

# Watershed Views



Newsletter of the Kezar Lake Watershed Association

## NEW YEAR'S GREETINGS TO MEMBERS AND FRIENDS OF THE KEZAR LAKE WATERSHED ASSOCIATION

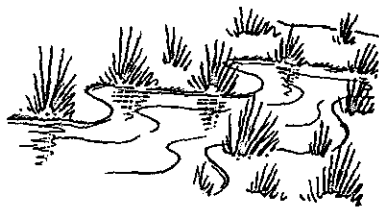
February, 2005

**S**o far, this winter has been a pretty normal one for Maine in contrast to recent years. It has been customarily cold (that is, frigid!!) with several snowfalls of 8" to 12" and two blizzards, each dumping about 18" to 24", but nothing particularly newsworthy like what areas to our south and west have endured.

Of course, the most exciting event that has kept New England temperatures up this winter has been watching the Patriots win the Super Bowl. Between the Red Sox winning the World Series and the Patriots' Super Bowl victory, New England is indeed basking in heart-warming glory!!

### INVASIVE SPECIES UPDATE

**L**ast summer KLWA members, local residents and staff from Quisisana continued the active campaign to prevent the introduction of invasive species into the lake, the eight ponds and to control the milfoil weed in Cushman Pond. Thanks to the generous \$50,000 approved by Lovell voters and funds donated by KLWA members for the widespread signage project in 2002, no additional funding was needed in 2003 and 2004, but funds have now run low so additional funds will be requested at 2005 town meeting.



Katrina Soucy continues to coordinate boat checks at the public landings, to promote invasive species education through library and school programs, and to work with the Volunteer Lake Monitoring Program (VLMP) of Auburn to schedule weed identification programs for adults. She reports that

**no plants were found on boats or trailers all summer** which means that boaters are now well aware of the need for boat checks and support the effort. Tournament fishermen followed their own strict boat check procedures and fully cooperated.

Thanks to a new program, "Adopt the Lake Day" initiated by Larry Hall of Quisisana, homeowner associations around the lake were asked to "adopt" a particular day or weekend for their members to check boats. As a result, boat checks increased from 804 in 2003 to 1,300 in 2004. This has to be a statewide record!! In addition to the increase in boat checks, Scott Williams and his staff from VLMP surveyed the entire lake and ponds and found no signs of invasives. This, of course, is good news, but the fight must go on to keep invasives out of the Kezar Lake Watershed!!

Our thanks to all who participated in the boat inspection project last summer. About 25 KLWA members and local residents and 14 Quisisana staff helped in 2003. 54 individuals and 13 Quisi staff volunteered in 2004 which shows an encouraging increase in concern about the invasive plant threat. Listed below are those who took part in 2004. Please accept apologies for any names inadvertently left off the list.

### KLWA MEMBERS & LOCAL RESIDENTS

Ainger, Jim  
Atwood, John & Esther  
Belleveau, Lyn  
Blanchard, Mary Louise & Merc  
Bliss, Pam  
Brown, Nancy  
Buckingham, Harold & Joyce  
Clout, Ed  
Crowe, John  
Dattelbaum, Charlie  
Duggan, Art

Feld, Andy  
Fleming, Peter & Cary  
Fowlie, Donna  
Gallagher, Hugh  
Gallie, Bud  
Gleason, Jane  
Hudson, Anne  
Hutchinson, Ford  
Knaver, Wendy  
Krauser, Walt & Gibb  
Lee, Norman & Charlotte

Lynch, Ann  
Mills, David  
Mitchell, Fred & Ruth  
Morine, Ruth  
Morgan, Tom & Luanna  
Mosher, Bobbie & Charlie  
Nichols, Bill  
Patterson, Bob  
Rosenberg, Fred  
Ryan, Don  
Sayles, Bill

Sheffield, Janet  
Stearns, Al  
Stearns, Dean  
Steller, Ben  
Sumbler, Art  
Tagliamonte, Bob & Mary  
Tupaj, Stan  
Turner, Norma  
Voigt, Herm  
Westerberg, George  
Williams, Bob & Ann

### QUISISANA STAFF

Abatelli, Mart  
Barbin, Derek  
Dannenberg, Beth  
Dunn, Megan  
German, Carrie  
Gouss, Alec  
Miller, Chris

Neff, Tracy  
Norton, Jamie  
Plunkett, James  
Silver, Becca  
Smith, Eileen  
Valone, Joe

### MEMBERS OF THE LOVELL INVASIVE PLANT PROTECTION COMMITTEE

Feld, Andy  
Gallie, Bud, co-chair  
Grzyb, Walt  
Hall, Larry  
Irish, Joan  
McAllister, Ron  
Mills, Dave

Nelson, Gerry, co-chair  
Nista, Ed  
Scala, George  
Soucy, Katrina  
Stearns, Dean  
Turner, Tripp  
Voigt, Herm

### CUSHMAN POND UPDATE



Gerry Nelson (left), Doug Faille (right)

About ten years ago as Gerry & Meg Nelson were canoeing on Cushman Pond, they discovered an extensive weed growth, later identified as milfoil.

Since then, a remarkable all-volunteer control effort has been undertaken by Cushman Pond residents after an experimental herbicide application failed to resolve the problem. Five times a year, for the past seven years, property owners and supporters have conducted a thorough and methodical screening of the littoral area of the pond to locate, remove and document every plant they encounter.



## Kezar Lake Water Quality Report 2004

Scott Williams, Aquatic Biologist



Those of us who spent time outdoors last summer have an enduring image in our memories of gray, drizzly weather! On the average, the summer of 2004 was quite wet, with frequent showers and extended periods of overcast skies. This was in sharp contrast to the previous three summers, beginning with the severe drought in 2001 that continued into 2002. Much of Maine was still experiencing unusually dry conditions in 2003.

Lakes and ponds are strongly influenced by the weather. And indicators of lake water quality are susceptible to the effects of precipitation, wind, sunlight intensity, temperature and other factors. So when an extended period of dry weather occurs, one might anticipate an interesting lake response. The weather is one of the natural forces that complicates our ability to detect changes in lake water quality. Changes in the weather from one year to the next are a major source of "natural variability" in lake ecosystems.



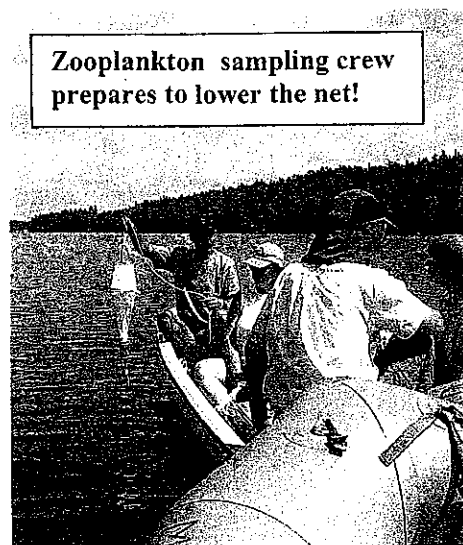
Kezar Lake is an exceptionally clear and clean body of water by anyone's standard. Water clarity is an important indicator of lake water quality. Clarity is defined as the distance that one can see down into the water, using an instrument known as a "Secchi disk". Compared to other Maine lakes, the water in Kezar is about 6 feet clearer, and that is a impressive, indeed! This figure is based on the long-term historical average for the North Bay area of the lake, compared to the average for all Maine lakes for which we have water clarity data. The historical average water clarity for the North Bay is 7.6 meters (about 25 feet).

Since 2001, Kezar has been getting even clearer! For the past four summers, including 2004, the water in the North Bay area of the lake has been substantially clearer than it has been in the past. The historical water clarity average for Kezar in 2004 was 9.24 meters (about 30 feet). During this period, Kezar has been as much as 12-14 feet clearer than the average for Maine lakes!

The South Bay area of Kezar is somewhat more difficult to assess because it is relatively shallow. Water clarity is measured in the south basin, but the readings are nearly always limited by the depth of the water. The concentration of algae in the South Bay area in 2004 was lower than the historical average for that area of the lake, suggesting that if the water was deeper, it would indeed have been very clear. It is interesting to note that the concentration of phosphorus in the water in the South Bay was lower than average, whereas phosphorus levels in the North Bay area remained at historical levels. The North Bay area (which functionally includes what is called "Middle Bay") behaves in many ways as a separate (but obviously hydrologically connected) lake system from South Bay. This is largely due to the fact that North Bay is much deeper than South Bay, the implications of which are profound, in terms of the physical, chemical and biological interactions within the two areas. One reason for the difference between the two is that it takes more than a year for all of the water in North and Middle Bays to be "flushed" or naturally replenished by surface and groundwater in a typical year. South Bay, on the other hand, flushes nearly 15 times every year! This dramatic difference is influenced primarily by the water depth of the two basins, and the land area of the watershed that drains to them.

Another striking feature of the quality of Kezar Lake is the fact that levels of dissolved oxygen in the deepest areas of the lake remain high throughout the summer months, when oxygen levels in many nearby lakes and ponds have dropped to very low concentrations. This particular feature is key to the ability of Kezar Lake to sustain a healthy coldwater fishery. Oxygen levels in 2004 were similar to healthy historical levels throughout the lake.

During the summer of 2004, KLWA participated in a regional project that involved collecting samples of the microscopic animal life in Kezar Lake. Three times during summer samples were taken in both North and South Bays. The purpose of the project was to determine the composition and abundance of a community of tiny creatures that are collectively referred to as "zooplankton". "Zoops" are a fundamental component of the lake's food chain/web. Information about the zooplankton communities in Kezar Lake is very limited. It is hoped that the findings of this program, which will continue through 2005, will broaden our understanding of the lake, particularly with respect to the composition of the fishery.



KLWA has monitored the quality of Kezar Lake for more than thirty years! This outstanding commitment to understanding and protecting such an exceptional natural resource is more important than ever, as development pressures increase throughout the greater watershed. The future quality of Kezar Lake will be directly proportional to investments made today to insure clear, clean water for years to come.

**NEW KLWA BOAT !!**

Last summer when Paul Sirois, our lake patrol officer, had to cope time and time again with numerous mechanical problems with the patrol boat, the Trustees decided that after 12 years of extremely hard wear and tear, the boat needed to be replaced. This winter, after extensively researching used and new boats, we will be purchasing a new Boston Whaler working model designed specifically for lake patrol and law enforcement which will be delivered in the spring.

The boat is a 16 ft. center console Guardian, 115 hp Mercury motor and trailer with the weight, speed and all the features to make Paul's work easier and more efficient. If you wish, please check it out on the web at Boston Whaler.com, Brunswick Commercial Government Products, Law Enforcement, 16' Guardian.

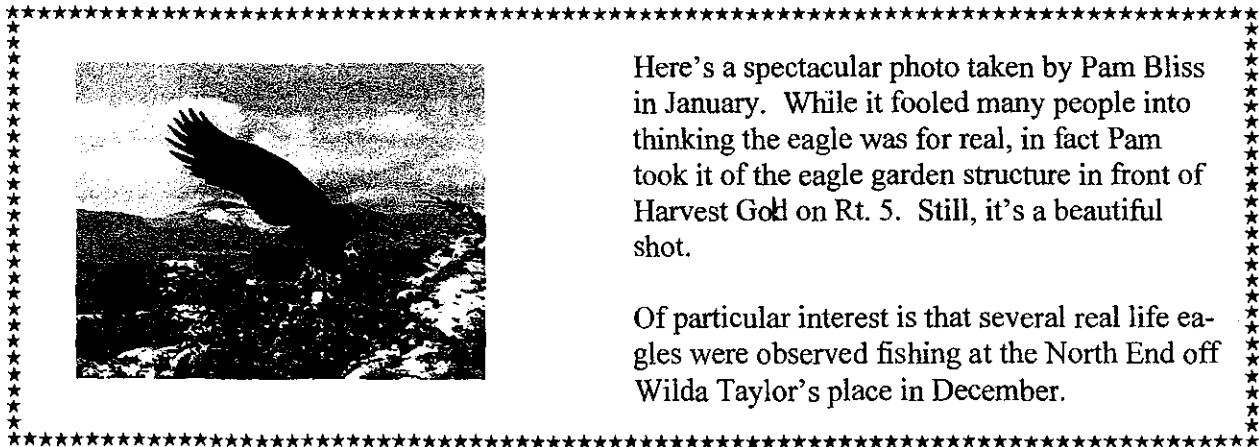
Finding a boat to fit Paul's needs at as reasonable a price as possible, has taken a great deal of time and negotiations, particularly on the part of David Conary at the Kezar Lake Marina. We owe him a big vote of thanks for the enormous amount of time he's spent contacting and negotiating with the Big Wheels at Boston Whaler in Florida to make this boat purchase a reality. In addition, Lee Conary and Paul have been consulted on this from the beginning. Not only is David **not** making a profit on this acquisition, but he has donated a generous sum toward the purchase cost.

Funding for this purchase has been sparked by contributions to KLWA in memory of Mike Miller, our former long-time vice president, who died in January, 2004. Mike was well-known in the community, an ardent lover of Kezar Lake and a valued associate in several local organizations. Without a doubt, Mike would be pleased to have his memorials used for this purpose. In addition, substantial funding was gratefully received from the recent KLWA/GLLT fundraising campaign as well as several donations earmarked for the boat. These sources will cover the major purchase cost. We thank all who have contributed to either or both of these funding efforts.



Another big vote of thanks belongs to Stephen and Tabitha King for allowing Paul and Betty to spend last summer at their campground and to continue to allow them to stay there this summer. This turned out to be a big plus for both the Kings and KLWA as Paul was right on the spot for boating problems or emergencies and was able to help protect the King's property from vandalism or trespassers.

To say this is a **big relief** is to put it mildly. Now that KLWA has a more powerful, efficient boat, it can continue to be the envy of every other lake association in Maine with its local lake patrol and boating safety project!!



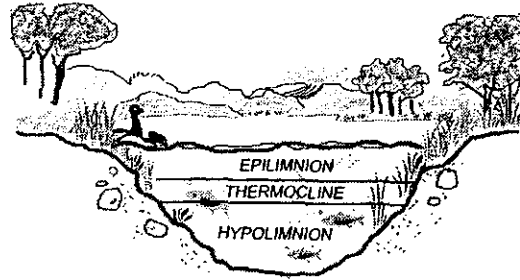
Here's a spectacular photo taken by Pam Bliss in January. While it fooled many people into thinking the eagle was for real, in fact Pam took it of the eagle garden structure in front of Harvest Gold on Rt. 5. Still, it's a beautiful shot.

Of particular interest is that several real life eagles were observed fishing at the North End off Wilda Taylor's place in December.

# LAKE LINGO

## Thermal Stratification

This complex-sounding term can be defined simply as the tendency of lakes and ponds to develop temperature "layers." When thermal stratification occurs during the spring, summer and early fall months, the warmest water layer, the epilimnion, is situated at the surface. It may be several feet to several meters in depth, depending on the time of season and the weather. The temperature in the epilimnion is somewhat uniform. Beneath this layer is an area of transition, the thermocline, in which the water temperature typically drops quickly over a vertical distance of 10-15 feet. Beneath the transition zone is the hypolimnion, the coldest region of the water column, in which the water temperature once again becomes more stable. When the water surface is covered with ice, reverse stratification can occur, in which the coldest water temperatures are near the surface. The reversal can be explained in terms of density. Cold water is more dense (and therefore heavier) than warm water until it reaches 4°C, at which time molecules start to form a crystal structure and spread out becoming less dense.



*Temperature layers in a lake can have a profound influence on lake dynamics and water quality.*

The phenomenon of thermal stratification has a profound influence on lake ecology and water quality. Most of the physical, chemical and biological processes in lakes and ponds are influenced in some manner by stratification. Deeper lakes are subject to stronger, longer-lasting stratification than shallow ponds. In between summer and winter stratification periods, most lakes mix - also known as "turnover," when the water temperature is somewhat uniform throughout the water column. Maine lakes generally experience some degree of thermal stratification between the months of May and October, depending on the depth of the individual water body, the air temperature and other weather influences.

Courtesy Volunteer Lakes Volunteer Monitoring Program, 2004 Newsletter

### ODDS AND ENDS

**Gift Shops:** As you've probably heard by now, both Pam Bliss of Yankee Ingenuity and Muffie Alling of the Kezar Lake Handcrafts have closed their gift shops for good. It appears that Pam's shop will be used by her next-door neighbor for antique sales and Muffie's place has been rented for business purposes by a Sevrance Lodge resident. This is indeed sad news for the many people who have enjoyed browsing in the shops in search of first-rate gifts, Christmas presents, clothing articles and household amenities. This is a sad change for the town of Lovell!

**Summer Meetings:** Please mark your calendars for the KLWA annual meeting on Saturday, July 9th at the Town Hall and our August meeting on Saturday, Aug 13th at the Suncook School.

**Lovell Historical Society's 6th Annual Antiques Show & Sale:** Sunday, July 10th at the Kimball-Stanford House, Rt. 5 from 9:30 a.m. to 3:30 p.m. Admission is \$3.00. A certified appraiser will give free appraisals of up to three items brought in by customers. Food and beverages will be available for purchase as well as raffle tickets for several fine antiques.

**2004 Loon Count:** Last summer 25 adults and 3 chicks were recorded on Kezar for the Annual Loon Count on July 17th. This is above average for adults and about normal for chicks. It's fun for those who participate and we thank them all.

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On behalf of all the Trustees, I extend our good wishes for an enjoyable winter and an early spring and summer.

Cordially,  
*Joan Irish*  
 Joan Irish, President

