



Number 14

Fall 2006

From the Director's Desk, Fall 2006

Dear Alumni and Friends of the CFL:

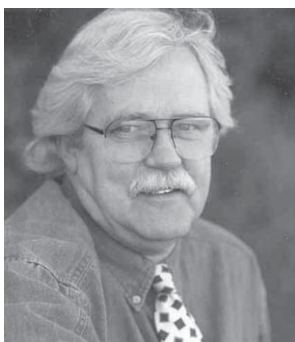
It's time for our annual update, and I am pleased to start this by saying that we continue to grow and flourish.

There are two major sections of this newsletter. First, there is a featured article by Dave Balsiger, known to us locally as the resident oral historian, poet, muse and on occasion, performing musician. Dave offers a suite of reminiscences that start in the '60's and take us to the present. Many of you will recognize the people and situations he describes. I think that John Magnuson and I are the only ones here who know all or most of those identified. We certify that Dave's renditions of events are relatively accurate. This is not to say that they lack some creative interpretation...

The other major feature of this edition focuses on an event we had been working toward for several years. Early in May 2006, we changed the name of our home-base facility, formally dedicating it the Arthur D. Hasler Laboratory of Limnology. Many months of preparation and a day of celebratory activities surrounded it. As represented in the pictures, Chancellor John Wiley and Dean Gary Sandefur joined us for a christening and ribbon-cutting ceremony where Hathaway Hasler and Sylvia Thatcher (Art's daughter) formally cut the ribbon on our new sign. The dedication event was followed by a reception including brief presentations of our Past (John Magnuson), Present (Jim Kitchell) and Future (Steve Carpenter). About 200 people attended, among them were at least 51 members of the Hasler family representing three generations. Also in attendance on the buffet table were two large, smoked salmon with cotton stuffed in their noses. Most of us recognized the symbolism. For me, the high point of the event was storytelling by Art's children and their spouses. I'm sure he would have enjoyed the entire event, especially that part.

Other sections of this newsletter offer overviews of some of our projects and events. Included is a major local project focusing on the possible effects of carp removal from Lake Wingra--a program emphasizing leadership by Dick Lathrop and a partnership of WDNR, CFL and the local community. Tim Kratz also offers a brief update on GLEON, the Global Lake Ecological Observatory Network. Our newsletter in 2004 featured the collaboration with Taiwanese scientists at the beginning of this endeavor. It has now grown to 11 sites and is distributed across 10 countries. In addition, we are pleased to report on recent awards received by our people at the CFL, and the "Graduations and Migrations" section provides information on our alumni as they move onto new destinations.

As I said at the beginning, it has been a great year. The pages that follow offer some of the highlights.



Sincerely,

A handwritten signature in black ink that reads 'Jim'.

Jim Kitchell
Director, Center for Limnology
Hasler Professor of Zoology

Forty Years Before the Mast

By Dave Balsiger

*The legend lives on from Chipman on down
Of the big lake they call Mendota*

In the spring of 1966, I started at the Lake Lab as a student hourly. First working for grad student Nick Lenz in what now is the River Lab, by summer I moved up, (actually down), to work in the shop with Frank Eustice, and also out onto the lake to do field work for grad students Clyde Voigtlander, Gary Hergenrader and others. I stayed on at the Lab, fulltime in summers and part time during semesters, until I left for the US Navy in 1968. Three years later, I was back at the lab while a master's student in Computer Science, and I stayed on in various roles until I drifted away sometime around 1977. In 2000, I came back to the Lab as data manager. There are others still here who have more continuous years, but I was here when both John Magnuson and Jim Kitchell arrived. Looking back on my time at the Lab, I present here some anecdotes and memories of the Lab.

Frank Eustice and Life in the Pit

*Every morning at the Lab, you would see him arrive.
He stood six-foot-two and weighed two-twenty-five*

Frank ran the shop until he retired in 1974. His job title was Mechanician which was some combination of mechanic, machinist and magician. There was nothing Frank could not fix or cobble together using just spare parts, imagination and his fine touch on the old lathe. Once, Frank and I had to quickly fashion a remote-controlled fish feeder for a project in Hawaii for Andy Dizon et al. From the chassis of an old washing machine, the lid from a large drum, three dozen hinges, three dozen plastic forks, and various indexers, solenoids, wires, and a pistol grip trigger, we manufactured a device that would flip small pieces of fish, resting in water on the drum lid so they wouldn't dry out, some 12 feet through the air into a large pool to reward tuna for swimming in the right direction. We built it in 3 days, tested it by consecutively flipping 15 small pieces of plywood into a garbage can across the shop. We shipped it off, and it worked perfectly (of course).

The Limnos arrived during those years and Frank used all his skills to make it the useful boat it has become. We also overhauled the Bat Jeep--an original, navy grey 1941 military Jeep. It had no roof, no seat belts, no doors, just charisma and a 3-on-the-floor. It was suggested that it was a difficult vehicle to drive as it usually took both Bill Niedermeier and me to run any errand in the Bat Jeep. More than once, well-intentioned but foolhardy grad students dropped the Bat Jeep through the ice into Lake Mendota. These days, Jim Kitchell will reward us at the Union Terrace if we keep the summer vehicle damage to a low level. I don't recall this happening in earlier times. Maybe because of that Jeep-sinking thing.

Frank, I am happy to report, is still thriving. He celebrated his 94th birthday on September 21 of this year. He is still driving across the state to help out his kids and visit his grandchildren.

After Frank retired, Glen Lee took over the shop, boats, motors, and the vehicles. He got a better lathe and a new welder

*Dave Balsiger (L) and Frank Eustice work
outside of the Lake Mendota Lab slip area, circa 1972*



(“Strike an arc and hold it. It’s not that hard, Bals.”) and was equally as adept and clever at keeping us running true.

Orientation project

*They will take their futile samples when they anchor above Deep Hole
While the ghosts of Birge and Hasler whisper mercy on their souls*

Investigation into homing instincts of salmon was a major project headed by Doctor Hasler at the lab in the 60’s. Locally, white bass were used as surrogate salmon. Gerald Chipman designed electronic tracking tags which were inserted into the fish and Ed Gardella, Al Scholtz, Peter Johnsen and others would track them around Lake Mendota day and night. My connection with this project was mostly collecting the six-pack rewards for finding a tagged fish in our fyke nets. But in the fall of 1968, just before I reported to the Navy, Ross Horral, Ivars Stasko and I spent six weeks in the Apostle Islands following tagged lake trout. Based in Bayfield, we stayed in a cabin outside of town looking across at Madeline Island. It was a golden fall with sparkling days and calm nights out on the water. Captain Harvey, whom we had hired along with his boat Interlude, and I would listen to the World Series night baseball games in between periods of listening for the electronic chirp of the tagged trout. Around that time, coho and chinook salmon were stocked into Lake Michigan and by adding a unique chemical to the hatchery water, you could create local home streams for salmon. Therefore, the Lake Superior experiment was retired after that one season.

The Progress of Computing

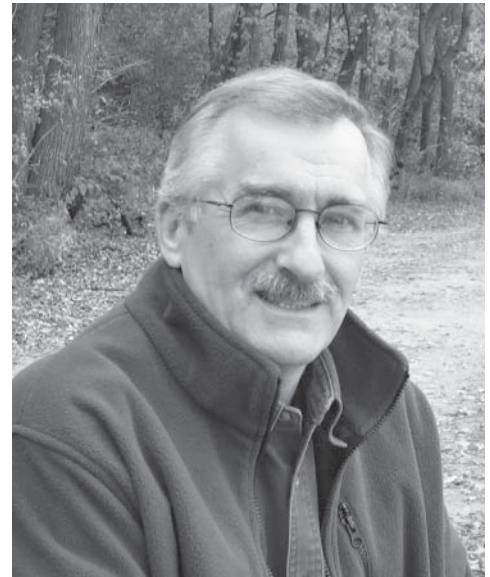
*Now Barbara she keeps her data locked up in a secret vault
Backed up on ageless paper, but it’s really not her fault.
She scans down the lists of numbers to see if they might repeat
While reams of metadata pile up around her feet.*

In 1966, the state of the art in local computing was the Monroe calculator—a large desktop device that looked a bit like an old manual cash register. It wasn’t very powerful by today’s standards, but it was light years beyond long division and counting fish out loud. Across the campus at the computing center, you could punch your program and data onto 80 column cards, hand them in to the computer operator and return in six hours to get your results (or not). We still retain a few boxes of Clyde Voigtlander’s model data in the UW Archives at Steenbock Library.

At some point, we obtained an early process control computer built by a professor over in the Psych Department. The second floor aquarium room, (currently, the library), was used it to monitor photocells which tracked bluegills in nine aquaria as they swam through a central tunnel dividing each aquarium. The heaters in the aquaria were dependent on the movement and location of the fish. It was a wonderfully advanced system with every thing you could want, except for perhaps a controller to override the heater controls and prevent the fiberglass aquaria from melting down and nearly igniting the Lab. Luck and quick action kept the damage limited to smoke.

Eventually early Apple computers found their way into the Lab and the rapid advance of computing was not to be stopped. Today we have Matlab, Fishsamp, Zoopomatic, Chemlab, dbBadger, Log2DB, Oracle, laptops, GIS, websites, online data catalog, satellite imagery, computerized models everywhere, and remote instrumented lake buoys that automatically load over 64,000 rows of data per day into the database (now that would be a lot of keypunching).

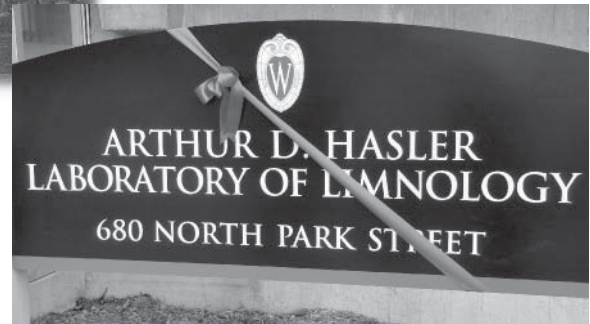
Continued on page 8



Dave Balsiger, October 2006.



On 8 May, 2006, the limnology laboratory was dedicated as the **Arthur D. Hasler Laboratory of Limnology**. The new sign was gift wrapped for the event.



Cancellor John Whiley reminded the audience of Arthur Hasler's many contributions to the University of Wisconsin.



The long relationship between Limnology and the College of Letters and Science was discussed by Dean Gary Sandefur of L&S.



The building dedication events were attended by over 150 listeners during a mild spring afternoon on the shore of Lake Mendota.

Hatheway Hasler and Sylvia Thatcher cut the ribbon, marking the official naming of the “Lim Lab” for Arthur Hasler.



The Hasler clan assembled from far and wide to join in the ceremony.

Many of the Haslers enjoyed a tour of the UW Limnology Research Vessel Limnos, decked out for the ceremony with badger footprints and bright flags.





John Magnuson, Jim Kitchell, and Steve Carpenter--the “ghosts of limnology past, present, and future”--described the history, current activities, and outlook for the Center for Limnology.



Friends, family, and guests enjoy reminiscences from members of the Hasler Family.



John and Norma Magnuson amongst other revelers at the buffet.

A fine spread was offered at the buffet, including a smoked salmon with its nose stuffed with cotton—a reminder to the crowd of the role of smell in salmon homing, one of Arthur Hasler’s most celebrated scientific discoveries.



Support the Center

Private support from alumni and friends of the University of Wisconsin-Madison plays a crucial role in helping the University achieve continued excellence in teaching, research and public service. Gifts to the Center for Limnology provide important support for graduate and undergraduate students, visiting scholars, faculty research and facilities development. If you would like to make a donation to the Center, please contact Anne Murphy-Lom at 608-262-3304, or via e-mail at ammurphylom@wisc.edu. You may also find more information about the Center for Limnology endowment programs, including how to make donations online, by visiting our website, <http://limnology.wisc.edu> and clicking on the Friends and Support link.

If you would like information on making a gift of securities or including the Center for Limnology in your estate plans, please contact Christopher Glueck, University of Wisconsin Foundation, 608-265-9952, or via e-mail at chris.glueck@uwfoundation.wisc.edu.

Front Office People

*For who will answer the Limnology phone
Who will we talk to when we're feeling alone
Who will find those reprints mislaid
Who will ensure that we all will get paid*

The people who hold the Lab together and make everything work smoothly are found in the offices at the top of the stairs. David Egger and Linda Holthaus had the longest tenure in this area and have done the most to keep the Lab going. But there are others that I recall fondly: Henry Eichorn first hired me. Jim Bruins was there before he moved to the Noland Hall and has been a good friend. Marian Villberg, Rosemary Birzer, and Nancy Bigler were there in earlier times, as were Karen (Isenberg) Plass and Deanne (Lovely) Roquet; two good friends and woods-walking companions, both of whom went on to careers in science and ecology.

We Are Family

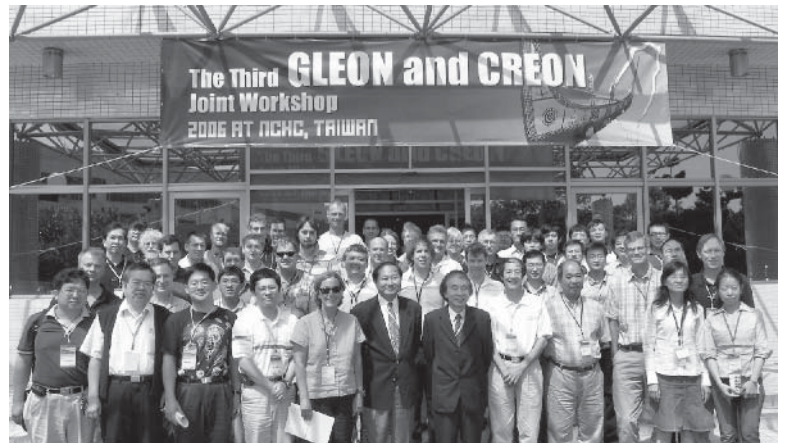
*The legend lives on from Chipman on down
Of the big lake they call Mendota*

So, what is it that has made the Lake Lab this special place for all these years? At a recent staff meeting, the first of the academic year, Jim Kitchell welcomed the new people and explained why the Lab works so well. He said, "We are like a family." It is this spirit, living on, that is the difference. It started with Doctor Hasler and his leadership in this great place of research. John Magnuson took over as Director and continued to lead the Lab in the same tradition for more than 20 years. Now Jim Kitchell has the helm and we still are family.

Update on GLEON

By Tim Kratz

The Global Lake Ecological Observatory Network (<http://gleon.org>) is an international grassroots network of lake scientists and information technology experts who are interested in using sensor technology to increase our understanding of lake dynamics. Tim Kratz, Barbara Benson, Paul Hanson, Dave Balsiger, and Tim Meinke of the Center for Limnology play key roles in this network. GLEON held its third meeting in early October 2006 in Hsinchu, Taiwan. Representatives from Australia, China, Finland, Israel, New Zealand, South Korea, Taiwan, and the US participated. One of the first science projects the group is addressing is a thorough analysis of the diel patterns of dissolved oxygen seen in surface waters in lakes around the world. The next meeting will be held at the Lammi Biological Station in Finland in March 2007. Funding for GLEON comes from the Gordon and Betty Moore Foundation and the National Science Foundation as well as local funding from the individual countries involved in GLEON.



GLEON held its third meeting in early October in Hsinchu, Taiwan in conjunction with the Coral Reef Ecological Observatory Network (CREON). Tim Kratz, Barbara Benson, Dave Balsiger, and Paul Hanson of the CFL attended the meeting.

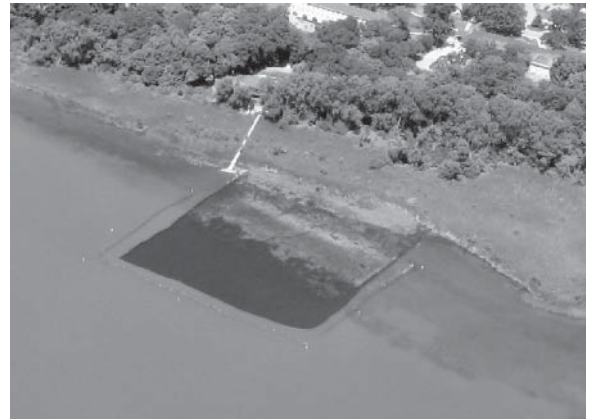
Restoring Lake Wingra by Removing Carp?

by Richard L. Lathrop

Lake Wingra is one of the Center for Limnology's Long Term Ecological Research Project (LTER) study lakes, located within Madison's urban boundaries in southern Wisconsin. The 139-ha shallow lake (mean depth 2.7 m.) is highly eutrophic with poor water clarity due to resuspended bottom sediments and summer blue-green algal blooms fueled by Eurasian water milfoil since the invasive plant first appeared in the early 1960's. The poor water clarity favors the exotic milfoil over native plants, as the milfoil can grow with dense foliage near the water surface. This produces a rainforest-like canopy effect that further shades native plants needing sunlight penetration into the water column to grow. However, in spite of the lake's poor water clarity, approximately 20 native aquatic macrophyte species are found scattered around the near-shore waters. This relatively large number of native plants is in contrast to the larger Madison lakes because Lake Wingra has had almost no mechanical cutting/harvesting or herbicide treatments to control nuisance plant growths.

Thus, Lake Wingra is stuck in a turbid algal-dominated state with little growth of aquatic macrophytes other than milfoil. In recent years, the Wisconsin Department of Natural Resources (WDNR), the Dane County Lakes program, and a newly formed local citizen group--the Friends of Lake Wingra (FOLW)--have been addressing the lake's urban runoff problems through a variety of land management practices. However, switching the lake to a clear-water state where native macrophytes can potentially out compete Eurasian water milfoil must also consider in-lake management actions, including reducing the lake's overabundant carp population. Carp are known to browse heavily on certain native macrophytes, particularly the macro-algae *Chara* that grows along the bottom and effectively seals the bottom sediments. Carp, through their bottom feeding activities, also keep the sediments loose and unconsolidated thus making them susceptible to wind resuspension.

Starting in late summer 2005, CFL scientists along with the WDNR, Dane County, and FOLW initiated a three-year experiment in Lake Wingra to test the response of the native macrophyte community to clearer water produced from a major carp reduction program. This demonstration-scale experiment includes the construction of a 1.0-hectare rectangular carp enclosure with its solid vinyl walls extending from the lake shoreline to a water depth of 2.9 m. While the enclosure experiment is slated to run until the fall of 2008, water clarity increases inside the enclosure due to the wave dampening effect were apparent soon after the enclosure's installation and carp removal. Secchi disc readings inside and outside the enclosure during the summer of 2006 averaged 1.46 m and 0.66 m, respectively. By mid-July, aquatic macrophyte biomass had increased by about 30 percent within the existing plant beds of the enclosure as compared to outside the enclosure, and the depth of maximum plant growth had increased by 0.8 m. As expected, most of this initial increase in plant growth was attributed to Eurasian water milfoil, but it is hoped by the end of the 2008 growing season the native plants will eventually respond to the clearer water and out-compete the milfoil.



*Aerial view of Lake Wingra Enclosure, July 2006.
Photo by Mike Kakuska.*

Another activity that CFL scientists are conducting with WDNR assistance and financial support from Madison Fishing Expo is radio-telemetry tracking of carp movements in Lake Wingra. This study will help determine if carp congregate at certain locations and times of the year where they are vulnerable to targeted removal by certain types of netting operations. Although the tracking of 14 carp with radio transmitters implanted by the WDNR only began in earnest in April 2006, one important finding has already occurred. During one survey in mid-May 10 of the carp were found spawning in or near the Vilas Park lagoons (which are connected to the lake by a channel). We presume they congregated there because of warmer water temperatures, since two weeks before and after the spawning period the tagged carp were dispersed throughout the lake. The CFL will continue the carp tracking study until the summer of 2007.

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Noteworthy/Awards

This year saw **Steve Carpenter** elected Fellow of the American Academy of Arts and Sciences.

Jake Vander Zanden is the 2006 recipient of the International Recognition for Professional Excellence (IRPE) prize from the Ecology Institute in Germany. Jake accepted this honor (including a monetary award) at a ceremony in Oldendorf/Luhe, Germany.

Emily Stanley was appointed a 2006 Leopold Leadership Fellow. The Aldo Leopold Leadership Program at Stanford University's Woods Institute for the Environment advances environmental decision making by providing academic scientists with the skills and connections needed to be effective leaders and communicators. The program's core training provides opportunities for outstanding mid-career academic scientists from a broad range of environmental fields. Now in its eighth year, ALLP is developing new ways of connecting Fellows with decision makers and the media to provide scientific expertise, and is expanding its leadership and communications training opportunities for a broader array of academic scientists.

Emily Stanley and Jim Kitchell represented the American Society of Limnology and Oceanography as delegates to the 2006 "Science on the Hill" event in Washington, DC. They visited the offices of selected members of Congress, including Senators Feingold (WI), Grassley (IA), and Kohl (WI), plus those of Representatives Baldwin (WI), Leach (IA), and Green (WI). The process is organized through the Coalition for National Science Funding, and is designed to encourage support for the 7 percent increase intended for the National Science Foundation. Results are forthcoming...



2006 Leopold Fellows in Washington DC. Left to right, front row: Adina Paytan, Karen Hodges, Emily Stanley, Pam Matson (ALLP Staff); second row: David Hooper, Emmett Duffy, Margaret Lowman, Julia Parrish, Selina Heppell; third row: Denise Reed, Stephen Jackson, Christopher Reddy, James Schaefer; fourth row: Andrew Dressler, Joshua Schimel, Arturo Sanchez-Azofeifa, Margaret McManus; back row: Romuald Lipcius, Kathleen Pickering

Paul Hanson received a Mid-Career Achievement Award from the UW College of Letters and Science.

Genkai Motomi-Kato (postdoc 2000, Carpenter) received the 2006 Miyadi Award from the Ecological Society of Japan for the outstanding paper by a young scientist in the previous year. The paper was: Genkai-Kato, M. and SR Carpenter. 2005. Eutrophication due to phosphorus recycling in relation to lake morphometry, temperature, and macrophytes. *Ecology* 86:210-219.

Student Awards

Brian Weidel and Justin Fox were both recipients of 2006 John Jefferson Davis Travel Awards (UW Dept. of Zoology).

Noah Lottig (Limnology and Marine Science, Stanley) is the first recipient of the North American Benthological Society *Aquatic Conservation: Marine and Freshwater Ecosystems* Award following the NABS meeting held in Anchorage, Alaska in June 2006. Noah's entry was considered the best conservation-oriented research by the judging panel. The award includes monetary awards along with the opportunity to submit a paper to *Aquatic Conservation: Marine and Freshwater Ecosystems* for peer review and publication. The title of Noah's presentation was "Prairie riparian restoration along Midwestern USA streams: influences on nutrient retention and ecosystem metabolism."

Anna Grant Birge Awards were granted to **Reinette (Oonsie) Biggs** (Limnology and Marine Science, Carpenter), **Nick Preston** (Limnology and Marine Science, Carpenter), **Brian Weidel** (Limnology and Marine Science, Carpenter), **Matthew Diebel** (Limnology and Marine Science, Vander Zanden), **Stuart Jones** (Limnology and Marine Science, McMahon), **Christopher Solomon** (Limnology and Marine Science, Vander Zanden), **Stephen Powers** (Limnology and Marine Science, Stanley), **Noah Lottig** (Limnology and Marine Science, Stanley), **Ensoo Kim** (Botany, Graham), and **Hengliang Yuan** (Computer and Electrical Engineering, Wu).

2006 Research Experiences for Undergraduates were awarded to **Nicole Hayes** (Biocomplexity, Jake Vander Zanden), **Matthew Guarascio** (Biocomplexity, Carpenter), and **Lara Kohler** (Cascade, Carpenter).

The 2006 winners of the Jean B. and E.T. Juday awards were undergraduate students **Richard Hartson** and **Kira Langree**. Richard worked with Pieter Johnson on the role of land use on presence and abundance of the trematode *Ribeiroia ondatrae*. Kira worked with Pieter Johnson, Julian Olden, and Chris Solomon on the range and effects of Chinese Mystery Snails on native snail communities.

The 2006 Chase Noland Scholarship in Limnology was awarded to **Kyle Amend**. Kyle worked with Jim Kitchell and Brian Weidel measuring the strength of the link between allochthonous carbon inputs and littoral fish through zooplankton.

Graduations and Migrations

Dawn Karner (MS 2005, Sonzogni)

Thesis: "Development and Application of an Algal Probe for Coper Speciation in Marine Waters:"

Norman Mercado-Silva (PhD 2005, Vander Zanden)

Dissertation: "Invasive Species in Aquatic Systems: Population, Community, Food Web and Landscape Perspectives." Norman will be starting a postdoc position at the Instituto de Ecología, A.C. in the City of Xalapa, in the State of Veracruz, Mexico.

Zeb Hogan (post doc, Vander Zanden) has accepted an Assistant Research Professorship at University of Nevada - Reno, where he will continue his research on the conservation of the world's largest freshwater fishes.

Greg Sass (PhD 2004, Kitchell) has accepted the position of Field Station Director of the Illinois River Biological Station within the Illinois Natural History Survey.

Julian Olden (post doc, Vander Zanden) has accepted an Assistant Professorship in Aquatic and Fishery Sciences at the University of Washington.

In Fond Memory

Walt Haag passed away on November 1, 2006 after a long struggle with cancer. Walt was the maintenance worker at the Trout Lake Station from 1974 until his retirement in 1993. Walt not only kept the station well-maintained, but more importantly he was keenly interested in the students and staff at Trout Lake. Whether the lunchtime discussion was about science, politics, or religion, Walt was interested and always asked probing questions. Virtually all of the graduate student theses of the time acknowledged Walt for his help with research logistics and for his friendship. Donations in his name may be sent to Dr. Kate's Hospice, PO Box 770, Woodruff WI 54568, Attn: Randi.



(Lake Wingra continued from Page 9)

Finally, at the request of FOLW, CFL-LTER scientists were recently asked to play a lead role in coordinating the scientific exchange of information about Lake Wingra. This includes conducting an analysis of historic information and the development of future lake scenarios. LTER is also making its data collected since 1996 more easily accessible to the general public by providing interpretations giving context to the information. Regular meetings with subcommittees of the larger group of interested parties are being held to help facilitate these activities. In short, the CFL is playing a major role in helping the restoration of Lake Wingra become a reality in the next few years.



Ted Bier (R), CFL/LTER Field Technician and Dan Cobian, student worker, track carp in Lake Wingra, September 2006. Photo by James Thoyre.

Limnology News

The University of Wisconsin-Madison Center for Limnology publishes Limnology News for its alumni and friends, and is printed through gift funds administered by the UW Foundation. Comments on the newsletter and future article ideas are welcome. On the web at <http://limnology.wisc.edu>

Editors: Jim Kitchell, Anne Murphy-Lom, Denise Karns. This newsletter

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