

Utah Lake Watch Report 2004

Prepared by Andree' Walker
Utah State University Water Quality Extension
January 21, 2005

Utah Lake Watch (ULW) is a program which enlists volunteers to take Secchi depth measurements in lakes and reservoirs throughout Utah. The Secchi depth measures the water clarity and is useful to scientists and lake managers in tracking the health of the lake. The Utah Lake Watch program volunteers are able to provide data which help supplement data collected by the Utah Division of Water Quality (DWQ) as part of their lakes program, and can be used by a variety of organizations.

The Utah Lake Watch Volunteers are individually trained to use a Secchi disk, a black and white disk which is lowered into the water until it is no longer visible. The depth at which the disk disappears is the Secchi depth. Training also includes site location (either DEQ station #'s or GPS) and data entry. They are given a standardized data sheet that is returned to USU Extension at the end of the season.

Results:

During the summer of 2004, 14 sites in various lakes and reservoirs around the state of Utah were monitored. The effort by volunteers on this project ranged from 1 sample taken on Piute Reservoir to 14 samples taken on East Canyon Reservoir.

Discussion:

Interpretation of the health of the water body should not be made by the Secchi measurements alone. A Trophic State Index (TSI) can be calculated using several different indicators of lake health, including water clarity, phosphorous concentration and chlorophyll concentration. The Utah Lake Watch program reports TSI values calculated only from Secchi measurements. TSI classification is based on the TSI index developed by Carlson in 1977.

Classification	Definition	TSI Index
Oligotrophic	A water body having low turbidity and abundant dissolved oxygen.	<40
Mesotrophic	A water body having moderate turbidity and moderate dissolved oxygen.	40-50
Eutrophic	A water body having high turbidity and low amounts of dissolved oxygen.	50-70
Hypereutrophic	A water body that is extremely turbid and exceptionally low in dissolved oxygen.	>70

The 2004 TSI values, based on Secchi measurements, indicated that Bear Lake and Wide Hollow Reservoir are considered oligotrophic, while the Great Salt Lake, Otter Creek, and Palisade Reservoir are considered eutrophic. All other reservoirs measured

were mesotrophic. Data and trends for each section are found in the summaries for each reservoir.

The following components are included in the remainder of this annual report:

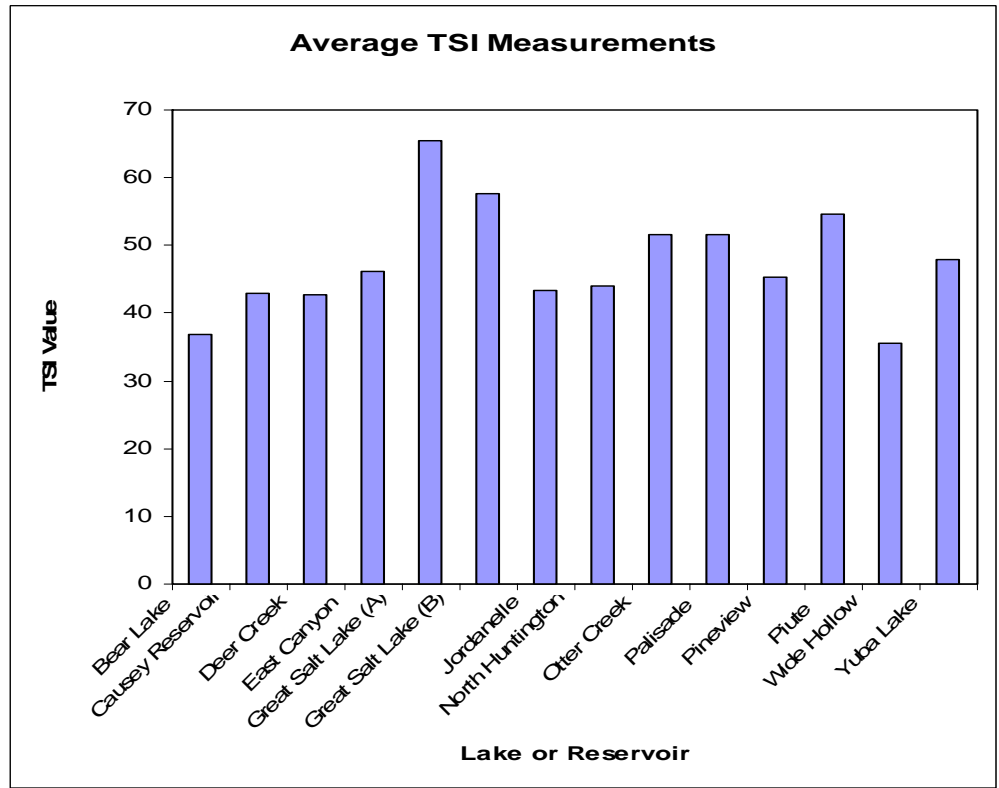
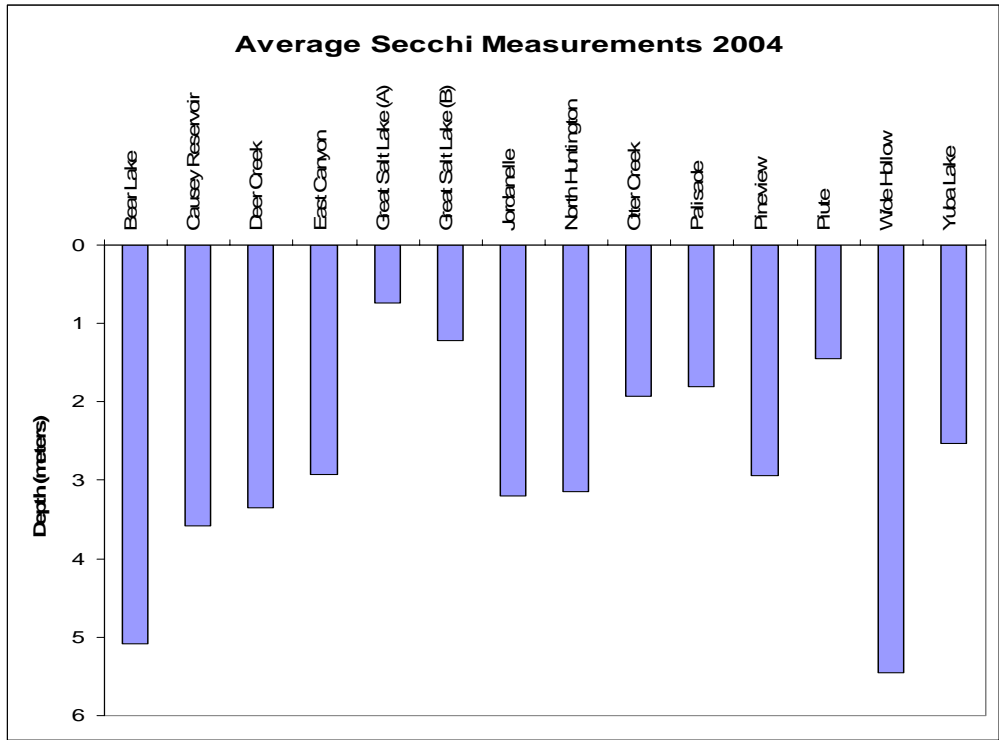
- Average Secchi depths for all monitoring sites.
- Average TSI measurements for all sites.
- A list of volunteers and their respective water bodies.
- Summary data for each reservoir
- Example of data sent to each volunteer.

Appendix A – Classification of TSI

Appendix B – Copies of volunteer data sheets

Appendix C – Electronic version of annual report and data

References



**2004
Participant
List**

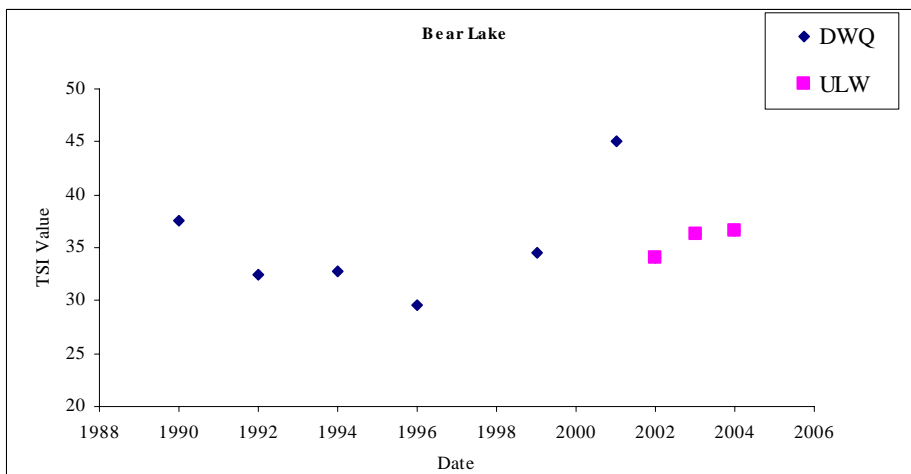
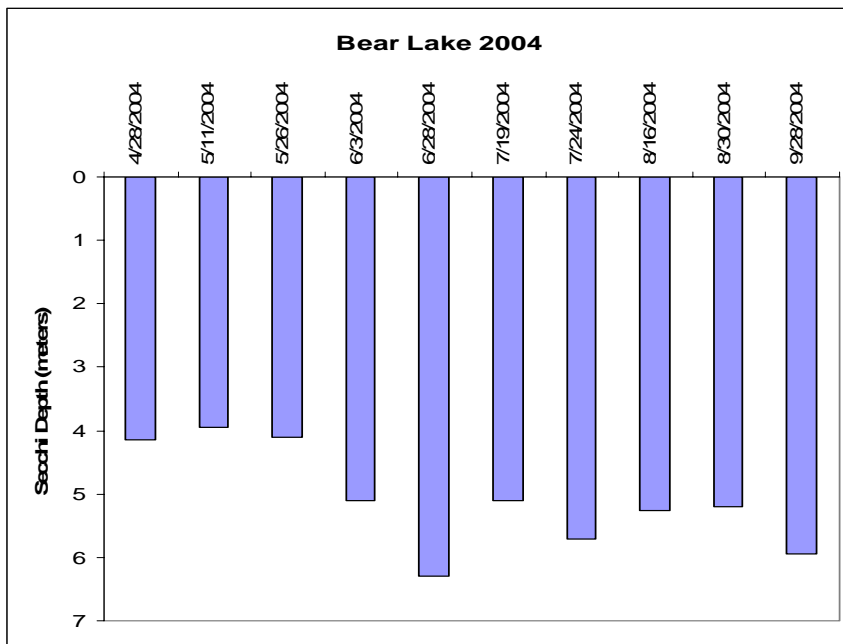
Reservoir or Lake	Site ID	Volunteer Name	Affiliation
Bear Lake	41° 57.902' N 111° W	Scott Tolentino	Bear Lake State Park
Causey Reservoir		Christian Baker	Student
Deer Creek	Near buoys at dam	Rick Redmon	Deer Creek State Park
East Canyon	40° 55' 12" N 110° 36' 00" W	Andrea Carrigan	East Canyon State Park
Great Salt Lake (A)	200 yds N of Bridge in Farmington Bay	staff	Antelope Island State Park
Great Salt Lake (B)	32° 54.454' N 112°26.469' W	staff	Antelope Island State Park
Jordanelle		Tom Menaham	Jordanelle State Park
North Huntington	39° 35' 07" N 111° 15' 43" W	Dan Richards	Huntington State Park
Otter Creek	Due N of Otter Creek Marina Deck 180 yds from shed on otter creek dam	John Russell	Otter Creek and Piute State Park
Palisade	Between boat ramp and rocks	Wayne Monroe	Palisade State Park
Piute	266 yards from dam outlet gate	John Russell	Otter Creek and Piute State Park
Pineview		Keith Rounkles	Ogden Canyon Club
Wide Hollow		Kendall Farnsworth	Escalante State Park
Yuba Lake	39° 22.323' N 112° 01.868' W	Chris Evans	Yuba Reservoir State Park

Note: DWQ site IDs for various reservoirs found in complete data file.

Bear Lake Summary Data

The average Secchi measurement in Bear Lake for 2004 was 5.08 m, decreasing from the average measurement in 2003 which was 5.32 meters. The average TSI value for 2004 was 36.75. According to data collected by the DWQ and also the ULW program, the trend for Bear Lake TSI values has been to fluctuate between 30 and 37 (excluding an outlier measurement collected in 2001). This trend shows bear lake as steadily oligotrophic.

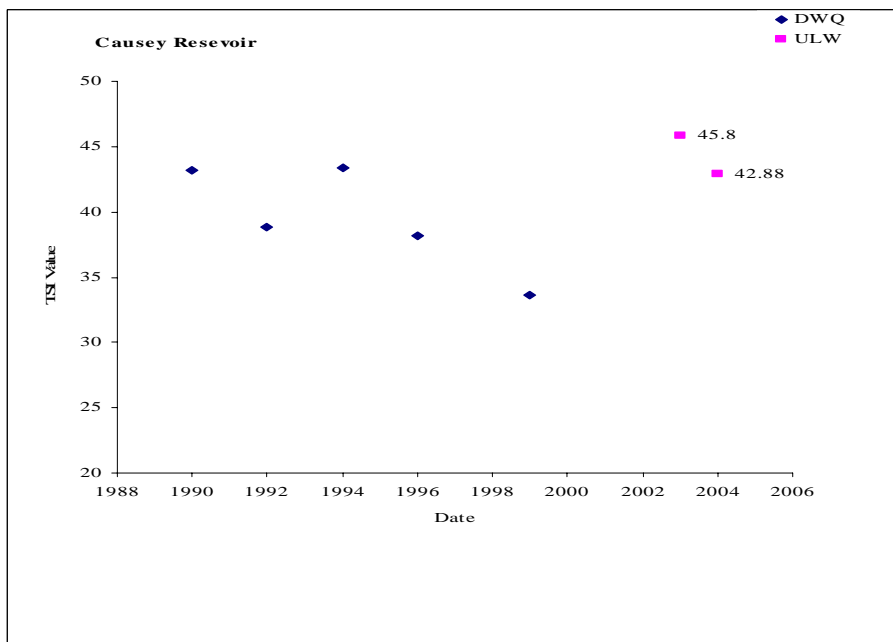
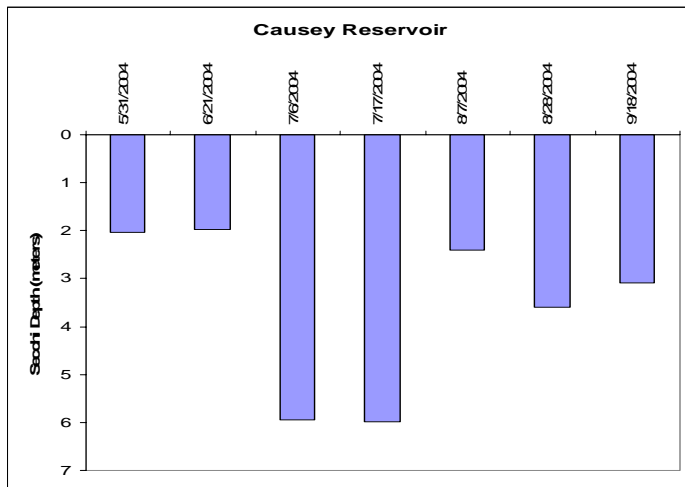
Lake Name	Date	Secchi Depth (m)	TSI based on Secchi depth
Bear Lake	4/28/2004	4.15	39.49
Bear Lake	5/11/2004	3.95	40.20
Bear Lake	5/26/2004	4.1	39.67
Bear Lake	6/3/2004	5.1	36.52
Bear Lake	6/28/2004	6.3	33.48
Bear Lake	7/19/2004	5.1	36.52
Bear Lake	7/24/2004	5.7	34.92
Bear Lake	8/16/2004	5.25	36.10
Bear Lake	8/30/2004	5.2	36.24
Bear Lake	9/28/2004	5.95	34.30
	Average	5.08	36.75



Causey Reservoir Summary Data

The average Secchi measurement in Causey Reservoir for 2004 was 3.58 m, showing an increase from the average measurement in 2003 which was 2.79 m. The average TSI value for 2004 was 42.88. According to data collected by the DWQ and the ULW program, TSI values have fluctuated between 33 and 45 since 1988, and show an upward trend. At this point, Causey Reservoir has been steadily mesotrophic.

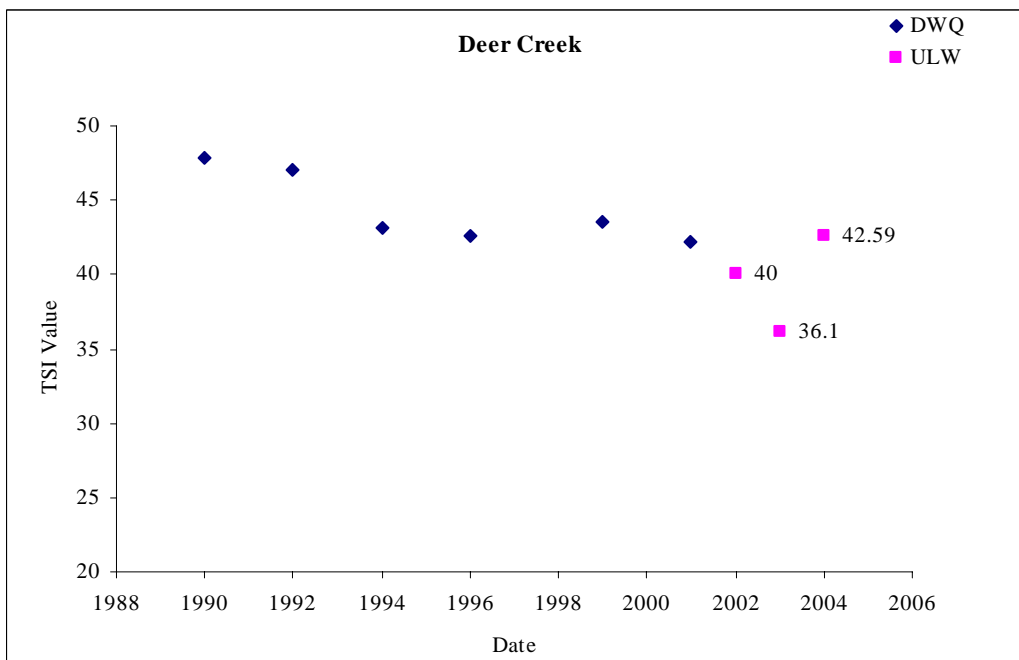
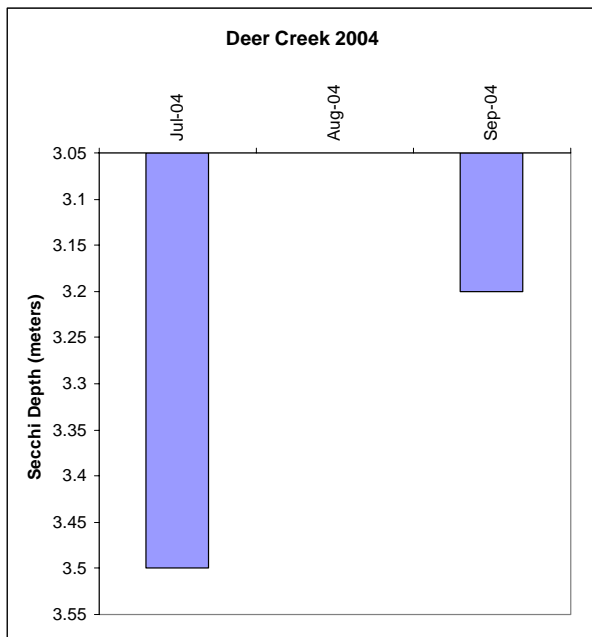
Lake Name	Date	Secchi Depth (m)	TSI based on Secchi depth
Causey Reservoir	5/31/2004	2.04	49.73
Causey Reservoir	6/21/2004	1.98	50.16
Causey Reservoir	7/6/2004	5.95	34.30
Causey Reservoir	7/17/2004	5.99	34.20
Causey Reservoir	8/7/2004	2.41	47.32
Causey Reservoir	8/28/2004	3.6	41.54
Causey Reservoir	9/18/2004	3.09	43.74
	Average	3.58	42.88



Deer Creek Summary Data

The average Secchi measurement in Deer Creek for 2004 was 3.35 m, showing a decrease from 5.35 meters in 2003. This may be due to a small sample size. The average TSI value for 2004 was 42.59. Trends in data collected by DWQ and ULW show a decrease in TSI value moving it toward becoming oligotrophic. Again, this years TSI data shows an increase from last year, but that too may be from a small sample size.

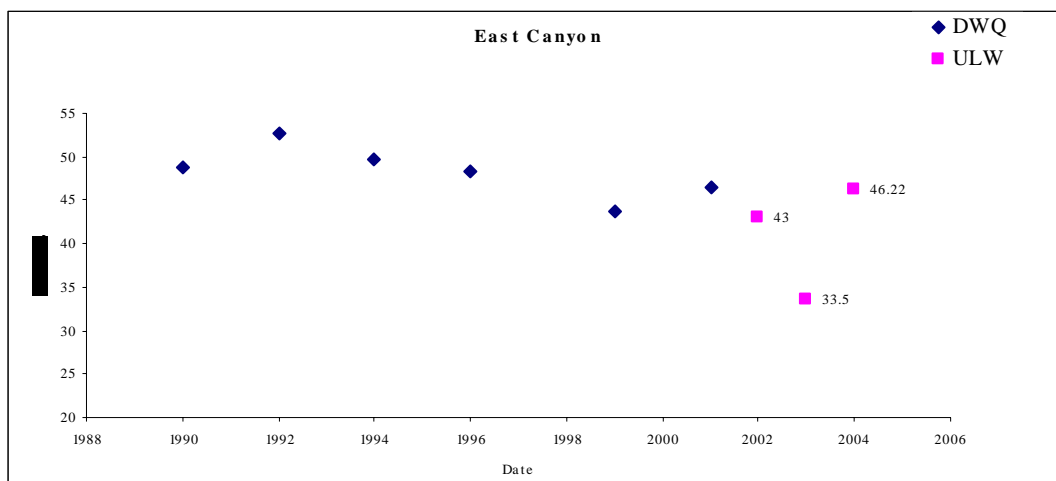
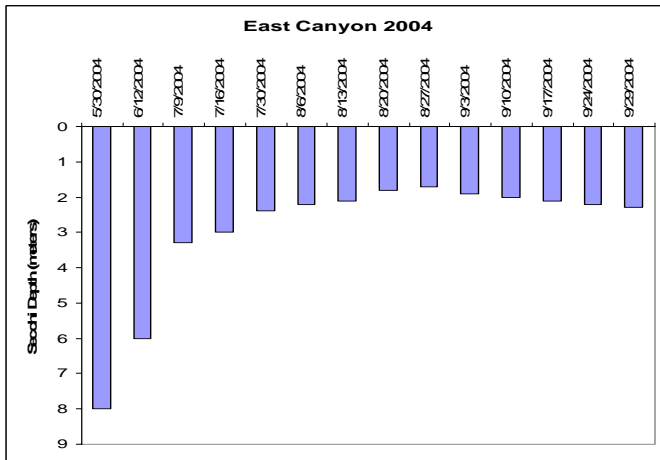
Lake Name	Date	Secchi Depth (m)	TSI based on Secchi depth
Deer Creek	7/14/2004	3.5	41.95
Deer Creek	9/4/2004	3.2	43.24
	Average	3.35	42.59



East Canyon Summary Data

The average Secchi measurement in East Canyon for 2004 was 2.93 m, showing a large decrease from 6.45 m in 2003. Only two samples were taken in 2003, which may account for this large difference. The average TSI value for 2004 was 46.22. According to data collected by the DWQ and the ULW program, TSI trends have fluctuated between 43 and 53, excluding an outlier of 33.5 from 2003. The trendline is also slightly decreasing. This indicates that East Canyon reservoir is fluctuating between eutrophic and mesotrophic.

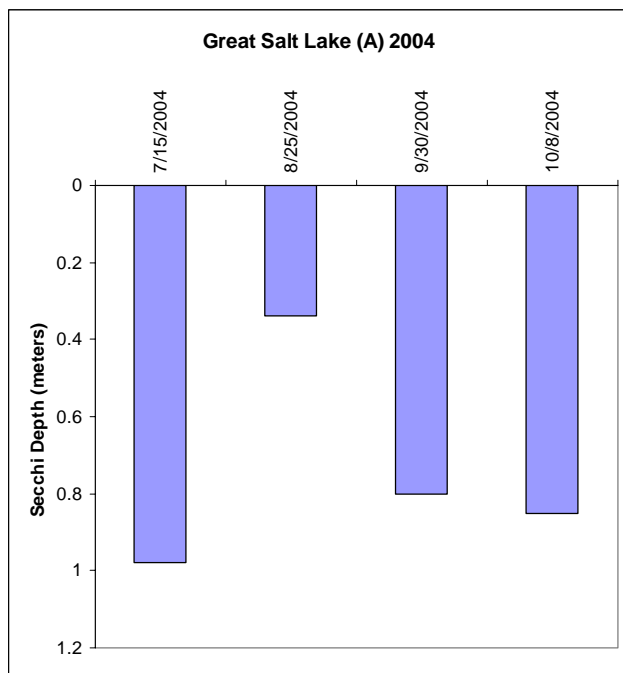
Lake Name	Date	Secchi Depth (m)	TSI based on Secchi depth
East Canyon	5/30/2004	8	30.04
East Canyon	6/12/2004	6	34.18
East Canyon	7/9/2004	3.3	42.80
East Canyon	7/16/2004	3	44.17
East Canyon	7/30/2004	2.4	47.39
East Canyon	8/6/2004	2.2	48.64
East Canyon	8/13/2004	2.1	49.31
East Canyon	8/20/2004	1.8	51.53
East Canyon	8/27/2004	1.7	52.35
East Canyon	9/3/2004	1.9	50.75
East Canyon	9/10/2004	2	50.01
East Canyon	9/17/2004	2.1	49.31
East Canyon	9/24/2004	2.2	48.64
East Canyon	9/29/2004	2.3	47.99
	Average	2.93	46.22



Great Salt Lake (A) Summary Data

The average Secchi measurement in the Great Salt Lake near Farmington Bay for 2004 was 0.74 meters. There are no past data for this area. The average TSI value for this area was 65.35. The data indicates that the Great Salt Lake near Farmington Bay is eutrophic. This is also noted by volunteers who observed large algal blooms.

Lake Name	Date	Secchi Depth (m)	TSI based on Secchi depth
Great Salt Lake (A)	7/15/2004	0.98	60.29
Great Salt Lake (A)	8/25/2004	0.34	75.55
Great Salt Lake (A)	9/30/2004	0.8	63.22
Great Salt Lake (A)	10/8/2004	0.85	62.34
	Average	0.74	65.3

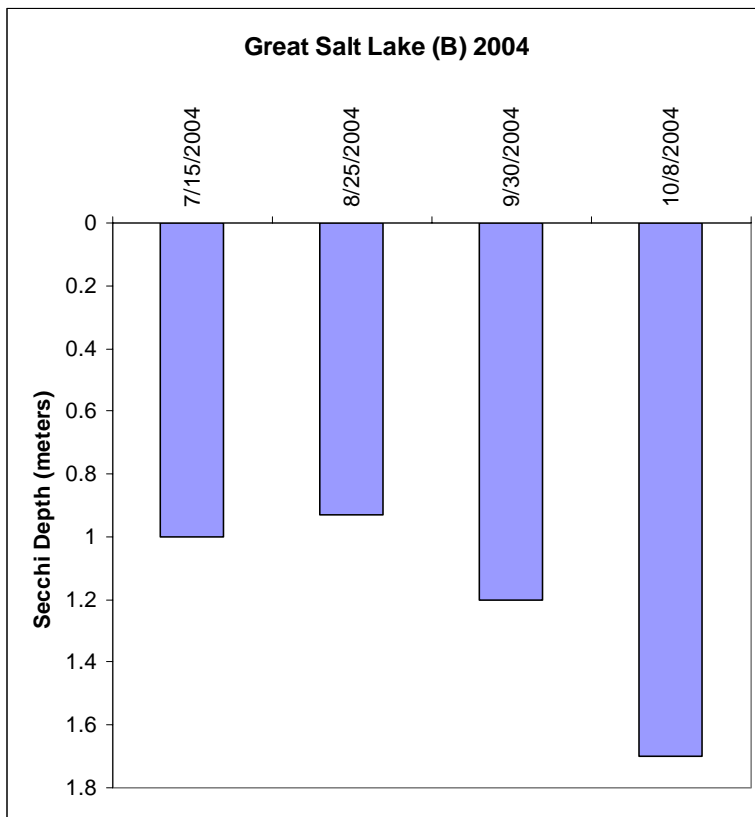


There are no past TSI data for this sample site on the Great Salt Lake.

Great Salt Lake (B) Summary Data

The average Secchi measurement in the Great Salt Lake for 2004 was 1.21 m. There are no past data for this area. The average TSI value for this area was 57.69 m. The data indicates that this area of the Great Salt Lake is eutrophic.

Lake Name	Date	Secchi Depth (m)	TSI based on Secchi depth
Great Salt Lake (B)	7/15/2004	1	60
Great Salt Lake (B)	8/25/2004	0.93	61.05
Great Salt Lake (B)	9/30/2004	1.2	57.37
Great Salt Lake (B)	10/8/2004	1.7	52.35
	Average	1.21	57.69



There are no past TSI data for this sample site on the Great Salt Lake.

Jordanelle Summary Data

The average Secchi measurement in Jordanelle Reservoir for 2004 was 3.2 m. This was the only measurement received for this area. The TSI value was 43.24. There are no past data to report.

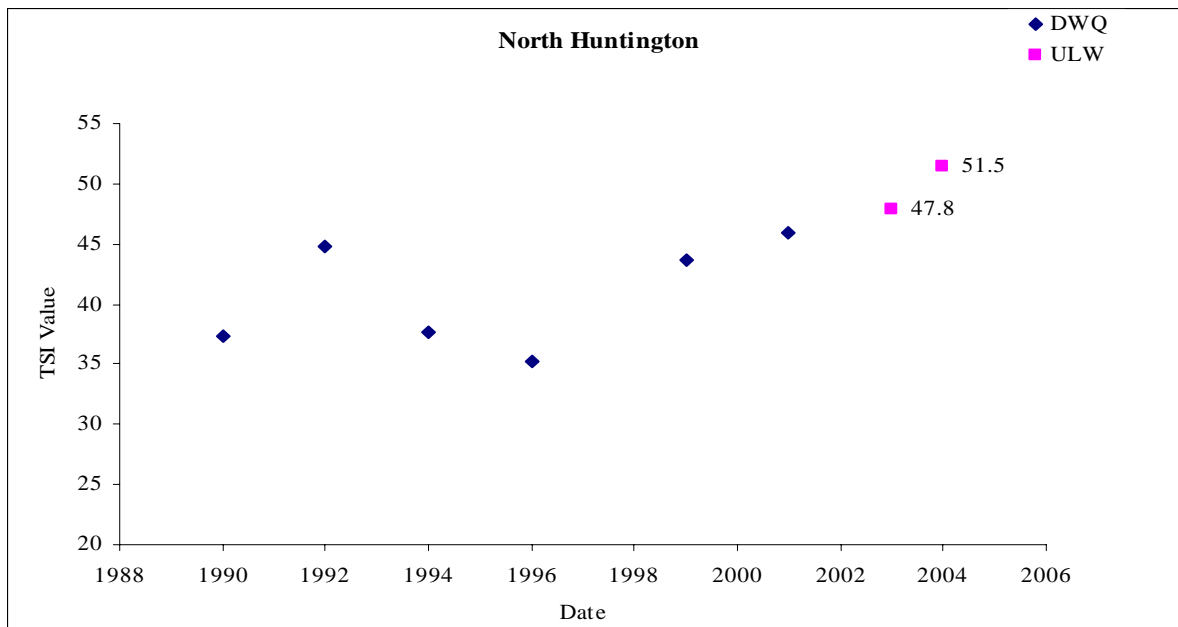
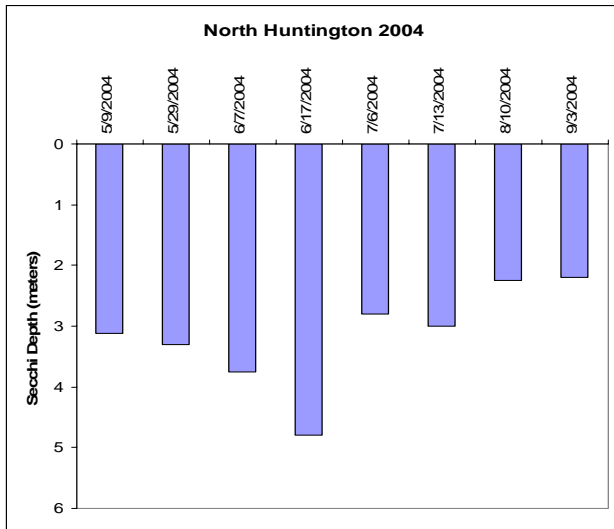
Lake Name	Date	Secchi Depth (m)	TSI based on secchi depth
Jordanelle	9/26/2004	3.2	43.24
	Average	3.2	43.24

There are no past TSI data for this sample site.

North Huntington Summary Data

The average Secchi measurement in North Huntington Reservoir for 2004 was 3.15 m, increasing from 2.4 m in 2003. The average TSI value was 43.89. According to data collected by the DWQ and the ULW program, TSI values have fluctuated between 35 and 51.5 since 1988. The data shows an increasing trend, moving North Huntington toward a eutrophic classification.

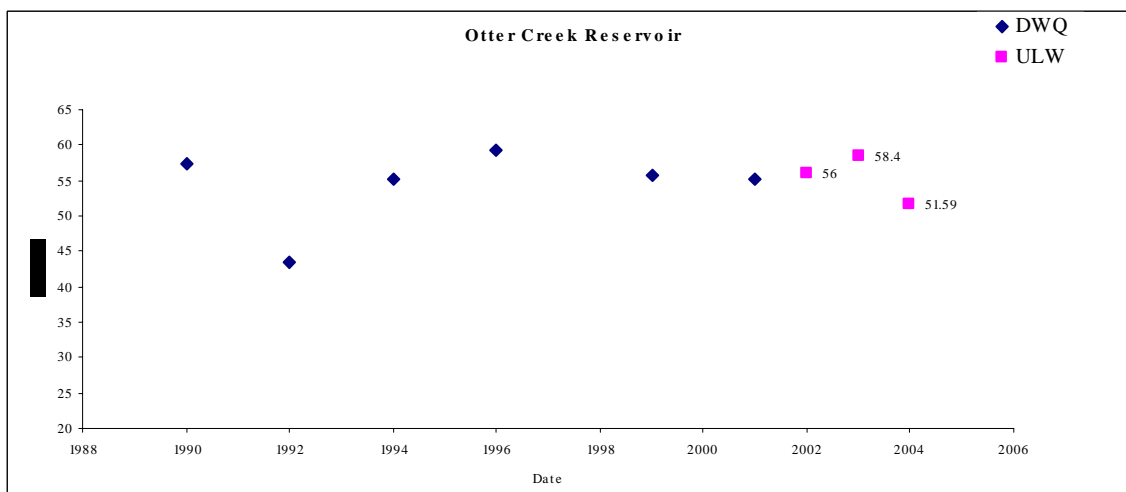
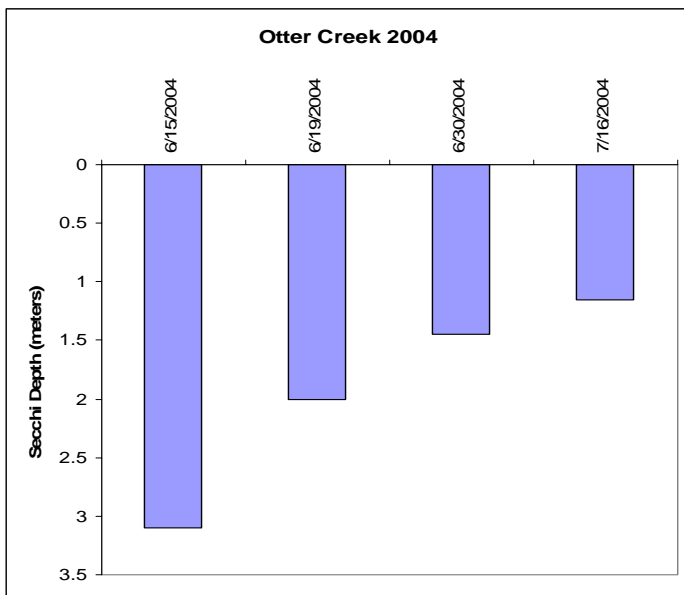
Lake Name	Date	Secchi Depth (m)	TSI based on Secchi depth
North Huntington	5/9/2004	3.12	43.60
North Huntington	5/29/2004	3.3	42.80
North Huntington	6/7/2004	3.75	40.95
North Huntington	6/17/2004	4.8	37.40
North Huntington	7/6/2004	2.8	45.16
North Huntington	7/13/2004	3	44.17
North Huntington	8/10/2004	2.25	48.31
North Huntington	9/3/2004	2.19	48.70
	Average	3.15	43.89



Otter Creek Summary Data

The average Secchi measurement in Otter Creek for 2004 was 1.93 m, increasing from 1.53 in 2003. The average TSI value was 51.59. According to data collected by the DWQ and the ULW program, TSI values have fluctuated between, 43 and 58. The trendline is steady, classifying Otter creek as eutrophic.

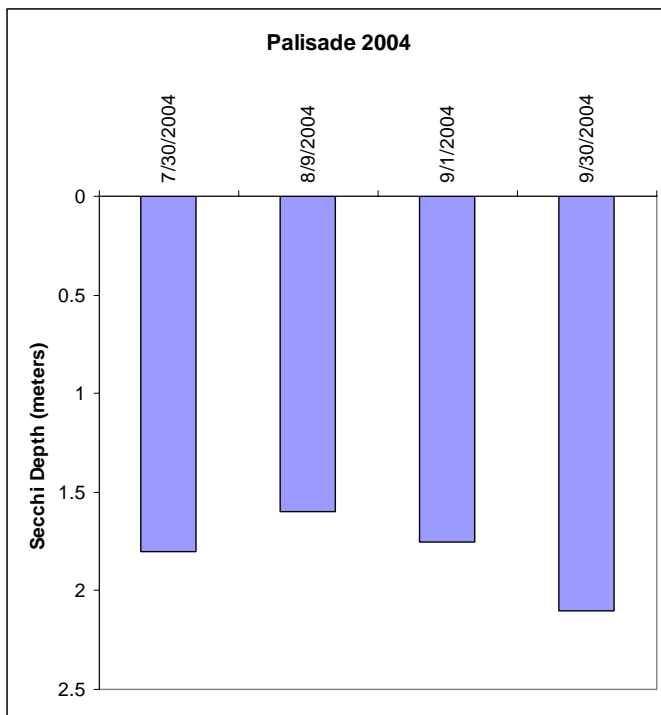
Lake Name	Date	Secchi Depth (m)	TSI based on Secchi depth
Otter Creek	6/15/2004	3.1	43.70
Otter Creek	6/19/2004	2	50.01
Otter Creek	6/30/2004	1.45	54.65
Otter Creek	7/16/2004	1.15	57.99
Otter Creek	8/21/2004	water level too low	
	Average	1.93	51.59



Palisade Summary Data

The average Secchi measurement in Palisade Reservoir for 2004 was 1.81 m. The average TSI measurement was 51.50. There are no past data available for either Secchi or TSI measurements.

Lake Name	Date	Secchi Depth (m)	TSI based on Secchi depth
Palisade	7/30/2004	1.8	51.53
Palisade	8/9/2004	1.6	53.23
Palisade	9/1/2004	1.75	51.94
Palisade	9/30/2004	2.1	49.31
	Average	1.81	51.50

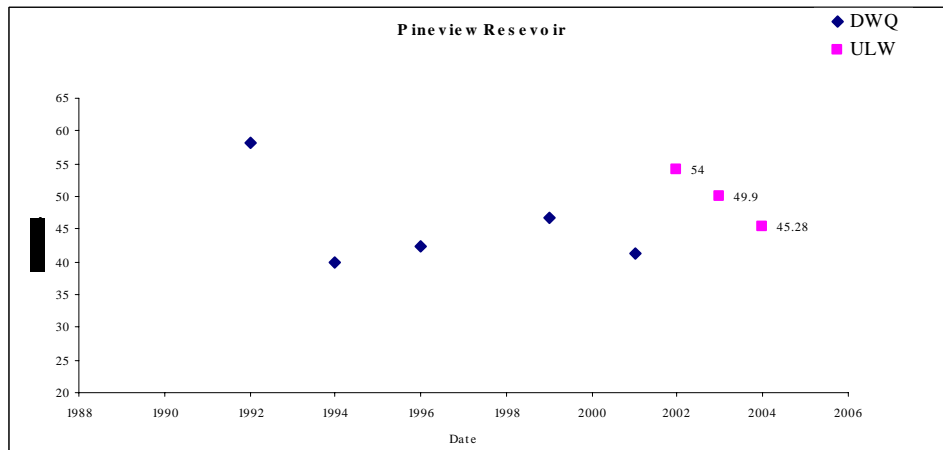
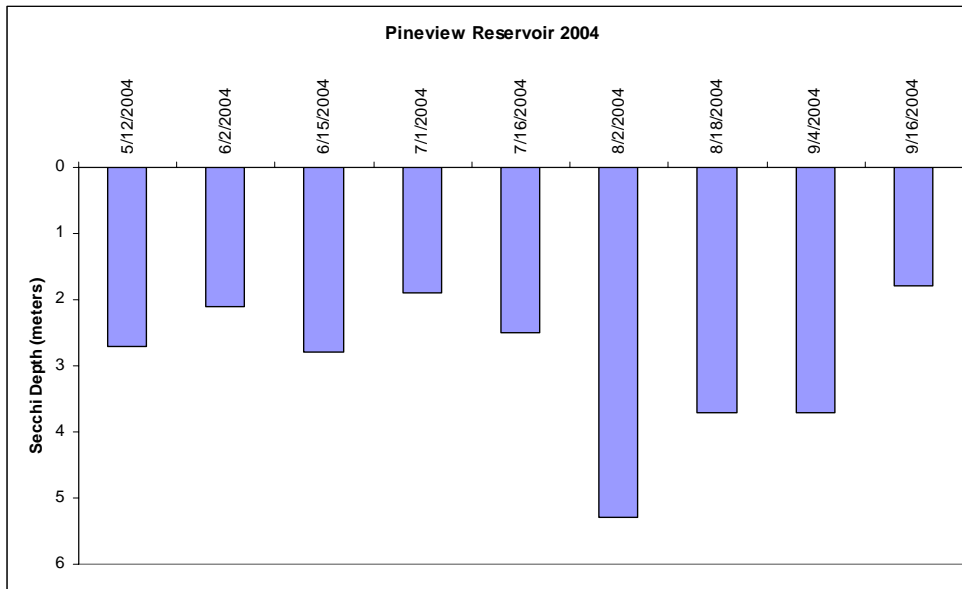


There are no previous data available for TSI.

Pineview Reservoir Summary Data

The average Secchi measurement in Pineview Reservoir for 2004 was 2.94 m, decreasing from 2.27 m in 2003. The average TSI value was 45.28. Past TSI data collected by the DWQ and the ULW program indicate a relatively steady mesotrophic trend.

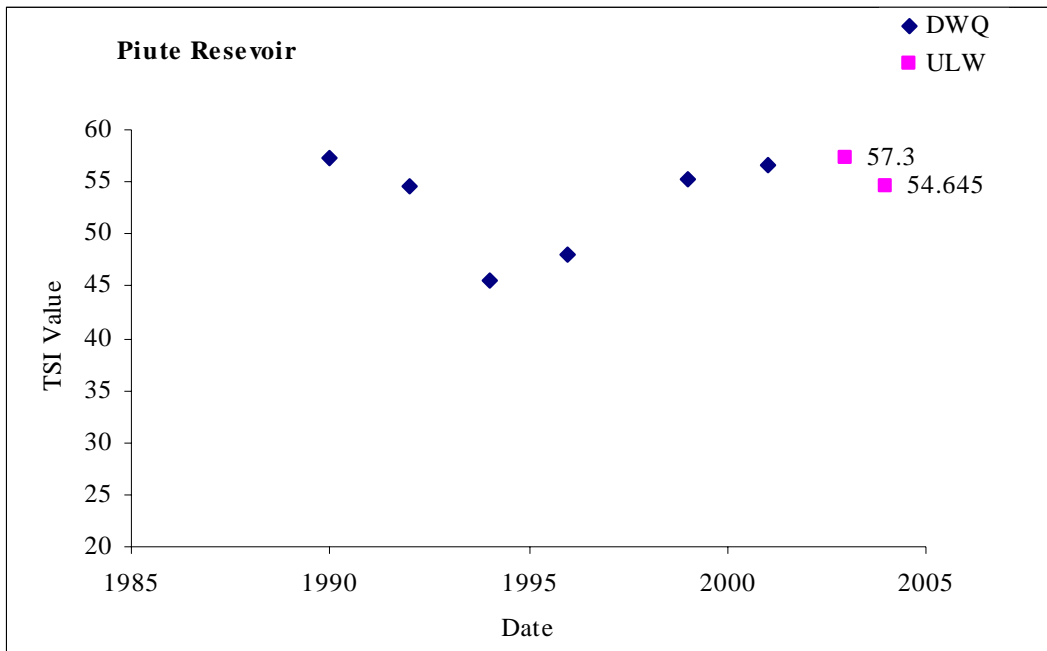
Lake Name	Date	Secchi Depth (m)	TSI based on Secchi depth
Pineview	5/12/2004	2.7	45.69
Pineview	6/2/2004	2.1	49.31
Pineview	6/15/2004	2.8	45.16
Pineview	7/1/2004	1.9	50.75
Pineview	7/16/2004	2.5	46.80
Pineview	8/2/2004	5.3	35.97
Pineview	8/18/2004	3.7	41.15
Pineview	9/4/2004	3.7	41.15
Pineview	9/16/2004	1.8	51.53
	Average	2.94	45.28



Piute Reservoir Summary Data

The average Secchi measurement in Piute Reservoir for 2004 was 1.45 m, slightly increasing from an average of 1.35 m in 2003. This may not be representative in that there was only one sample taken. The average TSI value was 54.66. Previous data collected by the DWQ and the ULW program have shown TSI values to fluctuate between 45 and 57.3. Piute Reservoir has been generally eutrophic other than a period between 1994 and 1997 where it was mesotrophic.

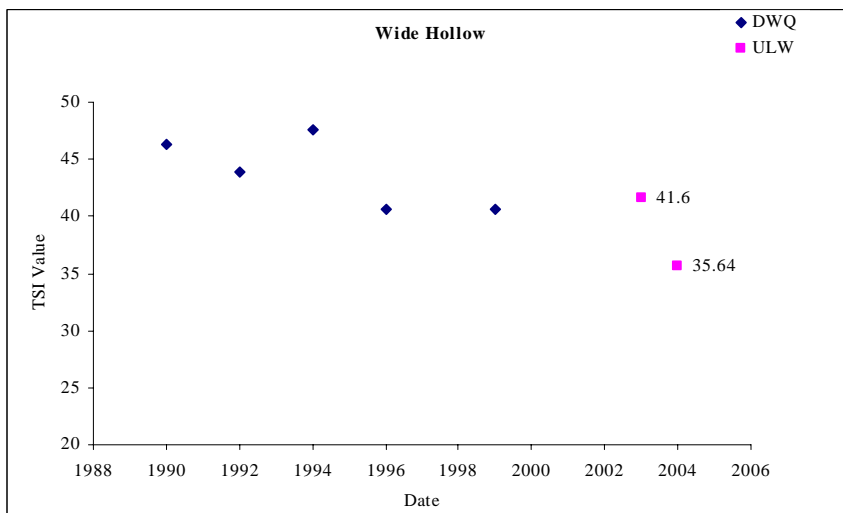
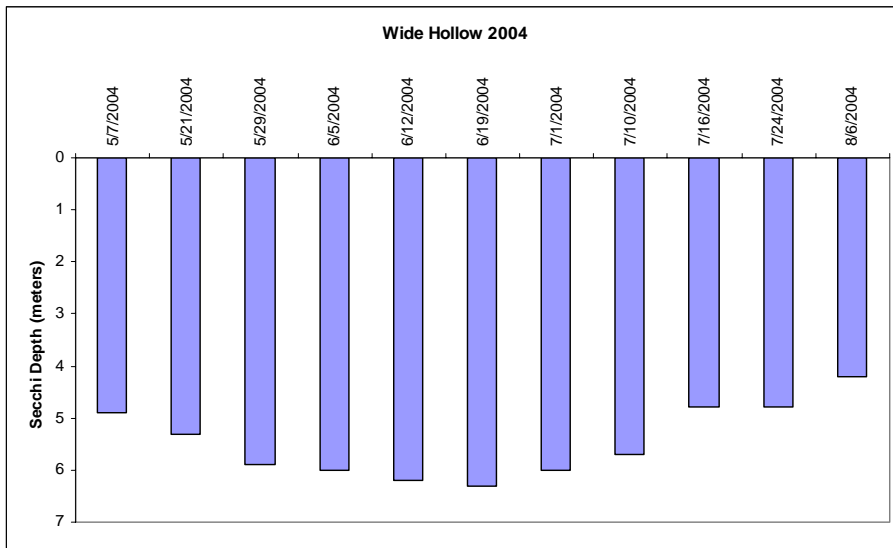
Lake Name	Date	Secchi Depth (m)	TSI based on Secchi depth
Piute	6/30/2004	1.45	54.65
	Average	1.45	54.65



Wide Hollow Reservoir Summary Data

The average Secchi measurement in Wide Hollow Reservoir for 2004 was 5.46 m, increasing from 3.63 m in 2003. The average TSI value for 2004 was 35.64. Data collected by the DWQ and the ULW program show that TSI values have fluctuated between 35.64 and 47. The trendline for these data is slightly decreasing, indicating that Wide Hollow is moving toward an oligotrophic classification.

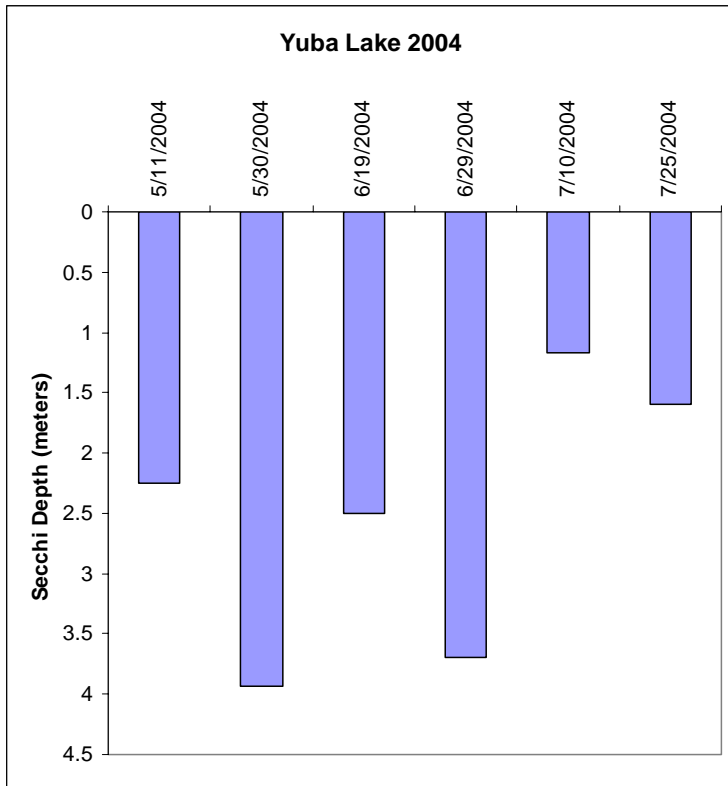
Lake Name	Date	Secchi Depth (m)	TSI based on Secchi depth
Wide Hollow	5/7/2004	4.9	37.10
Wide Hollow	5/21/2004	5.3	35.97
Wide Hollow	5/29/2004	5.9	34.42
Wide Hollow	6/5/2004	6	34.18
Wide Hollow	6/12/2004	6.2	33.71
Wide Hollow	6/19/2004	6.3	33.48
Wide Hollow	7/1/2004	6	34.18
Wide Hollow	7/10/2004	5.7	34.92
Wide Hollow	7/16/2004	4.8	37.40
Wide Hollow	7/24/2004	4.8	37.40
Wide Hollow	8/6/2004	4.2	39.32
	Average	5.46	35.64



Yuba Lake Summary Data

The average Secchi measurement in Yuba Reservoir for 2004 was 2.53 m, increasing from 0.81 m in 2003. The average TSI value for 2004 was 47.91, decreasing from 64.7 m in 2003. Currently this reservoir is classified as mesotrophic. There are no previous data for this reservoir.

Lake Name	Date	Secchi Depth (m)	TSI based on secchi depth
Yuba Lake	5/11/2004	2.25	48.31
Yuba Lake	5/30/2004	3.94	40.24
Yuba Lake	6/19/2004	2.5	46.80
Yuba Lake	6/29/2004	3.7	41.15
Yuba Lake	7/10/2004	1.17	57.74
Yuba Lake	7/25/2004	1.6	53.23
	Average	2.53	47.91



There are no past TSI data for Yuba Lake. The TSI value for 2003 was 64.7.



January 23, 2005

Dear Scott Tolentino,

Thank you for your participation in the Utah Lake Watch Program this past year. The data collected has been sent to the Division of Water Quality, and is greatly appreciated.

The measurements collected on Bear Lake produced an average Secchi depth of 5.08 meters. To compare Secchi depths from lake to lake, Secchi measurements must be converted to an indicator value called a Trophic State Index (TSI). As the TSI value decreases, the water quality increases. The average TSI at Bear Lake is currently 36.75 classifying it as oligotrophic. This means that it has low turbidity.

We greatly appreciate the time and effort you have put forth to help us make this program a success. With the efforts of volunteer monitoring and public awareness we can keep Utah's lakes beautiful.

Please take a look at the attached summary information along with the Bear Lake section from the Utah Lakes and Reservoirs report.

Feel free to call us with any questions or concerns you may have. Please ask for Nancy Mesner or Andree' Walker. We would also love to hear any suggestions for improvement of the program.

Thanks again,

USU Water Quality Extension
5210 Old Main Hill
Logan Utah, 84322-5210
(435) 797-2580

nancym@ext.usu.edu
andree@cc.usu.edu



January 23, 2005

Dear Christian Baker,

Thank you for your participation in the Utah Lake Watch Program this past year. The data collected has been sent to the Division of Water Quality, and is greatly appreciated.

The measurements collected on Causey Reservoir produced an average Secchi depth of 3.58 meters. To compare Secchi depths from lake to lake, Secchi measurements must be converted to an indicator value called a Trophic State Index (TSI). As the TSI value decreases, the water quality increases. The average TSI at Causey Reservoir is currently 42.88 classifying it as mesotrophic. This means that it has moderate turbidity.

We greatly appreciate the time and effort you have put forth to help us make this program a success. With the efforts of volunteer monitoring and public awareness we can keep Utah's lakes beautiful.

Please take a look at the attached summary information along with the Deer Creek Reservoir section from the Utah Lakes and Reservoirs report.

Feel free to call us with any questions or concerns you may have. Please ask for Nancy Mesner or Andree' Walker. We would also love to hear any suggestions for improvement of the program.

Thanks again,

USU Water Quality Extension
5210 Old Main Hill
Logan Utah, 84322-5210
(435) 797-2580

nancym@ext.usu.edu

andree@cc.usu.edu



EXTENSION
Utah State
UNIVERSITY



January 23, 2005

Dear Rick Redmon,

Thank you for your participation in the Utah Lake Watch Program this past year. The data collected has been sent to the Division of Water Quality, and is greatly appreciated.

The measurements collected on Deer Creek Reservoir produced an average Secchi depth of 3.35 meters. To compare Secchi depths from lake to lake, Secchi measurements must be converted to an indicator value called a Trophic State Index (TSI). As the TSI value decreases, the water quality increases. The average TSI at Deer Creek is currently 42.59 classifying it as mesotrophic. This means that it has moderate turbidity.

We greatly appreciate the time and effort you have put forth to help us make this program a success. With the efforts of volunteer monitoring and public awareness we can keep Utah's lakes beautiful.

Please take a look at the attached summary information along with the Deer Creek Reservoir section from the Utah Lakes and Reservoirs report.

Feel free to call us with any questions or concerns you may have. Please ask for Nancy Mesner or Andree' Walker. We would also love to hear any suggestions for improvement of the program.

Thanks again,

USU Water Quality Extension
5210 Old Main Hill
Logan Utah, 84322-5210
(435) 797-2580

nancym@ext.usu.edu

andree@cc.usu.edu



January 23, 2005

Dear Andrea Carrigan,

Thank you for your participation in the Utah Lake Watch Program this past year. The data collected has been sent to the Division of Water Quality, and is greatly appreciated.

The measurements collected on East Canyon Reservoir produced an average Secchi depth of 2.93 meters. To compare Secchi depths from lake to lake, Secchi measurements must be converted to an indicator value called a Trophic State Index (TSI). As the TSI value decreases, the water quality increases. The average TSI at East Canyon is currently 46.22 classifying it as mesotrophic. This means it has a moderate turbidity.

We greatly appreciate the time and effort you have put forth to help us make this program a success. With the efforts of volunteer monitoring and public awareness we can keep Utah's lakes beautiful.

Please take a look at the attached summary information along with the East Canyon section from the Utah Lakes and Reservoirs report.

Feel free to call us with any questions or concerns you may have. Please ask for Nancy Mesner or Andree' Walker. We would also love to hear any suggestions for improvement of the program.

Thanks again,

USU Water Quality Extension
5210 Old Main Hill
Logan Utah, 84322-5210
(435) 797-2580

nancym@ext.usu.edu
andree@cc.usu.edu



January 23, 2005

Dear Antelope Island Staff,

Thank you for your participation in the Utah Lake Watch Program this past year. The data collected has been sent to the Division of Water Quality, and is greatly appreciated.

The measurements collected on the Great Salt Lake at Farmington Bay produced an average Secchi depth of 0.74 meters. To compare Secchi depths from lake to lake, Secchi measurements must be converted to an indicator value called a Trophic State Index (TSI). As the TSI value decreases, the water quality increases. The average TSI at the Great Salt Lake is currently 65.35 classifying this site as eutrophic. This means that there is high turbidity.

We greatly appreciate the time and effort you have put forth to help us make this program a success. With the efforts of volunteer monitoring and public awareness we can keep Utah's lakes beautiful.

Please take a look at the attached summary information.

Feel free to call us with any questions or concerns you may have. Please ask for Nancy Mesner or Andree' Walker. We would also love to hear any suggestions for improvement of the program.

Thanks again,

USU Water Quality Extension
5210 Old Main Hill
Logan Utah, 84322-5210
(435) 797-2580

nancym@ext.usu.edu

andree@cc.usu.edu



January 23, 2005

Dear Antelope Island Staff,

Thank you for your participation in the Utah Lake Watch Program this past year. The data collected has been sent to the Division of Water Quality, and is greatly appreciated.

The measurements collected on the Great Salt Lake produced an average Secchi depth of 1.21 meters. To compare Secchi depths from lake to lake, Secchi measurements must be converted to an indicator value called a Trophic State Index (TSI). As the TSI value decreases, the water quality increases. The average TSI at the Great Salt Lake is currently 57.69 classifying this area as eutrophic. This means that there is high turbidity.

We greatly appreciate the time and effort you have put forth to help us make this program a success. With the efforts of volunteer monitoring and public awareness we can keep Utah's lakes beautiful.

Please take a look at the attached summary information.

Feel free to call us with any questions or concerns you may have. Please ask for Nancy Mesner or Andree' Walker. We would also love to hear any suggestions for improvement of the program.

Thanks again,

USU Water Quality Extension
5210 Old Main Hill
Logan Utah, 84322-5210
(435) 797-2580

nancym@ext.usu.edu

andree@cc.usu.edu



January 23, 2005

Dear Tom Menaham,

Thank you for your participation in the Utah Lake Watch Program this past year. The data collected has been sent to the Division of Water Quality, and is greatly appreciated.

The measurements collected on Jordanelle Reservoir produced an average Secchi depth of 3.2 meters. To compare Secchi depths from lake to lake, Secchi measurements must be converted to an indicator value called a Trophic State Index (TSI). As the TSI value decreases, the water quality increases. The average TSI at Jordanelle is currently 43.24 classifying it as mesotrophic. This means that it has a moderate turbidity level.

We greatly appreciate the time and effort you have put forth to help us make this program a success. With the efforts of volunteer monitoring and public awareness we can keep Utah's lakes beautiful.

Please take a look at the attached summary information along with the Jordanelle Reservoir section from the Utah Lakes and Reservoirs report.

Feel free to call us with any questions or concerns you may have. Please ask for Nancy Mesner or Andree' Walker. We would also love to hear any suggestions for improvement of the program.

Thanks again,

USU Water Quality Extension
5210 Old Main Hill
Logan Utah, 84322-5210
(435) 797-2580

nancym@ext.usu.edu

andree@cc.usu.edu



January 23, 2005

Dear Dan Richards,

Thank you for your participation in the Utah Lake Watch Program this past year. The data collected has been sent to the Division of Water Quality, and is greatly appreciated.

The measurements collected on North Huntington reservoir produced an average Secchi depth of 3.15 meters. To compare Secchi depths from lake to lake, Secchi measurements must be converted to an indicator value called a Trophic State Index (TSI). As the TSI value decreases, the water quality increases. The average TSI at North Huntington is currently 43.89 classifying it as mesotrophic. This means that there is moderate turbidity.

We greatly appreciate the time and effort you have put forth to help us make this program a success. With the efforts of volunteer monitoring and public awareness we can keep Utah's lakes beautiful.

Please take a look at the attached summary information and the North Huntington section from the Utah Lakes and Reservoirs report.

Feel free to call us with any questions or concerns you may have. Please ask for Nancy Mesner or Andree' Walker. We would also love to hear any suggestions for improvement of the program.

Thanks again,

USU Water Quality Extension
5210 Old Main Hill
Logan Utah, 84322-5210
(435) 797-2580

nancym@ext.usu.edu
andree@cc.usu.edu



January 23, 2005

Dear John Russell,

Thank you for your participation in the Utah Lake Watch Program this past year. The data collected has been sent to the Division of Water Quality, and is greatly appreciated.

The measurements collected on Otter Creek produced an average Secchi depth of 1.93 meters. To compare Secchi depths from lake to lake, Secchi measurements must be converted to an indicator value called a Trophic State Index (TSI). As the TSI value decreases, the water quality increases. The average TSI at Otter Creek is currently 51.59 classifying it as eutrophic. This means that there is high turbidity.

We greatly appreciate the time and effort you have put forth to help us make this program a success. With the efforts of volunteer monitoring and public awareness we can keep Utah's lakes beautiful.

Please take a look at the attached summary information along with the Otter Creek section from the Utah Lakes and Reservoirs report.

Feel free to call us with any questions or concerns you may have. Please ask for Nancy Mesner or Andree' Walker. We would also love to hear any suggestions for improvement of the program.

Thanks again,

USU Water Quality Extension
5210 Old Main Hill
Logan Utah, 84322-5210
(435) 797-2580

nancym@ext.usu.edu

andree@cc.usu.edu



January 23, 2005

Dear Wayne Monroe,

Thank you for your participation in the Utah Lake Watch Program this past year. The data collected has been sent to the Division of Water Quality, and is greatly appreciated.

The measurements collected on Palisade Reservoir produced an average Secchi depth of 1.81 meters. To compare Secchi depths from lake to lake, Secchi measurements must be converted to an indicator value called a Trophic State Index (TSI). As the TSI value decreases, the water quality increases. The average TSI at Palisade is currently 51.50 classifying it as eutrophic. This means that there is high turbidity.

We greatly appreciate the time and effort you have put forth to help us make this program a success. With the efforts of volunteer monitoring and public awareness we can keep Utah's lakes beautiful.

Please take a look at the attached summary information along with the Palisade section from the Utah Lakes and Reservoirs report.

Feel free to call us with any questions or concerns you may have. Please ask for Nancy Mesner or Andree' Walker. We would also love to hear any suggestions for improvement of the program.

Thanks again,

USU Water Quality Extension
5210 Old Main Hill
Logan Utah, 84322-5210
(435) 797-2580

nancym@ext.usu.edu
andree@cc.usu.edu



January 23, 2005

Dear Keith Rounkles,

Thank you for your participation in the Utah Lake Watch Program this past year. The data collected has been sent to the Division of Water Quality, and is greatly appreciated.

The measurements collected on Pineview Reservoir produced an average Secchi depth of 2.94 meters. To compare Secchi depths from lake to lake, Secchi measurements must be converted to an indicator value called a Trophic State Index (TSI). As the TSI value decreases, the water quality increases. The average TSI at Pineview is currently 45.28 classifying it as mesotrophic. This means that there is moderate turbidity.

We greatly appreciate the time and effort you have put forth to help us make this program a success. With the efforts of volunteer monitoring and public awareness we can keep Utah's lakes beautiful.

Please take a look at the attached summary information along with the Pineview Reservoir section from the Utah Lakes and Reservoirs report.

Feel free to call us with any questions or concerns you may have. Please ask for Nancy Mesner or Andree' Walker. We would also love to hear any suggestions for improvement of the program.

Thanks again,

USU Water Quality Extension
5210 Old Main Hill
Logan Utah, 84322-5210
(435) 797-2580

nancym@ext.usu.edu
andree@cc.usu.edu



January 23, 2005

Dear John Russell,

Thank you for your participation in the Utah Lake Watch Program this past year. The data collected has been sent to the Division of Water Quality, and is greatly appreciated.

The measurements collected on Piute Reservoir produced an average Secchi depth of 1.45 meters. To compare Secchi depths from lake to lake, Secchi measurements must be converted to an indicator value called a Trophic State Index (TSI). As the TSI value decreases, the water quality increases. The average TSI at Piute is currently 54.65 classifying it as eutrophic. This means that there is high turbidity.

We greatly appreciate the time and effort you have put forth to help us make this program a success. With the efforts of volunteer monitoring and public awareness we can keep Utah's lakes beautiful.

Please take a look at the attached summary information along with the Piute Reservoir section from the Utah Lakes and Reservoirs report.

Feel free to call us with any questions or concerns you may have. Please ask for Nancy Mesner or Andree' Walker. We would also love to hear any suggestions for improvement of the program.

Thanks again,

USU Water Quality Extension
5210 Old Main Hill
Logan Utah, 84322-5210
(435) 797-2580

nancym@ext.usu.edu

andree@cc.usu.edu



January 23, 2005

Dear Kendall Farnsworth,

Thank you for your participation in the Utah Lake Watch Program this past year. The data collected has been sent to the Division of Water Quality, and is greatly appreciated.

The measurements collected on Wide Hollow Reservoir produced an average Secchi depth of 5.46 meters. To compare Secchi depths from lake to lake, Secchi measurements must be converted to an indicator value called a Trophic State Index (TSI). As the TSI value decreases, the water quality increases. The average TSI at Wide Hollow is currently 35.64 classifying it as oligotrophic. This means that there is low turbidity.

We greatly appreciate the time and effort you have put forth to help us make this program a success. With the efforts of volunteer monitoring and public awareness we can keep Utah's lakes beautiful.

Please take a look at the attached summary information along with the Wide Hollow Reservoir section from the Utah Lakes and Reservoirs report.

Feel free to call us with any questions or concerns you may have. Please ask for Nancy Mesner or Andree' Walker. We would also love to hear any suggestions for improvement of the program.

Thanks again,

USU Water Quality Extension
5210 Old Main Hill
Logan Utah, 84322-5210
(435) 797-2580

nancym@ext.usu.edu

andree@cc.usu.edu



January 23, 2005

Dear Chris Evans,

Thank you for your participation in the Utah Lake Watch Program this past year. The data collected has been sent to the Division of Water Quality, and is greatly appreciated.

The measurements collected on Yuba Lake produced an average Secchi depth of 2.53 meters. To compare Secchi depths from lake to lake, Secchi measurements must be converted to an indicator value called a Trophic State Index (TSI). As the TSI value decreases, the water quality increases. The average TSI at Yuba Lake is currently 47.91 classifying it as mesotrophic. This means that there is moderate turbidity.

We greatly appreciate the time and effort you have put forth to help us make this program a success. With the efforts of volunteer monitoring and public awareness we can keep Utah's lakes beautiful.

Please take a look at the attached summary information.

Feel free to call us with any questions or concerns you may have. Please ask for Nancy Mesner or Andree' Walker. We would also love to hear any suggestions for improvement of the program.

Thanks again,

USU Water Quality Extension
5210 Old Main Hill
Logan Utah, 84322-5210
(435) 797-2580

nancym@ext.usu.edu
andree@cc.usu.edu

Appendix A – Classification of TSI (Carlson 1977)

Classification	Definition	TSI Index
Oligotrophic	A water body having low turbidity and abundant dissolved oxygen.	<40
Mesotrophic	A water body having moderate turbidity and moderate dissolved oxygen.	40-50
Eutrophic	A water body having high turbidity and low amounts of dissolved oxygen.	50-70
Hypereutrophic	A water body that is extremely turbid and exceptionally low in dissolved oxygen.	>70

References:

Carlson, R.E. 1977. A trophic state index for lakes. *Limnology and Oceanography*. 22:361-8.