

Market Assessment for Maine-Grown Arctic Surfclams

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EXECUTIVE SUMMARY

The purpose of this study was to assess the market potential for Maine-grown Arctic surfclams. In particular, this market assessment sought to determine whether there are viable opportunities for selling this product in forms that appear technically feasible, and if so, to provide information on promising market outlets.

This market assessment included secondary and primary market research. Secondary data on New England food markets were collected. Thirteen semi-structured interviews with seafood market representatives were conducted for this study. Interview participants included eight wholesalers, four restaurants, and one farmers' market representative.

Results of this market assessment indicate that there is good potential for selling Maine-grown Arctic surfclams as a niche product to restaurants and wholesalers in Maine. Several wholesalers and restaurants interviewed expressed strong interest in trying the product. Restaurants that promote Maine-grown products, offer seasonal menu items, and feature unique seafood dishes provide opportunities for selling small-volumes of Arctic surfclams at a relatively high price. Specialty food retailers, such as those specializing in seafood or serving Asian clientele, also appear promising as market outlets. If production constraints limit the clam size and seasonal availability, potential buyers are receptive to purchasing whole, live clams at a small shell size of about 1.5 inches during an autumn harvest season.

INTRODUCTION

This market assessment was conducted to gauge the viability of introducing a new product, Maine-grown Arctic surfclams, to the marketplace and to identify the most promising marketing options. Potential clam farmers will need information on cultivation techniques, costs, and market feasibility. The results of this market assessment are targeted at individuals and businesses who are considering farming Arctic surfclams in Maine, but who need guidance about market feasibility and options for business planning.

The Downeast Institute for Applied Marine Research & Education (DEI) is developing methods for farming Arctic surfclams (*Mactromeris polynyma*) in Maine. DEI has demonstrated that Arctic surfclams can be grown in coastal mudflats to a size of 1.25 to 1.75 inches in a year and a half. Growing them to larger sizes would entail a second winter of grow-out and increased risk of losses. The focus of this market assessment is on selling whole surfclams in the 1.25- to 1.75-inch size range, because that appears most feasible from a production standpoint. Two photos provided by DEI are attached at the end of this report. The ultimate goal of the project is to create new opportunities for Maine seafood businesses by demonstrating cultivation techniques and analyzing market potential.

This market assessment has two overarching research questions:

1. Are there viable opportunities for selling small, whole, Maine-grown Arctic surfclams?
2. Considering product characteristics, production volumes and location, what marketing channels, product forms, promotable attributes and price levels have the greatest likelihood of success?

To address these questions, primary and secondary market research was conducted. First, background information on Arctic surfclams and other shellfish species was reviewed. Second, data on the size of Maine's consumer food market were collected. Third, semi-structured interviews were conducted with 13 Maine seafood businesses. Fourth, additional price data were collected from Internet sources.

Results of the market assessment indicate that there is strong potential for selling small, live, in-shell Arctic surfclams to high-end restaurants and specialty food retailers in Maine. Several wholesalers expressed interest in purchasing Maine-grown Arctic surfclams, and they may be able to access additional markets, such as the domestic Asian market.

MARKET BACKGROUND

The Arctic surfclam (*Mactromeris polynyma*) is also known as the Stimpson's surfclam and by the Japanese name "hokkigai." Although Arctic surfclams occur in the Gulf of Maine, their abundance has not been sufficient to support a wild fishery. Currently an offshore Canadian

fishery is the primary source of Arctic surfclams. The 3-5 inch clams are dredged by two, large harvesting/processing vessels, removed from the shell, blanched, and frozen on board the vessels (Clearwater Seafoods, 2015).

The Canadian Arctic surfclams are sold in Japanese, Chinese, and American markets, generating \$72.8 million in 2014 sales revenue for the Canadian fishery. The foot of the Arctic surfclam turns a brilliant orange-red color when blanched or cooked and is considered a delicacy in Asian markets and at U.S. sushi bars. The red foot is excellent for visual presentation, and the rest of the clam can be used in any recipe calling for mollusks or seafood (Clearwater Seafoods, 2015; Pêcherie Manicouagan, 2015).

The Canadian Arctic surfclam fishery produces a high-volume frozen product distributed through global mass market channels. Numerous sources have noted consolidation in food production and distribution systems over the past few decades. “Fewer, larger buyers are working with fewer, more capable vendors” (Karst, 1999). Mass market channels prefer to work with large suppliers who can provide stable, consistent supply of a wide variety of products year-round (Karst, 1999; Clearwater Seafoods, 2015). For this reason, selling through large, diversified wholesalers is often necessary to reach major markets.

An alternative for small-scale food producers is direct marketing of specialty or differentiated products (Swisher and Sterns, 2003). Although the greatest overall market demand is in major metropolitan areas, local or regional markets can provide marketing opportunities for small-scale specialty producers. A segment of consumers seeks out locally produced food, which means that the most valuable markets may be in a food producer’s local region (Onozaka et al., 2010; Woods, et al., 2013; Kramer, 2014). Also, economies of scale in transportation mean that small-scale producers must either shrink the distance to market or rely on consolidated or joint distribution systems, such as through wholesalers, to keep per-unit distribution costs low.

It is not likely that small-scale Maine growers of Arctic surfclams would want to try to compete in the same mass market channels as the Canadian supplier of frozen Arctic surfclam feet. Instead, targeting small-volume, high-value niche markets would likely be more successful. Niche markets in Maine, and possibly New England, would offer the advantage of shorter distribution channels, which would be important for a live product with very short shelf-life.

The Economic Census, conducted every five years, provides information on the size and geographic distribution of the food market in Maine. Table 1 shows the number of restaurants, grocery stores, and specialty food stores in Maine, and in the top five Maine counties (ranked by number of restaurants). Table 1 also shows the value of sales in 2012 for each sector (U.S. Census Bureau, 2015).

In 2012 there were 2,757 restaurants in Maine with sales of \$1.8 billion, 581 grocery stores with sales of \$3.4 billion, and 129 specialty food stores with sales of \$125 million. As would be expected, Maine counties containing major metropolitan areas have the highest value of food

sales. These areas include Portland (Cumberland Co.), Bangor (Penobscot Co.), Augusta (Kennebec Co.), and Lewiston-Auburn (Androscoggin Co.). York County lies between Portland and the greater Boston-New Hampshire metropolitan area. Cumberland and York Counties are the top two Maine counties in terms of food sales. The Boston metropolitan area has an even larger market. 2012 Economic Census data were not yet available for that area when this report was written, but 2007 data show 3,710 full-service restaurants (\$4.0 billion in sales), 4,862 limited-service eating places (\$3.1 billion in sales), 1,826 grocery stores (\$9.1 billion in sales), and 410 specialty food stores (\$415 million in sales) in the Boston metropolitan area (U.S. Census Bureau, 2015).

Table 1. Number of Food Establishments and Value of Sales in Maine, 2012*

	Maine	Cumberland Co.	York Co.	Penobscot Co.	Kennebec Co.	Androscoggin Co.
Number of Restaurants	2,757	745	482	223	218	180
Restaurant Sales	\$1,808	\$562	\$323	\$186	\$142	\$127
Number of Grocery Stores	581	126	76	60	33	38
Grocery Store Sales	\$3,386	\$932	\$431	\$386	\$293	\$200
Number of Specialty Food Stores	129	35	28	8	10	7
Specialty Food Store Sales	\$125	\$42	n/a	\$8	n/a	n/a

*Sales values shown are in millions of US dollars

The Boston metropolitan area food market is larger than the market in the entire state of Maine. Based on these numbers, one could assume that the Boston-metro area has greater potential for seafood sales. However, local markets may offer high value outlets with lower distribution costs for selling small volumes of a Maine-grown niche product. For this market study, interviews were conducted with seafood businesses to assess the potential for selling Maine-grown Arctic surfclams through various market outlets.

INTERVIEWS WITH POTENTIAL BUYERS

In April and May 2015, 39 seafood market representatives were contacted about participating in an interview for this project. The initial sample was a convenience sample of New England seafood wholesalers, retailers, restaurants, and farmers' markets. Restaurants selected for the sample all featured seafood as a major part of their menu. Most of the restaurants were fine-dining establishments or Japanese-style restaurants.

Semi-structured phone interviews were completed with 13 individuals. Of the 13 interviews, eight were with seafood wholesalers. At least three of the wholesalers also sell retail. Four of the interviews were with restaurants, and one interview was with a farmers' market representative.

Initial contact was made by phone to confirm a contact name and email address. Then, an email was sent describing Arctic surfclams and the market assessment study. A few days after the emails were sent, follow-up phone calls were made to conduct the interviews.

The semi-structured interview questions and responses are attached to this report. The interview guide was set up using Google Forms. During the phone interviews, responses were typed into a Google Form and transferred automatically to a Google Spreadsheet. One respondent preferred to send written responses after the interview questions were sent to him. Interview participants were asked open-ended questions on possible market outlets, consumer interest, product attributes, competition, price, volume, and seasonality, as well as any other issues or challenges involved with selling Maine-grown Arctic surfclams.

Interview participants indicated that food service (primarily restaurants), retail food stores, and farmers' markets could all be viable market outlets for Maine-grown Arctic surfclams. Interview responses related to each type of market outlet are summarized below.

Types of restaurants mentioned most frequently were fine-dining restaurants and Asian-restaurants. One wholesaler mentioned national restaurant chains, but only if volume were high enough. Another wholesaler mentioned that some Italian restaurants might be interested in using small, whole clams for pasta with clams. Tapas restaurants were also mentioned as a possibility by one participant. One wholesaler and one restaurant mentioned specifically that clam shack-type restaurants would not likely be good outlets for this product. One traditional restaurant that offers several seafood items and also has an oyster bar said "We haven't changed our menu much in many years, and we're always full. When we've tried new menu items, it usually just sits. Something new like this probably wouldn't work here." But some respondents indicated that a lot of the higher end restaurants along the Maine coast like to offer new and seasonal items. One chef mentioned that choosing a few restaurants would be a good way to introduce a new, small-volume product. He suggested that "once you're in with some restaurants, have them use social media and it will spread like wild fire."

Portland was described by one respondent as a "foodie" city. Another respondent mentioned that there are several restaurants in Portland that like to offer new things and promote locally produced food.

The fine-dining and Japanese restaurants interviewed seemed very interested in trying Maine-grown Arctic surfclams. In the words of one chef interviewed, "Very interested! It would be a great opportunity to have surf clams from right here in Maine." Some respondents expressed interest in being able to serve them raw or only lightly cooked to feature them in a

crudo bar or as sashimi or nigiri. Quotes from the interviews about how to serve them included the following:

- I would look toward whole steamed type thing and come up with a sexy name for them (wholesaler).
- I could see it work live on half shell, steamed, or roasted in my 1,000 degree oven. Could make soups from them as well. As small as they are it lends itself to being eaten barely cooked or raw (restaurant).
- Sashimi and Nigiri in Japanese restaurants; raw preparations in higher end restaurants. It would be a great addition to our sushi menu and possibly our omakase – chef’s tasting menu (restaurant).
- We tend to cook shellfish low & dress up varying in season. Arctic surfclams would lend themselves to a variety of applications. Color change is interesting, which I like to feature. Their small size is good for tapas and small plates. Local, unique product is a good sell (restaurant).
- Could be an edible garnish on a high-end plate (wholesaler).
- Could you eat them raw? Otherwise over pasta (wholesaler).
- Italian restaurants; pasta with clams (wholesaler).

Retail outlets were also mentioned as a possibility by several interview participants. In the words of one wholesaler, “Any kind of shellfish is worth money; probably will sell themselves.” Others, however, cautioned that retail customers may need to be educated about how to prepare them. The domestic Asian market was mentioned by several participants as having strong demand for products like this and not needing information on how to prepare them. One wholesaler who supplies specialty Asian retailers across the country thought that live Arctic surfclams would sell well in that market. Some specialty retailers, like the Harbor Fish Market in Portland, like to offer new products, and they help educate customers about ways to prepare them. According to one wholesaler, “I think it would be a good retail item for general seafood retail, because of it being a shellfish coming from cold water, cold water meaning fresher and sweeter. That’s a perception a lot of people have at retail, whether accurate or not. Farm-raised in Maine would be attractive.”

The interview with a Maine farmers’ market representative indicated that there is strong demand for seafood at her farmers’ market, but the current seafood vendor is meeting the demand. Current farmers’ market members might not allow another seafood vendor into the market. Also, she believes selling a single item, like Arctic surfclams, would not be as viable as selling a variety of seafood. Options include finding a farmers’ market that does not already have a seafood vendor or selling Arctic surfclams to a vendor who already sells at farmers’ markets.

Interview responses to the proposed 1.5-inch size were mixed. One wholesaler said that restaurants prefer small clams; another said that baby anything sells. One restaurateur said he would be interested in them at the small size, but it would affect the way he prepared them. One wholesaler said that 1.5 inches in shell is too small, but suggested that clams in the 2-3 inch

size range would be easy to sell. Another wholesaler said he believed a 1.5-inch clam would sell in the domestic Asian market. A suggestion from one wholesaler was to offer two sizes, small and medium.

Interview participants also provided feedback on product forms. Most interview participants thought favorably of selling them whole, live, in shell. One wholesaler suggested selling the clam meat (foot) individually quick frozen (IQF), but said the foot itself would have to be at least 1.5 inches for that to be viable. He thought blueberry freezer space might be available to store the frozen product. Most respondents expressed a clear preference for fresh, live clams. As one wholesaler put it, if you buy frozen, why not buy from Asia; you lose the local, fresh advantage if you freeze them. One restaurant stated that they would always want them live, in shell: “We want to serve the freshest product; we tend not to buy any frozen product.” One wholesaler recommended selling them live in 5-lb or 10-lb bags. Another wholesaler recommended 25-lb bags.

Other attributes that could help sell Arctic surfclams include being locally grown in Maine, sustainable, and having a pleasing color. The sustainability aspect includes environmental and social impacts. One wholesaler mentioned the possibility of Best Aquaculture Practices (BAP) certification. Another wholesaler mentioned that the color of the shell is a big deal, with variations of gray, white, and brown more attractive than black. Several interview participants thought the visual appearance, especially the red foot, would be attractive to customers.

A key market feasibility question is “What price levels will the market support?” The grower’s price is directly linked to the final consumer price and the marketing margin, which is the per-unit cost of getting the clams from the grower to the consumer. The final consumer price will depend on the value to consumers (willingness to pay), as well as the price and availability of competing products. If Arctic surfclams are perceived as not much different than other species of clams available, consumers will not be willing to pay more for Arctic surfclams than the price of other similar clams. If Maine-grown Arctic surfclams can be differentiated from other clams available, so that consumers perceive a higher quality (or unique, desirable attributes), the market may support a higher price than for other clams.

Interview participants suggested that the most similar product, and therefore closest competitor, is the littleneck (hard-shell) clam, which is often farm-raised and sold live, in-shell, smaller than 2 inches. Some interview participants mentioned manila clams and cockle clams as other potential competitors. One wholesaler mentioned getting a lot of requests for blood clams from Asian customers and asked how similar Arctic surfclams are to blood clams. According to a newspaper source, blood clams have some unique characteristics that make them different from surfclams and most other types of clams (Fabricant, 2011).

Prices mentioned by interview participants ranged from \$0.20 to \$0.35 a piece (wholesale price) for littlenecks. The wholesale price for manila clams was quoted as \$4.00-\$4.50 per lb. One wholesaler said he would be willing to buy Arctic surfclams for \$1.50 per lb (grower price), but he would like them larger than 1.5-inch sizes. Another wholesaler mentioned that he pays

\$31 (grower price) for a 25-lb bag of cherrystones (larger hard clams). One restaurant said a chef would buy manila clams at \$4.50 per lb and charge \$16 per plate; wholesale clam prices of \$5-6 per lb would start limiting who would buy it. A wholesaler said that “if they are like blood clams, the Asian market would be willing to pay whatever [a high price].”

A sample of littleneck clam prices quoted on the Internet (May 2015) by online retailers ranged widely from \$2.99/dozen to \$9.99/dozen and from \$44 to \$76 per 100 count. The lowest price found (\$2.99/dozen) was for purchases of 20 dozen or more. Other littleneck clam prices quoted were \$5.99/lb and \$7.99 per quart (1.25-1.5 lbs). Online retail prices for manila clams were found at \$5.99/lb and \$6.05/lb.

Of course, retail prices are the highest, while wholesale prices (paid by restaurants and retailers) are lower, and grower prices (not including transportation, distribution, and marketing costs) are lowest. Growers of a new product like this would have some flexibility in setting the price, but would be constrained by consumer willingness to pay and the price of substitute products.

Responses to interview questions about volumes and seasonality were mixed. Some wholesalers feel it would be important for the surfclams to be available year round at substantial volumes. One wholesaler pointed out that higher volumes are needed to keep transportation costs per unit low, and another mentioned that it is most important for them to be available in the summer time. In the words of one wholesaler, “If the surfclams are only available a couple months a year, it would be difficult for me to sell. The more we can get product year round the better.” Three wholesalers said they would be willing to handle something like this at small volumes, at least initially. One wholesaler mentioned that there are a lot of seasonal items and said a limited season for the surfclams would not be a problem for him. Another wholesaler suggested that fall would be a good time to introduce a new product, like Arctic surfclams, after things slow down at the end of the summer. Restaurants interviewed did not think a limited season would be a problem. Fine dining restaurants like to have seasonal menu items.

Interview participants mentioned several possible challenges for successful marketing of Arctic surfclams. Educating potential buyers about the product and getting them to try it for the first time could be a challenge. Free samples would be helpful to build up demand for the product initially. The short shelf-life and getting them to market quickly and in good condition could be a challenge. Interview participants had differing views about that being a serious challenge or not. One wholesaler said that “shelf-life of only a couple days for live in-shell clams is a real problem; the biggest markets are in New York, Chicago, and Boston; by time they get to end user they’d be dead; that really limits your customers.” Others mentioned that good seafood distribution systems are already in place in Maine and that wholesalers figure out ways to extend the shelf life. Sand or grit that is sometimes found in bivalve shellfish was mentioned as a potential problem. If that turns out to be an issue, a rinsing or purging may need to be done prior to delivery to the customer. In some cases, chefs may be willing to handle that

themselves. Finally, the occurrence of red tide in Maine's coastal waters was mentioned by one participant as a potential problem.

CONCLUSIONS

Results of this market assessment indicate that there are viable opportunities for selling small, whole, Maine-grown Arctic surfclams. The most promising market outlets appear to be high-end seafood restaurants and specialty retailers that feature seafood or cater to Asian clientele.

The challenge for a low-volume seasonal product is to differentiate from mass-market products and identify the highest value market outlets, relative to the cost of getting to those markets. For small-scale production of Arctic surfclams in Maine, clusters of fine-dining restaurants within the state (mostly in southern Maine), and possibly a few specialty retailers, appear to have strong potential as high-value buyers who can be reached with reasonable marketing and distribution costs.

In particular, restaurants that promote Maine-grown products, offer seasonal menu items, and feature unique seafood dishes are promising outlets for small-volumes of fresh, whole Arctic surfclams. Because most consumers are not familiar with Arctic surfclams, recruiting chefs to develop preparation methods and dishes that feature the clams would be a good way to introduce the clams to consumers as a high-value, differentiated product. Three of the four restaurants interviewed for this study expressed strong interest in trying Maine-grown Arctic surfclams. Several wholesalers also expressed interest both for the restaurant market and other outlets.

Specialty retailers, in particular those serving the domestic Asian market, offer another promising market outlet for Maine-grown Arctic surfclams. Consumers' lack of familiarity with Arctic surfclams and the clams' short shelf-life (as a live product) may create challenges for serving retail markets, especially more distant ones.

There is definite interest among restaurants and wholesalers in trying a new product like Maine-grown Arctic surfclams. Whether direct delivery to restaurants or selling through a wholesaler would be most cost effective remains to be determined. With direct delivery, the grower would incur the storage, transportation, communication, and order transaction costs, but would receive the full wholesale-to-restaurant price. The grower price would be lower selling to a wholesaler, but the grower would avoid the distribution costs. Also, a seafood wholesaler would likely have efficient and effective storage and distribution systems in place and have access to a wider variety of potential final buyers.

Farmers' markets offer another suitable outlet for small volumes of local shellfish. There are numerous farmers' markets in Maine, some of which have seafood vendors. Restrictions on

vendor entry into farmers' markets and consumers' lack of familiarity with Arctic surfclams could create challenges for selling through those markets.

In terms of product form, fresh, live, in-shell is valued highly by the market. Most potential buyers interviewed seemed receptive to a small, 1.5-inch in-shell size. Clams could be sold to restaurants and retailers in bags ranging from 5 lbs to 25 lbs per bag. Maine-grown is an attribute that some buyers value.

The price buyers would be willing to pay for a new product is difficult to predict until they actually try the product. The personal interviews and quotes found on the Internet suggest a feasible price range. A grower-to-wholesaler price of \$1.50 per lb appears realistic as a lower end of the feasible price range. If product quality is as expected, restaurants would likely be willing to pay up to \$4.50 per lb, but per-unit marketing and distribution costs would need to be subtracted from that price to calculate the grower's net price. Differentiating the product from other clams and maintaining high product quality would raise the potential price.

This market assessment finds viable opportunities for selling Maine-grown Arctic surfclams through various market channels. Market feasibility is necessary, but not sufficient, to support the viability of a business enterprise. Technical feasibility and financial feasibility are additional elements needed for business success (Hofstrand and Holz-Clause, 2009).

Technical feasibility includes issues related to shellfish production and product quality. Production questions pertain to suitable sites and environmental conditions, availability of clam seed, and growing methods that can achieve dependable yields. Product quality questions pertain to the ability to produce clams that can meet market expectations for size, visual appearance, taste, food safety, adequate shelf-life, grit-free, and other attributes. Resolving those questions is important to establish the commercial viability of growing Arctic surfclams in Maine.

Market feasibility and technical feasibility are two key elements needed to for a financially viable enterprise. Market feasibility indicates whether the market will support a clam price at a sufficient margin above per-unit variable costs and whether the market can absorb the quantities needed to break even or achieve a target profit. Technical feasibility indicates whether production quantities and product quality can be achieved while keeping fixed and variable costs low enough, relative to the grower's price and quantities sold, to break even or achieve a target profit. Information on production costs and clam yields would help potential clam growers assess the financial feasibility of growing Arctic surfclams.

Avenues for further investigation to demonstrate the financial feasibility of growing Arctic surfclams in Maine include the following tasks:

1. Continue work to demonstrate technically feasible production methods and estimate production costs.
2. Deliver product samples to potential buyers and get feedback on the actual product.
3. Narrow down the most feasible price range after potential buyers try samples.

4. Gauge reaction to different possible trade names for the product.
5. Investigate ways to pack and store the clams to extend shelf life.
6. Investigate the level of sand/grit in the clams and ways to reduce that.
7. Estimate costs of direct delivery to southern Maine and other locations with clusters of potential buyers. Compare those costs to margins that would be charged by wholesalers.

This market assessment finds strong potential for selling Maine-grown Arctic surfclams to fine-dining and Japanese restaurants, as well as to specialty food retailers that feature seafood or serve Asian clientele. Further research on technical feasibility, production costs, and market response to product samples would provide additional key information for business planning.

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APPENDIX A - PHOTOS



Photos courtesy of the Downeast Institute for Applied Marine Research & Education

APPENDIX B – INTERVIEW QUESTIONS AND RESPONSES

Note: Response letters shown below are for the same participant on every question. Not every question was asked to every participant.

1. Business Type
 - a. Wholesaler
 - b. Wholesaler
 - c. Wholesaler
 - d. Restaurant
 - e. Restaurant
 - f. Wholesaler & Retailer
 - g. Restaurant
 - h. Restaurant
 - i. Wholesaler
 - j. Farmers' Market
 - k. Wholesaler
 - l. Wholesaler & Retailer
 - m. Wholesaler & Retailer
2. Other Business Descriptors (*responses omitted here for confidentiality reasons*)
3. Familiarity: Are you familiar with the Arctic surfclam? I should describe.
 - a. Yes. Knew about Brian working on raising them.
 - b. Yes, familiar with species, but never handled myself.
 - c. Yes.
 - d. No.
 - e. Yes.
 - f. No.
 - h. yes
 - i. Yes.
 - j. No.
 - k. Not really, but saw photos attached to email.
 - l. Not really, but saw photos attached to email.
 - m. No.
4. [Wholesalers only] What types of market outlets or distribution channels do you think would be most promising for selling small-to-medium volumes of small, whole Arctic surfclams grown in Maine?
 - a. If it's high volume, probably like a Darden's restaurant, Red Lobster or Olive Garden type thing, variety of seafood and in a lot of areas; a larger chain type thing. They have marketing specialists. I'd be willing to stick neck out and put them out to customers, but we'd be pretty small outlet. My footprint is on coast from Bar Harbor to Scarborough, supplying restaurants with fresh and frozen. We're a large distributor of shucked soft-shell clams. We're high volume in shucked clam industry. Could maybe supplement that industry. Getting harder with rising cost; 8 gal of clam meat was going for \$160/gallon on Cape Cod [\$20/lb]. If there were a steady supply, tender enough to bread and fry as alternative to surfclam strips. We tried with Mahogany clams in past, but couldn't get a good yield of meat. We're open to trying new things. Portland area is a "foodie" city now and likes new things.

- b. Domestic Asian market. Several companies that do a lot of that kind of business. I used to get razor clams from diggers Downeast and they'd all go into the domestic Asian market. I don't think so much the sushi market because of the size of the clam.
 - c. If you could supply 10,000 (count) a week in the 2-3" size range, it would be an easy sell. I could probably move them all tomorrow, no problem. I'd pay \$1.50/lb. Could probably get into domestic Asian market or Sushi markets no problem. Need to do volume on this, like 10,000 week. 200-300 count wouldn't work. Even selling directly to restaurants, logistics would be problem with low volume. Even a single restaurant would want at least 100 count. I could probably move them all tomorrow now problem, but would need some volume. Any kind of shellfish is worth money; probably will sell themselves.
 - f. The restaurants like smaller clams; don't like the bigger ones. Restaurants would probably be interested; maybe some supermarkets.
 - i. Retail outlets. Probably pushing toward the domestic Asian market. Could sell wholesale to retail outlets. Transportation channels are already there.
 - k. We sell mostly to restaurants, seafood markets, institutions, stores. We have some Asian restaurants that we supply. On a new product like that; I'd like to try them myself and see where flavor profile is. I'd like to see for myself that it's a good product, then offer to buyers.
 - l. We'd want to evaluate the product. I think we'd be able to sell depending on pricing. We now carry 6 different clam species, local and out of state. Bring in cockles from New Zealand and manilas from West Coast. They'd probably follow those distribution channels: we could sell in our retail store and sell to food service clients. Probably not a high volume thing for us. We typically sell manilas 60lbs/week, cockles 30-40lbs/week, hard clams (little necks & top necks) 15-25 100-lb bags/week.
 - m. Most of my customers are Asian markets across the country. I'd have to get samples out to them. I get a lot of requests for shellfish. Most of my sales go to specialty Asian retailers.
5. [Retailer/Farmer's Market only] How interested are you in the possibility of selling small, whole Maine-grown Arctic surfclams through your retail store/business in the future? Explain.
- j. The farmers' market already has a seafood vendor from Stonington [*name omitted here*], who sells lobster, clams, and other seafood at the market. The farmers' market requires a 2/3 vote by current members to allow a new vendor to sell at the market. Therefore it would probably be best to find a market that doesn't already have a seafood vendor, or to sell to the vendor who is already selling at the farmers' market. There is strong demand for seafood at this farmer's market, but [current vendor] meets the demand and his margins are pretty thin. The market denied an application by Port Clyde Fresh Catch to sell there, because the current membership thought it would drive out [current vendor]. Another point is that selling just Arctic surfclams might not be as attractive/profitable as selling a variety of seafood.
 - l. Yes, but we'd need to gain more knowledge about the product first.
6. [Restaurant only] What types of dishes or menu items do you think small, whole Arctic surfclams would be most suitable for? In what types of restaurants?
- d. There are several seafood restaurants in Portland that like to offer new things and promote locally harvested.
 - e. I could see it work live on half shell, steamed, or roasted in my 1,000 degree oven. Could make soups from them as well. As small as they are it lends itself to being eaten barely cooked or raw.
 - g. Sashimi and Nigiri in Japanese restaurants; raw preparations in higher end restaurants

- h. We tend to cook shellfish low & dress up varying in season. Most recent one was with radish sauce. Arctic surfclams would lend themselves to a variety of applications. Color change is interesting, which I like to feature.
7. [Restaurant only] How interested are you in the possibility of putting Maine-grown Arctic surfclams on your menu in the future? Explain.
- d. We do steamed clams, raw oysters and scallops. We haven't changed our menu much in many years, and we're always full. When we've tried new menu items, it usually just sits. Something new like this probably wouldn't work here.
 - e. Yes interested in experimenting; would love to get hands on them. We have a crudo bar.
 - g. Very interested! It would be a great opportunity to have surf clams from right here in Maine. One of the amazing things about living here on the coast is to have so much fresh fish and shellfish available year-round. It would be great to add to the selection. It would also depend, of course, on price and quality, but it would be a great addition to our sushi menu and possibly our omakase (chef's tasting menu)
 - h. Very interested. Good quality product; good feedback from guests having served it once before. They were on smaller size, but probably 3-4" in shell.
8. What similar products would compete most closely with Arctic surfclams?
- a. Quahog/cherrystone/little neck.
 - b. Don't know if I know enough about them to have an answer to that. I mentioned razor clams, also to domestic Asian market; other types of clams, including the small hardshells/quahogs, a lot of which are being farm-raised now in Long Island, Mass, and Virginia, for example Cherrystone Aquafarms. How fast do Arctic surfclams grow compared to quahogs. The faster they grow the less expensive the product's going to be.
 - c. I pay \$0.23/clam for littlenecks. There's an Arctic surfclam (at least it's being called that) being harvested off Mass. now. I don't know what going price for hokkigai tongues are. [Responding to question about baby clams over pasta], those are like little neck clams; that meat is circular and easy to deal with, but with the tongue it's different.
 - e. Manila clams and cockles
 - f. The shellfish we sell are steamers; also sell rope-grown mussels. We sell more mussels than steamers now. Also things like little necks & oysters, but fewer of those.
 - h. I've seen some baby surfclams around market. Issue is with level of sand in them. Can't serve a product with grit in it. Baby surfclams have had that issue before. There's not much else on market that is similar.
 - i. Probably hard shell clam, littleneck, from Rhode Island and Cape Cod. This might be a step above it, mainly because of the foot. I think it would be priced above them.
 - k. Sounds like littleneck clams would be the closest thing. We sell a lot of little necks, 2,000 to 4,000 per week. For local little necks, we pay \$0.30-\$0.35 a piece. [Wholesale price will be higher than that]. The ones we buy out of Boston, when we can't get local ones, are \$0.25 a piece.
 - l. Manila clams are sold in small, medium, and large. Easier to market when consistently the same size. You might consider offering two sizes, small and medium.
 - m. I get a lot of requests for blood clams, mostly from raw bars or live retail markets. Most of what I sell has to be live product. Asian retailers selling live shellfish are big in Texas and Denver.

9. What types of consumers do you think would be most interested in purchasing Arctic surfclams?
 - a. I would say high-end specialty type restaurants in Southern Maine area; not clam fry shack. Commercial street area of Portland would be a good place to start.
 - b. Domestic Asian market. Suppliers of domestic Asian market include Intershell Seafood/International (Gloucester, Monty Hall); ?McGura? USA (Gloucester), which is part of TrueWorld; H Mart Asian superstore is supplied by Captain Blue (Fulton Fish Market); Cape Cod Shellfish. Also, I think it would be a good retail item for general seafood retail, because of it being a shellfish coming from cold water, cold water meaning fresher and sweeter. That's a perception a lot of people have at retail, whether accurate or not. Farm-raised in Maine would be attractive. A retailer in Portsmouth said his customers don't mind farm-raised product, but want to know that it's raised naturally and nearby, not from Asia. In Portland we have Harbor Fish Market; they're adamant about using as much Maine products as we possibly can. Harbor Fish Market in Portland would be an excellent laboratory customer about how the retailer consumer would accept product.
 - c. Domestic Asian market - Japanese and Chinese go for anything red. Japanese will put in sushi bars, and Chinese will do whatever. If go after high-end chefs, they want this and that, whereas Asians are less picky, they would buy it however and pay a good price.
 - f. I sell to restaurants, nursing homes, & hospitals. Most shellfish we sell go to restaurants. Some supermarkets might be interested.
 - h. I would think higher end restaurants. Delicate creatures. Can't get away with it at clam shacks. I would think fine dining or tapas restaurants in particular.
 - i. Asian market. Maybe non-Asian retail, but they would need more education.
 - k. We have a lot of restaurants around here that are always looking for a new thing, Hancock Co./Bar Harbor area. The guy growing fish in Franklin last year, we bought some from him and didn't have any trouble selling it. If you could use them like a littleneck clam, then you open yourself to Italian restaurants, pasta with clams.
 - l. Restaurants, especially if local. Also, through my retail store. Could you eat them raw? Otherwise over pasta.
 - m. Mostly Asian consumers. I'd have to see it to tell if others might be interested.
10. What product forms (whole/shucked, fresh/frozen, raw/blanched, clam size, pkg size) do you think have the most potential?
 - a. I would look toward whole steamed type thing and come up with a sexy name for them. With mahogany quahogs, late 80s early 90s they made a come back; count of 28-33 per lb. Started selling by the dozen, volume oriented. Called them a butter clam; cute little clams, appealed to the average housewife.
 - b. I would think cost of producing just about any farm-raised seafood product in Maine compared to other places with cheap labor & real estate. For that reason, I think best form would be live, in-shell. There's plenty of logistical options to get product from Maine to Boston. If frozen, why not buy from Asia? Lose advantage. If they're marketed fresh, have to be marketed live and in shell.
 - c. 1.5" shell is too small. Need to grow larger. Need a tongue that's at least 1 1/2 inch by 1 1/2 inch to be a viable thing, size of a 10/20 count scallop. If large-enough meat, could be frozen, IQF pack frozen, could sell the hell out of them.
 - e. Will you shuck them and pack in cryovac? I would prefer whole, small clams; can shuck as need them. Might need to go through purge tanks before going to market; purge out sand and grit. I'd suggest some kind of rinsing or purging. Could try unpurged first. I would try selling live on half shell. They seem to be manila clam or cockle size.

- f. We sell steamers by pound or bushel. There's a market for shucked clams for chowders. We also sell frozen chopped clams.
 - g. Whole, fresh, and raw would be best for our restaurant, since we would probably be serving them exclusively raw as either nigiri or sashimi. In the past we have used the larger size of 3-5 inches, but would be interested in trying the smaller ones that you would be raising. The size may affect the way we prepare the sashimi/nigiri, but if the taste and texture is still there we would love to experiment.
 - h. Always live, in-shell; we want to serve the freshest product. We tend to not buy any frozen product.
 - i. Because of size, looking at whole clam, not just foot; specialty market for sure. Whole, live.
 - k. Color would be a selling point. The visual is 90%.
 - l. Fresh, live, in bag; probably 5-lb or 10-lb bags for wholesale. [I asked about grit issue:] If a lot of sand/grit on them, need to figure that out; won't sell.
 - m. Whole, live would be best. Currently my customers are buying periwinkles, mahoganies, and cherrystones. I believe 1.5 inch clam would sell. 25-lb bags would be a good package size.
11. What promotable attributes (red color, fresh, local/Maine, sustainable, organic, food safety) would improve the likelihood of success?
- a. Color of the shell is a big deal; grey/white/brown, pretty, not black. Certain places like sustainability and locally produced, but in back room cooking Taiwan farm-raised shrimp.
 - b. High points of that would be the grown in Maine and sustainable aspects of it. Growing a product that is high quality, as evidenced by Clearwater's success, but also fairly new product to market. Also bringing job opportunities for young people in region; there's a big social aspect to the project that retailers like Fresh Market might like. High quality but also a social impact or value. That would be very strongly promotable. Also, shellfish are win-win; they purify the water, improving water quality, as opposed to farmed salmon. Sustainability points could be promoted: pluses to environment and to local economy. The lobster industry is making great efforts to capitalize on general goodwill of Maine's image; has a certain connotation. Certifications such as BAP certified (Global Aquaculture Alliance) can help in promoting product and leaving competitors behind, even if it doesn't really impact price.
 - c. Red color, especially in Asian markets.
 - f. Seasonal demand. My sales area is Maine and part of NH. As prices have gone up, some places take off the menu. If a restaurant on water, they have to have steamers.
 - g. All of the above, except the red color I suppose. Freshness and taste would be the most important.
 - h. Red color. Purple transferring to red when cooked. Clean product. Low level of grit, but I can purge some myself. Their small size is good for tapas and small plates. Local, unique product is a good sell.
 - i. Baby anything sells. The fact that it's a red-footed clam.
 - k. Could be an edible garnish on a high-end plate.
 - l. Yes, probably all would apply. Would need to look at and try.
 - m. I honestly don't know. There's such a language barrier [with the domestic Asian market].
12. What prices and volumes would be necessary to be competitive in the wholesale/retail/restaurant market?
- a. You'd have to come in competitive with littleneck clams/quahogs. You couldn't go into a place with a brand new product and charge twice as much as for littlenecks.

- b. That I'd be inadequate to answer without doing more research. I'd call Monty at Intershell. From volume standpoint a big part of that would be the logistics. What would it cost to get product from Machiasport to Boston; economies of scale. Transport costs per unit go down as volume increases. I could bounce ideas off Monty at Intershell; would it be replacing or competing with an existing product or would it be a new thing?
 - c. It's all price & logistics. Need to put out at reasonable price, then raise later. Ten-year plan. He would buy for \$1.50/lb, but needs larger volume and size.
 - e. Any more than \$0.25 piece that's not cheap. Littlenecks often sold by the piece, \$0.20-\$0.30 each. Manila and cockle clams sold by the pound. A chef would buy Manila clams \$4.50/lb and want to get \$16/plate. \$5-6-7/lb would start limiting who would buy it. If it's a small fishery, and you're not able to do much volume, you must pick & choose who to deal with. Once you're in with some restaurants, have them use social media and it will spread like wild fire.
 - f. This winter the price of steamers was horrific (high). I'm paying \$133/bushel now, which is high.
 - h. I buy my chowders at about \$2.15/lb. I wouldn't want to spend a boat load on a product with limited shelf life like, but I can't say exactly.
 - i. Clearwater is doing adult, large, processed. I don't know about littleneck prices. Varies a lot seasonally. But with new item, basically set the price you want.
 - k. \$0.30-\$0.35 a piece if like little necks. We can start out with small batches, but if it's never going to grow to numbers that would be profitable for a grower or distributor it doesn't make much sense.
 - l. We're currently paying \$4/lb for manila clams. We would be willing to handle at small volumes.
 - m. I don't move a whole lot of any. I could probably make it work at low volumes for a while. Right now I'm paying \$31 for a 25-lb bag of cherrystones, but I'd really have to get samples out to people to see what they're worth. If they're like blood clams, the Asian market would be willing to pay whatever.
13. How would limited seasonal availability affect the ability to market Arctic surfclams successfully?
- a. You would want them available pretty much year round, or at least April to November. Summer time is most important to be available.
 - b. With the markets I'm describing they'd be more year-round markets. Things like soft-shell clams, there's a strong demand year round. Domestic Asian markets would be year round demand.
 - c. Nothing wrong with seasonal product. Would probably freeze great, just the tongues, get more value for the product. Might use blueberry freezer space.
 - e. Not a problem.
 - h. Never an issue.
 - i. You'd harvest when most opportunistic because of price. No, there are a lot of seasonal items.
 - k. Once Columbus Day hits, there's no business; local business. But maybe you want to move into it slow anyway. A good thing about fall is that it's a better time to introduce something new. We have more time in fall to introduce something new; difficult to introduce something new when right out straight during the summer. After a season or two, it becomes old hat; know there are clients out there that will want them.
 - l. If only available a couple months a year, it would be difficult for me to sell. The more we can get product year round the better.

- m. That [being available for only a couple months in the fall] would be workable.
14. What do you see as the biggest challenges for successful marketing of Maine-grown Arctic surfclams?
- a. Getting them on the plate in the first place, the first restaurant to promote them for us. You'd have to basically give them away to start and inform the customer.
 - b. Knee-jerk reaction as far as my part would be the size. How would the size be received on the marketplace? Will it be an impediment or a plus. I don't think the logistics are a challenge. Boston is arguably the largest seafood hub in the country.
 - c. Perishability, shelf-life of a couple days for live in-shell clam is a real problem. Biggest markets are in New York, Chicago, and Boston; by time get to end user would be dead. That really limits your customers. Also, need to grow to 2-3" shell.
 - f. Price. Can the restaurants make money off it? If price goes up too high, they may substitute something else.
 - g. Reaching past Japanese restaurants. Price may influence certain restaurants. Also, lack of knowledge of how to prepare surf clams could hinder success.
 - h. Making sure delivered fresh in quality direct from water. Freshness and quality. Low grit.
 - i. Educational piece. Work with fish market somewhere, like Harbor Fish Market in Portland, that features new items and give out info on preparing and cooking. Then go Asian market; they'd already know what they want to do with it. No way to know if shelf life is a problem yet; there are ways to help shelf life; pack appropriately.
 - k. Education. What the product is, how to cook it, how to eat it. And price point & availability. But there are a number of restaurants around the state that love to use products when they're in season. Could sell during fall. I don't see an issue with perishability unless they are more fragile than other clams out there.
 - l. Once we see the product, we can then determine culinary value, the need to work out price, availability, and sizing. All those things together matter. Are they affected by red tide? How consistent will they be week to week? Will they be available year round?
 - m. Probably maintaining production levels. If they [Asian customers] like them, they'll put a strain on supply.
15. Are there any other questions I should be asking? Or do you have anything else to add?
- b. Nope. I don't think so. I'll try to get in touch with some of the people I mentioned, and we can try to talk again next week, maybe Wednesday.
 - c. Say "Hi" to Brian.
 - f. Basics of supply and demand, which is seasonal in Maine, May through October.
 - h. We'd be interested in hearing when they're available.
 - i. No.
 - k. When you get some samples, I'd like to try some.
 - l. When you have samples, let me know.
 - m. I wouldn't know, other than looking into blood clams. I'd like to be contacted about samples when available.