

Newsletter of the AFS Ontario Chapter



President's Message

Greetings and Welcome. This is my first message to you as Chapter president. My first duty in this newsletter will be to welcome all of the new members to the Executive Committee (So.. welcome!) and bid farewell to the members of the Excomm who have "passed the torch" to us new folk (So long folks, and thanks!). This issue of the newsletter contains a few items to report; a few items that we hope will raise discussion and also a few items that are just plain interesting. Our Featured Biologist is Karen Murchie, just returned to Ontario from a self-imposed exile in lovely Yellowknife, has also returned to the Excomm as Carleton University's student rep. Thanks Karen and welcome back. Lynn Bouvier presents an article on the recent developments of an Ontario Chapter Student Subunit. Of course, there is another instalment of the "The View From Up Here" written by *yours truly*. Also in our Member Research section you will find an interesting abstract and poster on rainbow trout and fire ants presented by Rob Eakins, our webmaster.

For discussion purposes we have included a piece on bilingualism in the Ontario Chapter. Please read the article and let us know how you feel about this issue. There has been a lot of discussion as of late regarding the need for educational courses. I'd like to hear from you about what you think your career may be lacking as far as professional development goes. Maybe the AFS-OC can help to put together an interesting array of courses.

Of interest to many of you should be the information on our upcoming AGM. As some of our members know, the calibre of the AGM over the past few years has been very high. Many people work long hours and pull off super-human feats to ensure every detail is looked after. We have decided to continue the practice of heavily subsidizing the student attendance at the AGM. For those of you who don't know about this practise, last

year students were charged a flat fee of \$100.00. This included all meals, accommodation, and registration for the meeting. They were also given a 1-year membership in both the AFS parent society and the Ontario Chapter. The EXCOMM has decided to continue with this price structure, which means the hunt for sponsorship has begun. We need the assistance of all members (regular and young professionals) to keep this initiative alive. If you have any ideas to raise funds for the maintenance of this subsidy, or if you know of businesses that would be interested in sponsorship, please let us know by passing any contacts along to the EXCOMM.

As with anything, the old adage that -- *you get out of something what you put into it* -- rings true. This is **your** newsletter, so get involved. Articles, announcements and notices are greatly appreciated (even encouraged). For now, sit back and enjoy.

Warmest regards, Bill Gardner



Featured Biologist: Karen Murchie, Carleton University



Happy To Be Back: A Former AFS-OC Student Rep Returns to Ontario, Grad School and to the Excomm

Karen Murchie served as a student representative from 2000-2002 while completing her MSc. at the University of Waterloo, studying young-of-the-year yellow perch ecology in Northern Alberta with Dr. Mike Power. Upon completion of her degree, she left southern-Ontario and headed to Sault Ste. Marie for a position with Fisheries and Oceans Canada (DFO), at the Great Lakes Laboratory for Fisheries and Aquatic Sciences. During her tenure at DFO, she conducted research on the response of aquatic ecosystems to fluctuating flows on hydro-rivers under the guidance of Dr. Karen Smokorowski. Drawn further north, Karen set her sights on a move to the Northwest Territories where she took a position with Golder Associates in Yellowknife. Environmental effects monitoring and baseline data collection occupied most of her time in the sub-arctic as she traveled to gold and diamond mines in various stages of development. Returning to graduate school for her PhD was always in the plans, and the timing was right in September, 2006.

Ready to mix things up again, Karen recently began her studies at Carleton University, working with Dr. Steven Cooke. This time her research is taking her south, to the island of Eleuthera in the Bahamian archipelago. Miss Murchie will be taking a systems level approach to looking at tropical flats ecology while working out of the Cape Eleuthera Institute under the co-supervision of Dr. Andy Danylchuk (another export from Ontario). Her thesis dissertation research will evaluate how natural and anthropogenic disturbances influence individual behaviour and community interactions within tropical flats fish communities. During her return to grad school, Karen looks forward to serving again as a student representative for an organization she is proud to be a member of. Although her thesis work will occur in the south, Karen will stay connected to the Ontario fisheries research community by mentoring undergrad thesis students on local fish ecology projects and through her involvement with AFS-OC.

Welcome Back Karen ...



Member Research - Robert Eakins, EcoMetrix Incorporated

R.J. Eakins, D.G. Fitzgerald, A.J. Burt, D.G. Farara and G. Tello

Mortality of rainbow trout due to ingestion of fire ants in the Peruvian Andes

Abstract

Mountain streams of the Peruvian Andes have low fish species diversity, and also generally have low productivity. Rainbow trout (*Oncorhynchus mykiss*), which were introduced to these coldwater streams, have become an important supplement to indigenous peoples diets. The protection of these aquatic resources is a high priority for local inhabitants. Two separate kills of rainbow trout were reported (~1000 fish in total) downstream of a copper mine. An investigation was promptly undertaken by the mine. Due to the existence of an established environmental effects monitoring program, it was possible to quickly rule out the mine as the cause of the fish kills. Total evidence from this study identified selective mortality through natural causes. Examination of the gut contents of the dead rainbow trout revealed the presence of nonnative fire ants (*Solenopsis invicta*) which are known to be toxic to fish. The fire ants construct mounds along the streambanks, and winged ants were apparently washed into the stream following rain events, leading to predation by adult rainbow trout. By contrast, young-of-the-year rainbow trout and native sucker-mouth catfish (*Astroblepus* spp.) that consume primarily smaller benthic-oriented prey, avoided the same fate.

Mortality of Rainbow Trout Due to Ingestion of Fire Ants in the Peruvian Andes
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INTRODUCTION

- Fish kills were documented on September 22 (Chocapampa) and October 15, 2003 (near Ocho, Shikú) downstream of the Compañía Minera Antamina stream in the Peruvian Andes (Figure 1).
- In 1999, Compañía Minera Antamina initiated an aquatic environmental effects monitoring (EEM) program during construction of their mine, the first such approach used in Peru (Burt and Farara 2003).
- The objective of the EEM program was to monitor for any spatial or temporal changes in the health of fish or fish habitat that may be due to mine operations (Richardson 2003).
- Because the EEM program tracks the local and regional effects of the mine on downstream conditions through the assessment of water, benthic invertebrates, and fish, it was used to assess these fish kills.
- Post-mortem examinations revealed rainbow trout "toxic" (Chocapampa) and "fresh" (near Ocho) rainbow trout (Figure 2) as the only fish in the high gradient and low productivity streams.

FIGURE 1: Stream at base of hill. **FIGURE 2:** Dorsal and ventral view of a catfish.

Fish Kill Event Observations

- The fish kills occurred in isolated downstream of the Antamina mine (Figure 1).
- Dead fish were abundant trout mostly adults, with a few juveniles (2-7 cm), but not seasonal frylings.

Understanding Fish Kill Events

- Fish kills can result from non-natural or natural causes and be of biological, chemical or physical origin (Table 1).
- Examples of non-natural causes include the release of contaminants (e.g., pesticides, herbicides), low dissolved oxygen, high temperatures, disease or parasites.
- The fish kills tend to be acute in nature (i.e., many fish perish over short time compared with a chronic event that takes place over months or years).

Table 1. Pathways of exposure to stressors to interpret fish mortality.

Number of stressors	General mortality response
Biological (e.g., disease)	Fish both small and large lengths mortality increases, no fish mortality in adjacent stream.
Chemical (e.g., high dissolved oxygen)	Fish small fish first followed by large fish mortality increases, fish in adjacent stream.
Physical (e.g., low dissolved oxygen)	Fish both small and large lengths mortality increases, fish in adjacent stream.

FIGURE 3: Dissolved oxygen in three downstream of Antamina mine.

RESULTS

Natural Causes

- Analysis of Antamina's daily routine water quality data did not reveal any parameter (e.g., metals, pesticides) at concentrations that would have resulted in the fish kill (data not shown).
- Additional water samples were collected from the area of the fish kills also showed no elevated levels of parameters that would be toxic to fish (data not shown).

Other Physical Stressors

- Inventory was typical but the rates did approach rain (the last provided both fish kill events, Figure 3).
- At each fish kill event, water quality measures indicated that dissolved oxygen was saturated (i.e., > 1 mg/L), water temperatures were seasonal (i.e., ranged from 13 to 17°C), pH showed a range of 7.5 to 8.5, and conductivity was typical, and ranged from 285 to 415 µS/cm.

Benthic Invertebrate Community

- Benthic invertebrate samples were collected from five areas in October 2003 following the fish kills and compared with observations from July 2003.
- The comparison of the benthic invertebrate community between July and October 2003 identified no change in mean abundance or mean density (Figures 4 and 5).

FIGURE 4: Benthic invertebrate species across a study area. **FIGURE 5:** Benthic invertebrate density across a study area.

Fish Community

- Total catch per unit effort was higher in October than in July at all monitoring locations, primarily due to the presence of young-of-the-year that are not readily preserved during the July survey (Table 2).
- Observation of only dead rainbow trout (i.e., no catch) at both fish kill sites.

Table 2. Density of only dead and juvenile rainbow trout in July and October, 2003.

Area	July 2003		October 2003	
	CPUE	CPUE	CPUE	CPUE
Area 1	0	0	0	11
Area 2	0	0	0	11
Area 3	0	0	0	11
Area 4	0	0	0	11
Area 5	0	0	0	11
Area 6	0	0	0	11
Area 7	0	0	0	11
Area 8	0	0	0	11
Area 9	0	0	0	11
Area 10	0	0	0	11

Fish Pathology

- Autopsy indicated the fish appeared healthy and free of any external or internal infections.
- Fish Stomach Analysis**
- Stomach contents for dead and dying fish revealed all had non-native fire ants (*Solenopsis invicta*, Figure 6).

FIGURE 6: Stomach contents of dead rainbow trout from 15 October near Ocho, Shikú.

DISCUSSION

- Despite the equal concentrations are generally the most sensitive to contaminants (Burt et al. 2004), the fact that there are differences in these groups between July and October suggests that the fish kills were not due to chemical stressors.
- In addition, many of the invertebrates present are very sensitive to temperature and dissolved oxygen (Burt et al. 2004), so their high density at the fish kills is likely due to physical factors such as the presence of the fish kills.
- Fish density in October at a site downstream of the mine increased relative to July and was correlated with the number of benthic invertebrates and water chemistry that suggested the fish kills were not due to a physical or chemical cause affecting the stream.
- Similar patterns in the abundance of fish and juvenile rainbow trout and the temporal patterns (i.e., changes between July and October) are consistent with evidence that fish kills did not appear to be associated with any disturbance from the Antamina mine.
- If the stream had been the source of the fish kills, it would be expected a response would have been detected in the benthic invertebrates community and most of the dead fish would have been found upstream of Area 9. While there was a decrease in benthic invertebrate density in the stream, this was not the case for the fish kills.
- The pattern of the benthic invertebrate fish kills (i.e., at Chocapampa and near Ocho, Shikú) suggested there was no localized source that resulted in the fish kills.
- The local effect suggests that the fish kills were due to some food source or perhaps disease outbreak in the areas where there were high densities of fish.
- Observation of dead rainbow trout by humans off-sampled that fish were being killed by ants and fish up-kill event generally occurs further downstream at lower elevations after the dry season.

FIGURE 7: Fish and benthic invertebrates swimming. **FIGURE 8:** Design followed to investigate fish kills and their (likely) causes.

CONCLUSIONS

- Presence of ants in all fish stomachs indicates a simple mechanism to explain the mortality patterns.
- Ingestion of the ants by fish would reduce the amount that is composed of organic food, which is the primary food source for fish.
- The inference is that the large number of fish that died during the fish kills, as documented fish would be more likely to feed on organic food than on invertebrates or catfish.
- Since the fish kill events occurred after the rain events, it is highly probable that the presence of benthic invertebrates on the banks of the river resulted in larger numbers of ants entering the stream.
- Fish likely consumed fish and died during and after the observed rain events.
- Generally, the reported fish kills, due to ants do not present a serious problem to the biology of these low productivity Andean streams as they typically do not reduce the fish population. The situation was observed in Ocho, Antamina where fish density was still high in the areas after the fish kill occurred.

Fire Ants Impact on Fish in North America

- Swarming of the winged form of the ants has resulted in a number of fish kills in the southeastern United States where the fire ants have become established after they introduced in the 1930s.
- Fish that ingest small quantities (i.e., one or two) of ants generally recover (e.g., Fournelle et al. 1999).
- Others have speculated the ants that are not eaten when consumed may actually get into the stream and the fish to die (the number of eggs is increased (Burt et al. 2004)).
- It is likely the consumption of dead ants by fish also reduces the amount of organic food available.
- In 1995, the Department of Environment and Quality in Louisiana documented a habitat of sculpin (*Cottus bairdii*) was found and suffering from ingestion of the ants (Burt et al. 1995).
- In 1998, there was a major fish kill in the Guadalupe River where 7000 fish were estimated that 22 000 more were killed over a 25 km stretch of river due to ingestion of the ants (Cottam 1997).
- Fish kill incidents in the United States have generally occurred where an colonies build or where swarms of adult ants migrate from colonies as a response. The former situation seems to be identified in the stream of Peru.

REFERENCES

Burt, R.J., et al. 2004. The impact of fire ants on fish. *Am. Fish. Soc. Symp.* 53: 109-123.
 Cottam, C. 1998. Fish and fire ant interactions and the water quality. *Water, Air, Soil Pollut.* 100: 201-210.
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 St. Pa, K. 1994. Taking the mystery out of fish kills. *Fish kills: other challenges to OES.* Louisiana Environmental Action. *Am. Fish. Soc. Symp.* 2003. The importance of comprehensive aquatic environmental monitoring programs at new mines in developing countries. *S&E Conference, Lake Mead, NV* 13 p.

The poster was presented at the [136th American Fisheries Society Annual Meeting](http://www.136thAFS.org) in Lake Placid, New York and can be viewed in full and downloaded from the Member Research page on the AFS-OC website (www.afs-oc.org).

The View From Up Here

There is nothing better than taking a moment to put a line in the water and see if the fish are biting. Books have been written, movies have been made attesting to the relaxing, romantic nature of angling. My issue with the above statement is that I neither have the time nor the patience for angling. The concept is wonderful but making the time to actually go out, and then having the patience to actually spend some time to maybe or maybe not catch fish, is something that is pretty foreign to me. That said, I still have a tackle box full of lures and more than one fishing rod. I admit that I am a bit of a gear geek when it comes to fishing. I like to have the lures, and the 6 different types of line, and the different rods, reels, nets, etc. But I don't like to spend a lot of money on new lures that I am likely to just get snagged on a log in a lake or on a river. I have a better method to fill my tackle box.

Many years ago (12.5 to be exact) while doing a radio telemetry experiment on the Pancake River, I had to look for radio tagged lamprey that may have become snagged. On a particular day in June of 1994 I came across a cedar branch in a pool at the base of the Pancake falls (right where one of our tagged lampreys had been spending the last few days). When I put on my snorkelling gear and went into the pool the lamprey took off down stream, proving that he was neither dead (we tracked him over the next 6 days moving back and forth up and downstream) nor tangled. Although I didn't see the lamprey I did see a wonderful sight. A mass of lures, about the size of a football was tangled around that cedar branch. I managed to break off the top of the branch (below the tangle of lures) and pull it to shore. I spent the next week working the lures free from the tangle. It filled my tackle box to overflowing, I gave many lures away to the student I was working with and to others.

In the intervening years I have lost most of those lures, snagged on pretty much anything you could imagine. I decided this summer to take a half day and go revisit that place on the Pancake river, after all I left most of the cedar branch still in the pool. As I walked up the road, past the washout to the trailhead, and down to the base of the falls,

much of what I was seeing seemed quite foreign to me. I finally got to the base of the falls, and looked around for what might be the pool. I donned my snorkelling gear and slipped in. Unfortunately there was no cedar branch, so I went upstream and found another pool: nothing, this was repeated many times over the next few hours. I had to eventually concede defeat and admit that either A) there was a massive erosion event that drastically altered the pools of the bedrock falls and all of the debris that lies within them, or B) things change, memories fade and one can't really go back and expect things to be the same.

I'm opting for explanation A.

Until next time ...Cheers from The North,
Bill Gardner



http://www.surveymonkey.com/bait_survey

Ontario Chapter Student Subunit

After receiving support for the concept of a Student Subunit from numerous members of the Ontario Chapter as well as the Executive Committee, I began my search of capable and willing student members to man the official posts of the Student Subunit. I am pleased to announce that Mary Finch-Histed (University of Waterloo) has agreed to take on the position of President, while Mike Donaldson (Carleton University) will be manning the position of Vice-President. In addition, Andrew Drake (University of Toronto) has accepted the position of Treasurer/Secretary. We are also very thankful to Dr. Steve Cooke (Carleton University) who has agreed to take on the position of faculty advisor to the Subunit.

To date, we have created a first draft of the official petition that will be sent to the Parent Society and we are now in the midst of working closely with the Parent Society to create our bylaws. These are the first steps in petitioning the Parent Society to be recognized as an official Subunit. Once the petition has been accepted by the Parent Society and the bylaws are satisfactory to both the Executive Committee and the Parent Society we will receive official recognition as the Ontario Chapter Student Subunit.

There are numerous activities that we are hoping to provide to our student members. These activities may include providing continuing education and fisheries technique courses. As well, we are hoping to participate in restoration projects throughout Ontario. We are very thankful for the generous help of Rob Eakins, our webmaster, who was crucial in the creation of a Student Resources page on the Ontario Chapter website. This resource page currently provides links to awards and scholarships, in addition to educational links to Ontario universities and colleges.

Becoming a student member of the American Fisheries Society has numerous benefits. Last year the student dues were cut in half and are now a mere \$19 USD per year. Membership includes a subscription to *Fisheries* magazine, and access to online journals, the InfoBase and membership directory. Once it is created, the Ontario Chapter Student Subunit will be open to any student attending any educational institution throughout Ontario, although only students who are American Fisheries Society members will be given the right to vote.

If you would like to be added to our mailing list, which will provide you with updates on the creation of the Student Subunit, please send me an email with your name and institution. Also, any feedback or ideas relating to the proposed Ontario Chapter Student Subunit are more than welcome and should be sent to me (Lynn Bouvier) via email at: treasurer@afs-oc.org

AFS-OC Swag! Get your Hats and Pins Here!

Impress your friends and colleagues—Support your AFS-OC now!

Ontario Chapter baseball caps and lapel pins are now available for purchase from your Executive Committee.



Cost: Baseball Cap **\$20.00**
Lapel Pin **\$3.00**



If you would like to place an order for a baseball cap or lapel pin, please contact Bill Gardner (president@afs-oc.org) or Heather Lynn (secretary@afs-oc.org).

Chapter Notices

Bilingualism in the Ontario Chapter

Since we are the Ontario Chapter and Ontario is a bilingual province, discussion has begun about making the OC officially bilingual. In this day and age our website is our first point of contact, so we examined how best to make our website bilingual. In addition to the initial cost of translation, there would be the constant updates that would be required to maintain the website in both languages. Although there is money available through an application process to Heritage Canada, it would only pay for 50% of the costs of translation services. The details of the process are that we would have to hire a professional translator to do the website translation and those costs can be quite steep (up to 25 cents per word). Even if we were successful with a Heritage Canada application the chapter would be on the hook for 50% of the costs. This would be a very expensive process, one that we currently cannot afford. Yet we feel that we should do something towards making ourselves bilingual. What we have decided to do, for the interim, is to put both English and Français tabs on the opening page of our website. If one chooses the Français button, they will be directed to a statement that lets them know that we have a bilingual person with whom they can converse. Lynn Bouvier, our Treasurer, has agreed to be the bilingual contact for the chapter.

Le chapitre de l'Ontario en français!

Êtes-vous intéresser à recevoir notre bulletin en Français? Avez-vous des questions au sujet de la société Américaine de Pêche (AFS - American Fisheries Society) ou en particulier au sujet du chapitre de l'Ontario? Si vous avez répondu oui a aucune de c'est question sil vous plait envoyer vos enquête a Lynn Bouvier, trésorière du chapitre de l'Ontario (treasurer@afs-oc.org).

Stay In Touch... Keep Your On-Line Profile Up-to-Date

The American Fisheries Parent Society has new website at <http://web.fisheries.org/main/>. Members can now update their profile (including email address) online at <http://secure.fisheries.org/>.

Come Join Us at the 2007 Annual General Meeting

When: March 1-3, 2007

Where: Geneva Park, Orillia, ON

The **2007 Annual General Meeting and Conference** of the Ontario Chapter of the American Fisheries Society will take place March 1st to 3rd at [YMCA Geneva Park](#), on the shores of Lake Couchiching near Orillia. Once again the Executive Committee is planning an exciting weekend. This year the conference theme is "*Applying Multi-Disciplinary Science on the Ground: Putting Theory into Practice*".

Management issues are becoming increasingly more complex, requiring innovative solutions that encompass a variety of expertise. The intent of this year's AGM is to stimulate discussion and awareness of the many disciplines that must necessarily integrate in order to continue to build capacity that support dynamic adaptive management processes. By embracing uncertainty and supporting management decisions with good science we improve our capacity to make good decisions. Keep a close watch on the AFS-OC website at www.afs-oc.org for speaker and agenda updates. Additional information will be posted on the website and emailed to members as soon as it becomes available.

Attention All Past AFS-SOC Excomm Members

As part of the ongoing initiative to preserve our chapter history, we are searching for copies of minutes from some AFS-SOC Excomm meetings. The list below indicates those meetings for which minutes are missing from the electronic archive, as well as the Secretary at the time. If you are able to provide copies of any of the listed minutes, please contact history@afs-oc.org or webmaster@afs-oc.org. The preferred format is electronic (i.e., Microsoft Word) but we will take hard copies or scans (i.e., PDF's).

Your help in this undertaking is much appreciated!

1988-89 (all) - Secretary: Henk Rietveld

1989-90 (all) - Secretary: Henk Rietveld

1990-91 (all) - Secretary: Henk Rietveld

1991-92 (all) - Secretary: Henk Rietveld

1992-93 (all) - Secretary: Doug Clark

Sept 1993-Aug 1994 (Sept 1993) – Secretary: Tim Rance

Sept 1994-Aug 1995 (Jan 7, 1995) – Secretary: Tim Rance

Sept 1995-Aug 1996 (Mar 4, 1996; Aug 7, 1996) – Secretary: Dave Gibson

Sept 1996-Aug 1997 (Jan 9, 1997) – Secretary: Dave Gibson

Sept 1997-Aug 1998 (Jan 1998; June 23, 1998) – Secretary: Dave Gibson

Sept 1998-Aug 1999 (Jan 5, 1999; June 1, 1999) – Secretary: Adam Cotrill

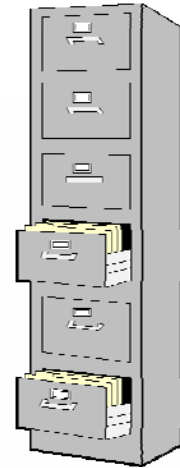
Sept 1999-Aug 2000 (Feb 25, 2000; Mar-Aug 2000) – Secretary: Adam Cotrill

Sept 2000-Aug 2001 (June 21, 2001) – Secretary: Ken Cornelisse

Sept 2001-Aug 2002 (Oct 16, 2001; April 16, 2002; May-August 2002) – Secretary: Jennifer Wright

Sept 2002-Aug 2003 (Dec 17, 2002; May 20, 2003; June 18, 2003; July 15, 2003) – Secretary: Jennifer Wright

Sept 2003-Aug 2004 (Nov 18, 2003) – Secretary: Jennifer Wright



Ontario Freshwater Fishes Life History Database

The AFS-OC is proud to be affiliated with the Ontario Freshwater Fishes Life History Database (OFFLHD). Once hosted by the Ontario Chapter, the OFFLHD now has its' own domain (www.fishdb.ca). This website is an unparalleled source of information concerning the fishes of Ontario. Researchers, consultants and students alike agree this interactive searchable database provides a valuable resource to all those interested in Ontario freshwater fishes.

The OFFLHD is a fully searchable database for all Ontario and adjacent Great Lakes freshwater fishes including introduced, extirpated and extinct species. It contains current information pertaining to life history, habitat, size and age, distribution, status, reproduction and nomenclature for 150 species, 3 subspecies and 2 established hybrids. The website also includes photographs, range maps, notes, references, glossary of terms and related web links.

Try it out for yourself by clicking the OFFLHD logo on the Ontario Chapter homepage, or directly by visiting www.fishdb.ca. Explore, learn and enjoy.

The Ontario Freshwater Fishes Life History Database was created and is maintained by Rob Eakins, AFS-OC Webmaster.



2006-2007 AFS-OC Executive Committee

President	Bill Gardner	President-Elect	Jack Imhof
Past-President	Warren Dunlop	Vice President	Jon Clayton
Secretary	Heather Lynn	Treasurer	Lynn Bouvier
Northern Member at Large	Rob Mackereth	Membership Chair	Warren Dunlop
Newsletter Editor	Debbie DePasquale	Webmaster	Rob Eakins
Education Committee Chair	Jennifer Wright		
Student Representatives	Karen Murchie (Carleton University) Greg Elliot (University of Guelph) Andrew Drake (University of Toronto) Mark Poos (University of Toronto) Melissa Robillard (University of Guelph) Katie Stammier (University of Western Ontario) Steve Marson (Trent University) Caleb Hasler (Queen's University)		

To contact any member of the Executive Committee visit our website (<http://www.afs-oc.org>).

Educational Opportunities

The [Natural Resources Extension Program](#) (NREP) at Malaspina University-College, Nanaimo BC, specializes in developing and delivering applied Natural Resource Management training programs for delivery in communities throughout Canada. Our courses are developed and taught by industry leaders, with key input from governments, educational institutes, and industry personnel. To-date in 2006, NREP has delivered training programs to over 700 course participants in 9 provinces.

NREP is offering the following course in our area and ... our very own Dave Green is teaching it! Sign up for the latest on **Environmental Monitoring for Construction Projects**. Courses are running November 21-23rd in Sudbury, ON; December 5-7th in Ottawa, ON; and December 12-14th in Thunder Bay, ON.

Visit the website at <http://www.mala.ca/nrep/environment/em.asp> for more information about the Environmental Monitoring for Construction Projects course.

Registration is limited so be sure to sign up early.

Stay Informed... Visit the AFS-OC website

Visit the **AFS-OC website** often and keep abreast of the latest news, conferences and workshops. Our webmaster works very hard to keep the latest information at your fingertips. Check out the **Events and Conferences** page at <http://www.afs-oc.org> for the latest in ongoing fisheries research.

We now have a **Student Resources** page. This webpage provides links for Universities and Colleges, Employment Opportunities, Awards, Scholarships and more!

Conference Announcements

67th Annual Midwest Fish and Wildlife Conference ***"The Economic and Social Values of our Natural Resources"***

When: December 3-6, 2006

Where: Doubletree Hotel, Omaha, Nebraska

The meeting is fast approaching but there is still time to take advantage of the early registration discount. Register online at the conference websites www.midwest2006.org or www.ngpc.state.ne.us/midwest2006/ **before November 3rd, 2006** and save \$75 on the full professional registration rate.

Also, we have negotiated a reduced room rate for conference attendees who make reservations **before Friday, November 17th** at the on-site DoubleTree Hotel. Visit the conference web page under "Accommodations" to see details and contact information.

This year's conference includes over 300 oral and poster presentations during eight concurrent sessions. National experts on the "Economic and Social Values of our Natural Resources" will relay their experiences during our plenary session. And the Social Program includes a welcoming reception in the Grand Ballroom of the DoubleTree Hotel on Sunday, and a visit to the world famous Henry Doorly Zoo on Tuesday evening. Return frequently to the conference web page as we continue to update our schedule.

60th Canadian Conference for Fisheries Research **Conférence Canadienne de la Recherche sur les Pêches**

When: January 4-6, 2007

Where: Hotel Delta Centre-ville, Montreal, Quebec

The major session themes of the 2007 Conference are:

1. Aquatic Conservation
2. Aquatic Ecosystem Science
3. Aquatic Invasive Species
4. Climate Change
5. Cyanobacteria: Causes, Consequences and Toxicity
6. Environmental Physiology and Genomics
7. Habitat-Fish Mortality Linkages
8. Hydroelectric Power and Aquatic Ecosystems
9. Land-Water Interactions: Water Quality Issues & Food Web Dynamics
10. The St. Lawrence Ecosystem
11. Wetlands

Visit the CCFFR webpage for more details or to register: <http://www.phys.ocean.dal.ca/ccffr/>.

For more information about the program or abstract submission, please contact Nick Mandrak mandrakn@dfo-mpo.gc.ca or Roxane Maranger r.maranger@umontreal.ca.

Conference Announcements

2007 Midwest Ecology and Evolution Conference

When: March 9-11, 2007

Where: Kent, Ohio

All graduate students, undergrads, and post-docs are cordially invited to the 27th Annual Midwest Ecology and Evolution Conference hosted by Kent State University in Kent, Ohio (9-11 March 2007). Sessions include but are not limited to various Ecology, Evolution, and Systematics sessions, Physical/Biological Anthropology, and Paleoecology. For more information and to register visit us at www.midwesteec.org. The registration deadline is February 19, 2007.

Please feel free to email Jennifer Clark with questions at meec2007@hotmail.com.

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Department of Biological Sciences
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IX International Wild Trout Symposium First Call for Papers

When: September 16-19, 2007

Where: West Yellowstone, Montana

Since the first Wild Trout Conference in 1974 concerned anglers, biologists and fisheries managers have gathered periodically to share their passion for wild trout. The Wild Trout IX Program Committee is soliciting abstracts for presentation and poster. For more information visit the website at www.wildtroutsymposium.com.

The program committee is interested in papers related to the following topics:

Balancing native trout with introduced trout
Habitat enhancement and restoration
Catch-and-release fisheries
Genetic considerations for managing wild trout
Invasive species: Vertebrates, invertebrates, plants

Please send brief abstracts (200-300 words or less) to Committee Co-Chairman Dirk Miller by April 1, 2007.

Dirk Miller
Wyoming Game and Fish Dept.
5400 Bishop Blvd.
Cheyenne, WY 82006
Tel: 307-777-4556
Fax: 307-777-4610
Email: dirk.miller@wgf.state.wy.us