



The Pleistocene Post

QUARTERLY NEWSLETTER OF THE ICE AGE FLOODS INSTITUTE

IAFI Contact Information

See our website for more information
<http://www.iceagefloodsinstitute.org>

Board of Directors

Dale Middleton, President
president@iceagefloodsinstitute.org

Dean Ladd, Vice President
deanladd2@aol.com

Karen Wagner, Secretary
information@moses-lake.com

Jim Pritchard, Treasurer
pritchard@donobi.net

Gene Kiver, Executive Committee
frogghollow@sisna.com

Pete Pettersen, Executive Committee
petegolf@myyellowstone.net

Kermit Kiebert, Director
smkvk@sandpoint.net

Susan Lacy, Director
lacy@nwi.net

Nancy Southam, Director
nnsoutham@juno.com

Charles Mason, Director
pixie@wenva.com

Ruth Jordan, Chapter Pres.
sjordan232@aol.com

George Last, Chapter Pres.
gvlast@charter.net

Charlie Mason, Chapter Pres.
pixie@wenva.com

Larry Lambert, Chapter Pres.
larry@glaciallakemissoula.com

Program Managers

Nancy Southam, Store Manager
store@iceagefloodsinstitute.org

Chris Murray, Web Sitemaster
webmaster@iceagefloodsinstitute.org

Rick Lovel, Webmaster
webmaster@iceagefloodsinstitute.org

Signe Wurstner, Newsletter Editor
newsletter@iceagefloodsinstitute.org

Scott Waichler, Newsletter Assoc. Ed.
newsletter@iceagefloodsinstitute.org

Trail Bill Introduced July 22

Since June, some very significant events have taken place concerning legislation calling for the designation of an Ice Age Floods National Geologic Trail.

On July 22 the first step in Congress finally happened. Just before the August recess Congressman Doc Hastings introduced H.R. 4944, the "Ice Age Floods National Geologic Trail Designation Act of 2004." Eleven other members of the U.S. House of Representatives from Washington, Oregon and Idaho had signed on as co-sponsors.

Several members of the Ice Age Floods Institute met with Jennifer Spurgatt of Congressman Hastings' Washington, D.C. office on July 28 concerning the strategy for marshalling the bill through the House. All in attendance left the meeting feeling optimistic that all seventeen members of the House of Representatives from the Northwest would eventually support this bill.

After the bill was introduced it was referred to the House Committee on Resources and on August 2 it was referred to the Subcommittee on National Parks, Recreation and Public Lands. The next step will be for the subcommittee to hold hearings and hopefully give the bill a favorable report back to the standing committee.

When Congress reconvenes after Labor Day, Washington Senators Maria Cantwell and Patty Murray are expected to introduce the bill in the Senate.

So, what can we, who are so far away from Washington, D.C., do to keep this process moving forward? Lots! For one thing, four of Washington's members of the House, the House Member from Montana and the Senators from Oregon, Idaho and Montana have not publicly announced that they will co-sponsor trail legislation. They need to hear from their constituents. Write them. But don't stop there. Ask your city council or county commissioners

to do the same (elected bodies of local officials carry more political weight than one voter). It's easy. Make an appointment to speak with your city manager or mayor or your commissioner about proposing that the local government support the trail bill. It won't cost them anything other than a few stamps to mail their resolution to the appropriate members of Congress. When they hear about the increase in tourism that the trail can bring, they will recognize the value. They need to hear that this is an opportunity for local government to get on the bandwagon. Several eastern Washington cities, counties, tourism groups and other public groups have climbed on that bandwagon.

The task isn't completed even if your Congressman, Congresswoman or Senator has signed on. Write them a letter of thanks and encouragement. As things stand they will need to gather the votes of 214 more House members and 49 more Senators to get this bill passed. They will then have to go through the appropriation process to fund the trail. If members of Congress are convinced that their constituents are supporting their actions, they will have the courage and arguments to convince their colleagues to vote in favor of trail designation.

There isn't much time left in the 108th Congress. It is possible that H.R. 4944 will still be in committee when Congress adjourns for the year. If that happens, it will be introduced again in January. In that case we will need to step up again and remind those Senators and Representatives that we need them to support the new bill.

To view the text of the bill and the current list of sponsors use a search engine on the Internet to go to <http://thomas.loc.gov> Enter H.R. 4944 in the space labeled Bill Number and click on search.

-- Gary Kleinknecht

BMW Riders Tour Scablands

The weekend of July 17th saw more than 6,000 BMW motorcycle riders assembling in Spokane for the annual rally of the BMW Motorcycle Owners of America. Gathering at the Spokane County Fairgrounds and filling virtually every hotel and motel room from Cheney to Post Falls, they met to renew friendships, buy from the many vendors, enjoy exploratory rides to interesting local sites and to attend lectures and demonstrations on many subjects. They hailed from all 50 states as well as Nova Scotia, Turkey, Australia, Japan and Scotland.

On Thursday, Professor Dale Spradling set up shop in "Barn A" and entertained approximately seventy riders with slides and stories of the Bretz/Spokane/Missoula Floods and the Ice Age Floods Institute's efforts to promote a public awareness of their origin and effects. Despite the heat in the unventilated building and a lack of proper darkness to view the slides, the audience showed great interest in the subject as evidenced by the continual questions during and after the presentation.

One aspect of motorcycling is the connection that the riders achieve with their environment. They have the ability to see in all directions without the limitations of the "cage", their slang term for the automobile. Thanks to Dr. Spradling, attendees were able to appreciate the effects of the floods as they made their way home.

-- Sam Van Wyck

President's Corner

This will be my last turn here, on this soapbox. Some time ago, I realized that it was time to retire, both to recover some control over my own life and to make room for other people to bring a new outlook, new talents and new energy to the activities and operation of the Institute. Serving seven years as president has been something of an adventure, perhaps pursuing an oversize and unconventional objective, but in the company of a great group of people who share the vision of presenting the whole amazing story of the floods in a coordinated and reliable way.

For the organization, the most exciting times are about to unfold. With the careful drafting and broadly sponsored introduction of H.R. 4944, Rep. Doc Hastings has brought the Floods Trail concept right up to the divide, and it is now poised to roll irresistibly toward development on the plain below---or is it scabland? Largely through his effort, the bill has been introduced with substantial bi-partisan support from the delegations of the Northwest states, as a non-controversial project that would benefit the whole region. The startling amount of positive media attention that the proposal has already received is an indication of the level of national (and international) interest that the floods can attract.

Trail advocates and interested groups and officials should send statements of appreciation to their Representatives and Senators who are already on board. Those legislators who have not yet formally registered as cosponsors or publicly stated their support should be encouraged to do so. This is it; the time is now.

-- Dale Middleton



Bruce Bjornstad, Skipper Howard H. Winkelmann, and Gary Kleinknecht aboard the C. V. Timberlyne

Timberlyne Marine Tours

There's a new twist to the floods on northern Idaho's Lake Pend Oreille. Skipper Howard H. Winkelmann offers a deal you can't refuse on board his cruise vessel "C. V. Timberlyne". On July 17th George Last, Bruce Bjornstad and Gary Kleinknecht of the Lake Lewis Chapter took an Ice Age Floods cruise. The boat accommodates up to four guests, and the tour includes viewing the video "Sculpted by Floods" at the Faragut State Park visitors center, instruction in navigation and boating techniques, a tour of the southern shoreline of Lake Pend Oreille and a trip over the deepest part of the lake which is 1125 feet. The scenery is beautiful, enough justification for the trip all by itself, but the real excitement was to visit the very site of the ice dam that created Glacial Lake Missoula and to imagine the outburst floods that began right there!

The other amazing thing about this trip is that there is no charge. It's free, at least for now. For more information or to schedule a tour, call Howard Winkelmann at (208) 623-6963.

-- Gary Kleinknecht

by Connie Estep
CREHST Museum, Richland, WA

In Part I (Pleistocene Post, Vol. 1, Issue 2, June 2004), we followed the development of Bretz' ideas until 1927 when he was asked to address the Geological Society of Washington, D.C. Geologists were lined up to refute his ideas. Why was the idea of a massive flood so threatening to them? To understand this we need to go back to the 1600s. Irish Archbishop James Ussher studied the Bible and calculated a timeline by using the genealogy listings and assigning a standard value for each generation. In 1654 he published a treatise showing that the Earth was created on October 23, 4004 BC. By the 1700s these figures were incorporated into Bibles and became part of accepted biblical truths.

Catastrophism

George Cuvier was the next step in this sequence. This Frenchman founded vertebrate paleontology and established the fact of extinction of past life forms. In the early 1800s he theorized that these extinctions were caused by "periodic revolutions or catastrophes" that wiped out species. He tried to avoid the term "catastrophes" due to possible supernatural overtones, but this was the start of what became known as Catastrophism and contributed to the validity of Ussher's date calculations.

Uniformitarianism

James Hutton, a Scottish gentleman farmer studied rock formations and came up with explanations for his observations. He saw sedimentary rock butted at unusual angles and suggested that one had been laid down, then tilted, then another layer deposited. His basic theory was that the interior of the Earth is hot and that this heat drives the creation of new rock. He was convinced that Earth must be much older than Ussher's figures suggested. He said these changes were not caused by catastrophes but were instead caused by the processes that are still occurring. He published his ideas in 1785 in a book that has been described as dense and unreadable.

Hutton's ideas were mostly unknown until Charles Lyell restated them in the 1830s. These ideas became known as uniformitarianism: that earth was formed incrementally by long slow processes rather than by catastrophe. Uniformitarianism became the basic theory of geologists and was so strong that to go back to the ideas of catastrophism was a step backwards and not to be considered.

Back to the 1927 conference

Although the geologists contradicting Bretz' theories knew little of Eastern Washington, their ideas were as firm as cement. In the middle of this conference Joseph Pardee reportedly told a friend that he knew where the flood came from. Pardee had been studying and writing about Lake Missoula since 1910. But Pardee worked for the United States Geological Survey (USGS) and his superior, W.C. Alden, was one of Bretz' opponents. Alden had sent Pardee to study Eastern Washington in the early 1920s before Bretz' work.

Pardee dismissed the idea but later wondered about the possibility of a connection with Lake Missoula. The next year Bretz also looked at the idea of Lake Missoula as a source, but scientific caution kept him from promoting this. By 1932 he had given up on this idea and said the cause was still unknown.

1932-1940

In 1933 an international field trip was planned to the area and Bretz was unable to lead it at the last minute. He found another guide and this actually helped his cause. The substitute, Ira Allison, was not as polarizing as Bretz had been and Allison didn't entirely believe all of Bretz' theories. The important thing was that people actually saw the features. Following this trip, more geologists did field work. This was what Bretz had hoped for, since the evidence was so compelling.

Vindication—at glacial speed?

The American Association for the Advancement of Science met in Seattle in 1940 and during the geological section, after several of Bretz' opponents expanded on their theories, Pardee gave a presentation on ripple marks in the floor of Lake Missoula (seen from the air). He theorized about a glacial ice-dam and sudden failure of that dam describing 500 cubic miles of water rushing out of the lake formed behind the ice-dam. This sudden outflow of water caused the ripple marks but he did not connect this water source with Bretz' unpopular theory. In the following years, geologists gradually began accepting Bretz' views but many of his old opponents continued to publish opinions against him.

In 1952 Bretz (almost 70 years old) led an extensive expedition and in 1956 published a nearly 100 page paper and later a shorter summary. One major new addition was that there were multiple floods (Bretz thought 7 for sure). It was 1971 before Bretz' last vocal opponent, textbook author Richard Flint, grudgingly included a single sentence describing the formation of the Channeled Scablands.

In 1979 Bretz received the Penrose Medal, the Geological Society of America's highest award. He died 2 years later at the age of 98 after outliving most of his opponents. Today we recognize that both catastrophes and slow uniform changes have formed the Earth. But we've also learned that it is the gradual changes that make the catastrophes possible.

Sources:

John Allen & Marjorie Burns, *Cataclysms on the Columbia*, 1986. Portland, OR: Timber Press, Inc. pp. 55-73.

<http://www.lhup.edu/~dsimanek/ussner.htm>

<http://www.ucmp.berkeley.edu/history/cuvier.html>

<http://www.catastrophism.net/>

http://en.wikipedia.org/wiki/James_Hutton

Calendar of Upcoming Events

All meetings are open to members and the public unless otherwise noted. Key to chapter identifiers below:

GLM Glacial Lake Missoula Chapter, Missoula, MT

LL Lake Lewis Chapter, Tri-cities, WA

WE Wenatchee Eratics Chapter, Wenatchee, WA

CP Cheney Palouse Chapter, Spokane, WA

IAFI Ice Age Floods Institute Activities

September

CP **September 8, 2004 - Chapter Meeting.** 6:30 PM at the EWU Science Building in Cheney, WA. EWU Associate Professor of Geology, Ted Doughty, will talk about "The Mysterious Mima Mounds of Eastern Washington". Information: Ruth Jordan, sjordan232@aol.com; (509) 235-9082

LL **September 8, 2004 - Chapter Meeting.** 6:45 PM at Kamiakin High School Auditorium in Kennewick, WA. Dr. Alan Busacca of WSU's Crop and Soil Sciences and Geology Departments will present a program on the floods and their influence on the terroir of local vineyards. Information: George Last, gvlast@charter.net; (509) 946-8050

WE **September 11, 2004 - Field trip to Methow Valley.** Leaving from the Fred Mayer parking lot in East Wenatchee at 8:00am and returning at 5:00pm. The glaciated Methow Valley is also intriguingly known as the Methow Ocean, the marine sedimentary features of which will be emphasized on the trip, as well as the ice-carved topography. The tour bus, with a seating capacity of 44, is full, and only cancellation "standby" seating is now offered. Information: Charlie Mason, pixie@wenval.com; (509) 884-2114

IAFI **September 17, 2004 - IAFI Annual Membership Meeting.** 7:00 pm at St. Patrick Hospital, 500 West Broadway, in Conference Center Rooms 1 & 2 (in Broadway building, use McCormick St. entrance), Missoula MT. Special scientific presentation will begin at 8 p.m. and will be open to the public. Information: Dale Middleton, president@iceagefloodsinstitute.org; (206) 784-3146

IAFI **September 18, 2004 - Glacial Lake Missoula Field Trip.** 8:00 am - 6:00 pm., Missoula MT. Led by Norm Smyers, geologist with Lolo and Flathead National Forests. Information: Pete Pettersen, petegolf@myyellowstone.net; (406) 728-2330.

October

WE **October 12, 2004 - "Halloween" chapter meeting** with "seasonal" door prizes and refreshments. 7:00pm in the Performance Center of the Wenatchee Valley Museum and Cultural Center at 127 S. Mission Street in Wenatchee. Moses Coulee, south of Wenatchee, is one of the very best examples of flood sculpted topography in the area, and the evening's program will feature Chuck Warner of the Nature Conservancy, who will discuss the status of preservation programs in the McCartney Creek area of Moses Coulee. Information: Charlie Mason, pixie@wenval.com; (509) 884-2114

LL **October 23&24, 2004 - Family-A-Fair.** At the TRAC facility in Pasco, WA. The Lake Lewis Chapter will be manning a booth to educate the general public about the Floods. **We need Volunteers !!!** - contact George Last if you are interested in taking a shift in the booth. Information: George Last, gvlast@charter.net; (509)946-8050

LL **October 30, 2004 - Field Trip.** Field work is critical, so we'll be visiting some of the wineries located in the Red Mountain and WallaWalla appellations to investigate terroir, led by Dr. Alan Busaca of Washington State University. Information: Gary Kleinknecht, res20jii@verizon.net; (509) 627-1654.

November

LL **November 9, 2004 - Chapter Meeting - (note new day of the week - Tuesday).** 6:45 pm at the Battelle Auditorium in Richland, WA. Information: George Last, gvlast@charter.net; (509)946-8050

CP **November 10, 2004 - Chapter Meeting.** 6:30 pm at the EWU Science Building in Cheney. Charles Mason will talk about "The Aftermath of the Ice Age Floods and the Glacial Remnants in Douglas and Grant Counties." Information: Ruth Jordan, sjordan232@aol.com; (509) 235-9082

Time to Renew for 2005

Dues received after Aug. 1, 2004 will be credited as paid through Dec. 2005. So please check the number after your last name on the mailing label. If the number is not 05, then it's time to renew your membership for next year. Please use the form on page 7 of this newsletter. Membership benefits include this newsletter, discounts on ice age floods merchandise (see page 8), and reduced cost and priority admission for IAFI field trips. Not to mention supporting a great natural history organization dedicated to telling the "Greatest Story Untold!"

Annual Meeting and Field Trip September 17 & 18 - Missoula, MT

This year's annual IAFI membership meeting will be held on Friday, Sept. 17, at 7:00 pm at St. Patrick Hospital, 500 west Broadway, Missoula, MT, in conference center rooms 1 & 2 (in the Broadway building, use the McCormick St. entrance). The business portion of meeting will begin at 7. The main items of business will be to receive reports, discuss Institute organization and programs, and fill several positions on the Board of Directors.

As a special feature at this meeting, the Institute will initiate what may become a regular series of presentations that relate to the scientific understanding of the Missoula Floods. This first presentation will begin at 8 p.m., following the business section of the membership meeting, and will be open to the public. Marc Hendrix, Associate Professor of Geology at the University of Montana, will explain the research and the reasoning that could require revision of current views about the relationship between modern Flathead Lake and Glacial Lake Missoula. Through analyses of high-resolution seismic reflection profiles and piston cores of lakebed sediments, he and his associates have learned much about the record of glaciation and deglaciation within the Flathead Lake basin, and the history of the lake since the glaciers retreated. Some of their findings regarding early Holocene climate change have modern implications.

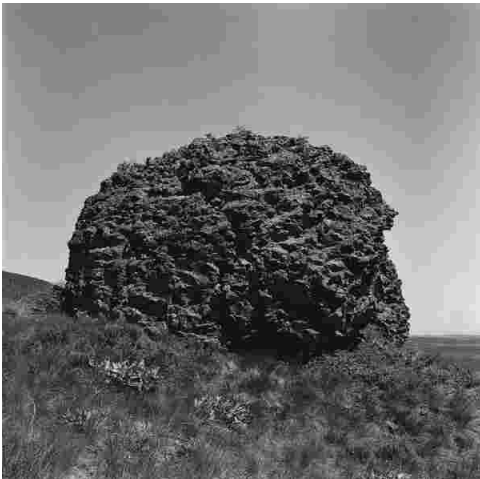
This year's annual IAFI field trip will be held on Saturday, Sept. 18. Norm Smyers, geologist with Lolo and Flathead National Forests, will be the principal leader of the field trip, which will focus on features that led Joseph T. Pardee first to describe Glacial Lake Missoula, and later to conclude that the huge lake had emptied very suddenly, and must have been the source of the cataclysmic flooding recognized by J Harlen Bretz in the Columbia Basin.

Tourgoers will see the geological evidence of a lake that had been nearly 1000 feet deep at Missoula and contained more than 500 cubic miles of water, and of what happened in the lake basin when the glacial ice dam failed and that huge volume of water swiftly drained away, with a peak rate of flow of more than 9 cubic miles per hour. The evidence will include such features as mountainside strandlines, huge current ripples, high-elevation gulch fills, erratics, scour basins, and graded deposits ranging from cobbles to silt. The tour will also include newly identified mega-dune bedforms lining the Clark Fork Valley.

A registration form is included in this newsletter. Contact Pete Pettersen, 406-728-2330, or petegolf@myyellowstone.net, if you are interested to inquire about late registration.

Book Review: *Erratics* by Charles Katz, Jr.

Sheehan Art Gallery in cooperation with Obscurity Press,
Walla Walla, Washington, 2000; ISBN 1-880269-16-3, first edition 2002.



Erratics, by Charles Katz, Jr., is available at <http://www.photoeye.com> for \$25 plus shipping. Just put "Katz" in their search engine. All profits go to Whitman College.

Charles Katz, Jr.'s recent book, *Erratics*, chronicles the form and setting of large, isolated stones found on the surface of the Waterville Plateau in north-central Washington. Typically rounded and "out of place" in the landscape, these stone masses are referred to by geologists as glacial erratics: rocks that are not where they are supposed to be. A detailed account of how these sizable rocks came to be where they are can be found in the introduction to *Erratics*, written by Dr. Kevin R. Pogue, Associate professor of Geology at Whitman College in Walla Walla, Washington. Suffice to say that for these erratics, push came to shove as advancing glacial ice flows during the last (Pleistocene) Ice Age advanced southward across this part of Washington state.

The terrain of the Waterville Plateau is arid, high, gently rolling grassland hills. The erratic rocks Katz has photographed are some of the very few natural objects in this landscape taller than a clump of bunchgrass or a thistle. Katz provides the reader with a visual tour from stone to stone, framing his subjects in such a way as to evoke a wry and erratic, if you will, sense of "personality" that these textured and once rambling rocks have developed. Like all good photographs, Katz's images capture our imagination and suggest that, if one were to take the effort to visit these curious stone beasts of the Waterville highlands, they would not be disappointed. For those that love the myriad forms and circumstances of the natural world, I highly recommend *Erratics*. Beautifully designed as an exhibition catalogue by Ian Boyden, Director of the Sheehan Gallery, Walla Walla, Washington, this is a gem of a book.

-- Terry Toedtemeier
Curator of Photography
Portland Art Museum

Chapter News

Lake Lewis Chapter (Tri-Cities, WA)

Chapter President: George Last
Chapter Contact: George Last
george.last@pnl.gov; (509) 946-8050

The summer was busy and productive for the Lake Lewis Chapter. George Last was elected the chapter's new President in July. Vice President Bruce Bjornstad, Secretary Ivar Husa and Treasurer Brad Dell were all re-elected. Committee chairs remain unchanged. After the elections, George Last, Chris Murray and Bruce Bjornstad teamed up to present a program on techniques used to date the Ice Age Floods.

Bruce Bjornstad continued his "Erratic Behavior" study this summer with new student intern Bronwyn Ryan, a Harvard University graduate and middle school science teacher in New York City. So much interest has been generated by Bruce's study that he conducted a training session for local enthusiasts. About 25 people joined him on July 29th for instruction in GPS techniques and rock identification, and then a trip into the field to practice documenting erratics (see photos on page 8).

The Lake Lewis Chapter will change its meeting date beginning with the November meeting to the second Tuesday of odd numbered months. The November meeting and program will be held on Tuesday, November 9th at the Battelle auditorium in Richland.

-- Gary Kleinknecht

Glacial Lake Missoula Chapter (Missoula, MT)

Chapter President: Larry Lambert
Chapter Contact: Larry Lambert
larry@glaciallakemissoula.com; (406) 370-5987

The chapter will host the IAFI annual membership meeting Friday, Sept. 17, with a bus tour of western Montana's lake and flood features to follow on Saturday (see article on page 5). University of Montana geology Professor Marc Hendrix will give the keynote presentation at the Friday meeting, discussing new research into the connections between Glacial Lake Missoula and Flathead Lake.

Missoula would become a nationally designated trailhead if the U.S. Congress passes recently introduced legislation creating the Ice Age Floods National Geologic Trail (see article on page 1). The Glacial Lake Missoula Chapter has encouraged passage of the bill, lobbying Montana's representatives and distributing news releases and brochures.

On Aug. 26, chapter treasurer Pete Pettersen and IAFI president Dale Middleton were quoted in a full-page, section-front story titled "Flood of Information" that ran in the Missoulian. The article was one of a dozen or so published everywhere from the New York Times to the Los Angeles Times in the wake of the federal legislation.

-- Patia Stephens

Wenatchee Valley Erratics Chapter (Wenatchee, WA)

Chapter President: Charlie Mason
Chapter Contact: Charlie Mason
pixie@wenva.com; (509) 884-2114

The Wenatchee Valley Erratics, at our August 10, 2004 chapter meeting, enjoyed a poetry reading and a program on the geology of the Methow Valley. 38 members and guests were present. New chapter officers were elected: Charlie Mason, President; Susan Lacy, Vice-President; John Whitecar, Secretary; and Diane Cebell-Chilton, Treasurer.

We also held our annual chapter picnic in Trinidad at the home of Susan and Ken Lacy, our retiring chapter president. The Lacy home is located on a high terrace some 400 feet above the present Columbia River. The terrace is deeply incised by the discharge from Lynch Coulee, the discharged material forming the land mass of Crescent Bar, a resort on the river south of the Lacy home. Despite very hot weather, 29 members and friends attended. It was a pleasant afternoon in the shade with good food and good friends. Eula Pritchard, Susan Lacy and Karen Brameld each won a free seat on the field trip in the door prize drawing.

-- Charlie Mason

Cheney Palouse Chapter (Spokane, WA)

Chapter President: Ruth Jordan
Chapter Contact: Carol Schwartz
csssbd@earthlink.net; 509-448-0604

We are pleased to report that two letters of support for the Ice Age Trail have been received recently from the Spokane County Commissioners and The City of Cheney City Council.

Our Regional Trails Committee, headed by Charles Dotson, is working to coordinate The Centennial Trail, The Columbia Plateau Trail and others in our immediate area so that it is easier to enjoy the wealth of outdoor recreation opportunities.

Eastern Washington University faculty and students are contributing to the chapter work by helping with the chapter web site, which is almost done, and by helping to map the trails and prepare a field guide so that people will be able to find their way to view the ice age flood sites in the area.

-- Ruth Jordan

ICE AGE FLOODS INSTITUTE

2004-2005 MEMBERSHIP AND CHAPTER SELECTION FORM

Special Rates: Dues received after Aug. 1, 2004 will be credited as paid through Dec. 2005

I WOULD LIKE TO _____ JOIN THE INSTITUTE FOR 2004-05 _____ RENEW MEMBERSHIP FOR 2004-05
 Please indicate your membership choice in one of the categories below

INDIVIDUAL MEMBERSHIP

(private citizen)
 _____ Basic dues \$30
 _____ Benefactor \$60
 _____ Sustainer \$120

FAMILY MEMBERSHIP

(1 or 2 adults, plus children, at same address)
 _____ Basic dues \$45
 _____ Benefactor \$90
 _____ Sustainer \$180

PRIVATE ORGANIZATION OR FIRM
 (designated representative, plus alternate*)

_____ Basic dues \$50
 _____ Benefactor \$100
 _____ Sustainer \$200

ASSOCIATE MEMBERSHIP

(government agency staff member)
 _____ Basic dues \$20

I would also like to make an additional contribution of \$ _____

_____ In support of the Institute

_____ In support of the _____ Chapter

_____ To be shared equally between the Institute and the _____ Chapter

CHAPTER SELECTION Please check one of the options, as your choice for 2004-05. Institute chapters have been organized (**), or may soon be (#), in the locations listed. *If you select a chapter, your dues will be shared with that chapter, when organized, as full payment of your dues for Institute and chapter membership.*

_____ Missoula** _____ Sandpoint# _____ Cheney/Spokane** | _____ None, or "at-large"
 _____ Moses Lake# _____ Wenatchee** _____ Tri-Cities** | _____ I am interested in forming a chapter in
 _____ Col. Gorge# _____ Portland# _____ Salem# | _____
 | _____ Send information about organizing a chapter

Regular newsletter distribution is now done by posting an Adobe Reader file on the IAFI website (PDF, in color). An e-mail notice will be sent when each quarterly issue is posted. A paper edition (black-and-white) is available by US Mail, for those who cannot use the website edition. *Check here to receive the paper edition* [____]

_____ Please do not include my membership in an acknowledgment listing in the Newsletter

PLEASE PRINT LEGIBLY =====
 NAME(S) _____

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Use the back of this form to note your principal interests related to the Floods and the Institute (optional).

Please make your check payable to **Ice Age Floods Institute**, enclose it with this form, and mail to:

Jim Pritchard, 617 First Ave NW, Ephrata WA 98823

Direct membership questions to Jim at 509-754-2931 or membership@iceagefloodsinstitute.org

The Institute is registered with the IRS as a 501(c)(3) tax-exempt non-profit organization.

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ICE AGE FLOODS INSTITUTE
and GLACIAL LAKE MISSOULA CHAPTER
SEPT. 18, 2004 FIELD TRIP REGISTRATION FORM
Glacial Lake Missoula: Signs of Its Sudden Exit
FIELD TRIP REGISTRATION AND PAYMENT MUST BE RECEIVED BY SEPT. 9,
TO RESERVE PLACES ON THE BUSES OR TO BE PUT ON THE STANDBY LIST

I / WE WOULD LIKE TO REGISTER FOR THE SEPT. 18 FIELD TRIP

_____ As Institute member(s) (current for 2004) \$30 per member	Field trip fee includes charter-bus transportation,
_____ As a K-12 teacher \$30	tour guidebook, and deli-style box lunch.
_____ As non-member(s) \$40 per person	<i>Please check below if a special lunch is preferred.</i>
Total submitted for field trip registration \$ _____	Vegetarian <input type="checkbox"/> Low carb <input type="checkbox"/>

USE THE SEPARATE MEMBERSHIP FORM TO APPLY FOR OR RENEW INSTITUTE AND CHAPTER MEMBERSHIP.

THE TOUR WILL START AT 8 A.M. AND RETURN NO LATER THAN 6 P.M.

CONFIRMATION OF YOUR REGISTRATION, WITH MISSOULA DEPARTURE LOCATION

AND OTHER INFORMATION, WILL BE SENT TO YOU BY U.S. MAIL. Convenient all-day parking will be available. Cancellation refunds will be made only if notice is received no later than Sept. 9.

PLEASE ALSO COMPLETE THE WAIVER/RELEASE FORM FOR THE TRIP.

LODGING ARRANGEMENTS MUST BE MADE SEPARATELY. A special room rate of \$55 per night is available for Sept. 17 and 18 at two Missoula motels: Mountain Valley Inn, 420 W. Broadway (800-249-9174 or 406-728-4500), and

Thunderbird Motel, 1009 E. Broadway (800-952-2400 or 406-543-7251). Both motels serve a continental breakfast.

To qualify for the special rate, call one of the motels no later than Sept. 9 to make your reservation, and be sure to specify that you are coming for the "Ice Age Floods Institute trip."

PLEASE PRINT LEGIBLY =====(Teachers: Please also note school, and grades and subjects taught)=====

NAME(S) _____

ADDRESS _____

E-MAIL _____ PHONE (_____) _____

To hold your place(s) on the field trip, full payment must be received with this registration.

Please make your check payable to **Ice Age Floods Institute**, enclose it with this form and completed waiver form, and mail to the Field Trip Registrar: **Pete Petterson, Glacial Lake Missoula Chap., PO Box 3244, Missoula MT 59806**

If you are also submitting a membership application at this time, include that form and payment with these field trip papers and send them all to Pete.

Waiver and Release Form

Ice Age Floods Institute Glacial Lake Missoula Field Trip September 18, 2004

Each person attending should read and sign this form.

I understand that the Ice Age Floods Institute's field trips may involve inherent risks. I realize that the tour itinerary may include some walking on rocky terrain, and that other natural hazards do exist, that falls and other accidents do occur, and that therefore injuries may result. I understand that it is my option whether or not to take part in any of the activities on the tour. I therefore accept the risks to myself and others, and agree to use extreme caution at all times on this trip.

I understand that any costs for medical expenses incurred as a result of accidental injury or death while participating in the field trip WILL NOT BE PAID BY THE ICE AGE FLOODS INSTITUTE OR ANY OF ITS CHAPTERS.

I, the undersigned, intending to be legally bound hereby for myself, my heirs, executors, and administrators, waive and release any and all rights and claims for losses and damages I may have against the Ice Age Floods Institute, its chapters, officers, board members, and field trip leaders, for any and all injuries suffered by me on this field trip. I attest and verify that I am participating at my own risk. This release is only intended for the use of the Ice Age Floods Institute, and does not absolve any other parties from their liability.

(1) Signed: _____ Date: _____

(2) Signed: _____ Date: _____

(3) Signed: _____ Date: _____

(4) Signed: _____ Date: _____

For minor(s)---

Parent's or guardian's signature: _____

Please describe any allergies or medical concerns of which we should be aware.

(1) _____

(2) _____

(3) _____

(4) _____