



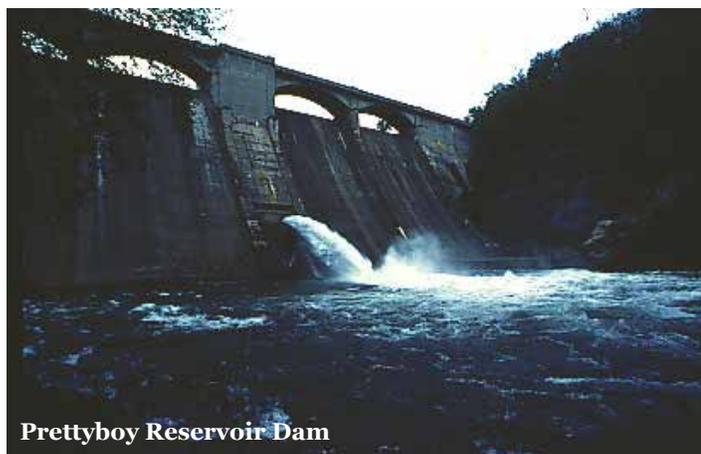
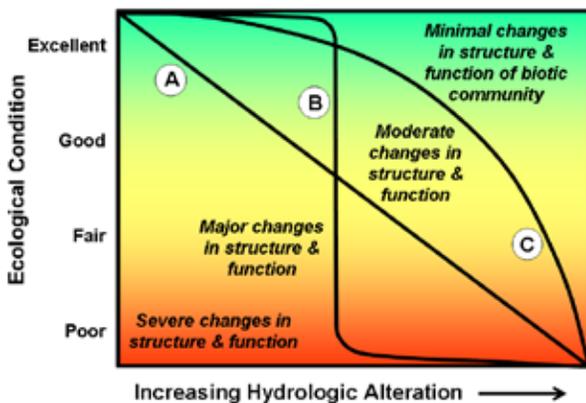
# A Hydro-ecological Assessment for Maryland's Streams

## Overview

The Department of Natural Resources' Monitoring and Non-Tidal Assessment Division (MANTA) is one of several agencies (Maryland Department of the Environment, Maryland

Geological Survey, and U.S. Geological Survey) participating in a study of ground and surface waters in the Fractured-Rock area of Maryland. This study is being conducted because watersheds in the Fractured-Rock area may not provide adequate water for human use without causing adverse impacts to streams. Stream flow shapes many characteristics of aquatic ecosystems. Stream organisms, like fish and benthic macroinvertebrates, have adapted to the range and variability in historic flows, which describes the natural flow regime. The alteration of flow regimes often results in a variety of detrimental ecological responses.

## Flow-ecology Response



Prettyboy Reservoir Dam

## Objectives

Our general objective during the first year of work is to improve the understanding of the impacts of water withdrawals on aquatic ecosystems. This understanding is needed

to develop and support guidelines for environmental flow standards. Several ongoing tasks that support this broad objective include: examining types and magnitude of water withdrawals for potential relationships to biological data, investigate potential effects of drought on stream organisms, and develop management questions that relate to potential water withdrawals. When complete, MANTA will submit a final plan to MDE to conduct a hydroecological assessment of Maryland's streams. This plan will seek to quantify effects of hydrologic alteration on the health of stream ecosystems through data collected by the Maryland Biological Stream Survey (More information about the MBSS here).

Another part of DNR's ongoing work in hydro-ecology is to provide technical review and evaluate the analysis being conducted by the Interstate Commissions on the Potomac River Basin, USGS, and Nature Conservancy to develop environmental flows for the Potomac River basin (More information in this link). We also identify and promote synergies between this river basin study and the statewide study with partner agencies to seek a common goal while reducing redundant tasks.

Check for updates about our progress on this task including our initial findings on the effects of surface and ground water withdrawal on stream life.

Click below for links of interest:

[Ecological Limits of Hydrologic Alteration \(ELOHA\)](#)

[Indicators of Hydrologic Alteration \(IHA\)](#)

[Hydrologic Integrity Assessment Process \(HIP\)](#)

[Flow-ecology relationships](#)