NOAA, Society, and the Economy:

An Assessment of NOAA’S Social Science Capability and Needs

July 18, 2013
Silver Spring, MD

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APPENDIX

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NOAA Fisheries Service
Social Science Mandates and Drivers

Legal Mandates

In 2011, the Department of Commerce issued 327 Final Rules (Rules). Notably, NOAA Fisheries accounted for 282 (86%) of these Rules, with other DOC sub-agencies (Bureau of Industry & Security, 32 Rules; Patent Office, 8 Rules; International Trade Administration, 3 Rules; Bureau of Economic Analysis, 2 Rules) comprising the remainder. According to the document, key drivers for NOAA Fisheries Economics & Human Dimensions Program (Program) are those Executive and legislative mandates governing the economic and socio-cultural analyses required for rulemakings including:

- **Magnuson-Stevens Fishery Conservation & Management Act (MSA, 2007)** – requires extensive economic and social data collections and assessments be conducted (additional details below);
- **Executive Order 12866:** conducting cost-benefits analyses of each management option proposed under every regulatory action;
- **Regulatory Flexibility Act:** assessing the economic impact of the Proposed and Final Rule on small entities and identifying steps the Agency has taken to minimize impacts on these entities;
- **National Environmental Policy Act:** assessing direct and cumulative economic and social impacts of regulatory options;
- **Executive Order 12898:** Agencies must make Environmental Justice part of its mission by identifying and addressing regulations that disproportionately impact minority or low income populations;
- **Endangered Species Act:** requires economic assessment of critical habitat designations.

The MSA places extensive economic and social data collection and assessment requirements on NOAA Fisheries. A key MSA driver is National Standard 8, which requires NMFS to take into account the importance of fishery resources to fishing communities by utilizing economic and social data to both provide for the sustained participation of fishing communities and to minimize to the extent practicable adverse economic impacts on these communities. In addition, for each of the 47 federal fishery management plans (FMPs) and associated amendments, NMFS must assess, specify, and analyze the likely cumulative economic, and social effects of the conservation and management measures on, and possible mitigation measures for, participants in the fisheries and fishing communities; participants in the fisheries conducted in adjacent areas; and the safety of human life at sea. Further, NMFS must also collect economic data on commercial harvest fleets, processors and for-hire operations; conduct economic impact assessments on recreational anglers, harvest and for-hire operations; and assess the economic impacts of rebuilding plans on fishery participants.

Implementation of limited access privilege programs, now commonly referred to as catch share programs, also have substantial socioeconomic requirements. For example, participation criteria must consider the cultural and social framework relevant to the fishery; economic barriers to access to fishery; and the social and economic impacts on harvesters, captains, crew, processors, and other firms substantially dependent upon the fishery in the region or sub-region. More generally, NMFS must monitor and assess that limited access privilege programs do not result in excessive market share, are mindful of potential harmful effects on fishing communities, and ensure fair and equitable initial allocations of harvest privileges.

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3 Only the Department of Homeland Security (1,233 Rules), Department of Transportation (563 Rules), and the Environmental Protection Agency (457 Rules) issued more Rules than NOAA Fisheries or DOC.
The Endangered Species Act places additional requirements on the federal trust agencies. Marine protected species do not only interact with fisheries but with other human uses, as well. Some of these interactions are positive (e.g., whale watching) while others are negative (e.g., ship strikes on whales, pinnipeds ‘occupying’ private property such as pleasure boats and docks). The economic analyses underpinning regulations to protect and rebuild these stocks must take into account the full suite of benefits (use and non-use) as well as the potential costs to private businesses and households, which results in a very different suite of data requirements and analyses. Similarly, the effects of habitat restoration activities extend well beyond fisheries. For instance, salmon habitat restoration activities can affect activities such as farming, mining, non-fishing recreation, hydropower, and municipal water use. The economic analyses underpinning salmon restoration decisions must often address multiple user groups and almost always require coordination with multiple agencies.

Taken in their entirety, the high number of regulatory actions coupled with economic and socio-cultural data collection program design and management duties, modeling activities, and decision support tool development responsibilities results in a heavy workload for the NMFS economists and social scientists.

Strategic Documents

NOAA Fisheries need for an economic and social sciences capability is strongly reflected in a number of key Agency documents. In particular, the Next Generation Strategic Plan (NGSP) and the Annual Guidance Memorandum (AGM), which establishes the priorities for implementing the NGSP, clearly identify the need for a strong economic and social sciences capability to inform resource management decisions. The AGM, for example, provides clear links between the NMFS’ stewardship mission to improved economic opportunities, “NOAA will sustain efforts to end overfishing and rebuild and maintain fish stocks at sustainable levels to optimize fishing opportunities, jobs, and ecosystem services.” Accordingly, the AGM identifies NOAA Fisheries’ top deliverable as “Complete implementation of annual catch limits and continue to assess economic and community impacts of these new management regimes.” In the out years, FY14-FY18, NMFS is directed to “Incorporate socio-economic information into EBM to provide LMR managers with information on the impacts, trade-offs, and distributional effects of management actions for the sustainability of marine resources and the coastal communities that depend on them.” In addition, NOAA Fisheries leadership is relying upon its Economics & Human Dimensions Program to implement new comprehensive performance measures to evaluate the success of catch share programs, a major initiative for the Program that was initiated in FY11.

FY11 Snapshot of NMFS Social Science Capability

In-house capability & its Geographic Distribution

In addition to designing and managing over two dozen economic and socio-cultural surveys and data collection programs each year and conducting assessments in support of almost 300 Rules, NMFS economists and social scientists conduct world class research in support of living marine resource management. On average, staff publish roughly 1.5 peer reviewed scholarly journal articles each year in leading resource economics, fisheries, ecology, human dimensions and general science journals. These articles demonstrate the depth of the NMFS Economics and Human Dimensions Program, with journal articles covering such diverse research topics as catch share program analyses and evaluation; marine spatial planning / fishing ground closures; recreational fishing valuation; adaptive management; effects
of climate change on fisheries; protected species valuation and valuation of actions to improve protection for threatened and endangered species; evaluation of habitat restoration strategies; regional economic impact analysis, seafood markets and trade; ecolabeling; aquaculture economics; integrated ecosystem modeling; disaster assessments; and ethnographic studies and socio-cultural research. Further, the journal publication process provides transparency and external peer review to the Agency’s economic and socio-cultural research, ensuring that the “best available science” required under MSA for fisheries management is, indeed, the best science available anywhere.

NMFS has taken a phased and distributed growth approach to building its Economics & Human Dimensions Program. Since NMFS began to ramp up its social science capability in 2001, the number of positions in the Headquarters Offices have increased from eight FTEs in 2000 to 13 FTEs but filled positions have returned to 2000 levels at eight FTEs (see Table 5). In contrast, the number of economists and social scientists in NMFS’ regional offices has more than doubled (increasing from 29 FTEs in 2000 to 64 FTEs onboard and eight vacancies). In FY11, NMFS had 86 economist and social scientist FTE positions, including 14 vacant positions. Due to the decrease in funding for this program in FY12, those positions will remain vacant indefinitely.

Internal partnerships are also critical to running a cost-effective but high impact economic research and data collection program. Economic data collection costs are held down by adding economic questions to logbook programs, observer programs, permit programs and the Marine Recreational Information Program angler intercept survey. Integrated, interdisciplinary research conducted by the program relies upon other NMFS scientists and managers, especially those in stock assessment, protected resources, and habitat. The program also directly supports the NMFS National Environmental Policy Act Program Office and the Aquaculture Office. NMFS also partners with OAR Sea Grant on the NMFS-Sea Grant Marine Resource Economics Fellowships, workshops (e.g., upcoming National Community Supported Fisheries Workshop) and research (recent examples include oral histories in fishing communities at risk to sea level rise as well as industry research, e.g., for-hire economic data collection and assessment, a seafood dealer survey, and seafood market research.

**Table 5: In-house NMFS capability & its Geographic Distribution**

<table>
<thead>
<tr>
<th></th>
<th>HQ</th>
<th>NEC</th>
<th>SEC</th>
<th>AFSC</th>
<th>NWC</th>
<th>SWC</th>
<th>PIC</th>
<th>SERO</th>
<th>AKR</th>
<th>NWR</th>
<th>SWR</th>
<th>PIRO</th>
<th>Sub-Total</th>
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</thead>
<tbody>
<tr>
<td><strong>STAFF (84 positions; 72 FTEs)</strong></td>
<td></td>
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<td></td>
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<tr>
<td>Economists</td>
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<td>Vacancy</td>
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<tr>
<td>Social Scientists</td>
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<tr>
<td><strong>Total Positions</strong></td>
<td>13</td>
<td>15</td>
<td>9</td>
<td>10</td>
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<td>7</td>
<td>7</td>
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<td>1</td>
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<td>1</td>
<td>86</td>
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<tr>
<td><strong>Staff On-board</strong></td>
<td>8</td>
<td>13</td>
<td>7</td>
<td>10</td>
<td>9</td>
<td>8</td>
<td>5</td>
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<td><strong>TERM FTEs</strong></td>
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<td>Economists</td>
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</tr>
</tbody>
</table>

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4 HQ: Headquarters, NEC: Northeast Fisheries Science Center, SEC: Southeast Fisheries Science Center, AFSC: Alaska Fisheries Science Center, NWC: Northwest Fisheries Science Center, SWC: Southwest Fisheries Science Center, PIC: Pacific Islands Fisheries Science Center, SERO: Southeast Regional Office, AKR: Alaska Regional Office, NWR: Northwest Regional Office, SWR: Southwest Regional Office, PIRO: Pacific Islands Regional Office

5 In FY11, Headquarters (HQ) economists and social scientists worked for the Office of Science & Technology, the Office of Sustainable Fisheries, the Office of Habitat Conservation and the Office of Protected Resources.
External Capability. The NMFS Economics & Human Dimensions Program primarily contracts for data collection, economic and socio-cultural research, IT support services for data management and data access tools, GIS support, and academic services (see Table 6). Some of these services are also conducted under grants or cooperative agreements with the Marine Fishing Commissions, to which NMFS can issue sole source grants, or through Sea Grant. Headquarters and field offices both award contracts and grants, with Headquarters providing additional contract support to the field offices through an IDIQ contract that is centrally managed by the Office of Science & Technology.

In FY11, the majority of NMFS economic and social science funds were obligated under contracts, with the balance (approximately 35%) obligated under grants (see Table 7). The majority of the grants were to Marine Fisheries Commissions, regional bodies that include state and federal fisheries partners.

Table 6: National Marine Fisheries Service FY11 Contracts & Grants

<table>
<thead>
<tr>
<th>NOAA Fisheries Economics &amp; Human Dimensions Program Contracts &amp; Grants</th>
<th>Funding ($1,000s of dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grants</td>
<td>$2,415</td>
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<tr>
<td>Contracts</td>
<td>$4,265</td>
</tr>
<tr>
<td>Total</td>
<td>$6,680</td>
</tr>
</tbody>
</table>

FY11 contracts and grants issued by the NMFS Economics & Human Dimensions Program by focus area is shown below in Table 8.6

Table 7: National Marine Fisheries Service External Social Science Capability

<table>
<thead>
<tr>
<th>Program Area</th>
<th>FY11 Funding ($1,000s of Dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Fisheries Economic Data &amp; Research</td>
<td>1,710</td>
</tr>
<tr>
<td>---Catch Share Programs</td>
<td>620</td>
</tr>
<tr>
<td>---Marine Spatial Planning (FishSET)</td>
<td>500</td>
</tr>
</tbody>
</table>

6 Note that due to the hiring delays in Workforce Management that occurred broadly across NMFS in FY10 and FY 11, NMFS had considerable “labor lapse” that was directed towards major priorities for the Program including the economic tools being developed recreational fisheries (BLAST) and marine spatial planning (FishSET) and the social indicators and community profiling tool. This funding was not sustainable, i.e., as the programmed hired staff, funding would have declined for these tools. This short burst of funding, however, enabled NMFS to make significant headway on these tools.


| Recreational Fisheries Economic Data & Research (BLAST) | 1,100 |
| National Standard 8: Communities & Social Impact Assessment | 1,200 |
| Protected Species Valuation | 740 |
| Habitat Research | 280 |
| Other: Seafood Markets (includes Aquaculture) | 140 |
| Software Licenses, including Econ Lit (NOAA-wide) | 130 |
| IT support | 260 |
| **Total** | **6,680** |

### Partnerships

The NMFS Economics & Human Dimensions Program regularly partners with the state marine fisheries agencies, generally under the auspices of the regional Marine Fisheries Commissions but also through direct collaborations, particularly for data collection and data sharing. Academic partnerships occur beyond contractual relationships, with research collaborations evolving from serving on Fishery Management Council committees, Marine Fisheries Commission committees as well as through professional organizations and conferences. The co-location of many of the NMFS Science Centers with universities or research centers also facilitates collaborative research.

NMFS economists and social scientists participate on a number of fisheries committees sponsored by NMFS’ federal partners:

- **Fishery Management Councils** – Committees include the Scientific Statistical Committees, which provides scientific review of studies; Plan Development Teams and Fishery Management Action Teams, similar committees that develop fishery management alternatives and assess the effects of these options on stewardship objectives as well as their socioeconomic implications; and socioeconomic committees, which address data and modeling issues.
- **Marine Fishery Commissions** – Committees include socioeconomic committees, recreational fishing committees, and data management committees.

Staff professional service includes serving on editorial boards of several journals including Marine Resource Economics, Coastal Management, and the Australian Journal of Agricultural and Resource Economics and are also regular reviewers for dozens of natural resource, resource economic and socio-cultural journals. In addition, staff are also active in the leadership of international professional organizations including serving leadership roles on the North American Association of Fisheries Economics and the International Institute for Fisheries Economics & Trade; Society for Human Ecology; and ICES. Staff also serves as mentors to doctoral students selected under the NMFS-Sea Grant Marine Resource Economics Fellowship Program, awarded annually to two students, and also routinely serve on thesis committees at local universities.

NMFS also collaborates with academics and other Agencies and NOAA Line Offices on several NMFS-led national efforts. FishSET is a spatial econometric modeling toolbox that provides analysts with the data and modeling tools necessary to rigorously analyze the costs imposed on fishermen from spatial management actions that restrict access to fishing grounds. Over a dozen leading spatial econometricians have contributed their regional knowledge and modeling skills to FishSET. NMFS is also collaborating with academics, other NOAA Line Office and other federal agencies to develop its Social Indicators.
Decisions Support Tool. This project will provide key information on coastal communities socioeconomic status and trends, including community resiliency and vulnerability.

Interagency Social Science

Like the other NOAA line offices, NMFS often conducts and applies social science activities in partnership with other federal agencies. For example, staff participate in or lead a number of interagency working groups, including the National Science and Technology Council's Joint Subcommittee on Ocean Science and Technology (JSOST), the National Climate Assessment, the Inter-Agency Task Force for Development of a National Fish, Plant and Wildlife Climate Adaptation Strategy; and the Klamath River Economic Assessment Team. Other notable collaborations includes work with the Puget Sound Partnership and The Natural Capital Project.

Social Science Needs

The need is plain – NOAA Fisheries cannot meet legal mandates requiring economic and social impact assessments with current resources. The fisheries management workload for the NMFS economists and social scientists is daunting. For example, the range of management options that may be considered for a single amendment affecting the commercial harvest sector may include area closures, seasonal closures, reduced harvest, reduced bycatch allowances, gear restrictions, and capacity reduction. The range of management options virtually ensures that more than one type of economic model must be used. Further, different types of economic analyses are required for each management option. That is, for each management option, NMFS must assess the cost and benefits to the regulated entities, the direct and cumulative economic and social impacts, consider the impacts on the “affected human environment” (e.g., shoreside processors, wholesalers, marinas, bait and tackle shops, marine suppliers, marine repair and dockyards, etc.), and the financial effects (e.g., profitability and cash flow) on small businesses. A similar suite of analyses must be conducted for Rules affecting recreational fisheries. In addition, and as outlined above, the economic analyses underpinning regulations to protect and rebuild marine protected species and restore habitat must take into account the full suite of benefits (use and non-use) as well as the potential costs to private businesses and households, which results in a very different suite of data requirements and analyses. Finally, mandated economic assessments of catastrophic disasters such as Sandy strain already limited resources.

In sum, with almost 300 Rules implemented in 2011, at least one amendment and sometimes multiple amendments were implemented in almost all of the 47 highly diverse FMPs managed by NMFS. Given the economic and social data collection, modeling and assessment requirements for supporting Rulemaking, it is clear that current staff is stretched too far and cannot keep pace with these demands.

Further, as the Agency shifts towards ecosystem-based management of fisheries, two truths are quite evident: 1) most ecosystem models are not integrated with economic models or even adequately grounded on economic assumptions; and 2) the Agency needs to invest more in economics and socio-cultural data and modeling if it wants to use these models to value ecosystem services and assess the trade-offs from

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7 The diversity of federal fisheries (e.g., single vs. multispecies; shellfish vs. finfish; sedentary stocks vs. highly migratory; small boat vs. industrialized fleets; geographically concentrated vs. geographically expansive, with a high number of active ports; etc.) is an added challenge, often limiting the applicability of a model to a small number of fisheries or even a single fishery.
alternative management decisions, including management of major drivers of ecosystem condition such as energy uses (oil, liquid natural gas, renewable energy) and land use decisions.

**Process, Products and Activities that Require Social Science**

NMFS economic and social science capability is responsible for assessing the economic and social impacts of all management options of every regulatory action proposed in each of the Nation’s federally-managed fisheries. The goal of this capability is to identify management options that maximize benefits to society while still achieving conservation goals, thereby resulting in a resource management strategy that is consistent with both the long-term sustainability of the Nation’s fisheries as well as the fishing communities that depend upon this resource for a livelihood and a way of life.

Underpinning this capability are the economic and socio-cultural data collection programs and surveys that provide the information base for meeting statutory mandates for cost-benefit analysis of regulatory actions, small business impacts, and social impact assessments. To meet these mandates, NMFS must collect economic data from commercial fishermen, processors, for-hire operations and must conduct economic assessments of commercial, for-hire and anglers, and fishing communities. Assessments include (but are not limited to) monitoring the economic performance of catch share fisheries and non-catch share fisheries; evaluating quota allocation strategies; analyzing the cost and benefits as well as distributional effects of rebuilding plans; predicting catch and effort; assessing the short- and long-run economic effects of marine protected areas; and estimating the economic contribution of fishing to the local, state and national economies; and assessing the economic and socio-cultural impacts of regulations on shoreside industry and fishing-dependent communities.

Protected species and habitat are also part of NMFS’ mandate. NMFS has established a rigorous, state-of-the-art non-market valuation program for assessing the public’s value for recovering threatened and endangered marine protected species and protecting or restoring marine habitats. These values can and should be included in NMFS’ cost-benefit analyses, which tend to be more focused on the “cost” implications of conservation measures. These values may also be used to assess the benefits obtained from NOAA’s conservation and recovery efforts, thus providing a useful benchmark for valuing stock rebuilding programs, protected species recovery efforts and habitat restoration and recovery efforts.

**Social Science Gaps based on immediate risks**

In FY12, the NMFS Economics & Social Science Research budget line was cut 30% from $10.7M in FY11 to $7.4M in FY12. This decrease was roughly equivalent to the Program’s increase in FY10. Accordingly, the Program’s budget priorities identified below and the rationale behind them are much the same as those identified in the FY10 President’s Request: 10 FTEs and funding for data collection and the development of social and economic decision support tools. While the funding went away, the need for these resources did not; in particular, the number of Rules issued by NMFS has not declined and the number of catch share programs, a market-based approach to management that requires substantially more economic assessments, increased.

**Decision Support Tools:** NMFS currently has two economic decision support tools available in all NMFS regions – a commercial fisheries economic impact tool and a recreational fisheries economic impact tool, both of which can be used to assess the effect of a fishing regulation on the local and state economy. Increased development of decision support tools will enable the Agency to work “smarter”, i.e., more

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8 NOAA General Counsel has directed NMFS to provide broader societal benefit estimates in its economic analyses of management options.
cost-effectively. The three national-in-scope decision support tools NMFS currently has underway support marine spatial planning or, more specifically, fishing ground closures (FishSET); a recreational fisheries economic decision support tool for evaluating management options (BLAST); and a social indicator / community profiling web-based tool that support social impact assessments. These three tools are described briefly below:

FishSET – this ecosystem modeling tool uniquely includes both data management tools and predictive behavioral models that are needed to rigorously assess the trade-offs from marine spatial management strategies that restrict fishermen’s access to fishing grounds. The model includes predicting the fishermen’s response to fishing ground closures and does so in a risk framework. NMFS is currently piloting FishSET in Alaska; none of the other regions have this capability.

BLAST – NMFS recreational fisheries economic decision support tool is underpinned by an integrated, dynamic bioeconomic model that may be used to analyze the effects of size and possession limits in a recreational fishery as well as the economic benefit streams associated with alternative rebuilding scenarios. BLAST will also provide essential information for making allocation decisions. Importantly, not only will BLAST improve assessment quality, it reduces the time required to run an assessment 20- fold, dramatically reducing labor costs. NMFS is currently piloting BLAST in the Northeast. The model will be reviewed by the New England Fishery Management Councils and Mid-Atlantic Fishery Management Council in September 2012 and is anticipated to be fully operationalized in these regions for selected fisheries by December 2012. No other regions, including the South Atlantic and Gulf of Mexico where recreational fishing is greatest, have a comparable capability.

Social Indicators / Community Profiling Tools – this tool will provide analysts with key demographic and community economic and socio-cultural data necessary to assess the potential social impacts of a regulatory action. Beyond data, the Toolbox will provide metrics for community resiliency, community vulnerability, gentrification, as well as a mapping tool, which will make it easier to identify agglomeration effects, i.e., groups of less resilient or vulnerable communities, which may compound the initial impacts on any individual community. NMFS has provided seed funding to this project for the Atlantic Coast and Gulf of Mexico. Prior to the FY12 funding cut, NMFS anticipated delivering a fully-operational decision support tool for fishery managers in New England, the Mid-Atlantic, South Atlantic and Gulf in FY13. Depending upon FY13 funding decisions, it may be possible to implement the Gulf Toolbox; the other three regions will not be ready until FY14, at the earliest. The other NMFS regions and their associated Fishery Management Councils do not have this capability.

Data: Currently, the Agency is only meeting 55% of its commercial fisheries economic data collection requirements and roughly 30% of its recreational fisheries economic data collection requirements. Closing these gaps is a priority for the Program.

Staff: The FY10 President’s Request included 10 FTEs for this Program. The distribution of these 10 FTEs by region and focus area is provided below:

- 2 FTEs, Southeast Fisheries Science Center (recreational economist, spatial econometrician);
- 2 FTEs, Northeast Fisheries Science Center (recreational economist, spatial econometrician);
- 2 FTEs, Pacific Islands Fisheries Science Center (recreational economist, spatial econometrician);
- 1 FTE, Alaska Fisheries Science Center (social scientist);
- 1 FTE, Northwest Fisheries Science Center (commercial fisheries /catch shares economist);
- 1 FTE, Southwest Fisheries Science Center (bioeconomic modeler);
- 1 FTE, HQ Office of Science & Technology (social scientist)
Recreational Economists: One recreational economist is needed in the Southeast because currently there is only one recreational economist at this Center despite the large number of recreational fisheries in this region. Northeast and Pacific Island also each need a recreational economist. Neither Center has a dedicated recreational economist nor staff with expertise in designing stated preference choice experiments, the state of the art survey method for assessing the costs and benefits of proposed management options.

Spatial Econometricians: One spatial econometrician is needed in the Northeast because the previous spatial model was built prior to catch shares and ACLs and different modeling skills are now required. The Southeast and Pacific Islands Centers entirely lack this capability.

Social Scientists – one social scientist (anthropologist or sociologist) is needed in Alaska, which has a significant Native American population as well as a high number of fishing communities with poverty rates and unemployment rates well above the national average. One social scientist is needed in the NMFS HQ Office of Science & Technology to oversee the national social science program and to support the NMFS HQ Office of Sustainable Fisheries and the NMFS HQ NEPA Office, neither which have a social scientist on staff.

Commercial Fisheries / Catch Shares Economist: the Northwest Center requires an economist to support its recently implemented catch shares program in the Pacific trawl fishery. This program was implemented with significant mandatory economic data reporting requirements, which were originally intended to be supported by the position funded originally in FY10 but no longer exists due to the budget cut in FY12.

Bioeconomic Modeler: the Southwest Center intends to implement the recreational fisheries decision support tool and then apply the same approach to a commercial fishery.

Ideal structure of the NMFS Economics & Human Dimensions Program

NMFS’ ideal structure for its economics and social science program was identified in FY07 budget documents as 140 FTEs. As the nascent program grew and began to develop increased tools for meeting management needs, the projected number of FTEs required to fully meet NMFS’ economic and socio-cultural assessment requirement was adjusted downward in FY09 budget documents to 120 FTEs and a budget of $27.2 million (inclusive of FTEs).

Table 8: NMFS Ideal Structure of Social Science Capability

<table>
<thead>
<tr>
<th>Program Area</th>
<th>Average Annual Funding</th>
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<tr>
<td>120 FTEs</td>
<td>$18,000</td>
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<tr>
<td>Commercial Fisheries Economic Data &amp; Research</td>
<td>2,300</td>
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<tr>
<td>---Catch Share Programs</td>
<td>1,200</td>
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<tr>
<td>---Marine Spatial Planning (FishSET)</td>
<td>600</td>
</tr>
<tr>
<td>Recreational Fisheries Economic Data &amp; Research</td>
<td>900</td>
</tr>
<tr>
<td>--Recreational fisheries economic evaluation tool (BLAST)</td>
<td>1,100</td>
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<tr>
<td>National Standard 8: Communities &amp; Social Impact Assessment</td>
<td>1,200</td>
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<tr>
<td>Protected Species Valuation</td>
<td>600</td>
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<tr>
<td>Habitat Research</td>
<td>700</td>
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</table>
Implications in FY 13 and Beyond

The budget was cut 30% in FY12. There were no budget offsets for these cuts. This has precluded the program from backfilling vacancies (20% of the Program’s FTEs). In addition, without additional funding in FY13, NMFS will have to let go an estimated 50-70% of the 23 contractors currently employed by the Economics & Human Dimensions Program. Additional implications for this cut include cutting funding for FishSET, an economic spatial modeling decision support tool that predicts fishers response to management strategies and assesses the cost-benefits of those options in a risk framework, by 60%, delaying the roll out of this tool in the Alaska region one year and two years (2015) in the Gulf of Mexico and will not be expanded to any other region. In addition, all funding for BLAST, the Agency’s new integrated recreational economic model currently being piloted in the Northeast and planned for expansion on the West Coast, Mid Atlantic and Gulf was eliminated. In fact, funding for recreational fisheries economic data collection program will be at a near 20 year low despite the Agency’s priority for improving the science and management of recreational fisheries. Funding for NMFS Social Indicator Toolbox, which was intended to fulfill the Agency’s NEPA Social Impact Assessment requirement, was also cut 50%.

Restoring the funding to FY10 levels would generate major returns to the Agency. The once nascent Economics Program was poised to deliver major decision support tools for both commercial and recreational fisheries. The integrated recreational economics decision support tool is already operational on a pilot basis in the Northeast and is poised for expansion in three other regions, with remaining regions to follow shortly after. This tool will allow NMFS to assess a range of management strategies, including allocation, rebuilding plans, and bag limits, literally at the push of a button. Likewise, FishSET could provide this same operational capability – modeling the cost-benefits from fishing ground closures, the creation of MPAs, or other coastal and marine spatial management strategies driven by the needs of other user groups (energy, aquaculture, etc.) – at the push of a button.

At current funding levels, these capabilities will not be achieved. Further, not only do these cuts place the Agency at risk for increased court challenges from both stakeholders and environmental organizations, at these reduced funding levels, NMFS may actually lose these lawsuits.

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