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Commercial Fisheries Cost Recovery Report

Prepared in Response to House Bill 1372 (2012)

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INTRODUCTION

The Maryland General Assembly enacted House Bill 1372 in 2012 to increase the efficiency, flexibility, and accountability of Maryland's commercial fishing license system. The legislation directed the Department to:

- Review existing laws, regulations, fees, and processes associated with commercial fishing licenses in the State;
- Consider the costs of managing and enforcing commercial fisheries; the structure of the commercial license and permit system and associated fees and surcharges; accountability of licensees; and setting commercial license revenue at a level that covers a fair and reasonable portion of the management and enforcement costs of the commercial fisheries;
- Collaborate with representatives of the Tidal Fisheries Advisory Commission and the Sport Fisheries Advisory Commission;
- Determine the allocation of the user fees for fisheries management of commercial or recreational fisheries based on revenues from those respective sectors; and
- Report findings and recommendations for changes to the commercial fish license and permit fee structure and identify actions needed to implement the plan.

The Department conducted an analysis to determine the costs of managing fisheries to each user sector and consulted with the Tidal Fisheries (TFAC) and Sport Fisheries (SFAC) Advisory Commissions. In total there were ten public Commission meetings to discuss the analysis and recommendations.

Pursuant to the analysis required by House Bill 1372, the total additional funds required for cost recovery in the commercial sector is \$2,719,062. These funds could be recovered solely through increasing commercial fees (Appendix B) or other options as recommended by the TFAC and SFAC. The Department of Natural Resources is amenable to increasing commercial fishing fees over a period of time. Without additional sources of revenue, the entire commercial fisheries management cost deficit will need to be paid by the commercial sector. Commercial fishing license costs were last set 18 years ago in 1994.

The Department identified an additional \$576,400 needed to provide services benefiting the community sector (general public), in addition recreational fishing license revenues continuing to support this sector, as recommended by the Task Force on Fisheries Management. These deficit figures include additional funding needed for blue crab surveys currently supported by an expiring federal grant. The Maryland Fisheries Service is projecting a total deficit of \$3,295,462 (\$2,719,062 commercial + \$576,400 community) beginning in fiscal year 2015.

The Department is grateful for the input and cooperation of the TFAC and SFAC in preparing this report. Recommendations from both Commissions are discussed at the end of the report.

BACKGROUND

Experiences with Cost Recovery

Australia and New Zealand were the first countries to implement commercial fisheries cost recovery. Cost recovery is also used in Iceland, Canada, and federally in the United States.¹

There are two principal categories of charges applied to fishermen. Access (or entry) charges are costs for access to the commercial fishery and which therefore take no account of the actual amount of use that is made of the natural resource. Examples of these include license and permit fees. Alternatively, user charges are costs that vary with the amount of use that is made of the natural resource. Resource use may be defined either directly in terms of output (the amount of fish caught and landed) or indirectly in terms of inputs (one or more components of effort). In practice, however, these charges have only been levied on outputs. Examples include landing taxes and charges proportional to the value of landings (as in some ITQ systems). User charges may create incentives to under-report fish harvest. Both types of charges, if unilaterally implemented, have the potential to hinder the competitiveness of local fisheries. With excess capacity, however, this is less of a concern.

A) The case of Australia

The principle of recovering all attributable costs was established in Australia in mid-1980. The commercial fishing industry pays for costs directly related to fishing activity, while the Commonwealth government pays for management activities that may benefit the broader community (as well as the industry) and that satisfy a range of specific community service obligations.

The framework currently used by the Australian Fisheries Management Authority (AFMA) is a two-stage procedure that assess which costs are attributable to and recoverable from the fishing industry and which should be borne by the government. In the first stage, it is determined whether the cost associated with each AFMA function is attributable to a specific user group (commercial fishers, foreign fishers, recreational fishers and so on) or whether it is attributable to the community at large. In practice, an activity is considered to be attributable to a specific user group if the answer to the following question is “yes”: Would the non-existence of a particular group eliminate the need for the AFMA activity in question?

In the second-stage, AFMA activities that have been attributed to specific user groups are examined to determine whether costs should be recovered from the user groups. A number of factors are taken into consideration in determining whether costs are recoverable or non-recoverable:

- The extent the user group benefits from the activity;
- Consistency with Commonwealth government cost recovery policy in other areas;
- The existence of extenuating socio-economic considerations (i.e. such as protecting the traditional way of life of some communities);

¹ Schrank, R. Arnason and R. Hannesson (Editors) “The Cost of Fisheries Management”, Ashgate Publishing Ltd., Aldershot (2003),

- The existence of government policy which impacts on the cost recoverability for a particular activity (i.e. there may have been policy decisions in the past that now influence the recoverability of a particular cost); and
- The cost effectiveness of recovering the costs of any particular activity.

Thus, for example, the costs associated with the management of domestic commercial fisheries are deemed to be fully recoverable from industry (although the costs associated with collapsed, exploratory or developmental fisheries may only be partially recoverable). The costs of surveillance and enforcement of commercial fisheries, on the other hand, are split equally between the government and industry.

As of 1999, 57% of the costs in the Commonwealth fisheries were recovered. This level of cost recovery is a direct result of the increasing use of the user pay concept in the provision of many government services (i.e. when the fishing industry is the main beneficiary of management, it should pay for the costs of that management). Measured as a share of landed value, the management costs in the Commonwealth fisheries are about 7%, which is a fairly typical share.²

B) The case of New Zealand

New Zealand introduced cost recovery in 1994. About 70% of all commercial fisheries management costs are recovered. Measured as a share of landed value, the management costs in New Zealand are about 8%.

The main principle behind cost recovery is, as in the case of Australia, that costs should be paid by those who drive the need for the management service. Thus:

- The Crown pays for services provided in the general public interest;
- The cost of services provided to manage the harvesting of fisheries resources is directed to those who benefit from harvesting the resource;
- The costs of services provided to avoid risk to the environment or its biological diversity are directed to those who contribute to the risk.

In 1999 the government established joint the Industry/Ministry of Fisheries Working Group to develop the detailed rules based on the principles listed above. The Working Group's main recommendation was that the government should continue to purchase or provide the services that are its core role, but industry should be allowed to purchase other, non-core, services at its own expense, so long as the services are delivered to standards that allow the government to carry out its core duties.

² As of 2000, the average share for the EU countries was 6% and for the OECD countries was also 6%. The average for US federal fisheries was 18% (Wallis and Flaaten, 2001). These numbers are similar to those of Maryland commercial fisheries, where the average share of management costs to landed value equals 13% (before any transfers off budget).

METHODOLOGY

Inspired by international experiences like those of Australia, New Zealand and Canada, the Maryland Fisheries Service conducted a cost recovery study with the objective of determining which user/non-user groups were currently paying for which programs/services. The methodology consisted of six steps:

Step 1: Identified the different user/non-user groups that benefit from the programs/services provided by the Maryland Fisheries Service. The Department identified five major groups: Inland Recreational, Tidal Recreational, Commercial, Aquaculture, and Community. Community is comprised of the citizens of the State of Maryland and includes locally harvested seafood consumers. Community was incorporated into the study in an attempt to account for the “public good” aspect of some of the fisheries management services provided by the Department.

Step 2: Allocated the salary of each employee in the Maryland Fisheries Service to each group based on the time the employee spends working for that group’s benefit. In conducting the allocation, the fraction corresponding to community is taken from the top, and the remaining amount is allocated among the four other sectors. The allocation to the commercial sector was further broken down by commercial species: blue crab, striped bass, oyster, other. This allocation was determined by the manager and staff of each sub-program.

Step 3: Allocated each non-salary item in the Fisheries Service’s FY2013 budget in proportion to how the different groups above benefit from the service that item supports. In conducting the allocation, the fraction corresponding to community is taken from the top, and the remaining amount is allocated among the four other sectors. The allocation to the commercial sector was further broken down by commercial species: blue crab, striped bass, oyster, other. This allocation was determined by the manager and staff of each sub-program.

In the case of community, benefits are given by the value Maryland residents attached to a healthy Chesapeake Bay with live fish. In other words, it is given by the public’s willingness to pay for well manage fisheries and for services such as water quality monitoring and environmental review. This willingness to pay may be associated, for example, with option value (i.e. the option to be able to conduct recreational activities in the Bay in the future) or existence value (i.e. even if individuals have no plans to access the Bay at any point in time). Additionally, a small part of the community benefit will come from the consumption of locally harvested seafood. This is the value consumers would be willing to pay, above the price they actually pay, for consuming locally harvested seafood (i.e. consumer surplus). Given the various opportunities for substitution of locally harvested seafood with imported seafood, it is anticipated that this component would be a small fraction of the overall community benefit.

An accurate estimation of these different community estimates is a complex undertaking, and would involve, among other things, a lengthy and expensive stated preference study. Such study has not been conducted for this first cost recovery analysis. Rather, the benefits were arrived at using the expertise and experience of the different program managers in the Maryland Fisheries Service.

Step 4: Allocated Maryland Fisheries Service contributions to other units within DNR (\$3,229,995 to the Natural Resources Police, \$850,000 to Licensing and Registration Services, and \$1,613,900 to the Office of the Secretary – including mission support, i.e. human resources, IT, etc.) among user/non-user groups. The allocations from NRP and Licensing came directly from those units (see Tables 1 and 2 below).

Table 1: NRP Resulting % Distribution for Cost Recovery Study

Non-Tidal Recreational	24%
Tidal Recreational	50%
Commercial:	26%
<i>Blue Crabs</i>	7%
<i>Finfish</i>	12%
<i>Shellfish</i>	8%

Table 2: Licensing Resulting % Distribution for Cost Recovery Study

Recreational	95.4%
Commercial	4.6%

Step 5: Identified current sources of funding corresponding to each sector. These include federal funds, reimbursable funds, general funds, and license fee revenues (special funds). In so doing, only recurring sources of funding were considered. Thus, the \$2.5 million in federal Blue Crab Disaster Funds were not included in the analysis (i.e. they were eliminated from both, costs and revenues).

Step 6: Determined the additional funds, if any, required for each user/non-user group to achieve 100% cost recovery. The additional funds needed were then used to estimate the required increase in annual special funds (license fee revenue).

RESULTS

The original results were presented to the SFAC and TFAC in September of 2012 and two subsequent meetings were held the same month with the Commissions to review the cost allocations per sector for certain programs. Based on comments received from the Commissioners, the Department made some minor adjustments in the original analysis, primarily concerning allocations for resource assessment services and the percentages allocated to the striped bass and blue crab programs. Table 3 shows the Maryland Fisheries Service budget situation under the current license fee structure (i.e. under status quo) for FY '13:

Table 3: Cost Recovery under Status Quo

FY2013 FISHERIES SERVICE BUDGET (Figures in \$)	Total (\$)	Inland R	Tidal R	Commercial	Aquaculture	Community
		\$	\$	\$	\$	\$
Total Fisheries Service FY2013 management costs:	25,743,145	5,286,370	6,135,553	6,657,228	1,571,750	6,092,244
Total FF, GF & RF:	13,464,460	2,544,040	2,695,960	2,617,000	1,521,713	4,085,747
License fee revenues:	11,850,285	3,089,315	4,670,704	4,040,228	50,037	
<i>Required additional revenue for 100% cost recovery</i>		-346,986	-1,231,111	2,467,062	0	2,006,497
<i>% Increase needed in SF revenues</i>		0.0%	0.0%	156.8%	0.0%	
<i>% cost recovery through user fees</i>		58.4%	76.1%	60.7%	3.2%	
<i>% of cost recovery by Federal, Reimbursable & Special Funds</i>		106.6%	120.1%	100.0%	24.4%	

Table 3 shows in red that the total additional cost-recovery required for the commercial sector is approximately \$2,467,062, with a surplus of \$346,986 in inland recreational fisheries, a surplus of \$1,231,111 in tidal recreational fisheries, and a revenue shortage of \$2,006,497 in community. If the recreational surplus is used to cover the community deficit, the resulting deficit for community would be \$428,400. The use of recreational license revenue for community services is supported by the 2008 Report of the Taskforce on Fisheries Management. The report recommended that increased recreational fishing license revenues be used, among other things, to increase staff and support of fisheries habitat prioritization, restoration, and protection, the environmental review program, and enforcement (Natural Resources Police). All of these services have a high portion of benefits to the community sector. The Department sees using recreational funds as an interim measure until more general funds become available. Also, note that the budget is balanced for aquaculture, because, as a developing industry, this sector is supported largely by general funds.

However, the FY2013 budget did not include money to conduct the blue crab effort survey, the winter dredge survey, or the cooperative data collection program with watermen. These surveys are being financed in FY2013 under federal Blue Crab Disaster funds that are not included in the analysis. Cutting these services would have significant impacts on the stock assessment monitoring of blue crabs, harvest estimates, and bushel/catch limits established for the commercial fishery. The costs of these surveys must be added to the results of the cost recovery analysis. The additional costs are as follows: Tidal Recreational \$28,000, Commercial \$252,000, and Community \$120,000.

Thus, pursuant to the analysis required by House Bill 1372, the total additional funds required for the commercial sector are \$2,719,062 (\$2,467,062 + \$252,000). These additional funds are needed by the Department to manage the commercial fishery. It is anticipated that the Maryland Fisheries Service will face a deficit of \$3,295,462 at the start of FY2015; therefore, it is necessary to address the commercial fishery deficit in the immediate future.

RESULTS

The Department recommends increasing commercial fishing license fees to achieve cost recovery in the commercial sector. Commercial license fees have not been raised since 1994. The Department has also identified an additional \$576,400 required in general funds for the community sector. Not increasing this revenue will mean reducing essential programs relevant to users -- i.e. programs that reduce the uncertainty of management and grant flexibility in the use of the resource. A summary of the services provided to the commercial sector are listed in Appendix A.

At an estimated \$80 million dockside value for Maryland fisheries, the ratio of management costs to landings value in Maryland is currently 8.5% (in line with Australia, New Zealand and Canada). Opting for further cuts instead of license fee increases would make this number drop to a low 5%, indicating a reduction in meaningful services. The Department does not support reducing services important to fisheries management for the industry.

Finally, Appendix B offers one example of the license fee level needed to increase commercial license revenue by \$2.7 million. The highlighted rows are new fees. The fee increases may be implemented over time provided that additional funds are made available to manage the commercial and community fishery management services in the interim.

The Department collaborated with the TFAC and SFAC in developing its recommendations.

Tidal Fisheries Advisory Commission Recommendations

The TFAC recommended a \$1.6 million increase in commercial license fees, several license structure changes, and \$800,000 in matching general funds. These changes would remove some exemptions or create new fees to portions of the commercial industry that do not pay for certain services they receive. The Department supports the structural changes to the commercial license system proposed by TFAC. The Commission is hopeful that some of the electronic systems that the Department is piloting may reduce management costs to the fishery in the future. Without significant efficiencies and a match of general funds, the remainder of the deficit will need to be made up in service cuts to fisheries management for the industry. These cuts would be made in the FY2015 budget and have not been decided. However, the cuts would need to have a high portion of their costs allocated to the commercial sector.

Examples of potential budget cuts include, but are not limited to:

- Public oyster fishery program reduction. Drastic reduction in program will result in an inability to manage commercial oyster fishery – the commercial oyster fishery would be

closed. There are approximately 250 active commercial oystermen who harvest about 150,000 bushels of oysters that have a dockside value of \$4.5 million.

- Eliminate the commercial harvest reporting program. Commercial fishermen and charter boat captains would be required to provide their harvest data to the Department in accordance with the conditions (i.e. electronic format, QA/QC, delivery timeframe) set forth by the Department. Fishermen would need to make a financial investment with an independent contractor to fulfill this service.
- Eliminate license renewal by mail. Renewal would only be available online.
- Eliminate surveys on certain finfish species. Catch limits for these species will have to be adjusted to be very conservative because the Fisheries Service will lack the ability to monitor the population.

The Commission recommended a programmatic cut to take effect in FY2014. The Commission recommended eliminating the commercial apprenticeship program. The program was established via Natural Resources Article § 4-701.1 in 1994. The program was designed to ensure that the limited number of commercial licenses available was held by watermen that are active. The program requires a certain number of hours working on the water with another tidal fish license, a boater's safety course, and a DNR course before a license can be issued from the waitlist. A separate law also required that an individual work on the water for 2 years as a mate or with another license type in order to qualify for a transfer of a license. That law was repealed last year by request of the watermen in House Bill 1372. In light of this change and that limited entry is no longer limiting most authorization categories, the Commission is in favor of removing the program. New commercial licenses will be issued based on a simple waitlist. Removing the program will reduce costs and facilitate more license sales under the existing caps.

The license fee changes recommended by the Commission are presented in Appendix C. The highlighted rows are new fees. The license structure changes are outlined below:

1. Create a harvesters registration for all individuals that harvest fish resources from the waters of the State for commercial purposes. This is a new registration. The harvesters registration will authorize an individual as a commercial fishing business, and the current license/authorization system will remain in place. Each authorization will be under the "umbrella" of the harvester's registration. While authorizations will still be transferable, a harvester's registration will not be transferrable. Each harvester must have their own registration that shall be renewed annually. There is no limit on the number of harvester's registrations; however, the caps will remain on the commercial authorizations. The TFAC recommendation for the harvester's license fee is \$205.
2. Establish a dealer marketing surcharge at a higher rate than the harvester's marketing surcharge. A dealer marketing surcharge was suggested at \$50.
3. Natural Resources Article §4-702 exempts seafood retail establishments, restaurants, and business that sell to the ultimate consumer from having to purchase a dealers license. Other than with oysters, a commercial harvester can currently sell seafood harvested from Maryland tidal waters to whomever he wants. In some cases, these people may then turn around and sell the product legally. These exemptions undermine the dealer reporting system because the data does not represent all seafood sold, and these businesses are receiving the fisheries management benefits without paying the cost. The Commission

considered methods that would allow restaurants to continue to sell without a license, but minimize the exemptions to retailers. The Commission recommends requiring a harvester to sell to a licensed dealer, like oysters. This would allow restaurants and retailers to continue to sell Maryland seafood without a dealer's license if they purchased the seafood from a wholesaler. The wholesaler would be licensed and this will improve the dealer reporting. If a restaurant or retailer wants to purchase from a waterman, then they have to purchase the license. In our research of fisheries on the east coast, we found that Massachusetts, North Carolina, South Carolina, and Florida require a harvester to sell to a licensed dealer. The Commission was concerned that a waterman would no longer have the freedom to sell their harvest to their neighbors or civic organizations. In order to sell his catch to someone that is not a licensed dealer, the harvester would need to possess the dealer's license. The Commission recommends that the dealer's license be offered to watermen at a reduced rate of \$50.

4. The Department currently issues bait harvesters permits for free. These are permits that allow permittees to harvest and sell (commercially) certain species of bait. They do not have a tidal fish license just this bait license. The Commission recommends charging a \$25 fee for these permits.
5. The Department manages and issue permits for horseshoe crabs, black sea bass, and flounder limited entry fisheries for no fee. These permits are in addition to the tidal fish license the harvester has under Natural Resources Article §4-701. The Department also issues harvester permits for yellow perch and snapping turtles at no fee. Participation in these fisheries is not limited; however, permits are necessary for monitoring harvest. The Commission recommends charging a \$25 permit fee for each of these species permits.
6. The law requires that anyone that harvests and sells seafood from the tidal waters of the State shall be licensed under Natural Resources Article §4-701. Fisheries Service has received requests for commercial licenses that are not provided under the law. This was recently the case when a commercial crayfish license was requested. Without the proper license to sell, the individual was unable to begin a commercial fishing business for crayfish. The Commission recommends that the Department have the regulatory authority to establish a commercial license and fee for any species that is not covered by Natural Resources Article §4-701.
7. Natural Resources Article § 4-711 caps the number of pound nets that a license may register with the Department at eight sites. However, the Department does not collect data regarding the number of registered pound net sites that are actively being fished. Without this data, the Department is unable to determine the actual effort put forth by the pound net fishery. The Department has proposed regulations requiring pound net fishermen to notify the Department of when a pound net is set and when it is taken down. In this way, the Department will have real-time information with regards to the number of pound nets actively being fished. The TFAC has recommended charging a \$20 per net fee for declaring a pound net site active. This fee will help cover the costs of administering the declaration, as well as deter a licensee from declaring all registered sites in an effort to cover all bases and undermining the assessment of fishing effort.

The TFAC does not support an increase in commercial license fees to the full cost recovery level of \$2.7 million. In addition, the Commission disagrees with the percentage of blue crab costs assigned to the recreational and commercial fisheries. The percentage assigned to these sectors was based on harvest estimates from the sectors, but TFAC believes the recreational number is too low.

Sport Fisheries Advisory Commission Recommendations

The SFAC stated that the goal is to have the commercial sector at 100% cost recovery. There was concern by some Commissioners that the commercial sector is a business and should not be subsidized by State government through the use of general funds. When the recreational sector proposed a recreational license fee increase in 2007, they requested a 50% match with general funds. Recognizing the similarity with a commercial license fee increase and the difficulty in obtaining \$2.4 million (not including the additional crab survey funds) from the commercial industry, a motion passed recommending a \$1.6 million increase in commercial fishing fees and a general fund match of \$800,000 for a total of 2.4 million.

APPENDIX A.

Summary of Services provided (in part or whole) to the Commercial Fishing Industry within the Fisheries Service Unit:

Director and Deputy Directors

- Directs and manages Fisheries Service. Some specific responsibilities are listed below:
 - Represents MD on ASMFC Management Boards, Policy Board and Executive Committee, Potomac River Fisheries Commission, Chesapeake Bay Program Sustainable Goal Implementation Team
 - Chairs Chesapeake Bay Stock Assessment Committee
 - Provides testimony on legislation affecting Maryland's commercial fisheries

Policy & Planning Division:

- Legislation and regulatory development;
- Fisheries management plans (currently 23 plans) – development, review and modification
- Fisheries habitat and ecosystem monitoring & assessment - management and land use impacts on fisheries resources;
- Fish passage for anadromous species, including participation with the ASMFC Fish Passage Workgroup
- DNR invasive species matrix and habitat teams
- Chesapeake Bay Sustainable Fisheries Goal Implementation Team – serves as coordinator of team

Estuarine and Marine Fisheries Division

Division Manager

- Directs and manages the Estuarine and Marine Fisheries Division. These duties include representing MD on the National Marine Fisheries Service's Mid-Atlantic Fisheries Management Council

Analysis and Assessment Program- Stock assessment analysis and analytical support for major commercial fisheries such as striped bass, menhaden, summer flounder and blue crabs. Striped bass commercial quota analysis.

Chesapeake Finfish- American Eel Project

- Young-of Year Survey: ASMFC mandated survey provides annual index of recruitment to assess population status
- Commercial eel pot survey from two Maryland Chesapeake Bay tributaries. Provides stock assessment data (growth data, sex ratio, mortality rates, etc) and parasite infestation rates.
- Eel pot survey in the Sassafras River. Provides stock assessment data (relative abundance, growth data, sex ratio, mortality rates, etc) and parasite infestation rates.

- Silver eel survey: Only Atlantic coast data on migratory phase American eels. Provides valuable information on age-at-maturity.
- Committee Representation: ASMFC American Eel Technical Committee; ASMFC American Eel Stock Assessment Subcommittee.

Resident Species

- Winter trawl survey: Provides stock assessment data for white perch, yellow perch, catfish species, forage fish and invasive species.
- Commercial fyke net (yellow perch) monitoring: Provides stock assessment data for annual yellow perch assessment and TAC.
- Choptank River fyke net survey: Provides stock assessment and biological data for white perch, yellow perch, catfish species and forage fishes.

Inter-jurisdictional Fisheries

- *Alosa spp.* (American shad, hickory shad and river herring)
 - Conowingo Dam Hook and Line/Tagging Survey: Provides stock assessment data and estimates of abundance for spawning stock populations of American shad in the Susquehanna River. ASMFC mandated.
 - Gill Net Survey: Provides stock assessment data and estimates of abundance for spawning stock populations of river herring in upper Chesapeake Bay. ASMFC mandated.
 - Nanticoke River Fyke/Pound Net survey: Provides stock assessment data and estimates of abundance for American shad, hickory shad and river herring. ASMFC mandated.
 - Juvenile Survey: Provides recruitment data from Chester, Corsica and North East rivers.
 - Committee Representation: ASMFC Shad and River Herring Technical Committee; SRAFRC Technical Committee
- Migratory species
 - Onboard sampling survey: Primarily samples commercial pound nets and provides stock assessment data for Atlantic croaker, weakfish, spot, bluefish, summer flounder and Atlantic menhaden. Also provides Maryland's only limited biological data on black drum, red drum, spotted sea trout and Spanish mackerel. Provides ASMFC required age and length data for weakfish
 - Fish-house sampling: Provides biological samples to fill data gaps in the onboard sampling survey.
 - Committee Representation: ASMFC Atlantic Croaker and Black Drum Technical Committees, ASMFC Spot Plan Review Team; ASMFC Atlantic Croaker Plan Review Team; ASMFC Atlantic Menhaden Plan Development Team.

Blue Crab Program- The following surveys have been conducted to provide information in managing the crab fishery and commercial catch limits.

- Winter dredge survey sampling, data entry and analysis which supports crab management.
- Summer trawl survey which provides key in-season information about crab population dynamics.
- Blue crab commercial effort survey – estimates the number of commercial crab pots deployed in Maryland's portion of Chesapeake Bay for each month of the crabbing

season. Critical information for stock assessment and for estimating annual harvest as a cross checks for reported harvest.

- Blue crab cooperative data collection program. A program where watermen and DNR biologists partner to provide critical data on commercial harvest rates and characteristics of the commercial catch – size, sex and life stage composition. This information is used in stock assessment and is key for estimating annual harvest as a cross check for reported harvest.

Striped Bass Program-

- Spring Spawning Stock Survey (Est. 1984 – Present) Survey using drift gill nets set by watermen on Potomac and Upper Bay. Provides data to ASMFC on abundance of spawning population plus age, length, sex ratio; abundance of age 8 – older spawners; input to Statistical Catch at Age (SCA) model.
- Juvenile Seine Survey (Est. 1954 – Present) Measures relative abundance and distribution of Young of Year (YOY) striped bass; also captures up to 105 other species. Provides data to ASMFC on YOY striped bass to determine future potential of the commercial and recreational striped bass fishery.
- Check Station Commercial Fishery Monitoring (Est. 1993 – Present) Sample harvest at check stations for biological characterization of the harvest from all commercial gear types. Provides data to ASMFC on length / weight / scales for ageing; Length and age distribution; and Catch-at-age.
- Commercial Pound Net Monitoring (Est. 1989 – Present) Sample directly from watermen's pound nets for biological characterization of the harvest and stock. Provides data to ASMFC on length / weight / scales for ageing; Length and age distribution; Catch-at-age; and also samples other species.
- Striped Bass Health Bay wide sampling of striped bass from other surveys for prevalence of lesions, sores, anomalies.
- Representation on the ASMFC striped bass technical committee.

Coastal Fisheries Program- Coastal Bays Fisheries Investigation (Juvenile survey used in the coastal stock assessments of many species including summer flounder, black sea bass, spot, and American eels.

- Offshore Commercial vessel sampling which collects data for stock assessments and monitoring for important commercial fisheries including horseshoe crabs, striped bass, spiny dogfish, etc.
- Review of the in-state commercial spiny dogfish fishery. Industry has requested forming a workgroup to discuss best methods for limiting entry to the spiny dog fishery including an ITQ.
- ASMFC Technical Committees: Horseshoe Crab; Horseshoe Crab Biomedical Harvest Best Practices Workgroup; Horseshoe Crab Adaptive Resource Management; Summer Flounder, Black Sea Bass, Scup; Spiny Dogfish and Coastal Sharks; American Lobster
- Mid-Atlantic Fisheries Management Council (MAFMC) Monitoring Committees: Summer Flounder, Black Sea Bass, Scup and Spiny Dogfish

Data management and commercial reporting

- Collects, records, and maintains all commercial harvest data reported by commercial fishermen through monthly harvest reports.

- Creates accounts and trains watermen for electronic commercial harvest reporting system, and downloads data to be used for management.
- Issues reporting materials to fishermen, provides customer service, and communicates reporting problems when needed.
- Provides commercial fishing data to biologists, statisticians, and managers for use in making management decisions relevant to commercial fisheries.

Commercial harvest permits, quota monitoring, and limited entry

- Manages quotas, tag distribution, and permitting for all permitted commercial species, including striped bass, yellow perch, horseshoe crabs, black sea bass, summer flounder, and snapping turtles.
- Registers and certifies new pound net sites and haul seines.
- Administers all aspects of the commercial fishing apprenticeship program.

Cooperative Management Investigations & Fisheries Health – A joint DNR/NOAA research and management facility which supports all other divisions.

- Alternative commercial fisheries management program evaluation,
- Fisheries economic analyses.
- Monitors pathogens, and finfish & shellfish health.
- MD representative on National Marine Fisheries Services’ Office of Protected Resources Take Reduction Teams including: large whales, sea turtles and large dolphins.
- GIS Support.

Shellfish Division -

- Public oyster and clam fishery management and policy.
- Oyster habitat rehabilitation.
- Shellfish (oysters, clams and scallops) population monitoring and analysis for Chesapeake Bay and Coastal Bays.
- Oyster restoration.
- Staff support of Oyster Advisory Commission and 12 County Oyster Committees, and CBP Sustainable Fisheries Goal Implementation Team’s Oyster Metrics Workgroup.
- Conducts surveys of Public Shellfish Fishery Areas in response to lease applications and pier construction permits.

Hatcheries Division – Responsible for fish and shellfish production, fish restoration and population enhancement, and invasive species research.

Communications & Outreach Division – Responsible for internal and external communications: Website, social media, graphics and publications, public notices and media relations. Supports Tidal Fisheries Advisory Commission.

Fisheries Marketing Division – Marketing and promotion of Maryland’s fisheries industries including commercial, aquaculture, charter boat industries. Outreach to seafood dealers, vendors, restaurants and chefs; Trade-shows, True Blue Program. Representation on Maryland Seafood Advisory Commission.

Fiscal & Management Services Division – Supports Fisheries Service with management of budget, fleet (cars and boats), personnel, inventory and facilities. Also handles all unit grants Management & Federal Aid Coordination; Procurement/Accounting and service contracts/MOUs with outside entities.

Fisheries Dollars Spent in other Units with Services to the Commercial Industry

Fisheries Service only provides a portion of the funding these sectors receive.

Environmental Review- Monitors land use impacts on aquatic habitat, reviews projects and actions requiring State and/or Federal environmental permits.

Licensing- Provides for commercial license renewal, striped bass declaration, and license transfers.

Natural Resources Police- Enforcement of fisheries rules.

Office of the Secretary- This sector is several units: the Secretary's Office, Attorney General, Finance and Administration Service, Human Resources, Information Technology, and Office of Communications. This sector provides policy, legal, and operational support to Fisheries Service.

Boating Services- Sets clam, sanctuary, and float free channel buoys.

Resource Assessment Service- The Maryland Geological Survey conducts studies of habitat, sediment and water sources critical to the support of the State's Fisheries. Mapping bottom habitat in the Chesapeake Bay, Coastal Bays and Atlantic waters of the state using remote sensing technologies combined with collection of samples to provide ground truth.

APPENDIX B.

Example of License Fees for Additional \$2.7 Million Commercial Revenue

COMMERCIAL LICENSE	SOLD in 2011- 2012 Season	2011-2012 Fee	Proposed 2013-2014 Fee	Est. 2014 Additional Revenue
Unlimited Tidal Fish	2047	\$ 300	\$ 850	\$ 1,125,850
Conch, Turtles and Lobster	8	\$ 50	\$ 100	\$ 400
Finfish Harvester	230	\$ 100	\$ 250	\$ 34,500
Fishing Guide - Non-Resident	35	\$ 100	\$ 150	\$ 1,750
Fishing Guide – Resident	371	\$ 50	\$ 125	\$ 27,825
Hook and Line	223	\$ 37.50	\$ 100	\$ 13,938
Master Guide	13	\$50 per vessel	\$ 100	\$ 650
Tidal Fish Dealer	219	\$ 150	\$ 250	\$ 21,900
Tidal Fish Dealer For TFL Holder	est. 100		\$ 75	\$ 7,500
Seafood Landing	19	\$ 150	\$ 250	\$ 1,900
Nonresident Surcharge	52; about 20 pay base	\$350 base- depends on State of residency	\$ 450	\$ 2,000
Late Renewal	392	\$ 50	\$ 75	\$ 9,800
Replacement License	234	\$ 5	\$ 5	\$ -
Dealer Marketing Surcharge	219		\$ 50	\$ 10,950
Seafood Marketing Surcharge	5668	\$ 10	\$ 50	\$ 226,720
Horseshoe Crab Permit	10	\$ -	\$ 50	\$ 500
Black Sea Bass Permit	14	\$ -	\$ 50	\$ 700
Yellow Perch Permit	37 got tags	\$ -	\$ 30	\$ 2,040
Snapping Turtle Permit	79	\$ -	\$ 50	\$ 3,950
Flounder Permit	7	\$ -	\$ 50	\$ 350
Species other than listed			Regulatory Authority	
Pound Net Registration	est. 250		\$25 per net	\$ 6,250
Crab Harvester -- > 300 pots	234	\$ 150	\$ 300	\$ 35,100
Crab Harvester -- > 600 pots	219	\$20 per crew member/ 300 pots	\$ 250	\$ 50,370
Crab Harvester -- > 900 pots	393	\$20 per crew member/ 300 pots	\$ 350	\$ 121,830
Limited Crab Catcher	2438	\$ 50	\$ 225	\$ 426,650
Limited Crab Catcher - Male Only	448	\$ 50	\$ 200	\$ 67,200
Oyster Dredge Boat	2	\$ 250	\$ 300	\$ 100
Oyster Harvester	544	\$ 50	\$ 150	\$ 54,400
Oyster Harvesting Surcharge	589	\$ 300	\$ 300	\$ -
Clam Harvester	6	\$ 100	\$ 150	\$ 300
Striped Bass Any License Type	1240		\$ 500	\$ 481,600
<i>Estimated Increase</i>				\$ 2,737,022.50

APPENDIX C.

TFAC Fee Schedule Recommendation

COMMERCIAL LICENSE	SOLD in 2011- 2012 Season	2011-2012 Fee	Proposed 2013-2014 Fee	Est. 2014 Additional Revenue
Harvester's License			\$ 205.00	\$ 1,192,690.00
Unlimited Tidal Fish	2047	\$ 300.00	\$ 300.00	\$ -
Conch, Turtles and Lobster	8	\$ 50.00	\$ 100.00	\$ 400.00
Finfish Harvester	230	\$ 100.00	\$ 100.00	\$ -
Fishing Guide - Non-Resident	35	\$ 100.00	\$ 100.00	\$ -
Fishing Guide – Resident	371	\$ 50.00	\$ 100.00	\$ 18,550.00
Hook and Line	223	\$ 37.50	\$ 100.00	\$ 13,937.50
Master Guide	13	\$50 per vessel	\$ 100.00	\$ 650.00
Tidal Fish Dealer	219	\$ 150.00	\$ 250.00	\$ 21,900.00
Tidal Fish Dealer For TFL Holder	?		\$ 50.00	
Seafood Landing	19	\$ 150.00	\$ 350.00	\$ 3,800.00
Nonresident Surcharge	52;20 pay base	\$350 base- depends on State of residency	\$ 450.00	\$ 2,000.00
Late Renewal	392	\$ 50.00	\$ 50.00	\$ -
Replacement License	234	\$ 5.00	\$ 5.00	\$ -
Dealer Marketing Surcharge	219		\$ 50.00	\$ 8,760.00
Seafood Marketing Surcharge	5668	\$ 10.00	\$ 20.00	\$ 56,680.00
Horseshoe Crab Permit	10	\$ -	\$ 25.00	\$ 250.00
Black Sea Bass Permit	14	\$ -	\$ 25.00	\$ 350.00
Yellow Perch Permit	37 got tags	\$ -	\$ 25.00	\$ 1,700.00
Snapping Turtle Permit	79	\$ -	\$ 25.00	\$ 1,975.00
Flounder Permit	7	\$ -	\$ 25.00	\$ 175.00
Species other than listed			Regulatory Authority	
Pound Net Registration	est. 250		\$20 per net	\$ 5,000.00
Bait Harvester	13		\$ 25.00	\$ 325.00
Crab Harvester -- > 300 pots	234	\$ 150.00	\$ 150.00	\$ -
Crab Harvester -- > 600 pots	219	\$20 crew/ 300 pots	\$ 100.00	\$ 17,520.00
Crab Harvester -- > 900 pots	393	\$20 crew/ 300 pots	\$ 150.00	\$ 43,230.00
Limited Crab Catcher	2438	\$ 50.00	\$ 100.00	\$ 121,900.00
Limited Crab Catcher - Male Only	448	\$ 50.00	\$ 100.00	\$ 22,400.00
Oyster Dredge Boat	2	\$ 250.00	\$ 250.00	\$ -
Oyster Harvester	544	\$ 50.00	\$ 100.00	\$ 27,200.00
Oyster Harvesting Surcharge	589	\$ 300.00	\$ 300.00	\$ -
Clam Harvester	6	\$ 100.00	\$ 100.00	\$ -
Striped Bass W/Tfl	1096	\$ 100.00	\$ 150.00	\$ 54,800.00
Striped Bass W/Fin or HLI	144	\$ 200.00	\$ 200.00	\$ -
Estimated Increase				\$ 1,616,192.50

There were 5,818 harvesters in the 2011-2012 season including fishing guides, but not seafood landing permittees or dealers.