

**Sea Urchin
and
Sea Cucumber Producers
From British Columbia
at the
2010 China Fisheries and
Seafood Expo
in Dalian, China.**



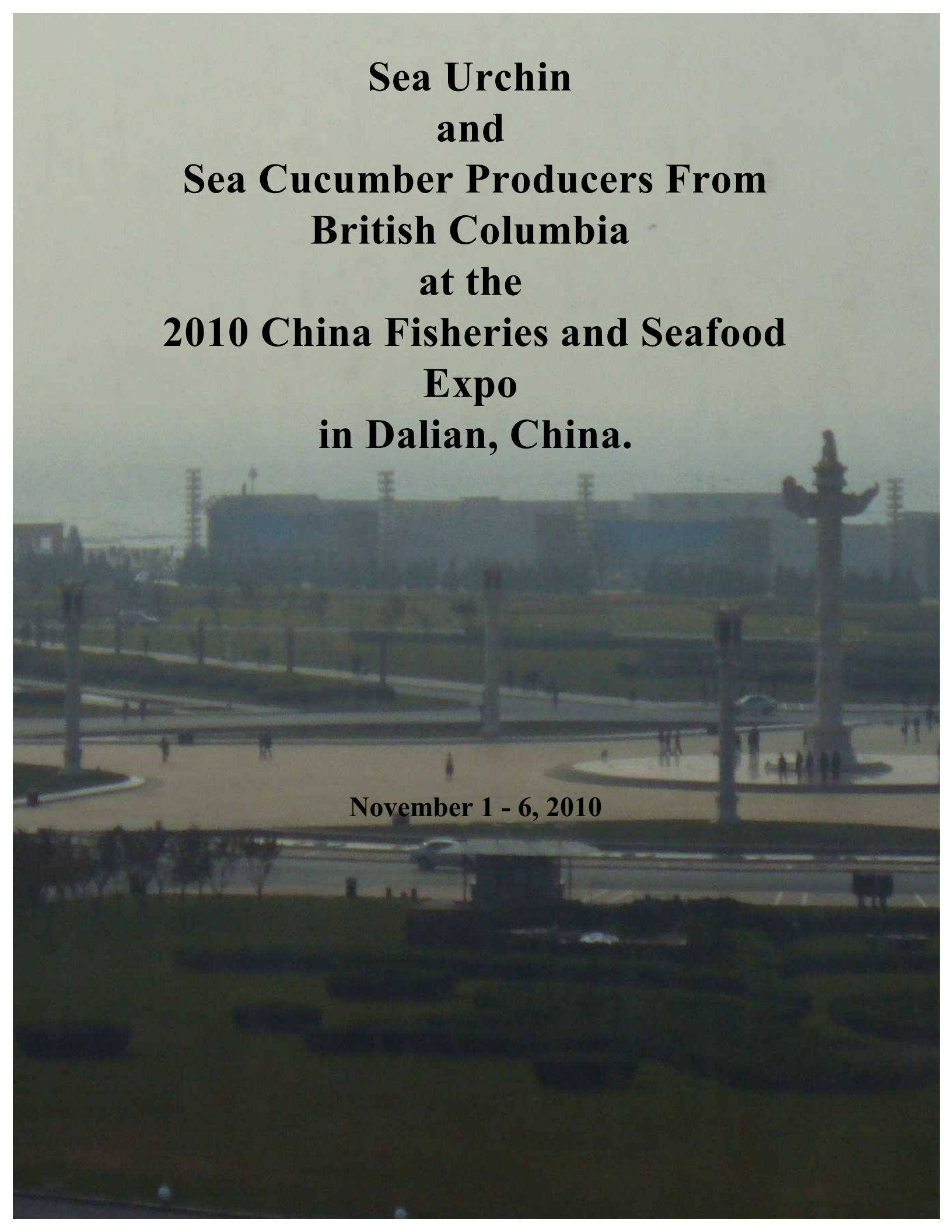
中国国际渔业博览会
CHINA FISHERIES & SEAFOOD EXPO



中国国际水
AQUACUL

**Sea Urchin
and
Sea Cucumber Producers From
British Columbia
at the
2010 China Fisheries and Seafood
Expo
in Dalian, China.**

November 1 - 6, 2010



B.C. Fishing Delegation visit to the 2010 China Fisheries and Seafood Expo (CFSE), in Dalian, China.

A delegation representing the Pacific Urchin Harvesters Association (PUHA), the West Coast Green Urchin Association (WCGUA) and the Pacific Sea Cucumber Harvesters Association (PSCHA) attended the 2010 China Fisheries and Seafood Exposition (CFSE) in Dalian China (November 2-4, 2010) (Figure 1). The delegation included Mike Featherstone (PUHA President), Ken Ridgway, Francis Cheung, Geoff Krause, Paddy Wong, Pat Fantillo, Ruth-Ellen Robichaud, Spencer Cheung and Tim Joys. Francis and Spencer had to depart for Hong Kong but put in a welcome appearance on the first day of the show. Paddy similarly had to go to Hong Kong but managed to get a couple of days at the booth before departing.



Figure 1: Entry lobby to the 2010 China Fisheries and Seafood Expo showing all 3 levels..

This level of representation was questioned by some as perhaps a bit excessive but, on the other hand, it is a large show and having the people available not only emphasized to those who visited the booth the importance we have put on China as a new market, it also permitted all our folks to circulate, view other booths and meet customers as required. We probably also earned some goodwill by helping out some of the other B.C. Association booths.

This show is acclaimed as one of the Big Three seafood shows around the world each year, the other two being Boston and Brussels. This is the 15th year for the show and China's seafood trade presence has increased from less than US\$ 3 B when it started in 1996 to about US\$ 17 B currently, putting it squarely in position to become the single largest seafood trading country in the world, a position currently held by the US. The China Fisheries and Seafood Expo (CFSE) features an exhibition area of 35,000 m² with more than a third of this comprising overseas exhibit space this year and is projecting visits by 20,000 trade professionals.

The venue was situated by the seaside at the Dalian World Expo Centre in Dalian China (Figure 2). The building and the grounds are, as is apparently the general case with public buildings and spaces in China, monumental in scale. The same can be said of many of the luxury hotels frequented by foreigners but it is probably most dramatically epitomized in by structures such as the Olympic venues put together for the 2008 Olympics and the Beijing Airport. Public art is strategically displayed at virtually every opportunity and the apparent support given the art community by local, regional and federal authorities and groups is admirable.



Figure 2: The Dalian World Expo Centre.

Another source of consistent amazement and amusement in China is the chaos that is the traffic in that country. Getting a first-hand look at the aggressive-defensive driving skills of taxi drivers from a front-seat perspective is a thrill ride well worth the price of admission. To the untutored

eye it appears that all vehicles are constantly jostling to get ahead and if any concession is yielded at any time, it is immediately taken advantage of. Timidity and/or courtesy are not apparently rewarded. Pedestrian traffic rules are similar- you walk through the traffic slowly as it passes you by on either side and you move through the next lane only once you have an opening on that lane alone. You have to move slowly so the drivers can adjust to your presence and hopefully avoid hitting you. It requires a certain non-trivial degree of trust to stick to the program and the fact that it works so well with so few accidents is, from a western perspective, probably nothing short of remarkable. The point to this referral though is that if this attitude carries over into the approach of Chinese business to competition, and I believe it might be a valid analogy, some useful insights on conducting business in China may come by reflecting on the traffic behaviour(s).

Back at the CFSE, the Canada Pavilion (Figure 3) was again present, along with another 15 national pavilions from various countries including the US, UK Chile, Norway and others. The British Columbia government has also re-established its presence with a B.C. booth as part of the Canada Pavilion. Newfoundland and Labrador, Nova Scotia, Prince Edward Island and New Brunswick also had Provincial booths. Other Associations with booths in the Pavilion included the Underwater Harvesters Association (UHA), Wild Canadian Sablefish Association, Canadian Lobster, The Canadian Aquaculture Industry Alliance, Trade Commissioners from Agriculture and Agrifood Canada and the Department of Foreign Affairs and International Trade and representatives from B.C. liaison offices in Beijing and Shanghai and Canada-based representatives from the B.C. Ministry of Small Business, Technology and Economic Development were also at the show to provide support and credibility as part of a unified presence effectively projected by the Canadian association and government representatives.



Figure 3: Part of the Canada Pavilion.

This is the third year running that the Sea Urchins From Canada Group (PUHA and WCGUA) have attended the show and the second at which they have had a booth as part of the Canada Pavilion. The participation of the PSCHA was encouraged this year by a number of processors and makes good sense because the associations and fisheries complement each other nicely in a way that should allow them to leverage advantages by collaborating on a joint marketing program. This collaboration started with the Asian Seafood Expo (ASE) in Hong Kong in early September 2010, and the success thus far realized with these two shows lend support to the proposal that the relationship be extended to include submission of a joint AgriMarketing Proposal for this coming year (fiscal 2011-12).

The display banner for the B.C. Sea Urchin and Sea Cucumber booth this year (Figure 4) did not unfortunately differentiate the Sea Cucumber component because their decision to participate came too late to make the required change but we did have some nice cucumber posters that attracted some attention. We also again had a DVD/TV combination to showcase the Pacific Urchin Harvesters' video production providing an overview of the fisheries, the product and some suggested uses. The Chinese version of the video continues to attract considerable interest from passers-by and most people cruising by stopped to watch at least parts of it. A new video production from the cucumber guys for next year and further upgrades on the sea urchin video incorporating additional demonstrations recipes and uses from China are anticipated.



Figure 4: B.C. Urchin and Sea Cucumber booth at the 2010 CFSE.

The booth was also outfitted with a new roll-up with representative pictures of urchins, uni, divers and people enjoying the product and a display freezer within which we had intended to

display both cucumbers and trays of uni. Although the cucumbers did not make it we did put together a display of uni and PUHA's plastic models (from Japan) on greens with a couple of bottles of wine and we received a number of comments on how good it looked. Kudos to Mike on that. The uni used in the booth, donated by Spencer and the folks at Grand Hale, was premium grade with great colour, form and texture that managed to hold together really nicely throughout the course of the show. They provided 2 styro-boxes, each with a dozen 120 gram trays, totalling just under 6.5 pounds of No. 1 grade uni, that we used for the display and samples. This was a very generous contribution and everybody in the booth really appreciates the support from Grand Hale.



Figure 5: Display freezer scene at the B.C. Sea Urchin and Cucumber Booth at the 2010 CFSE.

We had ordered the freezer for the booth so we could accommodate some frozen sea cucumber but these did not materialize as expected. After we got over the disappointment, we realized that it actually made the display easier to set up as we did not have to split the freezer into two sections, one frozen and one only chilled, for the sea cucumber and uni respectively. The problem with the freezer is that some care is required with the uni to ensure it does not freeze as this causes its colour to darken and therefore detracts from its visual appeal. We were able to get by using it as a chiller by periodically turning on the compressor to maintain the temperature between about -1°C to 5°C using a display thermometer that Tim managed to track down and which remains part of our show kit. If we can assume that the collaboration between the PSCHA

and PUHA/WCGUA is going to continue, developing an attractive and easy to assemble and monitor system should be undertaken prior to displaying them in the same unit as we did in Hong Kong. The setup in that case was effective, if a bit crude, but provided a good base to build future such displays on.

Requests for samples were regularly made by visitors but we were compelled to reserve most of the product for use with the other booths and ration its use so we did not prematurely deplete our display. On the second day, in a particularly inspired move, Mike used some smoked salmon florets as a bed for some pieces of uni (Figure 6). To say it was delicious would not be an overstatement: the smoked salmon and uni complement each other intriguingly. This particular creation could not help but be a hit at just about any dinner party as an appetizer allowing perhaps even bachelors to earn some high value points.



Figure 6: Smoked salmon and uni tasters (left) and a tray of uni from Grand Hale (right)

Dalian is a centre of sea urchin (and scallop) aquaculture in China and the product is better known and more widely available here than in many other parts of China. According to one source (see contact # CFSE2010 19-1 in database), there are between 20 - 30 urchin processing companies in Dalian. Most of these use either local or import product from Russia and produce trays. Most of their sales are to Hong Kong and Shenzhen without much going to Beijing, Shanghai or Guangzhou. His company does not ship to Japan although this does not likely hold for all the others.

One of the more frequent requests from visitors was for product delivered live to various locations throughout China. The spread of modern refrigeration infrastructure is still pretty novel in China and adherence to the procedures needed to ensure temperature sensitive products, such as trays of uni, are not “abused” is not well established or trusted. Even now live displays of seafood are common in many outlets, including neighbourhood wholesale and/or retail markets, higher-end restaurants and supermarkets in Dalian, Qingdao, Beijing and no doubt many other cities. The reasoning behind this is possibly because having a live product has been, at least until recently, the only dependable way to gauge or guarantee the freshness of the seafood. As such, live remains a, if not the, preferred product form for seafood by consumers in China. Canadian producers are working towards this but there remain a number of issues to be resolved before we can ensure adequate performance at an attractive cost.

Live product is currently moved in small volumes by air although larger volume shipping container-based systems are now being deployed, albeit strategically. Maersk Shipping had a booth at the show and was approached with questions regarding the new container-based live-shipment system the company is deploying on the East Coast for destinations in Europe. The representatives were aware of the system but did not know of any imminent plans to deploy it for shipments into China. They did however promise to enquire further through company channels and to keep PUHA informed of any changes to the situation. That works out nicely given the current situation as it would be entirely premature to even attempt such a move because the market will require some cultivation and the air-transport option will be more than sufficient for the next few years even with things developing on a timely basis. There are simply too many things to look at, coordinate and reconcile. The factors that must be included range from changes to harvest practices, dive-vessel and packer transport equipment for softer handling, on-shore holding infrastructure to dock-side validation protocols, over-seas transport, destination equipment and handling requirements, establishing and reconciling realistic expectations on volume, pricing, margins and holding intervals etc. at different points of the distribution process- or in short version, everything. No easy task for sure and one that is most likely best pursued incrementally over a period of years so current operations are not overly disrupted.

To get back to the show, traffic by the booth was steady even though we did not have any sea urchin samples *per se* at the booth (they were largely served up at the B.C. booth) or any sea cucumber on display. As a quick summary, we obtained business cards from 24, 21 and 10 contacts on Days 1 (Hours of operation: 1030 - 1630), 2 (0930 - 1630) and 3 (0930 - ~1300) of the show respectively and adding up to a total of 55. From this and other more subjective observations, it is readily apparent that the first two days are unsurprisingly the busiest but it should also be pointed out that the show had basically closed down by about 1:00 PM on day 3. As a point of some interest the corresponding numbers from the Hong Kong show in September were 66, 42 and 24 ($\Sigma = 132$) for the sea urchin and sea cucumber contacts combined.

Visitors were qualified as much as possible by who ever spoke with them at the booth but the result was spottier than was the case in Hong Kong as there were still a number reluctant or perhaps unable to divulge a lot of information on their business. The contact information has again been aggregated into a spreadsheet-style database which has been distributed separately to processors and interested members. The following tables summarize the contact information but the parent spreadsheet must be accessed to obtain further notes on the nature of the enquiry and

business particulars as developed through the qualification process. Images of the business cards provided are also included. Comparisons with results and contacts from previous years is difficult at this time as this is the first year that this contact information has been so catalogued but the deployment of this sort of system should also make year-to-year tracking much easier and more effective.

Table 1: Contact list from Day 1 of the 2010 China Fisheries and Seafood Expo (CFSE).

Product	Country	City	Business	First Name	Last Name	Company
Urchins	Canada	Calgary	distribution	Sandy/Frank	Chow/Liu	All Impact Foods Ltd.
Urchins	China	Beijing & Shanghai	wholesale	JiangPing	Fu	Beijing(Shanghai) Qihua Food Co. Ltd
Urchins	Taiwan	Taipei	restaurateur	Jeff	Huang	Mitsui Group
Cukes	China	Guangzhou	trader			Guangzhou Hong Yi Trade Co. Ltd
Urchins	China		wholesale	Marcus	Long	Hanover Food
Urchins	China	Hong Kong	distributor	L.S.	To	Galleon International Ltd.
Urchins	Canada	Vancouver	exporter	Gang Simon	Shi	Real International Resources Inc.
Urchins	China	Shanghai	importer	Hong	Xin	
Urchins	China	Qingdao	importer	Joe	Strilaeff	Qingdao Chengyang Guangda Aquatic Products
Urchins	China	Qingdao	distributor	Yan	Han	G&D Foods International Limited
Urchins	China	Dalian	importer	Hong Sheng	Ye	
Urchins	China	Xiamen	distributor	Zhirong	Yang	Shanghai Yanghong Food Business Dept
Cukes	China	Beijing	retailer			
Urchins	Thailand	Bangkok	distributor	Preeyada	Sripiboon	Siam Food Services Limited
Urchins	China	Chongqing	distributor	Hong Bo	Han	
Cukes	China	Fuzhou, Fujian	trader	Weichang	Zhuo	Fujian Fishpifa Trade Co. Ltd
??	China	Wuxi City, Jiangsu	distributor	Jessica		Wuxi Youtong Food Company Ltd
Urchins	China	Zhanjiang	unsure	Xi Yan	Huang	Zhanjiang Newpro Foods Co. Ltd.
Both?	China	Dalian	trade Comm.	Duan	Yong	Dalian Zhangzidao Fishery Group Co. Ltd
Urchins	China	Beijing	importer	Alisha/Chris	Bailey/Herbert	Jetfresh Oysters Live Imported Seafood
both	China	Qingdao	trade Comm.	Peter	Huang	Canadian Trade Commissioner Service
Urchins	Japan	Tokyo	trader	Bin	Kato	Masumine Trading Co. Ltd.
Cukes	China		wholesale	Hong	Yu	
Both?	China	Dalian	diver	Xiangkun	Yu	Dalian Deep Diving Engineering Exploration Ltd

Table 2: Contact list from Day 2 of the 2010 CFSE

Product	Country	City	Business	First Name	Last Name	Company
Cukes	China	Tianjin	buyer			TianjinThe Arctic Ocean Seafoods Trade Co. Ltd
Urchins	China	Shanghai	distributor	Liang	Ge	Azuma Foods (China) Co. Ltd.
Both	China	Shanghai	trade Comm.	Alvin	Liu	BC Int'l Trade and Investment Representative
Both	China	Dalian	research	Jiayin	Du	Research Consultant, Dalian Ocean University
Urchins	China	Beijing	restaurateur	Zhang	Zhimin	W.L.Z. Dining Group
Urchins	China	Shanghai	retailer	Leo	Zhang	City Super Shanghai Ltd
Urchins	China	Hong Kong	distributor	Sun-Chi	Chu	Whole Sun Ltd.
Urchins	China	Hong Kong	distributor	Tai Wai	Ho	Ho's Brothers Sea Food Co.
Urchins	China	Shanghai	importer	Jian	Chen	Shanghai Ziwang Trading Co. Ltd
Urchins	China	Guangzhou	retailer	Crystal	Wong	China Linking International Tracking Ltd
Cukes	China		distributor			
Both	China		marketing	Fan	Xubing	Beijing Seabridge Marketing & Consulting Co. Ltd
Both	China	Dalian	Consulting	Adam	Livermore	Dezan Shira & Associates
Both	China	Dalian	student	Jiayin	Du	c/o Dalian Ocean University
Both	Korea	Hanam City	buyer(frozen)	David	Lee	SS Company
Urchins	Taiwan	Kaosiung	buyer	Chris	Hwang	Sea King Seafood Enterprise Co.
Both	China	Qingdao	small distrib.			Sinopesca Distribution Co. Ltd
Urchins	Japan	Tokyo	import/export	Katsuhisa	Fujimoto	Dolphin Co. Ltd
Urchins	Canada	Vancouver	exporter	Henry	Han	Delta Seafood
Urchins	China	Dalian	import/export	Wang	Kai	Dalian Ryuki Trading Co. Ltd.
Both	China	Qingdao	shipper	Leo	Ian	Maersk Line

Table 3: Contact list from Day 3 of the 2010 CFSE

Product	Country	City	Business	First Name	Last Name	Company
Urchins	China	Qingdao	distributor	Ying Chun	Lu	
Urchins	USA	Los Angeles	importer	Julie	Hsu	Unified Seafood Co.
Cukes	China		importer	Al	Yang	Jia Hua's Seafood
Urchins	China	Yantai	importer	Liu Xing	Wu	Yantai Zhengwang Seafood Co. Ltd.
Urchins	New Zealand	Kaikoura	fisherman	Dick	Cook	Kaikoura Abalone Co. Ltd.
Both	China	Lanzhou	distributor		Chen	
Urchins	China	Dalian	import/export	Isabella	Guo	China Fish (Dalian) Imp & Exp Co Ltd
Urchins	China	Dalian	processor	Jun	Luanhuai	Dalian G. S.Y. Seafood Co. Ltd
Cukes	Singapore	Singapore	trader	Sam	Fong	Three Ocean Seafood Trading
Urchins	Japan	Tokyo	buyer	Toshinobu	Nakamura	Fair Trade Co. Ltd.
Both	Canada	Vancouver	Govt	Janet	Cho	BC Govt; Mngr- North China
Both	China	Beijing	Govt	Kevin	Tsui	BC Govt; Managing Dir- North China- resident
Both	China	Beijing	Govt	Janet	Yan	BC Govt; Mngr- North China- resident
Both	China	Chongqing	Govt	Dorothy	Hu	Canadian Trade Commissioner Service
Both	China	Beijing	Govt	Maggie (Yao)	Xu	Canadian Trade Commissioner Service
Both	Taiwan	Taipei	Govt	Karen	Huang	Canadian Trade Commissioner Service
Both	China	Beijing	Govt	Grace	Kim	Govt of Canada Trade Commissioner Service
Both	China	Shanghai	Govt	Claire	Zhu	Govt of Canada Trade Commissioner Service
Both	China	Hong Kong	Govt	Kitty	Ko	Canadian Trade Commissioner Service

The presence of government support and/service staff from Canada and British Columbia, listed at the bottom of the Day 3 list, was also impressive. 6 Trade Commissioners stationed in various cities in China including Taiwan and Hong Kong and working for either Agriculture and AgriFood Canada or the Department of Foreign Affairs and International Trade stopped by the booth to offer support and volunteer their on-going support. There were also 4 trade specialists from British Columbia, including 3 stationed in China who similarly made sure we understood that they are there to assist our efforts in China. Both of these groups represent significant available resources that can be accessed as needed for aid in facilitating business and trade with Chinese enterprises.

The show was considered successful by Canadian participants and provided additional insight on the fast-growing importance of China as an international destination for seafood. The collaboration shared by Canadian participants amongst themselves at this show far exceeded that seen in previous years and could only reflect favourably on all groups. One of the more significant changes observed this year was the amount of sharing of ingredients, recipes and chef expertise, especially between the urchin, sablefish, geoduck, and lobster groups. This was the first year that the urchin group had samples to distribute and it was definitely a positive as far as attracting attention.

The B.C. Provincial booth volunteered to showcase B.C. seafood products using recipes prepared by their chef and this seemed to stimulate more sharing between the booths themselves as the various seafoods were mixed together to produce extremely tasty and apparently popular samples that drew good-sized lineups whenever they were presented. The lobster booth was located across the aisle from the urchin booth and they got into the act by requesting some uni they could use in a sauce being prepared for the lobster. The sea urchin representatives agreed in exchange for an opportunity to taste the fare so produced and the result was a very tasty concoction that really showcased the use of the uni in the production of enriched seafood sauces.

As a bit of an aside, adopting value-added production of ready to eat dishes has been highlighted over the past decade at least as a demonstrated option to increase profitability in the seafood business. Given the quality and variety of ingredients available in B.C., this would appear to be a viable strategic option for B.C. producers but the continuing reluctance of primary producers to support secondary products of this sort has limited its adoption. With reference to the sea urchin fishery in particular, low recoveries because of poor colour and/or broken skeins limit the profitability of current processing operations because the material is considered waste and is reportedly simply discarded. Suggestions to redirect this material to a value-added use, such as production of high value sauces, seafood bisques and/or soups etc, have not yet been acted on. Discussions with other B.C. associations at the show however suggest this is being considered more widely despite apparent continuing indifference from established processors which apparently remain focussed on wringing out whatever costs they can from their primary processing operations.

Industry Tour: Friday November 5, 2010.

On the day following the close of the show there was an industry tour of 3 fairly upscale Chinese processing centres about an hour east of Dalian. Dalian is situated on a peninsula (Figure 7) just southwest of the North Korean border and is the urban centre for lot of agri- and aquacultural and fisheries processing activities. The area population is about 6 million and the per capita seafood consumption is just under 36 kg per year, a level far in excess of the norm in China and presumably due in large part to its maritime, fishing and seafood traditions. The annual seafood production in the area is about 2 million tons, 60% of which is farmed and including about 1 million tons of shellfish (sea cucumber, abalone, scallop, kuruma prawn, oysters and globefish (urchins?) and about 200 K-tons of seaweed. There are about 500 processors in the area and they produce a finished weight of about 1 million tons, 200 K-tons of which is exported to about ten countries. The factories produce more than 200 different items for export with about 50% being custom processing on consignment from offshore firms.

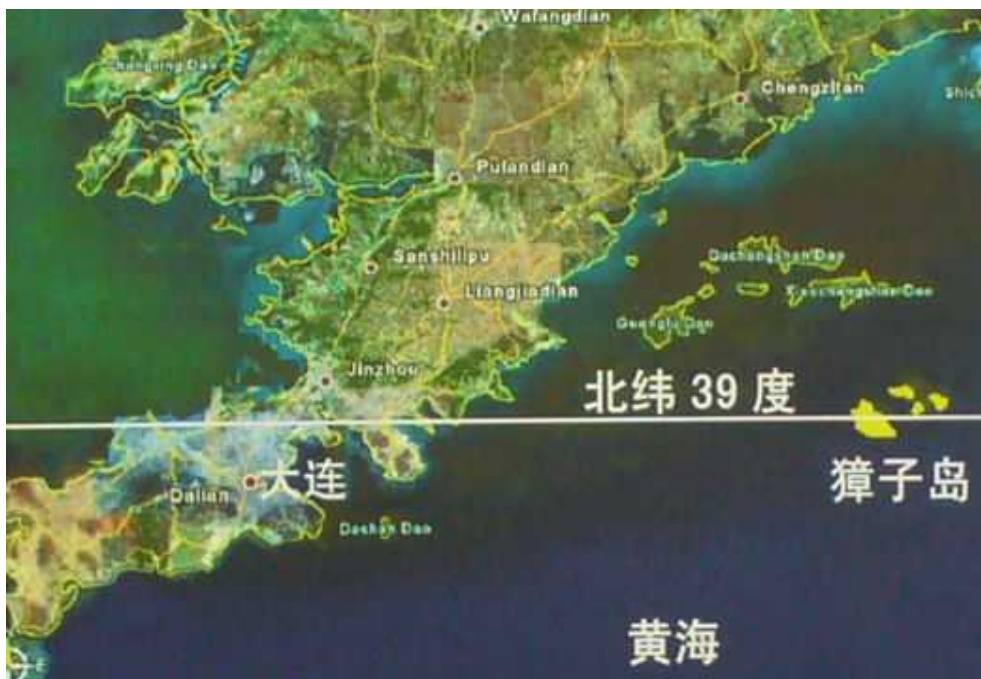


Figure 10: Dalian area also showing island areas of aquaculture tenure (in yellow) of 1 company included in industry tour.

The facilities we visited were all clean and published the advanced hygiene procedures used at the plants. Full body coveralls, boots, head nets, face-masks, air showers, hand-washings and disinfections, foot dips- it was all there. One in particular went a bit overboard and required workers and visitors to repeatedly wash and disinfect even when prior measures made additional efforts redundant.

Two of the plants were apparently processing and freezing product that had already seen primary processing and been frozen. The processing started with baths to slack off the frozen blocks followed by hand filleting, skinning and portioning and re-frozen in an Individual Quick Freezing (IQF) system comprising a high capacity tunnel freezer that took the temperature down to $-18-25^{\circ}\text{C}$ in about 25 minutes. The frozen pieces were then vacuum packed and boxed in pre-labelled designer boxes (~2 kg), put into a larger master and put into cold storage prior to shipment. Each of the processors processed about 125 - 250 MT of product per day. They did not appear to have an on-site fish meal plant and there were no such odours around so one must assume the offal processing and reduction takes place at another offsite facility.

The third facility we visited, part of the Zhangzidao Fishery Group, was dedicated to processing its own production from cultured fisheries. This company had a nice live pool setup at the show (Figure 8) that showcased its main production area around a number of islands about 25 km offshore (Figure 7). The area included in its tenure there, and it is apparently not the only such culture site under its control, is 2,000 square kilometres. The company produces a range of invertebrate and finfish seafood products including whelks, abalone, sea urchins, sea cucumber, kelp and seaweed, grouper, smallish flatfish, pelagics, other reef fish etc.



Figure 7: Model of aquaculture area of the Zhangzidao Fishery Group.

According to the company, production in the area is generally steady and actually increasing with some species, in contrast to the general depletion occurring in the non-assigned commons areas throughout virtually all of the southern seas around Asia, in sovereign and non-sovereign areas open to wild fishers. This problem, or from another angle: opportunity, is only bound to go one way as China and other countries in the area gain economic heft and is something that all seafood producers can profit from as long as cooperative and collaborative relationships within a non-toxic international environment can be maintained.

We did not witness their finfish processing area but the shellfish are first brought into the facility and held in holding tanks until processing can take place. As mentioned, the preferred product form is live so the processing often simply comprises weighing and placing into water filled shipping bins which are placed on trucks so the product can be moved to its destination, whether that be a wholesale market, retail market or restaurant, where it will be displayed live in aquaria until purchase.



Figure 8: Concrete receiving/holding tanks at the Zhangzidao Fishery group plant.

A Local Wholesale Live Seafood Market in Dalian

On a bit of a fluke we found a live-seafood market just behind the hotel across the street from our hotel in Dalian. It seemed to be a wholesale type setup but we did not have an interpreter to help us out on that question. The whole setup though appeared to be local and we got the definite feeling that similar market(s) are likely located throughout the city. The market (Figure 10) comprised a warehouse-like space perhaps 150 m. x 100 m. holding perhaps 50-75 different small-outlet booths. Probably 3/4 of these had aquaria holding live invertebrates including sea urchins (Figure 11), sea cucumber, whelks, abalone, fish and/or even geoduck clams (Figure 12).



Figure 9: Local wholesale live seafood market in Dalian.

The live product was supplied by truck from which they were dipped (Figure 13) and the water from a tanker truck (Figure 14), source unknown. The rest of the booths had tables with iced fish of one sort or another. The stated price for the urchins was 45 RMB per piece, but given the typical negotiating practices seen in other markets, a deal at between 3-5 RMB would be quite realistic. The stated price for the geoduck worked out to about \$CAD 60 per piece (@~2-2.5 lbs) and there did not seem to be a lot of willingness to negotiate on the part of the vendor.

One point of interest with the urchins is that they seem to be cracked or opened in a different manner there than is typical in Canada or Japan. In China they are apparently cut around the

equatorial centre-line so the skeins are arranged star-like (Figures 15 and 16). We saw this in the display product in the market as well as on canned product seen during the field trip the previous day. It may be a good idea to get some display pictures and/or models similarly laid out as this is apparently how they are used to viewing sea urchin.



Figure 10: Live sea urchins, scallops and abalone in one of many market booths.



Figure 11: Geoduck clams in market.



Figure 12: Live seafood transport truck.



Figure 13: Seawater source for market aquaria.



Figure 14: Can label showing typical Chinese urchin presentation



Figure 15: Presentation of processed sea urchin in Dalian live seafood market