

3745-1-26 **Cuyahoga river drainage basin.**

- (A) The water bodies listed in table 26-2 of this rule are ordered from downstream to upstream. Tributaries of a water body are indented. The aquatic life habitat, water supply and recreation use designations are defined in rule 3745-1-07 of the Administrative Code. The state resource water use designation is defined in rule 3745-1-05 of the Administrative Code. The most stringent criteria associated with any one of the use designations assigned to a water body will apply to that water body.
- (B) Figure 1 of the appendix to this rule is a generalized map of the Cuyahoga river drainage basin.
- (C) RM, as used in this rule, stands for river mile and refers to the method used by the Ohio environmental protection agency to identify locations along a water body. Mileage is defined as the lineal distance from the downstream terminus (i.e., mouth) and moving in an upstream direction.
- (D) The following symbols are used throughout table 26-2 of this rule:
- * Designated use based on the 1978 water quality standards;
 - + Designated use based on the results of a biological field assessment performed by the Ohio environmental protection agency;
 - o Designated use based on justification other than the results of a biological field assessment performed by the Ohio environmental protection agency; and
 - L An L in the warmwater habitat column signifies that the stream segment is designated limited warmwater habitat.
- (E) The following uses, criteria and conditions shall apply to the Cuyahoga river ship channel.
- (1) The Cuyahoga river ship channel is a unique segment of the Cuyahoga river. It is a federally maintained navigation channel which originates at the Newburgh and South Shore railroad bridge (river mile 5.6) and empties into the Cleveland harbor portion of Lake Erie. The maintenance of the channel is important to commerce and the economic well being of the Cleveland area. The channel averages two hundred seventy feet in width, is maintained at a uniform depth of twenty-three feet and is vertically sheet piled along the vast majority of its length. The physical configuration of the channel results in a ten-day time of travel for a mass of water entering the ship channel at critical low flow conditions.

Modeling projections of water quality in the channel have shown that levels of oxygen demanding materials found in natural waters are sufficient to depress dissolved oxygen below the warmwater habitat criteria. The modeling simulations also indicate that the

existing loads of oxygen demanding materials could maintain the warmwater habitat dissolved oxygen criteria if the river depth was decreased to twelve feet. However, this would preclude the use of the channel for commercial navigation.

The physical habitat of the channel and the prevailing background dissolved oxygen regime are insufficient to support any resemblance of the warmwater habitat aquatic life use designation. A use attainability analysis has been conducted and indicates the extant fauna is substantially degraded and the potential for recovery of the fauna to the level characteristic of other Lake Erie river mouths is precluded by irretrievable human induced conditions. However, the ship channel is used by fish as a migratory route in the spring months. This seasonal and stream flow related use shall be recognized and protected through this rule.

Full body contact recreational uses such as rowing, sculling and jet skiing do occur in the ship channel. The ship channel is also used as an industrial water supply but has no potential to support agricultural or public water supply uses.

- (2) Use designations for the Cuyahoga river ship channel are as follows:
 - (a) Aquatic life;
 - (i) During the months of June through January, and during the remaining months of the year whenever the river flow is less than seven hundred and three cubic feet per second at the United States geological survey gage at Independence (#04208000), the aquatic life use shall be limited resource water - navigation maintenance as defined in rule 3745-1-07 of the Administrative Code.
 - (ii) During the months of February through May whenever the river flow equals or exceeds seven hundred and three cubic feet per second at the United States geological survey gage at Independence (#04208000), the aquatic life use shall be fish passage. The fish passage use is defined as those rivers or other water bodies that have been the subject of a use attainability analysis and have been found to be incapable of supporting and maintaining a balanced, integrated, adaptive community of warmwater organisms but are capable of supporting the passage of warmwater fish during migratory periods.
 - (b) Industrial water supply as defined in rule 3745-1-07 of the Administrative Code; and
 - (c) Primary contact recreation as defined in rule 3745-1-07 of the Administrative Code.

- (3) The criteria and other provisions to protect the designated uses of the ship channel shall be those set forth in rules 3745-1-01 to 3745-1-07 of the Administrative Code with the following exceptions:
- (a) The limited resource water dissolved oxygen criterion shall be 1.5 mg/l minimum. No dissolved oxygen average criteria apply.
 - (b) The fish passage criteria shall be the same as the warmwater habitat criteria in rule 3745-1-07 of the Administrative Code, with the exception that the biological criteria do not apply.
- (4) Pursuant to United States environmental protection agency regulations ("40 CFR Part 130.7"), the director shall utilize the phased total maximum daily load approach as a means of progressing toward attainment of the dissolved oxygen criteria established in paragraph (E)(3) of this rule. The phased total maximum daily load approach is generally recognized by the United States environmental protection agency as an appropriate methodology for achieving a total load reduction compatible with achieving water quality criteria ("Guidance for Water Quality-based Decisions and the TMDL Process, EPA 440/4-91-001"). In this instance the concept must consider the expectation of dissolved oxygen enhancement through means other than additional point and nonpoint source load reductions. Based on the background presented in paragraph (E)(1) of this rule and extensive data collection and analysis, the following total maximum daily load components shall be established for oxygen demanding substances.
- (a) The wasteloads for point sources shall be those presented in table 26-1 of this rule. Loads for permit 3PA00002 may be established after the steps in paragraphs (E)(4)(b), (E)(4)(c) and (E)(4)(d) of this rule are completed.
 - (b) The total maximum daily load shall include a component for expected dissolved oxygen enhancement through such means as, but not limited to, off channel re-aeration, sediment remediation and flow augmentation.
 - (c) An evaluation of the site-specific technical and cost feasibility aspects of implementing off channel re-aeration shall be the first scheduled phase of the Cuyahoga river ship channel total maximum daily load. This evaluation shall be completed no later than two years after the adoption of this rule.
 - (d) Implementation of off channel re-aeration or other dissolved oxygen enhancement measures, and any wasteload allocation for permit 3PA00002 for oxygen demanding substances, shall occur only after these components of the total maximum daily load are incorporated into this rule.

- (5) These standards reflect the desire for restoring and maintaining multiple uses of the ship channel expressed by the Cuyahoga river remedial action plan coordinating committee. All parties, private and public, who contribute to the dissolved oxygen problem may share a responsibility in the study and attainment of these standards. The dissolved oxygen criteria established in paragraph (E)(3) of this rule are intended to be the minimum planning targets for the remedial action planning process to use in evaluating beneficial use restoration. The remedial action planning process should consider innovative means of achieving this target such as off channel re-aeration, sediment remediation and flow augmentation, either alone or in combination with additional point and nonpoint source controls. As with all standards, it will be appropriate to periodically re-assess the dissolved oxygen criteria based upon information collected as part of the feasibility study conducted pursuant to paragraph (E)(4)(c) of this rule or any other studies.
- (6) These standards shall be reviewed, and revised if appropriate, every three years. Pursuant to Section 118 of the act (the "Great Lakes Critical Programs Act of 1990") the director shall continue to develop the Cuyahoga river remedial action plan - stage two report in conjunction with the Cuyahoga river remedial action plan coordinating committee. Studies undertaken as part of the remedial action plan and the feasibility study conducted pursuant to paragraph (E)(4)(c) of this rule shall be important components of the standards review process.

Table 26-1. Cuyahoga river ship channel point source loads of oxygen demanding substances.

Facility - permit number	Outfall	Ammonia		CBOD ₅		D.O.
		average/maximum	average/maximum	average/maximum	average/maximum	
NEORS - 3PF00003	001 ^{a,g}	2.0 mg/l 1324 kg/d	3.0 mg/l 1986 kg/d	10 mg/l 6619 kg/d	15 mg/l 9928 kg/d	5 mg/l
NEORS - 3PF00003	001 ^{b,g}	5.0 mg/l 3309 kg/d	7.5 mg/l 4964 kg/d	16 mg/l 10,590 kg/d	24 mg/l 15,885 kg/d	5 mg/l
NEORS - 3PF00003	001 ^{c,g}	8.0 mg/l 5295 kg/d	12 mg/l 7942 kg/d	16 mg/l 10,590 kg/d	24 mg/l 15,885 kg/d	5 mg/l
NEORS - 3PA00002	all ^d	*	*	*	*	--
Zaclon - 3IE00005	004/601	34 mg/l 36.9 kg/d	55 mg/l 59.7 kg/d	45 mg/l ^e 48.9 kg/d	120 mg/l ^e 130 kg/d	--
LTV - 3ID00003	005/604 ^f	21 kg/d	63 kg/d	--	--	--
LTV - 3ID00003	014/605 ^f	9 kg/d	27 kg/d	--	--	--
LTV - 3ID00003	009/606	158 kg/d	317 kg/d	--	--	--
LTV - 3ID00003	027/621 ^f	18.8 kg/d	56.3 kg/d	--	--	--

^a Applies during the months of May through October.

^b Applies during the months of March, April and November.

^c Applies during the months of December, January and February.

^d Applies to all outfalls to the Cuyahoga river and its tributaries.

* Monitoring program required for the combined sewer overflows.

^e BOD₅ values.

^f A variance to these load limits is allowable unless the pending 301(g) variance request is denied. If the 301(g) variance request is denied, the established implementation schedule will apply.

^g Loads calculated based upon design flow of 175 million gallons per day and are applicable to normal dry weather operation. Load values are not intended to restrict facility operation during wet weather flows when efforts are made to capture and treat combined sewer overflows.

Table 26-2. Use designations for water bodies in the Cuyahoga river drainage basin.

Water Body Segment	Use Designations												Comments	
	Aquatic Life Habitat						Water Supply			Recreation				
	S R W	W W H	E W H	M W H	S S H	C W H	L R W	P W S	A W S	I W S	B W	P C R		S C R
Cuyahoga river - entirety of ship channel (Newburgh and South Shore (N&SS) railroad bridge (RM 5.6) to the mouth, including the old river channel)														See paragraph (E) of this rule.
- Lake Rockwell (Cuyahoga river RM 62.0 to RM 57.97)	+		+					+						PWS intake - Akron
- all other segments		+							+	+			+	
Burk branch (Burke brook) - uncovered segment adjacent to I-77							+		+	+			+	Channel modification
Big creek - within boundaries of Cleveland metro park	*	+							+	+			+	
- all other segments		+							+	+			+	
Ford branch (Big creek RM 4.4)							+		+	+			+	Small drainageway maintenance
West creek (Cuyahoga river RM 11.05)		+							+	+			+	
Mill creek		+							+	+			+	
Unnamed tributary (Cuyahoga river RM 14.33)		+							+	+			+	
Unnamed tributary (Cuyahoga river RM 15.11)		+							+	+			+	
Unnamed tributary (Cuyahoga river RM 16.24)		+							+	+			+	
Sagamore creek (Cuyahoga river RM 18.08) - Dunham rd. (RM 2.3) to the mouth							+		+	+			+	
- all other segments		+							+	+			+	
Tinkers creek - Richmond rd. (RM 8.75) to the mouth	o	+							+	+			+	
- within boundaries of the J. Arthur Herrick nature preserve (RM 29.3 to 28.9)	o	+							+	+			+	

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- all other segments		+							+	+		+	
Wood creek (Tinkers creek RM 2.44)		+							+	+		+	
Deerlick run (Tinkers creek RM 3.7) - RM 0.37 to the mouth	+	+							+	+		+	
- all other segments	+						+		+	+		+	High gradient
Southwest branch (Deerlick run RM 0.40)	+						+		+	+		+	High gradient
South branch (Deerlick run RM 0.46) - Egbert rd. (RM 0.45) to the mouth	+						+		+	+		+	High gradient
- all other segments							+		+	+		+	High gradient
North branch (Deerlick run RM 0.46)	+						+		+	+		+	High gradient
Hukill tributary (North branch RM 0.50)							+		+	+		+	High gradient
Ferro tributary (North branch RM 0.50)							+		+	+		+	High gradient
Bear creek (Tinkers creek RM 6.94)		+							+	+		+	
Hawthorne creek (Tinkers creek RM 7.8)		+							+	+		+	
Beaver Meadow run (Tinkers creek RM 10.6)		+							+	+		+	
Pond brook (Tinkers creek RM 22.5)				+					+	+		+	EOLP ecoregion - channel modification
Unnamed tributary (Tinkers creek RM 25.44)		+							+	+		+	
North branch (unnamed tributary RM 0.18)		+							+	+		+	
Unnamed tributary (Tinkers creek RM 27.72)		+							+	+		+	
Chippewa creek - st. rte. 82 to the mouth	*	+							+	+		+	

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- all other segments		+							+	+		+	
Brandywine creek - Penn Central railroad tracks (RM 2.2) to the mouth	o	+							+	+		+	
- all other segments		+							+	+		+	
Indian creek		+							+	+		+	
Stanford run	o	+							+	+		+	
Slipper run						+			+	+		+	
Boston run	o					+			+	+		+	
Haskell run	o	+							+	+		+	
Ritchie run	o	*							*	*		*	
Salt run	o					+			+	+		+	
Dickerson run - RM 3.1 to the mouth	o	+							+	+		+	
- all other segments		*							*	*		*	
Langes run - RM 2.4 to the mouth	o					+			+	+		+	
- all other segments						+			+	+		+	
Robinson run	o					+			+	+		+	
Furnace run		+							+	+		+	
Yellow creek		+							+	+		+	
North fork		+							+	+		+	

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	S R W	W W H	E W H	M W H	S S H	C W H	L R W	P W S	A W S	I W S	B W	P C R	
Woodward creek - Northampton rd. (RM 3.4) to Bath rd. (RM 2.2) - all other segments	o					+		+	+		+		
Sand run		+						+	+		+		
Mud brook		+						+	+		+		
Unnamed tributary (Mud brook RM 5.48)		+						+	+		+		
Powers brook (Mud brook RM 9.09)		+						+	+		+		
Little Cuyahoga river		+						+	+		+		
Ohio canal (little Cuyahoga river RM 2.0) - Summit lake (RM 2.84) to lock 1 (RM 1.25)				+				+	+		+		EOLP ecoregion - channel modification
- lock 1 to end of enclosed segment (RM 0.47)							+					+	Channel modification
- RM 0.47 to the mouth				+				+	+			+	EOLP ecoregion - channel modification
Camp brook (a.k.a. Chessie tributary) (little Cuyahoga river RM 4.1)		+						+	+			+	
Springfield lake outlet		+						+	+		+		
Wingfoot lake outlet		+						+	+		+		
Union Oil tributary (little Cuyahoga river RM 11.6)		+						+	+		+		
Fish creek - headwaters to Sunrise dr. (RM 1.3)				+				+	+		+		EOLP ecoregion - channel modification
- all other segments		+						+	+		+		
Plum creek		+						+	+		+		
Breakneck creek (Cuyahoga river RM 56.82)		+						+	+		+		

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	S R W	W W H	E W H	M W H	S S H	C W H	L R W	P W S	A W S	I W S	B W	P C R		S C R
Lake Hodgson							o							PWS intake - Ravenna
Wahoo ditch				+				+	+			*		EOLP ecoregion - channel modification
Hommon avenue ditch						+		+	+				+	Small drainageway maintenance
Congress lake outlet (Feeder canal)				+				+	+			+		EOLP ecoregion - channel modification
Potter creek		+						+	+			+		
Eckert ditch (Cuyahoga river RM 59.95)		+						+	+			+		
Unnamed tributary (Eckert ditch RM 0.92)		+						+	+			+		
Unnamed tributary (Cuyahoga river RM 63.82)						+		+	+			+		
Unnamed tributary (Cuyahoga river RM 65.19)		+						+	+			+		
Harper ditch (Cuyahoga river RM 66.33) - headwaters to Beck rd. (RM 0.2)		+						+	+			+		
- Beck rd. to the mouth		+				+		+	+			+		
Unnamed tributary (Harper ditch RM 0.61)		+						+	+			+		
Unnamed tributary (Cuyahoga river RM 69.43)		+						+	+			+		
Black brook (Cuyahoga river RM 76.64))		+						+	+			+		
Sawyer brook (Cuyahoga river RM 79.15)		+						+	+			+		
Bridge creek (Cuyahoga river RM 83.29)		+						+	+			+		
Unnamed tributary (Bridge creek RM 0.52)		+						+	+			+		
Unnamed tributary (Cuyahoga river RM 84.60)						+		+	+			+		

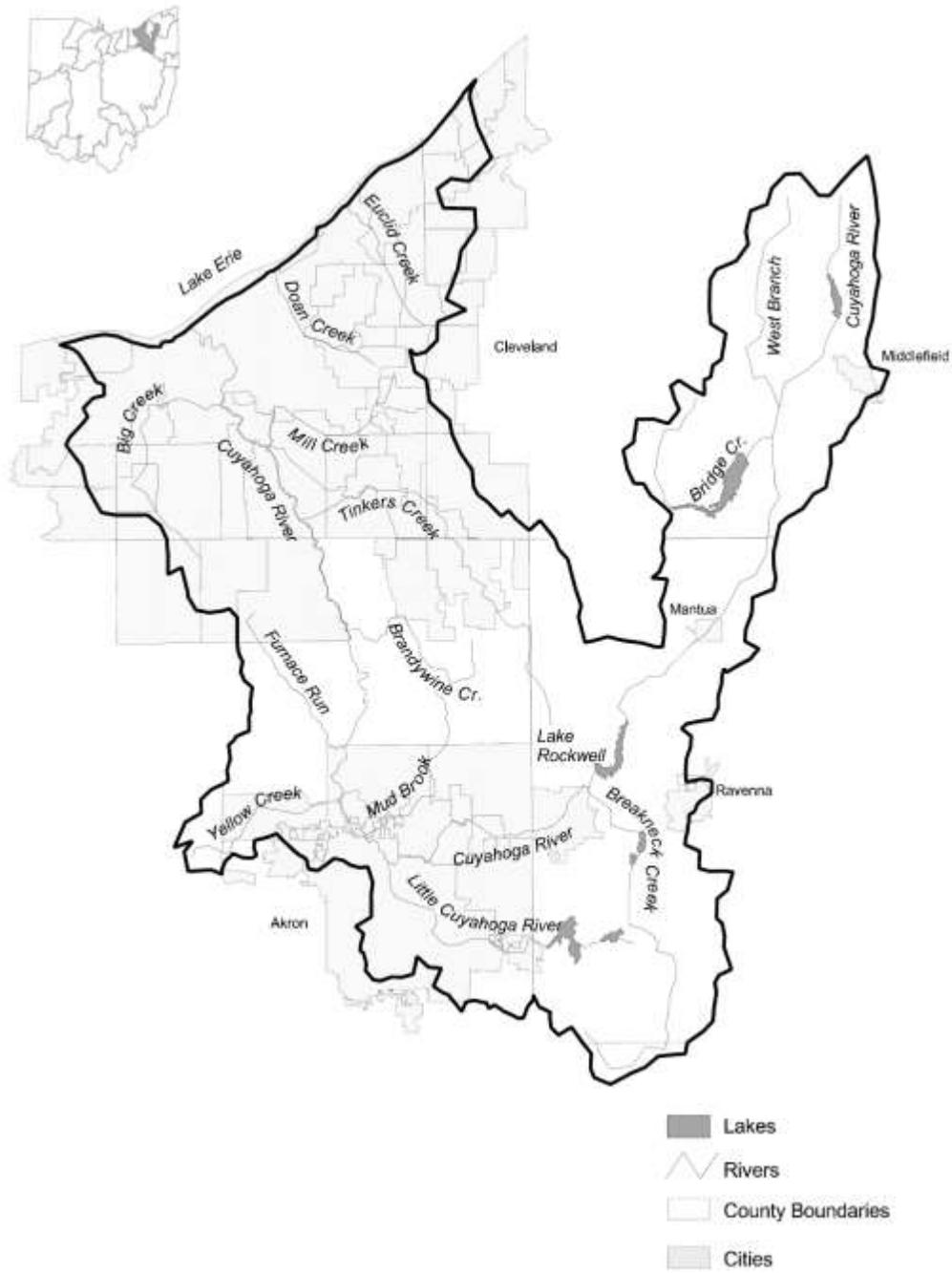
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	Aquatic Life Habitat						Water Supply			Recreation			
	S R W	W W H	E W H	M W H	S S H	C W H	L R W	P W S	A W S	I W S	B W	P C R	
West branch (Cuyahoga river RM 84.90)		+							+	+		+	
Diedrich creek (West branch RM 2.15)		+							+	+		+	
Butternut creek (West branch RM 9.54)		+							+	+		+	
Unnamed tributary (Cuyahoga river RM 88.0)		+							+	+		+	
Johnson Rubber tributary (unnamed tributary RM 2.3)							+		+	+			+
Tare creek (Cuyahoga river RM 88.55)		*							*	*		*	
Unnamed tributary (Cuyahoga river RM 93.65)		+							+	+		+	
Doan brook		+							+	+		+	
Shaker Lakes national environmental education landmark	*	+							+	+		+	
Ninemile creek		*							*	*		*	
Euclid creek - Anderson road (RM 5.6) to U.S. rte. 20 (RM 2.4)	*	+							+	+		+	
- all other segments		+							+	+		+	
East branch (Euclid creek RM 3.2)		+							+	+		+	
Unnamed tributary (East branch RM 1.55)							+		+	+			+

SRW = state resource water; WWH = warmwater habitat; EWH = exceptional warmwater habitat; MWH = modified warmwater habitat; SSH = seasonal salmonid habitat; CWH = coldwater habitat; LRW = limited resource water; PWS = public water supply; AWS = agricultural water supply; IWS = industrial water supply; BW = bathing water; PCR = primary contact recreation; SCR = secondary contact recreation.

Appendix

Figure 1. Cuyahoga river drainage basin.



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