

Dry Run

Use Designation Evaluation

Franklin County
Columbus, Ohio

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Prepared by

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Summary

- The existing Warmwater Habitat aquatic life use designation that applies to Dry Run should be retained.
- Physical stream conditions were reflective of good quality habitat.
- The biological community in Dry Run was impaired due to poor chemical water quality. Fish community results were in the poor range.

Status of Aquatic Life Uses

Dry Run is a small stream (less than six square miles drainage) which flows through the west side of the City of Columbus. It is a direct tributary of the Scioto River, with the confluence approximately two miles upstream from the Olentangy River. Dry Run was originally designated as a Warmwater Habitat aquatic life use in the 1978 Ohio Water Quality Standards. The techniques used then did not include standardized approaches to the collection of instream biological and physical habitat data. This study represents a first use of this type of biological and physical stream data to evaluate and establish the appropriate aquatic life use designation for Dry Run.

- The existing Warmwater Habitat aquatic life use designation that applies to Dry Run should be retained. The fish community was impaired in Dry Run due to poor chemical water quality; physical habitat conditions were considered adequate for supporting typical warmwater biological communities.

Status of Non-Aquatic Life Uses

- Currently, Dry Run is designated for Primary Contact Recreation, Agricultural and Industrial Water Supplies. Based upon the findings of this investigation for Dry Run, these use designations should be retained.

Physical Habitat for Aquatic Life

Physical habitat was evaluated in Dry Run at four locations. Qualitative Habitat Evaluation Index (QHEI) scores for each site are detailed in Table 1. Various attributes of the available stream habitat were scored based on their overall importance to the establishment of viable, diverse aquatic faunas. The QHEI evaluation includes the type and quality of substrate, amount of instream cover, channel morphology, extent of riparian canopy, pool and riffle development and quality, and stream gradient and are among the metrics used to evaluate the characteristics of a stream segment, not just the characteristics of a single sampling site.

- Stream morphology at each sampling location consisted of good pool and riffle development. Bottom substrates were predominated by gravel, cobble and boulders. Overall physical stream conditions were reflective of good quality habitat, with a predominance of warmwater habitat attributes and the lack of channel modifications.

- The most downstream sampling site (Holton Park) exhibited the highest level of physical stream quality (QHEI = 70.5) among all sites sampled in Dry Run. Riffle substrates were predominated by boulders and cobble, pool depth reached 90 centimeters, and moderate amounts of instream cover were observed.
- QHEI scores ranged between 59.5 and 70.5, with an average value of 66.0. Stream reaches with QHEI scores averaging greater than 60 generally are conducive to the establishment of warmwater faunas and likely have the potential to attain the Warmwater Habitat use.

Fish Community

A total of 335 fish representing 7 species were collected from one location in Dry Run (Holton Park - River Mile 1.4) on October 13, 1995. The sampling zone was 190 meters in length and included riffle and pool areas. The list of fish species collected and their abundance is presented in Table 2. Fish community performance was measured using the Index of Biotic Integrity (IBI). The IBI is an index which incorporates various metrics of health such as species richness, trophic composition, diversity, the presence of pollution tolerant individuals and species, abundance, and the presence of diseased or abnormal individuals.

- Ninety-six (96) percent of the catch was composed of three fish species considered highly tolerant of poor water quality. Of these, creek chub comprised 91 percent of the catch.
- The fish community at RM 1.4 was reflective of degraded water quality conditions, with the results in the poor range. The Index of Biotic Integrity (IBI) score was 22, significantly below Ohio biological water quality criterion (biocriterion) for warmwater habitat streams. Several chemical spills have occurred in Dry Run during the past several years, and are likely contributing to the biological impairment documented instream.

Table 2. List of fish species and relative abundance of fish collected in Dry Run at Holton Park (river mile 1.4).

Species	Number of Fish	Relative Abundance	Percent by Number
White sucker	7	11.05	2.09
Creek chub	304	480.00	90.75
Striped shiner	1	1.58	0.30
Central stoneroller	8	12.63	2.39
Green sunfish	12	18.95	3.58
Bluegill sunfish	1	1.58	0.30
Longear sunfish	2	3.16	0.60
Total	335	528.95	
Number of species		7	
