Board update by national inland assessment team

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During the last year, the national inland assessment team has been working towards the 2015 assessment of inland habitats by addressing two key areas. First, we have been updating and integrating additional datasets into our database for improved characterization of landscape-scale disturbances, improved resolution of landscape-scale disturbances through additions and modifications of units in our spatial framework, and improved characterization of stream fish assemblages. Second, we have been working to improve the nature of our analytical approach for characterizing stream fish response to landscape factors. The Science and Data Committee have provided input on these areas, and major steps taken towards meeting this objective are listed below.

Recent and upcoming talks related to national inland assessment:

Daniel, W. M., D. M. Infante, J. Ross, K. Herreman, and C. Estes. 2014. Influence of catchment-scale landscape factors on fishes of Southeast Alaska: Determining condition of fluvial fish habitat for the National Fish Habitat Partnership 2015 Assessment. Alaska Chapter of the American Fisheries Society Annual Meeting, October 20-24, 2014, Juneau, Alaska.

Daniel, W. M., D. M. Infante, L. Wang, K. Herreman, A. R. Cooper, D. Wieferich, J. Ross, R. Tingley, and Y. P. Tsang. 2014. 2015 National assessment of fluvial fish habitats: Improving opportunities for conservation and management. 144th Annual Meeting of the American Fisheries Society, August 17-21, 2014, Quebec City, Quebec.

Infante, D. M., W. M. Daniel, K. Herreman, J. Nohner, and W. W. Taylor. Invited. 2014. Enhancing assessments of river condition for improved conservation and management of fluvial fish habitat. 144th Annual Meeting of the American Fisheries Society, August 17-21, 2014, Quebec City, Quebec.

Infante, D. M. Invited. 2014. Characterizing landscape influences on stream fish assemblages: Implications for national assessment of stream habitats. Geospatial Sciences and Natural Resource Management Seminar Series, South Dakota State University, April 21, 2014, Brookings, South Dakota.

Major steps taken for the 2015 NFHP Inland Assessment

- Data improvements for 2015 national inland assessment.
    - Updated National Land Cover Database (NLCD) to 2006 version
    - Updated population (US Census) and roads layers (Tiger 2006se)
    - Added additional disturbance layers
        - USGS Coal and USDOE Uranium mines
        - Dam metrics (National Anthropogenic Barriers Dataset)

        - USGS Sparrow nutrient data*
        - EPA Water withdrawal*
    - Updated and added new fish records
        - Nearly doubled the number of available fish sample sites (39,318 unique sites) from multiple state, federal, university and museum databases.
    - Added new metric important to management (Games fishes). This metric was applied specifically to each state and reflects only that state's recognized game species.*
- Spatial Framework
    - Continuing to use NHDPlusV1
    - Now have four spatial scales of interest
        - Local catchment
        - Local 90m buffer
        - Network catchment
        - Network 90m buffer
- Accounting for variation in the data
    - Accounted for spatial autocorrelation within the site data
    - Grouped streams into two size classes for analysis (Creeks >100Km^2 and Rivers <100Km^2)*
    - Continuing to use analytical steps to remove natural variation from the fish assemblage data, by identifying best available site conditions
- Analytical methods to determine habitat condition
    - We are now using two threshold detection methods: change-point analysis with indicator analysis (TITAN) and piecewise linear regression. We accepted only thresholds that were highly statistically significant ($P \leq 0.01$) for both techniques and overlapped within low amount of error. The combination of the nonparametric and linear threshold analysis along with the strict criteria of significance provided conservative estimates of fish threshold responses to anthropogenic disturbnace.*

*= received input and approval from the NFHP Science and Data Committee