

Table 2-1 Summary of Changes to Surface Water Assessment Categories – 2006 to 2008

Note: These figures do not include waters listed under Category 4A for atmospheric deposition of mercury

Rivers and Streams						
31,224= Total Miles Assessed in 2006						
31,218=Total Miles Assessed in 2008						
	2006 Miles in Category*	% of Total 2006 Assessed Miles	2008 Miles in Category**	% of Total 2006 Assessed Miles	% Change '06-'08	Change in Miles '06 - '08
Category 1	4,347	14	4,347	14	0	0
Category 2	25,283	81	25,288	81	0	+5
Category 3	380	1	379	1	0	-1
Category 4	209	<1	216	<1	0	+7
Category 5	1005	3	988	3	0	-17
Lakes						
986,952 = Total Acres Assessed in 2006						
986,952 = Total Acres Assessed in 2008						
	2006 Acres in Category	% of Total 2006 Assessed Acres	2008 Acres in Category	% of Total 2006 Assessed Acres	% Change '06-'04	Change in Acres '08-'06
Category 1	295,443	29.9	295,443	29.9	0	0
Category 2 *	596,087	60.4	596,474	60.5		387
Category 3	18,164	1.8	17,777	1.8		-387
Category 4	72,288	7.3	73,600	7.5		1,312
Category 5	4,970	0.5	3,658	0.4		-1,312
Marine Waters (Acres)						
1,821,433.6 = Total Acres Assessed in 2006						
1,821,433.6 = Total Acres Assessed in 2008						
	2006 Acres in Category	% of Total 2006 Assessed Acres	2008 Acres in Category	% of Total 2008 Assessed Acres	% Change '06 - '08	Change in Acres '06 - '08
Category 1	0.00	0.00	0.00	0.00	0.00	0.00
Category 2	1,722,079.30	94.55	1,718,509.09	94.35	-0.20	-3,570.21
Category 3	3,986.00	0.22	2,835.00	0.16	-0.06	-1,151.00
Category 4	697.00	0.04	0.00	0.00	-0.04	-697.00
Category 5	94,671.30	5.20	100,089.50	5.50	0.30	5,418.20
Marine Waters (Square Miles)						
2,846.0 = Total Square Miles Assessed in 2006						
2,846.0 = Total Square Miles Assessed in 2008						
	2006 Square Miles in Category	% of Total 2006 Assessed Square Miles	2008 Square Miles in Category	% of Total 2008 Assessed Square Miles	% Change '06 - '08	Change in Square Miles '06 - '08
Category 1	0.00	0.00	0.00	0.00	0.00	0.00
Category 2	2,690.75	94.55	2685.17	94.35	-0.20	-5.58
Category 3	6.23	0.22	4.43	0.16	-0.06	-1.80
Category 4	1.09	0.04	0.00	0.00	-0.04	-1.09
Category 5	147.92	5.20	156.39	5.50	0.30	8.47

Comment [O1]: Corrected total acreage; original error due to error in ADB.

*Single-Category Reporting miles as generated by final 2006 cycle ADB
 ** Single-Category Reporting miles as generated by final 2008 cycle ADB

Since the 2004 Integrated Water Quality Report, waters that are listed in non-attainment, caused solely by bacteria either from Combined Sewer Overflows (CSOs) or other sources, are in Sub-Category 5B. The DEP deems that the CSO Master Plans and associated enforcement controls provide fully adequate mechanisms for control of this cause of bacterial impairment and thus they are a low priority for Total Maximum Daily Load (TMDL) development. All freshwaters in Maine are listed for an impaired Fish Consumption Use caused by mercury from sources beyond the region;

Table 3-2 The 2008 305(b) Report State of Maine Atlas; *Note- large difference in landcover values between 2004 and 2006 are due to use of different data summary methods as explained in footnote #4.*

Population or Natural Resource Category	Value Reported for 2006 ¹	Percent	Value Reported in 2004 ²
State Population (July 1, 2005 US Census Estimate)	1,321,505	100%	1,305,728
Total State Area (square miles)³	35,236.4	100.0%	29,699.2⁴
Total Fields (square miles)³	1,546.5	4.4%	2,297.9⁴
Blueberry Fields	100.9	0.3%	50.7 ⁴
Grassland / Herbaceous	57.9	0.2%	not reported
Pastureland / Hayland	644.8	1.8%	1,768.9 ⁴
Cultivated Crops	742.9	2.1%	405.5 ⁴
Total Forest (square miles)³	24,666.9	70.0%	26,519.8⁴
Recent Clearcut	163.6	0.5%	448.7 ⁴
Regenerating Forest (Post 1995)	720.3	2.0%	3131.7 ⁴
Light Partial Cut (Post 1995)	2,285.1	6.5%	430.0 ⁴
Heavy Partial Cut (Post 1995)	1,199.9	3.4%	577.5 ⁴
Deciduous Forest	4,745.5	13.5%	5,326.9 ⁴
Mixed Forest	8,899.4	25.3%	11,923.6 ⁴
Evergreen Forest	6,653.0	18.9%	4,666.5 ⁴
Total Scrub-Shrub (square miles)³	1,186.4	3.4%	725.4⁴
Total Wetlands (square miles)³	2,376.9	6.7%	not reported
Wetlands	816.1	2.3%	806.3 ⁴
Forested Wetland	1,560.8	4.4%	not reported
Total Open Water Surface Area (square miles)³	4,210.7	11.9%	4,123.0⁴
Total Saltwater Surface Area (square miles)⁴	not reported	n/a	2,273.4⁴
Total Unconsolidated Earth-Material Shorelines (square miles)³	225.3	0.6%	152.0⁴
Total Developed Lands and Paved Ways (square miles)³	972.0	2.8%	404.4⁴
Developed - Open Space	175.1	0.5%	not reported
Developed - Low Intensity	169.1	0.5%	261.2 ⁴
Developed - Med Intensity	95.4	0.3%	134.5 ⁴
Developed - High Intensity	98.5	0.3%	5.7 ⁴
Road / Runway	433.9	1.2%	3.0 ⁴
Total Alpine / Tundra (square miles)³	10.3	0.0%	8.0⁴
Total Bare Ground (square miles)³	41.5	0.1%	17.2⁴
Total Miles of Coastline (including tidal rivers & shorelines of islands)⁵	5261.0	100%	n/c
Total Miles of Border Coast, Lakes & Rivers Shared with CN and NH⁵	338.9	100%	n/c
Maine – Canadian Border (coastal water miles out to the "3 mile" limit)	39.4	12%	n/c
Maine – Canadian Border (lake miles)	33.0	10%	n/c
Maine – Canadian Border (river miles)	206.2	61%	n/c
Maine – Canadian Border (total water miles)⁵	278.6	82%	n/c
<i>Maine – Canadian Border (total land and water miles)</i>	<i>608.7</i>	<i>N/A</i>	<i>n/c</i>
Maine – New Hampshire Border (coastal water miles out to the "3 mile" limit)	17.3	5%	n/c
Maine – New Hampshire Border (lake miles)	17.7	5%	n/c

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Maine – New Hampshire Border (river miles)	25.4	7%	n/c
Maine – New Hampshire Border (total water miles) ⁵	60.3	18%	n/c
Maine – New Hampshire Border (total land and water miles)	188.8	N/A	n/c
Total Miles of Rivers and Streams in Maine ⁵	45,176.8	100%	45,149.0
Miles of perennial streams (subset)	25,643.2	57%	25,617.1
Miles of intermittent [nonperennial] streams (subset)	13,463.0	30%	13,461.3
Miles of rivers (subset)	6,070.6	13%	6,070.6
Miles of Rivers and Streams by Water Class ⁵	Miles	Percent	
<i>Water Class Streams (% of Stream Miles) Rivers (% of River Miles)</i>	<i>Class Totals</i>	<i>n/a</i>	<i>n/a ⁷</i>
Class AA 1,664 4.26% 1,274 20.99%	2,938.0	6%	n/a ⁷
Class A 18,216 46.58% 2,540 41.85%	20,756.0	44%	n/a ⁷
Class B 19,093 48.82% 1,782 29.36%	20,875.0	48%	n/a ⁷
Class C 134 0.34% 474 7.81%	608.0	2%	n/a ⁷
Totals 39,486 100% 6,070 100%	45,177.0	100%	n/a ⁷
Number of Lake, Pond and Reservoir Features in DEP's GIS Datalayer ⁵	33,119	100%	33
Number of Above Waterbodies assigned MIDAS ID Number (subset in ADB) ⁵	5,780	18%	5
Number of Significant Publicly Owned Waterbodies (subset) ⁵	2,314	7%	n/c
Total Areas of the Waterbodies Described Below:	Square Miles	Acres	
Lake, Pond & Reservoir Features the Maine DEP's GIS Datalayer ⁵	1,563.3	1,000,527.2	n/c
Lakes, Ponds & Reservoirs with an assigned MIDAS Number (subset; acreage from GIS) ⁵ Note: database totals 1,542.1 sq.mi. & 986,952 acres	1,518.6	971,885.6.0	
Significant Publicly Owned Lakes, Ponds & Reservoirs (subset) ⁵	1,477.4	945,506.2	n/c
Total Area of Near Shore Waters and Tidal Rivers (square miles and acres) ⁵	2,846.1	1,821,473.9	n/c
Total Area of Bays, Estuaries and Harbors	2,717.3	1,739,051.0	n/c
Total Area of Tidal Rivers	128.8	82,422.9	n/c
Total Area of Near Shore Waters and Tidal Rivers by Water Class ⁵	Square Miles	Acres	
SeaClass A	211.0	135,009.0	n/c
SeaClass B	2,606.3	1,668,047.8	n/c
SeaClass C	28.8	18,417.1	n/c
Total Area of Wetlands ⁶	4,972.8	3,182,563.4	n/c
Total Area of Saltwater Wetlands ⁶	404.3	258,739.3	n/c
Estuarine	239.8	153,462.2	n/c
Marine	164.5	105,277.1	n/c
Total Area of Freshwater Wetlands ⁶	4,568.5	2,923,824.1	n/c
Lacustrine	1,466.6	938,621.7	n/c
Palustrine	2,954.0	1,890,553.6	n/c
Riverine	147.9	94,648.8	n/c
Total Area of Mapped Sand and Gravel Aquifers ⁵	1,281.0	794,624.0	1,241.6

Comment [O2]: Correction/clarification

Comment [O3]: Clarification of discrepancy

1 These figures were the most current that were available to the DEP in early 2006. And 2. These figures were the most current available to the DEP in early 2004. The summary has not been updated for the 2008 Report.
 3. Derived from the 2004 MeLCD (Maine LandCover Dataset) that has a 25 square meter (5m X 5m) spatial resolution.
 4. Derived from the Maine GAP Landcover Analysis Dataset (based on the 1991 NLCD – National LandCover Dataset) that has a 900 square meter (30m X 30m) spatial resolution. Some categories were combined to allow a more direct comparison with figures derived from the 2004 MeLCD. 2006 report figures are derived from the higher resolution Maine Landcover Dataset (MELCD) 2004
 5. Derived from MeDEP's GIS hydrography, geology and state boundary datasets (Source: Digitized 1:24,000 USGS 7.5" Quadrangles and Digital Raster Graphics). Significant Lakes are defined as publicly owned, have bathymetric/morphometric surveys, vulnerability modeling was performed or some trophic data has been gathered.
 6. Derived from the National Wetland Inventory (NWI) dataset – based on polygons only, figures do not include a point dataset that indicates locations of small wetlands.
 7. A draft dataset was used to generate figures for the 2004 report; this dataset underwent significant revisions, so as not to be comparable to data in the 2006 report.

Integrated Report Lists of Categories 1 Through 5

Table 4-3 Summary of State Waters Attaining and Not Attaining Standards

Waterbody Type	Total Assessed for Attaining of WQ Standards – Assessed for Designated Uses	Total with Insufficient Data for Assessment – Not Assessed for Any Designated Uses (Category 3)	Total Attaining All WQ Standards – Supporting All Designated Uses (Category 1)	Total Attaining At Least One Standard – Supporting at Least One Use, But Not All Standards Assessed (Category 2)	Total Not Attaining One or More WQ Standards – Not Supporting One or More Uses – But Not Needing a TMDL (Category 4)	Total Not Attaining One or More WQ Standards – Not Supporting One or More Uses – and TMDL is Needed (Category 5)
River & Stream Miles‡	31,218	379	4,347	25,288	216**	988
Number of Lakes/Ponds	5,780 *	10	2,857	2,881 *	28	4 **
Lake & Pond Acres	986,952 *	17,777	295,443	596,474 *	73,600	3,658 **
Estuarine/Ocean Square Miles	2,846.0	4.4	0.0	2,685.2	0.0	156.4 °
Estuarine/Ocean (Acres)	1,821,433.6	2,835.0	0.0	1,718,509.1	0.0	100,089.5 °
Freshwater/Tidal Wetland Acres	N/A ¹	N/A ¹	N/A ¹	N/A ¹	N/A ¹	N/A ¹

Comment [O4]: Correction to acreage due to ADB error; now it is same as 2006 assessment

‡River and Stream mile summaries for each reporting category were generated by the Maine Assessment Database (ADB)
 * Includes 6 Category 2 lakes (22 acres) on coastal islands, all 6 lakes are not assigned to mainland HUCs.
 ** These figures do not include those waters listed under Category 4A for atmospheric deposition of Mercury.
 ° All estuarine and marine waters (2,846 square miles) are affected by a shellfish (lobster tomalley) consumption advisory due to the presence of PCBs and dioxins. These Category 5 totals do not include coastal waters under the statewide consumption advisory.
¹ "N/A" means "Not Assessed".

Table 4-4 Individual Use Support Summary for Maine Rivers and Streams *

USE	Total Size	Size Assessed	Size Fully Supporting	Size Fully Supporting and Threatened	Size Not Supporting	Size with Insufficient Info
Drinking Water Supply After Disinfection	20,083.27	4,400.05	4,400.05	0	0	15,683
Drinking Water Supply After Treatment	10,944.84	969.17	965.95	0	3.22	9,980
Fish and Other Aquatic Life	31,033.41	30,647.4	30,031.64	0	615.76	299
Fish Consumption **	31,216.16	5,550.77	4,908.25	0	642.52	25,550
Fishing	31,029.41	5,366.52	5,358.33	0	8.19	25,550
Hydroelectric Power Generation	20,816.88	1,581.17	1,581.17	0	0	19,122
Industrial Process and Cooling Water Supply	20,816.88	1,581.17	1,581.17	0	0	19,122
Navigation	31,029.41	5,358.9	5,354.66	0	4.24	25,548
Primary Contact Recreation	31,029.41	5,364.18	5,142.35	0	221.83	25,361
Secondary Contact Recreation	31,029.41	5,364.18	5,160.79	0	203.39	25,361

*River and stream mile summaries were generated by the Maine Assessment Database (ADB)
 ** All freshwaters are listed for a fish consumption advisory due to mercury (Category 4A-EPA approved Regional Mercury TMDL). The fish consumption (other) listing is for additional consumption advisories beyond than that caused by mercury (these waters also have a mercury advisory).

Table 4-5 Individual Designated Use Support Summary for Maine Lakes

CWA Goals	Designated Use	Size Fully Supporting – Attaining WQ Standards (Acres)	Size Not Supporting – Not Attaining WQ Standards (Acres)	Size Not Attainable – UAA Performed
Protect & Enhance Ecosystems	Aquatic Life Support	909,694*	77,258	9,160**
Protect & Enhance Public Health	Fish Consumption (Hg)	0	986,952	
	Swimming	944,811	24,364	
	Secondary Contact	986,952	0	
	Drinking Water Source Water	986,952	0	
Social & Economic	Agricultural	986,952	0	
	Industrial	986,952	0	
	Cultural or Ceremonial	986,952	0	
	State Defined:			
	1. Hydropower & Navigation	986,952	0	

Comment [O5]: Acreage Corrections due to change in total acres; see previous comments. *clarifications added.

* Includes Fully Supporting (295,443 acres) and Insufficient Information but assumed to be supporting (614,251 acres) lakes.

** Includes acreages of Ragged (2,712 acres) and Seboomook (6,448 acres) Lakes, which as a result of UAAs, have modified Aquatic Life Standards. Because they attain the modified standard, these acreages are also included in the Size Fully Supporting column.

Table 4-6 Individual Designated Use Support Summary for Estuarine and Marine Waters

CWA Goals	Designated Use	Size Fully Supporting – Attaining WQ Standards (square miles)	Size Not Supporting – Not Attaining WQ Standards (square miles)	Size Not Attainable – UAA Performed (square miles)
Protect & Enhance Ecosystems	Aquatic Life	2,842.83	3.16	0
Protect & Enhance Public Health	Fish Consumption ¹	0	2,845.99	0
	Shellfish Consumption ² (excluding lobster tomalley)	2,692.44	153.55	0
	Shellfish Consumption ³ (lobster tomalley)	0	2,845.99	0
	Swimming (primary and secondary contact)	2,845.97	0.02	0
Social & Economic	Aquaculture	2,845.99	0	0
	Navigation	2,845.99	0	0
	Industrial supply water	2,845.99	0	0
	Hydropower	2,845.99	0	0

¹ Based on a statewide fish/shellfish consumption advisory

² Does not include statewide advisories for PCBs or dioxin in lobster tomalley.

³ Based on a statewide consumption advisory for lobster tomalley.

Table 4-7 Total Sizes of Category 4 and 5 Impaired Rivers and Streams by Listing Causes/Stressors *

Cause/Stressor Type	Size Impaired (miles)
Pathogens (E. coli) CSO-source	201.39 variable miles
Aquatic Life Criteria (integrated effects including biocriteria, habitat and nutrient biological indicators)	332.15
Oxygen depletion Dissolved oxygen BOD	398.5 377.02 32.02
Altered flow regime	32.16
Nutrients Nutrient-eutrophication, biological indicators	194.26 137.85
Toxic inorganics Metals	38.78 29.85
Toxic organics Dioxin Polychlorinated biphenyls	431.53 379.04 391.82
Pesticides	217.43
pH/Acidity/Caustic conditions	1
Sedimentation	8.19
Cause Unknown	0.63

* River and stream mile summaries were generated by the Maine Assessment Database (ADB)

Table 4-8 Total Sizes of Category 4 and 5 Lakes Impaired by Listing Causes/Stressors (Total acreage)

Cause/Stressor Type	Size Impaired (acres)
Habitat Assessment (Lakes)	48,964
Methylmercury	986,952
Oxygen, Dissolved	634
Phosphorus (Total)	28,294
Secchi Disk Transparency	27,660
Turbidity	7,865

Table 4-9 Total Sizes of Category 4 and 5 Lakes Impaired by Listing Causes/Stressors (by Category)

Listing Category	Cause/Stressor Type	Size Impaired (acres)	Number Impaired
4A	Methylmercury	986,952	5780
	Oxygen, Dissolved	634	1
	Phosphorus (Total)	24,636	23
	Secchi disk transparency	24,000	23
4C	Habitat Assessment (Lakes)	48,964	5
	Turbidity	7,865	1
5A	Secchi disk transparency	3,658	4
	Phosphorus (Total)	3,658	4

Comment [O6]: Moved to 4A due to Regional TMDL; was inadvertently in 5C when originally submitted.

Table 4-10 Total Sizes of Category 4 and 5 Impaired Estuarine and Marine Waters by Causes/Stressors

Cause/Stressor Type	Size Impaired (square miles)
Bacteria	153.55
Bacteria (CSOs)	Variable
Dissolved Oxygen	0.3
Sediment Oxygen Demand	0.3
Toxics	-
Metals-copper	0.9
PAHs	0.5
PCBs	2,845.99
Dioxins	2,845.99
Aquatic Life	3.16

Table 4-11 Total Sizes of Category 4 and 5 Waters Impaired by Source for Rivers and Streams

Source Category	Size Impaired (miles)
Agriculture	330
aquaculture	9
Atmospheric deposition (mercury deposition)	31,218
Habitat modification- non-hydromodification	52
Hydromodification- dams and impoundments	82
Industrial permitted discharges	120
Land application waste sites- RCRA, illegal dumps, abandoned mines	37
Legacy pollutants-dioxin, PCBs, DDT	364
Municipal discharges, permitted	201
Other municipal discharges, including stormwater	167
Airports	2.5
Post-development erosion and sedimentation	58
Wet weather discharges	49
CSOs	(variable miles)
Upstream source	26
Urban runoff, non-regulated	109

* River and stream mile summaries were generated by the Maine Assessment Database (ADB)

Table 4-12 Total Sizes of Waters Impaired by Sources for Maine Lakes

Source Category	Size Impaired (acres)
Atmospheric Deposition – Toxics	986,952
Crop Production (Crop Land or Dry Land)	7,491
Flow Alterations from Water Diversions	30
Impacts from Hydrostructure Flow Regulation/modification	48,964
Industrial Land Treatment	1,820
Internal Nutrient Recycling	11,490
Landfills	29
Livestock (Grazing or Feeding Operations)	5,093
Municipal Point Source Discharges	4288
Natural Sources	10,195
Non-irrigated Crop Production	10,532
Residential Districts	5,119
Rural (Residential Areas)	22,580
Unspecified Unpaved Road or Trail	3,296
Unspecified Urban Stormwater	3,296
Upstream/Downstream Source	83

Comment [O7]: Row inserted; had been deleted inadvertently.

Table 4-13 Total Sizes of Waters Impaired by Sources for Maine Lakes by Listing Category

Listing Category	Source	Size Impaired (acres)	Number of Lakes
4A	Atmospheric Deposition – Toxics	986,952	5780
	Crop Production (Crop Land or Dry Land)	7,030	7
	Flow Alterations from Water Diversions	30	1
	Industrial Land Treatment	1,420	1
	Internal Nutrient Recycling	11,490	7
	Landfills	29	1
	Livestock (Grazing or Feeding Operations)	5,093	5
	Municipal Point Source Discharges	4288	1
	Natural Sources	1,869	2
	Non-irrigated Crop Production	10,532	5
	Residential Districts	2,405	2
	Rural (Residential Areas)	22,119	18
	Unspecified Unpaved Road or Trail	582	1
	Unspecified Urban Stormwater	582	1
4C	Impacts from Hydrostructure Flow Regulation/modification	48,964	5
	Natural Sources	7,865	1
5A	Crop Production (Crop Land or Dry Land)	461	1
	Industrial Land Treatment	400	1
	Natural Sources	461	1
	Non-irrigated Crop Production	0	1
	Residential Districts	2,714	1
	Rural (Residential Areas)	461	1
	Unspecified Unpaved Road or Trail	2,714	1
	Unspecified Urban Stormwater	2,714	1
Upstream/Downstream Source	83	1	

Comment [O8]: Moved to 4A due to Regional TMDL; was inadvertently in 5C when originally submitted.

Table 4-14 Total Sizes of Waters Impaired by Sources for Estuarine and Marine Waters

Source Category (examples)	Size Impaired (square miles)
Legacy Pollutants	2,845.99
Municipal Point Sources / Overboard Discharge	143.95
Combined Sewer Overflows	Variable
Urban Runoff/Storm Sewers	51.70
Sediment Oxygen Demand	0.30
Nonpoint Source	153.55

Rivers / Streams

WATER CLASSIFICATION PROGRAM

Contact: Susan P. Davies, DEP BLWQ, Division of Environmental Assessment (DEA)

Tel: 207-287-3901 email: Susan.P.Davies@SPAM-ZAPmaine.gov

Related Website: www.maine.gov/dep/blwq/docmonitoring/classification/index.htm

Maine has four water quality classes of rivers and streams: AA, A, B, and C (38 M.R.S.A. Section 465). Each classification assigns designated uses and water quality criteria (narrative and numeric), and may place specific restrictions on certain activities (Table 4-1 and 4-16) such that the goal conditions of each class may be achieved or maintained. Definitions of terms used in the classification are provided in 38 M.R.S.A. Section 466.

Class AA waters are managed for their outstanding natural ecological, recreational, social, and scenic qualities. Direct discharge of wastewater, dams, and other significant human disturbances are prohibited. Tiered aquatic life use goals in water quality standards direct that the biological condition of this classification be approximately Tier 1-2 on the Biological Condition Gradient (Davies and Jackson 2006; USEPA 2005)

Class A waters are managed for high quality with limited human disturbance allowed; aquatic life use goal approximately Tier 1-2 on the Biological Condition Gradient. Direct discharges are allowed but highly restricted.

Class B waters are general-purpose waters and are managed to attain good quality water; aquatic life use goal approximately Tier 3 on the Biological Condition Gradient. Well-treated discharges with ample dilution are allowed.