

ENV Report 27 - Definitions, Boundary Delineations, and Measurements of Attributes for the Hydraulic Classification of Aquatic Areas by Nickels.

And *Hydraulic Classification Analysis* (Appendix to Classification Definitions Report) by Thomas Pokrefke.

ABSTRACT

The study includes the development, integration, and application of hydrodynamic, hydrologic, sediment transport, and biological models to assess the impacts on the ecosystem. This modeling system will also aid in the design of required mitigation measures. The impacts include those potentially induced by new CE structures, rehabilitation, Operation and Maintenance practices, etc., that might occur due to the increased navigation traffic over the next 50 years. Both long- and short-term effects are of concern for the habitat in the main channel and channel borders, around islands, in backwater areas, sloughs, erosion of islands and banks, secondary channels, and sedimentation caused by navigation.

The analysis of the hydraulic classification should be considered as one method for linking the various types of backwaters and secondary channels in the UMR study trend pools where significant data exist to similar attributes in nontrend pools or river reaches where much less data are present. There are probably almost infinite ways to establish those linkages, and in fact, the methodology presented in this analysis was developed over several months and numerous reviews of the hydraulic classification and associated maps. What became evident in working through the hydraulic classification was that if one tries to provide linkages using numerous characteristics, a new classification tended to be developed. Therefore in this analysis, the linkage was based on a minimum number of characteristics or measured quantities within the hydraulic classification. Thus, the approach taken was that general characteristics and separation of attributes, such as contiguous backwaters with single inlets and outlets, was sufficient for delineation and linkage to other backwaters.