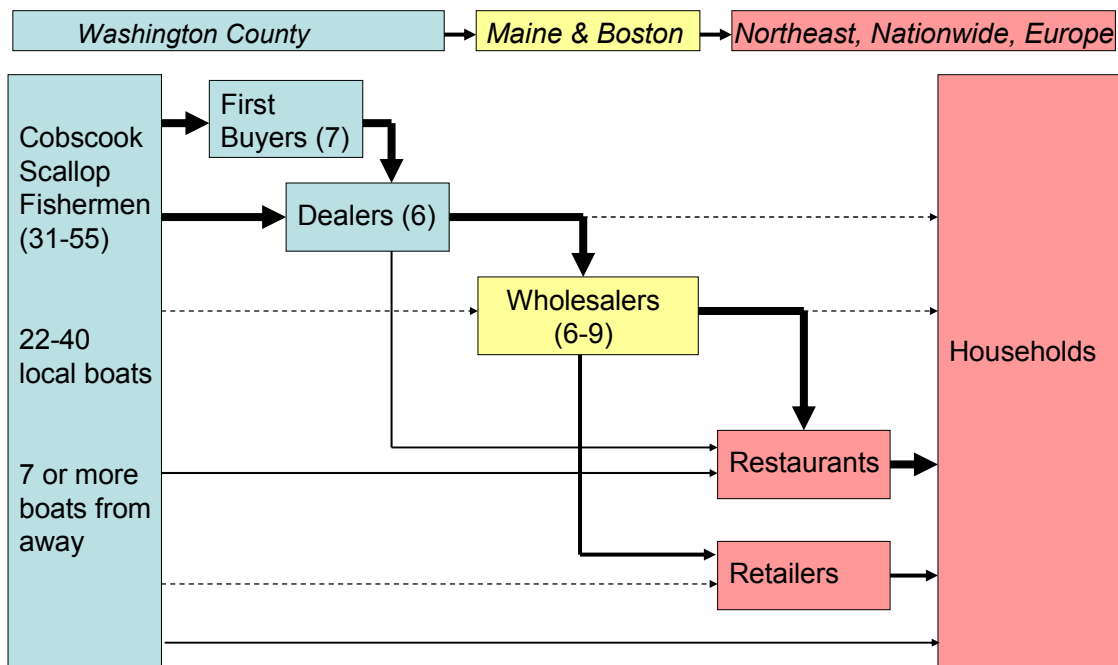
Most scallop fishermen hold a variety of different fishing licenses, with urchin and lobster being the most common. Several scallop fishermen also work other jobs, besides fishing. Logically, the decision to fish for scallops on a given day is influenced by price and catch expectations. The decision to scallop also depends on the direct costs of running the boat and paying the crew, as well as the availability of other fishing and work opportunities. With overlapping seasons it seems that scallop fishing intensity is inversely related to urchin fishing success and season length. Most scallop draggers state that they need to gross at least \$400 or \$500 per day to make scalloping worthwhile.

Data compiled by the Maine Department of Marine Resources (DMR) for scallop landings in state waters are unreliable and only available on a county-wide basis. We estimate Cobscook Bay scallop landings from interviews with fishermen and dealers. Our landings estimate for the 2004-05 season, based on fishermen interviews, is in the range of 67,770 lbs and 121,987 lbs (shucked scallop meats). This estimated range does not account for fishermen living outside the Cobscook area who fish in Cobscook Bay. Nor does it account for fishermen who may have started fishing late in the season, after we contacted them for interviews.

We also estimate landings based on dealer interviews. The dealer-based estimate is 155,900 lbs. for the 2004-05 season. Since only an estimated 85% of landings is sold to dealers or first buyers (the remainder is sold directly to restaurants or households), the true landings figure for Cobscook Bay could be even higher than 155,900 lbs.

Considering all available information related to landings, we believe that Cobscook Bay scallop landings for the 2004-05 season fall in the range of 115,000 to 195,000 lbs. Our best point-estimate is 155,000 lbs. At typical boat prices this year of \$6.25/lb for boat run and \$8.75/lb for U10s and assuming 90% of the catch is sold as boat run, we estimate the gross ex-vessel value of Cobscook scallop landings at approximately \$1 million (or within the range of \$747,500 to \$1,267,500) for the 2004-05 season.

Once scallops are hauled aboard, culled, and shucked, the scallop meats are usually washed and kept in 5 gallon buckets. About half the scallop fishermen report sometimes grading the scallops by size and a few report bagging the scallops while still on board.



Key: a) Thicker lines represent larger quantities. Dotted lines represent very small amounts.
 b) Numbers in parenthesis represent individuals or firms in that category.

Figure 3. Market channels for Cobscook Bay scallops

Figure 3 depicts the market channels for Cobscook Bay scallops. The predominant market channel is shown by the thickest lines in Figure 3. Most Cobscook

Bay scallops are sold by fishermen to first buyers and dealers. A dealer usually consolidates scallops from several fishermen and sells them to one or more wholesalers with whom he has an established relationship. Wholesalers purchase scallops from multiple supply regions, sort according to different characteristics, soak and freeze some scallops, and sell to restaurants and retailers.

Approximately 85% of Cobscook scallops are delivered to Washington County-based first buyers and dealers in bulk (5 gallon buckets), where they are inspected and weighed. Often the scallops are sorted by size category, and the fishermen are paid according to weight in each size category. First buyers truck the scallops to the dealers' facilities every day or two. Dealers may further inspect, sort, bag, and ice the scallops. Some scallops are frozen at this point, but apparently the majority is held fresh. None of the 3 dealers interviewed reports soaking scallops. Although dealers may sell some scallops directly to restaurants or households, most Cobscook scallops are sold to wholesalers in Maine (outside Washington County) or Boston. One dealer, who handles less than 10% of Cobscook scallops, reports that most of his Cobscook scallops are sold as "Maine scallops" to good restaurants in Maine, Boston, New York, or the West Coast.

Wholesalers typically buy scallops from all over the eastern United States, as well as from Canada, Asia and South America. Wholesalers soak the scallops in a solution with sodium tripolyphosphate to extend shelf-life and increase their weight. Some scallops are frozen by the wholesalers. Scallops that are only lightly soaked and have less than 82% moisture content are sold as "dry" scallops. Wholesalers sell scallops fresh or frozen, wet or dry, and in different size categories and packages.

The distribution of Cobscook scallops, once they reach the wholesalers, is difficult to trace. Wholesalers sell primarily to restaurants, retailers and other wholesalers. Two dealers report that many of the U10 scallops go to a distributor who ships them to high-end restaurants on the West Coast. One wholesaler known to handle Cobscook scallops supplies numerous Washington County restaurants. It is not known how many, if any, of the scallops supplied to these restaurants are of Cobscook origin. One informant reports that Cobscook scallops sold to wholesalers in Boston and Portland ultimately go all over Massachusetts and New York, including to a supermarket chain in Massachusetts. Cobscook scallops are sold by one Maine wholesaler to other wholesalers nationwide and sometimes to Europe. Although dealers and wholesalers sort scallops according to size and quality categories, they may combine scallops from different origins and generally cannot trace the scallops back to a particular fisherman or location of catch.

Roughly 15% of the Cobscook scallop catch is sold directly by fishermen to restaurants, retailers, or households on the so-called “peddle market.” Usually this involves the fishermen delivering scallops in buckets to restaurants, 5 to 15 gallons at a time. Sales to households are usually made in 1 gallon or ½ gallon freezer bags, and often the buyers pickup from the fishermen. Most of these direct sales are to Washington County residents or businesses. One fisherman reports selling to buyers outside the County. Numerous Washington County restaurants currently buy scallops directly from fishermen during the Maine scallop season. Most of the restaurants, however, supplement these purchases with scallops bought from wholesalers. Some restaurants, especially ones that are closed in the winter, only buy scallops from wholesalers.

Freshness is the most important scallop quality valued by the buyers interviewed. The market demonstrates a preference for “dry” scallops over “wet” ones, but in reality there are all different degrees of soaking. Many final buyers of scallops do not understand the difference between “wet” and “dry.” Even the buyers who do understand the difference cannot readily verify the extent of soaking and must take the sellers’ word. Scallop size is another important characteristic. Large U10 scallops of good quality command a price premium on the market, and go mostly to high-end restaurants. Not all final buyers prefer large scallops however. Some restaurants prefer medium, 10-20 or 20-30 count scallops.

There is some debate over the quality of fresh vs. frozen scallops. Many final buyers express a preference for fresh scallops, but most restaurateurs interviewed either buy fresh and freeze scallops themselves or buy frozen scallops. While some restaurants insist on working with fresh scallops, others state that the quality of frozen scallops is just as good, if not better. Of course a big factor is how fresh the scallops are when initially frozen. Several restaurants like the idea of buying fresh scallops directly from fishermen and freezing them. This way the restaurants know that the scallops are very fresh when put in the freezer, and they know exactly how long the scallops are kept frozen.

Several restaurants express a strong preference for local scallops and report that their customers like to know where the scallops come from. One restaurateur reports avoiding local Maine scallops out of concern for overfishing and perceived environmental impacts. A few Washington County restaurateurs express a specific preference for either Cobscook or Fundy Bay scallops. Many buyers believe Maine scallops are high quality, but do not perceive a difference between Cobscook Bay and

other parts of Maine. Unless purchased directly from fishermen, however, the origin of scallops is not usually known by the restaurant and retail buyers. Several restaurants prefer buying directly from fishermen when they can, but a couple prefer to buy from a reputable wholesaler.

Diver scallops are preferred by some buyers, mostly because they tend to be very fresh, large, and well-handled. A few buyers prefer diver scallops over dragger scallops, because of the perception of less environmental impact.

Other quality characteristics important to buyers include well-shucked, clean and well-handled, and good color and texture. When asked about sustainability of the fishery and food safety, most respondents felt that these were important considerations as well.

According to informants, dealer mark-ups typically range from \$0.25 to \$0.75/lb. First buyer commission is usually \$0.25/lb additional to the dealer mark-up. Mark-ups may be a little higher on the larger scallops than on the smaller ones. According to one wholesaler, their mark-ups vary depending on what they do with the scallops. We estimate typical wholesaler mark-ups at between \$1.00 and \$1.50.

Several restaurants report paying wholesalers between \$8.50 and \$8.95/lb for fresh 20-30 or 30-40 count scallops of unknown origin. One restaurant that pays \$8.95/lb for fresh scallops says the frozen price is \$7.65/lb. Another restaurant reports paying only \$7.00/lb for fresh, 20-30 count offshore scallops through a wholesaler. A restaurateur in Mid-Coast Maine reports paying a wholesaler \$11/lb for fresh, dry U10s.

This season Cobscook fishermen report boat-to-dealer prices ranging from \$5.00 to \$7.25/lb for boat run, \$7.00 to \$8.50/lb for 10-20 ct., and \$7.25 to \$10.25/lb for U10s. Peddle market prices are reported at \$60 to \$70 per gallon (\$6.67 - \$7.78 per pound),

usually for boat run. Table 10 shows Cobscook prices compared to the prices posted at the New Bedford Auction and Fulton Fish Market.

Table 10. Scallop price comparisons for the 2004-05 scallop season (Dec 1st – April 15th)¹

	<i>Boat run</i>	<i>20-30 ct.</i>	<i>10-20 ct.</i>	<i>U10 or U12</i>
Cobscook ex-vessel prices (to dealers)	\$5.00 - \$7.25		\$7.00 - \$8.50	\$7.25 - \$10.25
Cobscook peddle market prices	\$6.67 - \$7.78			
New Bedford Auction ex-vessel prices (dry)		\$6.63 - \$7.81	\$6.10 - \$7.74	\$6.10 - \$8.57
Fulton “wet” wholesale prices		\$5.25 - \$5.75		
Fulton NJ “dry” wholesale prices		\$7.00 - \$8.75		\$8.00 - \$10.00

¹Prices are per pound.

In comparing prices, differences in product quality, geographic location, and stage of the market channel must be considered. For scallops of identical quality, one would expect the price in a major market area or distribution hub (such as New York or New Bedford) to be higher than the price received by fishermen in distant supply regions with little local demand. The geographic differences in price reflect the transportation, storage, and handling costs required to get scallops from the supply region to the market. Also, although the New Bedford Auction prices are ex-vessel, they are the prices paid by large wholesalers (after subtracting the \$0.10/lb fee). Since this market channel is compressed, in that it skips the first buyer/dealer stage, higher ex-vessel prices could be supported. For these reasons, it is not surprising that New Bedford Auction prices for 20-30 count scallops are a little higher than Cobscook boat run prices.

Scallops from off-shore trip boats are less fresh, however, and not of identical quality to Cobscook day-boat scallops. Higher quality scallops should have a higher price, all else equal. Since Cobscook boat-to-dealer prices for boat run are lower than

New Bedford prices for 20-30 count scallops, it appears that the price penalty for distance to major market and dealer mark-up outweighs any price premium for quality.

Interestingly, this result does not hold true for 10-20 count and U10 or U12 scallops. In these size categories, Cobscook prices are higher than New Bedford prices. Distinct from the market for medium-small scallops, markets for the larger scallops are supporting a substantial price premium for the quality of Cobscook scallops. This quality premium far outweighs any price penalty due to location or multiple market intermediaries.

Various suggestions from fishermen and buyers on ways to improve the value of Cobscook scallops were noted. Leading suggestions from fishermen involve forming a cooperative or working together in some manner. More than one fisherman mentioned trying to access specialty or niche markets, possibly with some sort of advertising or promotion. Dealer and wholesaler suggestions include increasing landings, possibly by shutting the fishery down temporarily; good, clean handling of the scallops; not selling through channels that soak the scallops; and getting fishermen together to promote and market the scallops.

CONCLUSIONS

An ultimate goal of this study is to identify ways to improve the dollar value of Cobscook Bay scallops, especially the boat price and returns to Cobscook fishermen. The boat price is linked directly to the final selling price and the marketing margins associated with the market channel through which the scallops are sold. The boat price is also influenced by the quality characteristics of the scallops and how well these

characteristics are transmitted through the market channel and perceived by the final buyer.

Some scallop characteristics, such as size and color, are easily observable. Other characteristics, such as freshness, taste, and amount of soaking, are not easily observable prior to purchase, but can be at least partially verified after purchase and consumption. Still other characteristics, such as origin and method of catch or environmental impact of the fishery, are not easily verifiable even after consumption. Buyers' expectations regarding product quality and the prices they are willing to pay are influenced by quality signals that communicate information about a product's unobservable characteristics.

Quality signals for seafood and agricultural products may involve the use of grades (e.g., U.S. Prime beef), certification and labeling programs (e.g., USDA Organic, Marine Stewardship Council, Scottish Quality Salmon, and Label Rouge), regional names (e.g., Digby scallops and Florida orange juice), or private brands (e.g., EcoFish). Producer groups and private firms can reinforce quality signals through generic or private advertising and promotion. Quality can be signaled informally through product descriptions (e.g., dry U10s or Maine diver scallops) or based on seller reputation. Through previous experience, buyers may come to trust that a certain seller (fisherman or wholesaler) will consistently supply high quality products without the need for a label, brand, or other formal quality signal. In any case, price premiums based on product quality can only be generated if quality characteristics are effectively signaled through the market.

High-end restaurants, especially on the west coast, form a niche market that seeks large, U10 scallops and distinguishes inshore Maine quality from that of offshore trip

boats. This niche market rewards Cobscook U10 scallops with a price premium over New Bedford and New Jersey dry scallops. It is not clear whether this premium is being expressed primarily for freshness or other quality attributes. One wholesaler believes that more scallops are being sold throughout the country as Maine diver scallops than are being harvested by divers in Maine. Diver scallops are considered a specialty item by high-end restaurants, and those restaurants are willing to pay a considerable premium for them. One possibility is that certain distributors are selling large Cobscook dragger scallops as Maine diver scallops and that final buyers cannot distinguish between the two based on observable characteristics. If this is not true, then it appears that buyers of larger scallops perceive greater freshness or other quality attributes associated with Cobscook (or Maine day-boat) scallops relative to large dragger scallops of other origins. Whichever the case, Cobscook U10 and 10-20 count scallops are currently receiving a price premium relative to smaller Cobscook scallops and relative to large scallops landed outside of Maine.

Smaller Cobscook scallops appear to receive little, if any, premium relative to offshore trip-boat scallops landed in other parts of the country. There could be different explanations for this fact. One possible explanation is that final buyers of 20-30 count and smaller scallops simply are not willing to pay a premium for freshness or other day-boat quality attributes. Another possible explanation is that final buyers of 20-30 count scallops would be willing to pay a premium for fresh, high quality, Maine day-boat scallops, but current distribution channels do not maintain this quality (e.g., they soak the scallops) or do not signal this quality sufficiently to support a price premium.

Although most buyers assign greater importance to freshness than scallop size, size has a greater effect on price than does freshness. This result can be partly explained by the difficulty of verifying, maintaining, and signaling freshness through market channels. Scallop size, on the other hand, is readily observable and easily maintained through the market channel.

Other than changes in market forces outside the fishermen's control, there are two basic ways to improve the boat price. One is to find ways to reduce the marketing costs of getting the scallops to the same final buyers that are now purchasing Cobscook scallops. This might be accomplished through collective marketing arrangements or direct marketing. Because marketing margins in the current market channels do not appear excessive, trying to improve the boat price by reducing marketing costs alone seems to have limited potential.

Another way to improve the boat price is to enhance the quality of Cobscook scallops as perceived by the final consumer. This could increase the price consumers of Cobscook scallops are willing to pay and foster sales to new high-end outlets. Even if the actual quality need not be improved, increasing the final buyers' expectation of quality and improving the information available to them can enhance the value of the scallops. Improved quality control, certification and labeling, product promotion, value-added processing, and informal trust-based quality signaling are all ways to increase the quality and value for the final consumer.

Current direct marketing efforts by fishermen are successful because they accomplish both of the principles described above. Restaurants and households who buy directly from fishermen believe they are getting a higher quality product (very fresh, dry,

local) and are willing to pay a little more. Also, marketing costs per unit are kept low (perhaps lower than through dealer-wholesaler channels) because these buyers are located close by. For these reasons, the boat price for scallops sold on the peddle market is higher than the boat-to-dealer price. Although several fishermen are already selling part of their catch directly to final buyers in Washington County, it is likely that additional direct marketing opportunities exist. Expansion of direct marketing, especially outside Washington County, may require a more organized effort by fishermen, more formally specified quality signaling, or promotional efforts.

Cobscook boat run scallops sold on the peddle market and Cobscook U10 scallops sold through dealer-wholesaler channels to certain high-end restaurants currently receive a price premium. For smaller Cobscook scallops, however, differentiation by origin of catch, freshness, or level of soaking is not sufficiently transmitted through most dealer-wholesaler market channels to support a significant price premium. Many final buyers are not well-informed about differences in scallop freshness (e.g., day boat vs. trip boat), levels of soaking, or origin of catch. Even buyers who are knowledgeable about these quality differences cannot readily verify these qualities in the scallops they buy. Quality standards accompanied with certification and labeling or more informal methods of quality signaling could improve the information available to consumers and increase the amount they are willing to pay. There is potential for promotion or other marketing initiatives to raise awareness of quality issues, highlight superior quality characteristics, create name recognition, and support higher boat prices for Cobscook scallops.

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