



Asian Carp Marketing Summit

September 20-21, 2010
Lewis and Clark Community College
Grafton, Illinois

Photo credit:
Eric Gittinger, Illinois Natural History Survey, Great Rivers Field Station



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The Asian Carp Marketing Summit (ACMS) was developed with efforts from the U.S. Fish and Wildlife Service, U.S. Geological Survey, Louisiana Sea Grant, Illinois Commercial Fishing Association, and Shedd Aquarium.

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For more information on Asian carp and the marketing of Asian carp, visit www.iiseagrant.org/asiancarp.

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Contents

Executive Summary	1
ACMS Summary	3
Background	3
Outcomes	4
Evolutionary Strategy	8
Next Steps	9
Appendices	10
Appendix A: Asian Carp Marketing Summit Participants	11
Appendix B: Product Prioritization Exercise	13
Appendix C: Participant Comments	15
Appendix D: Stakeholder Needs	22
Appendix E: Exit Strategy Considerations	26
Appendix F: “Parking Lot” – Other Issues and Follow-up Items	27

Executive Summary

In fall 2010, Illinois-Indiana Sea Grant (IISG) organized an Asian Carp Marketing Summit (ACMS) to explore the idea of using commercial markets (and their concomitant harvesting) to control wild populations of Asian carp. To accomplish this, IISG and the Summit Advisory Group identified and invited various stakeholders (e.g., natural resource managers, commercial harvesters, processors, marketers, distributors, and researchers) to the ACMS for a comprehensive discussion on opportunities and barriers for such commercial markets.

Using a facilitated process, the ACMS participants identified and agreed upon the most promising generalized markets for Asian carp. These markets include: 1) high-volume/low-price export (for human consumption), 2) high-quality/higher-priced domestic (for human consumption), and 3) by-product.

The participants also set priorities for future product development based on: 1) demand for the product and therefore potential ability to impact wild Asian carp populations, 2) profit potential, including ability to cover costs throughout the supply chain, and 3) ease of exit once wild Asian carp populations decline. The ranked products identified by the participants, using these criteria were:

- Products for human consumption – fresh fillets and/or whole fish, frozen patties and canned fish.
- By-products – pet treats and pet food.

Each stakeholder group identified the factors or requirements to successfully enter these markets and implement a harvesting strategy. The group agreed that:

- Businesses need to take a leadership role in developing these markets. The government can be a partner and support business development.
- Domestic demand for the fresh and frozen fillets needs to grow, and new technologies are needed to cost-effectively process Asian carp into fillets and other high-value products.
- Commercial fishermen are the key to successful carp removal. Incentives for them to fish at the required levels include adequate pricing, access to efficient technologies for storage, and reduced processing and transportation costs.
- Additional data (e.g., accurate estimates of Asian carp populations, fully-developed marketing plans) and improved communication among stakeholders are needed for making critical business and environmental decisions.

These discussions evolved into development of an integrated strategy, which focuses on capitalizing on existing markets to quickly start reducing Asian carp in large numbers (Stage 1). With time, the strategy moves to controlling the carp populations through development of higher-quality products that command a higher price (Stage 2).

At the conclusion of the summit, the ACMS participants agreed on immediate next steps and assigned ownership for each. These next steps are:

- Issue a press release about the ACMS (IISG and IL DNR).
- Document and distribute the ACMS notes (IISG).



- Engage commerce/economic development agencies (federal agencies/business entities).
- Develop plan for moving forward with the evolutionary strategy (federal agencies/business entities).
- Develop and execute a communication plan for various stakeholder groups (IISG and federal partners).
- Continue engagement (IISG for short term).



ACMS Summary

Background

Bighead and silver carp (*Hypophthalmichthys nobilis* and *H. molitrix*, respectively), commonly referred to as Asian carp, are non-native fish that have negatively impacted North American waters, particularly those in the Mississippi River Basin. These impacts include reduced opportunities for recreational and commercial fishing, degraded body conditions of native species, and serious injuries to people hit by jumping silver carp. There is concern that the Great Lakes region will be similarly affected as these fish move upstream toward the basin.

The federal *Management and Control Plan for Bighead, Black, Grass, and Silver Carps in the United States*¹ identified commercial harvesting as one tool that can be used to reduce Asian carp populations and therefore their density-dependent movement. Current levels of harvest, however, are not enough to adequately control existing populations of these fish. While there have been on-going efforts by commercial entities to develop Asian carp markets, those efforts have met with limited success. North American consumers are not widely aware of the palatability of Asian carp, a relative newcomer to North American waters. Therefore, domestic demand is low. Likewise, natural resource managers are grappling with how to facilitate commercial harvest. Creating commercial markets to control unwanted species such as Asian carp is a non-traditional management approach, and few examples of this strategy are available for natural resource managers to follow. Hence, both commercial and management entities are essentially starting from scratch in creating an environmentally sound plan for increasing the harvest and markets for these fish.

To facilitate these efforts, IISG organized an ACMS. The purpose of the ACMS was to: 1) bring the various stakeholders in the issue (e.g., natural resource managers, commercial harvesters, processors, marketers, distributors, and researchers) together in one room, and 2) facilitate a comprehensive discussion on the various opportunities and barriers for commercial markets, including stakeholder needs and potentially conflicting motivations and goals. IISG hopes these efforts will ultimately benefit both commercial and management entities by helping to increase the commercial harvest of Asian carp, thereby reducing their environmental impact and density-dependent range expansion.

IISG was assisted in the planning of the summit by an advisory group comprised of members from the Illinois Commercial Fishing Association, Illinois Department of Natural Resources, John G. Shedd Aquarium, Louisiana Sea Grant, U.S. Fish and Wildlife Service, and U.S. Geological Survey. Funding was provided by the Illinois Department of Natural Resources and Illinois-Indiana Sea Grant; in-kind support was provided by Lewis and Clark Community College (Godfrey, IL) in the form of staff support and meeting facilities. Parks Consulting Group, LLC facilitated the process.

¹ Conover, G., R. Simmonds, and M. Whalen, editors. 2007. Management and control plan for bighead, black, grass, and silver carps in the United States. Asian Carp Working Group, Aquatic Nuisance Species Task Force, Washington, D.C. 223 pp.



Outcomes

The purpose of the ACMS was to explore the knowledge and ideas of the stakeholders involved in Asian carp commercial marketing. Therefore, IISG used a facilitated process to access the collective knowledge of the assembled group. This process also allowed for identification of various priorities and concerns associated with this issue including potential markets, potential products, and considerations pertinent to the success of increasing Asian carp commercial harvest.

Potential Markets – Through the exercises of the ACMS process, participants identified and aligned on the most promising Asian carp markets and their characteristics, which are:

High-Volume/Low-Price Export (for Human Consumption)

- Demand within this market already exists; export can begin now.
- The high volume of harvesting associated with this market is needed to reduce Asian carp populations.
- Pricing within this market needs to be low enough to be competitive; harvesters will depend on high volumes or subsidies to make it cost-effective.
- Few processing companies exist in the Mississippi River Basin.
- Transportation costs are high.
- Live transport of Asian carp is not allowed.
- A strategy to fulfill market demand during slow harvest times (e.g., summer) is needed.

High-Quality/Higher-Priced Domestic (for Human Consumption)

- Development of this market is in its early stages – little infrastructure exists.
- Lower-volume catch will be able to control Asian carp populations once they are reduced via export market.
- Fresh/flash-frozen fillet will net a higher price, so harvesting can be at lower volumes and still be cost-effective.
- Domestic market has not been analyzed or no analyses are available to public.
- Rebranding is a prerequisite; consumer demand must be created.
- De-boning, identifying shelf life, and consistently good taste and quality are critical to establishing this market.
- A strategy to fulfill market demand during slow harvest times (e.g., summer) is needed.

By-Products

- These are secondary to markets for human consumption (export and domestic markets above).
- Pricing will depend on demand for by-product as well as availability and cost of other sources.
- Use of fish parts not included in human-consumption markets (above) allows for a closed-loop system (i.e., no waste).

Potential Products – The ACMS process also facilitated creation of a comprehensive list of potential Asian carp products. This list included products for



human consumption, animal consumption, and other uses such as bait, carbon sequestration, and collagen. After discussions on the current state of knowledge of each potential product, the participants set priorities for future discussion and product development based on: 1) potential demand for the product and, therefore, its ability to impact wild Asian carp populations, 2) profit potential, including ability to cover costs throughout the supply chain, and 3) ease of exit once wild Asian carp populations decline. Priority products identified by the participants using these criteria (in descending order) were:

- Fresh fillets/whole fish
- Frozen patties
- Canned fish
- Pet treats (by-product)
- Pet food (by-product)

Considerations for Success – During the ACMS discussions, the participants kept returning to several ideas that they considered crucial to the success of this venture. These ideas are:

Additional data is needed for making critical business and environmental decisions

- Research has been useful in informing the issue, but data is still needed on both the biological and business aspects, such as the number of fish available for harvest and shelf life of various potential products.
- Data exists, but it can be difficult to find. Therefore, a better method of sharing and compiling data is needed.
- True market feasibility studies either have not been conducted for the Asian carp products we are exploring or have not been made public.
- It is estimated there are millions of pounds of Asian carp available for harvest, but these calculations are considered inaccurate. Also, the numbers are low compared to the size of other fish markets, such as tilapia or catfish.
- Complete eradication of wild Asian carp populations may be difficult to achieve. Any exit strategy should be evolutionary – from “reduce” to “control.”

Commercial fishermen are the key to successful carp removal

- Harvesting seems to be a pragmatic method to reduce the numbers.
- Commercial fishermen will fish as long as it is profitable, so pricing is critical.

Domestic demand for the product needs to grow

- The foreign export model already exists, but transportation costs are high. Consequently, carp buyers are unable to pay high prices to commercial fishermen.
- Domestic human consumption products probably will command a higher price.
- A high-quality human food product (fresh or frozen) that can demand a high price (such as fillets) may be the most viable market product in the long-term. However, this market will take time to build because of the re-branding and demand-creation needed.



- There is currently a negative perception to the Asian carp brand. Any product for human consumption must be branded and consistently excellent in both quality and taste.

Fresh and frozen whole fish and fillets are the priority products, but they present challenges

- Nothing from the fish should be wasted. High-quality fish parts should be used for human food, and the remainder should be used for by-products. These waste products will probably not be the primary focus for harvesting because they command a lower price.
- Asian carp have unique processing/preparing difficulties (e.g., bones) for human food products. These issues have not been present with other emerging fish like tilapia, so lessons learned from those markets may not be applicable.
- Some start-up funds or low-cost loans may be needed to build processing capability.

Businesses need to take a leadership role; government can support

- Partnership between industry and government is required to tackle the problem (see Stakeholder Needs below and Appendix D).
- Stakeholder needs – In breakout discussions organized by profession, harvesters, processors, and researchers identified their needs for moving forward on increasing exports and creating a domestic market for higher-quality/higher-priced Asian carp products. Researchers also identified areas for future research. The natural resource managers identified ways that natural resource agencies can contribute to the issue. Group needs were identified in the discussion following the breakout session and may be pertinent to one or all of the stakeholder groups.

Stakeholder	Need/Contribution
Harvesters	<ul style="list-style-type: none"> • An adequate price per pound to encourage fishing (e.g., 20-25 cents/pound) • Opened or eased fishing restrictions – areas, seasons, methods • Incentives for investing in new gear and new fishing technologies • Access to insurance for the additional personnel needed to be able to fish higher volumes • Immediate icing or refrigeration; nearby boat ramps with refrigeration to reduce transportation costs and ensure high quality • Money paid to fishermen upon delivery • Summer catch storage options
Processors	<ul style="list-style-type: none"> • Business-to-business networks and resources • Low interest loans for start-up costs • Initial incentives, such as guaranteed demand, RFPs, government contracts, etc., when price is low and costs are high • De-boning technology and methods • Adequate reserves for slow harvest months • Investment in shelf-life technology and methods
Researchers	<ul style="list-style-type: none"> • Enhanced communication among researchers; access to existing information • Research on technologies to improve taste and optimal ways to catch, preserve, and process Asian carp
Natural Resource Managers	<ul style="list-style-type: none"> • Authority and influence to increase fishing opportunities geographically and seasonally • Management of current conflicts between fishing and endangered species • Enhanced intra/inter-agency communication • Resolution of current management concerns: live transport, exit strategy, by-catch, and funding for agency work on Asian carp



Stakeholder	Need/Contribution
Group	<ul style="list-style-type: none">• Increased partnerships between governmental economic development agencies and businesses• A market feasibility study• Re-branding of Asian carp for higher-quality/higher-price purposes• Defined economic and ecological value of the Mississippi River Basin as a resource• Political support in Mississippi River Basin states for marketing the basin as a valuable resource (such as the Great Lakes states have done)• Creative problem-solving from all stakeholder groups

Evolutionary Strategy

On the second day of the ACMS, the participants developed a holistic, integrated strategy based on outcomes from the exercises and discussions of the two-day meeting. This strategy capitalizes on existing markets to quickly start reducing Asian carp in large numbers (Stage 1). With time, the strategy moves to controlling the carp populations through development of higher-quality products that command a higher price (Stage 2). Stage 2 also involves a closed-loop process for using any by-products of the higher-quality product. Prerequisites must be in place to enable Stage 1 and Stage 2.

	Prerequisites	Stage 1	Stage 2
Overall Objectives	<ul style="list-style-type: none"> • Gather needed information • Develop infrastructure • Reduce barriers 	<ul style="list-style-type: none"> • Reduce volumes of carp • Use existing foreign markets and infrastructure • Create domestic market demand and infrastructure 	<ul style="list-style-type: none"> • Expand domestic markets, including market for higher-quality product • Control levels of carp
Business Role	<ul style="list-style-type: none"> • Create business plans; get financing • Establish business-to-business networks • Build or retrofit processing capacity • Market feasibility analyses 	<ul style="list-style-type: none"> • Focus on current and new export markets identified from the market analysis • Set a price that encourages fishermen to fish in volumes needed 	<ul style="list-style-type: none"> • Focus on domestic markets identified in market analysis • Set a price that enables fishermen to harvest lower volumes
Government Role	<ul style="list-style-type: none"> • Engage Dept. of Commerce/economic development agencies • Establish economic and environmental value of the basin, similar to what the Great Lakes have done, as a way to obtain political support • Engage other basin states • Ease fishing restrictions to ensure harvest volumes 	<ul style="list-style-type: none"> • Create one-time, start-up incentives and low-interest loans 	<ul style="list-style-type: none"> • Create one-time, start-up incentives and low-interest loans • Restore habitat to facilitate return of native fish
Research/ Outreach Role	<ul style="list-style-type: none"> • Establish better estimates of fish available for harvest • Share existing research and information 	<ul style="list-style-type: none"> • Research big river systems, shelf-life, taste • Provide website for information sharing 	
Marketing Role	<ul style="list-style-type: none"> • Re-brand as desirous product 	<ul style="list-style-type: none"> • Re-brand; build domestic consumer demand 	

Next Steps

Prior to leaving the ACMS, the participants discussed how they and the ACMS conveners could ensure that the discussions and ideas generated at the meeting would be carried to a larger audience and, therefore, impact the larger issue. The participants agreed on the following items and roles:

Issue a press release about ACMS (IISG and IL DNR)

Document and distribute ACMS notes (IISG)

- SAG team review proceedings document
- Distribute to ACMS participants
- Process to receive feedback/comments

Engage U.S. Department of Commerce/economic development agencies (federal agencies/business entities)

- Identify new/existing government grants or programs to help emerging or expanding entities

Develop plan for moving forward with the evolutionary strategy (federal agencies/business entities)

Develop and execute a communication plan and materials for various stakeholder groups (IISG and federal partner)

- Participants – Master database of all participants and areas of expertise for exchange of leads and potential partnerships
- Legislators
- Commercial fishing industry
- Professional societies
- U.S. Fish and Wildlife Service and other natural resource agencies

Continue engagement (IISG for short term)

- Determine possible federal entity as on-going convener role
- Determine interest and role of National Great Rivers Research and Education Center
- Listserv of participants for on-going communication



Appendices

- A. Asian Carp Marketing Summit Participants
- B. Product Prioritization Exercise
- C. Participant Comments
- D. Stakeholder Needs
- E. Exit Strategy Considerations
- F. “Parking Lot” – Other Issues and Follow-up Items



Appendix A: Asian Carp Marketing Summit Participants

Name	Organization	City	State
John Ahrling	Commercial Fisherman	Godfrey	IL
Ben Allen	Grafton Summit Enterprises	Grafton	IL
Julie Anderson	Louisiana Sea Grant	Baton Rouge	LA
Moe Bader	Oceana Restaurant	New Orleans	LA
Tim Banek	Missouri Department of Conservation	Jefferson City	MO
Ron Brooks	Kentucky Department of Fish and Wildlife Resources	Frankfort	KY
Dale Chapman	Lewis and Clark Community College	Godfrey	IL
Duane Chapman	U.S. Geological Survey	Columbia	MO
Pat Charlebois	Illinois-Indiana Sea Grant	Glencoe	IL
John Chick	Illinois Natural History Survey	Brighton	IL
James Crain	Commercial Fisherman	O'Fallon	MO
Sid Dasgupta	Kentucky State University	Frankfort	KY
Carole Engle	University of Arkansas at Pine Bluff	Pine Bluff	AR
Sam Finney	U.S. Fish and Wildlife Service	Marion	IL
Jim Garvey	Southern Illinois University	Carbondale	IL
Tom Heavisides	Illinois Department of Natural Resources	Springfield	IL
Josh Hedstrom	Illinois Department of Commerce & Economic Opportunity	Springfield	IL
Mike Hoff	U.S. Fish and Wildlife Service	Fort Snelling	MN
Frank Kulpa, Jr.	Great Lakes Trawling Association	Two Rivers	WI
Tim Leeds	Heartland Processing, Inc.	Rockford	IL
Marcia Lochmann	National Great Rivers Research and Education Center	Godfrey	IL
Lan Chi Luu	Fish Innovations Enterprises, LLC	New Orleans	LA
Rob Maher	Illinois Department of Natural Resources	Brighton	IL
Kirby Marsden	Commercial Fishing Association	Niota	IL
Kell McInnis	Louisiana Wildlife and Fisheries Foundation	Baton Rouge	LA



Asian Carp Marketing Summit Participants continued

Name	Organization	City	State
Lisa McKee	Big River Fish Corporation	Pearl	IL
Brian Miller	Illinois-Indiana Sea Grant	Urbana	IL
Paula Moore	Jones and Eaker Farms	Neelyville	MO
Tony Nagberi	Asian Carp Fish, LLC	Minneapolis	MN
Chassidy Nixon	Oceana Restaurant	New Orleans	LA
Tim Norman	Mendota Agri-Products	Mendota	IL
Susan Parks	Parks Consulting Group	Oak Park	IL
Philippe Parola	Chef Philippe Enterprise	Baton Rouge	LA
Kwamena Quaigraine	Illinois-Indiana Sea Grant	West Lafayette	IN
Mark Richards	University of Wisconsin, Madison	Madison	WI
Henry Rockhold	Commercial Fisherman	Lomax	IL
John Rogner	Illinois Department of Natural Resources	Springfield	IL
Greg Sass	Illinois Natural History Survey	Havana	IL
Rob Simmonds	U.S. Fish and Wildlife Service	Marion	IL
Rick Smith	Big River Fish Corporation	Pearl	IL
Rebecca Steiner	National Great Rivers Research and Education Center	Godfrey	IL
Kristin TePas	Illinois-Indiana Sea Grant	Glencoe	IL
Gary Tilyou	Louisiana Department of Wildlife and Fisheries	Baton Rouge	LA
Jeff Torricelli	Illinois Department of Commerce & Economic Opportunity	Springfield	IL
Robert Walker	Louisiana Seafood Exchange, Inc.	Baton Rouge	LA



Appendix B: Product Prioritization Exercise

After compiling a list and discussing the current state-of-knowledge of all potential Asian carp products, the ACMS participants prioritized the products. Each participant was issued a small number of votes to prioritize each identified potential product based on the following criteria:

- The demand for the product (and therefore potential impact on reducing fish populations).
- Profit potential, including ability to cover costs throughout the supply chain.
- Ease of exit, once fish populations are controlled.

The total number of votes and comments that informed participant voting are:

Category	Product	Demand/ Impact Votes	Profit Potential Votes	Exit Ease Votes	Total Votes	Comments
Human	Fresh whole fish, fillet	40	38	23	101	<ul style="list-style-type: none"> • Higher quality; ability to get higher price • Good taste • Shelf life critical for quality • Specialty for Asian markets • Low contaminant level • Freezes well
Human	Frozen patties	27	22	15	64	<ul style="list-style-type: none"> • Freezes well • Need to be completely boneless
Human	Canned	17	20	9	46	<ul style="list-style-type: none"> • Good acceptance tests • Low contaminant level
Animal	Pet treat	16	17	10	43	<ul style="list-style-type: none"> • Little value in end-product • Fishmeal base (by-product) • Amino acid profile, fatty-acid levels
Animal	Pet food	14	10	5	29	<ul style="list-style-type: none"> • Tough to meet regulatory standards • Phosphorus may be a problem for cats • Little value in end-product • Fishmeal base (by-product)
Other	Fertilizer	9	6	9	24	<ul style="list-style-type: none"> • Good use for offal (by-product) • Must be boneless
Animal	Fishmeal	6	7	7	20	<ul style="list-style-type: none"> • Supplies too high • Low-value product • Use as by-product
Other	Collagen	5	7	6	18	<ul style="list-style-type: none"> • Tough to get FDA approval • Interest in China, France • Carp skin/scales have high concentrations



Product Prioritization Exercise continued

Category	Product	Demand/ Impact Votes	Profit Potential Votes	Exit Ease Votes	Total Votes	Comments
Human	Surimi	3	4	4	11	<ul style="list-style-type: none"> • Carp lower value than pollock • Demand may be too high to consistently meet • Low contaminant level • Color OK
Human	Fish oil	3	3	4	10	<ul style="list-style-type: none"> • Low oil content • Oil is by-product only (e.g., fish head)
Animal	Zoo food, alligator farms	0	2	5	7	<ul style="list-style-type: none"> • Little value in end-product • Fishmeal base (by-product) • Requires vitamin additives to meet dietary requirements • Mixed results in tests so far
Other	Carbon credits	1	1	5	7	<ul style="list-style-type: none"> • May receive government/industry backing
Other	Bait	1	1	2	4	<ul style="list-style-type: none"> • Cost of cutting is too high • Not oily enough • Cannot use as live bait • Not acceptable for lobster
Human	Protein powder	0	1	2	3	<ul style="list-style-type: none"> • Made from fish meal (by-product) • Some off-taste



Appendix C: Participant Comments

On the second day, each ACMS participant was invited to share their vision of how to address the issue and any concerns or problems. These comments are summarized and grouped below by profession.

Commercial Fishers

- The bottom line is we rely on the fishermen. It will be hard to remove the stock.
- Processors need to be able to process what we catch for human use. The infrastructure to handle volumes is not there yet.
- We need a solid market to showcase a solid product, which will increase the price point.
- I am concerned about exotic species because I grew up with the issue in Lake Michigan. Mistakes were made in the past that we do not want to repeat. I can share insight on mistakes made previously. Humans made the mess, we should clean it up.
- What is the major goal – eradication or free enterprise? I love idea of pond fisheries to help with the economic development.
- If we don't make war on this fish what will be the impact in five years? What is going to happen?
- Exciting things are happening; individuals are developing promising high-end markets. That's good. Fishermen need to be compensated.
- We need the price to go up to 25 cents per pound. If that happens, fish reduction will be noticeable because fishermen will want to fish Asian carp and sell what they catch.
- IL DNR has been running successful fisherman programs at Rend Lake and Carlyle Lake with benefits to sport fishermen. Many waters are not yet available to commercial fishermen. The department can work to open those waters and do this regularly.
- Continuity of supply will be an issue. Summer fishing will be difficult, so keep this in mind in terms of adding in the cost of freezing.
- We need to rely upon fishermen. Fishermen need infrastructure with handling fish for the human-consumption market.
- The bottom line is that the market is there only because of the fishermen.
- Restrictions on methods, nets, areas, and seasons need to be lifted in Missouri, Arkansas, Louisiana, Kentucky, and Tennessee.
- Fishermen will fish when they are assured the money. There should be subsidies if the market cannot sustain the price.

Processors

- We killed our own fishing industry. The majority of fish we eat is imported. We now have the opportunity to create an entire industry. U.S. fish are not "dirty." Build plants to de-bone fish and get into production.
- Exit strategy is simple. If we decrease the number of Asian carp, the other fish will come back. Same processing plants can be used when other fish come back.
- Politically we need to turn this around. The Illinois Department of Commerce



and Economic Opportunity (DCEO), IL DNR, and U.S. Department of Commerce are needed. DCEO needs to be here.

- Marketing strategy should take pressure off Great Lakes.
- We can be part of the solution of keeping carp out of the Great Lakes.
- Fishermen need incentives to continue fishing even when the price fluctuates.
- Fisherman will take 15 cents per pound, but they would prefer 25 cents per pound. Big River is paying 7 cents per pound to export fish.
- We need to foster development of a market that will pay more, not like Big River (e.g., low prices to supply Chinese market). Fishermen will not get involved until we pay more. They need a living wage. The domestic and higher-quality product will pay more.
- We need an entity that can help make that happen. And we need to get fishermen involved. We can't wait for the market to grow by itself. Big River needs the fish to be ready to export to China, and we need the fishermen to fish so we can produce it here and ship it there.
- I am a processor who will take by-product. Fish oil is a secondary market. That won't pay the fishermen to fish.
- Initial market is export. Then build the domestic market.
- Let private enterprise take the lead. But is there a way to provide seed money, such as low-interest loans? For \$10 million in seed money, everyone in this room could meet their goals.
- In the end, this will be solved by the marketers and exporters.
- Big River, high-end products, and using by-product for pet food are all good ideas. The market will sort itself out in terms of price.
- Big River averaged 14 cents per pound. Competition will increase and the price of fish will increase as more facilities open up.
- Don't make the price too high, or they won't be able to sell it to other countries. The price for the consumer (whether domestic or foreign) still needs to be reasonable.
- Consider water levels and government-controlled waters. We could be creating safe harbors for fish that could hurt us. Open waters in a responsible manner so that all stakeholders' needs are taken into consideration (natural resources, fishermen, duck hunters, etc.).
- From a commercial standpoint, there is a viable industry already. We agree with the earlier speaker – starting an industry takes a long time and a lot of start-up money.
- There are already commercial solutions with existing industry and infrastructure that we should leverage. For example, the way McDonalds is using their closed-loop process with used cooking oil as a marketing advantage. There has been a lot of evolution in this area. My company has been purchasing used cooking oil and selling it for animal feed for many years.
- It would be helpful in the marketing plan to explain the use of by-products and sustainable processes, such as using digesters to collect methane on almost all products – consider rendering industry, too. Message it with the “no waste” angle.
- I'm from the Louisiana “contingent” in the room. I don't know why other states are not represented. Louisiana sent a large contingent. Why not others? More states need to be represented.



- Who holds purse strings for the eradication (the \$80 million given to the Great Lakes issue)?
- I sense a money grab – everyone wants something. The scientific community needs money, but it has already received enough money.
- We need money to market (example of how much Coca-Cola spends on marketing, even though Coke is established).
- We need to get the media and education to all fishermen groups and communities so they understand the competition issue with sport fish.

Natural Resource Managers

- There are conflicting problems with the Missouri River and Mississippi River.
- By-catch is a concern because some of the catch is endangered species.
- A value-added marketing strategy is needed to increase price for harvesting.
- From a natural resource manager standpoint, we need more research on big river systems.
- Export markets are a reality today (e.g., Chinese markets). Illinois processors already have contracts for 30 million pounds for Chinese markets. There are other foreign markets as well – European markets, Scandinavian markets, African markets.
- One-time funding is needed to nudge the process–flash freezers, fishermen off-loading stations, marketing blitz. For example, we need \$700,000 to get a facility up and running in western Kentucky.
- Let private enterprise take the lead and let fishermen fish. Small businesses will continue to locate markets. State fish and wildlife departments will assess and regulate fisheries to accommodate fisherman and anglers (e.g., addressing restrictive regulations).
- First step – market; second step – processing (funding needed); third step – get commercial fishermen to the fish.
- We need an evolutionary strategy, not an exit strategy. We should export carp with a discounted price until Asian carp are no longer easy prey for fishermen and the domestic market has developed.
- U.S. Geological Survey is not a regulatory or funding agency. It provides information and does research only. It is directed by representatives and the government.
- U.S. Geological Survey needs to listen to this group; you give us the direction and tell us what is needed.
- We need an entrance and an exit strategy. Businesses will find the markets. Government needs to get out of the way.
- What do you all need to have success? What will allow fisherman to make more money so they will fish more and help the fish to decline?
- Natural resources groups are not typically organizations that write checks to start up commerce. We will monitor the activity.
- Let us know what needs to be done to “grease the skids.” We need someone here to represent commerce/small business.
- We need an exit strategy. More discussion is needed.
- The Asian Carp Management Plan consists of 133 recommendations. Harvesting is one recommendation and is an important tool. Our job (U.S. Fish



and Wildlife Service) is to facilitate the work that the business industry needs to do to get going on the solution.

- Our agency can facilitate meetings like this. We also can assist in research to answer questions and find ways to make it easier to fish. We can attempt to eliminate or reduce roadblocks (like lifting fishing restrictions or opening up refuges).
- We don't write checks, and we don't pick or back the "market winners."
- Bottom line is there will not be a market without fishermen. We can get agencies involved that provide economic development or subsidies.
- We can research funding sources and distribute to group; \$80 million from FY10 is already allocated.
- We all know the fish need to go and be reduced in numbers.
- It is not the fish's flesh that stops it from being a strong domestic market. The fish would sell on its own except for the bones and the name. A marketing campaign is needed to overcome the negative attitudes linked to the name carp.
- People like the idea of buying and eating local fish. Everyone who tries it likes the taste. We need to educate the American public. We need to give away samples.
- I wrote letters to the Environmental Protection Agency to change fish name. They declined, but I won't give up on idea.

Marketers

- It is wise to focus on existing markets and develop higher value markets to allow fishermen to make good income. If the price is only at 7-10 cents per pound, it could lead to discouragement. We need to encourage the fishermen to fish.
- Look at expanding successful current markets and explore which ones will create more money for the commercial fisherman.
- Availability of the product on a large scale is only temporary. The volume needed for commercial success may not exist over a long time.
- Look at existing infrastructure instead of building a new, large infrastructure investment that could become obsolete.
- We need help from economists. They are currently helping the aquaculture industry with decision-making. We should seek their help with this, too.
- Businesses know costs and ideas. Economists put numbers behind options – market , price point, quantity needed to be moved, quantity that can be affected, etc. Trade-offs become clear. This has been going on for years and years.
- The business case or economics for viable Asian carp markets are not there yet. Fishermen are not getting paid enough to make it worth their while. Therefore, something needs to happen.
- We know the price needed to make it worthwhile to fish. We know transportation costs are high (both foreign and domestic).
- We don't have enough information to understand the options. We first need to target the market options laid out quantitatively to compare the trade-offs.
- The next step should not be too expensive or time-consuming. We need to bring in a business consultant who is neutral and has experience in putting a business plan together. Select five to six very specific market options (for



example, urban Bangladesh ethnic markets, Africa exports, China exports, restaurants, and supermarkets) for the consultant to look at. Have the consultant talk to a few processors and the fishing associations, crunch the numbers and assess trade-offs. Then decision-makers can use this analysis and the numbers. For each option the assessment should include total investment cost, year 1-3 results, longevity of project, price points, exit strategy, profits along chain, and price to fishermen. Then we will have the basis for making decisions about which markets and products to pursue.

- An option should also be considered to just pay the fishermen to fish, such as previously suggested. That may be the cheapest option.
- There may need to be some public funding that would help the political decision-making process and the business decisions. Implementation of this should include multi-stakeholder support. The detailed plan could be used by states to acquire funding and justification for doing other things.
- We need a very good estimate of how much fish is available for harvest. Three to 10 million per year? This exercise should be considered as exploiting a non-renewable resource. A certain quantity is needed to support a market. How long do we think supply will last (before the fish are reduced to levels of little threat)? Don't put a lot of investment into new infrastructure with so little information about how long it will be a useful or productive resource.
- How much do we think we need financially? What if the government buys the fish from farmers at 25 cent a pound and then 100 million pounds were fished? That would be only a \$25 million cost to remove a significant amount of fish. Would that be a better investment than creating new processing infrastructure?
- Import competition needs to be considered. The type of product is important. If we get into frozen fillets, there are so many countries producing carp from aquaculture. They might prefer a wild-caught product. But, as the number of Asian carp goes down, the price will go up, and imports can become a problem. Look at the challenges of domestic catfish from imports.
- Will this attract imports from foreign countries?

Researchers

- Marketing will be important.
- We need to also take a spatial perspective. The focus is on the Illinois River; however, recruitment can vary and there can be lean years based upon various factors. As we develop the fishery, focus on several locations (a fisher network) on large spatial scale, using partnerships between different regions. This will build stability.
- There is pressure on U.S. Army Corps of Engineers to develop habitat for native fishes.
- We need to maintain quality and desirable flavors in the cooked products. Noses and taste buds are important.
- If it does not taste good, we need to consider technologies and research (i.e., into antioxidants) that will improve taste, shelf life, etc.
- Our research groups need to partner with the markets and consumers to do this.
- There is a negative ecological situation in the rivers. As it improves, it will improve life for people in the region.



- A caution: We need to do everything we can to stop Asian carp from getting into the Great Lakes.
- We need to make this a viable solution for economic value.

Conservation Organizations

- I now realize how much work is being done. I've not yet been successful in raising government funds.
- An important action step is to consolidate research and studies. This information needs to be available to all so we are not reinventing the wheel to compare results.
- By-products "use" questions – we have learned a lot about ways to efficiently and economically use the remains. Right now there is no utilization for by-products. We need to efficiently share and economically utilize leftovers, such as collagen, oils, and pet food. We can coordinate markets so as not to waste resources.
- There should be a coordinated education effort to inform the public about habitat dangers with this fish; lots of stakeholders still don't get it.

Aquaculturists

- Marketing is necessary in the beginning, but the objective is to reduce Asian carp in rivers. As that happens, what is going to happen to businessmen who built livelihoods on this market?
- Don't underestimate the potential of aquaculture to pick up slack. We can produce fish on aquaculture fish farms.
- Be careful when making regulations that affect the future. When the carp was first detected, regulations were put into action and were not thought through. We are now living with results of these regulations that have negatively affected fishermen.

Distributors

- As a businessman, if the government wants us to solve this problem, why should it be our burden to solve?
- What states are affected? They should issue RFPs and get business to propose ways to solve it.
- There is demand, but shipping costs are high (e.g., cost of shipping fish to Africa was \$7,000). Where will funding come from?

Restaurateurs

- Restaurateurs are usually looking for local products because people like them. Customers are interested if a fish is caught in Louisiana waters.
- Marketing is the most important issue. Everyone that tries Asian carp likes it; how do we get a market for it? I'd like to see this product on menus with lots of recipes.
- We need to change the name and educate public. Let's try to make it work.
- We need to take action after this meeting.
- Be careful to advertise carefully. Educating people locally is a priority. They



must embrace products (i.e., want to eat them) before you can sell them. For example, have fish promotions like fishing competitions, Oktoberfest, and tastings. Launch a campaign about eating the fish at restaurants and supermarkets.

- Don't catch it just to throw it away. Get people to eat it. When they taste it they will get behind you and that will help to create the high-quality/high-price, value-added product.
- Need to change the focus/message from "trying to get rid of it" to "wanting it because it is good to eat."
- The fillet is the most valuable part of fish, and it will bring enough money to sustain the cost for jobs, economy, and other markets. There are many uses for the fish. I understand the need to address by-product (32 percent of total fish) to use it effectively.
- We need to move quickly with options to move the product until the value-added/high-quality option is established.
- We need to lobby the government to pay fishermen. The government funding for "moving dirt" to stop the passage of the fish is not enough; we must also remove the fish that are already there.
- My proposed food-processing plant will provide the best American food technology and science, and it will put Americans to work (50-60 full-time people and other part-time people). The estimated plant production is at 18,000 fish per shift per day (can do three shifts per day).
- We need funding – \$3.5-4 million.
- It needs to be top-notch facility because the public is going to tour facility when the end product is prepared. It also needs to meet FDA standards and regulations. If we use existing infrastructure, we will have to demolish the existing facility and start over to meet standards. Yet, the technology is not fish-specific and can be used on many other fish.



Appendix D: Stakeholder Needs

The second day of the ACMS had a facilitated breakout session for each profession: harvesters, processors, natural resource managers, and researchers. During these breakouts, each group identified and prioritized its needs for moving forward on increasing exports and creating a domestic market for higher-quality/higher-priced Asian carp products; researchers also identified areas for further research. The group of natural resource managers identified ways that natural resource agencies can contribute to the issue. Group needs were identified in the discussion following the breakout session and may be pertinent to one or all of the stakeholder groups. Below are the summaries of each discussion as presented by each breakout group; the group discussion was summarized by a facilitator.

Harvesters

Cost considerations

- Harvesting Asian carp requires appropriate nets and gear (\$300-\$500 per net; each fisherman uses three to 15 nets at a time). Nets need to be replaced every 18 days, on average.
- Cost of doing business also includes boats, motors, insurance, trucks, gas, and ice.

High-volume harvesting

- Open restricted fishing areas and closed waterways.
- Bigger boats needed for larger catches – 30 ft. for 5,000-10,000 lbs. (medium priority)
- Specialized nets and advanced gear (see above). (medium priority)
- There are enough fishermen for today's catch. If the market increases, more fishermen will start to fish carp. Existing fishermen may need to hire additional help. These new hires would need insurance. If an employee got hurt, without insurance, it could break the business. (high priority)

Market price

- If the price is right, the fishermen will catch the carp.
- We would need 20-25 cents per pound for human consumption market. (high priority)

Logistics and transportation

- If fish is for human consumption and quality need to be high, immediate icing, refrigeration, and transport logistics (e.g., boat ramps with refrigeration) need to be worked out. (high priority)
- Cost and transport options are impacted by how far from water fish need to be transported. Can docks be centralized so that fish can be iced at the dock?
- Price could be lower if fish don't need to be hauled to the processor. Can processors come to the fishermen?



Payment

- Guarantee of purchase by the buyer.
- Money paid at delivery; no invoicing. (high priority)

Other

- Most efficient to harvest in winter, spring, and fall. Carp are difficult to catch with entanglement gear in the summer because the fish are too active.
- The summer months make it difficult to properly store fish.

Processors

Business-to-business resource

- It is time to talk to each other and develop business-to-business networks.

Capital funding

- Low interest and/or startup loans for capital/infrastructure needs.
- Information about potential funding sources.
- “Guaranteed demand” in the beginning when Asian carp are more of a commodity product, such as military contracts, RFPs from the government for large-scale orders, Title 3 designation (i.e., disaster relief/humanitarian food), etc.

Critical success factors

- De-boning technology and processes.
- Adequate reserves (and ways to store the product) to be able to provide product during slow harvesting times (i.e., when fresh product is less available because of harvesting and refrigeration challenges, such as in summer).
- Ability to lower transportation costs and transit issues – processing near where the fish are caught. Processing for the high-quality/high-price (value-added) product cannot occur on boats or barges because of the de-boning process.

Natural Resource Managers

Contributions

- Define the economic and ecological value of the resource; use the information to rally the Mississippi River Basin and get political support.
- Increase fishing opportunities, both geographically and seasonally. We need authority to do this, and that varies by state.
- Create an “Asian trail” for fishing.
- Work on current conflicts: sports fishermen and endangered species.
- Enhanced intra/inter-agency communication.
- Engage Mississippi Interstate Cooperative Resource Association (MICRA).



Concerns

- Live transport.
- An exit strategy that includes aquaculture (and risk of escape).
- By-catch.

Obstacles

- Natural resource agencies don't have the resources to fund incentives.
- Monitoring is expensive and difficult to do.
- Competition for agency time; bighead and silver carp are just two of several invasive species that the agencies are fighting.

Researchers

Communication and access to information

- Consolidate information and available research.
- Provide ways to share information.

New research/information

- Better understand the best ways to catch, preserve, and process the fish.
- Learn about new technologies, such as antioxidants, to improve taste.
- Find out if the carp – by species – will be listed as histamine fish or not. If so, HACCP plans will be required.

Monitoring

- We need to know how many fish and how long it will take for the species to decline.
- Is the target 40 million pounds per year? Are about 20 million pounds processed today?

Group

Business viability and success

- Marketing creates demand from consumers.
- Product acceptability from consumers is high (in terms of taste, smell, contaminants, and being “green”).
- Ability to satisfy demand via an effective market that reaches targeted consumers.
 - ◆ Reasonable investment needed to enter the market.
 - ◆ Sufficient revenue for each stage from harvesting to consumer needed to make the effort worthwhile.

Additional stakeholders need to be engaged

- Commerce/economic development arms of federal and state government.
- Illinois Department of Commerce and Economic Opportunity.



- Representatives from more Mississippi River Basin states.
- Political support in both the Great Lakes Basin and the Mississippi River Basin states.
- Regional state representation and buy-in to the strategy.

Quantitative market data is needed

- Market analysis/feasibility studies.

Domestic market demand needs to be built

- It is critical to re-brand Asian carp (away from “trash fish that is a problem” to “healthy, good tasting, wild caught river fish”, the “green fish”) and create a regional brand.
 - ◆ U.S. Fish and Wildlife Service can help change public perception of the fish by changing its messaging.
 - ◆ Public tastings at state-wide community events.
 - ◆ PSAs in television/media.
- There needs to be education and awareness to increase demand, such as tips on how to prepare for cooks and recreational fishers. Targets are fishers and recreational users of the affected rivers and Great Lakes, the communities near the rivers, and policy makers/government.

Everyone has to think about doing things in new ways

- Regulators may need new ways of thinking.
- Fishermen need to be open to new gear and strategies to harvest more cheaply yet with higher quality.
- Processors need to think about new products and ways of processing. They also need to make equipment investments that can serve other purposes later on.

Appendix E: Exit Strategy Considerations

Once Asian carp populations are reduced to non-nuisance levels, more discussion is needed on strategies that will allow commercial entities to “exit” the harvesting, processing, and selling of Asian carp. Many of the ACMS participants suggested that Asian carp eradication is not possible and that eventually the carp will need to be fished only to control their numbers (rather than to greatly reduce their numbers). Therefore, more of an evolutionary strategy will need to be employed to accommodate changing harvesting goals. Overall, the following comments regarding an exit strategy were made, but there was little group discussion on any of them:

- Eradication may be impossible. The goal should be to control the population (i.e., Asian carp will no longer be a pest).
- The market will dictate the exit process. In the beginning, higher volumes will be fished at a lower price. The higher-volume commodity pricing will peak. Lower volume fishing will require a higher price per pound.
- Processors are aware that they will need to transfer to another industry at the end.
- Processing infrastructure will need to adapt to new products if carp are no longer available.

On-going resource management issues:

- The habitat will not recover in the short-term, and it will take time for any native fishes to return. There may not be a substitute fish.
- What is the role of aquaculture – to provide additional supply as long as fish are dead before transport to processors?



Appendix F: “Parking Lot” – Other Issues and Follow-up Items

A “parking lot” of issues was maintained for comments or questions that were raised but not discussed during the ACMS. These comments and questions were:

- With more fishing, the caught fish will be smaller and there probably will be more silver carp. How small a fish will be acceptable for the targeted products? How will the fish size affect the price?
- We need agribusiness perspective/expertise.
- Is there a way to subsidize fishermen until prices are reasonable for the harvesting needed?
- If a state outside of the Great Lakes has an initiative in place, how does it get funding?
- China is the number one farmer of carp with government support. Any business in North America will have to compete against China. What will the U.S. federal government do to help U.S. markets? China will re-sell to U.S. consumers.
- What are the new/existing government grants or programs to help emerging or expanding entities?
- Would more efficient harvest methods reduce fishermen overhead costs?
- We need a social study to help address the risk that incentivizing fish in the Mississippi River Basin may accelerate their spread elsewhere.



