

Fishery Resource Grant Final Report

L. D. Amory & Co. Inc

“Developing Both Commodity and Niche Markets for Cow Nose Ray”

February 9, 2009

Our project was to continue developing a three-tiered market for ray. The market tiers on which some work has already been done are: a high end domestic market with an emphasis on marketing to distributors; a commodity market for the foreign export of container sized loads of ray wings; and a bait market for the parts of the ray not used for human consumption.

We processed 323,766 pounds of ray during the 2008 season. This year we offered a loin cut in addition to the fillets, however there were fewer sales in the high end market than we saw in 2007. Due to the worldwide economic slowdown, we have not been able to sell the wings to Korea. We sent bait samples to various fisheries, a pet food company, and two alligator farms. The alligator farms were the only ones to give us positive feedback on the bait.

We believe that the market in Korea will open again when economic conditions improve, but, given our experience, we think it's unlikely that a ray product can be developed that will appeal to the high end white table cloth market. We believe efforts to develop lower cost value added products from rays such as clam strips, BBQ product, patties, etc.; will be more fruitful, especially during these difficult economic times. We believe a small amount of the bait will be marketable; however most of it will either have to be composted or go to the landfill.

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February 9, 2009

The purpose of our project was to continue the development of a three-tiered market for ray started in 2007. The market tiers, on which some work has already been done, are: a high end domestic market with an emphasis on marketing to distributors; a commodity market for foreign export of container sized loads of ray wings; and a bait market for the parts of the ray not used for human consumption.

The development of a high end market requires carefully processed quality ray. We used the processing room built in 2006 to process the 323,766 pounds of ray we purchased from May through October 2008. The price paid to the fishermen was \$.15 per pound. The fish ranged from 23 to 48 pounds, with the average being around 32 pounds. This year in addition to the fillet we added a tenderloin cut so we could get the most amount of usable meat from the ray. When you are cutting the ray to get the loin and fillet cuts you get a 20 percent yield. The ray is skinned and cut by hand. It takes two cutters half a day to skin and cut 300 pounds of ray. A major hindrance is the time and effort required to skin these animals, so that the meat can be cut away from the cartilage. If we are going to continue to process ray, a skinning machine would be necessary to help reduce the processing cost.

To get the fillet and loin cuts out into the market we worked closely with Joe Cardwell of the VMPB. Working with our information the VMPB printed informational brochures to help us promote the ray. (See attached) We also provided the VMPB with samples for chef and restaurant demonstrations. Visits were made to the NY Fish Market, Jessup Market in Maryland, and the Philly Market. By going to the major markets we could meet with more than one

company at a time, getting more people to sample the ray. There were also meetings with three large East Coast distributors: US Foods in Virginia Beach; Poseidon Foods in Charlotte; and Inland Seafood in Atlanta. After each of these visits we provided samples to the companies that showed an interest in promoting the ray. Through these companies and through a handful of local peddlers we sold a total of 1320 pounds of the fillet and loin cuts. This is a lower amount of sales than we experienced in 2007. The fillets and loins were sold for as low as \$2.50 and as high as \$4.00 per pound.

In 2008 we were expecting to continue the success with the foreign export of container sized loads of frozen wings that we experienced in 2007, however that has not been the case. We currently have 82,896 pounds of frozen wings on hand. The buyers from 2007 blame the worldwide economic slowdown for their lack of purchasing. As Korea is the main market for the frozen wings, we participated in the Busan International Seafood Show hoping to find new leads. The buyers at the show also state that the economy is the reason they are not able to buy right now. We are still hopeful that we will be able to export the frozen wings to Korea once economic conditions improve.

As stated above, when you cut the ray for the fillet and loin cuts you get a 20% yield. When you cut the ray for the wing cut you get a 33% yield. This leaves a large amount of product that needs a market. The bait market seemed to be the answer. We sent samples to two of the largest gator farms in Florida. They were happy with the product, however the cost to ship the ray bait to Florida is more than they are currently paying for chicken. We tried a pet food company. Addison Foods tested the ray but determined it had too much ammonia to be used as pet food. It was not successful as conch bait. Benthic Fish Corp tried samples for the red crab fishery which were not successful. We have sent samples to Florida to two stone crab fishermen, but have not gotten any response. We had success with the shark fishermen in North Carolina, however due to the current regulations those boats are no longer fishing for sharks. We currently have 8,000 pounds of bait on hand. The remainder of the product went to the dump at a cost of \$.03 per pound. There is the possibility of new markets for the remainder. Cartilage located in the wings of the ray, and oil in the livers

from the ray have the greatest potential commercial value. There is commercial interest in cartilage if we can produce a clean product. The cartilage has a value of approximately \$.62 per pound, or more, based on its chondroitin content and quality. The remaining wastes may also be able to be composted depending on its proximate composition, carbon content, and nitrogen/phosphorus ratio.

We are optimistic that the market in Korea will open again when economic conditions improve, but given our experience, we think it's unlikely that a ray product can be developed that will appeal to the high end white table cloth market . We believe efforts to develop lower cost value added products from rays such as clam strips, BBQ product, patties, etc.; will be more fruitful, especially during these difficult economic times. One of the major constraints to producing such value added products is the high cost of producing the product using only hand labor. A skinning machine would reduce the cost of processing the rays allowing easier entrance into the lower end value added markets mentioned above. We are excited about the potential new markets for the waste product. Developing a successful market for the waste product would help us lower, or possibly eliminate the amount being carried to the dump.

ChesapeakeRAY

VIRGINIA SEAFOOD



*Wild. Available. Sustainable.
Day boat harvested.*

Chesapeake Ray (*Rhinoptera bonasus*) is a delicious, mild tasting fish caught in the United States along Virginia's Eastern Shore, the Chesapeake Bay and its many tributaries. Ray is a tender, red meat fish offering a "meaty bite".

Ray migrates from the mid-Atlantic to Florida in the United States and throughout Venezuela and Brazil.



Ray WINGS

- Resembles tuna with a rich red coloration like Number 1 tuna and has a beef or veal flavor.
- An average size wing is 3 kg (6.6 lbs).
- Wings are packed fresh daily.
- Harvest season – late May until late September.
- Chesapeake Ray wing market sizes:
 - Under 1 kg (2.2 lbs.)
 - 1 ~ 2 kg (2.2 lbs ~ 4.4 lbs.)
 - 2 ~ 3 kg (4.4 lbs ~ 6.6 lbs.)
 - 3 kg and up (6.6 lbs.)

IQF frozen WINGS

- Packed in 20 kg (44 lbs.) waxed seafood carton lined with plastic.
- Available year round.

Fresh WINGS

- Packaged in 20 kg (44lbs) increments, chilled to 0 °C (32 °F), surrounded by ice for a long shelf life.

HARVESTING

- Chesapeake Ray are harvested by day boats using pound or gill nets.

PREPARATION

- Chesapeake Ray can be sautéed, grilled, fried, pan seared, steamed or broiled.
- Chesapeake Ray accepts all marinades and sauces.
- Chesapeake Ray should be cooked over high heat for a short duration of time.

Serving SUGGESTIONS

- Serve in a traditional style with vegetables or noodles.
- Delicious when marinated or served with sauces.
- Good in hot and cold soups.

For more information or recipes contact:

Virginia Marine Products Board, 554 Denbigh Boulevard, Suite B, Newport News, Virginia 23608, USA

Telephone: 757-874-3474, Fax: 757-886-0671, Website: www.virginiaseafood.org

PRODUCT IMAGE



CHESAPEAKE RAY WING

PACKAGE INFORMATION



CHESAPEAKE RAY SHIPPING CARTON

NUTRITION FACTS

Nutrition Facts

Serving size 4 oz (112 g)
Servings per container to be specified

Amount Per Serving

Calories 100 **Calories from fat** 0

%Daily Value*

Total Fat 0 g **0 %**

Saturated Fat 0 g **0 %**

Trans Fat 0 g

Cholesterol 120 mg **40 %**

Sodium 105 mg **4 %**

Total Carbohydrate 2 g **1 %**

Dietary Fiber 0 g **0 %**

Sugars 0 g

Protein 22 g

Vitamin A 0 % • **Vitamin C** 0%

Calcium 0 % • **Iron** 10%

* Percent Daily Values are based on a 2,000 Calorie diet. Your daily values may be higher or lower depending on your Calorie needs.

	Calories: 2,000	2,500
Total Fat	Less than 65g	80g
Sat Fat	Less than 20g	25g
Cholesterol	Less than 300mg	300mg
Sodium	Less than 2,400mg	2,400mg
Total Carbohydrate	Less than 300g	375g
Dietary Fiber	Less than 25g	30g

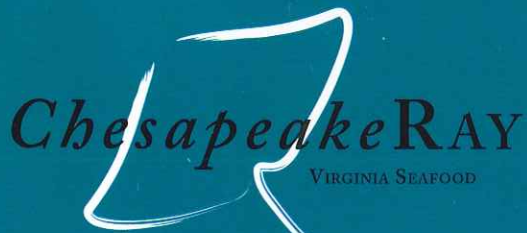
Call today for
product information.

Your *Chesapeake* RAY Supplier:

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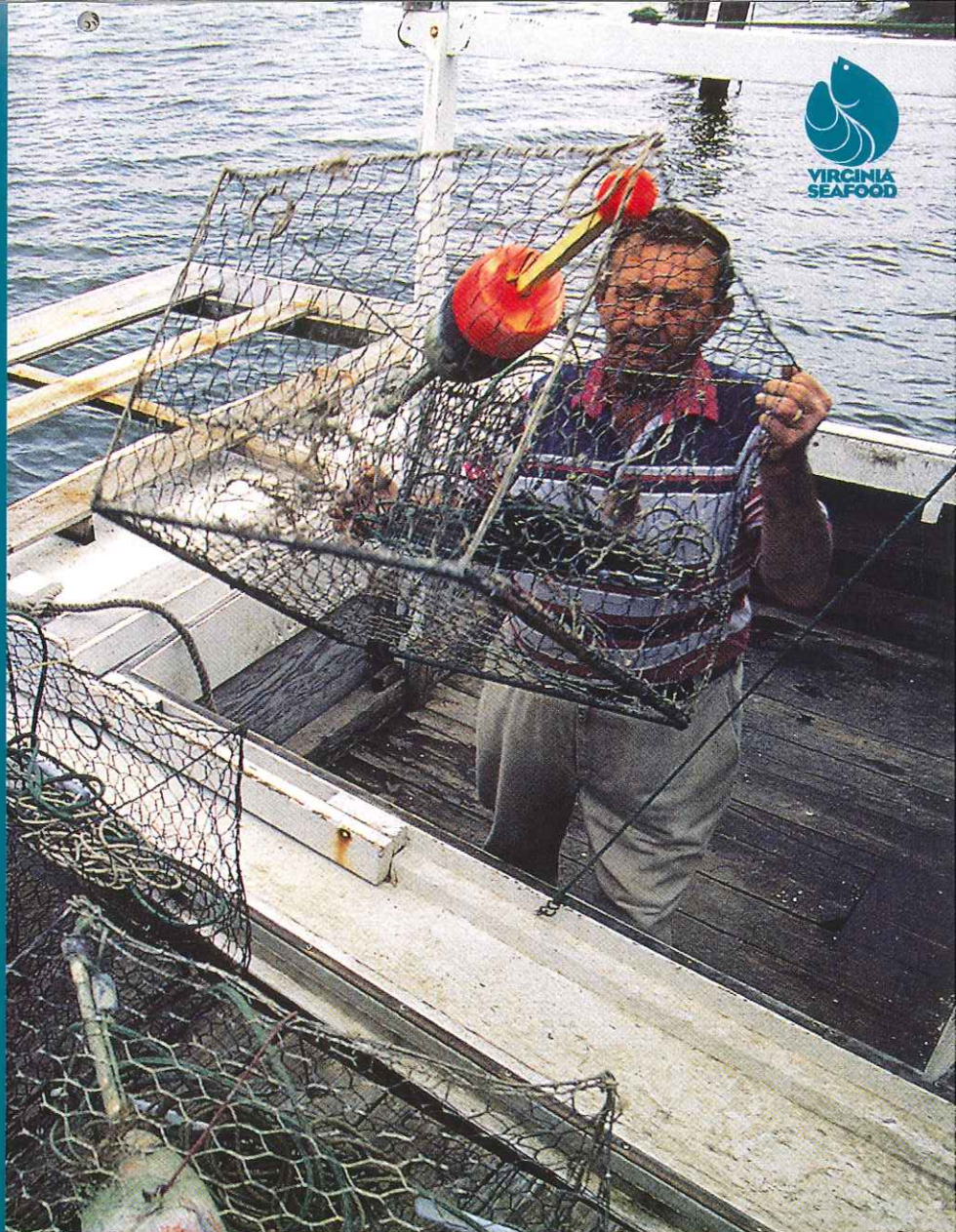


Chesapeake RAY BAIT & CHUM

Fresh, frozen Chesapeake Ray (*Rhinoptera bonasus*) is available year-round from your top quality bait supplier.

Chesapeake Ray is harvested by day boats using pound and gill nets.

Ray is cut fresh then blast frozen, producing quality bait that holds up for a long period of time.



- Perfect for Crawfish, Crab, Lobster, Conch, Shark and Stone Crab bait.
- Great for the sport angler and charter captain, both as strip bait and as chum.
- Cut from freshly frozen ray, producing a quality bait with long catching appeal. It is a tough bait.
- Readily available and can be shipped year-round.
- Packaged in 35# and 50# waxed cartons, as well as 10# chum bags.

For more information contact:

Your bait supplier or Virginia Marine Products Board, 554 Denbigh Boulevard, Suite B, Newport News, Virginia 23608
Telephone: 757-874-3474, Fax: 757-886-0671, Website: www.virginiaseafood.org

PRODUCT INFORMATION



CHESAPEAKE RAY BAIT IS CUSTOM CUT TO THE SIZE NEEDED.

PACKAGE INFORMATION



CHESAPEAKE RAY BAIT SHIPPING CARTON

*Call today to
receive samples.*

Your *Chesapeake* RAY Supplier:

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