

# Volunteer Lake Monitoring Program

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# 2012 VLMP TIERED APPROACH

	Tier 1	Tier 2	Tier 3
	<i>Secchi Only</i>	<i>Water Quality &amp; Tier 1</i>	<i>Expanded Water Quality &amp; Tier 1</i>
LAKE TYPE			
PURPOSE	Education & Water Quality Assessments	Expanded Education & Baseline Water Quality Indicators & Water Quality Assessments	Expanded Education & Water Quality Indicators & Water Quality Assessments & TMDL Development
MONITORING EXPECTATIONS	Twice/Month May thru October	<b>Tier 1 – Twice/Month (May-Oct) &amp; Water Quality Sampling –</b> Once/Month @ Site 1, 4 months/year, May thru August	<b>Tier 1 – Twice/Month (May-Oct) &amp; Water Quality Sampling –</b> 1/Month @ multiple sites & depths, 5 months/year, May thru August & October
PARAMETERS	<i>Secchi Transparency</i> , Aquatic Plant Coverage, Apparent Color, Water Level, Weather Conditions, Rainfall last 48 hours, Aquatic Invasive Species tracking, and additional observations and management noted.	<b>As Tier 1 &amp; Water Quality Sampling</b> at Site 1 for Total Phosphorus, Total Suspended Solids, Volatile Suspended Solids, Color, Chloride in seven counties*, and Chlorophyll (on selected lakes). Dissolved Oxygen monitoring at multiple sites (on selected lakes).	<b>As Tier 1 &amp; Water Quality Sampling</b> at multiple sites for Total Phosphorus, Total Suspended Solids, Volatile Suspended Solids, Alkalinity, Ammonia, Nitrate/Nitrite, Total Nitrogen (TKN), Color, Chloride in seven counties*, and Chlorophyll. DO monitoring at multiple sites.
LAKE #'S	Unlimited	75 Lakes x 1 Site = 75 Sites	10 Lakes x 3 sites = 60 Sites
VOLUNTEER ATTRIBUTES	<b>No Experience Needed</b> , Access to boat with anchor, personal floatation equipment, & internet access (if possible)	Previous year of consistent Tier 1 (9 Tier 1 events).	Previous year of consistent Tier 1 (9 Tier 1 events) and previous Tier 2 experience.
TRAINING	Personal Training at Individual's Lake	Personal Training or Centralized Training	Personal Training

\* Cook, DuPage, Kane, Kendall, Lake, McHenry, and Will Counties.

# 2012 Tier 1 VLMP Lakes

- Antioch/Lake
- Bangs/Lake
- Barrington/Lake
- Beaver/Grundy
- Black Oak/Lee
- Campton/Kane
- Carroll/Carroll
- Catherine/Lake
- Channel/Lake
- Chautauqua/Jackson
- Cross/Lake
- Duck/Lake
- Evergreen/McLean
- Fish Trap/Jo Daviess
- Forest/Lake
- Fourth/Lake
- Fox/Lake
- Fyre/Mercer
- Gages/Lake
- Gamlin/St. Clair
- Goose Lake/McHenry
- Grays/Lake
- Griswold/McHenry
- Harrisburg Res/Saline
- Herrin New (#1)/Williamson
- Indian/Cook
- Jacksonville/Morgan
- La Fox Pond/Kane
- Lake of Egypt/Williamson
- Le-Aqua-Na/Stephenson
- Leisure/Lake
- Linden/Lake
- Little Silver/Lake
- Little Swan/Warren
- Longmeadow/Cook
- Loon, East/Lake
- Loon, West/Lake
- Loveless/Du Page
- Mauvaisterre/Morgan
- Minear/Lake
- Murphysboro/Jackson
- Nashville/Washington
- New Thompson/Jackson
- North Tower/Lake
- Paris Twin East/Edgar
- Paris Twin West/Edgar
- Petersburg/Menard
- Pierce/Winnebago
- Pine/Lee
- Pistakee/Lake
- Richardson Wildlife/Lee
- Round/Lake
- Sunset/Lee
- Third/Lake
- Virginia/Cook
- Waterford/Lake
- Westlake/Winnebago
- Zurich/Lake

# 2012 Tier 2 VLMP Participants

- Altamont New/Effingham
- Bass/Lee
- Bertinetti/Christian
- Bird's Pond/Sangamon
- Bluff/Lake
- Borah/Richland
- Buffalo Creek/Lake
- Campus/Jackson
- Candlewick/Boone
- Carbondale Res/Jackson
- Carlinville I/Macoupin
- Charles/Du Page
- Charleston SCR/Coles
- Civic/Grundy
- Cross/Lake
- Crystal/McHenry
- Decatur/Macon
- Deep/Lake
- Devil's Kitchen/Williamson
- Diamond/Lake
- Druce/Lake
- Dunlap/Madison
- Fischer/Lake
- Galena /Jo Daviess
- Governor Bond/Bond
- Honey/Lake
- Island/Lake
- Joliet Jr. College/Will
- Killarney/McHenry
- Lake of the Woods/Champaign
- Leopold/Lake
- Lock Lomond/Lake
- Long/Lake
- Mattoon/Shelby
- Miller/Jefferson
- Miltmore/Lake
- Napa Suwe/Lake
- Olney East Fork/Richland
- Ossami/Tazewell
- Petite/Lake
- Pinckneyville/Perry
- Potomac/Lake
- Spring/Lake
- Spring Arbor/Jackson
- Spring Ledge/Lake
- Stephen/Will
- Summerset/Winnebago
- Sunset/Champaign
- Sunset/Macoupin
- Sylvan/Lake
- Taylorville/Christian
- Three Oaks North/McHenry
- Three Oaks South/McHenry
- Timberlake/Lake
- Tower/Lake
- Twin Oaks/Champaign
- Valley/Lake
- Vermilion/Vermilion
- Vernor/Richland
- Waverly/Morgan
- Wee-Ma-Tuk/Fulton
- Willow/Stephenson
- Wonder/McHenry
- Woodhaven/Lee
- Wooster/Lake

# 2012 Tier 3 VLMP Participants

- Apple Canyon/Jo Daviess
- Bloomington/McLean
- Canton/Fulton
- Cedar/Jackson
- Deep Quarry/Du Page
- Herrin Old (#2)/Williamson
- Highland Silver/Madison
- Homer/Champaign
- Kinkaid/Jackson
- Otter/Macoupin
- Paradise/Coles
- Sara/Effingham
- Silver/McHenry
- Spring/McDonough
- Springfield/Sangamon
- Woods Creek/McHenry

## Tier 1

Secchi Depth Transparency  
Macrophyte Coverage

## Tier 2

Water Quality at Site 1:

Alkalinity, Chloride, Color,  
Ammonia, Nitrate/Nitrite, Total  
Nitrogen, Total Phosphorus, and  
TSS/VSS

## Tier 3

Water Quality at 3 sites and  
bottom sample at site one.

Chlorophyll Sampling at 3 sites.

Dissolved Oxygen at 3 sites.

# 2012 VLMP Report

Figure 4: Lake Access

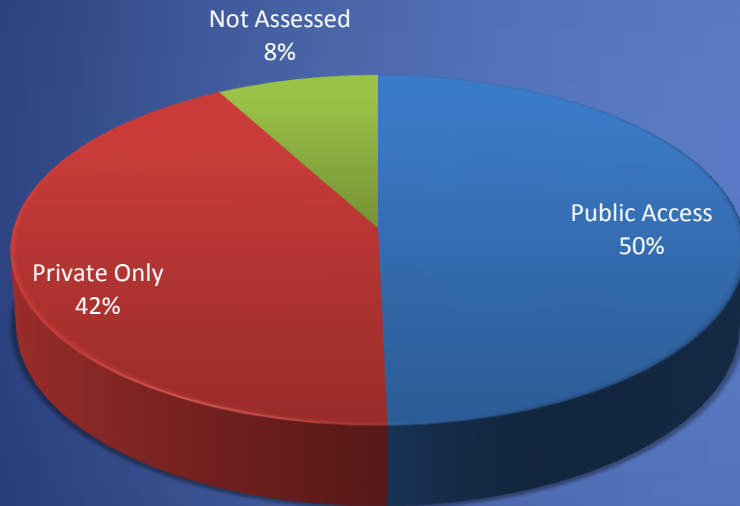
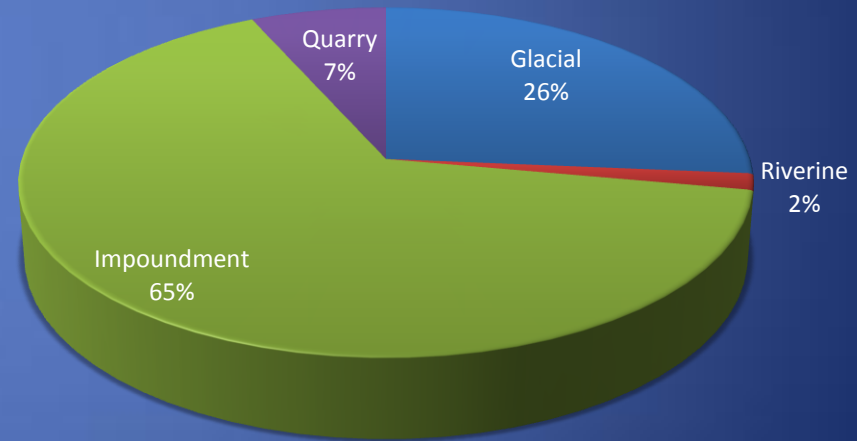
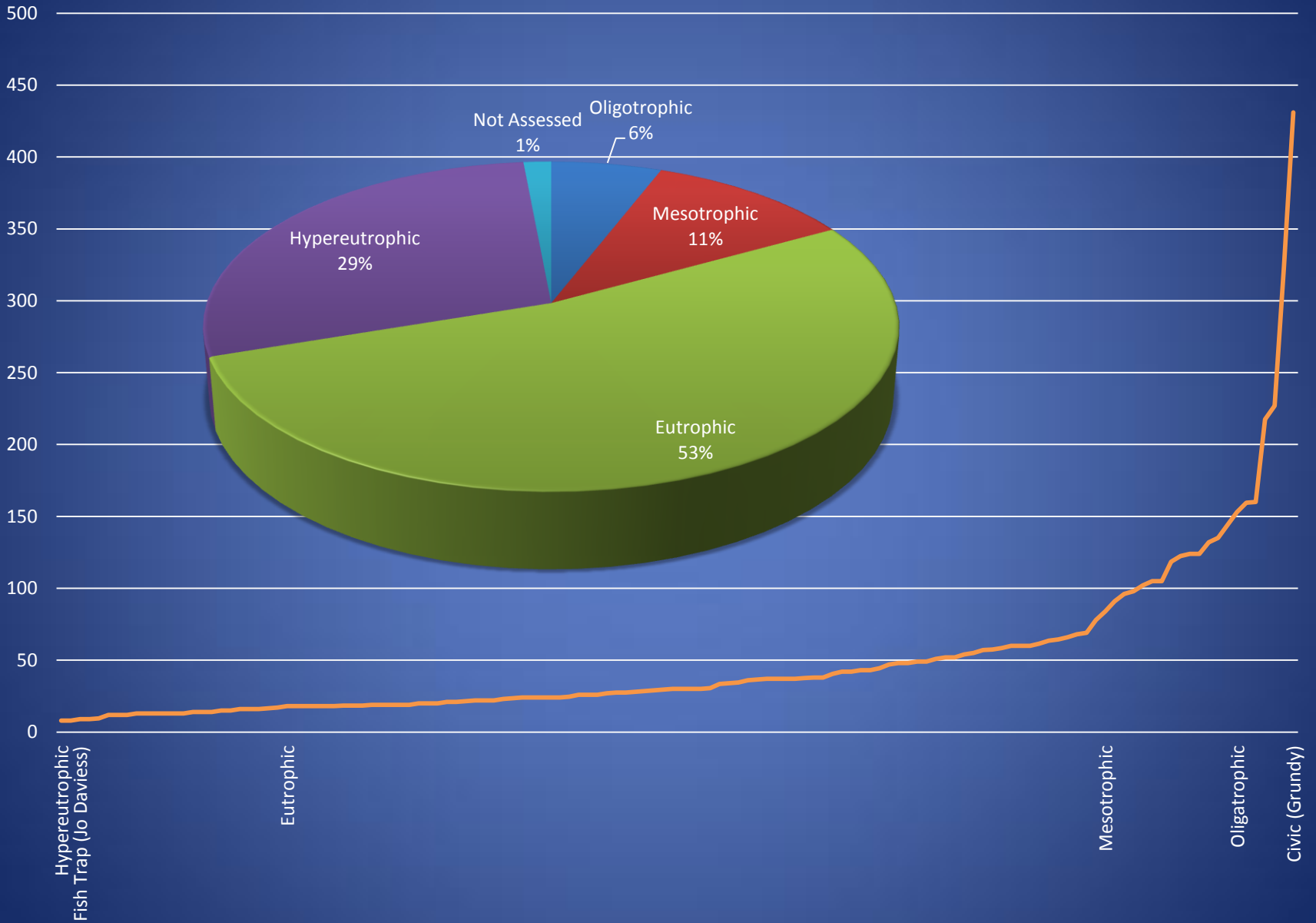


Figure 3: Lake Types



# Median Secchi Transparency for 134 Illinois Lakes



# 2012 Trophic State for Tier 3

Station Code	Waterbody Name	Tier	SD (in)	CHL (ug/l)	TP (mg/l)	TSI <sup>SD</sup>	TSI <sup>TP</sup>	TSI <sup>CHL</sup>	Trophic State
RMJ	Apple Canyon	3	36	27	<b>0.057</b>	61.3	62.5	62.9	Eutrophic
RDO	Bloomington	3	21	37	<b>0.137</b>	69.1	75.1	66.0	Eutrophic
RDD	Canton	3	24	58	<b>0.095</b>	67.4	69.7	70.4	Eutrophic
RNE	Cedar	3	35	34	<b>0.026</b>	61.9	51.1	65.1	Eutrophic
WGZK	Deep Quarry	3	324	1	<b>0.008</b>	29.6	34.1	34.4	Oligotrophic
RNzd	Herrin Old	3	58	17	<b>0.024</b>	54.5	50.0	58.3	Eutrophic
ROZA	Highland Silver	3	13	115	<b>0.367</b>	76.0	89.3	77.1	Hypereutrophic
RBO	Homer	3	18	64	<b>0.082</b>	71.3	67.6	71.4	Hypereutrophic
RNC	Kinkaid	3	66	11	<b>0.021</b>	52.6	48.1	54.4	Eutrophic
RDF	Otter	3	26	48	<b>0.096</b>	66.0	70.0	68.5	Eutrophic
RCG	Paradise	3	9	117	<b>0.226</b>	81.3	82.3	77.3	Hypereutrophic
RCE	Sara	3	37	17	<b>0.032</b>	60.9	54.1	58.1	Eutrophic
RTW	Silver	3	78	9	<b>0.019</b>	50.2	46.2	51.8	Eutrophic
RDR	Spring (McDonough)	3	13	91	<b>0.226</b>	76.0	82.3	74.9	Hypereutrophic
REF	Springfield	3	16	56	<b>0.448</b>	73.0	92.2	70.2	Hypereutrophic
RTZZ	Woods Creek	3	27	38	<b>0.071</b>	65.4	65.5	66.4	Eutrophic



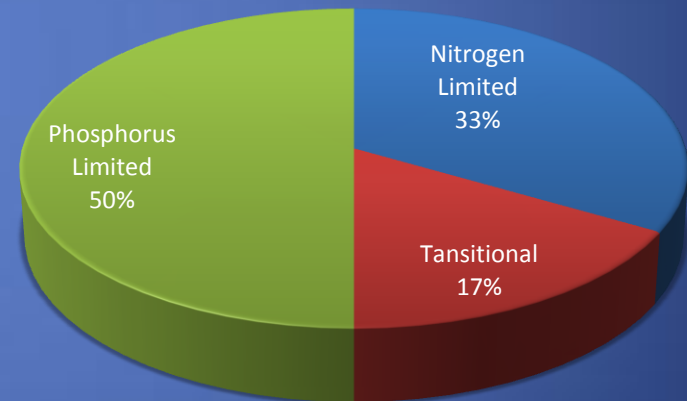
# 2012 Median Results for Tier 3

Lake Code	Waterbody Name	Tier	SD (in)	Alkalinity (mg/l)	Chloride (mg/l)	Color (C.U.)	CHL (ug/l)	NVSS (mg/l)	TP (mg/l)	NH <sub>4</sub> (mg/l)	NO <sub>3</sub> +NO <sub>2</sub> (mg/l)	TKN (mg/l)	TN (mg/l)	Inorganic Nitrogen (mg/l)	N:P
RMJ	Apple Canyon	3	36	203		7	27	0.00	<b>0.057</b>	0.020	0.018	0.904	0.922	0.038	16:1
RDO	Bloomington	3	21	195		7	37	3.00	<b>0.137</b>	0.020	0.019	0.854	0.945	0.039	7:1
RDD	Canton	3	24	173		9	58	5.50	<b>0.0945</b>	0.020	0.018	0.933	0.951	0.038	10:1
RNE	Cedar	3	35	41	3	7	34	0.00	<b>0.026</b>	0.020	0.018	0.757	0.775	0.038	30:1
WGZK	Deep Quarry	3	324	170	67	2	1	0.00	<b>0.008</b>	0.020	0.018	0.206	0.224	0.038	28:1
RNZZ	Herrin Old	3	58	42		12	17	0.00	<b>0.024</b>	0.060	0.018	0.340	0.391	0.108	16:1
ROZA	Highland Silver	3	13	110		21	115	13.00	<b>0.367</b>	0.020	0.055	1.755	1.873	0.075	5:1
RBO	Homer	3	18	160		10	64	5.00	<b>0.0815</b>	0.020	0.635	1.100	1.995	0.655	24:1
RNC	Kinkaid	3	66	68		7	11	0.00	<b>0.021</b>	0.075	0.048	0.424	0.475	0.165	23:1
RDF	Otter	3	26	118			48	2.50	<b>0.096</b>	0.020	0.018	0.967	0.995	0.038	10:1
RCG	Paradise	3	9	150		13	117	19.00	<b>0.226</b>	0.020	0.018	1.530	1.914	0.038	8:1
RCE	Sara	3	37	110		8	17	0.00	<b>0.032</b>	0.020	0.018	0.876	0.894	0.038	28:1
RTW	Silver	3	78	193	211	7	9	1.50	<b>0.0185</b>	0.020	0.018	0.382	0.436	0.038	24:1
RDR	Spring (McDonough)	3	13	170		10	91	17.00	<b>0.2255</b>	0.020	0.018	1.500	1.577	0.038	7:1
REF	Springfield	3	16	180		9	56	6.50	<b>0.448</b>	0.020	0.031	1.110	1.319	0.070	3:1
RTZZ	Woods Creek	3	27	163	246	13	38	3.00	<b>0.0705</b>	0.020	0.019	0.935	0.954	0.109	14:1

# 2012 Nitrogen to Phosphorus Ratio

Lake Code	Waterbody Name	Tier	TP (mg/l)	TN (mg/l)	N:P
RMJ	Apple Canyon	3	0.057	0.922	16:1
RDO	Bloomington	3	0.137	0.945	7:1
RDD	Canton	3	0.095	0.951	10:1
RNE	Cedar	3	0.026	0.775	30:1
WGZK	Deep Quarry	3	0.008	0.224	28:1
RNZD	Herrin Old	3	0.024	0.391	16:1
ROZA	Highland Silver	3	0.367	1.873	5:1
RBO	Homer	3	0.082	1.995	24:1
RNC	Kinkaid	3	0.021	0.475	23:1
RDF	Otter	3	0.096	0.995	10:1
RCG	Paradise	3	0.226	1.914	8:1
RCE	Sara	3	0.032	0.894	28:1
RTW	Silver	3	0.019	0.436	24:1
RDR	Spring (McDonough)	3	0.226	1.577	7:1
REF	Springfield	3	0.448	1.319	3:1
RTZZ	Woods Creek	3	0.071	0.954	14:1

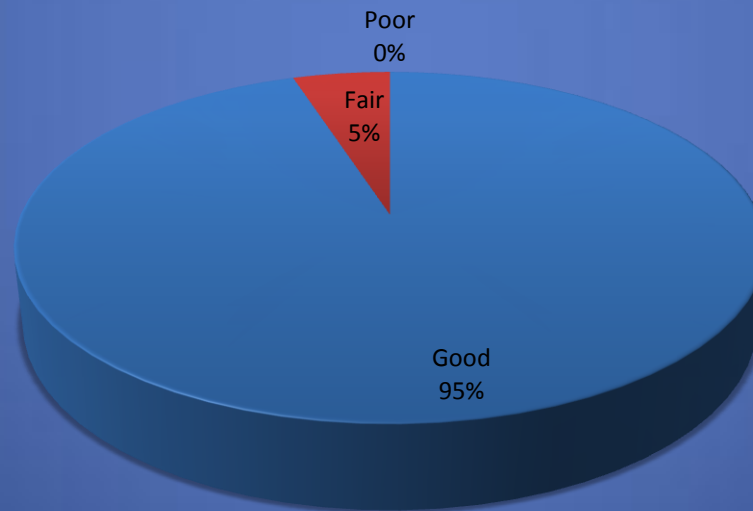
Figure 8: Algae Growth Limiting Nutrient



# Aquatic Life (80 Lakes)

Station Code	Waterbody/County	Tier	%Macro <sup>ALU</sup> Points	NVSS <sup>ALU</sup> Points	ALU TSI <sup>SD</sup>	ALU TSI <sup>TP</sup>	ALU TSI <sup>CHL</sup>	SD Score	TP Score	CHL Score	SD Rating	TP Rating	CHL Rating	Overall Rating
RCJ	Altamont New/Effingham	2	15	0	40	50	40	55	65	55	Good	Good	Good	Good
RMJ	Apple Canyon/Jo Daviess	3	15	0	50	50	50	65	65	65	Good	Good	Good	Good
RPJ	Bass/Lee	2	0	0	50	60	50	50	60	50	Good	Good	Good	Good

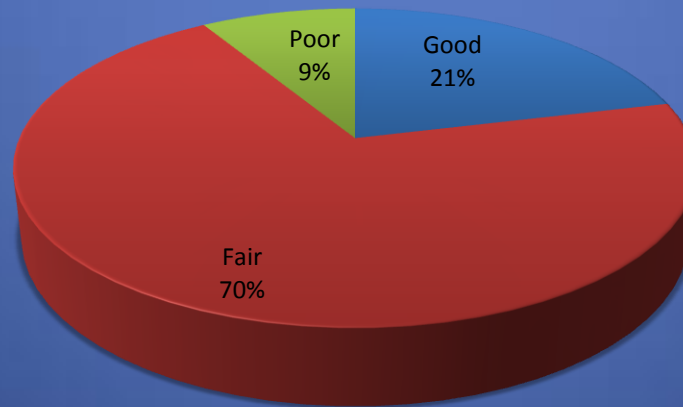
**Figure 9: Estimated Aquatic Life Conditions**



# Aesthetic Quality (80 Lakes)

Station Code	Waterbody/County	Tier	%Macro <sup>AQU</sup> Points	NVSS <sup>AQU</sup> Points	AQU TSI <sup>SD</sup>	AQU TSI <sup>TP</sup>	AQU TSI <sup>CHL</sup>	SD Score	TP Score	CHL Score	SD Rating	TP Rating	CHL Rating	Overall Rating
RCJ	Altamont New/Effingham	2.a	0	0	58.7	69.5	57.5	58.7	69.5	57.5	Good	Fair	Good	Good
RMJ	Apple Canyon/Jo Daviess	3	0	0	61.3	62.5	62.9	61.3	62.5	62.9	Fair	Fair	Fair	Fair
RPJ	Bass/Lee	2.a	7.5	0	64.7	87.9	74.8	72.2	95.4	82.3	Fair	Poor	Fair	Fair

**Figure 10: Estimated Aesthetic Quality Conditions**



# 2013 VLMP TIERED APPROACH

	Tier 1	Tier 2	Tier 3 (Special Study)
	<i>Secchi Only</i>	<i>Water Quality &amp; Tier 1</i>	<i>Expanded Water Quality &amp; Tier 1</i>
<b>PURPOSE</b>	Education & Water Quality Assessments	Expanded Education & Baseline Water Quality Indicators & Water Quality Assessments	Expanded Education & Water Quality Indicators & Water Quality Assessments & TMDL Development
<b>MONITORING EXPECTATIONS</b>	Twice/Month May thru October	<b>Tier 1</b> – Twice/Month (May-Oct) & <b>Water Quality Sampling</b> – Once/Month @ Site 1, 4 months/year, May thru August	<b>Tier 1</b> – Twice/Month (May-Oct) & <b>Water Quality Sampling</b> – 1/Month @ multiple sites & depths, 5 months/year, May thru August & October
<b>PARAMETERS</b>	<i>Secchi Transparency</i> , Aquatic Plant Coverage, Apparent Color, Water Level, Weather Conditions, Rainfall last 48 hours, Aquatic Invasive Species tracking, and additional observations and management noted.	<i>As Tier 1 &amp; Water Quality Sampling</i> at Site 1 for Total Phosphorus, Total Suspended Solids, Volatile Suspended Solids, Chloride*, and Chlorophyll. Dissolved Oxygen monitoring at multiple sites (on selected lakes).	<i>As Tier 1 &amp; Water Quality Sampling</i> at multiple sites for Total Phosphorus, Total Suspended Solids, Volatile Suspended Solids, Alkalinity, Ammonia, Nitrate/Nitrite, Total Nitrogen (TKN), Chloride*, and Chlorophyll. DO monitoring at multiple sites.
<b>LAKE #'S</b>	Unlimited	75 Lakes x 1 Site = 75 Sites	15 Lakes x 3** Sites = 45 Sites
<b>VOLUNTEER ATTRIBUTES</b>	<b>No Experience Needed</b> , Access to boat with anchor, personal floatation equipment, & internet access (if possible)	Previous year of consistent Tier 1 (9 Tier 1 events).	Previous year of consistent Tier 1 (9 Tier 1 events) and previous Tier 2 experience.
<b>TRAINING</b>	Personal Training at Individual's Lake	Personal Training or Centralized Training	Personal Training
* Chloride analyzed in Cook, DuPage, Kane, Kendall, Lake, McHenry, and Will Counties.			
** Number of Sites may vary due to lake size and type of Special Study.			

# THANK YOU



Home Page: [www.epa.state.il.us/water/conservation/vlmp](http://www.epa.state.il.us/water/conservation/vlmp)