Title: Science and Data Committee Report for FY2014

Desired outcome: An informational briefing to the Board on the Science and Data Committee's 2014 work plan outcomes and Board concurrence for the Science and Data Committee's proposed priority tasks it will address in 2015. The briefing will include a preliminary FY2015 Board funding request for those tasks and an identification of external funding needs.

Priorities and Outcomes: At the October 2013 Meeting, the Board approved Science and Data Committee priorities for 2014 and the Committee have been implementing these tasks as follows:

1. Revitalize the Science and Data Committee membership to include more expertise in coastal and marine and lake habitats and scientific data management to ensure the Committee can meet the Board's needs.
   a. Status – Committee has been revitalized and is now meeting using GotoMeeting on a monthly basis to assist the Assessment Teams and conduct other business. The current committee roster includes additional marine, lake and FHP representation and is provided in Attachment 1.

2. The Science and Data Committee will examine and review current Assessment activities underway by the Fish Habitat Partnerships, Landscape Conservation Cooperatives (LCCs), and the National Assessment Teams.
   a. Status – This project has been put on hold to provide more time to assist Assessment Teams with key analysis and approach issues. This task will be continued in the FY2015 workplan.

3. Refine mechanisms and document procedures to guide Fish Habitat Partnerships and partners in data management practices to improve data and information exchange that will facilitate collaborative science and data efforts across the National Fish Habitat Partnership. Continue to catalog data products developed by Fish Habitat Partnerships via the NFHP Data System. Refine developed workflow strategies to allow implementation of best practices in data management including data curation and preservation tasks to ensure data access and re-use in the future.
   a. Status - The Science and Data Committee completed the "National Fish Habitat Partnership Data Standard Operating Procedures for Partners" http://ecosystems.usgs.gov/fishhabitat/resources.jsp that provides step-by-step written guidance to Fish Habitat Partnerships and other partners providing data to the NFHP Data

System. By housing the well-documented authoritative datasets in the NFHP Data System, partners and stakeholders will always know where to access the most up-to-date NFHP data for current and future use. Refinement of the data management system will be a continuing task.

4. Continue development of standard effectiveness measures for conservation actions used to address nationwide fish habitat focus areas.
   a. Status - A pilot effort was conducted by a subgroup of the Science and Data Committee to investigate the potential use of existing project effectiveness tools to develop project-scale effectiveness measures for the National Fish Habitat Partnership. The goal of the project was to begin developing standard effectiveness measures for common actions taken in support of fish habitat conservation.

5. The inland assessment will refine and update fisheries, aquatic nuisance and invasive species, dam inventory, land conservation status, and water quality status information as data become available. Improved river fragmentation analyses and national calculation of fragmentation metrics will be completed. Development of lakesheds and lake assessments will begin. Demonstration project areas will be identified and implemented with interested Partnerships. Approaches to improve hydrology and temperature incorporation and to refine the marine-inland linkages between the inland and marine assessments will be evaluated.
   a. Status – Refinement and improvement of the 2010 Assessment continues on schedule following the 2015 National Fish Habitat Assessment Strategy as approved by the Board in July 2012. The assessment will continue to use NHD+V1 for the Lower 48 states and potentially HI 2015 Assessments but will move to the higher resolution NHD+V2 for the 2020 Assessment. This refinement could not be implemented in 2015 as this would require too much effort to process this change for 2015 Assessment. The AK assessment will use a combination of available spatial frameworks to include HUC12 and synthesized watersheds with NHD+ to be available for the 2020 Assessment.

      The 2015 Lower 48 Assessment will use: 7 variables (3 urban land use, impervious surface, 2 agriculture, and road density) summarized at network, local catchment and 90m buffer resolutions, 6 variables (road crossings, fragmentation, mines, toxic release sites, NPDES sites, and USEPA Superfund sites) summarized at the network and local catchment resolutions; and 2 variables (water withdrawal and nutrients) at the network resolution. The number of fish collection locations has been doubled for this assessment. Analyses will be conducted on functional groups of fish and on game fish using step and hockey stick threshold methods for different sizes of rivers. Data attribution should be complete in October with final analyses done in November. Score generation should be

completed in March. Work is also in progress on Index of Change from the 2010 to 2015 National Assessment scores.

The AK assessment will use HUC 12 spatial scales for most of the state except for Southeast AK where local and network watersheds have been developed. The assessment will use 5 urban population, two agricultural, two barrier, 2 point source, 3 infrastructure, 1 landing strips/airports, and 1 mine variable with new information developed for population, dam, and road density. Additional variables have been added for Southeast AK to include forest harvest, logging road density and culverts. Available fish information for the entire state has been acquired and will be used to develop stress and condition analyses depending on data quality. All data attribution will be complete in October. Analyses will be completed by December with score generation in March.

The HI Assessment that is being done in conjunction with the HI FHP will use the available NHD+ spatial framework and updated fish information for all stream reaches. Similar variables to the 2010 Assessment will be used with refinements and updated information for selected variables. Data attribution will be complete in October. Analyses will be completed by December with score generation in March. River scores and their effect on nearshore habitats and potentially estuaries will be evaluated this fall/winter.

The lake assessment component planning is in progress and a strategy for fully integrating this information along with the reservoir assessment will be included in the Assessment Report. It is expected that these assessment products will be issued as a subsequent supplement to the 2015 Assessment because of resource limitations at this time.

6. Refine the existing marine geospatial framework for estuaries in the contiguous United States and complete initial development of a geospatial framework for all estuaries across Alaska. A pilot project, illustrating the proposed new fish stressor methodology and regional assessment approach, will be completed for estuaries in the Gulf of Mexico, including methodological refinements as necessary. Begin data collection and processing to support additional regional estuarine assessments starting in the Pacific Northwest, including datasets on fish/shellfish abundance and diversity, physical habitat, anthropogenic stress, and biological response. Explore methodologies to improve linkages between the inland and marine components of the National Assessment.
   a. Status - Refinement and improvement of the 2010 Assessment continues generally on schedule following the 2015 National Fish Habitat Assessment Strategy as approved by

the Board in July 2012 within limitations imposed by resource limitations. A demonstration project using new greatly improved spatial framework and assessment methodology has been completed for the Gulf Coast that includes a range of new variables and fish and shellfish data. The assessment methodology emulates the inland assessment so results will be similar in approach and interpretation. A full assessment for the Gulf Coast has been initiated. Currently, the West Coast of the Lower 48 states is in progress and all available information will be included in the 2015 Assessment Report. The Atlantic Coast Assessment is in initial stages and is being led by the NALCC and ACFHP. Work has not progressed for either AK or HI marine assessments.

The Great Lakes assessment being led by the University of Michigan (Catherine Riseng) and many other collaborators using funding from the Great Lakes Fishery Trust and the Great Lakes Basin FHP is progressing. A spatial framework that integrates information for the U.S. and Canada is now complete and was a very difficult task. Currently, habitat classification and integration of river inputs is in progress with fisheries information and inland habitat scores attribution to follow. A report on the progress of this assessment will be included in the 2015 National Assessment.

7. Science and Data Committee outreach efforts will: ensure coordination of assessment and data actions among all interested entities including FHPs and LCCs; inform Board and key audiences of the direction and products of the National Fish Habitat Assessment and its integral data system; and seek new resources and partnerships from appropriate entities and groups to increase efficiency and the quality of the National Fish Habitat Assessment.
   a. Status - Completed a demonstration data system mechanism that incorporates locations where monitoring is being conducted in the Pacific Northwest so that the west coast FHPs can increase or facilitate their interactions with existing monitoring programs. The increased information delivered in this Northwest focus area can be used to demonstrate effective leveraging and to potentially gain momentum to mobilize similar information in other areas of the country for the benefit of more FHPs.

8. Develop new science and data products from existing and new Fish Habitat Partnership assessment databases to further support FHP habitat analysis and the Board's 2015 National Fish Habitat Assessment. Key FHP datasets will be identified by the Science and Data Committee and these data along with appropriate analytical tools will be integrated into the Board's Data System for wider inter-FHP habitat assessment efforts.
   a. Status – This project has been put on hold to provide more time to assist Assessment Teams with key analysis and approach issues. This task will be continued in the FY2015 workplan.

9. Continue to develop selected socioeconomic data and analyses to support decision making by the Board and FHPs. This work will focus on continuing and expanding the currently funded work to attribute and incorporate appropriate socioeconomic data into the existing Board Data System.
   a. Status – No progress was made on this task as funding was unavailable to provide needed experience and resources. This task will be included in the FY2015 workplan and resources sought to implement it.

Draft Science and Data Priorities for FY2015:

- The Science and Data Committee will examine and review National Assessment products produced by Marine and Inland Assessment Teams along with activities underway by the Fish Habitat Partnerships and Landscape Conservation Cooperatives (LCCs).
  Resources: $20,000 to support a single Science and Data Committee meeting to focus on the products from the 2015 National Fish Habitat Assessment along with FHPs and LCCs Assessment efforts. This task was not conducted in FY2014 as products were not mature enough to warrant a face-to-face meeting review of products and this will be the case in FY2015.

- Develop coordinated delivery of the 2015 assessment, including adding new online capabilities following Science and Data Committee direction to help partners and stakeholders understand and best use the new National Assessment data and products.
  Resources: $135,000 to support applications developer team, metadata specialist, infrastructure maintenance and support – in-kind from USGS for FY2015.

- Continue to catalogue science data products and assessments completed and underway within each of the established Fish Habitat Partnerships and the national assessment team via the NFHP Data System. Dedicated data management workflow strategies following the NFHP Data Standard Operating Procedures will be implemented to ensure data access, understanding, and re-use currently and in the future.
  Resources: $34,000 to provide dedicated data management support to catalog FHP data – in-kind from USGS for FY2015.

- Continue development of standard effectiveness measures for conservation actions used to address nationwide fish habitat focus areas.
  Resources: Resources needs will be fully assessed in FY2015.

- The inland assessment will refine and update fisheries, aquatic nuisance and invasive species, dam inventory, land conservation status, and water quality status information as data become available. Improved river fragmentation analyses and national calculation of fragmentation metrics will be completed. Development of lakesheds and lake assessments will begin. Demonstration project areas will be identified and implemented with interested Partnerships. Approaches to improve hydrology and temperature incorporation and to refine the marine-inland linkages between the inland and marine assessments will be evaluated.
  Resources: $151,000 to continue core development of the Inland Assessment – USFWS funds.
  Resources Needed: $42, 300 to support data management activities for inland assessment team

- Complete a full assessment of estuaries in the northern Gulf of Mexico, building on the results of the recently concluded demonstration project in the region to develop the new marine assessment methodology. Continue data collection, processing, and initial analysis for West Coast estuaries. Begin data collection and processing to support additional regional estuarine assessments starting in the Pacific Northwest, including datasets on fish/shellfish abundance and diversity, physical habitat, anthropogenic stress, and biological response.

  When resources become available, refine the existing marine geospatial framework for estuaries in the contiguous United States and complete initial development of a geospatial framework for all estuaries across Alaska. Explore methodologies to improve linkages between the inland and marine components of the National Assessment.

  Resources: $180,000 in funding and staff support from NOAA Fisheries is anticipated in FY15 to support ongoing activities. Many portions of the marine assessment effort remain unfunded and the products for 2015 will be incomplete due to resource constraints.

- Science and Data Committee outreach efforts will: ensure coordination of assessment and data actions among all interested entities including FHPs and LCCs; inform Board and key audiences of the direction and products of the National Fish Habitat Assessment and its integral data system; and seek new resources and partnerships from appropriate entities and groups to increase efficiency and the quality of the National Fish Habitat Assessment.
  Resources: $12,000 to support state agency Science and Data Committee Co-Chair travel for six trips @ $2,000 each to include 2 NFHP Board meetings, 2 AFWA meetings and 2 other trips to be determined by opportunities.

Key Areas Without Known Resources for FY2015:

- Continue to develop selected socioeconomic data and analyses to support decision making by the Board and FHPs. This work will focus on continuing and expanding the currently funded work to attribute and incorporate appropriate socioeconomic data into the existing Board Data System.
  Resources: $35,000 to support specialist work to acquire and integrate socioeconomic data into the Board Data System with the development of a limited set of appropriate analytical tools for the proper analysis of these data by FHPs and Board. Fully developing and attributing of detailed socioeconomic data and analyses on the same geospatial scale as habitat assessment to improve conservation planning abilities of the Board and FHPs will require $100,000 in contractual services.

- Develop new science and data products from existing and new Fish Habitat Partnership assessment databases to further support FHP habitat analysis and the Board's 2015 National Fish Habitat Assessment. Key FHP datasets will be identified by the Science and Data Committee and these data along with appropriate analytical tools will be integrated into the Board's Data System for wider inter-FHP habitat assessment efforts.
  Resources: $70,000 to support additional GIS specialist time to integrate FHP datasets and develop associated analytical tools.

- Strengthening the science foundation of the National Fish Habitat Partnership Board's National Assessment by determining the best approaches for incorporating data on connectivity, hydrology and marine fish and shellfish. These were all gaps in the Assessment that were consistently identified by reviewers and FHPs.
  Resources Needed: $400,000 for 2.0 FTEs and workshops to fully develop.

- Refinement of the National Fish Habitat Partnership Board's National Assessment by initiating the filling analytical gaps on connectivity, hydrology and in the marine assessment identified by National Fish Habitat Board (Board) and Fish Habitat Partnerships (FHPs) in the 2010 National Fish Habitat Assessment (Assessment).
  Resources Needed: $150,000 for 2.0 FTEs to fill key gaps in the Marine Assessment to be combined with matching resources from NOAA- Fisheries.

- Completion of the marine assessment for all coastal waters of the U.S.
  Resources Needed: Total resources needed to complete this task need to be fully assessed and determined in FY2015.

- Strengthening the science foundation of the National Fish Habitat Partnership Board's National Assessment by developing standardized effectiveness measurements for FHPs' connectivity projects which will include developing new methods to incorporate fine-scale system process information from FHP projects. This task was requested by the Board.

Resources Needed: $383,500 for 2.0 FTEs to develop standardized connectivity effectiveness measures.

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