Amendment to the Northeast Water Quality Management Plan and Sussex County Water Quality Management Plan

Total Maximum Daily Loads for Pathogens to Address 25 Lakes in the Northeast Water Region

Watershed Management Area 3
(Crystal Lake, Lake Edenwold, Bubbling Springs, Erksine Lake, Forest Hill, Kitchell Lake, Lake Ioscoe, Lionhead Lake, and Skyline Lakes)
Watershed Management Area 4
(Toms Lake)
Watershed Management Area 6
(Camp Lewis Lake, Cozy Lake, Fox's Pond, Indian Lake, Intervale Lake, Lake Swannanoa, Mountain Lake, Parsippany Lake, Powder Mill Pond, Rainbow Lake, Sunrise Lake, Telemark Lake, West Lake, White Meadow Lake, and Cold Springs Pond)

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TABLE OF CONTENTS

TABLES

FIGURES

EXECUTIVE SUMMARY

In accordance with Section 305(b) and 303(d) of the Federal Clean Water Act (CWA), the State of New Jersey, Department of Environmental Protection (Department) is required to assess the overall water quality of the State's waters and identify those waterbodies with a water quality impairment for which TMDLs may be necessary. A TMDL is developed to identify all the contributors of a pollutant of concern and the load reductions necessary to meet the Surface Water Quality Standards (SWQS) relative to that pollutant. The Department fulfills its assessment obligation under the CWA through the Integrated Water Quality Monitoring and Assessment Report, which includes the Integrated List of Waterbodies, issued biennially. On October 4, 2004 the Department adopted the *2004 Integrated List of Waterbodies* as an amendment to the Statewide Water Quality Management Plan (36 NJR 4543(a)), as part of the Department's continuing planning process pursuant to the Water Quality Planning Act at N.J.S.A. 58:11A-7 and the Water Quality Management Planning rules at N.J.A.C. 7:15-6.4(a). The *2004 Integrated List of Waterbodies* identifies twenty-five lakes as impaired with respect to pathogens in the Northeast Water Region.

The Department has recently adopted the *2006 Integrated Water Quality Monitoring and Assessment Report*, including the *2006 Integrated List of Waterbodies*, which identifies impairments based on HUC 14 Assessment Units rather than stream segments associated with discrete monitoring locations. This change in assessment methodology allows establishment of a stable base of assessment units for which the attainment or non-attainment status of all designated uses within each subwatershed or assessment unit will be identified. In addition, lakes are assessed and listed separately when impaired. The *2006 Integrated List of Waterbodies* identifies twenty-five lakes that are impaired with respect to pathogens in the Northeast Water Region. A lake is determined to be impaired if it does not fully support primary contact recreation as evidenced by beach closings in accordance with Health Department standards. The water quality trigger for beach closings is exceedance of 200 cfu/100 ml of fecal coliform (NJDOH, 2004). TMDLs are adopted for the impaired lakes listed in Table 1.

Table 1. Lakes in the Northeast Water Region impaired for pathogens for which TMDLs are adopted

TMDL Number	WMA	Lake Assessment Unit Name	County*
1	3	Crystal Lake	Bergen
2	3	Lake Edenwold	Morris
3	3	Bubbling Springs	Passaic
4	3	Erksine lake	Passaic
5	3	Forest Hill	Passaic
6	3	Kitchell Lake	Passaic
7	3	Lake Ioscoe	Passaic

TMDL Number	WMA	Lake Assessment Unit Name	County*
8	3	Lionhead Lake	Passaic
9	3	Skyline Lakes	Passaic
10	4	Toms Lake	Passaic
11	6	Camp Lewis Lake	Morris
12	6	Cozy Lake	Morris
13	6	Foxs Pond	Morris
14	6	Indian Lake	Morris
15	6	Intervale Lake	Morris
16	6	Lake Swannanoa	Morris
17	6	Mountain Lake	Morris
18	6	Parsippany Lake	Morris
19	6	Powder Mill Pond	Morris
20	6	Rainbow Lake	Morris
21	6	Sunrise Lake	Morris
22	6	Telemark Lake	Morris
23	6	West Lake	Morris
24	6	White Meadow Lake	Morris
25	6	Cold Springs Pond	Passaic

*The drainage area/lakeshed for each lake may encompass municipalities beyond the identified County in which the lake is located.

Nonpoint and stormwater point sources are the primary sources of fecal coliform loads to the impaired lakes. Source loads were estimated for land uses in each watershed using the Watershed Treatment Model (WTM) (WTM, 2001). The WTM model is a series of spreadsheets that quantifies the loading of pathogen indicators based on land use distribution, stream network length in the watershed, and annual rainfall. Traditional point sources, i.e., treatment facilities that have a sanitary waste component, were considered de minimus due to the use of effective disinfection practices by these facilities. TMDLs were developed based on an analysis of the existing pathogen indicator data compared to Health Department indicator criteria and the loading capacity has been allocated among the point and nonpoint sources.

This report establishes twenty-five TMDLs that have been adopted as amendments to the appropriate area-wide water quality management plan in accordance with N.J.A.C. 7:15-3.4(g). This report was developed consistent with EPA's May 20, 2002 guidance document entitled: "Guidelines for Reviewing TMDLs under Existing Regulations issued in 1992," (Sutfin, 2002) which describes the statutory and regulatory requirements for approvable TMDLs. These TMDLs were approved by EPA on September 28, 2007, and will be adopted as amendments to the Northeast and Sussex County Water Quality Management Plans in accordance with N.J.A.C. 7:15-3.4 (g).

1.0 INTRODUCTION

In accordance with Section 303(d) of the Federal Clean Water Act (CWA) (33 U.S.C. 1315(B)), the State of New Jersey, Department of Environmental Protection (Department) is required biennially to prepare and submit to the EPA a report that identifies waters that do not meet or are not expected to meet water quality standards after implementation of technology-based effluent limitations or other required controls. This report is commonly referred to as the 303(d) List. In accordance with Section 305(b) of the CWA, the Department is also required biennially to prepare and submit to the EPA a report addressing the overall water quality of the State's waters. This report is commonly referred to as the 305(b) Report or the Water Quality Inventory Report. The Integrated Water Quality Monitoring and Assessment Report combines these two assessments and assigns waterbodies to one of five sublists on the Integrated List of Waterbodies. Sublists 1 through 4 include waterbodies that are generally unimpaired (Sublist 1 and 2), have limited assessment or data availability (Sublist 3), are impaired due to pollution rather than pollutants, or have had a TMDL or other enforceable management measure approved by EPA (Sublist 4). Sublist 5 constitutes the traditional 303(d) list for waters impaired or threatened by one or more pollutants, for which a TMDL may be required.

In the New Jersey 2004 *Integrated Water Quality Monitoring and Assessment Report* the water quality impairments were identified by segment name and pollutant(s) or non-attained designated use responsible for the finding that the segment was impaired. Each segment was assessed using the data from one or more discrete monitoring locations that were determined to be representative of the water quality in that segment. This impaired segment delineation method was changed in 2006.

The *New Jersey 2006 Integrated Water Quality Monitoring and Assessment Report* now identifies impairments based on designated use attainment and then lists the parameters responsible for the non-attainment of the designated use. The assessments are conducted for each of the seven categories of designated use, which include aquatic life, recreational use (primary and secondary contact), drinking water, fish consumption, shellfish harvesting (if applicable), agricultural water supply use and industrial water supply use. In addition, lakes are assessed and listed separately if impaired. In the Northeast Water Region, the *2006 Integrated List of Waterbodies* currently identifies twenty-five lakes as impaired for pathogens. These lakes do not fully support primary contact recreation as evidenced by beach closings and water quality data that demonstrate exceedance of the water quality criterion that triggers closings.

A TMDL represents the assimilative or carrying capacity of a waterbody, taking into consideration point and nonpoint sources of pollutants of concern, natural background, and surface water withdrawals. A TMDL quantifies the amount of a pollutant a waterbody can assimilate and still conform to applicable water quality standards and support designated uses. The TMDL or loading capacity is allocated to known point and nonpoint sources in the form of waste load allocations (WLAs) for point sources, load allocations (LAs) for nonpoint sources, and a margin of safety (MOS).

Recent EPA guidance (Sutfin, 2002) describes the statutory and regulatory requirements for approvable TMDLs, as well as additional information generally needed for EPA to determine if a submitted TMDL fulfills the legal requirements for approval under Section 303(d) and EPA regulations. These TMDLs address the following required items in the May 20, 2002 guideline document:

1. Identification of waterbody(ies), pollutant of concern, pollutant sources and priority ranking.
2. Description of applicable water quality standards and numeric water quality target(s).
3. Loading capacity – linking water quality and pollutant sources.
4. Load allocations.
5. Wasteload allocations.
6. Margin of safety.
7. Seasonal variation.
8. Reasonable assurances.
9. Monitoring plan to track TMDL effectiveness.
10. Implementation (USEPA is not required to and does not approve TMDL implementation plans).
11. Public Participation.

This report establishes twenty-five TMDLs for pathogens to address the impaired lakes in the Northeast Water Region. All of the impaired lakes were listed for fecal coliform and assigned a high priority on the *2004 Integrated List of Waterbodies* and a high priority ranking on the *2006 Integrated List of Waterbodies* Sublist 5. These TMDLs include management approaches to reduce pathogen contributions from various sources in order to attain applicable surface water quality standards and fully support the designated primary contact recreation use. These TMDLs affect the drainage areas of the impaired lakes due to the fact that the implementation measures must be applied to the contributing drainage areas, not just the impaired lakes. Following approval of the TMDLs by EPA, pathogens will be removed as a basis of impairment in the next Integrated List. In addition to the pathogen impairments, Mountain Lake was listed for mercury on the *2006 Integrated List*. This pollutant will be addressed in future TMDL efforts.

2.0 POLLUTANT OF CONCERN AND AREA OF INTEREST

The pollutant of concern for these TMDLs is pathogens. Standards are established in terms of indicator organisms which, when present in excess of the standard, suggest that the waterbody is

not suitable for primary contact recreation because of an elevated risk of disease. New Jersey Surface Water Quality Standards (SWQS) include pathogen indicator criteria for the assessment of the recreational use (primary and secondary contact recreation) for all waterbodies. However, for lakes with bathing beaches, the New Jersey Health Department Standards N.J.A.C. 8:26-7.18 establish the basis for beach closings. These standards are more stringent than the Surface Water Quality Standards. As a result, the Health Department Standards will serve as the water quality target for these TMDLs. The Health Department Standards and SWQS are summarized as follows:

> **As stated in N.J.A.C. 8:26-7.18 Microbiological water quality standards for bathing beaches:**
>
> The multiple-tube fermentation technique for fecal coliforms shall be conducted in accordance with the procedures set for in Method 9222D Fecal Coliform Membrane Filter Procedure or Method 9221E.2. Fecal Coliform MPN Procedure (A-1 medium) found in the 19th edition of "Standard Methods for the Examination of Water and Wastewater." American Public Health Association, incorporated herein by reference, as amended and supplemented. The estimated fecal coliform concentrations shall not exceed 200 fecal coliform per 100 milliliters.

As stated in N.J.A.C. 7:9B-1.14(d) of the New Jersey Surface Water Quality Standards Fresh Water 2 (FW2) waters:

1. Bacterial quality (Counts/100 ml)

    ii. Primary Contact Recreation:

        (2) E. Coli levels shall not exceed a geometric mean of 126/100 ml or a single sample maximum of 235/100 ml.

The lakes assessed as impaired based on water quality data and for which TMDLs have been developed are identified in Table 2 and depicted in Figures 1 and 2.

Table 2. Impaired Waterbodies as identified on the *2004 Integrated List of Waterbodies* and the *2006 Integrated List* for which Pathogen TMDLs are being adopted

TMDL Number	WMA	Lake Assessment Unit Name	Lake Assessment Unit ID	2004 Status	2006 Status	County(s) *	Proposed Action
1	3	Crystal Lake	Crystal Lake-03	Sublist 5	Sublist 5	Bergen	Adopt TMDL
2	3	Lake Edenwold	Lake Edenwold-03	Sublist 5	Sublist 5	Morris	Adopt TMDL
3	3	Bubbling Springs	Bubbling Springs-03	Sublist 5	Sublist 5	Passaic	Adopt TMDL
4	3	Erskine lake	Erskine Lake-03	Sublist 5	Sublist 5	Passaic	Adopt TMDL
5	3	Forest Hill	Forest Hill Lake-03	Sublist 5	Sublist 5	Passaic	Adopt TMDL

TMDL Number	WMA	Lake Assessment Unit Name	Lake Assessment Unit ID	2004 Status	2006 Status	County(s) *	Proposed Action
6	3	Kitchell Lake	Kitchell Lake-03	Sublist 5	Sublist 5	Passaic	Adopt TMDL
7	3	Lake Ioscoe	Lake Ioscoe-03	Sublist 5	Sublist 5	Passaic	Adopt TMDL
8	3	Lionhead Lake	Lionhead Lake-03	Sublist 5	Sublist 5	Passaic	Adopt TMDL
9	3	Skyline Lakes	Skyline Lakes-03	Sublist 5	Sublist 5	Passaic	Adopt TMDL
10	4	Toms Lake	Toms Lake-04	Sublist 5	Sublist 5	Passaic	Adopt TMDL
11	6	Camp Lewis Lake	Camp Lewis Lake-06	Sublist 5	Sublist 5	Morris	Adopt TMDL
12	6	Cozy Lake	Cozy Lake-06	Sublist 5	Sublist 5	Morris	Adopt TMDL
13	6	Foxs Pond	Foxs Pond-06	Sublist 5	Sublist 5	Morris	Adopt TMDL
14	6	Indian Lake	Indian Lake-06	Sublist 5	Sublist 5	Morris	Adopt TMDL
15	6	Intervale Lake	Intervale Lake-06	Sublist 5	Sublist 5	Morris	Adopt TMDL
16	6	Lake Swannanoa	Lake Swannanoa-06	Sublist 5	Sublist 5	Morris	Adopt TMDL
17	6	Mountain Lake	Mountain Lake-06	Sublist 5	Sublist 5	Morris	Adopt TMDL
18	6	Parsippany Lake	Parsippany Lake-06	Sublist 5	Sublist 5	Morris	Adopt TMDL
19	6	Powder Mill Pond	Powder Mill Pond-06	Sublist 5	Sublist 5	Morris	Adopt TMDL
20	6	Rainbow Lake	Rainbow Lakes-06	Sublist 5	Sublist 5	Morris	Adopt TMDL
21	6	Sunrise Lake	Sunrise Lake-06	Sublist 5	NA	Morris	Adopt TMDL
22	6	Telemark Lake	Telemark Lake-06	Sublist 5	Sublist 5	Morris	Adopt TMDL
23	6	West Lake	West Lake-06	Sublist 5	Sublist 5	Morris	Adopt TMDL
24	6	White Meadow Lake	White Meadow Lake-06	Sublist 5	Sublist 5	Morris	Adopt TMDL
25	6	Cold Springs Pond	Cold Spring Lake 06	Sublist 5 (as Pond at Conference Center Left and Right)	Sublist 5	Passaic	Adopt TMDL

*The drainage area/lakeshed for each lake may encompass municipalities beyond the identified County in which the lake is located.

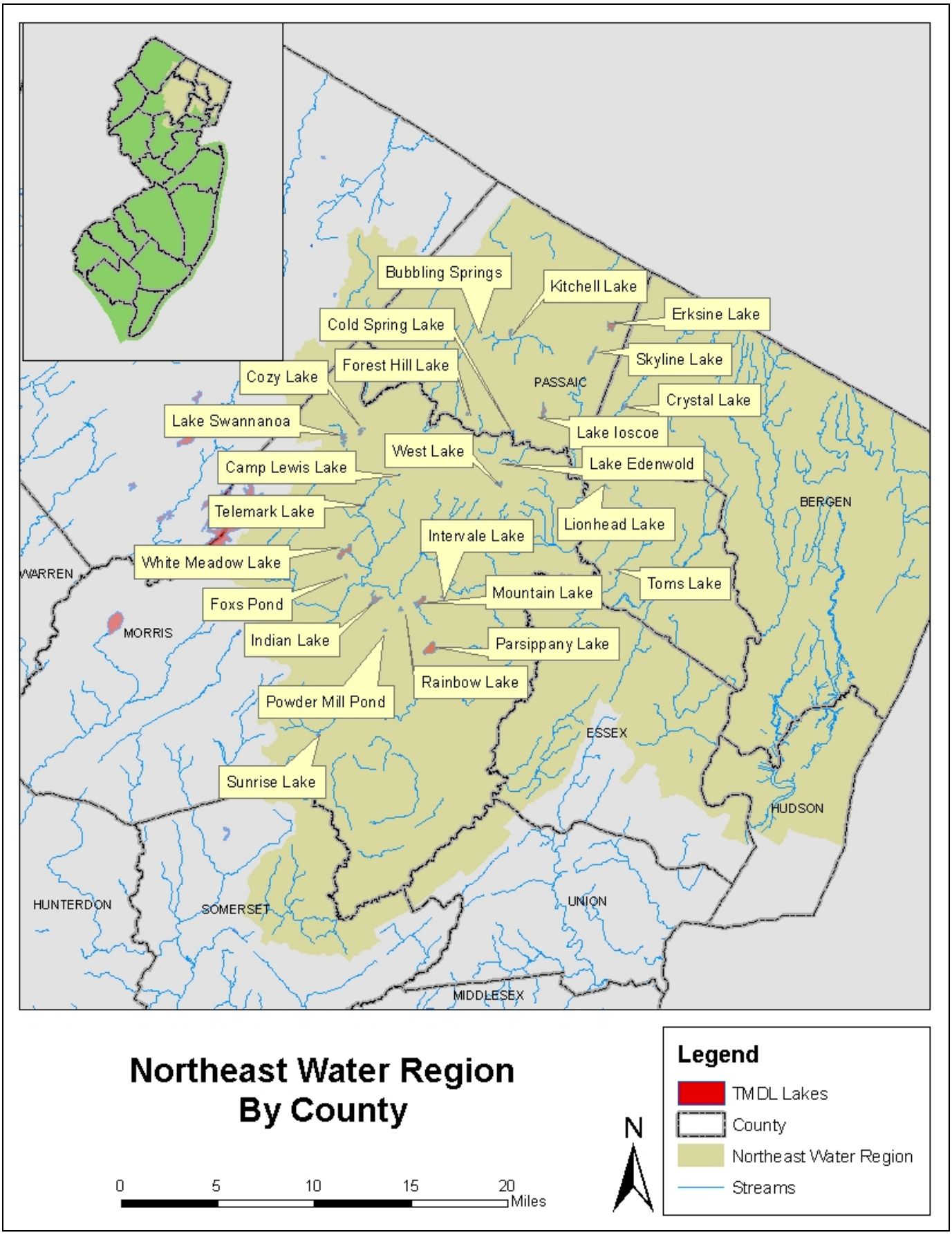

Figure 1. Pathogen impaired lakes in Northeast Water Region by county

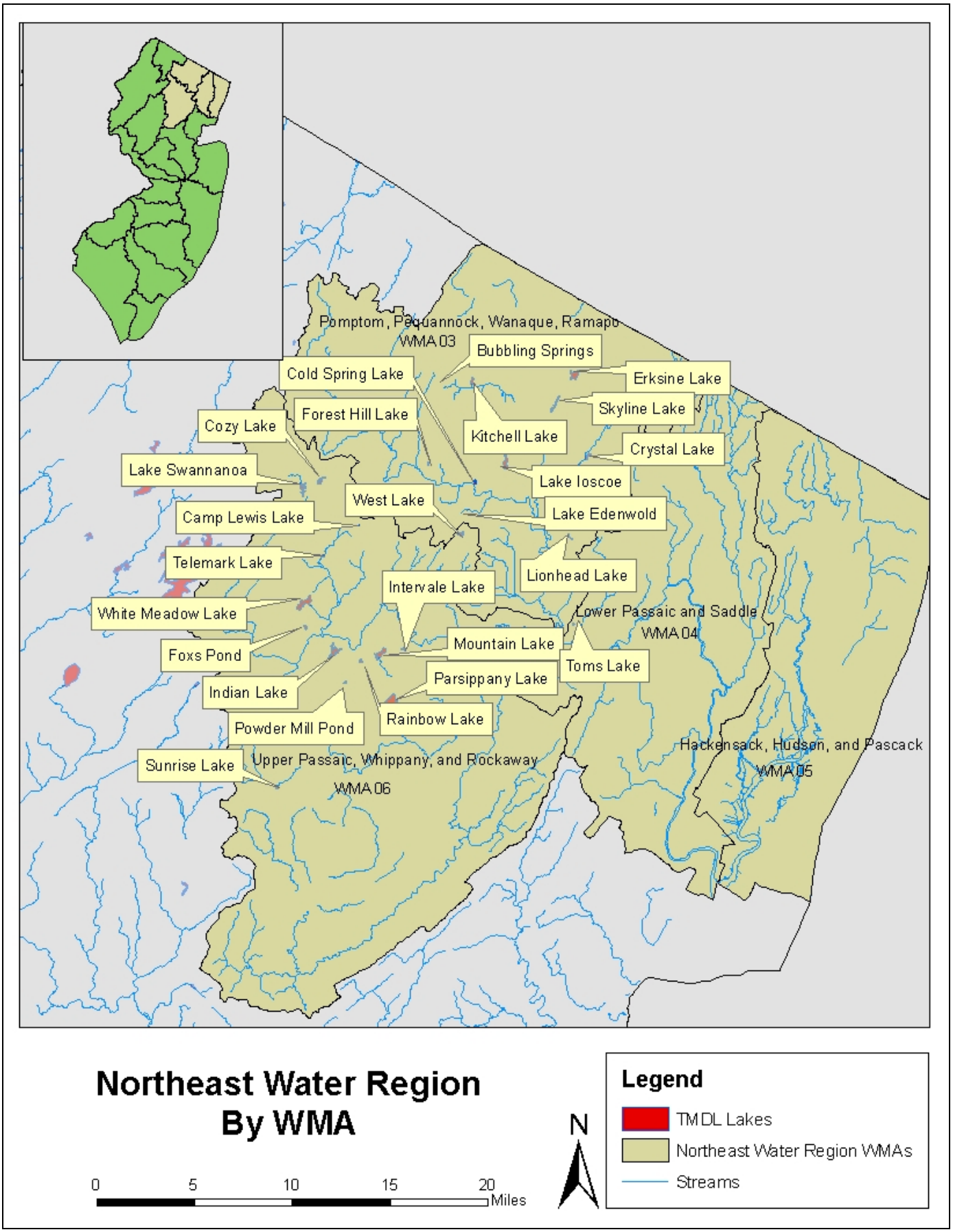

Figure 2. Pathogen impaired lakes in the Northeast Water Region by WMA.

Erskine Lake, Forest Hill Lake, Kitchell Lake, Sunrise Lake and Telemark Lake are classified as Fresh Water 2 (FW2), Trout Maintenance (TM). All other impaired lakes addressed in this document are classified as FW2, Non-Trout (NT).

In all FW2 waters, the designated uses are (NJAC 7:9B-1.12):

1. Maintenance, migration and propagation of the natural and established aquatic biota;
2. Primary and secondary contact recreation;
3. Industrial and agricultural water supply;
4. Public potable water supply after conventional filtration treatment (a series of processes including filtration, flocculation, coagulation and sedimentation, resulting in substantial particulate removal but no consistent removal of chemical constituents) and disinfection; and
5. Any other reasonable uses.

3.0 SOURCE ASSESSMENT

A source assessment was conducted to identify and characterize potential pathogen sources that may be impacting water quality in the listed waters. Both point and nonpoint sources were considered in TMDL development. Source assessment also includes the determination of the relative contribution of the primary bacteria sources to facilitate proper management responses through TMDL implementation. A variety of information was used to characterize possible pathogen sources including land use information gathered for each watershed, point source information, literature sources, and other available data.

3.2 Assessment of Point Sources

For TMDL development purposes, point sources include domestic and industrial wastewater treatment plants that discharge to surface waters, as well as surface water discharges of stormwater subject to regulation under the National Pollutant Discharge Elimination System (NPDES). This includes facilities with individual or general industrial stormwater permits, Tier A municipalities, and federal, interstate agency, state, and county facilities regulated under the New Jersey Pollutant Discharge Elimination System (NJPDES) municipal stormwater permitting program. Tier A municipalities are generally located within the more densely populated regions of the state or along the coast. These municipalities meet the population size requirements of EPA's Municipal Separate Storm Sewer System (MS4) program for regulating urban stormwater discharges. Stormwater point sources, like stormwater nonpoint sources, derive their pollutant loads from runoff from land surfaces and load reduction is accomplished through the use of best management practices (BMPs). The distinction is that stormwater point sources are regulated under the Clean Water Act (under the MS4 program). Stormwater point sources will be addressed through the management practices required through the MS4 permits.

Wastewater treatment facilities and Tier A municipalities that directly discharge to the pathogen impaired lakes in the Northeast Water Region are identified in Appendix B. Per Department NJPDES Regulation, N.J.A.C. 7:14A-12.5(a), "All wastewater that could contain pathogenic

organisms such as fecal coliform and/or enterococci organisms shall be subject to continuous year round disinfection prior to discharge into surface waters." Therefore, loads from wastewater treatment facilities were considered de minimus, consistent with previous pathogen TMDLs developed by the Department. The NJPDES permit limits for these point sources will not be changed as a result of these TMDLs and will remain a 200 cfu/100 ml monthly geometric mean and a 400 cfu/100 ml weekly geometric mean.] Stormwater loads from Tier A MS4 systems are point sources that can be significant. These loads were estimated using the watershed loading methods described in the nonpoint source section, as they will be addressed through BMPs.

3.3 Assessment of Nonpoint Sources

Nonpoint sources that may affect lakes include stormwater discharges that are not subject to regulation under the Clean Water Act, including Tier B municipalities, direct stormwater runoff from land surfaces, as well as malfunctioning sewage conveyance systems, failing or inappropriately located septic systems, and direct contributions from wildlife, livestock and pets. Tier B municipalities are generally located in more rural, non-coastal regions of the state.

Watershed Treatment Model (WTM) (WTM, 2001), a steady-state spreadsheet model, was chosen to estimate nonpoint source bacteria loads for these TMDLs. WTM simulates loadings generated by watershed washoff processes. The WTM model was selected because it encompasses local rainfall data and stream length information to better tailor load estimates. In addition, it has been successfully applied in previous coastal TMDL studies, including the development of pathogen TMDLs for impaired shellfish waterbodies in New Jersey. The goal of applying WTM is to characterize all the point and nonpoint sources, as available data allows, in the existing system and to determine their relative contributions to the waterbody of interest. The loading values thus derived serve as the reference point from which reductions are made to meet TMDL targets.

The WTM model is a series of spreadsheets that quantifies the loading of pathogen indicators based on land use distribution, stream network length in the watershed, and annual rainfall. The model is designed as a planning level tool for watersheds that do not have sufficient data for complex modeling applications. Pathogen concentrations in runoff and receiving waters are highly variable due to many factors, therefore average annual land use loads derived using the WTM model are gross estimates. Although the WTM model has several tiers of data specificity, loading estimates can be calculated with simple land use data, as they were for these lake TMDLs. Land use loads are calculated on an annual basis by using a series of coefficients for runoff volume and pathogen loading derived from scientific literature. General land use categories are assigned either a coefficient that is then multiplied by an annual runoff volume to calculate an annual load (e.g., urban land uses) or an annual unit area load that is applied as a function of land use (e.g., rural land uses). These coefficients are presented in Table 3 and discussed in the WTM user manual (Caraco, 2001). According to the WTM user manual, the urban loading coefficient was based on the median urban runoff value derived from Nationwide Urban Runoff Program (NURP) monitoring data (Pitt, 1998). Loading values for rural land uses were taken from Horner et. al., 1994. Note that barren land is not represented in the WTM model, therefore it was assumed that the forest loading value was reasonable for this land use type.

Table 3. Default WTM land use categories and loading variables.

WTM Land Use	Corresponding New Jersey Land Uses	Average % Impervious Cover	Fecal Coliform Conc. (MPN/100 ml) or Annual Load (billion/acre)
Low Density Residential	Low Density Residential, Rural Residential, Recreational Land, Athletic Fields	19	20,000
Medium Density Residential	Medium Density Residential, Mixed Residential, Mixed Urban or Built-Up, Other Urban or Built-Up, Military Reservations, No Longer Military	35	20,000
High Density Residential	High Density Residential	56	20,000
Commercial	Commercial Services	71	20,000
Roadway	Transportation/Communication/Utilities	39	20,000
Industrial	Industrial, Industrial/Commercial	78	20,000
Forest	Forest/Wetland	0	Load: 12 billion/acre
Rural	Agriculture	0	Load: 39 billion/acre
Barren (replaced "Vacant Lots" category in WTM)	Barren	2	Load: 12 billion/acre (estimated)

The watershed for each TMDL waterbody was delineated using the Hydrologic Unit Coverage (HUC-14 digit) developed by NJDEP, digital elevation model (DEM) data, the National Hydrography Dataset (NHD) stream coverage for New Jersey, and ArcHydro, a watershed delineation tool available as an extension for the ArcGIS geospatial mapping software suite. Land use data for each watershed was obtained from the 2002 land use coverage developed for New Jersey's WMAs. Land use categories were consolidated into broader groups for use in estimating land-based loads using the WTM model and for presenting the loading results. The percent impervious information for each land use category was derived from the percent impervious information in the Department's GIS land use coverage, averaged across similar land uses. The bacterial loads for urban areas in each watershed were calculated based on the default fecal coliform concentration literature value for urban land uses, the average percent impervious cover, and the annual runoff volume calculated by the WTM model. Agricultural, forest, and barren land use loads were calculated based on the specific loading rate for each category. The literature loading rate for forested land was applied to wetland areas to estimate a wetland land use load. Waterways were not included in loading calculations based on WTM model assumptions.

Direct contributions from illicit discharges, livestock, pets, and wildlife (e.g. seagulls, geese, and other waterfowl in particular) were not estimated based on the lack of site-specific information needed to represent these sources. Population estimates, bacteria production rates, and other information would be needed to estimate these sources. Bacteria may also be present in the sediment in some areas, as a result of contamination from stormwater, failing septic systems, malfunctioning sewer systems, agricultural runoff, and other sources. For these TMDLs, the loads contributed by wildlife, sediment, and the other sources were assumed to be included in the land use loading coefficients.

The drainage area and land use distribution of the impaired watersheds are presented in Table 4. Maps of the watershed land use distributions are presented in Appendix C.

Table 4. Land use area distribution for impaired watersheds in the Northeast Water Region

WMA	Lake Assessment Unit ID	Agriculture		Barren Land		Forest		Urban		Water		Wetland		Total Area
		km²	%	km²	%	km²	%	km²	%	km²	%	km²	%	km²
3	Bubbling Springs-03	0.00	0.0	0.00	0.2	0.10	39.0	0.14	55.4	0.01	3.7	0.00	1.7	0.25
3	Crystal Lake-03	0.07	0.3	0.13	0.7	4.10	20.7	13.65	69.0	0.85	4.3	1.00	5.0	19.79
3	Erskine Lake-03	0.00	0.0	0.00	0.0	0.72	36.3	0.80	40.3	0.45	22.5	0.02	0.9	1.99
3	Forest Hill Lake-03	0.02	3.2	0.03	3.6	0.47	65.3	0.16	22.4	0.04	5.2	0.00	0.4	0.72
3	Kitchell Lake-03	0.01	0.3	0.00	0.0	1.44	65.9	0.58	26.3	0.09	4.3	0.07	3.2	2.19
3	Lake Edenwold-03	0.03	0.2	0.02	0.1	8.77	60.3	3.50	24.0	1.35	9.3	0.88	6.1	14.54
3	Lake Ioscoe-03	0.00	0.0	0.02	0.5	3.09	67.3	0.52	11.4	0.72	15.7	0.23	5.1	4.59
3	Lionhead Lake-03	0.02	0.4	0.00	0.0	1.47	27.5	1.90	35.4	1.76	32.8	0.21	3.9	5.36
3	Skyline Lakes-03	0.01	0.2	0.02	0.2	4.84	63.0	2.26	29.4	0.19	2.5	0.36	4.7	7.67
4	Toms Lake-04	0.00	0.0	0.00	0.0	0.04	9.7	0.28	71.8	0.05	12.8	0.02	5.6	0.40
6	Camp Lewis Lake-06	0.00	0.0	0.00	0.0	0.36	74.5	0.09	19.5	0.01	1.2	0.02	4.8	0.48
6	Cold Spring Lake 06	0.00	0.0	0.00	0.0	2.99	79.8	0.31	8.3	0.26	6.9	0.19	5.1	3.74
6	Cozy Lake-06	0.08	1.8	0.04	0.9	2.68	56.9	1.46	30.9	0.16	3.3	0.29	6.1	4.71
6	Foxs Pond-06	0.00	0.0	0.03	0.9	0.87	27.9	2.03	65.5	0.07	2.1	0.11	3.6	3.10
6	Indian Lake-06	0.34	1.8	0.07	0.4	6.71	36.0	9.40	50.5	1.01	5.4	1.11	6.0	18.63
6	Intervale Lake-06	0.00	0.0	0.00	0.0	0.44	28.1	0.98	62.5	0.05	3.2	0.10	6.3	1.56
6	Lake Swannanoa-06	0.23	0.7	0.08	0.2	22.48	65.0	7.16	20.7	0.84	2.4	3.78	10.9	34.58
6	Mountain Lake-06	0.00	0.0	0.00	0.0	0.99	30.2	1.59	48.4	0.59	17.9	0.12	3.5	3.28
6	Parsippany Lake-06	0.00	0.0	0.00	0.0	0.08	2.7	2.26	76.2	0.62	21.0	0.00	0.1	2.97
6	Powder Mill Pond-06	0.08	2.0	0.02	0.6	1.48	37.0	2.10	52.6	0.06	1.5	0.25	6.3	3.99
6	Rainbow Lakes-06	0.00	0.0	0.00	0.0	0.19	29.0	0.33	50.3	0.07	11.4	0.06	9.2	0.65
6	Sunrise Lake-06	0.00	0.0	0.02	0.8	1.73	88.4	0.15	7.8	0.02	1.0	0.04	2.0	1.95
6	Telemark Lake-06	0.03	0.4	0.01	0.2	4.97	71.4	1.15	16.5	0.12	1.7	0.69	9.8	6.97
6	West Lake-06	0.00	0.0	0.00	0.0	0.59	42.7	0.46	33.3	0.26	18.9	0.07	5.1	1.39
6	White Meadow Lake-06	0.00	0.0	1.11	15.4	2.67	37.1	1.58	21.9	1.43	19.8	0.42	5.8	7.21

4.0 WATER QUALITY ANALYSIS

Relating pathogen sources to concentrations of indicator organisms in the impaired waters is distinguished from quantifying that relationship for other pollutants given the inherent variability in population size and dependence not only on physical factors such as temperature and soil characteristics, but also on less predictable factors such as re-growth media. Since bacteria loads and concentrations can vary many orders of magnitude over short distances and over time at a single location, dynamic water quality models can be very difficult to calibrate. Options available to control nonpoint sources of bacteria typically include measures such as sewage infrastructure improvements, goose management strategies, pet waste ordinances, agricultural conservation management plans, and septic system replacement and maintenance. The effectiveness of these control measures is not easily measured relative to observed ambient concentrations. Given these considerations, detailed water quality modeling was not selected for determining the load reductions needed to attain standards and support the designated primary contact recreation use.

Fecal coliform data collected by county and township municipal health departments were used as the basis for TMDL development for the listed pathogen impaired lakes. These data were reviewed to identify potential data excursions in accordance with the Quality Assurance Project Plan (QAPP) that was developed for this study (QAPP, 2007). The percent reduction required to meet New Jersey bathing beach requirements was calculated based on comparing the maximum fecal coliform concentration recorded for each lake to the TMDL target (200 cfu/100 ml). The data available for each lake are included in Appendix D.

4.1 Seasonal Variation/Critical Conditions

The technical approach used to develop these TMDLs includes consideration of seasonal variability and critical conditions. The TMDL lakes are listed as impaired based on the designated primary contact bathing use. Water quality criteria for bathing beaches are established by the New Jersey Department of Health (NJDOH), which conducts monitoring at the municipal level in support of meeting the applicable criteria. Bathing beaches are typically in use during the late spring and summer months and data collection efforts are coordinated to coincide with this time period (May-September). TMDL loading reductions are based on the single sample maximum concentration identified in the record of observed in-lake water quality, therefore, TMDL development is based on the highest concentration observed for the time period of greatest exposure. Seasonal variability is of less importance because of the need to meet NJDOH bathing beach requirements during the summer critical condition period. TMDL loads are presented as average annual loads, which incorporate the summer critical condition period and the average load contributed during the other seasons.

4.2 Margin of Safety

A Margin of Safety (MOS) is provided to account for "lack of knowledge concerning the relationship between effluent limitations and water quality" (40 CFR 130.7(c)). For these TMDLs, both an implicit and explicit Margin of Safety (MOS) were incorporated. An implicit MOS was incorporated by using conservative assumptions, including treating fecal coliform as a

conservative substance (source loads were estimated without including die-off rates, soil incorporation, etc.) and using conservative methods to estimate land-based loads. In addition, a 5% explicit MOS was calculated for each lake.

5.0 TMDL CALCULATIONS

Pathogen load percent reductions were calculated by comparing the maximum fecal coliform concentration recorded for each lake to the TMDL target concentration (200 cfu/100 ml). Load capacities were the remaining loads after applying the required reductions on the current loads. In addition, 5% of the load capacity was reserved as the explicit MOS (see example below). The percent reduction specified for each lake was applied equally to pathogen sources in each watershed except in cases where load reductions could be met without reducing the loads contributed by forest, wetlands and barren lands: in such cases these loadings were not reduced in the TMDL allocation. In cases where load reductions on these land use sources were greater than or equal to 99.5%, the percent reduction specified for each lake was applied equally to all pathogen sources including forest and barren land loads.

Percent Reduction = (1 – TMDL target conc./max conc.) x 100
Load Capacity = (1 – percent reduction) * overall current load (using WTM)
MOS = 5% * Load capacity
Overall percent reduction = 1 – (Load capacity – MOS) / overall current load
Overall current load = agricultural and urban land use loads + forest, wetland and barren land loads

When $1 - \frac{Load\ Capacity - MOS - Forest, Wetlands\ and\ Barren\ Land\ Load}{Agricultural\ and\ Urban\ Land\ Use\ Load} \geq 99.5\%$,

Require the same percent reduction on Forest Wetlands, and Barren land loads as on other land use loads;

Otherwise,

Zero percent reduction on Forest, Wetlands and Barren lands loads

5.1 Wasteload Allocations and Load Allocations

WLAs were established for municipal stormwater discharges subject to regulation under the CWA. LAs were established for all stormwater sources that are not subject to regulation under the CWA and for all other nonpoint sources. Stormwater point sources that received a WLA were distinguished from stormwater sources receiving a LA on the basis of land use type and municipal tier designation (Tier A/Tier B).

This distribution of loading capacity between WLAs and LAs is consistent with recent EPA guidance that clarifies existing regulatory requirements for establishing WLAs for stormwater discharges (Wayland, November 2002). Stormwater discharges are captured within the runoff sources quantified according to land use, as described previously. Distinguishing between regulated and unregulated stormwater is necessary in order to express WLAs and LAs numerically; however, "EPA recognizes that these allocations might be fairly rudimentary because of data limitations and variability within the system" (Wayland, November 2002, p.1). Therefore,

allocations are established according to source categories as shown in Table 5. This demarcation between WLAs and LAs based on land use source categories is not perfect, but it represents the best estimate defined as narrowly as data allow. The Department acknowledges that there may be stormwater sources in the residential, commercial, industrial, and mixed urban runoff source categories that are not NJPDES-regulated. Nothing in these TMDLs shall be construed to require the Department to regulate a stormwater source under NJPDES that would not already be regulated as such, nor shall anything in these TMDLs be construed to prevent the Department from regulating a stormwater source under NJPDES.

Table 5. Assignment of WLAs and LAs for stormwater point sources and nonpoint sources

Land Use Source Category	Municipal Tier	TMDL Allocation Type
High density residential	A	WLA
Medium density residential (incl. mixed residential, mixed urban, other urban, military reservations, and no longer military)	A	WLA
Low density residential (incl. rural residential, recreational land, and athletic fields)	A	WLA
Commercial	A	WLA
Industrial	A	WLA
Roadways	A	WLA
High density residential	B	LA
Medium density residential (incl. mixed residential, mixed urban, other urban, military reservations, and no longer military)	B	LA
Low density residential (incl. rural residential, recreational land, and athletic fields)	B	LA
Commercial	B	LA
Industrial	B	LA
Roadways	B	LA
Agricultural	N/A	LA
Forest/Wetland	N/A	LA
Barren land	N/A	LA

A summary of the WLAs, LAs, and MOS is provided for each lake in Table 6 and source loads and allocations are presented in Table 7. As described above, when the loads contributed by forest/wetland/barren lands were not reduced in the TMDL allocation table, the load reduction for urban lands and agricultural lands was increased proportionally to meet the overall percent reduction required for each lake. Note that the overall percent reduction shown in Tables 6 and 7 takes into account the 5% explicit MOS if not based on the previously established stream Fecal Coliform TMDL.

In cases where impaired lakeshed is hydrologically connected to a streamshed addressed in a n established Fecal Coliform TMDL or to another impaired lakeshed, different approaches were utilized to calculate the load reduction for each "nested" watershed.

Lakeshed connected with the Fecal Coliform TMDL established streamshed

If the entire lakeshed is located within the impaired streamshed, the more stringent overall percent reduction between the lake and the stream is applied to the lakeshed. When the streamshed is part of the lakeshed, the rivershed is treated as an upper stream "lake" shed. The same approach, as described below for the nested lakesheds, was used to determine the adjusted load reduction for different areas.

Lakeshed connected with another impaired lakeshed

The following methodology was used to determine the adjusted percent reduction for the nested lake watersheds:

1. Existing pathogen loads calculated for each lake watershed (using WTM) were reduced based on the overall percent reduction that was calculated from the observed lake water quality data. The reduced load was termed the target load.
2. The target load for the upstream watershed was subtracted from the target load of the downstream watershed, giving a target load for the downstream (local) watershed area. The existing load for the downstream (local) watershed was calculated similarly.
3. If the target load for the downstream (local) watershed area was less than or equal to zero, the downstream lake's higher percent reduction needed to be applied to the upper stream lakeshed. This means that the entire drainage area of the downstream lake is ruled by the downstream lake's reduction percentage.
4. If the target load of the downstream (local) watershed area was higher than zero, the percent difference between the existing and target loads for the downstream (local) watershed was calculated. This adjusted percent reduction superseded the original downstream lake percent reduction and was used as the required percent reduction for the downstream (local) watershed area while the upstream lakeshed stayed with the original overall percent reduction. The adjusted percent reduction would be higher than the original overall percent reduction for the downstream lake when the upstream lake required a less percent reduction than the downstream lake and less than the original value if the upstream lake required a higher percent reduction than the downstream lake.

Table 6. TMDL calculations for pathogen impaired lakes in the Northeast Water Region

WMA	Lake Assessment Unit ID	WLA (10^6 colonies/yr)	LA (10^6 colonies/yr)	MOS (10^6 colonies/yr)	TMDL (10^6 colonies/yr)	Overall % Reduction	% MOS	Reduction from associated Stream TMDL
3	Bubbling Springs-03	4.88E+02	3.03E+02	4.17E+01	8.34E+02	90.50%	5.00%	
3	Crystal Lake-03[b]	3.06E+04	1.55E+04	2.43E+03	4.86E+04	94.86%	5.00%	91%
3	Erskine Lake-03	2.11E+03	7.71E+01	1.15E+02	2.30E+03	96.48%	5.00%	
3	Forest Hill Lake-03	4.74E+02	8.71E+01	2.95E+01	5.91E+02	94.86%	5.00%	
3	Kitchell Lake-03	1.77E+03	2.35E+02	1.06E+02	2.11E+03	94.84%	5.00%	
3	Lake Edenwold-03	4.91E+03	2.87E+04	1.77E+03	3.53E+04	84.17%	5.00%	
3	Lake Ioscoe-03	1.20E+03	9.92E+03	5.86E+02	1.17E+04	75.32%	5.00%	
3	Lionhead Lake-03	3.03E+03	5.00E+03	4.23E+02	8.46E+03	95.13%	5.00%	
3	Skyline Lakes-03	6.43E+03	6.30E+02	3.71E+02	7.43E+03	95.96%	5.00%	
4	Toms Lake-04[a]	1.68E+03	1.80E+02	9.77E+01	1.95E+03	93.00%	N/A	93%
6	Camp Lewis Lake-06[a]	5.91E+02	1.23E+02	3.76E+01	7.52E+02	89.00%	N/A	89%
6	Cold Spring Lake 06	3.08E+03	1.86E+03	2.60E+02	5.20E+03	80.21%	5.00%	
6	Cozy Lake-06[b]	2.79E+03	3.09E+02	1.63E+02	3.27E+03	96.83%	5.00%	92%
6	Foxs Pond-06	3.69E+03	6.91E+01	1.98E+02	3.96E+03	97.68%	5.00%	
6	Indian Lake-06	5.58E+03	2.34E+04	1.53E+03	3.05E+04	95.37%	5.00%	
6	Intervale Lake-06	1.55E+03	1.60E+03	1.66E+02	3.32E+03	96.35%	5.00%	
6	Lake Swannanoa-06[b]	3.68E+04	7.08E+03	2.31E+03	4.62E+04	92.08%	5.00%	92%
6	Mountain Lake-06	1.06E+03	3.28E+03	2.28E+02	4.56E+03	95.87%	5.00%	
6	Parsippany Lake-06	4.55E+03	2.50E+02	2.52E+02	5.05E+03	97.43%	5.00%	
6	Powder Mill Pond-06	5.40E+03	2.10E+02	2.95E+02	5.90E+03	96.48%	5.00%	
6	Rainbow Lakes-06	6.20E+03	7.33E+02	3.65E+02	7.30E+03	76.83%	5.00%	
6	Sunrise Lake-06	2.07E+02	4.02E+02	3.21E+01	6.42E+02	95.48%	5.00%	
6	Telemark Lake-06[b]	4.81E+03	9.84E+02	3.05E+02	6.10E+03	94.24%	5.00%	89%
6	West Lake-06[b]	3.63E+03	1.97E+03	2.95E+02	5.90E+03	83.04%	5.00%	78%
6	White Meadow Lake-06[b]	4.66E+03	4.93E+02	2.71E+02	5.43E+03	96.04%	5.00%	89%

a. Lakeshed located within the stream shed and goes with the stream reduction

- Toms Lake is nested with the watershed of Preakness Brook near Little Falls, on which a reduction of 93% was required (NJDEP, 2003).
- Camp Lewis Lake is nested with the watershed of Beaver Brook at Rockaway, on which a reduction of 89% was required (NJDEP, 2003).

b. lakeshed located within the stream shed and stays with its own reduction.

- Crystal Lake is nested with the watershed of Ramapo River near Mahwah, on which a reduction of 91% was required (NJDEP, 2003)
- Lake Swannanoa is nested with the watershed of Roackaway River at Longwood Valley, on which a reduction of 92% was required (NJDEP, 2003).
- Telemark Lake is nested with the watershed of Beaver Brook at Rockaway, on which a reduction of 89% was required (NJDEP, 2003).

- West Lake is nested with the watershed of Stony Brook at Boonton, on which a reduction of 78% was required (NJDEP, 2003).
- White Meadow Lake is nested with the watershed of Beaver Brook at Rockaway, on which a reduction of 89% was required (NJDEP, 2003).
- Cozy Lake is nested with the watershed of Roackaway River at Longwood Valley, on which a reduction of 92% was required (NJDEP, 2003).

Table 7. Northeast Water Region land-based load allocations

WMA	Lake Assessment Unit ID	Overall % Reduction	Agriculture			Barren Land			Forest/Wetland			Urban Total (WLA)			Urban Total (LA)		
			Existing Load (10^6 colonies/yr)	Percent Reduction	Allocated Load (10^6 colonies/yr)	Existing Load (10^6 colonies/yr)	Percent Reduction	Allocated Load (10^6 colonies/yr)	Existing Load (10^6 colonies/yr)	Percent Reduction	Allocated Load (10^6 colonies/yr)	Existing Load (10^6 colonies/yr)	Percent Reduction	Allocated Load (10^6 colonies/yr)	Existing Load (10^6 colonies/yr)	Percent Reduction	Allocated Load (10^6 colonies/yr)
3	Bubbling Springs-03	91%	3.58E-01	94%	2.18E-02	1.32E+00	0%	1.32E+00	3.02E+02	0%	3.02E+02	8.03E+03	94%	4.88E+02	0.00E+00	94%	0.00E+00
3	Crystal Lake-03	95%	6.28E+02	97%	2.18E+01	3.84E+02	0%	3.84E+02	1.51E+04	0%	1.51E+04	8.83E+05	97%	3.06E+04	0.00E+00	97%	0.00E+00
3	Erskine Lake-03	96%	0.00E+00	96%	0.00E+00	0.00E+00	96%	0.00E+00	2.19E+03	96%	7.71E+01	6.00E+04	96%	2.11E+03	0.00E+00	96%	0.00E+00
3	Forest Hill Lake-03	95%	2.19E+02	95%	1.12E+01	7.60E+01	95%	3.90E+00	1.40E+03	95%	7.20E+01	9.23E+03	95%	4.74E+02	0.00E+00	95%	0.00E+00
3	Kitchell Lake-03	95%	5.39E+01	95%	2.78E+00	0.00E+00	95%	0.00E+00	4.49E+03	95%	2.32E+02	3.43E+04	95%	1.77E+03	0.00E+00	95%	0.00E+00
3	Lake Edenwold-03	84%	2.92E+02	97%	7.82E+00	5.25E+01	0%	5.25E+01	2.86E+04	0%	2.86E+04	1.83E+05	97%	4.91E+03	0.00E+00	97%	0.00E+00
3	Lake Ioscoe-03	75%	0.00E+00	97%	0.00E+00	6.29E+01	0%	6.29E+01	9.86E+03	0%	9.86E+03	3.52E+04	97%	1.20E+03	0.00E+00	97%	0.00E+00
3	Lionhead Lake-03	95%	2.06E+02	98%	3.91E+00	0.00E+00	0%	0.00E+00	5.00E+03	0%	5.00E+03	1.60E+05	98%	3.03E+03	0.00E+00	98%	0.00E+00
3	Skyline Lakes-03	96%	1.37E+02	96%	5.53E+00	5.17E+01	96%	2.09E+00	1.54E+04	96%	6.23E+02	1.59E+05	96%	6.43E+03	0.00E+00	96%	0.00E+00
4	Toms Lake-04	93%	0.00E+00	94%	0.00E+00	0.00E+00	0%	0.00E+00	1.80E+02	0%	1.80E+02	2.63E+04	94%	1.68E+03	0.00E+00	94%	0.00E+00
6	Camp Lewis Lake-06	89%	0.00E+00	89%	0.00E+00	0.00E+00	89%	0.00E+00	1.12E+03	89%	1.23E+02	5.37E+03	89%	5.91E+02	0.00E+00	89%	0.00E+00

WMA	Lake Assessment Unit ID	Overall % Reduction	Agriculture			Barren Land			Forest/Wetland			Urban Total (WLA)			Urban Total (LA)		
			Existing Load (10^6 colonies/yr)	Percent Reduction	Allocated Load (10^6 colonies/yr)	Existing Load (10^6 colonies/yr)	Percent Reduction	Allocated Load (10^6 colonies/yr)	Existing Load (10^6 colonies/yr)	Percent Reduction	Allocated Load (10^6 colonies/yr)	Existing Load (10^6 colonies/yr)	Percent Reduction	Allocated Load (10^6 colonies/yr)	Existing Load (10^6 colonies/yr)	Percent Reduction	Allocated Load (10^6 colonies/yr)
6	Cold Spring Lake 06	80%	0.00E+00	80%	0.00E+00	0.00E+00	80%	0.00E+00	9.42E+03	80%	1.86E+03	1.55E+04	80%	3.08E+03	0.00E+00	80%	0.00E+00
6	Cozy Lake-06	97%	8.13E+02	97%	2.57E+01	1.22E+02	97%	3.86E+00	8.82E+03	97%	2.79E+02	8.82E+04	97%	2.79E+03	0.00E+00	97%	0.00E+00
6	Foxs Pond-06	98%	0.00E+00	98%	0.00E+00	8.55E+01	98%	1.98E+00	2.90E+03	98%	6.71E+01	1.59E+05	98%	3.69E+03	0.00E+00	98%	0.00E+00
6	Indian Lake-06	95%	3.25E+03	99%	3.03E+01	2.03E+02	0%	2.03E+02	2.32E+04	0%	2.32E+04	5.99E+05	99%	5.58E+03	0.00E+00	99%	0.00E+00
6	Intervale Lake-06	96%	0.00E+00	98%	0.00E+00	0.00E+00	0%	0.00E+00	1.60E+03	0%	1.60E+03	8.46E+04	98%	1.55E+03	0.00E+00	98%	0.00E+00
6	Lake Swannanoa-06	92%	2.26E+03	92%	1.79E+02	2.47E+02	92%	1.96E+01	7.79E+04	92%	6.16E+03	4.64E+05	92%	3.68E+04	9.04E+03	92%	7.15E+02
6	Mountain Lake-06	96%	0.00E+00	99%	0.00E+00	0.00E+00	0%	0.00E+00	3.28E+03	0%	3.28E+03	1.02E+05	99%	1.06E+03	0.00E+00	99%	0.00E+00
6	Parsippany Lake-06	97%	0.00E+00	98%	0.00E+00	0.00E+00	0%	0.00E+00	2.50E+02	0%	2.50E+02	1.87E+05	98%	4.55E+03	0.00E+00	98%	0.00E+00
6	Powder Mill Pond-06	96%	7.75E+02	96%	2.73E+01	7.27E+01	96%	2.56E+00	5.12E+03	96%	1.80E+02	1.53E+05	96%	5.40E+03	0.00E+00	96%	0.00E+00
6	Rainbow Lakes-06	77%	0.00E+00	79%	0.00E+00	0.00E+00	0%	0.00E+00	7.33E+02	0%	7.33E+02	2.92E+04	79%	6.20E+03	0.00E+00	79%	0.00E+00
6	Sunrise Lake-06	95%	0.00E+00	95%	0.00E+00	4.45E+01	95%	2.01E+00	5.24E+03	95%	2.37E+02	4.58E+03	95%	2.07E+02	3.61E+03	95%	1.63E+02
6	Telemark Lake-06	94%	2.62E+02	94%	1.51E+01	4.26E+01	94%	2.45E+00	1.68E+04	94%	9.66E+02	8.36E+04	94%	4.81E+03	0.00E+00	94%	0.00E+00

WMA	Lake Assessment Unit ID	Overall % Reduction	Agriculture			Barren Land			Forest/Wetland			Urban Total (WLA)			Urban Total (LA)		
			Existing Load (10^6 colonies/yr)	Percent Reduction	Allocated Load (10^6 colonies/yr)	Existing Load (10^6 colonies/yr)	Percent Reduction	Allocated Load (10^6 colonies/yr)	Existing Load (10^6 colonies/yr)	Percent Reduction	Allocated Load (10^6 colonies/yr)	Existing Load (10^6 colonies/yr)	Percent Reduction	Allocated Load (10^6 colonies/yr)	Existing Load (10^6 colonies/yr)	Percent Reduction	Allocated Load (10^6 colonies/yr)
6	West Lake-06	83%	0.00E+00	88%	0.00E+00	0.00E+00	0%	0.00E+00	1.97E+03	0%	1.97E+03	3.10E+04	88%	3.63E+03	0.00E+00	88%	0.00E+00
6	White Meadow Lake-06	96%	0.00E+00	96%	0.00E+00	3.29E+03	96%	1.30E+02	9.17E+03	96%	3.63E+02	1.18E+05	96%	4.66E+03	0.00E+00	96%	0.00E+00

5.2 Reserve Capacity

Reserve capacity is an optional means of reserving a portion of the loading capacity to allow for future growth. Reserve capacities are not included for the lakes addressed in these TMDLs. Wastewater treatment facilities will continue to be required to achieve disinfection. Nonpoint source reduction strategies applied to land uses will be equally effective with respect to existing and future use of the land.

6.0 FOLLOW - UP MONITORING

Monitoring requirements for the listed lakes are established under NJDOH regulations for state bathing beaches. NJDOH regulations include sampling requirements before and during seasonal operation. Before bathing beaches are opened each year, NJDOH requires a pre-operational assessment, which includes

- A review of historical sampling and epidemiological data
- A field investigation of the bathing and surrounding areas to identify sources of potential contamination
- A sampling of waters in the bathing area and in areas of suspected sources of contamination

During the bathing season, NJDOH requires that bathing beach water be sampled one week prior to opening and at one-week intervals once in use. Samples are collected during periods of maximum user load and from depths used for bathing. In cases where water samples were found to meet the NJDOH water quality criterion for three consecutive months in the prior year, operators can apply for biweekly sampling responsibilities (NJDOH, 2004).

7.0 IMPLEMENTATION

Management measures are "economically achievable measures for the control of the addition of pollutants from existing and new categories and classes of nonpoint and stormwater sources of pollution, which reflect the greatest degree of pollutant reduction achievable through the application of the best available nonpoint and stormwater source pollution control practices, technologies, processes, citing criteria, operating methods, or other alternatives" (USEPA, 1993).

Development of effective management measures depends on accurate source assessment. Coliform bacteria are contributed to the environment from a number of categories of sources including human, domestic or captive animals, agricultural practices, and wildlife. Coliform bacteria from these sources can reach waterbodies directly, through overland runoff, or through sewage or stormwater conveyance facilities. Each potential source will respond to

one or more management strategies designed to eliminate or reduce that source of coliform bacteria. Each management strategy has one or more entities that can take lead responsibility to effect the strategy. Various funding sources are available to assist in accomplishing the management strategies. The Department will address the sources of impairment by matching strategies with sources, selecting responsible entities and aligning available resources to effect implementation.

For example, the stormwater discharged to the impaired waterbodies through "municipal separate storm sewer systems" (MS4s) are regulated under the Department's Municipal Stormwater Regulation Program. Under these rules and associated general permits, many municipalities (and various county, State, and other agencies) are required to implement various control measures that should substantially reduce bacteria loadings, including measures to eliminate "illicit connections" of domestic sewage and other waste to the MS4s. Measures that are currently in effect include ordinances to manage pet waste, prohibit feeding of unconfined wildlife on public property, clean catch basins, perform good housekeeping at maintenance yards, and provide related public education and employee training. These measures are required in accordance with the Department's Municipal Stormwater Regulation program. The Department has provided State funds as well as a portion of its Clean Water Act 319(h) pass through grant funds to assist municipalities in meeting these requirements.

Sewage conveyance facilities are potential sources of fecal coliform in that equipment failure or operational problems may result in the release of untreated sewage. These sources, once identified, can be eliminated through appropriate corrective measures that can be affected through the Department's enforcement authority. Inadequate on-site sewage disposal can also be a source of fecal coliform. Systems that were improperly designed, located or maintained may result in surfacing of effluent; illicit remedies such as connections to storm sewers or streams add human waste directly to waterbodies. Once these problems have been identified through local health departments, sanitary surveys, or other means, alternatives to address the problems can be evaluated and the best solution implemented. The New Jersey Environmental Infrastructure Financing Program, which includes New Jersey's State Revolving Fund, provides low interest loans to assist in correction of water quality problems related to stormwater and wastewater management.

Geese are migratory birds that are protected by the Migratory Bird Treaty Act of 1918 and other Federal and State Laws. Resident Canada geese do not migrate, but are nevertheless protected by this and other legislation. The United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS)-Wildlife Services program reports that the 1999 estimated population of non-migratory geese in New Jersey was 83,000. Geese may produce up to 1½ pounds of fecal matter a day and when the congregate in large numbers they can represent a locally significant source of coliform bacteria. This may warrant taking steps to reduce populations in areas with excessive populations.

Because geese are free to move about and commonly graze and rest on large grassy areas associated with schools, parks, golf courses, corporate lawns, and cemeteries, measures to reduce populations, where necessary, are best developed and conducted at the community level through a community-based goose damage management program. USDA's Wildlife Services program recommends that a community prepare a written Canada Goose Damage Management Plan that may include the following actions:

- Initiate a fact-finding and communication plan
- Enact and enforce a "no feeding" ordinance (already required per MS4 permit)
- Conduct goose damage control activities such as habitat modification
- Review and update land use policies
- Reduce or eliminate goose reproduction (permit required)
- Hunt geese to reinforce nonlethal actions (permit required)

Procedures such as handling nests and eggs, capturing and relocating birds, and the hunting of birds require a depredation permit from either the USDA APHIS Wildlife Services or U.S. Fish and Wildlife Services. Procedures requiring permits should be a last resort after a community has exhausted the other listed measures. The Department's draft guide *Management of Canada Geese in Suburban Areas, March 2001,* which may be found at www.state.nj.us/dep/watershedmgt under publications, provides extensive guidance on how to modify habitat to serve as a deterrent to geese as well as other prevention techniques such as education through signage and ordinances.

In coastal areas, other waterfowl are naturally present in significant numbers and vary seasonally with migratory patterns. Other wildlife contributions may include deer populations, which have been identified as a potential fecal coliform source in the impaired watersheds. The forested and low-density residential areas that provide deer habitat can be found in close proximity to the impaired watersheds. Deer have been evaluated in fecal coliform TMDLs by other States (e.g. Alabama and South Carolina) and could be a fecal coliform source in New Jersey. Management measures to reduce coliform bacteria contributed by wildlife are not generally practicable but could respond to measures such as improved riparian buffers.

Agricultural activities are another example of potential sources of coliform bacteria. Possible contributors are direct contributions from livestock permitted to traverse streams and stream corridors, manure management from feeding operations, or use of manure as a soil fertilizer/amendment. Implementation of conservation management plans and best management practices are the best means of controlling agricultural sources of coliform bacteria. Several programs are available to assist farmers in the development and implementation of conservation management plans and best management practices. The Natural Resource Conservation Service is the primary source of assistance for landowners in the development of resource management pertaining to soil conservation, water quality improvement, wildlife habitat enhancement, and irrigation water management. The USDA

Farm Services Agency performs most of the funding assistance. All agricultural technical assistance is coordinated through the locally led Soil Conservation Districts. The funding programs include:

- **The Environmental Quality Incentive Program (EQIP)** is designed to provide technical, financial, and educational assistance to farmers/producers for conservation practices that address natural resource concerns, such as water quality. Practices under this program include integrated crop management, grazing land management, well sealing, erosion control systems, agri-chemical handling facilities, vegetative filter strips/riparian buffers, animal waste management facilities and irrigation systems.

- **The Conservation Reserve Program (CRP)** is designed to provide technical and financial assistance to farmers/producers to address the agricultural impacts on water quality and to maintain and improve wildlife habitat. CRP practices include the establishment of filter strips, riparian buffers and permanent wildlife habitats. This program provides the basis for the Conservation Reserve Enhancement Program (CREP).

- **The Conservation Reserve Enhancement Program** The New Jersey Departments of Environmental Protection and Agriculture, in partnership with the Farm Service Agency and Natural Resources Conservation Service, have established a $100 million dollar CREP agreement. The program matches $23 million of State money with $77 million from the Comodity Credit Corporation within USDA. Through CREP, financial incentives are offered for agricultural landowners to voluntarily implement conservation practices on agricultural lands. NJ CREP will be part of the USDA's Conservation Reserve Program (CRP). There will be a ten-year enrollment period, with CREP leases ranging between 10-15 years. The State intends to augment this program thereby making these leases permanent easements. The enrollment of farmland into CREP in New Jersey is expected to improve stream health through the installation of water quality conservation practices on New Jersey farmland.

Management strategies are summarized below in Table 8.

Table 8. Implementation management strategies

Source Category	Responses	Potential Responsible Entity	Funding options
Human Sources			
Inadequate (per design, operation, maintenance, location, density) on-site disposal systems	Sanitary surveys, septic management programs/ordinances	Municipality	CWA 604(b) for confirmation of inadequate condition; Environmental

Source Category	Responses	Potential Responsible Entity	Funding options
			Infrastructure Financing Program for construction of selected option
Inadequate or improperly maintained stormwater facilities; illicit connections	Measures required under Municipal Stormwater permitting program including any additional measures determined in the future to be needed through TMDL process	Municipality, State and County regulated entities, stormwater utilities	CWA 319(h); Environmental Infrastructure Financing Program for construction of selected option
Malfunctioning sewage conveyance facilities	Identify through source trackdown and repair	Owner of malfunctioning facility--compliance issue	User fees
Domestic/captive animal sources			
Pets	Pet waste ordinances	Municipalities for ordinance adoption and compliance	State source and CWA 319(h) assistance to municipalities to implement municipal stormwater regulations
Horses, livestock, zoos	Confirm through source trackdown: SCD/NRCS develop conservation management plans	Property owner	EQIP, CRP, CREP
Agricultural practices	Confirm through source trackdown; SCD/NRCS develop conservation management plans, exercise CAFO/AFO authority if applicable	Property owner	EQIP, CRP, CREP
Wildlife			
Locally excessive populations of resident Canada geese or other waterfowl	Feeding ordinances; Goose Management BMPs	Municipality for ordinance; local community groups for BMPs	State source; CWA 319(h)
Indigenous wildlife	Confirm through trackdown; riparian buffer restoration; consider revising designated uses	State	State source

7.1 Specific Projects

In addition to the more generalized strategies described previously, a number of projects have been undertaken which are expected to aid in achieving the load reductions assigned to the impaired waterbodies. Ongoing activities to develop and implement watershed restoration plans are expected to result in additional specific projects to reduce pollutant loads.

Table 9. Northeast Outreach and Restoration Projects

WMA	FY	Funding Source	Recipient	Project Title	Grant Amount
6	2003	319(h)	Rutgers Cooperative Extension	Regional Stormwater Management Plan for Troy Brook (completed) – Both Intervale Lake and Lake Parsippany are identified in the Troy Brook which include several measures that may reduce fecal loadings to these lakes.	$213,400
6	2007	319(h)	Rockaway Township	Installation of Stormwater Quality Management Structures in the Beaver Brook Watershed (White Meadow Lake)	$198,400

8.0 REASONABLE ASSURANCE

With the implementation of source reduction measures such as reducing the number of failing septic systems, leaching sewer lines, and controlling agricultural runoff, the Department has reasonable assurance that a significant improvement in the support of primary contact recreation in the impaired lakes will be attained. The results from on-going existing monitoring programs will be evaluated to determine effectiveness of the identified measures and if additional measures are needed.

9.0 PUBLIC PARTICIPATION

The Water Quality Management Planning Rules at N.J.A.C. 7:15-7.2 require the Department to initiate a public process prior to the development of each TMDL and to allow public input to the Department on policy issues affecting the development of the TMDL. Further, the Department shall adopt each TMDL as an amendment to the appropriate area-wide water quality management plan in accordance with procedures at N.J.A.C. 7:15-3.4(g). As part of the public participation process for the development and implementation of the subject TMDLs, the Department solicited information from stakeholder groups and from the general public directly and through a web posting beginning in October 2006. Additionally in November 2006, the list of impaired lakes was distributed to the New Jersey volunteering monitoring community, through the Watershed Watch Network. The Watershed Watch Network is a

program acting as an umbrella for all of the volunteer monitoring programs within New Jersey. Interested parties had the opportunity to supply the Department with information about each via e-mail. The Department specifically solicited information regarding potential sources and/or current non point sources of pollution reduction projects within the impaired watersheds. Information received regarding potential sources of fecal contamination were assessed in the development of these TMDLs.

10.0 AMENDMENT PROCESS

Notice proposing these TMDLs appeared in the July 16, 2007 New Jersey Register and in a newspaper of general circulation in order to provide the public an opportunity to review the TMDL document and submit formal comments. In addition, a public hearing was held on August 17, 2007 at the New Jersey Department of Environmental Protection Public Hearing Room, 401 E. State St., Trenton, NJ 08608. There was an informal presentation from 1:00 p.m. to 2:00 p.m., followed by the public hearing. Notice of the proposal and hearing was provided to affected municipalities and lake associations in the watershed.

No comments were received during the public notice period. One person attended the public hearing and no testimony was given. This TMDL was approved by EPA on September 28, 2007 and was adopted on October 19, 2009 as an amendment to the Northeast and Sussex County Water Quality Management Plans in accordance with New Jersey's Water Quality Management Planning Rules at N.J.A.C. 7:15-3.4 (g).

APPENDIX A: REFERENCES

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APPENDIX B: NJPDES WASTEWATER TREATMENT FACILITIES, TIER A MUNICIPALITIES, TIER B MUNICIPALITIES

Northeast Water Region Wastewater Treatment Facilities

NJPDES ID	Facility Name	Pipe	FC Limit	Permit Category*	Receiving Waters/Associated Lake
NJ0024457	Our Lady of Magnificent School	001A	NA	A	Butler Reservoir via unnamed trib/Lake Edenwold
NJ0053112	Oakland Boro - Chapel Hill Estates	001A	NA	A	Ramapo River via Mirror Lk and storm swr/Crystal Lake
NJ0021342	Oakland Boro Skyview-Highbrook STP	001A	NA	A	Caille Lk via unnmd trib & storm sewer/Crystal Lake
NJ0029858	Oakland Care Center	001A	NA	A	Hoppers Pond (Ramapo R) via storm sewer/Crystal Lake
NJ0032395	Ringwood Plaza - Ringwood Assn	001A	NA	A	Meadow Brook/Skyline Lakes
NJ0027006	Ringwood Boro - Ringwood Acres	001A	NA	A	High Mountain Bk via ditch/ Skyline Lakes
NJ0021253	Ramapo BOE - Indian High	001A	NA	A	Pond Brook (Ramapo River)/Crystal Lake
NJ0026867	Jefferson Twp - White Rock	001A	NA	A	Mitt Pond (Russia Brook) via unnmd trib/Lake Swannanoa
NJ0021091	Jefferson Twp High - Middle School	001A	NA	A	Russia Brook via unnmd trib (Edison Bk)/Lake Swannanoa

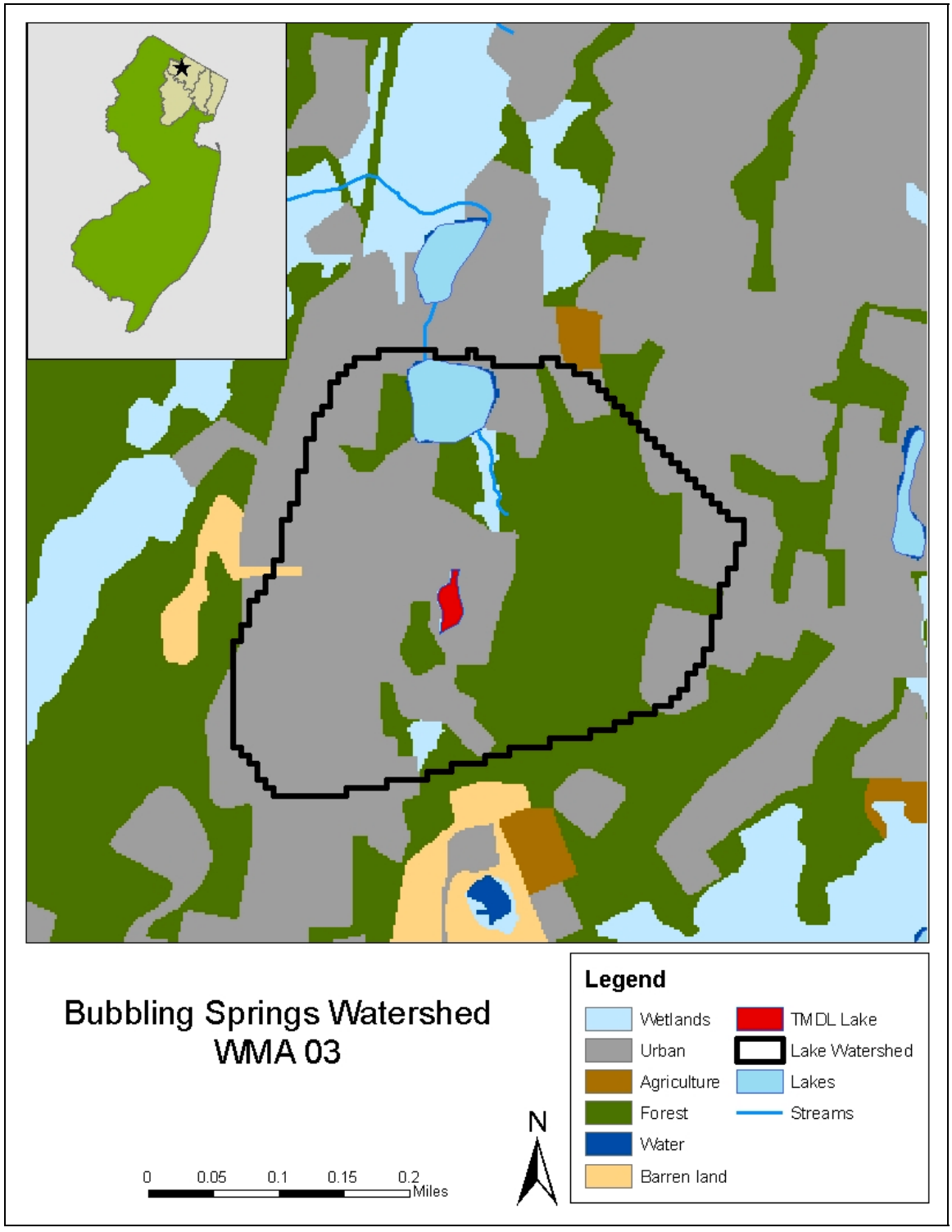
*Permit Categories: A = Sanitary Surface Water Discharge

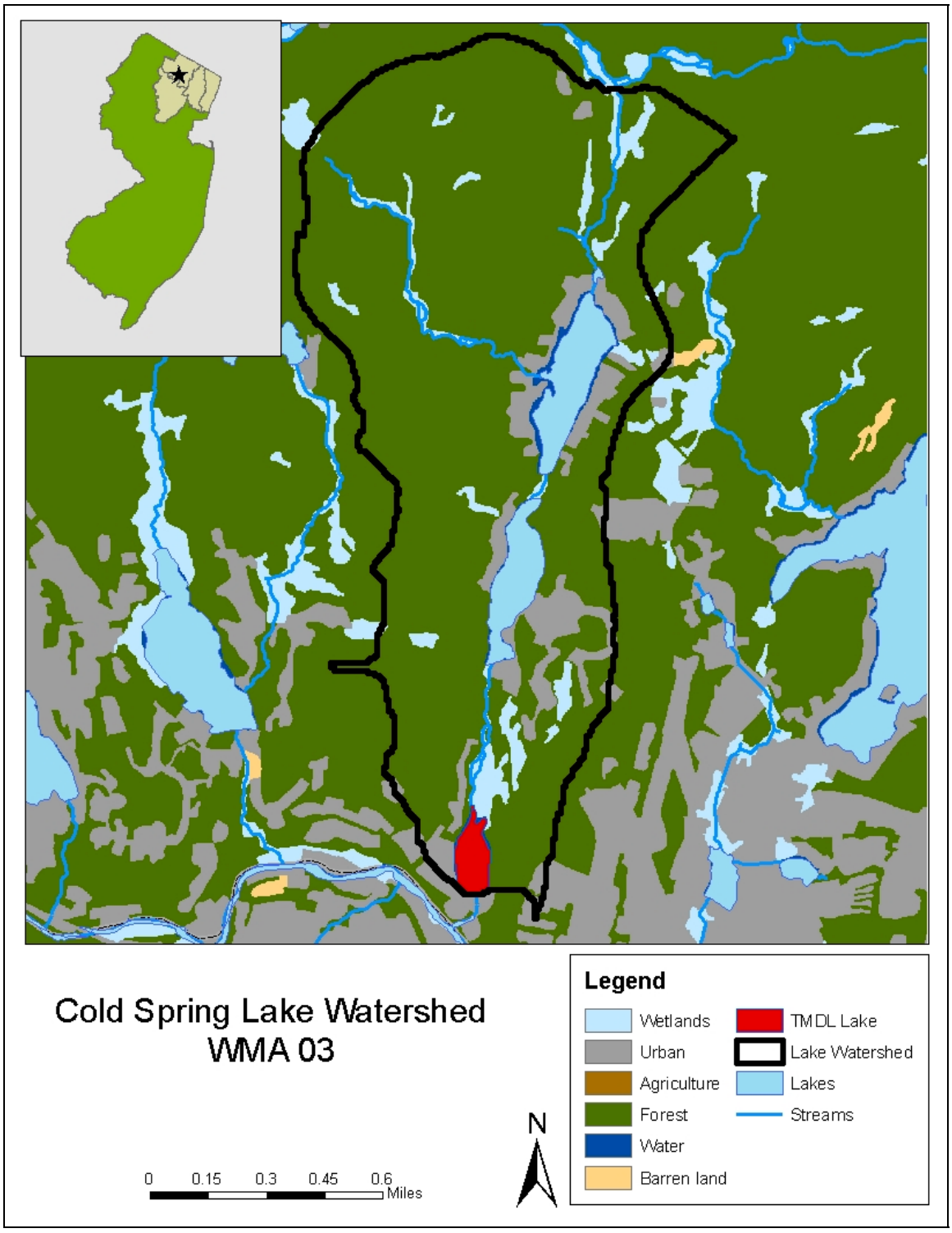
Northeast Water Region Tier A and Tier B Municipalities

Tier	Watershed	Municipality	WMA	Permit #
A	Kitchell Lake	West Milford Twp	3	NJG0148806
	Skyline Lakes	Ringwood Boro	3	NJG0152749
		Mahwah Twp	3	NJG0151211
		Wanaque Boro	3	NJG0149306
	Erksine Lake	Ringwood Boro	3	NJG0152749
	Lionhead Lake	Franklin Lakes Boro	3	NJG0154121
		Wayne Twp	3	NJG0150436
	Crystal Lake	Mahwah Twp	3	NJG0151211
		Oakland Boro	3	NJG0148521
		Franklin Lakes Boro	3	NJG0154121
		Wayne Twp	3	NJG0150436
		North Haledon Boro	3	NJG0154130
	Lake Edenwold	Kinnelon Boro	3	NJG0149781
		Butler Boro	3	NJG0149837
	Bubbling Springs	West Milford Twp	3	NJG0148806
	Forest Hill Lake	West Milford Twp	3	NJG0148806
	Toms Lake	Wayne Twp	4	NJG0150436
	Lake Swannanoa	Sparta Twp	6	NJG0148059
		Jefferson Twp	6	NJG0151793
	Cold Springs Lake	West Milford Twp	6	NJG0148806
		Bloomingdale Boro	6	NJG0153371
	Lake Ioscoe	Wanaque Boro	6	NJG0149306
		Bloomingdale Boro	6	NJG0153371
	Mountain Lake	Boonton Twp	6	NJG0148091
		Denville Twp	6	NJG0148229
		Mountain Lakes Boro	6	NJG0151386
	Intervale Lake	Boonton Twp	6	NJG0148091
		Boonton Town	6	NJG0153672
		Mountain Lakes Boro	6	NJG0151386
		Parsippany-Troy Hills Twp	6	NJG0150266
	Powder Mill Lake	Denville Twp	6	NJG0148229
		Parsippany-Troy Hills Twp	6	NJG0150266
	Foxs Pond	Rockaway Twp	6	NJG0151246
		Rockaway Boro	6	NJG0150746
	Indian Lake	Denville Twp	6	NJG0148229
		Parsippany-Troy Hills Twp	6	NJG0150266
		Randolph Twp	6	NJG0152501
		Morris Twp	6	NJG0152463
	Parsippany Lake	Parsippany-Troy Hills Twp	6	NJG0150266
	Camp Lewis Lake	Rockaway Twp	6	NJG0151246
	Cozy Lake	Jefferson Twp	6	NJG0151793
		Rockaway Twp	6	NJG0151246
	Sunrise Lake	Mendham Twp	6	NJG0150819

	White Meadow Lake	Rockaway Twp	6	NJG0151246
	Rainbow Lake	Denville Twp	6	NJG0148229
		Mountain Lakes Boro	6	NJG0151386
		Parsippany-Troy Hills Twp	6	NJG0150266
	West lake	Kinnelon Boro	6	NJG0149781
	Telemark Lake	Rockaway Twp	6	NJG0151246
B	Lake Swannanoa	Hardyston Twp	6	NJG0152269
	Sunrise Lake	Harding Twp	6	NJG0151165

APPENDIX C: LAKE WATERSHED MAPS

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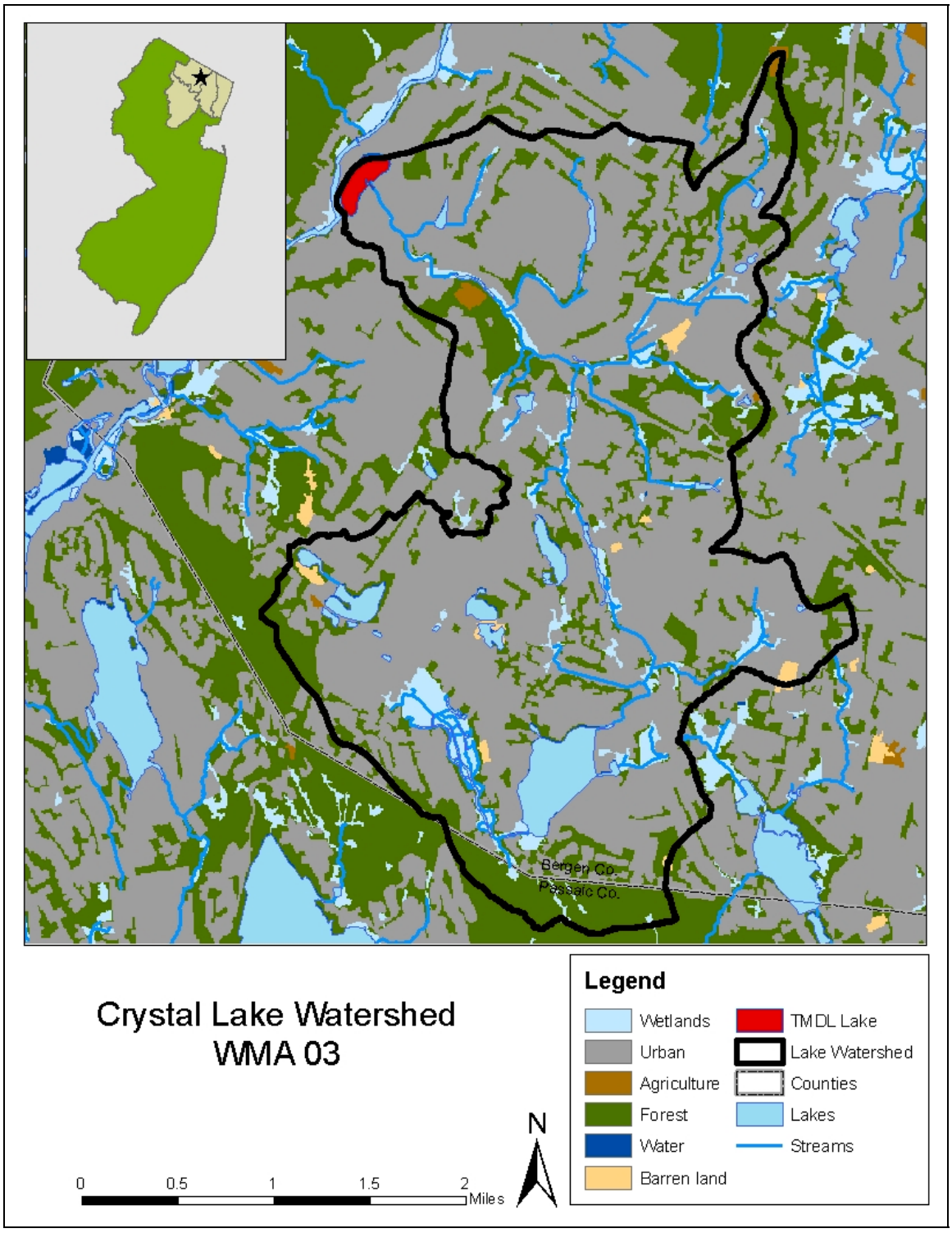
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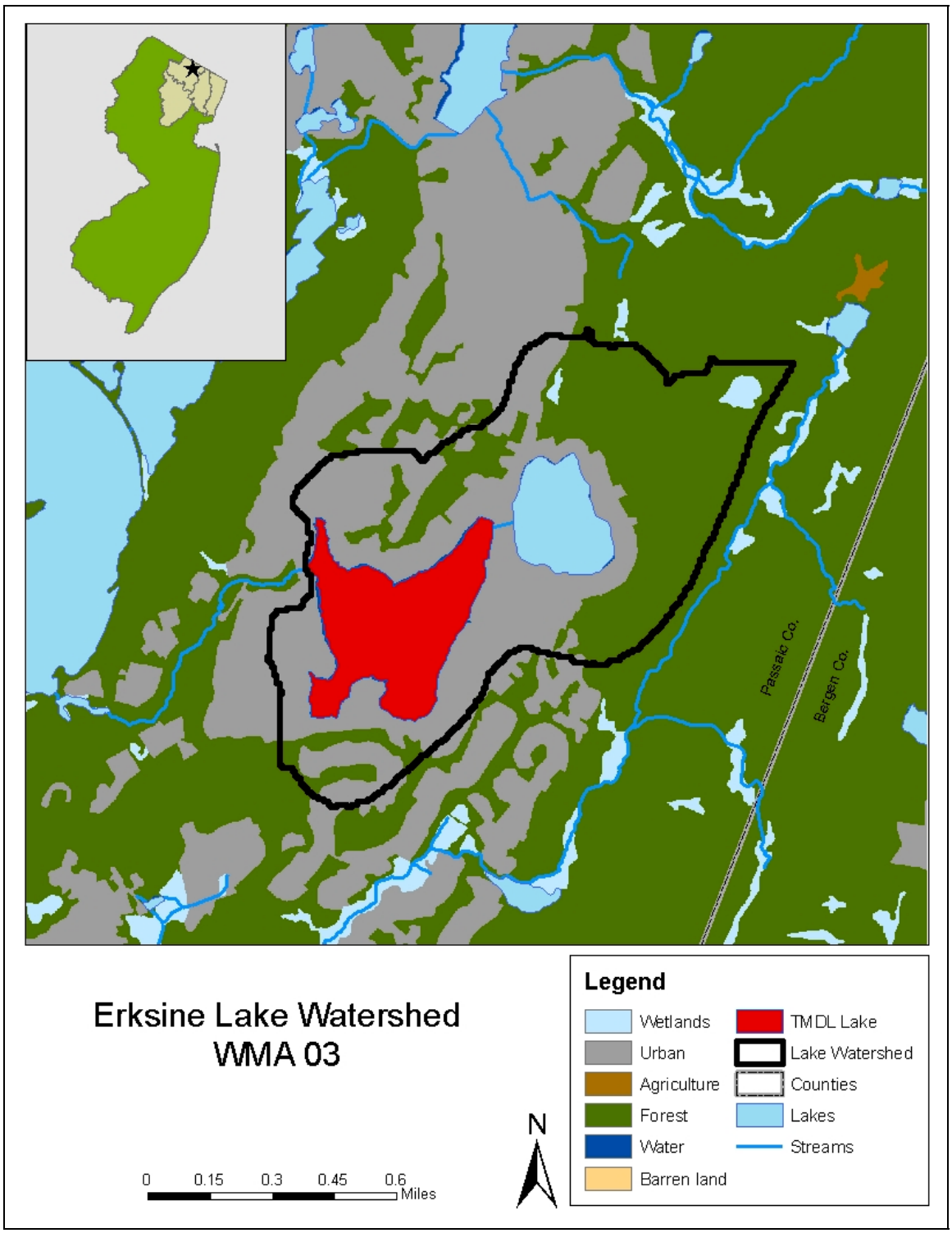
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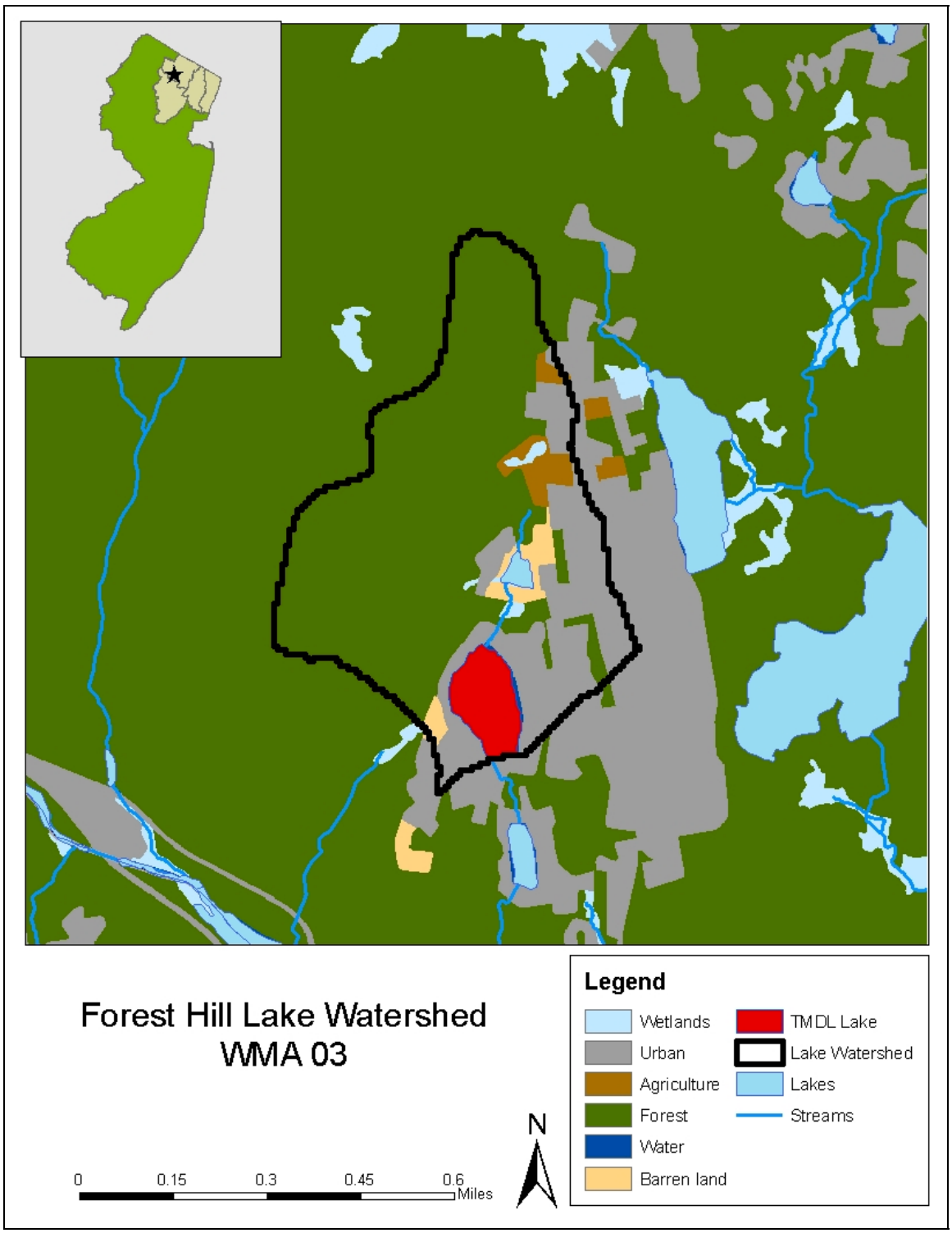
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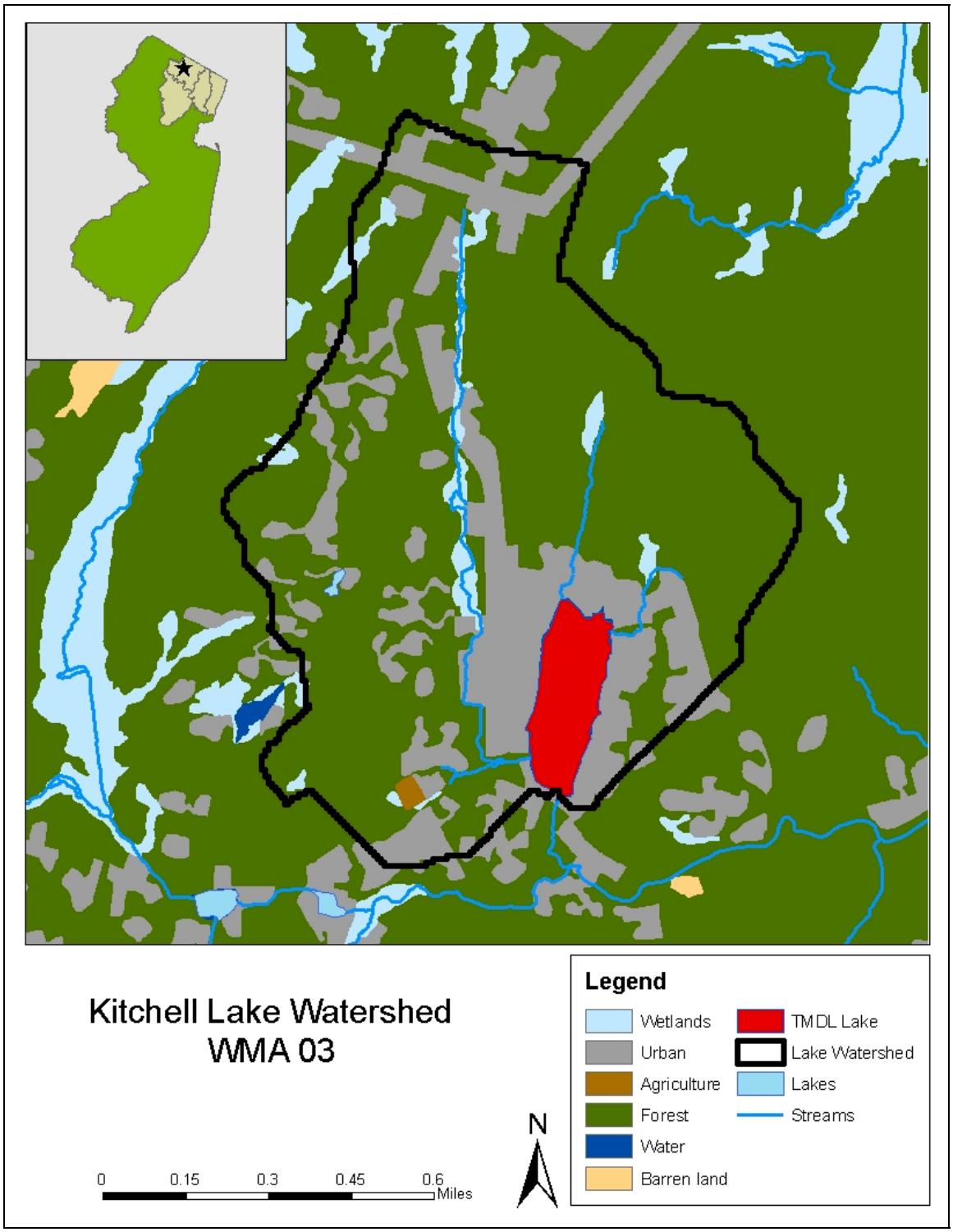
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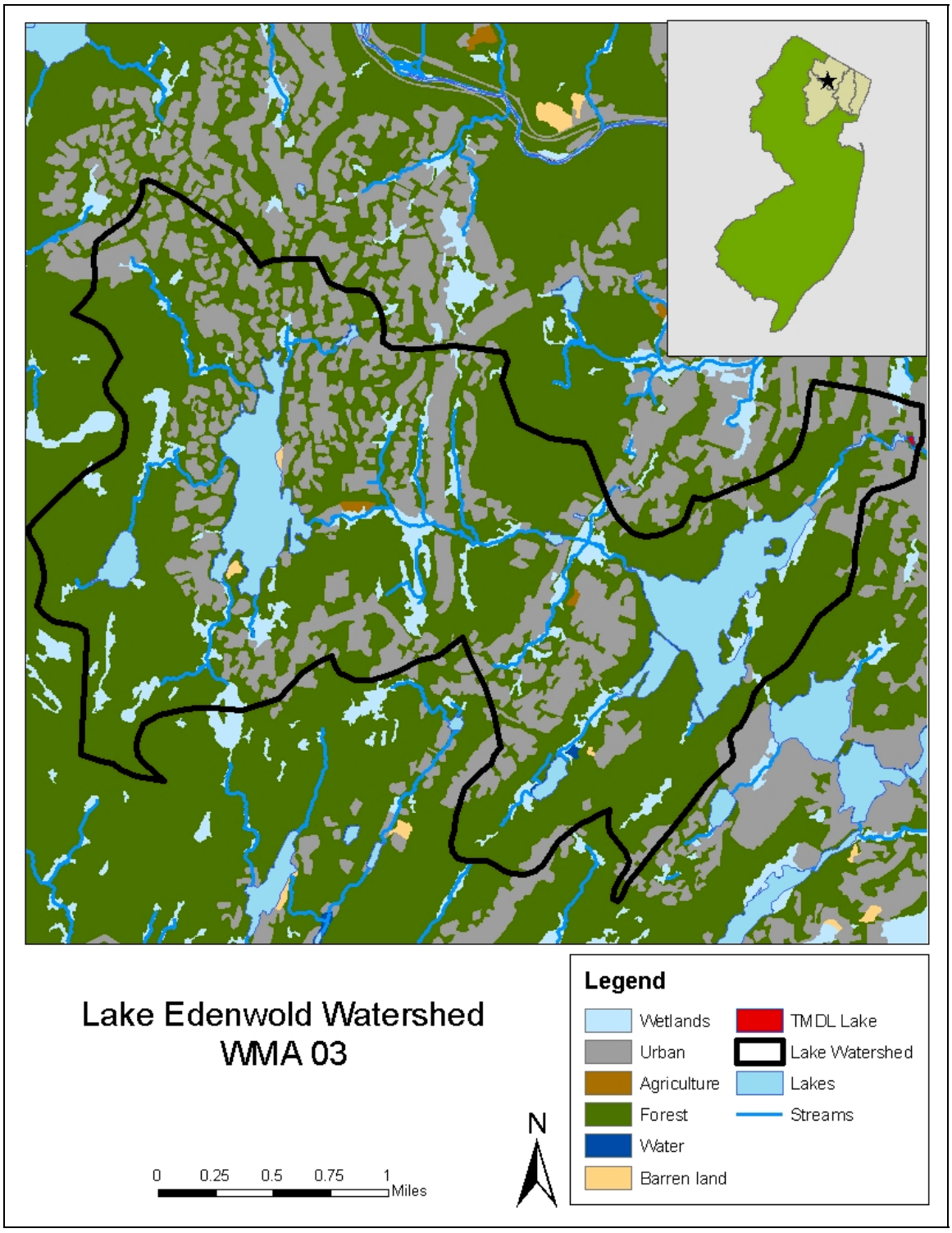
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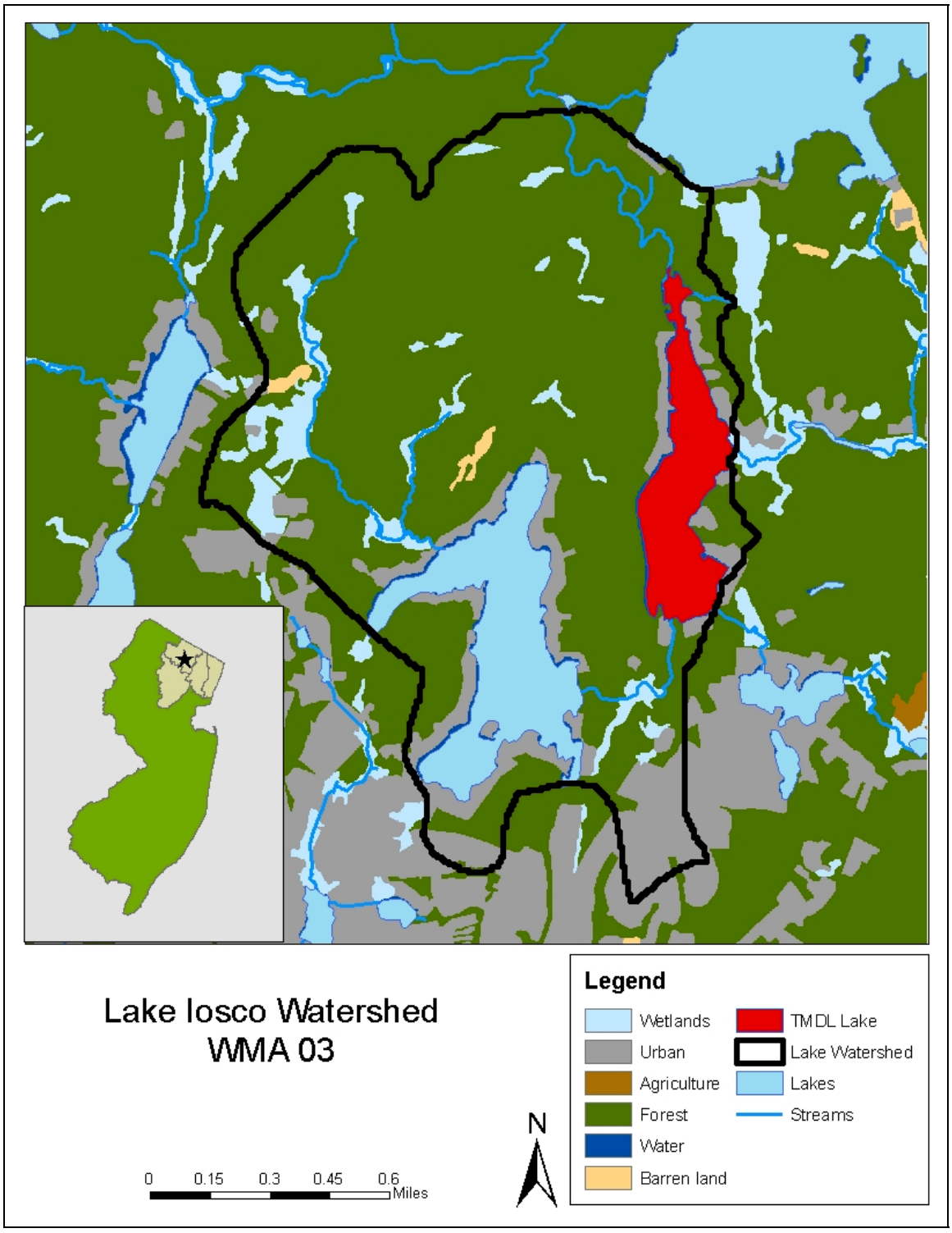
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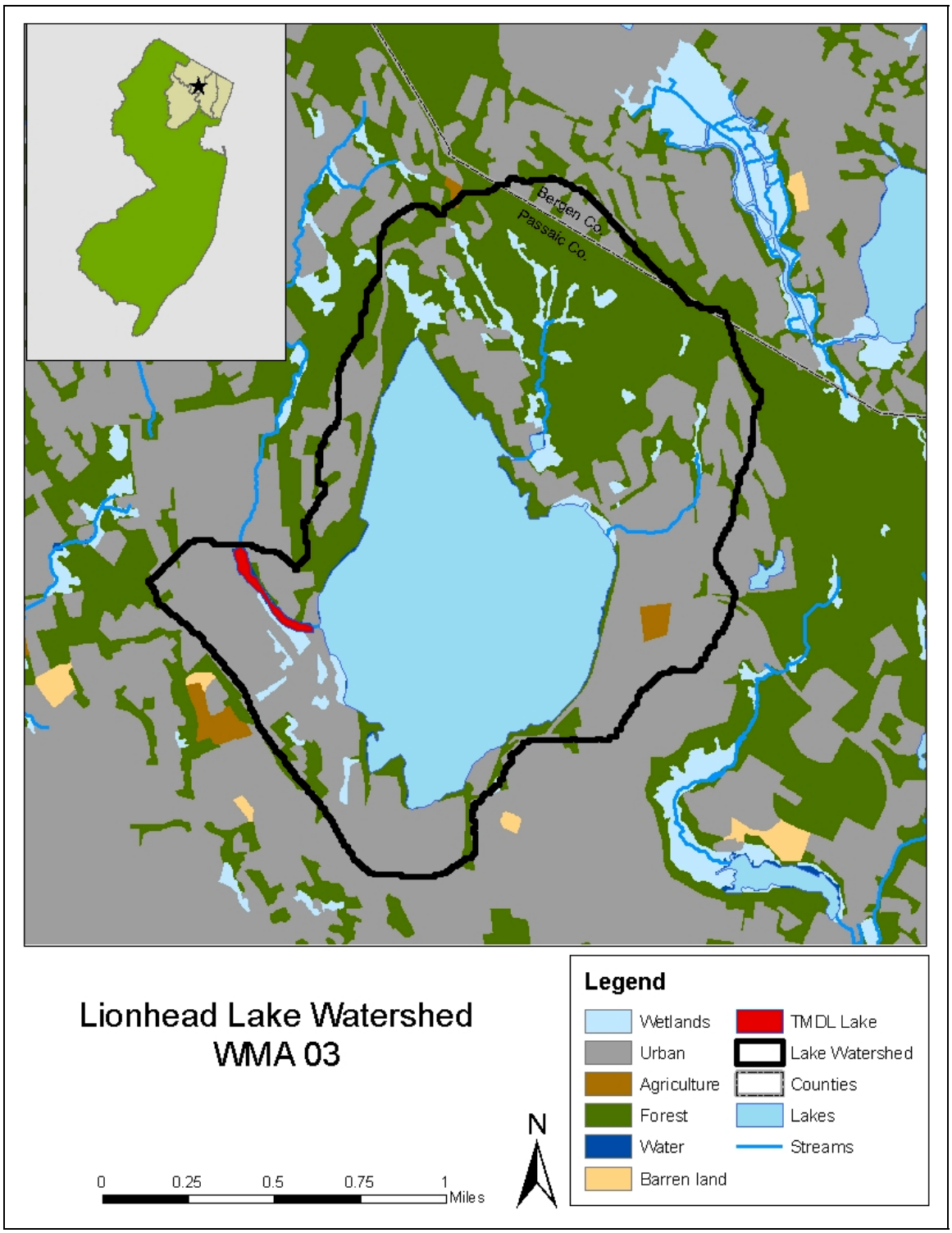
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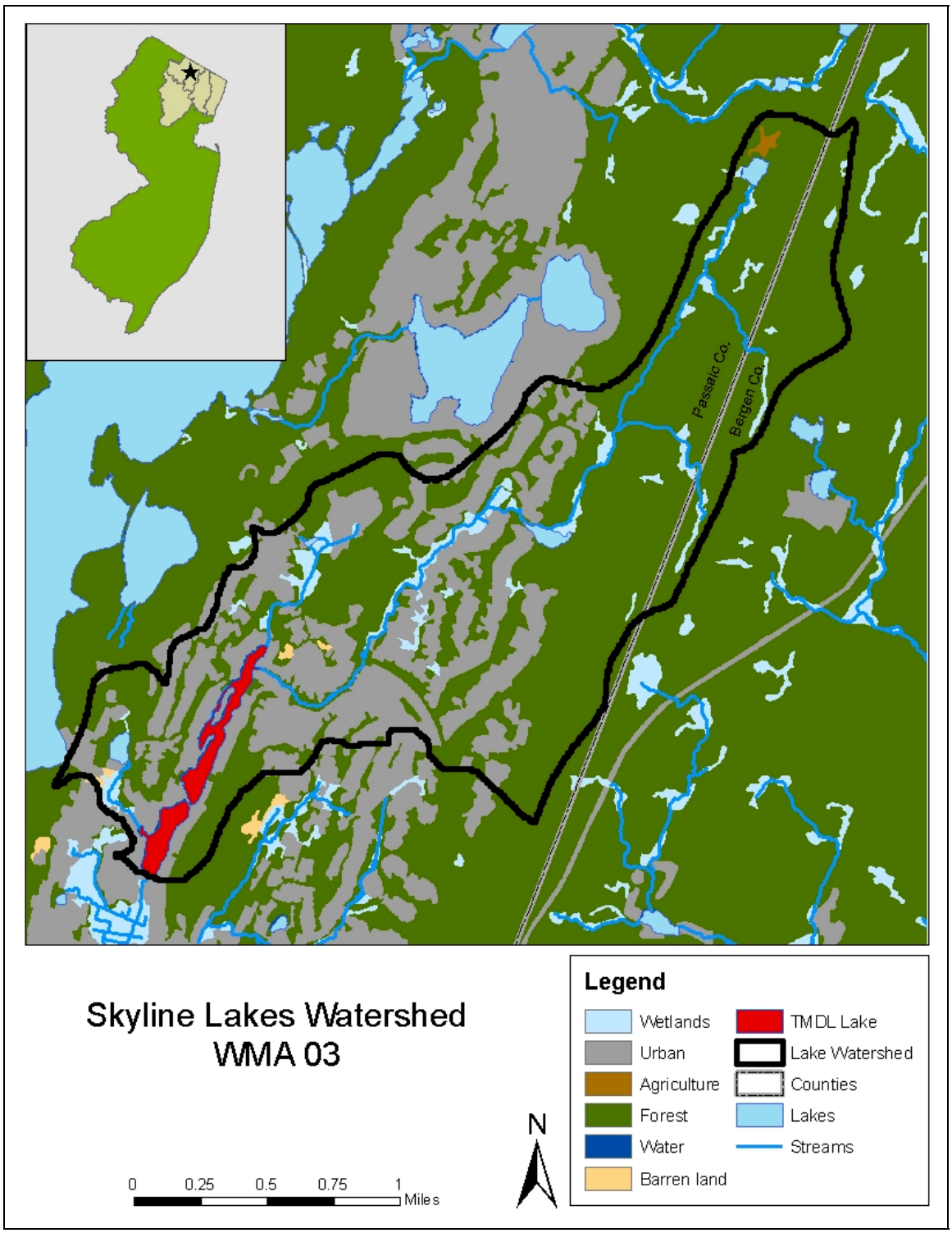
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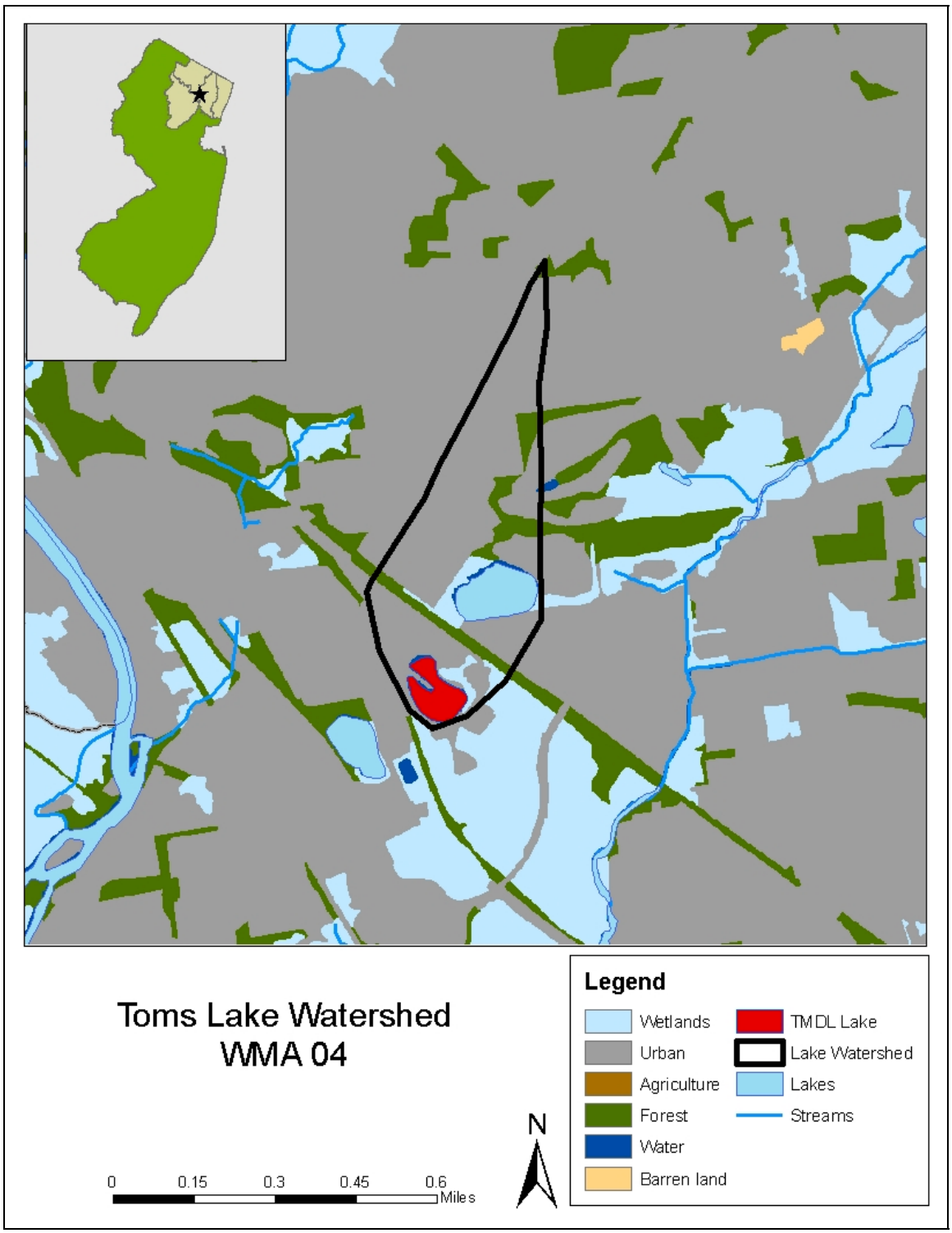
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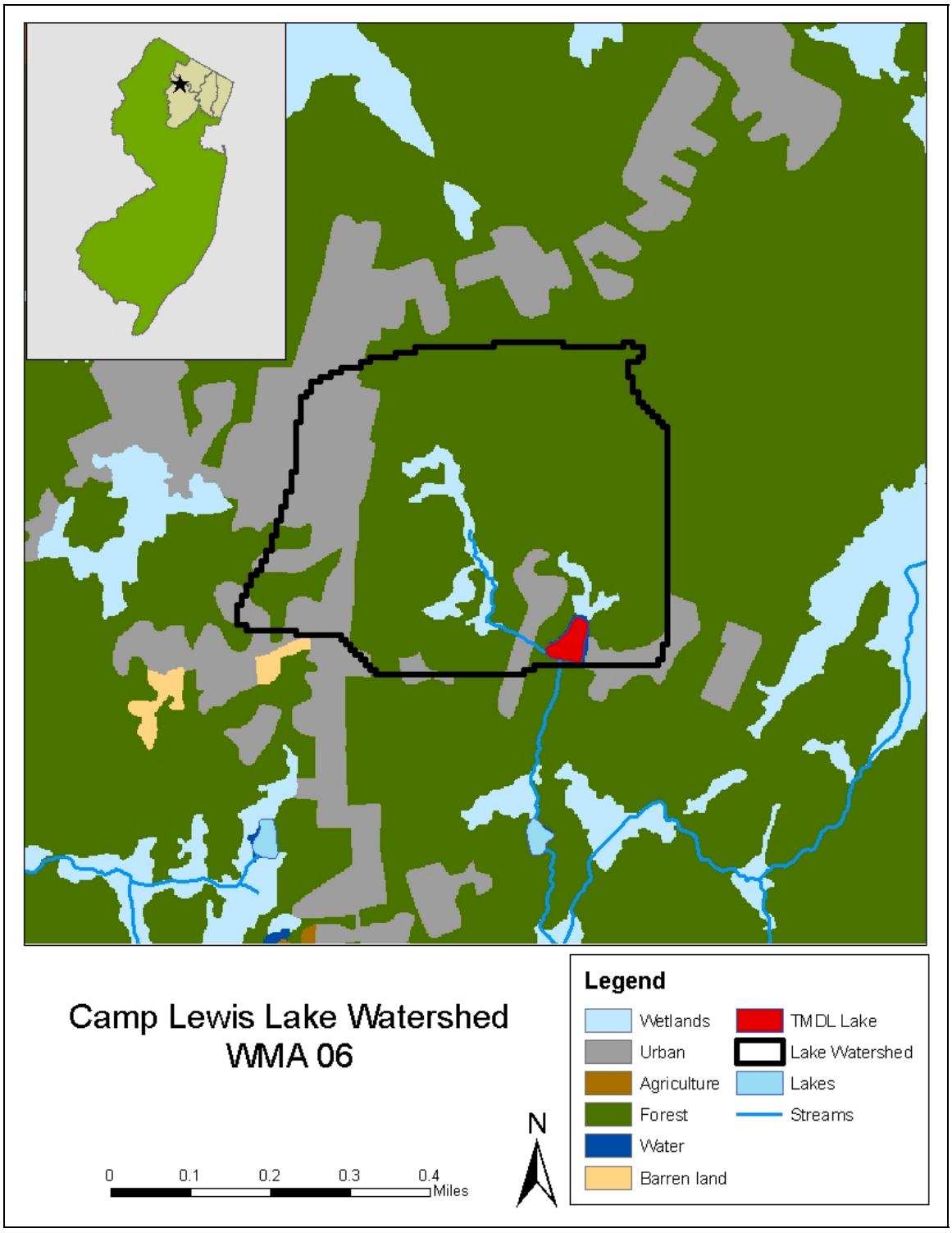
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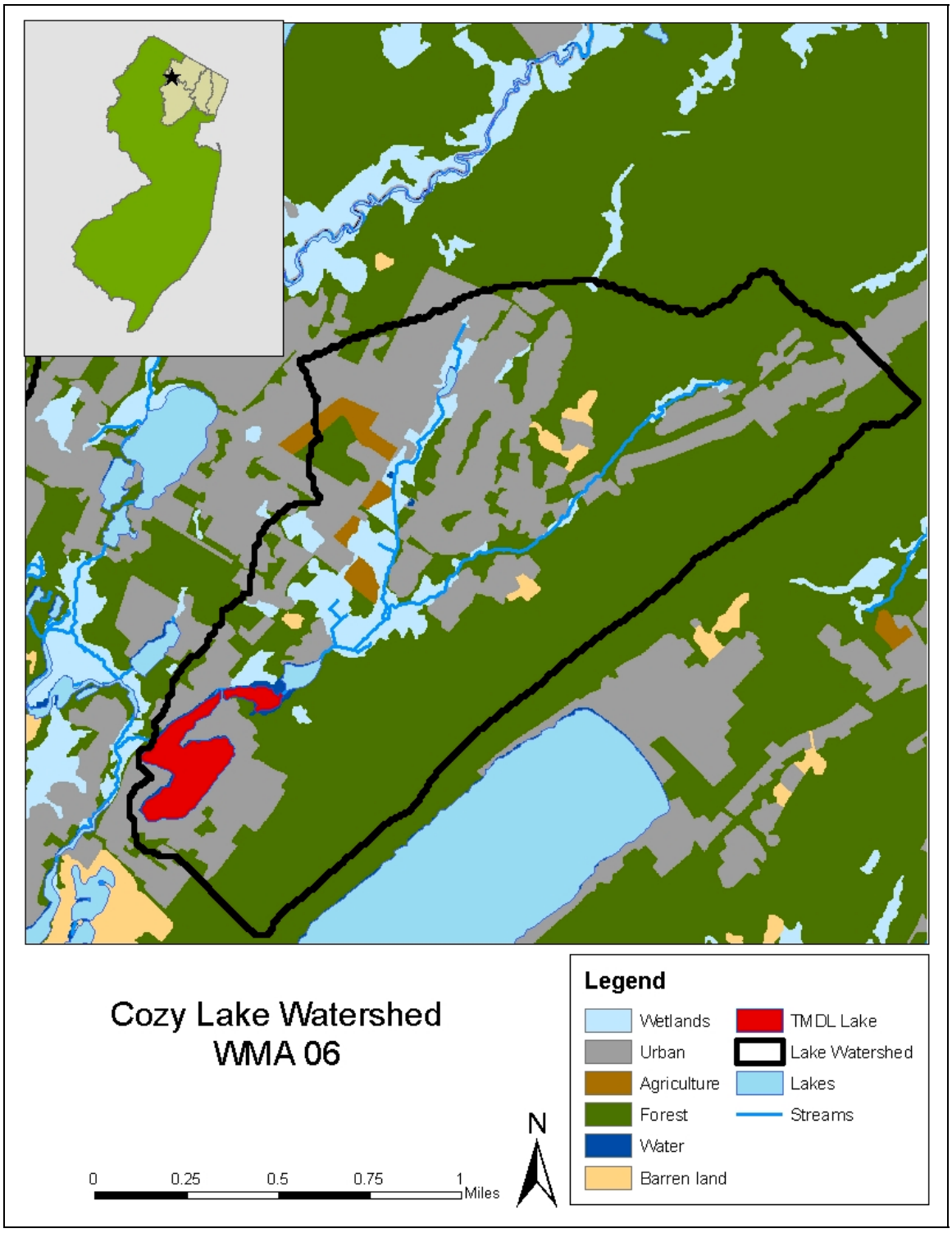
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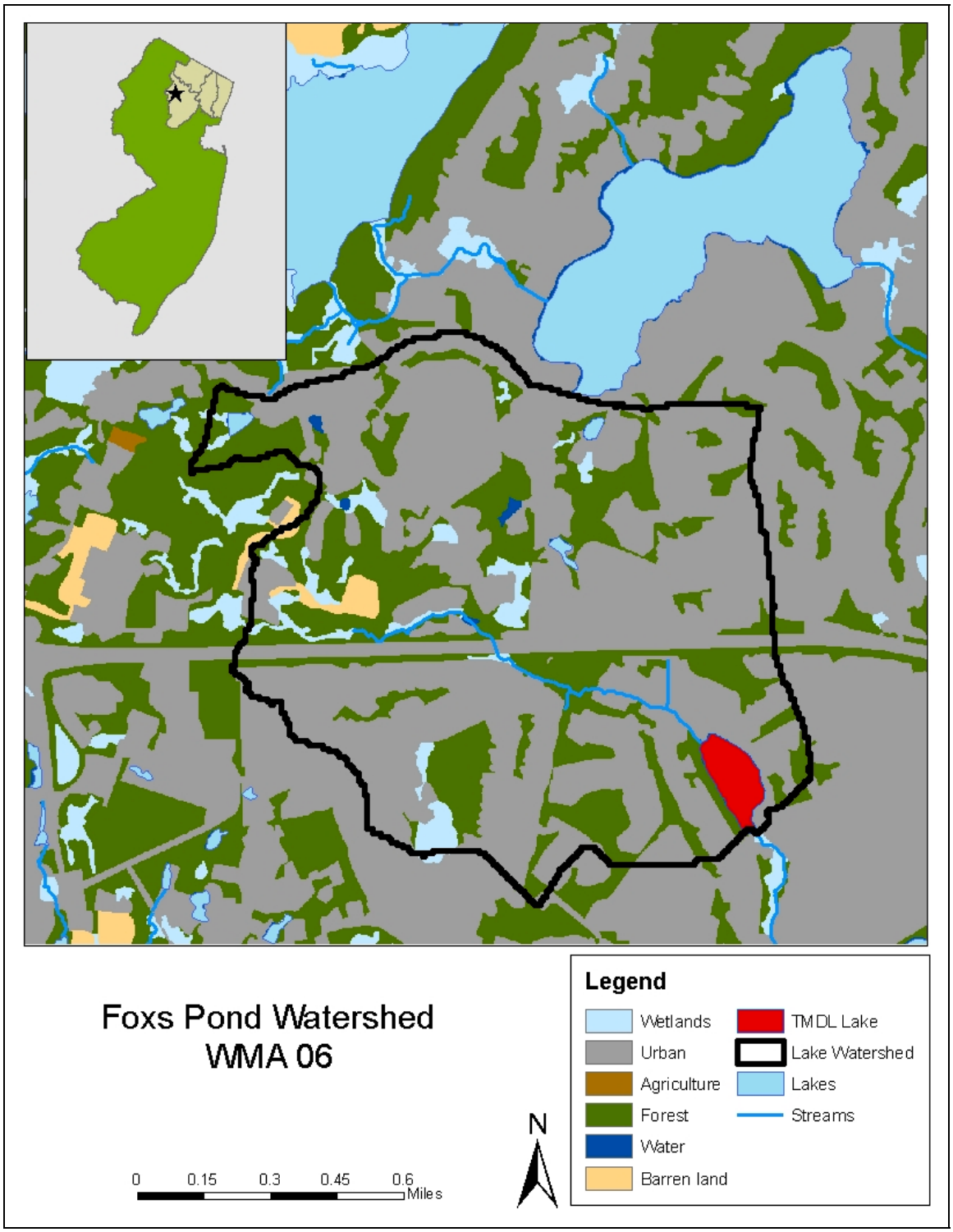
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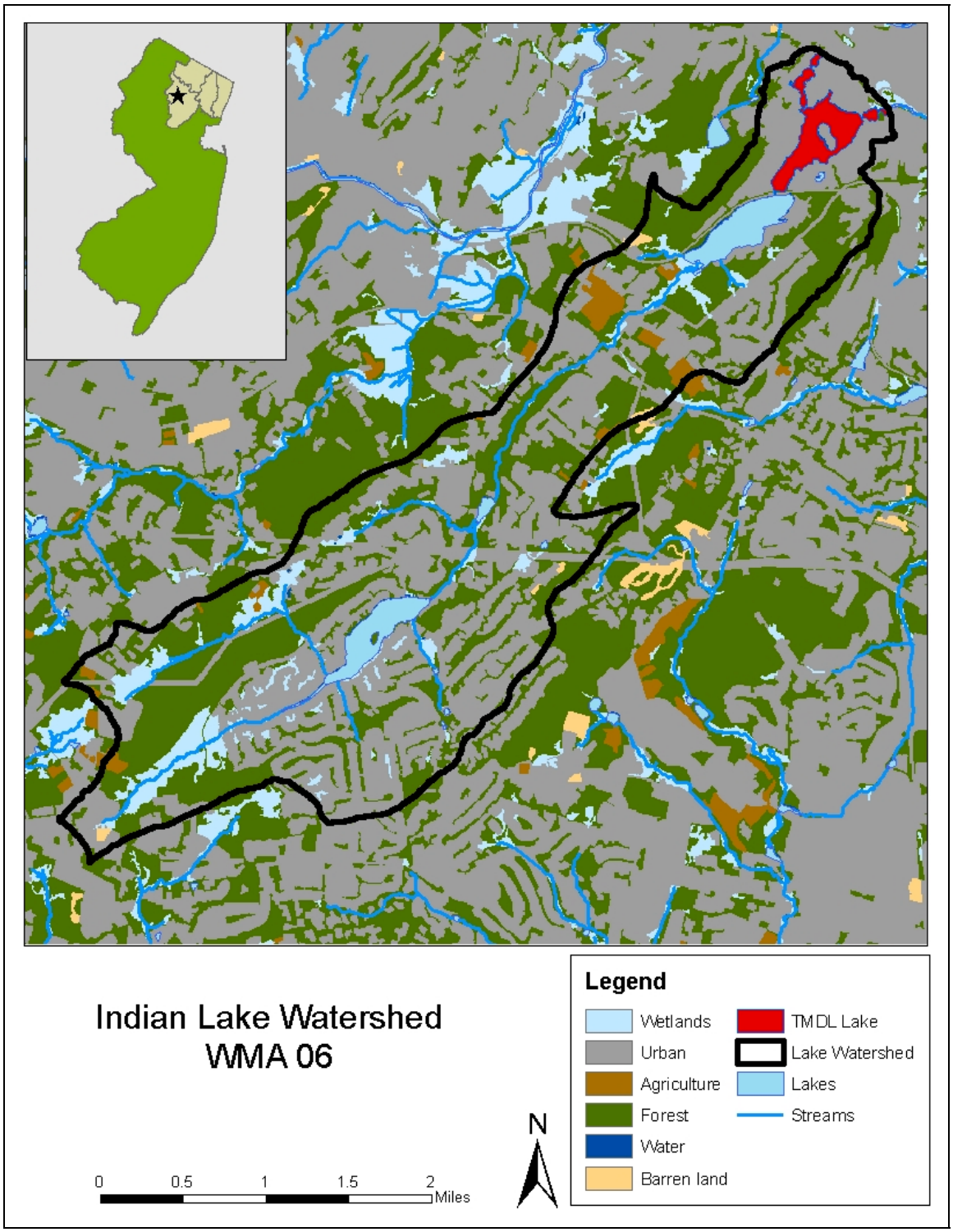
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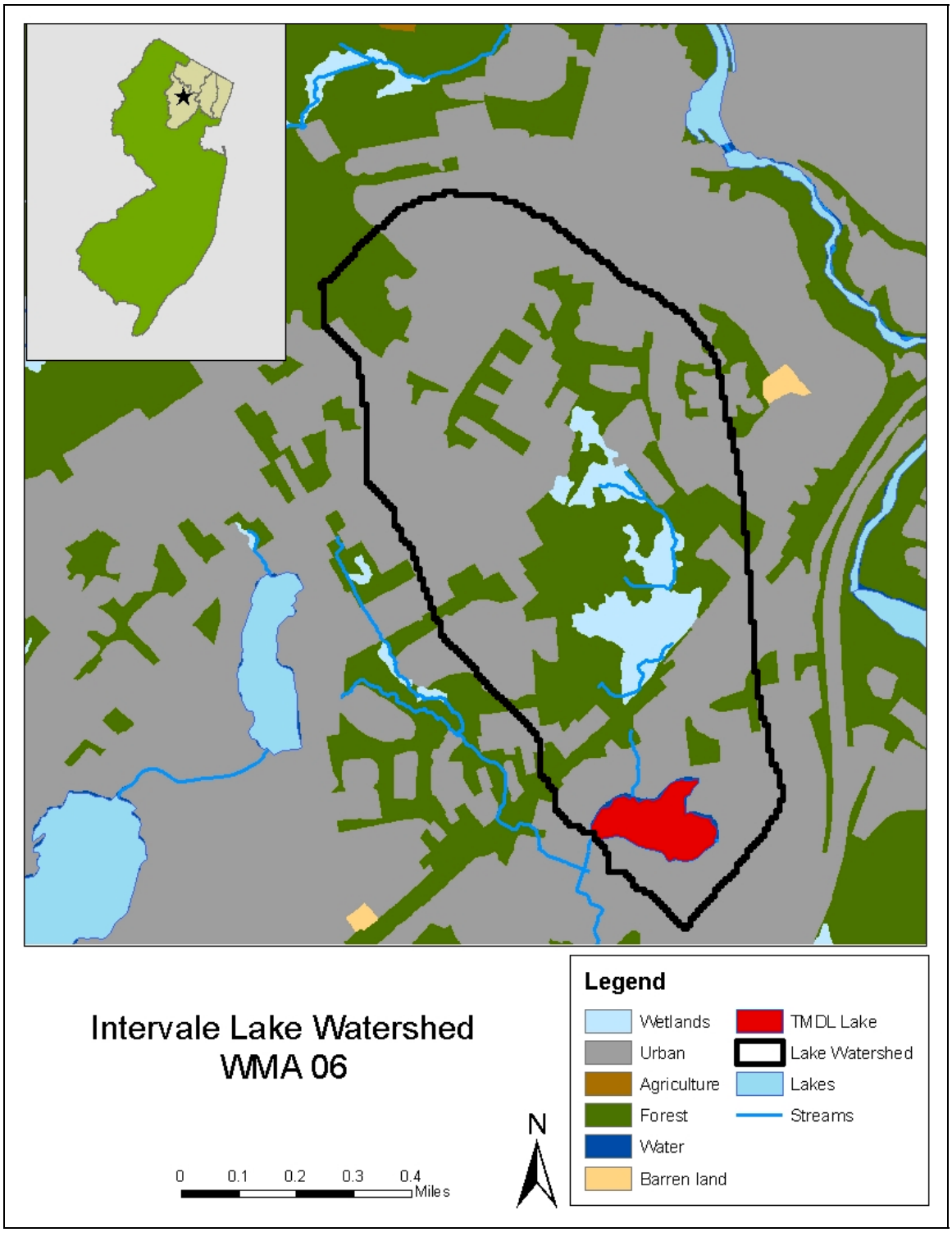
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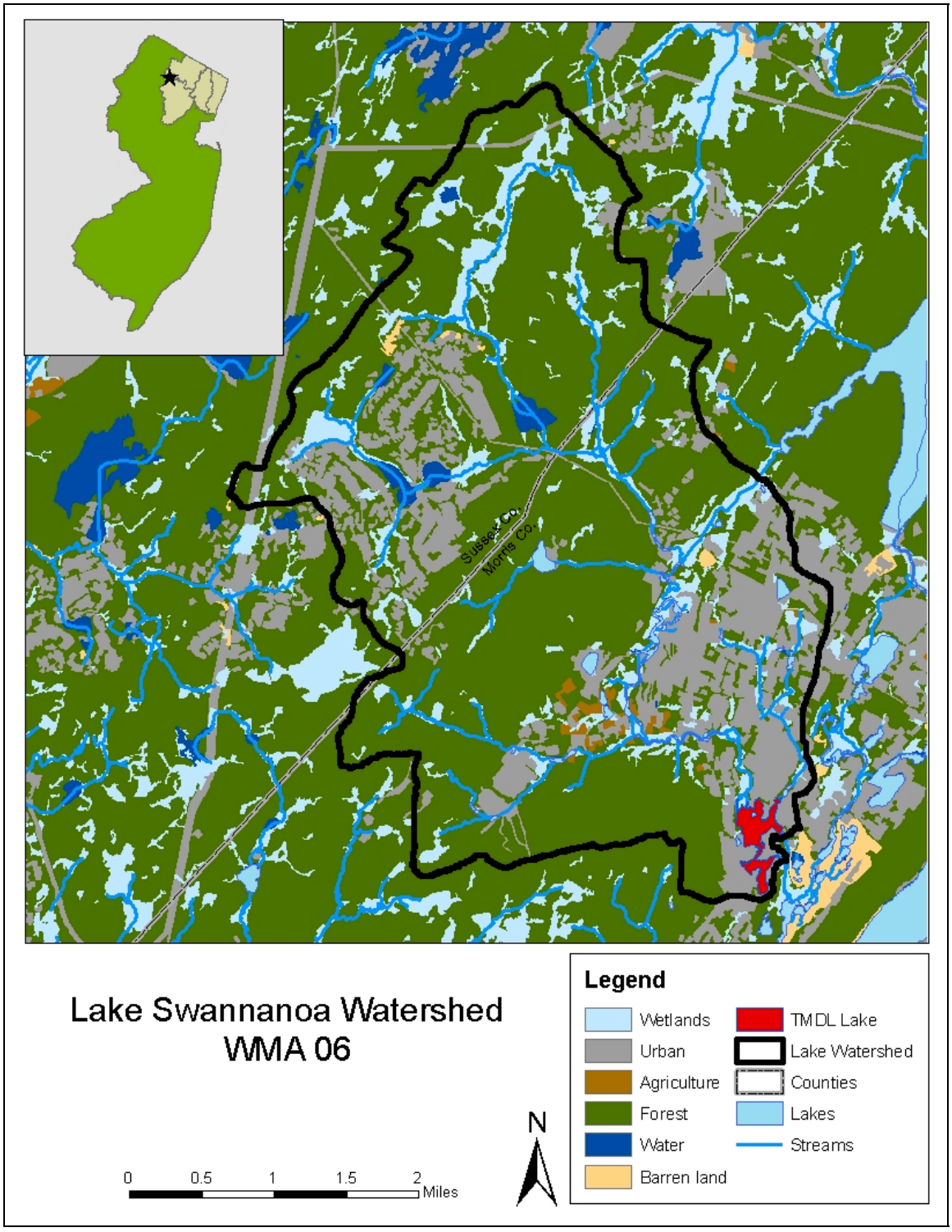
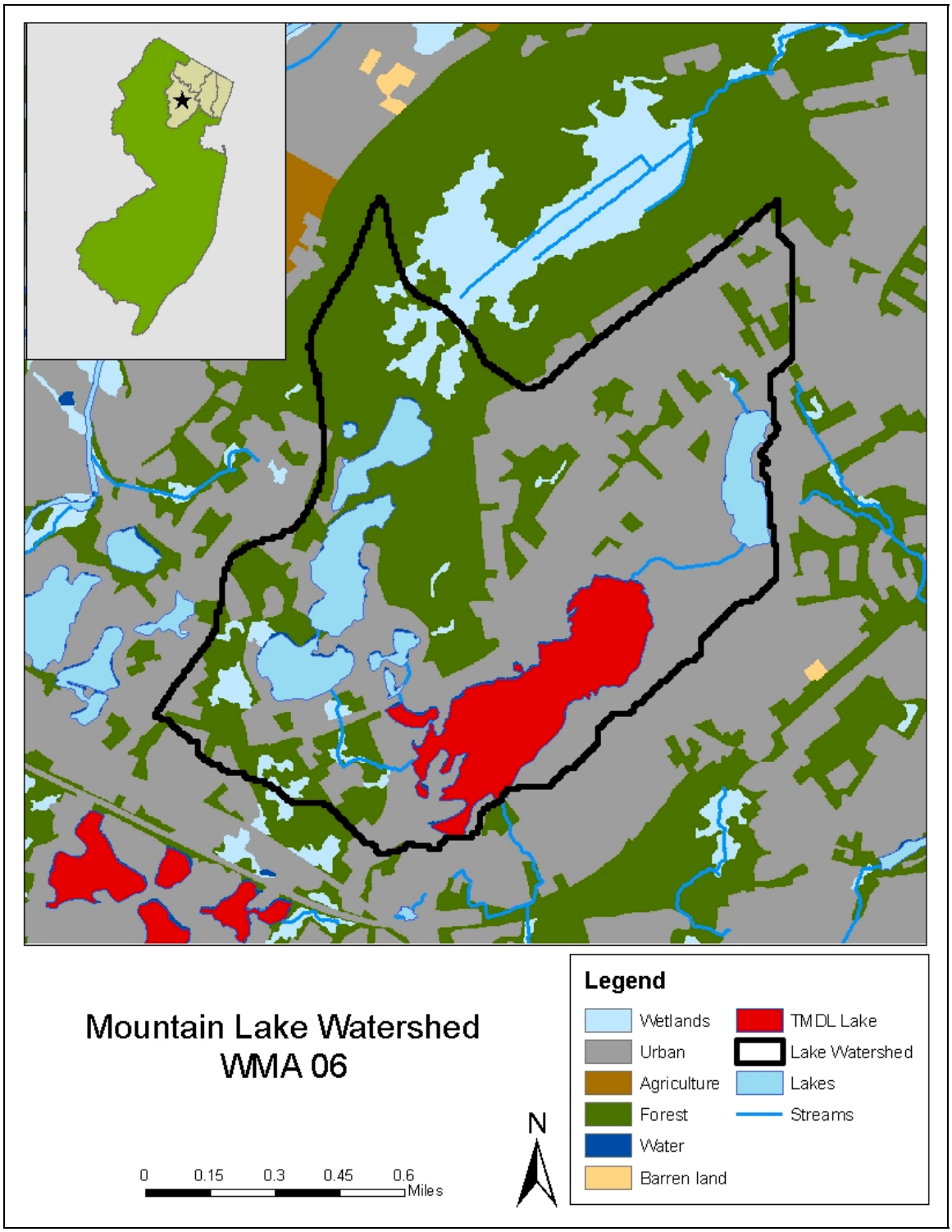
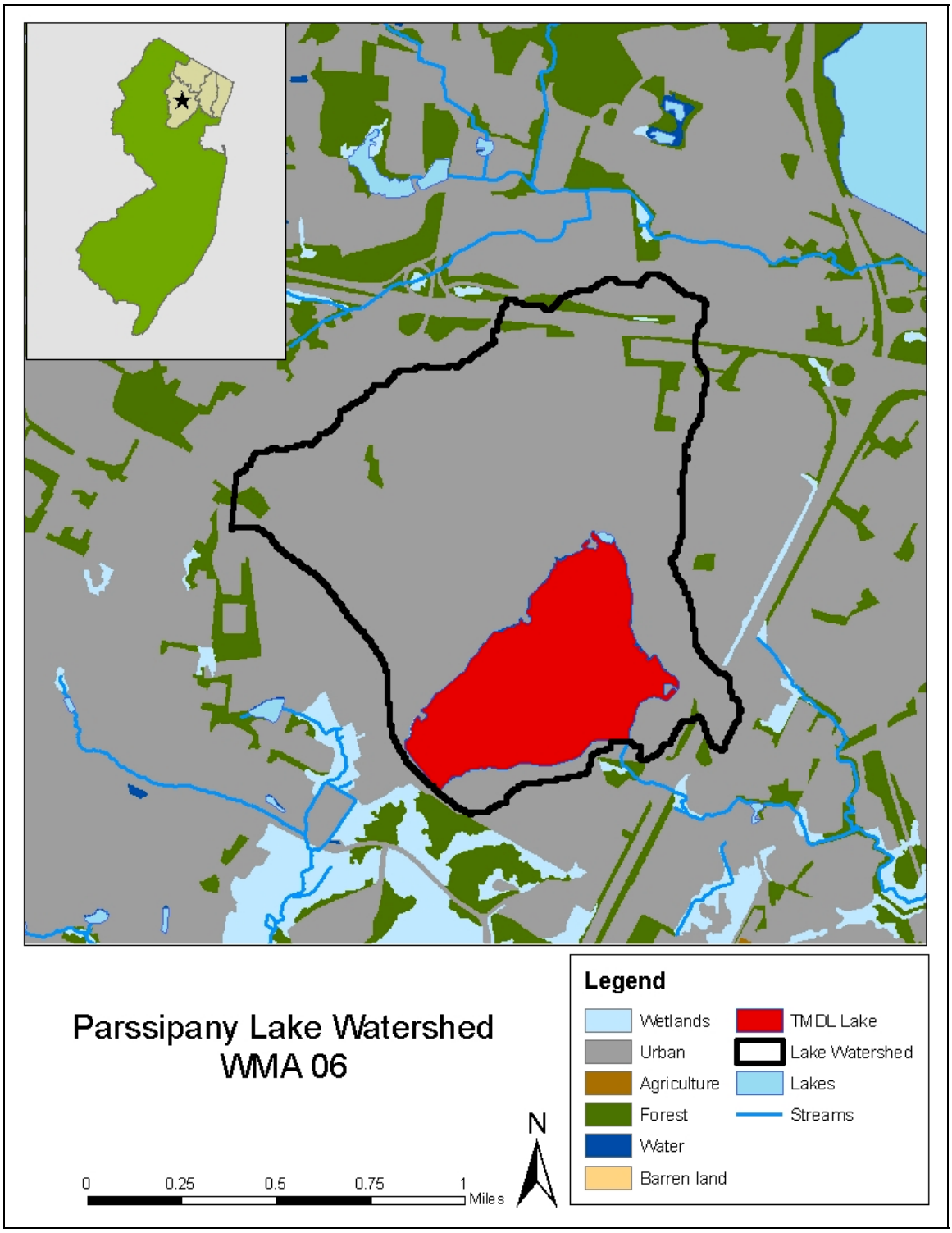
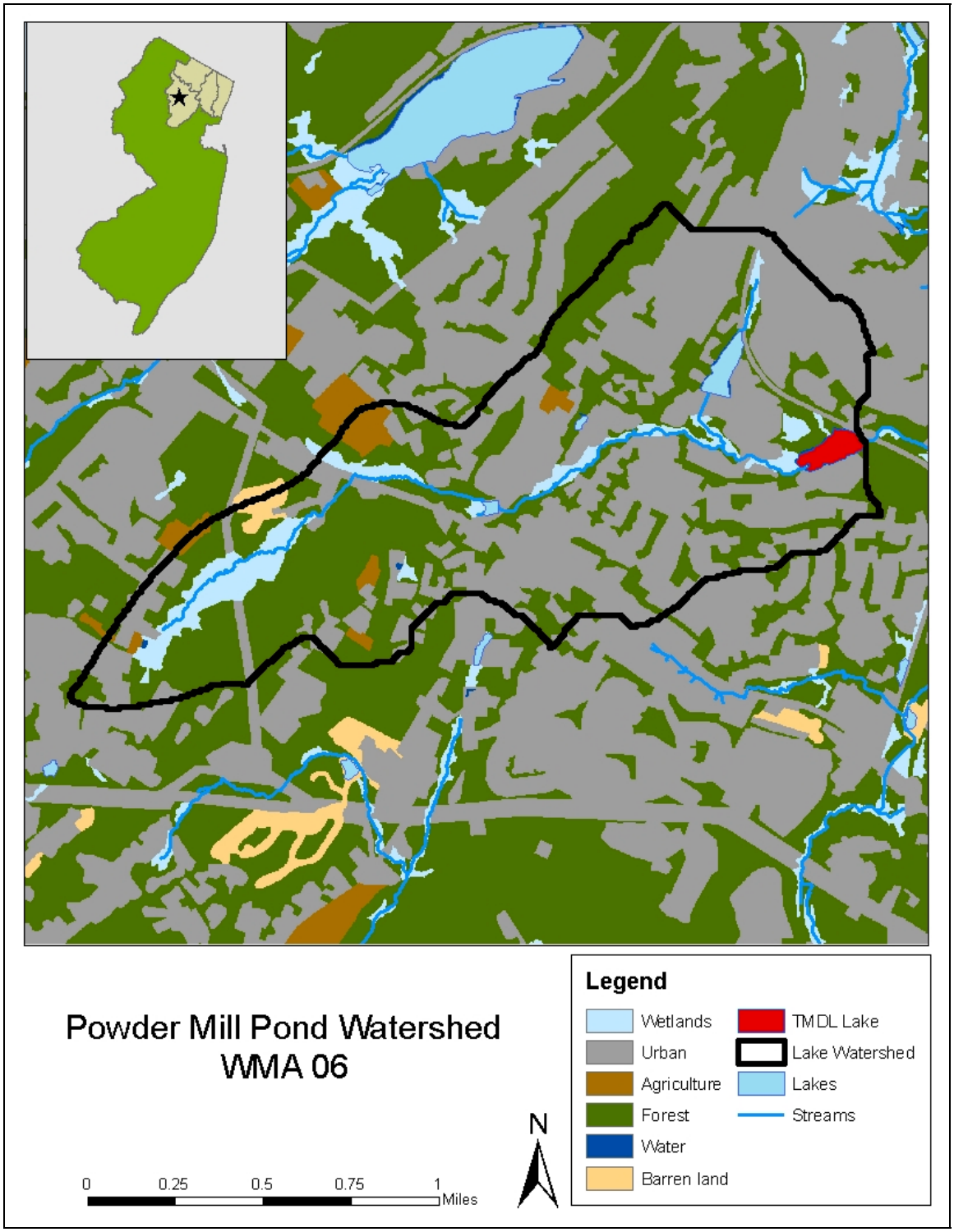
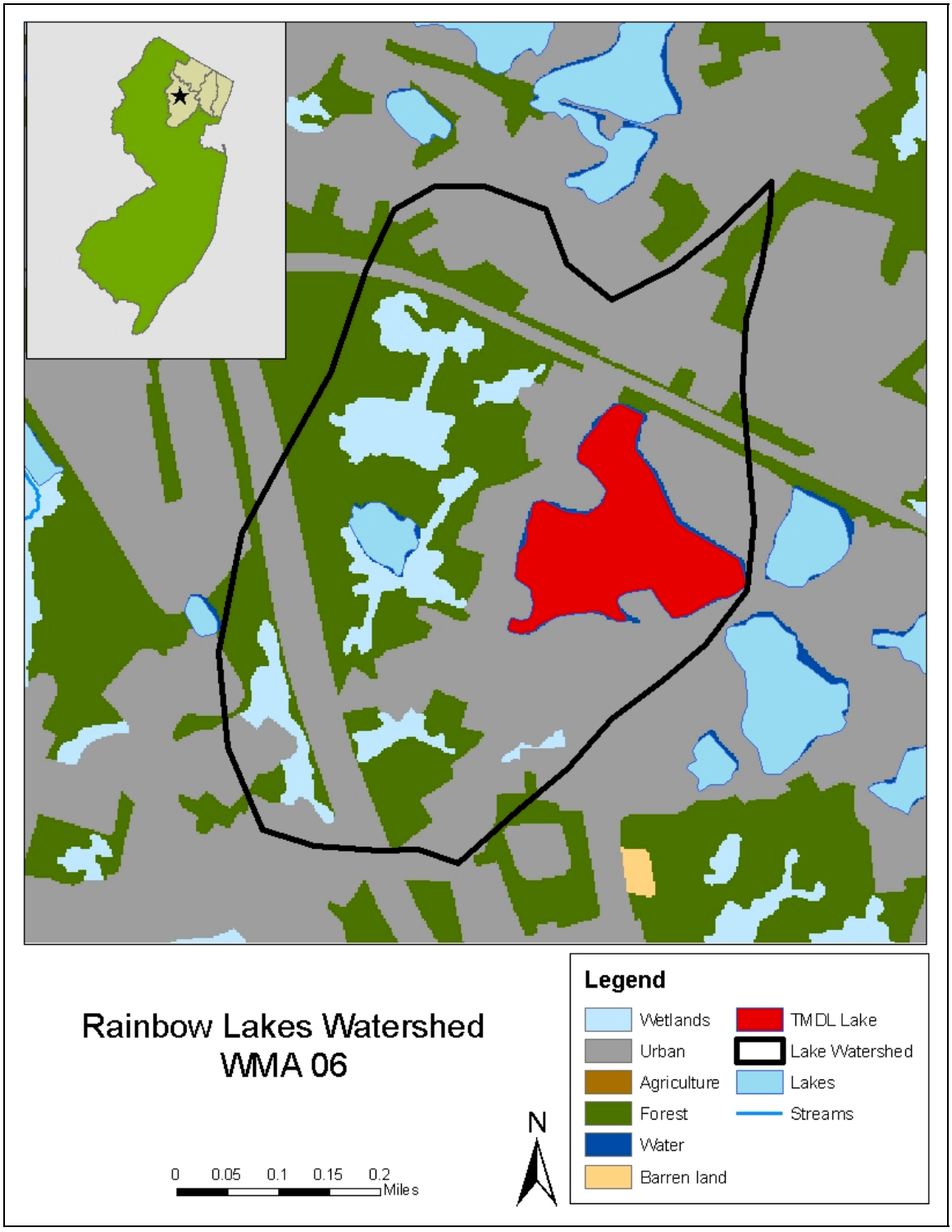
Agriculture
Forest
Water
Barren land
TMDL Lake
Lake Watershed
Lakes
Streams

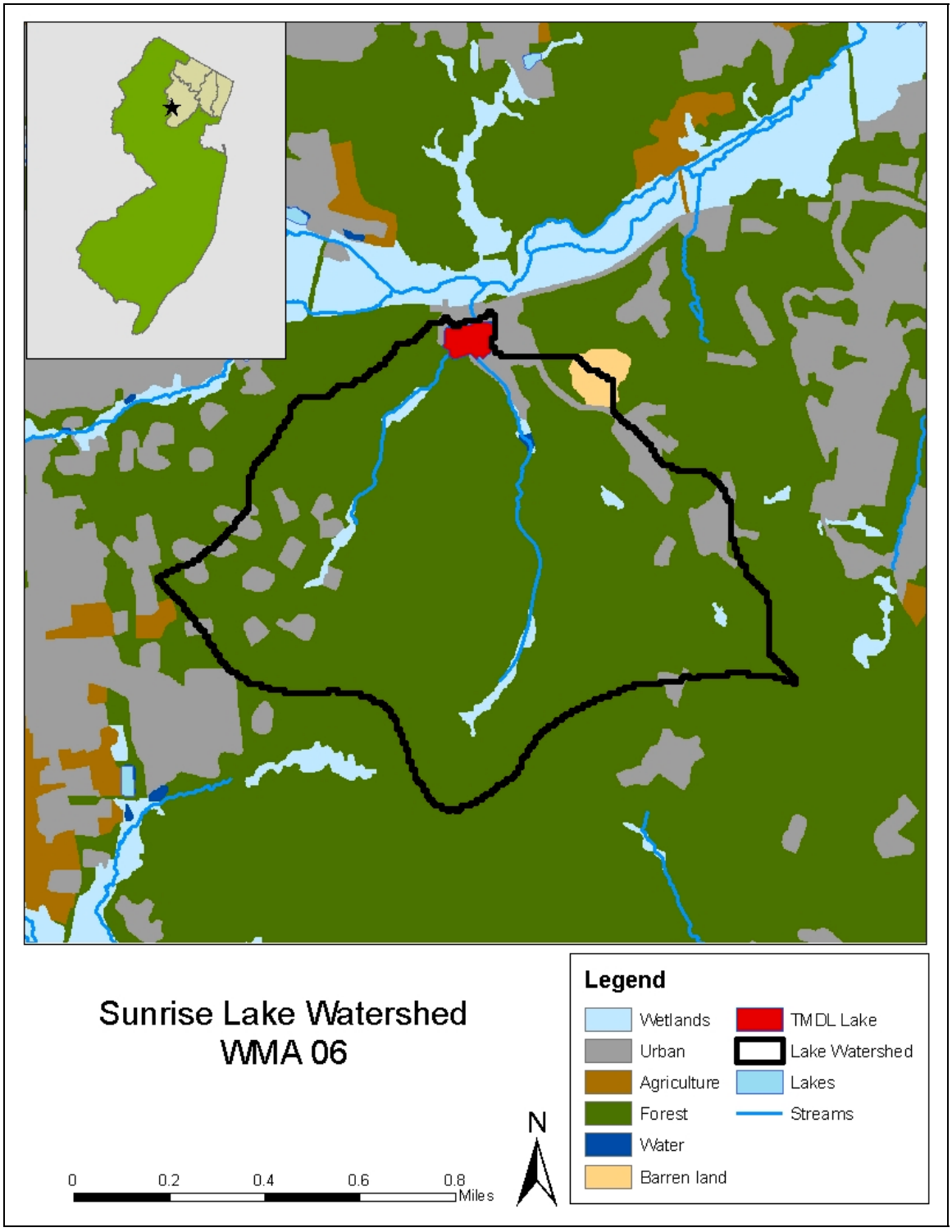

Sussex Co.
Morris Co.
Lake Swannanoa Watershed
WMA 06
0
0.5
1
1.5
2
Miles
N
Legend
Wetlands
Urban
Agriculture
Forest
Water
Barren land
TMDL Lake
Lake Watershed
Counties
Lakes
Streams

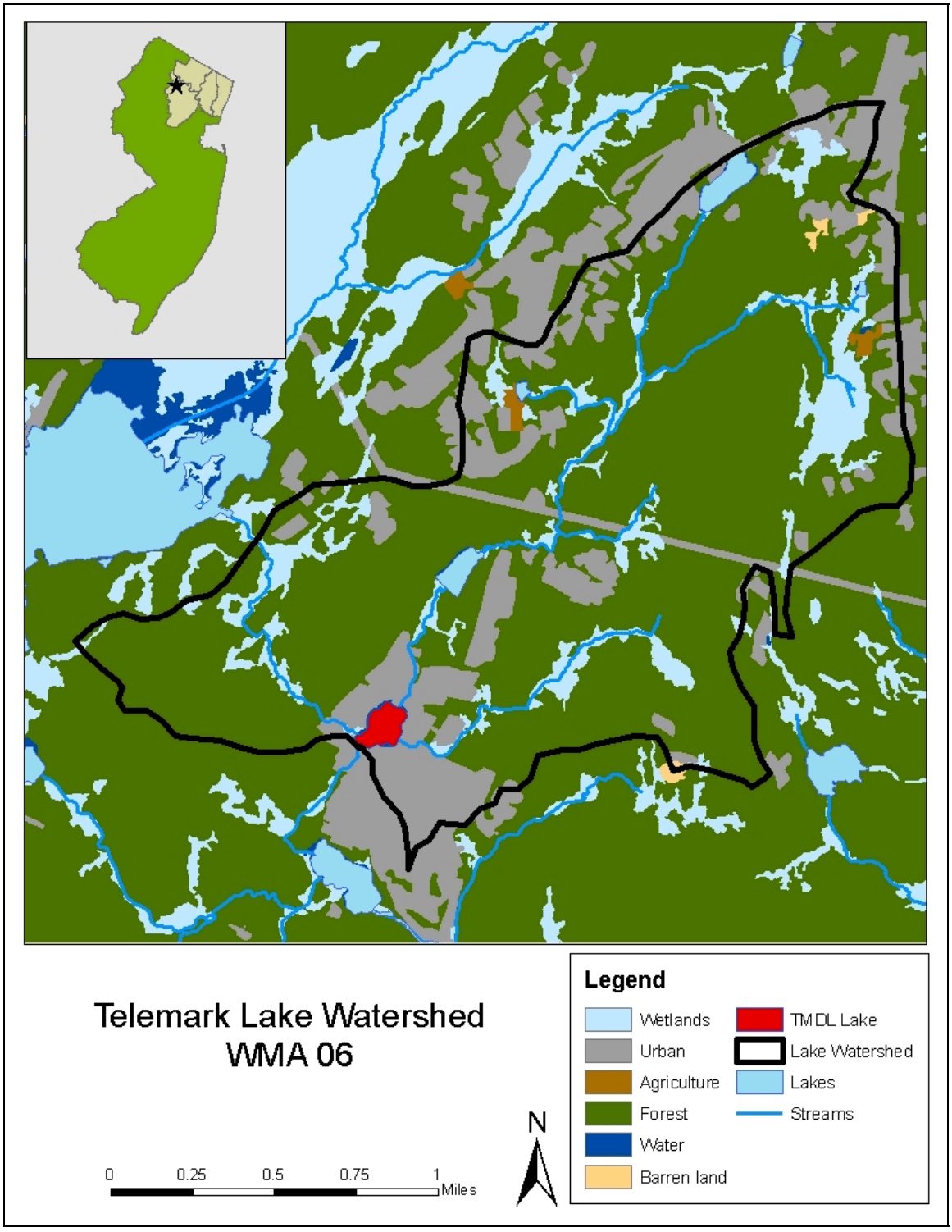

Mountain Lake Watershed
WMA 06
0 0.15 0.3 0.45 0.6
Miles
N
Legend
Wetlands
Urban
Agriculture
Forest
Water
Barren land
TMDL Lake
Lake Watershed
Lakes
Streams

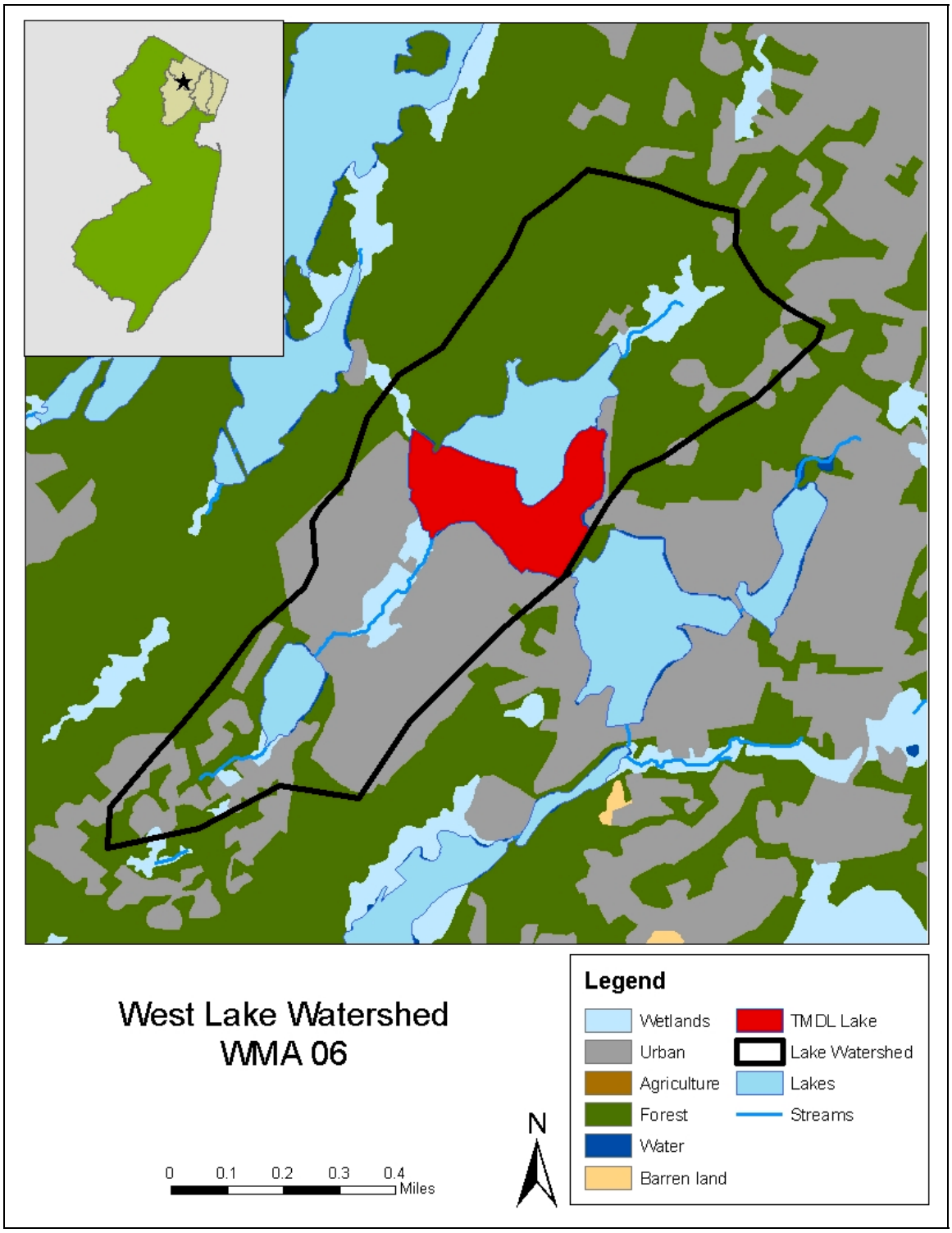

Parssipany Lake Watershed
WMA 06
Legend
Wetlands
Urban
Agriculture
Forest
Water
Barren land
TMDL Lake
Lake Watershed
Lakes
Streams
N
0
0.25
0.5
0.75
1
Miles

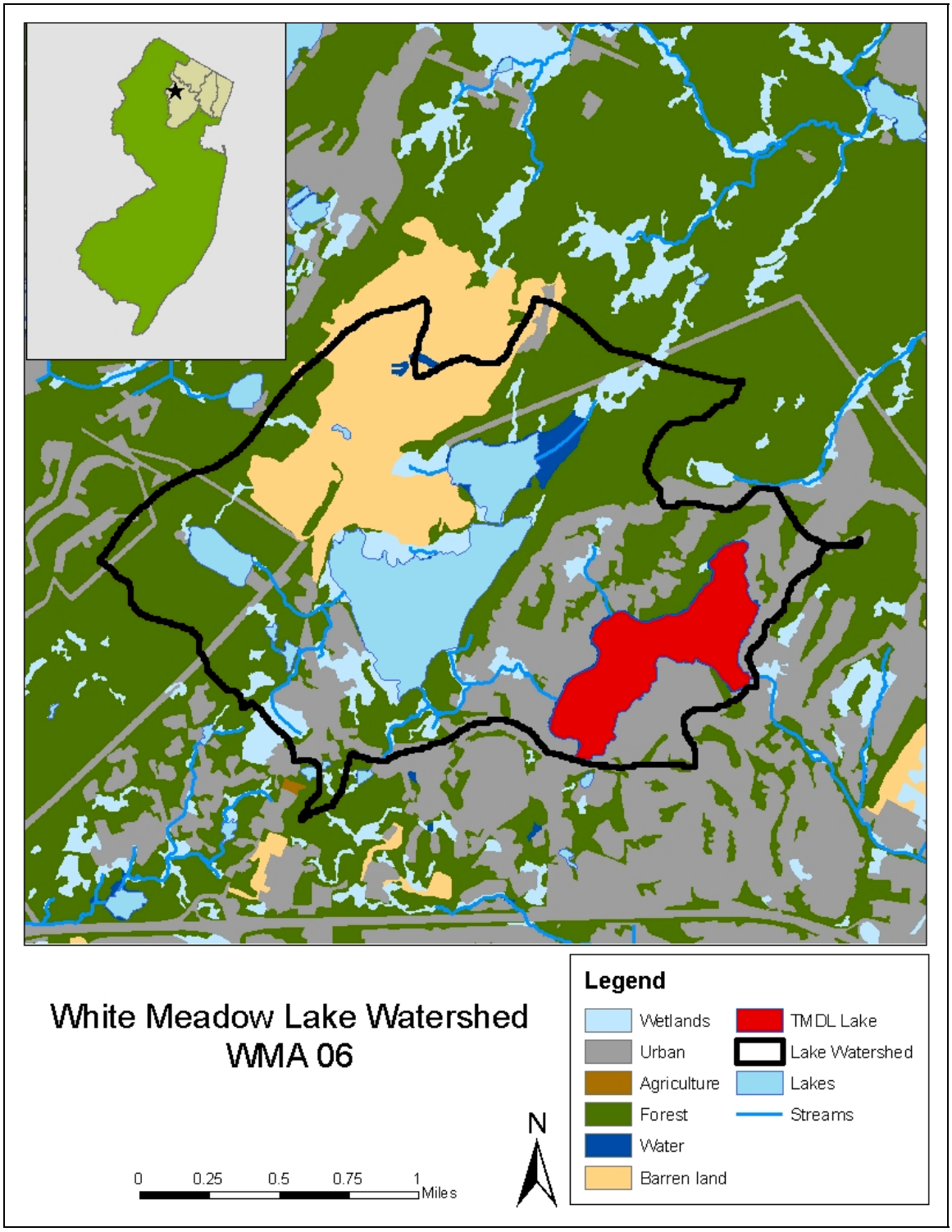

Powder Mill Pond Watershed
WMA 06
0
0.25
0.5
0.75
1
Miles
N
Legend
Wetlands
Urban
Agriculture
Forest
Water
Barren land
TMDL Lake
Lake Watershed
Lakes
Streams


Rainbow Lakes Watershed
WMA 06
0 0.05 0.1 0.15 0.2
Miles
N
Legend
Wetlands
Urban
Agriculture
Forest
Water
Barren land
TMDL Lake
Lake Watershed
Lakes
Streams


Sunrise Lake Watershed
WMA 06
Legend
Wetlands
Urban
Agriculture
Forest
Water
Barren land
TMDL Lake
Lake Watershed
Lakes
Streams
N
0
0.2
0.4
0.6
0.8
Miles


Telemark Lake Watershed
WMA 06
0
0.25
0.5
0.75
1
Miles
N
Legend
Wetlands
Urban
Agriculture
Forest
Water
Barren land
TMDL Lake
Lake Watershed
Lakes
Streams


West Lake Watershed
WMA 06
0 0.1 0.2 0.3 0.4
Miles
N
Legend
Wetlands
Urban
Agriculture
Forest
Water
Barren land
TMDL Lake
Lake Watershed
Lakes
Streams


White Meadow Lake Watershed
WMA 06
0
0.25
0.5
0.75
1
Miles
N
Legend
Wetlands
Urban
Agriculture
Forest
Water
Barren land
TMDL Lake
Lake Watershed
Lakes
Streams

APPENDIX D: NORTHEAST WATER REGION WATER QUALITY DATA

* Highlighted values are greater than 200 cfu/100 ml of fecal coliform bacteria

WMA 03

Bubbling Springs			
count	133	mean+3stdev	717
median	5	%reduction	90%
max	2000		
stdev	213	**no data excluded**	
mean	79		
mean+3stdev	717		

Station	**Date**	**Value**	**Remark**
Diving	05/20/98	1	k
Inlet	05/20/98	1	k
Outlet	05/20/98	2	
Inlet	06/03/98	2	
Outlet	06/03/98	19	
Diving area	06/03/98	2	
Inlet	06/17/98	30	
Outlet	06/17/98	6	
Diving	06/17/98	1	k
Inlet	06/29/98	154	
Diving	06/29/98	1	k
Outlet	06/29/98	1	k
Diving	07/13/98	1	k
Inlet	07/13/98	5	
Beach	07/13/98	3	
Diving	07/27/98	1	k
Bathing	07/27/98	5	
Inlet	07/27/98	10	
Inlet	08/03/98	194	
Diving	08/03/98	127	
Beach	08/03/98	5	
Inlet	08/03/98	1	k
Swim Area Flag	07/20/98	2	
Diving	07/20/98	1	k
Inlet	08/10/98	800	
Diving	08/10/98	750	
Inlet	08/10/98	205	
Inlet	08/11/98	600	
Diving	08/11/98	195	
Beach Chair 2	08/11/98	179	
BeachChair3	08/11/98	51	
Swim Dock	08/11/98	294	
Inlet	08/12/98	253	
Swim Dock	08/12/98	166	
Diving Dock	08/12/98	136	
Beach Chair 2	08/12/98	165	
Beach Chair 3	08/12/98	173	
Inlet	08/13/98	1	k
Pump Pipe	08/13/98	47	
Chair2	08/13/98	37	
Chair 3	08/13/98	42	
SwimLanes Dock	08/13/98	32	
Diving Area	08/13/98	57	
Dive	08/17/98	1	k
Swim	08/17/98	1	
Inlet	08/17/98	1	k
Swim Area Flag	08/24/98	2	
Diving	08/24/98	1	k
Inlet	08/24/98	5	
BS	06/01/99	1	K
BS	06/01/99	1	K
BS	06/01/99	1	K
BS	06/07/99	6	
BS	06/07/99	4	
BS	06/07/99	10	
BS	06/15/99	28	
BS	06/15/99	2	
BS	06/15/99	11	
BS	06/21/99	1	
BS	06/21/99	2	
BS	06/21/99	1	
BS	06/28/99	1	K
BS	06/28/99	118	
BS	06/28/99	1	K
BS	07/06/99	1	K
BS	07/06/99	2	
BS	07/06/99	1	
BS	07/12/99	2	
BS	07/19/99	4	
BS	07/27/99	20	
BS	08/02/99	1	
BS	08/16/99	8	
BS	08/30/99	2	K
Bubbling Spring	05/17/00	6	
Bubbling Spring	05/24/00	34	
Bubbling Spring	06/07/00	336	
Bubbling Spring	06/09/00	2	K
Bubbling Spring	06/12/00	2	L
Bubbling Spring	06/20/00	4	
Bubbling Spring	06/27/00	64	
Bubbling Spring	07/10/00	8	
	07/18/00	24	
Bubbling Spring	07/24/00	2	K
Bubbling Spring	07/31/00	92	
Bubbling Spring	08/08/00	2	K
Bubbling Spring	08/15/00	360	
Bubbling Spring	08/17/00	2	K
Bubbling Spring	08/22/00	4	
Bubbling Spring	08/29/00	72	
Lake	06/05/01	10	
Lake	07/02/01	2	
Lake	07/16/01	2	
Lake	07/31/01	2	
Lake	08/14/01	2000	
Lake	08/16/01	10	Resample
Lake	08/21/01	326	
Lake	08/23/01	136	
Lake	08/27/01	112	
Water Full	05/21/01	4	
Dive Area	05/21/01	20	
LAKE	05/15/02	2	
DIVE AREA	05/15/02	4	
DIVE AREA	05/29/02	42	
DIVE AREA	06/11/02	190	
DIVE AREA	06/25/02	42	
DIVE AREA	07/09/02	2	
DIVE AREA	07/22/02	2	
DIVE AREA	08/06/02	338	
DIVE AREA	08/12/02	2	
DIVE AREA	08/19/02	190	

SWIM LANES	05/29/02	66	
SWIM LANES	06/11/02	208	
SWIM LANES	06/13/02	2	
SWIM LANES	06/25/02	84	
SWIM LANES	07/09/02	8	
SWIM LANES	07/22/02	2	
SWIM LANES	08/06/02	264	
SWIM LANES	08/12/02	2	
SWIM LANES	08/19/02	194	
diving area	05/24/04	2	K
	06/07/04	16	
	06/21/04	2	K
	07/06/04	2	
	07/19/04	2	K
	08/02/04	96	
	08/26/04	4	
	08/30/04	2	K
swimlanes/dock	06/21/04	2	K
	07/06/04	12	
	07/19/04	16	
	08/02/04	4	
	08/16/04	2	K
	08/30/04	2	K

Crystal Lake			
count	60	mean+3stdev	1824
median	35	%reduction	95%
max	3700		
Stdev	536	**no data excluded**	
Mean	216		
mean+3stdev	1824		

Station	**Date**	**Value**	**Remark**
CRL-1	05/23/98	10	K
CRL-1	06/07/98	100	
CRL-1	06/20/98	30	
CRL-1	06/29/98	10	K
CRL-1	07/06/98	10	K
CRL-1	07/13/98	10	K
CRL-1	07/21/98	10	K
CRL-1	07/27/98	10	K
CRL-1	08/03/98	10	K
CRL-1	08/11/98	560	
CRL-1	08/16/98	10	K
CRL-1	08/16/98	10	K
CRL-1	08/20/98	630	
CRL-1	08/24/98	10	K
CRL-1	08/28/98	20	
Lake	05/13/99	10	K
	06/06/99	160	
	07/05/99	20	
	07/12/99	20	
	07/22/99	10	K
	07/29/99	10	K
	08/05/99	10	K
	08/13/99	110	
	08/17/99	80	
	08/25/99	10	K
Crystal Lake (Ramapo Mountain Lakes, Inc.)	05/24/00	450	
Crystal Lake (Ramapo Mountain Lakes, Inc.)	06/16/00	140	
Crystal Lake (Ramapo Mountain Lakes, Inc.)	06/25/00	270	
Crystal Lake (Ramapo Mountain Lakes, Inc.)	06/28/00	150	
Crystal Lake (Ramapo Mountain Lakes, Inc.)	07/12/00	10	K
Crystal Lake (Ramapo Mountain Lakes, Inc.)	07/20/00	70	
Crystal Lake (Ramapo Mountain Lakes, Inc.)	07/28/00	1600	(TNTC)
Crystal Lake (Ramapo Mountain Lakes, Inc.)	08/03/00	250	
Crystal Lake (Ramapo Mountain Lakes, Inc.)	08/05/00	130	
Crystal Lake (Ramapo Mountain Lakes, Inc.)	08/07/00	520	
Crystal Lake (Ramapo Mountain Lakes, Inc.)	08/11/00	20	
Crystal Lake (Ramapo Mountain Lakes, Inc.)	08/16/00	740	
Crystal Lake (Ramapo Mountain Lakes, Inc.)	08/18/00	60	
Crystal Lake (Ramapo Mountain Lakes, Inc.)	08/22/00	10	
Crystal Lake (Ramapo Mountain Lakes, Inc.)	09/01/00	10	
Crystal Lake (Ramapo Mountain Lakes, Inc.)	09/07/00	30	
Crystal Lake (Ramapo Mountain Lakes, Inc.)	09/13/00	3700	
Crystal Lake (Ramapo Mountain Lakes, Inc.)	09/15/00	510	
	05/21/02	50	
	05/22/02	20	
	05/29/02	200	
	06/04/02	10	k
	06/11/02	130	
	06/17/02	1000	
	06/20/02	170	
	06/26/02	40	
	07/03/02	290	
	07/07/02	10	k
	07/17/02	110	
	07/22/02	10	k
	07/31/02	10	k
	08/06/02	10	
	08/12/02	40	
	08/21/02	160	
	08/26/02	150	

Erksine Lake			
count	287	mean+3stdev	1274
median	30	%reduction	96%
max	5400		
stdev	387	**no data excluded**	
mean	113		
mean+3stdev	1274		

Station	**Date**	**Value**	**Remark**
Erskine Lake (little)	05/23/98	10	
Erskine Lake (little)	06/05/98	40	
Erskine Lake (little)	06/11/98	50	
Erskine Lake (little)	06/18/98	30	
Erskine Lake (little)	06/22/98	10	
Erskine Lake (little)	07/05/98	10	
Erskine Lake (little)	07/12/98	10	
Erskine Lake (little)	07/19/98	30	
Erskine Lake (little)	07/26/98	50	
Erskine Lake (little)	08/03/98	10	
Erskine Lake (little)	08/14/98	10	
Erskine Lake (little)	08/18/98	20	
Erskine Lake (little)	08/29/98	10	

Erskine Lake (main)	05/23/98	10	
Erskine Lake (main)	06/05/98	10	
Erskine Lake (main)	06/11/98	20	
Erskine Lake (main)	06/18/98	30	
Erskine Lake (main)	06/22/98	70	
Erskine Lake (main)	07/05/98	10	
Erskine Lake (main)	07/12/98	10	
Erskine Lake (main)	07/19/98	110	
Erskine Lake (main)	07/26/98	50	
Erskine Lake (main)	08/03/98	10	
Erskine Lake (main)	08/14/98	10	
Erskine Lake (main)	08/18/98	20	
Erskine Lake (main)	08/29/98	10	
Erskine Lake (upper)	05/23/98	10	
Erskine Lake (upper)	06/05/98	10	
Erskine Lake (upper)	06/11/98	10	
Erskine Lake (upper)	06/18/98	70	
Erskine Lake (upper)	06/22/98	80	
Erskine Lake (upper)	07/05/98	10	
Erskine Lake (upper)	07/12/98	10	
Erskine Lake (upper)	07/19/98	10	
Erskine Lake (upper)	07/26/98	10	
Erskine Lake (upper)	08/03/98	40	
Erskine Lake (upper)	08/14/98	10	
Erskine Lake (upper)	08/18/98	10	
Erskine Lake (upper)	08/29/98	10	
ELMB	06/02/99	110	
ELMB	06/18/99	150	
ELMB	06/25/99	20	
ELMB	07/05/99	230	
ELMB	07/10/99	10	K
ELMB	07/20/99	40	
ELMB	07/29/99	340	
ELMB	08/02/99	10	K
ELMB	08/04/99	10	K
ELMB	08/09/99	40	
ELMB	08/31/99	10	K
ELLB	06/02/99	10	
ELLB	06/18/99	10	K
ELLB	06/25/99	20	
ELLB	07/05/99	20	
ELLB	07/10/99	10	K
ELLB	07/20/99	10	K
ELLB	07/29/99	10	K

ELLB	08/04/99	10	K
ELLB	08/09/99	10	
ELLB	08/31/99	10	K
ELUB	06/02/99	10	K
ELUB	06/18/99	40	
ELUB	06/25/99	10	K
ELUB	07/05/99	10	
ELUB	07/10/99	50	
ELUB	07/20/99	50	
ELUB	07/29/99	120	
ELUB	08/04/99	10	K
ELUB	08/09/99	170	
ELUB	08/20/99	100	
ELUB	08/31/99	10	K
Erskine Lake Main Beach	05/25/00	10	K
Erskine Lake Main Beach	06/01/00	10	K
Erskine Lake Main Beach	06/08/00	410	
Erskine Lake Main Beach	06/16/00	50	
Erskine Lake Main Beach	06/23/00	90	
Erskine Lake Main Beach	06/28/00	10	K
Erskine Lake Main Beach	07/03/00	10	
Erskine Lake Main Beach	07/06/00	70	
Erskine Lake Main Beach	07/12/00	30	
Erskine Lake Main Beach	07/18/00	40	
Erskine Lake Main Beach	07/30/00	120	
Erskine Lake Main Beach	08/03/00	5400	
Erskine Lake Main Beach	08/07/00	140	
Erskine Lake Main Beach	08/14/00	10	
Erskine Lake Main Beach	08/25/00	10	
Erskine Lake Main Beach	09/07/00	20	
Erskine Lake Upper Beach	05/25/00	10	K
Erskine Lake Upper	06/01/00	20	

Beach			
Erskine Lake Upper Beach	06/08/00	10	K
Erskine Lake Upper Beach	06/16/00	50	
Erskine Lake Upper Beach	06/23/00	2100	
Erskine Lake Upper Beach	06/28/00	740	
Erskine Lake Upper Beach	07/03/00	10	
Erskine Lake Upper Beach	07/06/00	590	
Erskine Lake Upper Beach	07/12/00	420	
Erskine Lake Upper Beach	07/18/00	30	
Erskine Lake Upper Beach	07/30/00	10	K
Erskine Lake Upper Beach	08/07/00	230	
Erskine Lake Upper Beach	08/14/00	120	
Erskine Lake Upper Beach	08/25/00	10	K
Erskine Lake Upper Beach	09/07/00	10	K
Erskine Lake Little Beach	05/25/00	30	
Erskine Lake Little Beach	06/01/00	10	
Erskine Lake Little Beach	06/08/00	10	
Erskine Lake Little Beach	06/16/00	20	
Erskine Lake Little Beach	06/23/00	10	
Erskine Lake Little Beach	06/26/00	10	
Erskine Lake Little Beach	06/28/00	150	
Erskine Lake Little Beach	07/06/00	30	
Erskine Lake Little Beach	07/12/00	10	K
Erskine Lake Little Beach	07/18/00	10	K
Erskine Lake Little Beach	07/30/00	1100	
Erskine Lake Little Beach	08/03/00	290	

Erskine Lake Little Beach	08/07/00	10	K
Erskine Lake Little Beach	08/14/00	240	
Erskine Lake Little Beach	08/16/00	10	K
Erskine Lake Little Beach	08/25/00	10	
Erskine Lake Little Beach	09/07/00	10	K
Main Beach	05/23/01	40	
Main Beach	05/29/01	10	
Main Beach	06/04/01	30	
Main Beach	06/18/01	230	
Main Beach	06/20/01	260	Resample; closed 6/22
Main Beach	06/27/01	190	
Main Beach	07/06/01	30	
Main Beach	07/13/01	20	
Main Beach	07/17/01	240	
Main Beach	07/20/01	10	Resample
Main Beach	07/23/01	20	
Main Beach	07/30/01	220	
Main Beach	08/01/01	10	
Main Beach	08/06/01	70	
Main Beach	08/15/01	130	
Main Beach	08/21/01	680	
Main Beach	08/24/01	40	Resample
Upper Beach	05/23/01	30	
Upper Beach	05/29/01	310	
Upper Beach	06/04/01	10	
Upper Beach	06/18/01	70	
Upper Beach	06/20/01	10	
Upper Beach	06/27/01	40	
Upper Beach	07/06/01	80	
Upper Beach	07/13/01	20	
Upper Beach	07/17/01	40	
Upper Beach	07/23/01	30	
Upper Beach	07/30/01	150	
Upper Beach	08/06/01	10	
Upper Beach	08/15/01	10	
Upper Beach	08/21/01	50	
Little Beach	05/23/01	20	
Little Beach	05/29/01	10	
Little Beach	06/04/01	10	
Little Beach	06/18/01	40	

Little Beach	06/20/01	40	
Little Beach	06/27/01	40	
Little Beach	07/06/01	20	
Little Beach	07/13/01	10	
Little Beach	07/17/01	10	
Little Beach	07/23/01	30	
Little Beach	07/30/01	10	
Little Beach	08/06/01	10	
Little Beach	08/15/01	40	
Little Beach	08/21/01	40	
MAIN BEACH	06/11/02	10	
MAIN BEACH	06/19/02	30	
MAIN BEACH	06/24/02	40	
MAIN BEACH	07/02/02	10	
MAIN BEACH	07/07/02	10	
MAIN BEACH	07/17/02	10	
MAIN BEACH	07/25/02	60	
MAIN BEACH	07/29/02	40	
MAIN BEACH	08/12/02	10	
MAIN BEACH	08/23/02	40	
MAIN BEACH	09/03/02	10	
UPPER BEACH	06/11/02	160	
UPPER BEACH	06/19/02	10	
UPPER BEACH	06/24/02	720	
UPPER BEACH	06/26/02	90	
UPPER BEACH	07/02/02	60	
UPPER BEACH	07/07/02	200	
UPPER BEACH	07/17/02	10	
UPPER BEACH	07/25/02	810	
UPPER BEACH	07/29/02	130	
UPPER BEACH	08/12/02	100	
UPPER BEACH	08/23/02	50	
UPPER BEACH	09/03/02	490	
LITTLE BEACH	06/11/02	10	
LITTLE BEACH	06/19/02	20	
LITTLE BEACH	06/24/02	20	
LITTLE BEACH	07/02/02	10	
LITTLE BEACH	07/07/02	10	
LITTLE BEACH	07/17/02	10	
LITTLE BEACH	07/25/02	60	
LITTLE BEACH	07/29/02	40	
LITTLE BEACH	08/12/02	30	
LITTLE BEACH	08/23/02	20	
LITTLE BEACH	09/03/02	20	

ERSKINE LAKE:MAIN BEACH	05/20/03	10	
	05/27/03	10	
	06/03/03	220	
	06/06/03	10	
	06/09/03	40	
	06/20/03	40	
	06/25/03	40	
	07/01/03	120	
	07/08/03	110	
	07/15/03	160	
	07/22/03	150	
	07/29/03	10	
	08/05/03	110	
	08/12/03	500	
	08/14/03	20	
	08/19/03	10	
	08/26/03	50	
	09/02/03	40	
Erskine Lake:UPPER BEACH	05/20/03	30	
	05/27/03	30	
	06/03/03	90	
	06/09/03	10	
	06/20/03	10	
	06/25/03	1200	
	07/01/03	330	
	07/03/03	10	
	07/08/03	40	
	07/15/03	90	
	07/22/03	310	
	07/29/03	30	
	08/05/03	90	
	08/12/03	860	
	08/14/03	300	
	08/19/03	440	
	08/21/03	40	
	08/26/03	40	
	09/02/03	210	
	09/04/03	10	
Erskine Lake:LITTLE BEACH	05/20/03	10	
	05/27/03	40	
	06/03/03	10	
	06/09/03	10	
	06/20/03	10	

	06/25/03	30	
	07/01/03	100	
	07/08/03	10	
	07/15/03	40	
	07/22/03	170	
	07/29/03	90	
	08/05/03	110	
	08/12/03	30	
	08/14/03	10	
	08/19/03	20	
	08/26/03	20	
	09/02/03	200	
Erskine Main	05/26/04	10	
	06/03/04	20	
	06/10/04	10	K
	06/22/04	100	
	07/14/04	70	
	07/21/04	20	
	07/29/04	80	
	08/03/04	30	
	08/10/04	10	
	08/17/04	80	
	08/24/04	40	
Erskine Upper	05/26/04	20	
	06/03/04	210	
	06/10/04	220	
	06/22/04	10	K
	07/14/04	2000	
	07/16/04	260	
	07/21/04	10	K
	07/29/04	60	
	08/03/04	10	K
	08/10/04	40	
	08/17/04	10	K
	08/24/04	10	
Erskine Lower	05/26/04	40	
	06/03/04	30	
	06/10/04	20	
	06/22/04	30	
	07/14/04	70	
	07/21/04	10	
	07/29/04	40	
	08/03/04	10	K
	08/10/04	10	
	08/17/04	20	

	08/24/04	10	K

Forest Hill Lake			
count	99	mean+3stdev	9063
median	13	% reduction	95%
max	28200		
stdev	2875	**1 value excluded (28200)**	
mean	436	**Excluded. Next highest value in dataset is 3700. Also, there was no remark code**	
mean+3stdev	9063		

Station	**Date**	**Value**	**Remarks**
FHP	05/25/99	74	
FHP	06/01/99	2500	
FHP	06/03/99	13	
FHP	06/09/99	10	
FHP	06/15/99	9	
FHP	07/12/99	6	
FHP	08/17/99	15	
FHP	08/23/99	2	
FHP	08/31/99	2	K
Beach Area	05/27/98	1	
Inlet	05/27/98	1	
Beach Area	06/10/98	1	
Inlet	06/10/98	1	k
Beach Area	06/16/98	35	
Beach Area	06/23/98	14	
Inlet	06/23/98	20	
Beach Area	06/30/98	26	
Beach	07/07/98	1	k
Forest Hill	07/07/98	1	k
Beach Area	07/14/98	2	
Beach Area	07/21/98	1	k
Inlet	07/21/98	2	
Beach Area	08/04/98	2	
Inlet	08/04/98	10	
Beach Area	08/11/98	184	
Beach Area	08/18/98	80	
Inlet	08/18/98	190	
Beach Area	08/27/98	3	
Inlet	08/27/98	68	
Beach Area	09/03/98	2	

Forest Hill Park	05/24/00	44	
Forest Hill Park	05/30/00	6	
Forest Hill Park	06/05/00	2	
Forest Hill Park	06/13/00	46	
Forest Hill Park	06/20/00	8	
Forest Hill Park	07/06/00	4	
Forest Hill Park	07/12/00	8	
Forest Hill Park	07/19/00	36	
Forest Hill Park	07/25/00	2	K
Forest Hill Park	08/02/00	20	
Forest Hill Park	08/08/00	2	K
Forest Hill Park	08/15/00	108	
Forest Hill Park	08/22/00	2	K
Forest Hill Park	08/28/00	12	
Beach	05/22/01	128	
Beach	05/29/01	8	
Beach	06/04/01	68	
Beach	06/12/01	24	
Beach	06/18/01	184	
Beach	06/26/01	192	
Beach	07/02/01	110	
Beach	07/09/01	32	
Beach	07/16/01	16	
Beach	07/23/01	16	
Beach	07/31/01	14	
Beach	08/06/01	42	
Beach	08/14/01	3100	
Beach	08/17/01	40	
Beach	08/22/01	2	
Beach	08/22/01	54	
Beach	08/27/01	2	
Inlet	05/22/01	28200	
Inlet	06/04/01	186	
Inlet	06/18/01	1900	
Inlet	07/02/01	578	
Inlet	07/16/01	10	
Inlet	07/31/01	180	
Inlet	08/14/01	3700	
Inlet	08/17/01	32	
Inlet	08/27/01	82	
BEACH	05/20/02	14	
BEACH	05/28/02	2	
BEACH	06/03/02	2	
BEACH	06/10/02	4	

BEACH	06/19/02	18	
BEACH	06/24/02	2	
BEACH	07/02/02	8	
BEACH	07/08/02	2	
BEACH	07/15/02	6	
BEACH	07/22/02	2	
BEACH	07/29/02	2	
BEACH	08/13/02	4	
BEACH	08/19/02	2	
BEACH	08/26/02	4	
INLET	05/20/02	124	
Forest Hill Lake	05/24/04	10	K
	06/01/04	10	K
	06/09/04	20	
	06/15/04	10	
	06/24/04	10	K
	07/06/04	20	
	07/15/04	30	
	07/21/04	20	
	07/26/04	260	
	07/29/04	60	
	08/03/04	10	K
	08/10/04	10	K
	08/18/04	40	
	08/24/04	20	

Kitchell Lake			
count	77	mean+3stdev	1675
median	31	%reduction	95%
max	3680		
stdev	505	**no data excluded**	
mean	161		
mean+3stdev	1675		

Station	**Date**	**Value**	**Remark**
Beach	06/16/98	70	
Beach	06/23/98	39	
Beach	06/30/98	168	
Beach	07/07/98	3	
Beach	07/14/98	12	
Beach	07/21/98	31	
Beach	08/04/98	7	
Beach	08/11/98	450	

Beach	08/13/98	10	
Stream Inlet	08/13/98	6	
Beach	08/18/98	270	
Beach	08/20/98	292	
Kitchell Lake	08/24/98	2	
Beach	09/03/98	146	
KL	05/26/99	43	
KL	06/03/99	231	
KL	06/09/99	6	
KL	06/17/99	1	K
KL	06/17/99	65	
KL	06/23/99	24	
KL	06/29/99	3680	
KL	07/01/99	92	
KL	07/07/99	14	
KL	07/12/99	16	
KL	07/19/99	10	
KL	07/27/99	4	
KL	08/03/99	25	
KL	08/11/99	1	K
KL	08/17/99	41	
KL	08/23/99	4	
Kitchell Lake	06/20/00	24	
Kitchell Lake	07/05/00	30	
Kitchell Lake	07/19/00	76	
Kitchell Lake	07/24/00	12	
Kitchell Lake	08/02/00	28	
Kitchell Lake	08/08/00	124	
Kitchell Lake	08/16/00	320	
Kitchell Lake	08/18/00	44	
Kitchell Lake	08/21/00	92	
Kitchell Lake	08/28/00	240	
Kitchell Lake	08/30/00	32	
Beach	05/21/01	2	
Beach	05/29/01	20	
Beach	06/04/01	18	
Beach	06/11/01	14	
Beach	06/18/01	164	
Beach	07/02/01	196	
Beach	07/09/01	144	
Beach	07/16/01	2	
Beach	07/23/01	2	
Beach	07/31/01	316	
Beach	08/02/01	14	
Beach	08/06/01	34	

Beach	08/14/01	2500	
Beach	08/17/01	34	
Beach	08/23/01	10	
Beach	08/27/01	30	
Inlet	07/12/01	86	
	05/28/02	12	
	06/14/02	2	
	06/25/02	44	
	07/08/02	6	
	07/22/02	62	
	08/08/02	10	
	08/19/02	4	
Kitchell Lake Association	05/20/04	2	K
	06/02/04	145	
	06/14/04	130	
	06/28/04	14	
	07/12/04	88	
	07/26/04	600	
	07/29/04	260	
	07/30/04	10	
	08/09/04	26	
	08/16/04	410	
	08/18/04	136	
	08/23/04	70	

Lake Edenwold			
count	42	mean+3stdev	719
median	70	%reduction	83%
max	1200		
Stdev	198	**no data excluded**	
Mean	125		
mean+3stdev	719		

Name	**Date**	**Value**	**Remark**
LE	06/20/99	150	
LE	07/02/99	440	
LE	07/07/99	70	
LE	07/09/99	100	
LE	07/09/99	140	
LE	07/09/99	10	K
LE	07/09/99	50	
LE	07/15/99	40	

LE	07/22/99	230	
LE	07/23/99	100	
LE	07/28/99	10	
LE	08/01/99	40	
LE	08/12/99	40	
LE	08/18/99	90	
LE	08/24/99	40	
	07/15/02	10	k
	07/22/02	10	k
	08/06/02	10	k
	08/13/02	10	k
	08/19/02	60	
	08/29/02	1200	
	09/01/02	140	
Lake Edenwold, Butler	06/03/03	40	
	06/06/03	30	
	06/16/03	40	
	06/23/03	70	
	06/30/03	30	
	07/07/03	120	
	07/28/03	90	
	08/04/03	280	
	08/07/03	140	Resample
	08/11/03	150	
	08/19/03	120	
	08/25/03	50	
Lake Edenwold, Butler	06/02/04	40	
	06/17/04	170	
	06/23/04	110	
	06/29/04	480	
	07/07/04	100	
	07/20/04	50	
	07/26/04	50	
	08/04/04	90	

Lake Ioscoe			
count	24	mean+3stdev	702
median	10	%reduction	74%
max	770		
stdev	204	**no data excluded**	
mean	91		
mean+3stdev	702		

Station	**Date**	**Value**	**Remark**
Lake Ioscoe	06/06/98	680	
	06/10/98	10	
	06/26/98	10	
	07/02/98	10	K
	07/07/98	10	K
	07/14/98	10	K
	07/22/98	50	
	07/28/98	40	
	08/05/98	10	K
	08/12/98	10	K
	08/19/98	30	
	08/29/98	10	K
LI	06/07/99	10	
LI	06/20/99	20	
LI	07/02/99	20	
LI	07/09/99	770	
LI	07/13/99	60	
LI	07/15/99	100	
LI	07/22/99	10	
LI	07/28/99	10	K
LI	08/01/99	10	K
LI	08/12/99	10	K
LI	08/18/99	280	
LI	08/24/99	10	

Lionhead Lake			
count	57	mean+3stdev	2426
median	108	%reduction	95%
max	3900		
stdev	700	**no data excluded**	
mean	326		
mean+3stdev	2426		

Station	**Date**	**Value**	**Remark**
Lions Head Lake	05/23/00	108	
Lions Head Lake	05/31/00	2	K
Lions Head Lake	06/09/00	28	
Lions Head Lake	06/14/00	208	
Lions Head Lake	06/15/00	80	
Lions Head Lake	06/20/00	132	
Lions Head Lake	06/28/00	98	
Lions Head Lake	07/05/00	76	

Lions Head Lake	07/17/00	160	
Lions Head Lake	07/24/00	56	
Lions Head Lake	07/31/00	560	
Lions Head Lake	08/05/00	210	
Lions Head Lake	08/07/00	104	
Lions Head Lake	08/17/00	196	
Lions Head Lake	08/21/00	84	
Lions Head Lake	08/28/00	54	
Lions Head Lake: Wayne	05/29/01	400	
	05/31/01	128	Resample
	06/11/01	140	
	06/18/01	2800	
	06/20/01	180	Resample
	06/25/01	168	
	07/02/01	172	
	07/09/01	178	
	07/16/01	92	
	07/23/01	90	
	07/30/01	2	
	08/06/01	176	
	08/14/01	398	
	08/16/01	48	Resample
	08/20/01	72	
	08/27/01	20	
LIONS HEAD	05/20/02	82	
	05/29/02	2	
	06/03/02	1200	
	06/06/02	3900	
	06/10/02	30	
	06/17/02	466	
	06/17/02	280	
	06/24/02	12	
	07/01/02	20	
	07/01/02	32	
	07/07/02	30	
	07/08/02	210	
	07/15/02	158	
	07/22/02	18	
	07/29/02	52	
Lions Head Lake	05/17/04	60	
	06/15/04	1700	
	06/17/04	2100	
	06/30/04	140	

	07/08/04	10	K
	07/20/04	120	
	07/26/04	160	
	08/03/04	100	
	08/17/04	420	
	08/25/04	50	

Skyline Lakes			
count	167	mean+3stdev	1955
median	50	%reduction	96%
max	4700		
stdev	581	**no data excluded**	
mean	211		
mean+3stdev	1955		

Station	**Date**	**Value**	**Remark**
Skyline Lake	05/23/98	830	
Skyline Lake	05/28/98	10	
Skyline Lake	06/05/98	90	
Skyline Lake	06/11/98	50	
Skyline Lake	06/18/98	700	
Skyline Lake	06/22/98	650	
Skyline Lake	06/24/98	540	
Skyline Lake	06/29/98	10	
Skyline Lake	07/05/98	140	
Skyline Lake	07/12/98	40	
Skyline Lake	07/19/98	190	
Skyline Lake	07/26/98	10	
Skyline Lake	08/03/98	320	
Skyline Lake	08/05/98	170	
Skyline Lake	08/12/98	130	
Skyline Lake	08/12/98	10	
Skyline Lake	08/19/98	170	
Skyline Lakes Upper Beach	05/23/98	30	
Skyline Lakes Upper Beach	06/05/98	110	
Skyline Lakes Upper Beach	06/11/98	10	
Skyline Lakes Upper Beach	06/18/98	20	
Skyline Lakes Upper Beach	06/22/98	10	
Skyline Lakes Upper	07/05/98	10	

Beach			
Skyline Lakes Upper Beach	07/12/98	10	
Skyline Lakes Upper Beach	07/19/98	40	
Skyline Lakes Upper Beach	07/26/98	10	
Skyline Lakes Upper Beach	08/03/98	10	
Skyline Lakes Upper Beach	08/14/98	110	
Skyline Lakes Upper Beach	08/18/98	40	
Skyline Lakes Upper Beach	08/29/98	10	
SL	06/02/99	230	
SL	06/04/99	120	
SL	06/04/99	67	
SL	06/10/99	452	
SL	06/14/99	86	
SL	06/18/99	300	
SL	06/18/99	120	
SL	06/22/99	654	
SL	06/25/99	40	
SL	06/25/99	100	
SL	07/05/99	220	
SL	07/05/99	80	
SL	07/10/99	80	
SL	07/10/99	20	
SL	07/20/99	10	K
SL	07/20/99	120	
SL	07/29/99	10	
SL	07/29/99	100	
SL	08/04/99	10	K
SL	08/04/99	50	
SL	08/09/99	10	K
SL	08/09/99	260	
SL	08/11/99	180	
SL	08/13/99	30	
SL	08/31/99	100	
Skyline Lake Main Beach	05/25/00	40	
Skyline Lake Main Beach	06/01/00	10	K
Skyline Lake Main Beach	06/08/00	30	
Skyline Lake Main	06/16/00	30	

Beach			
Skyline Lake Main Beach	06/23/00	70	
Skyline Lake Main Beach	06/28/00	90	
Skyline Lake Main Beach	07/06/00	330	
Skyline Lake Main Beach	07/18/00	40	
Skyline Lake Main Beach	07/30/00	460	
Skyline Lake Main Beach	08/03/00	1200	
Skyline Lake Main Beach	08/07/00	90	
Skyline Lake Main Beach	08/14/00	50	
Skyline Lake Main Beach	09/07/00	40	
Skyline Lake Upper Beach	06/01/00	40	
Skyline Lake Upper Beach	06/16/00	20	
Skyline Lake Upper Beach	07/18/00	10	
Skyline Lake Upper Beach	07/30/00	2600	
Skyline Lake Upper Beach	08/03/00	560	
Skyline Lake Upper Beach	08/07/00	90	
Skyline Lake Upper Beach	08/14/00	120	
Skyline Lake Upper Beach	08/25/00	10	K
Main/Lower Beach	05/25/01	10	
Main/Lower Beach	05/29/01	10	
Main/Lower Beach	06/04/01	100	
Main/Lower Beach	06/18/01	390	
Main/Lower Beach	06/20/01	100	Resample
Main/Lower Beach	06/27/01	490	
Main/Lower Beach	07/06/01	50	
Main/Lower Beach	07/13/01	600	Closed 7/16
Main/Lower Beach	07/17/01	10	
Main/Lower Beach	07/23/01	100	
Main/Lower Beach	07/30/01	270	
Main/Lower Beach	08/01/01	40	Resample
Main/Lower Beach	08/06/01	130	
Main/Lower Beach	08/15/01	510	

Main/Lower Beach	08/21/01	30	
Upper Beach	05/22/01	320	
Upper Beach	05/29/01	40	
Upper Beach	05/29/01	10	
Upper Beach	06/04/01	100	
Upper Beach	06/18/01	4700	
Upper Beach	06/20/01	3400	Resample
Upper Beach	06/27/01	350	
Upper Beach	06/27/01	150	
Upper Beach	07/06/01	50	
Upper Beach	07/13/01	30	
Upper Beach	07/17/01	10	
Upper Beach	07/23/01	200	
Upper Beach	07/30/01	50	
Upper Beach	08/06/01	50	
Upper Beach	08/15/01	50	
Upper Beach	08/21/01	10	
MAIN/LOWER	05/24/02	260	
MAIN/LOWER	06/06/02	380	
MAIN/LOWER	06/11/02	130	
MAIN/LOWER	06/19/02	10	
MAIN/LOWER	06/24/02	30	
MAIN/LOWER	07/07/02	30	
MAIN/LOWER	07/08/02	30	
MAIN/LOWER	07/17/02	50	
MAIN/LOWER	07/25/02	80	
MAIN/LOWER	07/29/02	3900	
MAIN/LOWER	08/12/02	20	
MAIN/LOWER	08/23/02	50	
MAIN/LOWER	09/03/02	40	
UPPER	05/28/02	20	
UPPER	06/06/02	140	
UPPER	06/11/02	30	
UPPER	06/19/02	10	
UPPER	07/29/02	80	
SKYLINE LAKE:Main	06/03/03	120	
	06/20/03	210	
	07/01/03	30	
	07/08/03	10	
	07/22/03	200	
	08/08/03	140	
	08/14/03	40	
	08/26/03	30	
Skyline Lake:LOWER BEACH	05/20/03	10	
	05/27/03	430	
	05/30/03	40	
	06/09/03	100	
	07/29/03	50	
	08/05/03	410	
	08/12/03	510	
	08/19/03	80	
	09/02/03	110	
Skyline Lake:UPPER BEACH	05/20/03	20	
	06/09/03	30	
	06/20/03	40	
	06/25/03	240	
	07/01/03	10	
Skyline Upper Lake	05/26/04	100	
	06/03/04	130	
	06/10/04	10	
	06/22/04	80	
	07/14/04	50	
	07/21/04	10	
	07/29/04	1	K
	08/03/04	10	
	08/17/04	50	
	08/24/04	30	
Skyline Lower	05/26/04	10	
	06/10/04	80	
	06/22/04	60	
	07/14/04	40	
	07/21/04	40	
	07/29/04	30	
	08/03/04	40	
	08/10/04	20	
	08/17/04	30	
	08/24/04	30	

WMA 04

Toms Lake (WMA 04)			
count	214	mean+3stdev	662
median	12	%reduction	90%
max	2000		
stdev	194	**no data excluded**	

mean	80		
mean+3stdev	662		

Station	**Date**	**Value**	**Remark**
North Cove swim lanes	05/31/00	2	
North Cove swim lanes	06/09/00	122	
North Cove swim lanes	06/14/00	4	
North Cove swim lanes	06/20/00	42	
North Cove swim lanes	06/28/00	96	
North Cove swim lanes	07/05/00	8	
North Cove swim lanes	07/17/00	24	
North Cove swim lanes	07/24/00	2	K
North Cove swim lanes	07/31/00	4	
North Cove swim lanes	08/07/00	16	
North Cove swim lanes	08/17/00	12	
North Cove swim lanes	08/21/00	4	
North Cove swim lanes	08/28/00	4	
North Cove beach	05/23/00	278	
North Cove beach	05/25/00	2	
North Cove beach	05/31/00	136	
North Cove beach	06/09/00	114	
North Cove beach	06/14/00	84	
North Cove beach	06/20/00	16	
North Cove beach	06/28/00	96	
North Cove beach	07/05/00	2	K
North Cove beach	07/06/00	2	K
North Cove beach	07/17/00	112	
North Cove beach	07/24/00	2	K
North Cove beach	07/31/00	16	
North Cove beach	08/07/00	124	
North Cove beach	08/17/00	20	
North Cove beach	08/21/00	4	
North Cove beach	08/28/00	36	
Kilroy Park	05/31/00	2	
Kilroy Park	06/09/00	4	

Kilroy Park	06/14/00	14	
Kilroy Park	06/20/00	2	K
Kilroy Park	06/28/00	94	
Kilroy Park	07/05/00	264	
Kilroy Park	07/17/00	12	
Kilroy Park	07/24/00	24	
Kilroy Park	08/02/00	48	
Kilroy Park	08/07/00	4	
Kilroy Park	08/17/00	76	
Kilroy Park	08/21/00	52	
Kilroy Park	08/28/00	20	
Beach	05/21/01	32	
Beach	05/29/01	46	
Beach	06/04/01	4	
Beach	06/11/01	16	
Beach	06/18/01	350	
Beach	06/20/01	21	Resample
Beach	06/25/01	2	
Beach	07/02/01	28	
Beach	07/09/01	10	
Beach	07/16/01	26	
Beach	07/23/01	6	
Beach	07/30/01	2	
Beach	08/06/01	6	
Beach	08/14/01	18	
Beach	08/20/01	34	
Beach	08/27/01	14	
Swim Lanes	07/09/01	6	
Swim Lanes	07/16/01	34	
Swim Lanes	07/23/01	4	
Swim Lanes	07/30/01	2	
Swim Lanes	08/06/01	2	
Swim Lanes	08/14/01	24	
Swim Lanes	08/20/01	4	
Swim Lanes	08/27/01	2	
Kilroy Park Lake: Wayne	05/21/01	18	
see note in 2003	05/29/01	102	
	06/04/01	2	
	06/11/01	2	
	06/18/01	2	
	06/25/01	2	
	07/02/01	2	
	07/09/01	2	

	07/16/01	2	
	07/23/01	2	
	07/30/01	2	
	08/06/01	2	
	08/14/01	2	
	08/20/01	2	
	08/27/01	2	
BEACH	05/20/02	2	
BEACH	05/29/02	280	
BEACH	05/31/02	264	
BEACH	06/03/02	20	
BEACH	06/04/02	20	
BEACH	06/10/02	34	
BEACH	06/17/02	384	
BEACH	06/19/02	196	
BEACH	07/01/02	30	
BEACH	07/08/02	2	
BEACH	07/15/02	10	
BEACH	07/22/02	2	
BEACH	07/29/02	2	
BEACH	08/05/02	2	
BEACH	08/12/02	2	
SWIM LANES	05/20/02	2	
SWIM LANES	05/29/02	4	
SWIM LANES	06/03/02	184	
SWIM LANES	06/10/02	2	
SWIM LANES	06/17/02	16	
SWIM LANES	07/01/02	2	
SWIM LANES	07/08/02	2	
SWIM LANES	07/15/02	2	
SWIM LANES	07/29/02	2	
SWIM LANES	08/05/02	2	
SWIM LANES	08/12/02	2	
	05/20/02	2	
	05/29/02	14	
	06/03/02	714	
	06/05/02	102	
	06/10/02	256	
	06/10/02	262	
	06/12/02	42	
	06/17/02	22	
	06/24/02	6	
	07/01/02	32	
	07/08/02	2	
	07/15/02	24	

	07/22/02	22	
	07/29/02	74	
	08/05/02	6	
NORTH COVE:Beach	05/20/03	16	
	05/27/03	96	
	06/09/03	182	
	06/16/03	164	
	06/23/03	98	
	06/30/03	8	
	07/07/03	2	
	07/14/03	12	
	07/21/03	2	
	07/28/03	2	
	08/04/03	34	
	08/11/03	196	
	08/18/03	556	
	08/20/03	2	
	08/25/03	2	
North Cove:SWIM LANES	05/20/03	2	
	05/27/03	2	
	06/09/03	198	
	06/16/03	4	
	06/23/03	2	
	06/30/03	2	
	07/07/03	2	
	07/14/03	2	
	07/21/03	2	
	07/28/03	2	
	08/04/03	26	
	08/11/03	86	
	08/18/03	2	
	08/25/03	2	
KILROY PARK????:	05/20/03	2	
	05/27/03	2	
	06/09/03	2	
	06/16/03	2	
	06/23/03	2	
	06/30/03	2	
	07/07/03	2	
	07/14/03	2	
	07/21/03	2	
	07/28/03	2	
	08/04/03	2	
	08/11/03	2	

	08/18/03	2	
	08/25/03	2	
North Cove Lake	05/23/04	2000	
	05/24/04	318	
	05/28/04	900	
	06/01/04	187	
	06/07/04	60	
	06/09/04	88	
	06/14/04	288	
	06/16/04	196	
	06/21/04	146	
	06/28/04	50	
	07/06/04	42	
	07/12/04	212	
	07/14/04	284	
	07/16/04	73	
	07/19/04	206	
	07/21/04	6	
	07/22/04	8	
	07/26/04	10	
	08/02/04	20	
	08/09/04	16	
	08/16/04	90	
	08/23/04	22	
	08/30/04	14	
North Cove Swim Lanes	05/23/04	500	
	05/24/04	268	
	05/28/04	600	
	06/01/04	183	
	06/07/04	242	
	06/14/04	160	
	06/21/04	34	
	06/28/04	6	
	07/06/04	26	
Kilroy Park (Tom's Lake)	05/23/04	2	K
	05/24/04	1078	
	05/28/04	2	K
	06/01/04	2	K
	06/07/04	2	K
	06/14/04	2	K
	06/21/04	2	K
	06/28/04	2	K
	07/06/04	198	
	07/01/04	2	K
	07/19/04	184	
	07/26/04	130	
	08/02/04	196	
	08/09/04	2	K
	08/16/04	238	
	08/23/04	172	
	08/30/04	2	K

WMA 06

Camp Lewis			
count	84	mean+3stdev	599
median	10	%reduction	78%
max	930		
stdev	173	**no data excluded**	
mean	80		
mean+3stdev	599		

STATION	DATE	VALUE	REMARK
MOCL	05/30/98	80	
MOCL	06/06/98	10	K
MOCL	06/13/98	90	
MOCL	06/20/98	50	
MOCL	06/30/98	30	
MOCL	07/09/98	10	K
MOCL	07/16/98	10	K
MOCL	07/21/98	10	K
MOCL	07/29/98	10	K
MOCL	08/04/98	10	K
MOCL	08/12/98	500	
MOCL	08/19/98	100	
MOCL	08/26/98	40	
Beach	06/27/99	10	K
	07/09/99	10	K
	07/15/99	30	
	07/18/99	10	K
	07/30/99	10	K
	08/05/99	20	
	08/12/99	10	K
	08/19/99	10	K
	08/29/99	10	K
Camp Lewis	06/04/00	10	K
Camp Lewis	06/11/00	10	K
Camp Lewis	06/20/00	10	K
Camp Lewis	06/24/00	10	K
Camp Lewis	07/02/00	20	
Camp Lewis	07/08/00	10	K
Camp Lewis	07/21/00	10	K
Camp Lewis	07/30/00	930	
Camp Lewis	08/01/00	70	
Camp Lewis	08/12/00	510	
Camp Lewis	08/15/00	290	
Camp Lewis	08/17/00	70	
Camp Lewis	08/22/00	10	K
MOCL	06/19/01	650	
MOCL	06/22/01	20	K, resample
MOCL	06/25/01	350	
MOCL	07/03/01	10	K, resample
MOCL	07/16/01	10	
MOCL	07/23/01	10	
MOCL	08/01/01	10	
MOCL	08/08/01	10	
MOCL	08/15/01	70	K
MOCL	08/23/01	10	
	06/11/02	10	K
	06/17/02	120	
	06/24/02	10	K
	07/05/02	40	
	07/07/02	10	K
	07/19/02	10	K
	07/25/02	10	K
	07/30/02	10	K
	08/12/02	50	
Camp Lewis	05/29/03	10	k
	06/03/03	180	
	06/09/03	70	
	06/16/03	70	
	06/23/03	200	
	06/30/03	10	k
	07/08/03	10	k
	07/14/03	10	k
	07/21/03	10	k
	07/25/03	20	
	07/29/03	10	
	08/04/03	860	
	08/06/03	200	

	08/12/03	70	
	08/20/03	10	k
Camp Lewis	06/15/04	50	
	06/30/04	10	
	07/06/04	10	k
	07/21/04	140	
	07/26/04	10	k
	08/03/04	10	k
	08/10/04	10	
	08/18/04	10	
Camp Lewis	06/13/05	20	
	06/28/05	10	
	07/06/05	10	k
	07/11/05	10	
	07/19/05	10	
	08/01/05	20	
	08/15/05	240	resample

Cold Springs Pond			
count	104	mean+3stdev	421
median	20	%reduction	79%
max	960		
stdev	122	**no data excluded**	
mean	55		
mean+3stdev	421		

Station	**Date**	**Value**	**Remark**
	06/04/01	10	K
	06/20/01	10	
	06/28/01	20	
	07/11/01	10	
	07/16/01	10	K
	07/24/01	10	
	07/31/01	10	K
	08/07/01	10	K
	08/14/01	30	
	08/20/01	140	
	08/28/01	10	K
	06/04/01	20	
	06/20/01	10	
	06/28/01	10	K
	07/11/01	20	
	07/16/01	10	K

	07/24/01	10	K
	07/31/01	20	
	08/07/01	50	
	08/14/01	10	K
	08/20/01	960	
	08/22/01	400	Resample, closed
	08/25/01	70	Resample, reopened
	08/28/01	10	
	05/31/02	20	
	06/06/02	390	
	06/09/02	10	
	06/17/02	90	
	06/25/02	20	
	07/02/02	20	
	07/09/02	20	
	07/15/08	10	k
	07/18/02	10	k
	07/22/02	20	
	07/31/02	10	
	08/06/02	40	
	08/13/02	10	
	08/19/02	10	k
	08/29/02	10	
	05/28/02	480	
	05/31/02	40	
	06/09/02	10	k
	06/17/02	40	
	06/25/02	10	
	07/02/02	30	
	07/09/02	20	
	07/15/08	30	
	07/18/02	10	k
	07/22/02	10	k
	07/31/02	10	k
	08/06/02	70	
	08/13/02	30	
	08/19/02	10	k
	08/29/02	40	
Star Lake Camp, Conference Center, Left, Bloomingdale	05/29/03	40	
	06/09/03	10	K
	06/16/03	10	
	06/23/03	20	

	06/30/03	10	
	07/07/03	10	K
	07/14/03	10	
	07/21/03	10	
	07/28/03	20	
	08/04/03	30	
	08/07/03	330	
	08/11/03	170	Resample
	08/19/03	20	
	08/25/03	10	K
Star Lake Camp, Conference Center, Right, Bloomingdale	05/29/03	10	K
	06/09/03	20	
	06/16/03	20	
	06/23/03	70	
	06/30/03	10	K
	07/07/03	10	
	07/14/03	20	
	07/21/03	10	K
	07/28/03	40	
	08/04/03	40	
	08/07/03	180	
	08/11/03	310	
	08/19/03	20	
	08/25/03	60	
Star Lake Camp, Conference Center	06/02/04	80	
	06/02/04	90	
	06/17/04	60	
	06/17/04	80	
	06/23/04	10	k
	06/23/04	10	
	06/29/04	20	
	06/29/04	60	
	07/04/04	40	
	07/04/04	10	k
	07/20/04	10	
	07/20/04	10	k
	07/26/04	90	
	07/26/04	20	
	08/04/04	50	
	08/04/04	30	
	08/09/04	20	
	08/09/04	40	
	08/19/04	10	K

	08/19/04	10	k
	08/24/04	20	
	08/24/04	10	K

Cozy Lake			
count	124	mean+3stdev	2159
median	29	%reduction	97%
max	6000		
Stdev	648	**no data excluded**	
mean	215		
mean+3stdev	2159		

Station	**Date**	**Value**	**Remark**
Cozy Lakers, Inc.	06/05/98	320	
Cozy Lakers, Inc.	07/01/98	1	K
Cozy Lakers, Inc.	07/08/98	30	
Cozy Lakers, Inc.	07/15/98	2	K
Cozy Lakers, Inc.	07/22/98	180	
Cozy Lakers, Inc.	07/28/98	1	K
Cozy Lakers, Inc.	08/05/98	1	K
Cozy Lakers, Inc.	08/13/98	1	K
Cozy Lakers, Inc.	08/18/98	1	K
Cozy Lakers, Inc.	08/26/98	2200	
Cozy Lakers, Inc.	08/31/98	1	K
Cozy Lakers, Inc.	09/02/98	1	K
Cozy Lakers, Inc.-Beach	07/25/98	150	
Cozy Lakers, Inc.-Burkhart	06/12/98	82	
Cozy Lakers, Inc.-Center	06/12/98	1	K
Cozy Lakers, Inc.-Cozy Beach	06/12/98	1	K
Cozy Lakers, Inc.-Cozy Dam.	06/12/98	6000	K
Cozy Lakers, Inc.-East Birch	07/25/98	1300	
Cozy Lakers, Inc.-East Birch	07/25/98	900	
Cozy Lakers, Inc.-East Birth	06/12/98	2200	K
Cozy Lakers, Inc.-Hamlet	06/12/98	1	K
Cozy Lakers, Inc.-Horseshoe	06/12/98	309	
Cozy Lakers, Inc.-NYODA	07/25/98	265	
Cozy Lakers, Inc.-	06/12/98	254	

NYODA Falls			
Cozy Lakers, Inc-48 Horseshoe.	06/12/98	1	K
Cozy Lakers, Inc-Grove.	06/12/98	1	K
Cozy Lakers	06/01/99	2	K
	06/07/99	75	
	06/14/99	120	
	06/21/99	60	
	06/28/99	95	
	07/06/99	30	
	07/12/99	10	
	07/19/99	20	
	07/26/99	2	K
	08/02/99	1600	L
	08/09/99	1200	L
	08/05/99	390	
	08/11/99	280	
	08/12/99	20	
	08/16/99	570	
	08/19/99	240	
	08/23/99	1200	L
	08/25/99	1200	L
	08/30/99	650	
	09/01/99	425	
	09/07/99	2	K
Cozy Lake Association	05/23/00	10	K
Cozy Lake Association	06/21/00	150	
Cozy Lake Association	06/24/00	150	
Cozy Lake Association	07/02/00	10	
Cozy Lake Association	07/08/00	10	K
Cozy Lake Association	07/21/00	10	K
Cozy Lake Association	07/30/00	120	
Cozy Lake Association	08/12/00	40	
Cozy Lake Association	08/16/00	40	
Cozy Lake Association	08/22/00	10	K
	05/29/01	30	
	06/01/01	34	
	06/04/01	10	k
	06/06/01	44	
	06/10/01	10	k
	06/14/01	2	k
	06/19/01	10	
	06/20/01	138	
	06/27/01	82	
	07/05/01	26	

	07/11/01	2	k
	07/19/01	2	k
	07/26/01	30	
	08/01/01	16	
	08/09/01	18	
	08/13/01	18	
	08/16/01	8	
	08/22/01	6	
	08/29/01	4	
	09/05/01	2	k
	05/23/02	104	
	05/30/02	12	
	06/06/02	196	
	06/12/02	58	
	06/19/02	20	
	06/27/02	28	
	07/03/02	42	
	07/10/02	50	
	07/17/02	8	
	07/25/02	20	
	07/31/02	2	
	08/07/02	14	
	08/14/02	84	
	08/21/02	2	
	08/28/02	6	
Cozy Lakers	05/19/03	2	k
	05/27/03	22	
	06/02/03	366	
	06/06/03	96	
	06/09/03	174	
	06/16/03	160	
	06/24/03	98	
	06/30/03	66	
	07/07/03	84	
	07/14/03	338	
	07/15/03	224	
	07/17/03	8	
	07/21/03	62	
	07/28/03	138	
	08/04/03	138	
	08/11/03	106	
	08/19/03	4	
	08/25/03	198	
Cozy Lakers	05/25/04	2	
	06/04/04	2	k

	06/10/04	22	
	06/17/04	30	
	06/21/04	158	
	06/30/04	12	
	07/15/04	4	
	07/21/04	36	
	07/28/04	14	
	08/04/04	2	k
	08/10/04	2	k
	08/19/04	14	
	08/24/04	16	
	08/31/04	2	k

Foxs Pond			
count	205	mean+3stdev	3402
median	110	%reduction	98%
max	8200		
stdev	981	**no data excluded**	
mean	410		
mean+3stdev	3353		

STATION	**Date**	**Value**	**Remark**
MOL 1	06/09/99	210	
MOL 1	06/16/99	20	
MOL 1	06/23/99	70	
MOL 1	06/30/99	180	
MOL 1	07/07/99	160	
MOL 1	07/14/99	30	
MOL 1	07/21/99	100	
MOL 1	07/28/99	60	
MOL 1	08/04/99	110	
MOL 1	08/11/99	10	
MOL 1	08/18/99	890	
MOL 1	08/25/99	210	
MOL 1	06/07/00	320	
MOL 1	06/14/00	150	
MOL 1	06/21/00	20	
MOL 1	06/28/00	410	
MOL 1	06/30/00	50	
MOL 1	07/05/00	20	
MOL 1	07/12/00	10	K
MOL 1	07/19/00	110	
MOL 1	07/26/00	10	K
MOL 1	08/02/00	360	
MOL 1	08/04/00	410	
MOL 1	08/07/00	260	
MOL 1	08/09/00	180	
MOL 1	08/16/00	1,100	
MOL 1	08/18/00	160	
MOL 1	05/30/01	310	resample
MOL 1	06/06/01	50	
MOL 1	06/13/01	10	K
MOL 1	06/27/01	110	
MOL 1	07/03/01	50	
MOL 1	07/11/01	2400	resample
MOL 1	07/13/01	10	
MOL 1	07/17/01	110	
MOL 1	07/24/01	10	K
MOL 1	07/30/01	290	resample
MOL 1	08/01/01	140	
MOL 1	08/07/01	480	resample
MOL 1	08/09/01	120	
MOL 1	08/14/01	2,300	resample
MOL 1	08/17/01	4000	closed,resample
MOL 1	08/28/01	40	
MOL 2	06/09/99	40	
MOL 2	06/16/99	10	
MOL 2	06/23/99	10	
MOL 2	06/30/99	100	
MOL 2	07/07/99	10	
MOL 2	07/14/99	10	
MOL 2	07/21/99	10	
MOL 2	07/28/99	380	
MOL 2	08/04/99	10	
MOL 2	08/11/99	10	
MOL 2	08/18/99	10	
MOL 2	08/25/99	280	
MOL 2	06/14/00	200	
MOL 2	06/21/00	10	K
MOL 2	06/28/00	480	
MOL 2	06/30/00	40	
MOL 2	07/05/00	10	K
MOL 2	07/12/00	10	K
MOL 2	07/19/00	70	
MOL 2	07/26/00	10	
MOL 2	08/02/00	260	
MOL 2	08/04/00	140	
MOL 2	08/07/00	90	
MOL 2	08/09/00	30	
MOL 2	08/16/00	570	
MOL 2	08/18/00	50	
MOL 2	06/06/01	40	
MOL 2	06/27/01	10	
MOL 2	07/03/01	60	
MOL 2	07/11/01	140	
MOL 2	07/17/01	350	resample
MOL 2	07/19/01	20	
MOL 2	07/24/01	10	K
MOL 2	07/30/01	10	K
MOL 2	08/07/01	30	
MOL 2	08/14/01	50	
MOL 3	06/09/99	70	
MOL 3	06/16/99	210	
MOL 3	06/23/99	460	
MOL 3	06/30/99	860	
MOL 3	07/07/99	270	
MOL 3	07/14/99	190	
MOL 3	07/21/99	8,200	
MOL 3	07/28/99	10	
MOL 3	08/04/99	550	
MOL 3	08/11/99	170	
MOL 3	08/18/99	150	
MOL 3	08/25/99	140	
MOL 3	06/07/00	1,200	
MOL 3	06/14/00	200	
MOL 3	06/21/00	140	
MOL 3	06/28/00	1,500	
MOL 3	07/05/00	550	
MOL 3	07/12/00	200	
MOL 3	07/19/00	100	
MOL 3	07/26/00	5,280	
MOL 3	08/02/00	200	
MOL 3	08/09/00	4,700	
MOL 3	08/16/00	440	
MOL 3	05/30/01	60	
MOL 3	06/13/01	60	
MOL 3	06/27/01	170	
MOL 3	07/03/01	210	
MOL 3	07/11/01	30	
MOL 3	07/13/01	120	
MOL 3	07/17/01	4200	
MOL 3	07/24/01	50	
MOL 3	07/30/01	170	

MOL 3	08/07/01	380	
MOL 3	08/14/01	190	
MOL 3	08/28/01	170	
Inlet	05/14/03	230	inlet is located in Rockaway Township
	05/19/03	60	
	05/27/03	350	
	06/02/03	290	
	06/16/03	310	
	06/23/03	530	
	06/30/03	2,200	
	07/07/03	220	
	07/14/03	220	
	07/21/03	130	
	07/28/03	1,500	
	08/04/03	420	
	08/11/03	280	
	08/18/03	510	
Beach	05/14/03	50	
	05/19/03	10	K
	05/27/03	340	Not open for season
	06/02/03	3,300	Not open for season
	06/16/03	210	Not open for season
	06/23/03	1,200	Opening Week
	06/25/03	60	Resample
	06/30/03	30	
	07/07/03	10	K
	07/14/03	10	
	07/21/03	30	
	07/28/03	100	
	08/04/03	1,600	
	08/06/03	830	Resample; **Closed**
	08/08/03	600	Resample; **Closed**
	08/11/03	10	Resample; **Opened**
	08/18/03	10	K; Closed for season
Lanes	05/19/03	10	K
	05/27/03	340	Not open for season
	06/02/03	4,000	Not open for season
	06/16/03	190	
	06/23/03	2,100	Opening Week
	06/25/03	60	
	06/30/03	10	K
	07/07/03	10	K
	07/14/03	10	K
	07/21/03	10	

	07/28/03	40	
	08/04/03	350	
	08/06/03	960	Resample; **Closed**
	08/08/03	110	Resample; **Opened**
	08/11/03	10	
	08/18/03	20	Closed for season
	05/25/04	10	K
	05/25/04	140	
	06/02/04	20	
	06/02/04	10	
	06/02/04	160	
	06/07/04	340	
	06/07/04	20	
	06/07/04	20	
	06/14/04	10	
	06/14/04	10	K
	06/14/04	10	
	06/21/04	160	
	06/21/04	10	
	06/21/04	10	K
	06/28/04	10	
	06/28/04	30	
	06/28/04	20	
	07/06/04	50	
	07/06/04	40	
	07/06/04	10	K
	07/12/04	2700	
	07/12/04	10	K
	07/12/04	10	K
	07/19/04	40	
	07/19/04	90	
	07/19/04	10	K
	07/26/04	10	
	07/26/04	30	
	07/26/04	20	
	08/02/04	130	
	08/02/04	10	K
	08/02/04	10	
	08/09/04	10	K
	08/09/04	10	K
	08/09/04	30	
	08/17/04	1100	
	08/17/04	1300	
	08/17/04	1200	
	08/19/04	40	resample

	08/19/04	200	resample
	08/19/04	40	resample
	08/23/04	150	facility closed for the season
	08/23/04	300	
	08/23/04	340	

Indian Lake			
count	273	mean+3stdev	1390
median	30	%reduction	95%
max	4100		
stdev	420	**no data excluded**	
mean	130		
mean+3stdev	1390		

STATION	DATE	VALUE	REMARK
INDIAN/CLUB	07/06/98	20	
INDIAN/CLUBHOUSE	06/22/98	100	
INDIAN/CLUBHOUSE	06/22/98	100	
INDIAN/CLUBHOUSE	06/29/98	350	
INDIAN/CLUBHOUSE	07/13/98	30	
INDIAN/CLUBHOUSE	07/20/98	52	
INDIAN/CLUBHOUSE	07/27/98	110	
INDIAN/CLUBHOUSE	08/17/98	40	
INDIAN/CLUBHOUSE	08/24/98	100	
INDIAN/FRANKLIN	06/22/98	40	
INDIAN/FRANKLIN	06/22/98	40	
INDIAN/FRANKLIN	06/29/98	10	
INDIAN/FRANKLIN	07/13/98	10	
INDIAN/FRANKLIN	07/20/98	8	
INDIAN/FRANKLIN	07/27/98	20	
INDIAN/FRANKLIN	08/17/98	80	
INDIAN/FRANKLIN	08/24/98	90	
INDIAN/MAIN	06/22/98	10	
INDIAN/MAIN	06/22/98	10	
INDIAN/MAIN	06/29/98	10	
INDIAN/MAIN	07/06/98	10	
INDIAN/MAIN	07/13/98	10	
INDIAN/MAIN	07/20/98	10	
INDIAN/MAIN	07/27/98	10	K
INDIAN/MAIN	08/17/98	20	
INDIAN/MAIN	08/24/98	40	
INDIAN/EAST	06/22/99	10	K

INDIAN/EAST	07/05/99	90	
INDIAN/CLUB	06/24/99	80	
INDIAN/CLUB	06/22/99	860	
INDIAN/CLUB	06/25/99	80	
INDIAN/CLUB	07/08/99	190	
INDIAN/CLUB	07/16/99	10	
INDIAN/CLUB	07/21/99	90	
INDIAN/CLUB	07/29/99	130	
INDIAN/CLUB	08/04/99	10	K
INDIAN/CLUB	08/13/99	170	
INDIAN/CLUB	08/19/99	320	
INDIAN/CLUB	08/23/99	620	
INDIAN/CLUB	08/27/99	560	
INDIAN/CLUB	09/01/99	230	
INDIAN/FRANKLIN	06/24/99	20	
INDIAN/FRANKLIN	06/22/99	220	
INDIAN/FRANKLIN	06/25/99	20	
INDIAN/FRANKLIN	07/05/99	50	
INDIAN/FRANKLIN	07/08/99	40	
INDIAN/FRANKLIN	07/16/99	10	
INDIAN/FRANKLIN	07/21/99	10	
INDIAN/FRANKLIN	07/29/99	10	
INDIAN/FRANKLIN	08/04/99	10	K
INDIAN/FRANKLIN		10	K
INDIAN/FRANKLIN	08/19/99	10	K
INDIAN/FRANKLIN	08/27/99	50	
INDIAN/MAIN	07/05/99	10	
INDIAN/MAIN	07/08/99	40	
INDIAN/MAIN	07/16/99	10	
INDIAN/MAIN	07/21/99	10	K
INDIAN/MAIN	07/29/99	10	K
INDIAN/MAIN	08/04/99	10	K
INDIAN/MAIN	08/13/99	10	K
INDIAN/MAIN	08/19/99	10	K
INDIAN/MAIN	08/27/99	10	K
INDIAN/MAIN	09/01/99	10	K
INDIAN/CLUB	05/28/00	10	K
INDIAN/CLUB	06/03/00	50	
INDIAN/CLUB	06/10/00	90	
INDIAN/CLUB	06/20/00	10	
INDIAN/CLUB	06/24/00	40	
INDIAN/CLUB	07/06/00	10	
INDIAN/CLUB	07/11/00	20	
INDIAN/CLUB	07/17/00	100	
INDIAN/CLUB	07/28/00	40	

INDIAN/CLUB	08/04/00	30	
INDIAN/CLUB	08/08/00	40	
INDIAN/CLUB	08/08/00	40	
INDIAN/CLUB	08/15/00	350	
INDIAN/CLUB	08/23/00	2000	
INDIAN/CLUB	08/26/00	280	
INDIAN/CLUB	08/30/00	30	
INDIAN/CLUB	08/31/00	140	
INDIAN/FRANKLIN	05/28/00	10	K
INDIAN/FRANKLIN	06/20/00	4100	
INDIAN/FRANKLIN	06/24/00	40	
INDIAN/FRANKLIN	07/06/00	10	K
INDIAN/FRANKLIN	07/11/00	10	K
INDIAN/FRANKLIN	07/17/00	10	
INDIAN/FRANKLIN	07/28/00	60	
INDIAN/FRANKLIN	08/04/00	150	
INDIAN/FRANKLIN	08/08/00	10	
INDIAN/FRANKLIN	08/08/00	10	
INDIAN/FRANKLIN	08/15/00	270	
INDIAN/FRANKLIN	08/23/00	10	K
INDIAN/FRANKLIN	08/31/00	20	
INDIAN/MAIN	05/28/00	40	
INDIAN/MAIN	06/20/00	470	
INDIAN/MAIN	06/24/00	10	K
INDIAN/MAIN	07/06/00	10	
INDIAN/MAIN	07/11/00	60	
INDIAN/MAIN	07/17/00	10	K
INDIAN/MAIN	07/28/00	20	
INDIAN/MAIN	08/04/00	20	
INDIAN/MAIN	08/08/00	10	K
INDIAN/MAIN	08/08/00	10	
INDIAN/MAIN	08/15/00	40	
INDIAN/MAIN	08/23/00	10	K
INDIAN/MAIN	08/31/00	10	
Club	06/13/01	50	
Club	06/19/01	200	
Club	07/12/01	220	
Club	07/16/01	80	
Club	07/23/01	60	
Club	08/01/01	80	
Club	08/08/01	430	
Club	08/13/01	380	
Club	08/23/01	170	
Franklin	07/12/01	130	
Franklin	07/16/01	30	

Franklin	07/23/01	20	
Franklin	08/01/01	40	
Franklin	08/08/01	40	
Franklin	08/13/01	70	
Main	07/12/01	90	
Main	07/16/01	20	
Main	07/23/01	10	k
Main	08/01/01	10	
Main	08/08/01	20	
Main	08/13/01	20	
EAST	06/04/02	180	
EAST	08/13/02	310	
EAST	08/19/02	40	
CLUB	06/04/02	20	
CLUB	06/10/02	10	
CLUB	06/17/02	1100	
CLUB	07/05/02	100	
CLUB	07/10/02	80	
CLUB	07/15/02	160	
CLUB	07/24/02	70	
CLUB	08/01/02	40	
CLUB	08/08/02	260	
CLUB	08/28/02	30	
FRANKLIN	06/04/02	10	
FRANKLIN	06/17/02	140	
FRANKLIN	07/05/02	220	
FRANKLIN	07/10/02	30	
FRANKLIN	07/15/02	10	
FRANKLIN	07/24/02	20	
FRANKLIN	08/01/02	40	
FRANKLIN	08/08/02	370	
FRANKLIN	08/13/02	180	
FRANKLIN	08/19/02	10	
FRANKLIN	08/28/02	40	
MAIN	07/05/02	130	
MAIN	07/10/02	10	
MAIN	07/15/02	10	k
MAIN	07/24/02	10	k
MAIN	08/01/02	60	
MAIN	08/08/02	30	
MAIN	08/13/02	10	k
MAIN	08/19/02	10	k
MAIN	08/28/02	10	
Indian East	06/30/03	20	
	07/07/03	20	

	07/15/03	500	
	07/21/03	30	
	07/21/03	40	
	07/28/03	20	
	08/05/03	690	
	08/08/03	80	
	08/11/03	320	
	08/15/03	480	
	08/19/03	50	
	08/29/03	140	
Indian Club	05/23/03	10	
	06/09/03	40	
	06/30/03	90	
Indian Franklin	05/23/03	50	
	06/20/03	10	k
	06/24/03	40	
	06/30/03	10	
	07/07/03	20	
	07/15/03	210	
	07/21/03	10	
	07/17/03	3600	
	07/28/03	30	
	08/05/03	10	k
	08/11/03	30	
	08/19/03	20	
	08/29/03	140	
Indian Main	05/23/03	60	
	06/30/03	10	
	06/30/03	10	k
	07/07/03	40	
	07/15/03	10	k
	07/17/03	30	
	07/21/03	30	
	08/11/03	10	
	08/05/03	20	
	08/23/03	10	k
INDIAN/CLUB	06/08/04	110	
	06/29/04	300	
	06/22/04	650	
	06/24/04	170	
	07/05/04	20	
	07/16/04	190	
	07/20/04	40	
	07/27/04	10	k
	08/02/04	30	

	08/25/04	190	
	08/09/04	10	k
	08/19/04	30	
	06/03/04	40	
	07/01/04	80	
INDIAN/FRANKLIN	06/08/04	10	k
	06/03/04	70	
	07/01/04	50	
	06/29/04	40	
	06/24/04	40	
	07/16/04	30	
	07/20/04	10	k
	07/27/04	10	
	08/02/04	40	
	08/25/04	10	
	08/09/04	10	
INDIAN/MAIN	06/08/04	100	
	06/03/04	10	k
	07/01/04	160	
	06/29/04	3400	
	06/24/04	50	
	07/20/04	10	k
	07/27/04	20	
	08/02/04	30	
	08/25/04	140	
	08/09/04	10	k
	08/19/04	10	k
INDIAN/CLUB	05/31/05	10	k
	06/07/05	40	
	06/14/05	50	
	06/21/05	230	
	06/27/05	50	
	07/05/05	40	
	07/12/05	10	
	07/19/05	40	
	07/25/05	20	
	07/25/05	20	
	07/27/05	20	
	08/01/05	30	
	08/08/05	10	
	08/17/05	40	
	08/23/05	10	k
	08/30/05	340	
INDIAN/FRANKLIN	06/23/05	30	k
	06/27/05	40	

	07/12/05	70	
	07/19/05	40	
	07/25/05	40	
	07/27/05	10	
	08/01/05	10	k
	08/08/05	20	
INDIAN/MAIN	05/31/05	10	
	06/21/05	10	
	06/23/05	50	
	06/27/05	30	
	07/05/05	20	
	07/12/05	120	
	07/19/05	50	
	07/25/05	550	
	07/27/05	10	
	08/01/05	10	k
	08/08/05	10	k
	08/17/05	10	k
	08/23/05	10	k
	08/30/05	310	
INDIAN EAST	06/07/05	20	

Interval Lake			
count	100	mean+3stdev	2194
median	50	%reduction	96%
max	5200		
stdev	661	**no data excluded**	
mean	210		
mean+3stdev	2194		

Station	**Date**	**Value**	**Remark**
MOLI	06/11/98	1200	L
MOLI	06/17/98	5200	
MOLI	06/22/98	3700	
MOLI	06/24/98	170	
MOLI	06/30/98	2	K
MOLI	07/07/98	10	K
MOLI	07/15/98	2	K
MOLI	07/22/98	10	K
MOLI	07/28/98	10	K
MOLI	08/04/98	10	K
MOLI	08/13/98	10	K
MOLI	08/19/98	10	K

MOLI	08/26/98	10	K
IL	06/03/99	60	
IL	06/09/99	2	K
IL	06/16/99	270	
IL	06/21/99	20	
IL	06/24/99	340	
IL	06/28/99	125	
IL	07/21/99	2	L
IL	07/28/99	100	
IL	08/05/99	1600	L
IL	08/09/99	2	K
IL	08/12/99	500	
IL	08/17/99	2	K
IL	08/18/99	2	K
IL	08/25/99	2	K
IL	09/01/99	2	K
IL	09/09/99	500	
Lake Intervale	06/19/00	16	
Lake Intervale	07/05/00	8	
Lake Intervale	07/10/00	28	
Lake Intervale	07/17/00	232	
Lake Intervale	07/19/00	216	
Lake Intervale	07/24/00	8	
Lake Intervale	07/31/00	2	K
Lake Intervale	08/08/00	16	
Lake Intervale	08/14/00	272	
Lake Intervale	08/16/00	8	
Lake Intervale	08/21/00	20	
	05/29/01	76	
	06/04/01	120	
	06/11/01	190	
	06/18/01	960	
	06/20/01	250	
	06/25/01	148	
	07/02/01	150	
	07/09/01	32	
	07/16/01	2	
	07/24/01	2	k
	07/30/01	12	
	08/06/01	14	
	08/14/01	56	
	08/20/01	4	
	08/27/01	10	
	09/05/01	692	
Lake Intervale	05/31/02	58	

	06/06/02	68	
	06/12/02	132	
	06/19/02	102	
	06/25/02	92	
	07/03/02	18	
	07/10/02	64	
	07/17/02	20	
	07/24/02	50	
	07/31/02	24	
	08/07/02	18	
	08/14/02	6	
	08/21/02	32	
	08/28/02	14	
Lake Intervale	05/19/03	100	
	01/00/00	242	
	05/29/03	120	
	06/09/03	96	
	06/16/03	100	
	06/24/03	152	
	06/30/03	14	
	07/07/03	208	
	07/09/03	2	
	07/14/03	8	
	07/21/03	108	
	07/28/03	56	
	08/04/03	148	
	08/11/03	248	
	08/13/03	72	
	08/18/03	6	
	08/25/03	114	
Lake Intervale	06/04/04	44	
	06/10/04	112	
	06/17/04	36	
	06/22/04	41	
	06/30/04	10	
	07/15/04	2	k
	07/21/04	236	
	07/23/04	148	
	07/28/04	192	
	08/04/04	2	
	08/10/04	52	
	08/19/04	154	
	08/24/04	50	

Lake Swannanoa			
count	86	mean+3stdev	1209
median	40	%reduction	92%
max	2400		
Stdev	352	**no data excluded**	
mean	155		
mean+3stdev	1209		

Station	**Date**	**Value**	**Remark**
Lake Swannanoa Country Club	06/16/98	190	
Lake Swannanoa Country Club	06/23/98	31	
Lake Swannanoa Country Club	06/30/98	32	
Lake Swannanoa Country Club	07/07/98	1	
Lake Swannanoa Country Club	07/15/98	274	
Lake Swannanoa Country Club	07/17/98	62	
Lake Swannanoa Country Club	07/20/98	234	
Lake Swannanoa Country Club	07/22/98	254	
Lake Swannanoa Country Club	08/04/98	13	
Lake Swannanoa Country Club	08/10/98	28	
Lake Swannanoa Country Club	08/17/98	600	
Lake Swannanoa Country Club	08/19/98	1	K
Lake Swannanoa Country Club	08/26/98	261	
Lake Swannanoa Country Club	08/28/98	530	
Lake Swannanoa Country Club	09/01/98	410	
Lake Swannanoa Country Club	09/02/98	34	
Lake Swannanoa CC	06/18/99	26	
	06/22/99	2	
	06/29/99	12	
	07/08/99	7	
	07/13/99	10	
	07/20/99	16	

	07/26/99	18	
	08/04/99	46	
	08/11/99	1	K
	08/17/99	10	
	08/24/99	2	
	08/30/99	14	
Lake Swannanoa Country Club	06/16/00	36	
Lake Swannanoa Country Club	06/21/00	102	
Lake Swannanoa Country Club	06/27/00	6	
Lake Swannanoa Country Club	07/06/00	36	
Lake Swannanoa Country Club	07/10/00	4	
Lake Swannanoa Country Club	07/19/00	16	
Lake Swannanoa Country Club	07/24/00	240	
Lake Swannanoa Country Club	07/27/00	2	K
Lake Swannanoa Country Club	08/02/00	222	
Lake Swannanoa Country Club	08/09/00	64	
Lake Swannanoa Country Club	08/16/00	24	
Lake Swannanoa Country Club	08/22/00	168	
Lake Swannanoa Country Club	08/28/00	128	
	06/19/01	30	
	06/25/01	50	
	07/03/01	10	
	07/16/01	20	
	07/23/01	10	k
	08/01/01	160	
	08/08/01	2400	
	08/10/01	50	
	08/15/01	100	
	08/23/01	140	
	05/31/02	130	
	06/06/02	50	
	06/11/02	130	
	06/17/02	840	
	06/24/02	1700	
	06/26/02	350	

	07/05/02	20	
	07/07/02	10	k
	07/19/02	200	
	07/25/02	30	
	07/30/02	10	k
	08/12/02	10	k
	08/19/02	30	
Lake Swannanoa	06/09/03	140	
	06/23/03	360	
	06/26/03	60	
	06/30/03	60	
	07/08/03	40	
	07/14/03	30	
	07/21/03	90	
	07/29/03	40	
	08/04/03	40	
	08/20/03	40	
	08/25/03	10	k
Lake Swannanoa	06/07/04	40	
	06/15/04	40	
	06/24/04	50	
	06/30/04	40	
	07/15/04	60	
	07/21/04	80	
	07/26/04	10	k
	08/03/04	10	
	08/10/04	120	
	08/24/04	1200	
	08/28/04	80	

Mountain Lake			
count	130	mean+3stdev	1910
median	60	%reduction	96%
max	4600		
stdev	562	**no data excluded**	
mean	225		
mean+3stdev	1910		

Station	**Date**	**Value**	**Remark**
MOL02	06/02/98	20	K
MOL02	06/16/98	820	
MOL02	06/18/98	400	
MOL02	06/19/98	40	

MOL02	06/23/98	10	K
MOL02	06/29/98	10	K
MOL02	07/06/98	890	
MOL02	07/13/98	160	
MOL02	07/20/98	64	
MOL02	07/27/98	20	
MOL02	08/04/98	950	
MOL02	08/07/98	10	
MOL02	08/10/98	104	
MOL02	08/25/98	10	
MOL02	09/01/98	70	
Beach	06/01/99	10	k
	06/07/99	20	
	06/14/99	240	resample
	06/17/99	50	
	06/21/99	10	
	06/28/99	30	
	07/06/99	10	K
	07/12/99	10	K
	07/19/99	60	
	07/26/99	220	
	07/28/99	70	resample
	08/04/99	10	K
	08/09/99	10	K
	08/16/99	20	
	08/23/99	10	K
	08/30/99	70	
	09/06/99	50	
Mountain Lake	05/25/00	10	K
Mountain Lake	05/30/00	10	K
Mountain Lake	06/05/00	10	
Mountain Lake	06/12/00	120	
Mountain Lake	06/19/00	110	
Mountain Lake	06/26/00	10	
Mountain Lake	07/05/00	3800	
Mountain Lake	07/06/00	30	
Mountain Lake	07/10/00	40	
Mountain Lake	07/17/00	40	
Mountain Lake	07/24/00	10	K
Mountain Lake	07/26/00	40	
Mountain Lake	07/31/00	100	
Mountain Lake	08/07/00	290	
	05/21/01	20	
	05/29/01	10	k
	06/04/01	10	k

	06/11/01	80	
	06/18/01	10	
	06/25/01	10	k
	07/02/01	140	
	07/09/01	140	
	07/16/01	450	
	07/18/01	10	k, Resample
	07/23/01	10	k
	07/30/01	460	
	08/01/01	20	Resample
	08/06/01	10	
	08/13/01	40	
	08/20/01	670	
	08/22/01	20	
	08/27/01	210	
	08/30/01	430	Resample
	09/04/01	400	Resample
	09/06/01	10	k, Resample
	05/20/02	4	
	05/28/02	4	
	06/03/02	10	
	06/10/02	236	
	06/12/02	26	Resample
	06/17/02	74	
	06/25/02	106	
	07/01/02	98	
	07/08/02	90	
	07/15/02	101	
	07/22/02	80	
	07/29/02	170	
	08/05/02	700	
	08/07/02	72	Resample
	08/12/02	4600	
	08/14/02	2	k, Resample
	08/22/02	48	Resample
	08/26/02	380	
	08/28/02	686	Resample
	08/29/02	336	Resample
	09/03/02	484	Resample
	09/05/02	1002	Resample
Mountain	05/19/03	16	
	05/27/03	248	
	05/29/03	78	
	06/02/03	232	
	06/04/03	26	

	06/09/03	162	
	06/16/03	12	
	06/23/03	152	
	06/30/03	212	
	07/02/03	84	
	07/07/03	132	
	07/14/03	8	
	07/21/03	210	
	07/22/03	1488	
	07/28/03	112	
	08/03/03	1050	
	08/06/03	500	
	08/07/03	114	
	08/11/03	52	
	08/18/03	42	
	08/25/03	284	
	08/27/03	104	
Mountain	04/12/04	2	k
	05/24/04	6	
	06/04/04	24	
	06/07/04	40	
	06/14/04	10	
	06/21/04	16	
	06/28/04	46	
	07/06/04	18	
	07/12/04	22	
	07/19/04	52	
	07/26/04	10	
	08/02/04	560	
	08/04/04	22	resample
	08/10/04	140	
	08/17/04	516	
	08/18/04	568	resample/closed
	08/19/04	60	resample/opened
	08/24/04	98	
	08/31/04	110	

Parsippany Lake			
count	227	mean+3stdev	2014
median	30	%reduction	97%
max	7400		
stdev	618	**no data excluded**	
mean	159		

mean+3stdev	2014		

Station	**Date**	**Value**	**Remark**
MOLP-DL	05/24/98	10	K
MOLP-DL	05/31/98	20	
MOLP-DL	06/09/98	10	K
MOLP-DL	07/01/98	20	
MOLP-DL	07/07/98	60	
MOLP-DL	07/14/98	40	
MOLP-DL	07/22/98	20	
MOLP-DL	07/28/98	70	
MOLP-DL	08/05/98	10	K
MOLP-DL	08/10/98	10	K
MOLP-DL	08/20/98	30	
MOLP-HL	06/09/98	10	K
MOLP-HL	05/31/98	120	
MOLP-HL	06/09/98	20	
MOLP-HL	07/01/98	50	
MOLP-HL	07/07/98	10	K
MOLP-HL	07/14/98	10	K
MOLP-HL	07/22/98	10	
MOLP-HL	07/28/98	10	K
MOLP-HL	08/05/98	10	K
MOLP-HL	08/10/98	10	K
MOLP-HL	08/20/98	10	K
MOLP-JL	05/24/98	20	
MOLP-JL	05/24/98	30	
MOLP-JL	05/31/98	20	
MOLP-JL	07/01/98	150	
MOLP-JL	07/07/98	20	
MOLP-JL	07/14/98	110	
MOLP-JL	07/22/98	60	
MOLP-JL	07/28/98	10	K
MOLP-JL	08/05/98	10	K
MOLP-JL	08/10/98	10	K
MOLP-JL	08/20/98	10	K
DL	06/03/99	40	
DL	06/22/99	600	
DL	06/24/99	50	
DL	06/30/99	10	
DL	07/08/99	110	
DL	07/12/99	10	
DL	07/21/99	10	K
DL	07/29/99	10	K

DL	08/06/99	10	K
DL	08/13/99	30	
DL	08/19/99	10	K
DL	08/27/99	50	
HL	06/03/99	40	
HL	06/22/99	30	
HL	06/30/99	60	
HL	07/08/99	360	
HL	07/12/99	30	
HL	07/21/99	70	
HL	07/29/99	10	K
HL	08/06/99	40	
HL	08/13/99	20	
HL	08/19/99	30	
HL	08/27/99	20	
JL	06/03/99	150	
JL	06/22/99	50	
JL	07/08/99	220	
JL	08/06/99	30	
JL	08/13/99	10	K
JL	08/19/99	10	K
JL	08/27/99	120	
Johnson Beach At Lake Parsippany	07/10/00	10	K
Johnson Beach At Lake Parsippany	07/29/00	70	
Johnson Beach At Lake Parsippany	08/08/00	10	
Johnson Beach At Lake Parsippany	08/15/00	4100	
Johnson Beach At Lake Parsippany	08/25/00	10	K
Hoffman Beach At Lake Parsippany	05/29/00	10	
Hoffman Beach At Lake Parsippany	07/06/00	270	
Hoffman Beach At Lake Parsippany	07/10/00	10	K
Hoffman Beach At Lake Parsippany	07/11/00	40	
Hoffman Beach At Lake Parsippany	07/17/00	10	K
Hoffman Beach At Lake Parsippany	07/29/00	310	
Hoffman Beach At Lake Parsippany	08/02/00	120	
Hoffman Beach At Lake Parsippany	08/08/00	370	

Hoffman Beach At Lake Parsippany	08/10/00	10	
Hoffman Beach At Lake Parsippany	08/15/00	60	
Hoffman Beach At Lake Parsippany	08/25/00	10	
Drewes Beach At Lake Parsippany	05/29/00	20	
Drewes Beach At Lake Parsippany	07/06/00	70	
Drewes Beach At Lake Parsippany	07/11/00	10	K
Drewes Beach At Lake Parsippany	07/17/00	10	
Drewes Beach At Lake Parsippany	07/29/00	2700	
Drewes Beach At Lake Parsippany	08/02/00	910	
Drewes Beach At Lake Parsippany	08/08/00	40	
Drewes Beach At Lake Parsippany	08/15/00	560	
Drewes Beach At Lake Parsippany	08/25/00	30	
Lake Drewes	05/23/01	190	
Lake Drewes	05/28/01	10	k
Lake Drewes	06/05/01	180	
Hoffman Lake	05/23/01	1000	
Hoffman Lake	05/28/01	20	
Hoffman Lake	06/05/01	30	
Hoffman Lake	06/09/01	10	
Hoffman Lake	06/19/01	50	
Hoffman Lake	06/21/01	30	
Hoffman Lake	06/28/01	40	
Hoffman Lake	07/06/01	10	
Hoffman Lake	07/12/01	190	
Hoffman Lake	07/18/01	20	
Hoffman Lake	07/24/01	20	
Hoffman Lake	07/31/01	10	
Hoffman Lake	08/07/01	130	
Hoffman Lake	08/14/01	230	
Hoffman Lake	08/21/01	1400	
Hoffman Lake	08/27/01	40	
Johnson Lake	05/23/01	140	
Johnson Lake	05/28/01	100	
Johnson Lake	06/05/01	40	
Johnson Lake	06/09/01	10	
Johnson Lake	06/19/01	30	

Johnson Lake	06/21/01	10	
Johnson Lake	06/28/01	120	
Johnson Lake	07/06/01	50	
Johnson Lake	07/12/01	10	
Johnson Lake	07/18/01	30	
Johnson Lake	07/24/01	20	
Johnson Lake	07/31/01	140	
Johnson Lake	08/07/01	190	
Johnson Lake	08/14/01	10	k
Johnson Lake	08/21/01	140	
Hoffman Jetty	06/28/01	100	
Drewes Beach	05/30/02	10	k
	06/06/02	1600	
	06/24/02	30	
	07/01/02	60	
	07/22/02	10	k
	07/30/02	370	
	08/06/02	10	
	08/15/02	10	
	08/20/02	7400	
Johnson Beach	05/30/02	30	
	06/06/02	660	
	06/17/02	10	k
	06/24/02	10	k
	07/01/02	170	
	07/07/02	120	
	07/15/02	240	
	07/22/02	110	
	07/30/02	90	
	08/06/02	30	
	08/15/02	40	
	08/20/02	10	k
	08/28/02	220	
Hoffman Beach	05/30/02	120	
	06/06/02	430	
	06/17/02	50	
	06/24/02	10	
	07/01/02	20	
	07/07/02	10	k
	07/15/02	10	
	07/22/02	20	
	07/30/02	30	
	08/06/02	40	
	08/15/02	10	k
	08/20/02	170	

	08/28/02	70	
Johnson Beach Lake Parsippany	05/29/03	40	
	06/03/03	130	
	06/09/03	100	
	06/16/03	20	
	06/23/03	60	
	06/30/03	80	
	07/10/03	40	
	07/15/03	10	k
	07/21/03	20	
	07/28/03	10	
	08/12/03	30	
	08/19/03	10	k
	08/28/03	20	
Drewes Beach Lake Parsippany	05/29/03	40	
	06/03/03	30	
	06/09/03	100	
	06/16/03	120	
	06/23/03	160	
	06/30/03	10	k
	07/07/03	10	k
	07/15/03	10	k
	07/21/03	10	
	07/28/03	40	
	08/07/03	1	k
	08/12/03	700	
	08/14/03	120	
	08/19/03	10	
	08/28/03	10	k
Hoffman Beach Lake Parsippany	05/29/03	540	
	06/03/03	80	
	06/09/03	110	
	06/16/03	290	
	06/23/03	50	
	06/30/03	40	
	07/07/03	1800	
	07/10/03	60	
	07/15/03	40	
	07/21/03	60	
	07/28/03	20	
	08/12/03	130	
	08/19/03	10	
	08/28/03	10	k

Johnson Beach Lake Parsippany	05/24/04	10	k
	06/15/04	10	k
	06/22/04	20	
	07/06/04	40	
	07/20/04	10	k
	08/03/04	10	k
	08/12/04	160	
	08/17/04	20	
	08/24/04	10	
Drewes Beach Lake Parsippany	05/24/04	10	k
	06/15/04	10	
	06/22/04	20	
	06/29/04	50	
	07/20/04	50	
	08/03/04	30	
	08/12/04	40	
	08/17/04	10	k
	08/24/04	40	
Hoffman Beach Lake Parsippany	05/24/04	30	
	06/15/04	10	k
	06/22/04	10	
	06/29/04	30	
	07/06/04	10	
	07/20/04	100	
	08/03/04	20	
	08/17/04	50	
	08/24/04	120	

Powder Mill Pond			
count	92	mean+3stdev	2495
median	30	%reduction	96%
max	5400		
stdev	747	**no data excluded**	
mean	255		
mean+3stdev	2495		

Station	**Date**	**Value**	**Remark**
MOTLB	07/28/98	20	
MOTLB	08/04/98	90	
MOTLB	08/10/98	70	

MOTLD	07/15/98	10	K
MOTLD	07/28/98	20	
MOTLD	08/04/98	300	
MOTLD	08/10/98	10	K
MOTLD-left	08/07/98	40	
MOTLD-right	08/07/98	10	K
MOTLL	07/01/98	1000	
MOTLL	07/07/98	10	K
MOTLL	07/11/98	10	K
MOTLL	07/14/98	70	
MOTLL	07/17/98	10	K
MOTLL	07/22/98	30	
MOTLL	07/24/98	60	
MOTLL	08/19/98	80	
TL	07/08/99	20	
TL	07/16/99	10	K
TL	07/21/99	30	
TL	08/04/99	10	K
TL	08/13/99	40	
TL	08/19/99	10	K
TL	08/27/99	820	
TL	08/31/99	10	
Tabor Lake Corporation	07/11/00	10	K
Tabor Lake Corporation	07/17/00	1700	
Tabor Lake Corporation	07/20/00	30	
Tabor Lake Corporation	07/31/00	640	
Tabor Lake Corporation	08/03/00	40	
Tabor Lake Corporation	08/21/00	20	
Tabor Lake Corporation	08/25/00	120	
	06/05/01	10	
	06/09/01	40	
	06/19/01	2100	
	06/21/01	10	k
	06/28/01	10	
	07/06/01	80	
	07/12/01	40	
	07/18/01	70	
	07/24/01	20	
	07/31/01	20	
	08/07/01	660	

	08/14/01	120	
	08/21/01	380	
	08/23/01	30	
	05/30/02	100	
	06/24/02	10	
	06/27/02	40	
	07/01/02	20	
	07/09/02	10	k
	07/11/02	40	
	07/15/02	20	
	07/18/02	30	
	07/22/02	30	
	07/30/02	70	
	08/02/02	20	
	08/06/02	20	
	08/09/02	10	
	08/15/02	20	
	08/20/02	10	
Tabor Lake	05/29/03	10	k
	06/03/03	410	
	06/09/03	360	
	06/16/03	230	
	06/23/03	750	
	06/30/03	30	
	07/02/03	10	
	07/07/03	30	
	07/15/03	10	k
	07/21/03	10	k
	07/28/03	100	
	08/12/03	5400	
	08/14/03	360	
	08/19/03	50	
	08/21/03	10	k
	08/28/03	20	
Tabor Lake	06/01/04	10	
	06/03/04	20	
	06/08/04	30	
	06/16/04	10	
	06/22/04	10	k
	06/29/04	80	
	07/06/04	40	
	07/14/04	280	
	07/16/04	120	
	07/20/04	80	
	08/03/04	80	

	08/12/04	3600	
	08/17/04	1800	
	08/20/04	50	
	08/24/04	50	

Rainbow Lake			
count	83	mean+3stdev	510
median	40	%reduction	76%
max	820		
stdev	138	**no data excluded**	
mean	97		
mean+3stdev	510		

Station	**Date**	**Value**	**Remark**
MORL	05/24/98	10	K
MORL	06/09/98	40	
MORL	06/26/98	80	
MORL	07/01/98	210	
MORL	07/03/98	30	
MORL	07/07/98	10	K
MORL	07/14/98	30	
MORL	07/22/98	20	
MORL	07/28/98	20	
MORL	08/05/98	10	K
MORL	08/13/98	10	K
MORL	08/19/98	20	
MORL	08/26/98	10	K
RLCC	05/30/99	10	K
RLCC	06/09/99	10	K
RLCC	06/19/99	120	
RLCC	06/30/99	10	K
RLCC	07/16/99	100	
RLCC	07/21/99	410	
RLCC	07/26/99	10	
RLCC	07/29/99	430	
RLCC	08/04/99	20	
RLCC	08/13/99	70	
RLCC	08/19/99	80	
RLCC	08/27/99	170	
Rainbow Lakes Community Club	05/28/00	1	K
Rainbow Lakes Community Club	06/10/00	10	

Rainbow Lakes Community Club	07/06/00	10	K
Rainbow Lakes Community Club	07/11/00	40	
Rainbow Lakes Community Club	07/28/00	90	
Rainbow Lakes Community Club	08/08/00	10	K
Rainbow Lakes Community Club	08/15/00	380	
Rainbow Lakes Community Club	08/23/00	120	
	05/29/01	120	
	06/13/01	10	k
	06/19/01	20	
	06/25/01	460	
	06/28/01	40	
	07/03/01	340	
	07/12/01	30	
	07/16/01	20	
	07/23/01	10	
	08/01/01	60	
	08/08/01	10	
	08/13/01	350	
Rainbow Lakes	06/06/02	370	
	06/10/02	40	
	06/17/02	50	
	07/05/02	40	
	07/10/02	100	
	07/15/02	50	
	07/24/02	40	
	08/01/02	140	
	08/08/02	350	
	08/13/02	10	k
	08/19/02	10	k
Rainbow lakes Community Club	05/29/03	120	
	06/03/03	820	
	06/09/03	130	
	06/20/03	70	
	06/24/03	100	
	06/30/03	30	
	07/07/03	40	
	07/15/03	20	
	07/21/03	130	
	07/28/03	10	
	08/08/03	140	

	08/11/03	260	
	08/19/03	40	
	08/29/03	210	
Rainbow lakes Community Club	06/08/04	50	
	06/15/04	10	
	06/17/04	40	
	06/22/04	10	k
	06/29/04	20	
	07/05/04	90	
	07/15/04	80	
	07/20/04	1	k
	07/27/04	20	
	08/09/04	30	
	08/19/04	100	
	08/25/04	130	
	08/27/04	70	

Sunrise Lake			
count	73	mean+3stdev	2727
median	70	% reduction	95%
Max	4200		
stdev	791	**no data excluded**	
mean	353		
mean+3stdev	2727		

Station	**Date**	**Value**	**Remark**
Morris County Park@Lewis Morris	05/21/03	60	
	06/11/03	10	k
	06/17/03	100	
	06/24/03	20	
	07/02/03	30	
	07/18/03	40	
	07/30/03	900	
	08/06/03	2800	
	08/12/03	3000	
	08/15/03	230	
	08/19/03	170	
Beach	05/24/01	70	
Beach	05/30/01	650	
Beach	06/01/01	120	
Beach	06/15/01	180	
Beach	06/27/01	100	
Beach	07/19/01	10	
Beach	07/27/01	50	
Beach	08/03/01	20	
Beach	08/10/01	30	
Beach	08/17/01	40	
Beach	08/29/01	540	
Inlet	05/24/01	590	
Inlet	05/30/01	10	
Inlet	06/15/01	10	
Inlet	06/27/01	30	
Inlet	07/19/01	10	
Inlet	07/27/01	20	
Inlet	08/03/01	10	
Inlet	08/10/01	110	
Inlet	08/17/01	10	
Inlet	08/29/01	40	
Lake	05/24/01	10	
Lake	07/07/01	10	
Lake	08/31/01	160	
Outlet	05/30/01	210	
Outlet	06/15/01	10	
Outlet	06/27/01	10	
Outlet	07/19/01	10	
Outlet	07/27/01	10	
Outlet	08/03/01	10	
Outlet	08/10/01	20	
Outlet	08/17/01	80	
Outlet	08/29/01	70	
	05/24/02	10	
	05/28/02	50	
	06/12/02	70	
	06/17/02	110	
	06/24/02	30	
	07/03/02	40	
	07/08/02	60	
	07/17/02	140	
	08/02/02	270	
	08/08/02	200	
	08/15/02	2800	
	08/20/02	1400	
	08/22/02	2500	
	08/27/02	710	
	08/30/02	360	
Morris County	05/24/04	70	

Park@Lewis Morris			
	06/01/04	140	
	06/08/04	140	
	06/14/04	110	
	06/28/04	10	L
	07/07/04	160	
	07/14/04	380	
	07/20/04	30	
	07/26/04	160	
	08/04/04	360	
	08/10/04	40	
	08/20/04	570	
	08/25/04	4200	
	08/31/04	20	

Telemark Lake			
count	89	mean+3stdev	1300
median	30	%reduction	94%
Max	3300		
stdev	385	**no data excluded**	
mean	146		
mean+3stdev	1300		

STATION	**DATE**	**VALUE**	**REMARK**
MOLT1	05/18/98	160	
MOLT1	06/06/98	10	K
MOLT1	06/13/98	3300	CLOSED
MOLT1	06/24/98	30	
MOLT	06/30/98	240	
MOLT	07/09/98	30	
MOLT	07/16/98	50	
MOLT	07/21/98	110	
MOLT	08/04/98	10	K
MOLT	08/12/98	520	
MOLT	08/19/98	50	
MOLT	08/26/98	10	K
Beach	06/04/99	10	K
	06/19/99	10	K
	06/25/99	30	
	06/27/99	10	
	07/09/99	10	K
	06/18/99	30	
	07/23/99	10	K

	07/30/99	10	K
	08/05/99	10	K
	08/12/99	10	K
	08/19/99	20	
	08/29/99	30	
Lake Telemark	06/04/00	20	
Lake Telemark	06/21/00	40	
Lake Telemark	06/24/00	300	
Lake Telemark	07/02/00	20	
Lake Telemark	07/08/00	10	
Lake Telemark	07/21/00	30	
Lake Telemark	07/30/00	860	
Lake Telemark	08/12/00	850	
Lake Telemark	08/30/00	40	
MOLT	05/29/01	150	K
MOLT	06/04/01	70	K
MOLT	06/19/01	580	
MOLT	06/22/01	10	resample
MOLT	06/25/01	350	
MOLT	07/03/01	120	K, resample
MOLT	07/11/01	10	
MOLT	07/16/01	20	K
MOLT	07/23/01	10	
MOLT	08/08/01	10	
MOLT	08/15/01	10	
MOLT	08/23/01	10	
	06/09/02	210	
	06/17/02	160	
	06/24/02	30	
	07/05/02	40	
	07/07/02	40	
	07/19/02	40	
	07/25/02	120	
	07/30/02	170	
	08/12/02	10	K
	08/19/02	10	K
Lake Telemark	05/29/03	110	
	06/03/03	290	
	06/09/03	470	no swimming entire season
	06/16/03	280	
	06/23/03	800	
	06/26/03	40	
	06/30/03	100	
	07/08/03	130	

	07/14/03	310	
	07/21/03	30	
	07/29/03	10	k
	08/04/03	430	
	08/12/03	300	
	08/20/03	10	
	08/25/03	40	
Lake Telemark	06/15/04	10	
	06/30/04	10	
	07/06/04	10	
	07/21/04	30	
	07/26/04	40	
	08/03/04	120	
	08/10/04	40	
	08/18/04	10	
	08/24/04	10	k
Lake Telemark	06/13/05	140	
	06/20/05	40	
	06/28/05	30	
	07/06/05	10	
	07/19/05	30	
	08/01/05	10	
	08/12/05	10	k
	08/15/05	10	
	08/26/05	10	k
	08/29/05	10	**k**

West Lake			
count	138	mean+3stdev	412
median	10	%reduction	82%
max	1120		
stdev	121	**no data excluded**	
mean	48		
mean+3stdev	412		

Station	**Date**	**Value**	**Remarks**
SB	06/23/99	1	
SB	07/07/99	6	
SB	07/21/99	2	
SB	07/28/99	1	K
SB	08/04/99	1	
SB	08/11/99	1	K
SB	08/18/99	2	

SB	08/25/99	2	K
SB	09/01/99	2	K
Fayson Lake Main Beach	05/24/00	196	
Fayson Lake Main Beach	05/31/00	6	
Fayson Lake Main Beach	06/08/00	12	
Fayson Lake Main Beach	06/20/00	80	
Fayson Lake Main Beach	07/05/00	28	
Fayson Lake Main Beach	07/06/00	2	K
Fayson Lake Main Beach	07/19/00	28	
Fayson Lake Main Beach	07/25/00	12	
Fayson Lake Main Beach	08/02/00	68	
Fayson Lake Main Beach	08/09/00	80	
Fayson Lake Main Beach	08/16/00	120	
Fayson Lake Main Beach	08/23/00	2	K
Fayson Lake Main Beach	08/30/00	100	
Fayson Lake Main Beach	09/06/00	24	
Sabeys Beach	05/24/00	148	
Sabeys Beach	05/31/00	6	
Sabeys Beach	06/08/00	8	
Sabeys Beach	06/20/00	66	
Sabeys Beach	06/28/00	4	
Sabeys Beach	07/05/00	2	
Sabeys Beach	07/19/00	16	
Sabeys Beach	07/25/00	8	
Sabeys Beach	08/02/00	16	
Sabeys Beach	08/09/00	24	
Sabeys Beach	08/16/00	32	
Sabeys Beach	08/23/00	2	K
Sabeys Beach	08/30/00	4	
Sabeys Beach	09/06/00	20	
Fayson Lake: Main Beach	05/30/01	1120	
	06/06/01	208	
	06/13/01	440	
	06/27/01	10	
	07/05/01	16	
	07/12/01	30	
	07/18/01	2	
	07/25/01	10	
	08/01/01	2	k
	08/08/01	2	k
	08/15/01	62	
	08/22/01	10	
	09/05/01	4	
Fayson Lakes: Sabeys Beach	05/30/01	180	

	06/06/01	12	
	06/13/01	4	
	06/27/01	40	
	07/05/01	32	
	07/12/01	40	
	07/18/01	2	
	07/25/01	2	k
	08/01/01	2	k
	08/08/01	2	k
	08/15/01	42	
	08/22/01	50	
	09/05/01	2	
Fayson Lake: Main Beach	05/22/02	6	
	06/05/02	48	
	06/26/02	44	
	07/03/02	14	
	07/10/02	18	
	07/17/02	268	
	07/25/02	20	
	08/01/02	4	
	08/07/02	2	
	08/14/02	2	k
	08/21/02	14	
	08/28/02	2	k
Fayson Lakes: Sabeys Beach	05/22/02	6	
	06/05/02	14	
	06/26/02	2	
	07/03/02	10	
	07/10/02	8	
	07/17/02	2	k
	07/25/02	2	k
	08/01/02	2	
	08/07/02	10	
	08/14/02	6	
	08/21/02	10	
	08/28/02	4	
Fayson Lakes Main Beach	05/28/03	30	
	06/11/03	6	
	06/25/03	14	
	07/02/03	18	
	07/09/03	4	
	07/17/03	158	
	07/30/03	2	K

	08/06/03	36	
	08/27/03	58	
Fayson Lakes Sabeys Beach	05/28/03	16	
	06/11/03	4	
	06/25/03	196	
	07/02/03	2	K
	07/09/03	2	K
	07/17/03	10	
	07/30/03	2	
	08/06/03	12	
	08/20/03	6	
	08/27/03	12	
Fayson Lakes	05/20/04	60	
Main Beach	05/27/04	220	
	06/03/04	10	k
	06/10/04	10	
	06/14/04	10	
	06/24/04	60	
	07/01/04	30	
	07/08/04	10	
	07/12/04	10	k
	07/19/04	20	
	07/26/04	10	
	08/02/04	30	
	08/09/04	10	k
	08/16/04	90	
	08/23/04	200	
	08/30/04	160	
Fayson Lakes	05/27/04	120	
Sabeys Beach	06/03/04	10	k
	06/10/04	20	
	06/14/04	10	
	06/24/04	10	k
	07/01/04	10	k
	07/08/04	10	k
	07/12/04	10	k
	07/19/04	50	
	07/26/04	10	k
	08/02/04	20	
	08/09/04	10	k
	08/16/04	140	
	08/23/04	70	
	08/30/04	600	L
	09/02/04	10	k

White Meadow Lake			
count	337	mean+3stdev	1846
median	50	%reduction	96%
max	4800		
stdev	547	**no data excluded**	
mean	205		
mean+3stdev	1846		

STATION	DATE	VALUE	REMARK
1	05/26/99	10	K
1	05/30/99	20	
1	06/06/99	10	
1	06/22/99	10	K
1	06/28/99	30	
1	07/07/99	30	
1	07/13/99	10	K
1	07/21/99	40	
1	07/27/99	10	K
1	08/11/99	10	K
1	08/19/99	30	
1	08/26/99	310	
1	08/29/99	850	resampled
1	09/01/99	10	K, reopened
2	05/26/99	30	
2	05/30/99	10	
2	06/06/99	10	K
2	06/22/99	20	
2	06/28/99	10	K
2	07/07/99	10	
2	07/13/99	30	
2	07/21/99	310	resampled
2	07/27/99	20	
2	08/11/99	10	K
2	08/19/99	10	
2	08/26/99	3400	
2	08/29/99	50	resampled
3	05/26/99	10	K
3	05/30/99	10	
3	06/06/99	50	
3	06/22/99	20	
3	06/28/99	10	K
3	07/07/99	90	

3	07/13/99	20	
3	07/21/99	100	
3	07/27/99	60	
3	08/11/99	60	
3	08/19/99	30	
3	08/26/99	2300	closed
3	08/29/99	100	resampled
MOWM1	05/31/98	10	K
MOWM1	06/03/98	10	K
MOWM1	06/09/98	10	K
MOWM1	06/25/98	30	
MOWM1	06/29/98	10	K
MOWM1	07/06/98	10	K
MOWM1	07/13/98	50	
MOWM1	07/23/98	40	
MOWM1	07/27/98	460	
MOWM1	08/03/98	30	
MOWM1	08/06/98	10	K
MOWM1	08/13/98	10	K
MOWM1	08/20/98	3,300	
MOWM1	08/21/98	30	
MOWM2	05/31/98	10	K
MOWM2	06/03/98	10	K
MOWM2	06/09/98	10	K
MOWM2	06/25/98	90	
MOWM2	06/29/98	10	K
MOWM2	07/06/98	20	
MOWM2	07/13/98	50	
MOWM2	07/23/98	250	
MOWM2	07/27/98	230	
MOWM2	07/30/98	150	
MOWM2	08/06/98	110	K
MOWM2	08/13/98	10	K
MOWM2	08/20/98	310	
MOWM2	08/21/98	30	
MOWM3	05/31/98	20	K
MOWM3	06/03/98	40	K
MOWM3	06/09/98	10	K
MOWM3	06/25/98	130	
MOWM3	06/29/98	10	K
MOWM3	07/06/98	10	K
MOWM3	07/13/98	40	
MOWM3	07/23/98	50	
MOWM3	07/27/98	10	K
MOWM3	08/06/98	10	K

MOWM3	08/13/98	170	
MOWM3	08/20/98	480	
MOWM3	08/21/98	10	K
White Meadow Lake	05/25/00	10	
White Meadow Lake	05/25/00	10	K
White Meadow Lake	05/25/00	20	
White Meadow Lake	06/03/00	70	
White Meadow Lake	06/03/00	10	K
White Meadow Lake	06/03/00	10	K
White Meadow Lake	06/12/00	110	
White Meadow Lake	06/12/00	10	K
White Meadow Lake	06/12/00	10	K
White Meadow Lake	06/20/00	10	
White Meadow Lake	06/20/00	70	
White Meadow Lake	06/20/00	80	
White Meadow Lake	06/25/00	10	K
White Meadow Lake	06/25/00	60	
White Meadow Lake	06/25/00	10	K
White Meadow Lake	06/29/00	150	
White Meadow Lake	06/29/00	20	
White Meadow Lake	06/29/00	10	
White Meadow Lake	07/08/00	50	
White Meadow Lake	07/08/00	290	
White Meadow Lake	07/08/00	10	K
White Meadow Lake	07/14/00	20	
White Meadow Lake	07/14/00	100	
White Meadow Lake	07/14/00	10	
White Meadow Lake	08/01/00	160	
White Meadow Lake	08/01/00	40	
White Meadow Lake	08/01/00	70	
White Meadow Lake	08/09/00	4800	
White Meadow Lake	08/09/00	70	
White Meadow Lake	08/09/00	30	
White Meadow Lake	08/17/00	160	
White Meadow Lake	08/17/00	10	
White Meadow Lake	08/17/00	50	
White Meadow Lake	08/21/00	340	
White Meadow Lake	08/21/00	10	K
White Meadow Lake	08/21/00	1800	
White Meadow Lake	08/23/00	40	
White Meadow Lake	08/23/00	1100	
White Meadow Lake	08/30/00	160	
White Meadow Lake	08/30/00	10	K
White Meadow Lake	08/30/00	470	
MOWM1	05/23/01	20	K

MOWM1	05/29/01	70	K
MOWM1	06/10/01	80	K
MOWM1	06/20/01	90	K
MOWM1	06/27/01	60	K
MOWM1	07/03/01	10	
MOWM1	07/12/01	40	K
MOWM1	07/25/01	150	K
MOWM1	08/20/01	2400	
MOWM1	08/22/01	470	resample
MOWM1	08/28/01	50	K
MOWM2	05/23/01	270	K
MOWM2	05/29/01	10	
MOWM2	06/10/01	40	K
MOWM2	06/20/01	290	
MOWM2	06/27/01	180	K
MOWM2	07/03/01	40	K
MOWM2	07/12/01	10	
MOWM2	07/25/01	80	K
MOWM2	08/20/01	580	
MOWM2	08/22/01	150	K, resample
MOWM3	05/23/01	260	
MOWM3	05/29/01	90	K
MOWM3	06/10/01	210	
MOWM3	06/20/01	60	K
MOWM3	06/27/01	30	K
MOWM3	07/03/01	100	K
MOWM3	07/12/01	10	
MOWM3	07/25/01	70	K
MOWM3	08/20/01	400	
MOWM3	08/22/01	440	resample
	05/22/02	10	K
	06/08/02	10	
	06/17/02	30	
	06/19/02	260	RESAMPLE
	06/24/02	160	
	06/26/02	90	
	07/05/02	20	
	07/09/02	10	K
	07/16/02	50	
	07/31/02	40	
	08/07/02	10	K
	08/15/02	10	
	08/20/02	230	
	08/23/02	340	
2	05/22/02	10	K

	06/08/02	20	
	06/17/02	30	
	06/24/02	80	
	06/26/02	10	
	07/05/02	10	
	07/09/02	150	
	07/16/02	10	K
	07/31/02	140	
	08/07/02	390	RESAMPLE
	08/15/02	30	
	08/20/02	170	
3	05/22/02	10	K
	06/08/02	80	
	06/17/02	1100	RESAMPLE
	06/24/02	90	
	06/26/02	140	
	07/05/02	320	RESAMPLE
	07/09/02	770	RESAMPLE
	07/16/02	40	K
	07/31/02	40	
	08/07/02	20	
	08/15/02	10	
	08/20/02	340	
	08/23/02	120	
White Meadow Lake 1	05/20/03	10	k
	05/29/03	50	
	06/03/03	30	
	06/09/03	10	k
	06/17/03	10	k
	06/26/03	50	
	07/07/03	30	
	07/15/03	10	
	07/21/03	70	
	07/28/03	20	
	08/04/03	380	
	08/06/03	40	
	08/11/03	30	
	08/18/03	180	
White Meadow Lake 2	05/20/03	50	
	05/29/03	10	k
	06/03/03	70	
	06/17/03	10	
	06/26/03	40	
	07/07/03	20	
	07/15/03	40	

	07/21/03	1500	
	07/28/03	30	
	08/04/03	70	
	08/06/03	120	
	08/11/03	590	
	08/15/03	30	
	08/18/03	20	
White Meadow Lake 3	05/20/03	10	k
	05/29/03	3100	
	06/03/03	180	
	06/17/03	30	
	06/26/03	40	
	07/07/03	120	
	07/15/03	10	k
	07/21/03	80	
	07/29/03	20	
	08/04/03	180	
	08/06/03	90	
	08/11/03	20	
	08/18/03	70	
	08/18/03	70	
White Meadow Lake	07/01/04	460	
	07/01/04	10	
	07/01/04	110	
	07/07/04	10	
	07/07/04	70	
	07/07/04	150	
	07/14/04	30	
	07/14/04	550	
	07/14/04	30	
	07/16/04	90	
	07/16/04	140	
	07/16/04	40	
	07/16/04	20	
	07/20/04	660	
	07/20/04	80	
	07/20/04	10	
	07/20/04	660	
	07/22/04	50	
	07/22/04	20	
	07/22/04	20	
	07/22/04	70	
	07/26/04	40	
	07/26/04	20	
	07/26/04	130	

	07/27/04	10	
	08/04/04	350	
	08/04/04	60	
	08/04/04	20	
	08/04/04	20	
	08/13/04	60	
	08/13/04	280	
	08/13/04	60	
	08/13/04	360	
	08/17/04	90	
	08/17/04	90	
	08/17/04	70	
	08/19/04	140	
	08/19/04	60	
	08/19/04	40	
	08/19/04	1500	
	08/24/04	320	
	08/24/04	90	
	08/24/04	10	k
	08/30/04	1300	
	08/30/04	2500	
	08/30/04	10	k
	08/30/04	10	k
	08/30/04	20	
	08/30/04	1	k
	09/01/04	80	
	09/01/04	110	
	09/01/04	30	
White Meadow Lake	06/02/05	10	k
	06/02/05	10	
	06/02/05	40	
	06/15/05	200	
	06/15/05	70	
	06/12/05	10	
	06/21/05	110	
	06/21/05	680	resample
	06/21/05	210	resample
	06/23/05	30	
	06/23/05	20	
	06/30/05	230	
	06/30/05	430	
	06/30/05	40	
	07/05/05	10	
	07/05/05	470	resample
	07/05/05	20	

	07/05/05	10	k
	07/05/05	130	
	07/05/05	90	
	07/11/05	180	
	07/11/05	50	
	07/11/05	50	
	07/18/05	70	
	07/18/05	10	
	07/18/05	210	
	07/26/05	50	resample
	07/26/05	4300	resample
	07/26/05	240	resample
	07/28/05	50	
	07/28/05	260	resample
	08/01/05	20	
	08/01/05	60	
	08/01/05	370	resample
	08/09/05	10	
	08/09/05	10	k
	08/09/05	80	
	08/09/05	30	
	08/19/05	370	resample
	08/19/05	230	resample
	08/19/05	40	
	08/23/05	260	
	08/23/05	260	
	08/23/05	50	
	08/23/05	680	closed
	08/25/05	50	
	08/25/05	10	k
	08/31/05	600	closed
	08/31/05	490	closed
	08/31/05	440	resample
	08/31/05	1100	closed