



# American Fisheries Society

## *Western Division*

*President – Tom McMahon      President-Elect – Lynn Starnes*  
*Vice President – Joe Margraf      Secretary/Treasurer – Monica Hiner      Past President – Don MacDonald*

February 29, 2004

Hello and welcome to scenic Salt Lake City, Utah.

This annual gathering of the AFS's Western Division is being co-hosted by the **Colorado/Wyoming and Bonneville Chapters**. Salt Lake City and the Little America/Grand America Hotel was chosen as the site for this exciting meeting that will emphasize native fish management and many other issues that are of vast importance to members in the west. Pre-registration numbers and increased abstract submittals have already proven that this meeting will provide you a great opportunity for information exchange and building new partnerships. We are also very excited to be sharing this stage with the **Whirling Disease Foundation**, who are jointly meeting with us at these beautiful hotels. Our Local Arrangements and Program Committees have planned a number of socials, activities, and symposia that highlight native fishes, fisheries management and AFS professionalism throughout western North America.

We are confident in **Local Arrangements Chair Eric Wagner (Bonneville Chapter President)** and his committee members' expertise in providing us with an exciting location and well-organized lodging, meeting arrangements, and entertainment. In fact, check out the opportunities to ski, shop, sightsee, or ice skate that are available all week – there is definitely something for everyone. Furthermore, we are very excited with the way the program has come together with 19 symposia, lots of posters, and various contributed paper sessions scheduled throughout the meeting. **Program Co-Chairs Lynn Starnes (WDAFS President-elect) and Dave Zafft (Colorado/Wyoming Chapter President)** deserve extra special credit for setting up an excellent program worthy of such a great gathering.

We have also incorporated a number of opportunities for you to relax and network with your colleagues throughout the meeting. On **Sunday**, we hope everyone takes advantage of the free "*Leadership Training - Point of Order*" CE class being offered. If not, we'll see you at our WDAFS "*Welcome Social*" at our host hotel, Little America. **Monday** will kick off our annual meeting with the always interesting Plenary Session in the morning, followed by our various Symposia, Contributed Paper, and Poster sessions. Monday evening brings a night of entertainment choices...a Utah Jazz basketball game, our student social, a "bootleg" fisheries film festival or go discover Salt Lake on your own. On **Tuesday**, we continue our fine schedule of Symposia, Contributed Paper and Poster sessions, but please join us for a FREE lunch. Well, nothing is actually free, but please come to our "*WDAFS Annual Business Luncheon*" – it's already part of your registration, so you pay nothing. Later that day you'll have the chance to walk amongst the Poster Session and Trade Show and talk to the vendors and presenters at the Social sponsored by the Whirling Disease Foundation. **Wednesday** will start with our host Chapter's (Colorado/Wyoming and Bonneville) concurrent "*Annual Business Meetings and Breakfast*". This day will then continue with our Symposia, Contributed Paper and Poster sessions and finish with the "*Western Division Banquet and Raffle*" in the evening. **Thursday** may be the final day, but it is by no means the end. The **Utah State University Student Chapter** has lined up some great Continuing Education classes that we strongly recommend you take advantage of. And there are still lots of opportunities to take advantage of winter sports and sightseeing in Utah...so check it out!!!

As you can see, we are quite proud of the meeting we have put together for you. This Annual Meeting is jammed with events and opportunities for you to learn and exchange information in a relaxed setting. Here's hoping that your stay in Salt Lake City will be a memorable one for you...and your family.

Sincerely,

**Tom McMahon, President**  
Western Division, AFS

**Eric Wagner, President**  
Bonneville Chapter, AFS

**Dave Zafft, President**  
CO/WY Chapter, AFS

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**American Fisheries Society**  
*Western Division*

**American Fisheries Society**  
**Western Division, Bonneville Chapter &**  
**Colorado/Wyoming Chapter**  
**2004 Annual Meeting Sponsors**

*Activity Sponsors (\$2,000 - \$5,000)*

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# *Whirling Disease Foundation*

## *2004 Symposium Sponsors*

The Whirling Disease Foundation gratefully acknowledges these sponsors for making this meeting possible

U.S. Fish and Wildlife Service  
U.S. Geological Survey  
Trout Unlimited  
Montana State University System Water Center  
Whirling Disease Foundation

American Fisheries Society Fish Health Section  
Barbara and Gerry Clow  
Colorado Division of Wildlife  
Colorado Trout Unlimited  
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Federation of Fly Fishers  
Idaho Fish and Game  
Montana Fish, Wildlife and Parks  
The State of New York Department of Environmental Conservation  
Salt Lake County Fish and Game Association  
Utah Division of Wildlife Resources  
Utah Council of Trout Unlimited  
Simms Fishing Products

## Meeting Organizers

Team WDAFS2004

Co-hosted by: Bonneville and Colorado-Wyoming Chapters

<b><u>ANNUAL MEETING CHAIR</u></b> .....	Lynn Starnes
<b><u>BONNEVILLE CHAPTER PRESIDENT</u></b> .....	Eric Wagner
<b><u>COLORADO-WYOMING PRESIDENT</u></b> .....	David Zafft
<b><u>WHIRLING DISEASE FOUNDATION</u></b> .....	Jerri Bartholomew and Dave Kumlien
<b><u>PROGRAM COMMITTEE CHAIR</u></b> .....	David Zafft
Continuing Education .....	Sarah Chamberlain, Pete McHugh, and Mark Novak
Plenary Session .....	Lynn Starnes
Poster Session .....	Jason Burckhardt
Printed Program & Abstracts .....	Rob Gipson
<b><u>LOCAL ARRANGEMENTS CHAIR</u></b> .....	Eric Wagner
Audio Visual .....	Tom Pettengill and Krissy Wilson
Best Student Paper/Poster .....	Kevin Gelwicks and Anna Miller
Fundraising Chair .....	Bill Bradshaw
Local Activities .....	Matthew Andersen and Mike Slater
Publicity .....	Paul Mavrakis
Raffle Chair .....	Phaedra Budy
Raffle .....	Tracy Stephens & Dan Brauch
Registration .....	Sheila Garl, Roger Mellenthin, and Steve Wolff
Signs & Banners .....	Emily Sanderson
Trade Show .....	Kevin Christopherson
Web Site .....	Mary Whalen

### ***Western Division AFS Officers and Representatives for 2003-2004***

<p><b>President</b>          Thomas R McMahon          Arizona Game &amp; Fish Dept          2221 W Greenway          Phoenix, AZ 85023-4399          USA          Phone (602) 789-3216          Fax (602) 789-3776          tmcMahon@gf.state.az.us</p>	<p><b>President Elect</b>          Lynn Starnes          US Fish and Wildlife Service          P.O. Box 308          Albuquerque, NM 87103          USA          Phone (505) 248-6865          Fax (505) 248-6845          lynn_starnes@mail.fws.gov</p>	<p><b>Past President</b>          Don MacDonald          MacDonald Environmental Services          and the Sustainable Fisheries          Foundation          #24 - 4800 Island Highway North          Nanaimo, BC V9T 1W6          Canada          Phone (250) 729-9623          Fax (250) 729-9628          sff@island.net</p>
<p><b>Vice President</b>          F. Joseph Margraf          Alaska Cooperative Fish and Wildlife          Research Unit          University of Alaska Fairbanks          210 Irving I Bldg          P.O. Box 757020          Fairbanks, AK 99775-7020          USA          Phone (907) 474-7661          Fax (907) 474-6716          ffjfm1@uaf.edu</p>	<p><b>Secretary Treasurer</b>          Monica Hiner          Yurok Tribal Fisheries Program          15900 Highway 101 North          Klamath, CA 95548          USA          Phone (707) 482-2841          Fax (707) 482-0384          monica@northcoast.com</p>	<p><b>Nominating Representative</b>          Kathryn Boyer          Department of Fish and Wildlife          104 Nash Hall          Oregon State University          Corvallis, OR 97331-3803          USA          Phone (503) 737-1972          Fax (541) 737-3590          Kathryn.Boyer@orst.edu</p>

## **General Information**

Please refer to the hotel floor plans (Pages 27-28) to help you find your way to the many meetings, presentations, activities, and events taking place at all locations. At each venue, follow informational signs to the various rooms and activities. We have attempted to make this information accurate and relevant. However, it is all subject to change. So, **PLEASE CONSULT THE DAILY CHANGE SHEETS AT THE REGISTRATION TABLE FOR THE MOST UP-TO-DATE INFORMATION.**

### **Registration**

Conference registration is located in the **Uintah Room** of **Little America**. It will be open:

Sunday, February 29.....11:00 am - 11:00 pm	Monday, March 1.....7:00 am - 5:00 pm
Tuesday, March 2.....7:00 am - 5:00 pm	Wednesday, March 3.....7:00 am - 5:00 pm

### **Presentation Download**

Presentations will be downloaded in the **Sawtooth Room** of **Little America**. All presentations must be downloaded by 8:00 pm the evening prior to the scheduled presentation time.

Sunday, February 29.....12:00 pm - 11:00 pm	Monday, March 1.....9:00 am - 8:00 pm
Tuesday, March 2.....9:00 am - 8:00 pm	

### **Audio-Visual Preview**

Presenters can test their equipment and run through their slides in **Wasatch Room** of **Little America**. If you would like to use this room, please check in at the Sawtooth Room. This room is available:

Sunday, February 29.....12:00 pm - 8:00 pm	Monday, March 1.....9:00 am - 8:00 pm
Tuesday, March 2.....9:00 am - 8:00 pm	

### **Student Subunit T-shirt Sales**

Please help the student subunits by purchasing one or more t-shirts. T-shirts are on display in the Little America Coat Room and will be on sale throughout the conference.

### **Raffle and Auction Display / Ticket Sales**

Please stop by the Little America Sinclair Room to check out the great raffle and auction items. Tickets will be on sale throughout the conference. See Page 29 for a list of raffle and auction donors.

### **Symposia and Technical Sessions**

We have 17 symposium scheduled between Monday and Wednesday. This is in addition to the 10<sup>th</sup> Annual Whirling Disease Symposium. Concurrent sessions will held on both floors of Little America and all talks associated with the Whirling Disease Symposium will in the Savoy Room in Grand America. Please check the "quick glance" listing on pages 12-21 of this program for a schedule of presentation times, authors, and titles.

### **Poster Session**

There are over 50 poster presentations that will be displayed during the conference. The authors will be present at their posters from 6:00 p.m. to 8:00 p.m. Tuesday, March 2<sup>nd</sup> during the Poster Social. A list of poster titles and authors can be found on Pages 22-23.

Presenters: Poster set-up is between 4:00 pm and 10:00 pm on Sunday, February 29 and between 7:00 am and 12:00 pm on Monday, March 1<sup>st</sup>. Dismantling of poster presentations is between 3:30 pm and 5:00 pm on Wednesday March 3<sup>rd</sup>.

### **Trade Show**

Make sure you spend some time at the Trade Show located in Little America, Foyers A-C and Ballroom B. The trade show will run from 12:00 pm on Monday, March 1st through 3:30 pm Wednesday, March 3rd. Participants who visit all vendors during the exhibition will also win a special, secret door prize.

Vendors: Trade show set-up is between 4:00 pm and 10:00 pm on Sunday, February 29 and between 7:00 am and 12:00 pm on Monday, March 1st. Dismantling of trade show exhibits is between 3:30 pm and 5:30 pm on Wednesday March 3rd.

### **Mid-morning and Mid-afternoon Breaks**

Morning and afternoon session breaks will be held at Little America in Foyers A-C and Ballroom B. Breaks will also be held in the Grand Amercia Session Foyers. Refreshments will be available provided. Daily technical session/symposium break times vary, so be sure to check your daily schedule!

### **Lunches**

With the exception of the Tuesday Western Division AFS Business Luncheon (see above), lunches are on your own. There are restaurants located in Little America and numerous restaurants within easy walking distance of the hotel. Lunches are 90 minutes.wn.

## *Sunday (February 29)*

### **“POINT OF ORDER”- SKILLS FOR SURVIVING GENERAL ROBERT’S RULES**

This is a free workshop and all members are encouraged to attend, particularly Division and Chapter Executive Committee members.

2:00 pm – 5:00 pm

Little America, Flagstaff Room

### **Welcome Social**

This is a great opportunity to mingle with old friends and make new acquaintances. The pool terrace on the second floor provides a nice place to socialize. Complimentary beverages and hors d'oeuvres will be provided.

6:00 pm - 9:00 pm

Little America, Second floor and pool terrace

### **Program Chairs/Moderator Coordination Meeting**

All program chairs and moderators are encouraged to attend this coordination meeting.

7:00 pm - 8:00 pm

Little America, Cheyenne Room

## *Monday (March 1)*

### **Morning Coffee**

Coffee, tea, pastries, and muffins will be served prior to the plenary session.

7:30 am - 8:30 am

Grand America, Imperial Ballroom A and B

### **Plenary Session**

The theme of the Plenary Session is “*Native Fish Management: Policies, Politics and Practicalities*”. In addition to presentations by Bob Wiltshire, Paul Marsh, Ira New Breast, and Bruce Taubert, several Western Division AFS awards will be presented (Page 11).

8:30 am - 12:00 pm

Grand America, Imperial Ballroom A and B

### **Film Festival**

This will be an opportunity to view some bootleg fisheries films. See page 26 for the film festival schedule.

8:30 pm – 10:00 pm

Little America, Ballroom C

### **Student Social**

All students are invited to attend the student social. This is a great opportunity to mix with fisheries professionals in a relaxed setting. Food and beverage will be provided.

7:00 pm - ??

Little America, Presidential Suite

## *Tuesday (March 2)*

### **Morning Coffee**

Coffee, tea, pastries, and muffins will be served prior to the morning session.

7:00 am - 8:00 am

Little America, Foyers A-C and Ballroom B

### **Western Division AFS Business Luncheon**

The WDAFS business meeting represents our most important opportunity to address key issues of interest to the members of the Division. Therefore, we would like to extend an invitation to enjoy an excellent lunch, get caught up on ongoing activities and initiatives, and help shape future priorities in the Western Division. Everyone is encouraged to attend; this lunch is included in your registration.

11:30 am - 1:30 pm

Grand America, Imperial A and B

### **Poster Social**

Tuesday evening, the Whirling Disease Foundation is sponsoring a social in which poster presenters will be on hand to discuss their research. Complimentary beverages and hors d'oeuvres will be provided.

6:00 pm – 8:00 pm

Little America, Foyers A-C and Ballroom B

## Conference Activities

### ***Slipstream Concert and Jam***

Tuesday evening, from 8:00 to 9:00 pm, the band *Slipstream* will perform in a free concert. After the concert, a jam will follow in which all acoustic musicians are welcome to join in regardless of skill level. The band is composed of a variety of fisheries professionals: Matthew Andersen (guitar, bass, vocal), Chris Andersen (piano, vocal), Bill Bradshaw (mandolin), Eric Wagner (guitar, harmonica, vocal, violin), and Cara (violin). The songs range from country western to folk and old-time, with a few acoustic originals thrown in for good measure.

8:00 pm – 11:00 pm

Little America, Ballroom C

## ***Wednesday (March 3)***

### ***Morning Coffee***

Coffee, tea, pastries, and muffins will be served prior to the morning session.

7:00 am - 8:00 am

Little America, Foyers A-C and Ballroom B

### ***Bonneville Chapter Business Meeting***

All Bonneville Chapter members are encouraged to attend and participate in the Chapter Annual Business Meeting. This is an important opportunity to participate in chapter business and issues, as well as get caught up with important Chapter issues. Pre-registration is required for the breakfast, but not to attend the meeting.

7:00 am – 9:00 am

Grand America, Second Floor

### ***Colorado-Wyoming Chapter Business Meeting***

All Colorado-Wyoming Chapter members are encouraged to attend and participate in the Chapter Annual Business Meeting. This is an important opportunity to participate in chapter business and issues, as well as get caught up with important Chapter issues. Pre-registration is required for the breakfast buffet, but not to attend the meeting.

7:00 am – 9:00 am

Little America, Arizona Room

### ***Banquet, Raffle, and Live Auction (Fee included with registration)***

Prior to the banquet and raffle there will be a social held at Little America, Foyers A-C from 6:00 to 7:00 pm. A Western buffet will be served starting at 7:00 pm. All registrants will receive two free beer coupons for this event. This year's raffle will be hosted by Utah's one and only Roger Schneidervin. Raffle and auction items will include guided fishing trips, two very nice fishing rods, the infamous "Fly Fish" (the student chapter's three-foot model fish chock full of hand-tied flies), beautifully framed prints and a whole suite of art, fishing, and outdoor equipment you cannot resist. A list of donors is located on Page 29.

6:00 pm - 11:00 pm

Little America, Grand Ballroom

## ***Thursday (March 4)***

### ***Continuing Education Workshops***

There will be three concurrent continuing education workshops:

- Aquatic invasive species threats to western waters
- Preparation and review of professional manuscripts
- Population viability analysis

For workshop descriptions see Pages 24-25.

8:00 am – 5:00 pm

Little America, Second Floor

## Local Tours and Activities

### **Brief Summary and Estimated Costs**

All events subject to change and costs approximate. If you have any questions, please contact Matthew Andersen (Utah Division of Wildlife Resources) at (801) 538-4756 or see Matthew during the meeting. Light rail (TRAX) serves the downtown area for free from the Little America Hotel. The Little America concierge can be reached at (801) 596-5799.

If you are interested in Alpine or Nordic skiing you should contact Mike Slater (801) 491-5650 or Matthew Andersen (801) 538-4756, respectively, as soon as possible.

Shopping opportunities are readily available in the Salt Lake City area and exhibits are free at Clark Planetarium.

### **Saturday 28 February**

- 7:30 am – 5:30 pm Alpine skiing (on your own, no minimum people). Transportation and lift tickets \$48 - \$89, equipment rentals available, more information at: [www.skiutah.com](http://www.skiutah.com). Mike Slater (UDWR) has more information and a limited number of lift tickets for sale at cost.
- 9:00 am – 3:00 pm Classic Nordic/cross-country skiing and snowshoeing in Wasatch-Cache National Forest (contact Matthew if you wish to Nordic ski). Transportation and forest pass \$10, equipment rentals available \$15.
- 9:00 am – 4:00 pm Ski Jumping World Cup at Utah Olympic Park (on your own). Transportation and event ticket \$65.
- 8:00 pm – 11:00 pm Utah Symphony Performance at Abravanel Hall (on your own, no minimum people). Transportation free (TRAX system outside Little America Hotel), Tickets \$16-40.
- 11:00 pm and 12:00 pm Midnight Music and Laser show at Clark Planetarium (on your own). Tickets \$10 (must be seated 5 minutes before show).

### **Sunday 29 February**

- 7:30 am – 5:30 pm Alpine skiing (on your own, no minimum people). Transportation and lift tickets \$48 - \$89, equipment rentals available, more information at: [www.skiutah.com](http://www.skiutah.com) (Contact Mike).
- 9:00 am – 4:00 pm Nordic/cross-country skiing and snowshoeing at White Pine Touring, Park City (contact Matthew). Transportation and track pass \$24, equipment rentals \$12-15.
- 9:00 am – 4:00 pm Ski Jumping World Cup at Utah Olympic Park (on your own). Transportation and event ticket \$65.

### **Monday 1 March**

- 7:30 am – 5:30 pm Alpine skiing (on your own, no minimum people). Transportation and lift tickets \$48 - \$89, equipment rentals available, more information at: [www.skiutah.com](http://www.skiutah.com).
- 7:00 pm – 9:00 pm NBA Basketball (on your own). Detroit Pistons vs. Utah Jazz at Delta Center. Transportation free, tickets \$30-110.

## Local Tours and Activities

### Tuesday 2 March

7:30 am – 5:30 pm Alpine skiing (on your own, no minimum people). Transportation and lift tickets \$48 - \$89, equipment rentals available, more information at: [www.skiutah.com](http://www.skiutah.com).

### Wednesday 3 March

7:30 am – 5:30 pm Alpine skiing (on your own, no minimum people). Transportation and lift tickets \$48 - \$89, equipment rentals available, more information at: [www.skiutah.com](http://www.skiutah.com).

### Thursday 4 March

7:30 am – 5:30 pm Alpine skiing (on your own, no minimum people). Transportation and lift tickets \$48 - \$89, equipment rentals available, more information at: [www.skiutah.com](http://www.skiutah.com).

9:00 am – 4:00 pm Nordic/cross-country skiing and snowshoeing at White Pine Touring, Park City OR Soldier Hollow, Midway (Olympic venue) (contact Matthew).  
Transportation and track pass \$24, equipment rentals \$12 – 15.

7:00 pm – 9:00 pm Mormon Tabernacle Choir Rehearsal (own your own). Free

### Friday 5 March

7:30 am – 5:30 pm Alpine skiing (on your own, no minimum people). Transportation and lift tickets \$48 - \$89, equipment rentals available, more information at: [www.skiutah.com](http://www.skiutah.com).

9:00 am – 4:00 pm Nordic/cross-country skiing and tubing at Soldier Hollow, Midway (Olympic venue) (contact Matthew). Transportation and track pass \$25, equipment rentals available \$15.

11:00 pm and  
12:00 pm Midnight Music and Laser show at Clark Planetarium (on your own).  
Tickets \$10 (must be seated 5 minutes before show).

### Saturday 6 March

7:30 am – 5:30 pm Alpine skiing (on your own, no minimum people). Transportation and lift tickets \$48 - \$89, equipment rentals available, more information at: [www.skiutah.com](http://www.skiutah.com).

8:00 am – 6:00 pm Back-country skiing (escorted). \$50 per person, which includes lunch and snacks, minimum of 2 individuals maximum number of 6, transportation \$21 per person. People are encouraged to bring their own equipment, or can rent gear in the area. Contact Robert Al-Chokhachy at [robertal@cc.usu.edu](mailto:robertal@cc.usu.edu).

9:00 am – 4:00 pm Nordic/cross-country skiing and snowshoeing at White Pine Touring, Park City (escorted, 10 people maximum). Transportation and track pass \$24, equipment rentals \$12- 15.

11:00 pm and  
12:00 pm Midnight Music and Laser show at Clark Planetarium (on your own).  
Tickets \$10 (must be seated 5 minutes before show).

## Sessions Overview

Session Number	Session Name	Session Chair	Monday Afternoon	Tuesday Morning	Tuesday Afternoon	Wednesday Morning	Wednesday Afternoon	
1	Science in the Public Arena: The How and Why of Scientific Decision-Making	Don MacDonald	GA Savoy Room					
2	Western Native Fishes	Jim Tilmant and Mark Brouder	Little America Ballroom A					
3	Western Native Inland Trout	Kevin Meyer	Little America Ballroom C					
4	Threats to Western Waters	Bob Pitman	Little America Wyoming					
5	Impacts of Fire Management on Fisheries	Amy Unthank and Dave Winters	Little America Idaho					
6	Large-Scale Surveys: Providing the Scientific Foundation for Fish and Aquatic Ecosystem Management	Bob Hughes	LA Arizona					
7	Management of Resident Fish in the Columbia River Basin	David Ward	LA Flagstaff					
8	Contributed Papers - Pacific Salmon Management / Salmonid Spawning Investigations	David Zafft	LA Sun Valley					
	Contributed Papers – Amphibian Investigations					LA Sun Valley		
	Contributed Papers - General						LA Sun Valley	
9	Supplementation: Measuring Effects and Predicting Outcomes	Keith Underwood	Little America Tucson					
10	Coastal Cutthroat Trout	Bob Gresswell		Little America Arizona				
11	Watershed Planning: Approaches, Challenges, and Strategies	Don MacDonald		Little America Flagstaff				
12	Food Webs and Fish Carrying Capacity	Mark Wipfli		Little America Sun Valley				
13	Stream Restoration: Approaches, Case Studies, and Techniques	Don Wiley and Mark Holden			Little America Idaho			
14	Instream Flows: Scientific Approaches, Legal Considerations and Public Involvement	Tom Annear			Little America Tucson			
15	Reservoir Sampling and Management Strategies	Scott Gangl				Little America Wyoming		
16	Aquaculture	Joe Valentine and Steve Sharon				Little America Flagstaff		
17	Lessons for the Design of Future Salmon Habitat Restoration and Monitoring Programs	Charlie Paulsen and Ian Parnell					LA Arizona	

**Plenary Session  
Grand America  
Imperial Ballroom A and B  
8:30 am – 12:00 pm**

**Native Fish Management:  
Policies, Politics, and Practicalities**

**8:30 am - Welcome and Introductions**

**Lynn Starnes** - WDAFS President-Elect

**Tom McMahon** - WDAFS President

- \* **Dave Kumlien** - Executive Director, Whirling Disease Foundation
- \* **Ira Adelman** - AFS President, "Priorities and Activities of AFS: 2003 and 2004"
- \* **Gus Rassam** - AFS Executive Director, "Outlook for AFS"
- \* **Casey Harthorn** - President AZ/NM Chapter, "AFS Hutton Program is Growing"

**WDAFS Award Presentation** by Tom McMahon

Robert Borovicha Conservation Achievement Award

**Bob Wiltshire**, Director, Federation of Fly Fishers' Discovery Center, Livingston, Montana

"Communicating Science-based Fisheries Information to Public Audiences"

**Break (15 minutes - Please return promptly)**

**Paul Marsh**, Arizona State University, Tempe, Arizona

"Conflicts Between Management of Native Fishes and Introduced Sport Fisheries in the Southwestern United States"

**WDAFS Award Presentation** by Tom McMahon

Conservation Achievement Award

**Ira New Breast**, Executive Director, Native American Fish and Wildlife Society

"How Best Can Tribal Fish and Game Departments (or Tribal Governments) be Included in Efforts to Conserve and Enhance Native Fishes?"

**WDAFS Award Presentation** by Tom McMahon

Award of Excellence

**Bruce Taubert**, Assistant Director, Wildlife Management Division, Arizona Game and Fish Department, Phoenix, Arizona

"Arizona's Efforts to Maintain and Restore Native Fish Populations"

**Closing remarks** - Lynn Starnes - WDAFS President-Elect

**12:00 pm - Adjourn**

**Monday afternoon ♦ March 1**

<i>Session Name</i>	<b>Science in the Public Arena: The How and Why of Scientific Decision-Making</b>	<b>Western Native Fishes</b>	<b>Western Native Inland Trout</b>	<b>Threats to Western Waters</b>	<b>Impacts of Fire Management on Fisheries</b>
<i>Session #</i>	<b>01</b>	<b>02</b>	<b>03</b>	<b>04</b>	<b>05</b>
<i>Moderator</i>	<b>Don MacDonald Cleve Steward</b>	<b>Marlis Douglas Mark Brouder</b>	<b>Kevin Meyer</b>	<b>Bob Pitman</b>	<b>Amy Unthank</b>
<i>Venue</i>	<b>Grand America</b>	<b>Little America</b>	<b>Little America</b>	<b>Little America</b>	<b>Little America</b>
<i>Room</i>	<b>Savoy</b>	<b>Ballroom A</b>	<b>Ballroom C</b>	<b>Wyoming</b>	<b>Idaho</b>
<b>1:30 pm</b>	<b>Introduction</b>	<b>Introduction</b>	<b>Introduction</b>	<b>Introduction</b>	<b>Introduction</b>
<b>1:35</b>	[01-01] Course description  Presenters:  <b>I. Adelman E. Knudsen</b>	[02-01] Drought in an evolutionary context: molecular evidence from endemic Colorado River fishes  <b>M. Douglas</b>	[03-01] Distribution of native cutthroat trout in northern Utah  <b>P. Thompson</b>	[04-01] Aquatic nuisance species legislation and funding  <b>T. Proctor</b>	[05-01] Using a multiple scale aquatic, riparian and wetland assessment to identify watershed characteristics and impacts: implications to future fire management <b>D. Winters</b>
<b>1:55</b>	[01-02] Normative Science: Subverting Development of Sound Fisheries Policy  <b>R. Lackey</b>	[02-02] Factors affecting roundtail chub, flannelmouth sucker, and bluehead sucker in the upper Muddy Creek watershed, Wyoming  <b>M. Bower</b>	[03-02] Colorado River cutthroat trout restoration projects in Wyoming  <b>H. Sexauer</b>	[04-02] Effects of competition and predation by introduced fishes on coho salmon using shallow Pacific northwest lakes  <b>S. Bonar</b>	[05-02] The effects of wildfire on hydrologic processes and stream sedimentation at Little Granite Creek near Bondurant, Wyoming  <b>S. Ryan</b>
<b>2:15</b>		[02-03] Current distribution of bluehead sucker, flannelmouth sucker, and roundtail chub in the Green River drainage, Wyoming  <b>K. Gelwicks</b>	[03-03] Status of Paiute cutthroat trout recovery  <b>C. Mellison</b>	[04-03] Establishment of invasive species in Hawaiian stream systems  <b>A. Brasher</b>	[05-03] Effects of wildland fire on stream characteristics and organic matter dynamics in the Little Granite Creek watershed, Wyoming  <b>K. Dwire</b>
<b>2:35</b>		[02-04] Field application of the "floodplain reset" approach to enhance survival of bonytail and razorback sucker in the Middle Green River, Utah  <b>T. Modde</b>	[03-04] The status of desert redband trout in Southwestern Idaho  <b>D. Johnson</b>	[04-04] Effects of green sunfish and post-fire sedimentation on native fauna in interrupted streams in southwestern Arizona  <b>D. Hall</b>	[05-04] Technology transfer for the Region 1/Region 4 watershed, soils, and riparian adaptive management fire projects  <b>K. Overton</b>
<b>2:55</b>		[02-05] The status of endangered humpback chub populations in Utah  <b>J. Hudson</b>	[03-05] Status and management of Yellowstone cutthroat trout in Wyoming  <b>J. Burckhardt</b>	[04-05] Life history and impacts of introduced asian carp in large river systems  <b>W. Stancil</b>	[05-05] Streamside forest and large woody debris characteristics in burned and unburned ponderosa pine/ Douglas-fir forests  <b>S. Wollrab</b>
<b>3:15</b>	<b>Break</b>	<b>Break</b>	<b>Break</b>	<b>Break</b>	<b>Break</b>
<b>3:40</b>	Presenters:  <b>B. Wiltshire G. Rassam B. Taubert</b>	[02-06] Population trends for humpback chub <i>Gila cypha</i> , in the Little Colorado River, 2001-2003  <b>P. Sponholtz</b>	[03-06] Status of westslope cutthroat trout and the potential extent of hybridization with introduced rainbow trout in the Upper Kootenay River, BC  <b>S. Bennett</b>	[04-06] Whirling disease as an invasive species: spread and impact  <b>B. Kerans</b>	[05-06] Wildland fire and riparian areas: Identifying criteria influencing riparian area resistance to high intensity wildfire  <b>L. Decker</b>
<b>4:00</b>		[02-07] Virgin spinedace status and distribution  <b>R. Fridell M. Movillius</b>	[03-07] Conserving westslope cutthroat trout in Yellowstone National Park  <b>D. Mahoney</b>	[04-07] Impacts and management of invasive aquatic plants in the west  <b>M. Pfauth</b>	[05-07] Wildfire and native fishes in the southwest: The final nail in the coffin?  <b>J. Rinne</b>
<b>4:20</b>		[02-08] Status of razorback sucker in the Colorado River with emphasis on the Lake Mead population  <b>T. Welker</b>	[03-08] Population estimation of Apache trout <i>Oncorhynchus apache</i> in 11 streams on the Fort Apache Indian Reservation, Arizona  <b>L. Ruiz</b>	[04-08] Case history of New Zealand mudsnail invasion  <b>D. Richards</b>	Discussion  Perspectives on integrating Forest Service research on fire effects to aquatic ecosystems
<b>4:40</b>		[02-09] A review of the distribution and management of bonytail <i>Gila elegans</i> , in the Lower Colorado River Basin  <b>C. Minckley</b>	[03-09] Proposal and criteria for matching extant Apache trout streams with replication streams  <b>K. Meyer</b>	[04-09] Non-native fish removal and control in the Colorado River mainstem: What have we learned?  <b>G. Muller</b>	
<b>5:00</b>			[03-10] Native trout recovery in Arizona: past, present, and future  <b>S. Gurtin</b>	[04-10] Vulnerability of native fish to predation by western mosquitofish <i>Gambusia affinis</i> : A model and test of assumptions  <b>M. Mills</b>	

Session Name	Large-Scale Surveys: Providing the Scientific Foundation for Fish and Aquatic Ecosystem Management	Management of Resident Fish in the Columbia River Basin	Contributed Papers Pacific Salmon Management Salmonid Spawning Investigations	Supplementation: Measuring Effects and Predicting Outcomes
Session #	06	07	08	09
Moderator	Bob Hughes	Dave Ward	Bill Bradshaw	Keith Underwood
Venue	Little America	Little America	Little America	Little America
Room	Arizona	Flagstaff	Sun Valley	Tucson
1:30 pm	<b>Introduction</b>	<b>Introduction</b>	<b>Introduction</b>	<b>Introduction</b>
1:35	[06-01] A 1000 points of insight – development and application of a reference site network for establishing expected biological conditions in western streams <b>C. Hawkins</b>	[07-01] Resident fish in the Columbia River Basin: Restoration, enhancement, and mitigation losses associated with hydroelectric development and operations <b>N. Ward</b>	[08-01] Direct and indirect methods of estimating juvenile winter Chinook abundance in the Upper Sacramento River (JPE's versus JPI's) <b>P. Gaines</b>	[09-01] ISAB review of salmon and steelhead supplementation <b>E. Loudenslager</b>
1:55	[06-02] A method for measuring the comparability of different sampling methods used in biological surveys: implications for data integration and synthesis <b>Y. Cao</b>	[07-02] An adaptive conservation aquaculture program for endangered Kootenai River white sturgeon: past, present and future <b>S. Ireland</b>	[08-02] A need to consider water quality during restoration efforts: the effects of chromium on Chinook salmon under exposure conditions simulating the Columbia River, WA <b>A. Farag</b>	[09-02] Idaho supplementation studies: a cooperative study for evaluating supplemented populations of Chinook salmon in Idaho <b>J. Lutch</b>
2:15	[06-03] Landscape characteristics and Pacific salmon: consistent patterns across watersheds and their management applications <b>A. Steel</b>	[07-03] Alternatives for management of white sturgeon in the Columbia River Basin <b>D. Ward</b>	[08-03] Spatial and temporal patterns of habitat selection by juvenile salmon and implications for entrainment <b>M. Horn A. Blake</b>	[09-03] Idaho supplementation studies: use of microsatellite DNA markers to determine the reproductive success of hatchery and natural origin Chinook salmon in a supplemented stream <b>B. Leth</b>
2:35	[06-04] Utility of spatially continuous, basinwide redd counts for examining spatial and temporal dynamics of Chinook salmon <b>R. Thurow</b>	[07-04] Burbot on the brink or <i>Notalota lota</i> <b>V. Paragamian</b>	[08-04] Can directional asymmetry be used to evaluate environmental or genetic impacts of hatchery supplementation in endangered Snake River chinook salmon? <b>O. Johnson</b>	[09-04] Lessons in adapting study designs to evaluate the evolving science of supplementation: perspectives from the Idaho supplementation studies <b>J. Lutch</b>
2:55	[06-05] How much is enough? Using spatiotemporally dimensioned census data to understand the geography of Chinook salmon populations <b>D. Isaak</b>	[07-05] Using geochemical signatures in westslope cutthroat trout scales to determine stream origin in a freshwater river basin <b>C. Muhlfeld</b>	[08-05] Feasibility of dual marking age-0 Chinook salmon for mark-recapture studies <b>P. Gaines</b>	[09-05] Warm Springs National Fish Hatchery spring Chinook salmon program: an integrated tool balancing harvest, supplementation, and conservation of wild populations <b>B. Spateholts</b>
3:15	<b>Break</b>	<b>Break</b>	<b>Break</b>	<b>Break</b>
3:40	[06-06] Insuring large-scale monitoring efforts are meaningful <b>B. Roper</b>	[07-06] Testing strobe lights to reduce entrainment of kokanee at Grand Coulee Dam <b>R. LeCaire</b>	[08-06] Developing a method for quantification of Chinook salmon spawning habitat in the Yukon-Kuskokwim River Delta using stocks and habitat in the Tuluksak River <b>D. Jallen</b>	[09-06] Lessons after 10 years of large-scale salmon and steelhead supplementation in the Hood River <b>K. Underwood</b>
4:00	[06-07] Allocation of monitoring sites for regional surveys <b>R. Gresswell</b>	[07-07] A hierarchical examination of bull trout habitat relationships in northeast Oregon <b>R. Al-Chokhachy</b>	[08-07] Diel spawning behavior of chum salmon in the Columbia River <b>K. Tiffan</b>	[09-07] Genetic integration vs. segregation of hatchery broodstocks: constraints for successful supplementation of natural populations <b>D. Campton</b>
4:20	[06-08] ODFW's Oregon plan monitoring: what have we learned and where are we going? <b>B. McIntosh</b>	[07-08] What are we recovering? Determining which attributes of population structure are useful for identifying bull trout conservation units <b>H. Schaller</b>	[08-08] Shoal spawning in an isolated population of coastal cutthroat trout in a high montane lake of the Cascade Range of Oregon <b>D. Saiget</b>	[09-08] Sequestration as an alternative to hatchery rearing for conservation of imperiled species <b>J. Scheurer</b>
4:40	[06-09] Biological criteria for cold water streams based on a survey of the Oregon and Washington Coast Range <b>R. Hughes</b>	[07-09] Non-native resident fish in the Columbia River Basin: How habitat directs fisheries management <b>J. Maroney</b>	[08-09] Deposition and survival of endemic Coregonid eggs in relation to different substrate types in Bear Lake, Utah/Idaho <b>B. Albrecht</b>	

Tuesday morning ♦ March 2

Session Name	<b>Whirling Disease Host and Parasite Studies Ecological and Habitat Studies</b>	<b>Western Native Fishes Lower Colorado Region [10-13] Pacific Northwest Region [14-17]</b>	<b>Western Native Inland Trout Habitat and Nonnative Species: Effects on Persistence and Distribution</b>	<b>Threats to Western Waters</b>	<b>Impacts of Fire Management on Fisheries</b>
Session #	<b>WD1 / WD2</b>	<b>02</b>	<b>03</b>	<b>04</b>	<b>05</b>
Moderator	<b>Bill Granath Al Zale</b>	<b>Michael Douglas Julie Scheurer</b>	<b>Hilda Sexauer</b>	<b>Bob Pitman</b>	<b>Dave Winters</b>
Venue	<b>Grand America</b>	<b>Little America</b>	<b>Little America</b>	<b>Little America</b>	<b>Little America</b>
Room	<b>Savoy</b>	<b>Ballroom A</b>	<b>Ballroom C</b>	<b>Wyoming</b>	<b>Idaho</b>
8:00 am	<b>Introduction</b>	<b>Introduction</b>	<b>Introduction</b>	<b>Introduction</b>	<b>Introduction</b>
<b>8:05</b>	[WD1-01] A comparison of early stages of infection with <i>Myxobolus cerebralis</i> in susceptible and resistant strains of rainbow trout  <b>M. Adkison</b>	[02-10] Investigations into early life histories of razorback sucker and bonytail in Cibola High Levee Pond  <b>J. Carpenter</b>	[03-11] Effects of biotic and abiotic factors on the distribution of native cutthroat trout along the Logan River, Utah  <b>E.A. de la Hoz</b>	[04-11] Effective messaging to protect resources  <b>J. Starinchak</b>	[05-08] Pre-fire season planning for threatened and endangered species  <b>C. Mellison</b>
<b>8:25</b>	[WD1-02] First data on the resistance mechanisms of Hofer rainbow trout to whirling disease  <b>M. El-Matbouli</b>	[02-11] Phylogeography of Sonora sucker <i>Catostomus insignis</i>  <b>M. Douglas</b>	[03-12] The successful reintroduction of native cutthroat trout into historic habitat in the presence of whirling disease  <b>C. Chamberlain</b>	[04-12] Involving the public in invasive species control  <b>B. Wiltshire</b>	[05-09] Fish entrainment in helibuckets filled from central Idaho streams during fire suppression activities  <b>B. Gamett</b>
<b>8:45</b>	[WD1-03] Genetic study on resistant and susceptible rainbow trout to <i>Myxobolus cerebralis</i> infection rate using the mitochondrial control region  <b>K. Beauchamp</b>	[02-12] Status of listed warm water fishes of the Gila River Basin, southwestern United States  <b>R. Clarkson</b>	[03-13] Fish loss associated with irrigation diversions on the Wind River Indian Reservation, Wyoming  <b>B. McGinn</b>	[04-13] Ecology and upstream invasion of estuarine mysid shrimp in the Columbia River  <b>C. Haskell</b>	[05-10] Impacts of the Aspen fire on Gila chub in Sabino Canyon  <b>D. Mitchell</b>
<b>9:05</b>	[WD1-04] <i>Triactinomyxon</i> dynamics estimated by packed-bed filtration  <b>H. Lukins</b>	[02-13] A tale of two rivers: environmental stochasticity, nonnative fishes, and long-term trends in native fish assemblages, Gila River drainage, New Mexico  <b>J. Stefferud</b>	[03-14] The effects of irrigation canals on Bonneville cutthroat trout populations and movement patterns in the Smiths Fork drainage, western Wyoming  <b>J. Roberts</b>	[04-14] A strategy to prevent an unintentional introduction of zebra mussels into the Missouri River Basin as a result of increased boater traffic due to the Lewis and Clark Bicentennial  <b>B. Zook</b>	[05-11] Short-term effects of the Picture Fire on fishes and aquatic habitat  <b>J. Rinne</b>
<b>9:25</b>	<b>Break</b>	<b>Break</b>	<b>Break</b>	<b>Break</b>	<b>Break</b>
<b>9:50</b>	[WD2-01] Effect of riparian zone and associated stream substrata on <i>Tubifex tubifex</i> : density and infection with <i>Myxobolus cerebralis</i>  <b>D. Cartwright</b>	[02-14] Implications of floodplain isolation and connectivity on the conservation of an endangered minnow, Oregon chub, in the Willamette River, Oregon  <b>P. Scheerer</b>	[03-15] Watershed-scale patterns in native trout abundance and hydrologic integrity in the Greater Yellowstone Ecosystem  <b>R. Van Kirk</b>	[04-15] Coordinating an international control effort – The 100 <sup>th</sup> Meridian  <b>D. Britton</b>	[05-12] Recovery of a small trout reservoir within 18 months of a catastrophic fire  <b>K. Meyer</b>
<b>10:10</b>	[WD2-02] Effects of fish distribution on whirling disease in the Pahsimeroi River drainage, Idaho  <b>M. Colvin</b>	[02-15] Pacific lamprey larvae life history, habitat utilization, and distribution in the South Fork Clearwater River drainage, Idaho  <b>C. Claire</b>	[03-16] Hydrologic alteration and its effect on trout recruitment in the South Fork Snake River  <b>S. Moller</b>	[04-16] Assessing the potential ecological and economic impacts of zebra mussels to western river systems  <b>J. Bossenbroek</b>	[05-13] Impacts of wildfire and post-fire flash floods on aquatic biota in burned streams of the Pajarito Plateau, New Mexico  <b>N. Vieira</b>
<b>10:30</b>	[WD2-03] Understanding the ecology of whirling disease through modeling of tubificid habitat  <b>K. Anlauf</b>	[02-16] Utah chub: One man's 'trash fish' is another's treasure  <b>J. Johnson</b>	[03-17] What does wilderness protection provide for California golden trout?  <b>K. Matthews</b>	[04-17] The feasibility of HAACP training for fisheries field workers as a tool to minimize the spread of NZMS among anadromous salmonids rearing habitat in the Columbia River  <b>B. Parker</b>	[05-14] Wildfire and conservation of Gila trout  <b>D. Propst</b>
<b>10:50</b>	[WD2-04] <i>Myxobolus cerebralis</i> infection in Yellowstone cutthroat trout in three spawning tributaries to Yellowstone Lake  <b>S. Murcia</b>		[03-18] Native southwestern trout: Conservation with reference to physiography, hydrology, distribution and threats  <b>J. Rinne</b>	[04-18] Managing natural resource pathways-An agency perspective  <b>S. Sharon</b>	
<b>11:10</b>	[WD2-05] Windy Gap Reservoir: where have all the tams gone?  <b>R. Nehring</b>				

Session Name	Coastal Cutthroat Trout	Watershed Planning Approaches, Challenges, and Strategies	Food Webs and Fish Carrying Capacity	Supplementation: Measuring Effects and Predicting Outcomes
Session #	10	11	12	09
Moderator	Bob Gresswell	Don MacDonald Cleve Steward	Mark Wipfli	Keith Underwood
Venue	Little America	Little America	Little America	Little America
Room	Arizona	Flagstaff	Sun Valley	Tucson
8:00 am	<b>Introduction</b>	<b>Introduction</b>	<b>Introduction</b>	<b>Introduction</b>
8:05	[10-01] Geographical variation in genetic and meristic characters of coastal cutthroat trout  <i>T. Williams</i>	[11-01] Integrative considerations in watershed planning  <i>B. McComb</i>	[12-01] Comparisons of alternative approaches for modeling the carrying capacity of salmonid ecosystems  <i>E. Knudsen</i>	[09-09] An overview of Colorado's kokanee brood stock program  <i>P. Martinez</i>
8:25	[10-02] Landscape factors and genetic structure among barrier isolated populations of coastal cutthroat trout  <i>T. Guy</i>	[11-02] Integrating endangered species recovery and sub-basin/watershed planning – I: A great idea but can it work? (Policy and Science)  <i>E. Garr</i>	[12-02] Development of a conceptual population model describing the aquatic food web of the San Juan River, Colorado, New Mexico, and Utah  <i>J. Ptacek</i>	[09-10] Life history (theory): the missing link in analysis, monitoring and recovery goals for listed salmon  <i>M. Hurley</i>
8:45	[10-03] Genetic variation and geographic structure of coastal cutthroat trout at the northern extent of their range, Prince William Sound, Alaska  <i>K. Griswold</i>	[11-03] Integrating endangered species recovery and sub-basin/watershed planning – II: A great idea but can it work? (Watershed Science)  <i>J. Stein</i>	[12-03] Predicting maximum density of stream-living trout  <i>J. Dunham</i>	[09-11] Don't save sturgeon with salmon hatcheries: life history matters  <i>P. Anders</i>
9:05	[10-04] Factors influencing within-watershed genetic variation of coastal cutthroat trout  <i>J. Wofford</i>	[11-04] Sub-basin planning in the Columbia River basin and the role of locally led planning in watershed restoration and species recovery  <i>D. Marker</i>	[12-04] Food and space as regulators of salmonid populations in streams: worldwide patterns and seasonal trends  <i>P. Bisson</i>	[09-12] A stochastic model investigation of the potential benefits of a conservation hatchery program for supplementing Oregon coast coho <i>Oncorhynchus kisutch</i>  <i>G. Oosterhout</i>
9:25	<b>Break</b>	<b>Break</b>	<b>Break</b>	<b>Break</b>
9:50	[10-05] Hybridization and introgression between naturally sympatric steelhead and coastal cutthroat trout: implications of life histories and mating strategies on hybridization  <i>C. Ostberg</i>	[11-05] Watershed planning in the Columbia River basin: The politics of planning and implementation  <i>T. Giese</i>	[12-05] Food versus habitat: understanding the significance of food and nutrient subsidies in salmonid food webs  <i>M. Wipfli</i>	[09-13] Application of a comprehensive life stage evaluation approach to assess artificial propagation in salmon recovery in Johnson Creek, Idaho  <i>J. Vogel</i>
10:10	[10-06] A molecular investigation of natural hybridization between rainbow trout and coastal cutthroat trout on the Copper River Delta, Alaska  <i>I. Williams</i>	[11-06] Intersection of the endangered species act and sub-basin planning in the Columbia River basin  <i>J. Zisa</i>	[12-06] Winter carrying capacity: spatial-temporal dynamics of early feeding demand and food supply by sockeye salmon fry in Lake Washington  <i>D. Beauchamp</i>	[09-14] Evaluation of the supplementation program at Livingston Stone NFH using winter Chinook salmon escapement survey  <i>R. Null</i>
10:30	[10-07] Hybridization of coastal cutthroat trout <i>O. clarki clarki</i> and rainbow trout/steelhead <i>O. mykiss</i> – lessons from coastwide and within drainage studies  <i>J. Baker</i>	[11-07] Science for sub-basin planning: The good, the bad, and the absent  <i>G. Bisbal</i>	[12-07] Differences in benthic habitat selection by closely related endemic whitefish in Bear Lake, UT-ID: tradeoffs between food availability consumption rates and predation risk  <i>B. Kennedy</i>	Question/Answer Period Informal Discussion/Wrap Up
10:50	[10-08] Seasonal movements of radio-tagged coastal cutthroat trout adults on the North Gulf Coast/Copper River Delta of Alaska  <i>D. Saiget</i>	Panel Discussion	[12-08] Preliminary results on the role of headwater streams in the energetic requirements of juvenile salmonids  <i>K. Polivka</i>	

**Tuesday afternoon ♦ March 2**

<i>Session Name</i>	<b>Whirling Disease Status Update PCR Overview</b>	<b>Western Native Fishes Great Basin Region</b>	<b>Western Native Inland Trout Inferences from Recent Research</b>	<b>Threats to Western Waters</b>	<b>Stream Restoration: Approaches, Case Studies, and Techniques</b>
<i>Session #</i>	<b>WD3 / WD4</b>	<b>02</b>	<b>03</b>	<b>04</b>	<b>13</b>
<i>Moderator</i>	<b>Sue Higgins Dave Money</b>	<b>Matthew Andersen Scott Tolentino</b>	<b>Amy Harig</b>	<b>Bob Pitman</b>	<b>Don Wiley</b>
<i>Venue</i>	<b>Grand America</b>	<b>Little America</b>	<b>Little America</b>	<b>Little America</b>	<b>Little America</b>
<i>Room</i>	<b>Savoy</b>	<b>Ballroom A</b>	<b>Ballroom C</b>	<b>Wyoming</b>	<b>Idaho</b>
<b>1:50 pm</b>	<b>Introduction</b>	<b>Introduction</b>	<b>Introduction</b>	<b>Introduction</b>	<b>Introduction</b>
<b>1:55</b>	[WD3-01] Reports on the current status of <i>Myxobolus cerebralis</i> will be presented by representatives from the following states or regions: Arizona, California, Colorado, Idaho, Montana, Oregon, Utah, Washington, Wyoming, and Yellowstone National Park	[02-17] Status of June sucker <i>Chasmistes liorus</i> in Utah Lake and refugia  <b>M. Andersen</b>	[03-19] Evaluating the potential for competition between introduced brown trout and native Bonneville cutthroat trout in the Logan River, Utah  <b>P. McHuuh</b>	100th Meridian Meeting  Colorado, Missouri, and Columbia River teams	[13-01] Completing the restoration of priority watersheds; an imperative for future success  <b>D. Heller</b>
<b>2:15</b>		[02-18] Residence time of larval June sucker <i>Chasmistes liorus</i> in the lower Provo River as determined by otolith microstructure  <b>C. Ellsworth</b>	[03-20] Applications of otolith microchemistry to resolve movement patterns and life history diversity in freshwater systems  <b>D. Horan</b>		[13-02] Comparison of three streambank alteration assessment methods  <b>R. Henderson</b>
<b>2:35</b>		[02-19] The status of leatherside chub <i>Gila copei</i> , in Utah  <b>P. Miller</b>	[03-21] Temporal reproductive isolation of Yellowstone cutthroat trout and rainbow trout in the Yellowstone River, Montana  <b>J. De Rito</b>		[13-03] Monitoring the effects of management on riparian vegetation in the upper Columbia River Basin  <b>M. Coles-Ritchie</b>
<b>2:55</b>		[02-20] A sexually dimorphic character in Utah chubs <i>Gila atraria</i> : variation among populations  <b>J. Hanks</b>	[03-22] Ecotypic differentiation of native rainbow trout populations from British Columbia  <b>E. Keeley</b>		[13-04] Characteristics of successful riparian grazing systems in northern Nevada  <b>C. Evans</b>
<b>3:15</b>	<b>Break</b>	<b>Break</b>	<b>Break</b>	<b>Break</b>	<b>Break</b>
<b>3:40</b>					
<b>3:45</b>	[WD4-01] This session will address changes in diagnostic approaches for <i>Myxobolus cerebralis</i> and their regulatory and management implications in the following talks, to be followed by a discussion	[02-21] Results of monitoring endangered June sucker in the Utah Lake system  <b>J. Rasmussen</b>	[03-23] Yellowstone cutthroat trout sexual maturity: size does matter!  <b>K. Meyer</b>		[13-05] Trout distribution with variable water temp and metal concentrations: does cold water "draw the moth to the flame?" in Prickly Pear Creek, Montana  <b>D. Harber</b>
<b>4:05</b>	Implications of using PCR data – lessons from international disease control programs <b>J. Winton</b>	[02-22] Status of least chub <i>lotichthys phlegethontis</i> , in Utah  <b>K. Wilson</b>	[03-24] Factors influencing thermal refuge use by redband trout and other native fishes  <b>J. Ebersole</b>		[13-06] Naturalized breach channels for decommissioning earth-fill dams  <b>B. Chilibeck</b>
<b>4:25</b>	Political and legal consequences of testing and the history of PCR's accepted uses <b>D. Hawk</b>	[02-23] The population status of four Bear Lake endemic fishes  <b>S. Tolentino</b>	[03-25] Can low summer water temperature cause recruitment bottlenecks in translocated cutthroat trout populations?  <b>M. Coleman</b>		[13-07] Fish passage at road crossings assessment on the national forests of Oregon and Washington  <b>D. Heller</b>
<b>4:45</b>	AFS-FHS methods for detection of <i>Myxobolus cerebralis</i> – how and why they were developed <b>J. Bartholomew</b>	[02-24] Biological status of leatherside chub: a framework for recovery of western freshwater fishes  <b>M. Belk</b>	[03-26] Synthesis of research and management issues regarding fine-spotted cutthroat trout in the Salt River drainage, Wyoming  <b>W. Hubert</b>		[13-08] Stream restoration to enhance channel-floodplain interactions for anadromous salmonid habitat: Redwood Creek, California, and Red River, Idaho  <b>S. Clavton</b>
	AFS-FHS methods for detection of <i>Myxobolus cerebralis</i> – what they mean to a pathologist <b>C. Wilson</b>				

Session Name	Coastal Cutthroat Trout	Watershed Planning Developing and Implementing Watershed Plans	Food Webs and Fish Carrying Capacity	Instream Flows: Scientific Approaches, Legal Considerations and Public Involvement
Session #	10	11	12	14
Moderator	Bob Gresswell	Don MacDonald Cleve Steward	Mark Wipfli	Tom Annear
Venue	Little America	Little America	Little America	Little America
Room	Arizona	Flagstaff	Sun Valley	Tucson
<b>1:50 pm</b>	<b>Introduction</b>	<b>Introduction</b>	<b>Introduction</b>	
<b>1:55</b>	[10-09] Habitat use and movement of sea-run cutthroat trout in the Salmon River estuary  <i>L. Krentz</i>	[11-08] Salmo watershed-based fish sustainability planning: reflections and realities  <i>G. Nellestijn</i>	[12-09] Non-native fish invasion restructures stream and forest food webs by interrupting reciprocal prey subsidies  <i>C. Baxter</i>	
<b>2:15</b>	[10-10] Coastal cutthroat trout in the Columbia River Gorge: where would they be without barriers?  <i>P. Connolly</i>	[11-09] A multiple tool approach to watershed planning in Puget Sound, Washington  <i>M. Schiewe</i>	[12-10] Model food webs: integrating empirical studies of riparian predation in the Oregon Coast Range  <i>J. Li</i>	
<b>2:35</b>	[10-11] Physical constraints on trout distribution in logged and unlogged streams of the Cascade Mountains  <i>J. Latterell</i>	[11-10] The use of qualitative habitat assessment (QHA) to develop sub-basin management plans in Oregon  <i>J. Fryer</i>	[12-11] Rainbow trout diets and riparian composition in streams of the Imnaha River Basin in Eastern Oregon  <i>S. Johnson</i>	
<b>2:55</b>	[10-12] Effects of riparian logging on headwater populations of coastal cutthroat trout in Southwestern British Columbia  <i>J. DeGroot</i>	[11-11] Evaluating the biotic integrity of watersheds in Arizona: development of a watershed prioritization and strategy  <i>P. Sponholtz</i>	[12-12] Food availability of coastal cutthroat trout in relation to riparian vegetation  <i>N. Romero</i>	
<b>3:15</b>	<b>Break</b>	<b>Break</b>	<b>Break</b>	<b>Break</b>
<b>3:40</b>				<b>Introduction</b>
<b>3:45</b>	[10-13] Seasonal and diel variation in diet of coastal cutthroat trout in the Oregon Coast Range  <i>N. Romero</i>	[11-12] Historic, current, and restored landscapes: A recovery planning case study in the Lewis River  <i>A. Steel</i>	[12-13] Is there a relationship between current velocity and invertebrate drift?: a multiscale analysis  <i>R. Rader</i>	[14-01] Environmental processes affecting population dynamics and life history traits of Arctic grayling populations in western and interior Alaska  <i>N. Polloczek</i>
<b>4:05</b>	[10-14] Influence of spawning Pacific salmon on the stable isotope composition, feeding behavior, and caloric intake of coastal cutthroat trout  <i>C. Ellings</i>	[11-13] From satellite to stream: applying field data to scale landscape-based habitat assessments for salmon recovery planning  <i>J. Burke</i>	[12-14] It's all about food: get my drift?  <i>J. Matousek</i>	[14-02] The influence of multiple velocity calibration sets on the PHABSIM habitat index  <i>T. Payne</i>
<b>4:25</b>	[10-15] Coastal cutthroat trout <i>Oncorhynchus clarki clarki</i> diet in South Puget Sound, Washington, 1999 – 2002  <i>J. Jauquet</i>	[11-14] Integrated restoration planning in watersheds with mixed ownership and land-use practices in southwest Oregon  <i>J. Winn</i>	[12-15] Using net energy intake to predict habitat quality for stream-dwelling Yellowstone cutthroat trout  <i>A. Jenkins</i>	[14-03] Stewardship of drugs to minimize their environmental disposition in aquatic environments  <i>S. Haskell</i>
<b>4:45</b>	Closing remarks  <i>R. Gresswell</i>	[11-15] The Henry's Fork watershed council: A model for ecosystem-based watershed planning  <i>S. Hill</i>	[12-16] Physical processes and ecological responses to spring peak flow and summer base flows in the upper Colorado River  <i>D. Rees</i>	[14-04] The concept of weighted usable area as relative suitability index  <i>T. Payne</i>

Wednesday morning ♦ March 3

Session Name	<u>Whirling Disease</u> Diagnostic and Research Methods	Western Native Fishes Missouri/Rio Grande Region	Western Native Inland Trout Nonnatives and Barriers: to connect or not connect?	Reservoir Sampling and Management Strategies	Stream Restoration: Approaches, Case Studies, and Techniques
Session #	WD5	02	03	15	13
Moderator	Beth MacConnell	Jim Tilmant	Chris Hirsch	Scott Gangl	Mark Holden
Venue	Grand America	Little America	Little America	Little America	Little America
Room	Savoy	Ballroom A	Ballroom C	Wyoming	Idaho
9:05 am	<b>Introduction</b>	<b>Introduction</b>	<b>Introduction</b>	<b>Introduction</b>	<b>Introduction</b>
9:10	[WD5-01] Susceptible and resistant strains of <i>Tubifex tubifex</i> are present in a genetic lineage susceptible to <i>Myxobolus cerebralis</i>  D. Baxa	[02-25] National parks and our native fish heritage  J. Tilmant	[03-27] Parafluvial ponds as invasion mechanisms: exotic brook trout dominance of native cutthroat and bull trout assemblages in lateral habitats  S. Chilcote	[15-01] Assessment and monitoring of habitat characteristics and animal behavior using hydroacoustic technology  B. McClure	[13-09] Restoration of the Middle Provo River, Utah  T. Allred
9:30	[WD5-02] A multiplex real-time PCR assay to quantitatively determine <i>T. Tubifex</i> lineages in multi-worm samples  J. Wood	[02-26] Sauger distribution and habitat associations in the Wind River watershed, Wyoming  C. Amadio	[03-28] Evaluating brook trout jumping performance using adjustable waterfalls  M. Kondratieff	[15-02] Modeling prey fish target strength to improve hydroacoustic estimation of piscivore population parameters  H. Crockett	[13-10] Habitat assessment of Middle Provo River restoration using 2D hydrodynamics modeling  R. Addley
9:50	[WD5-03] Detection of <i>Myxobolus cerebralis</i> myxospores and trophozoites in fish tissue using monoclonal antibodies  C. Wicks	[02-27] Channel catfish status and management in Wyoming  P. Mavrikis	[03-29] Reducing introgression with the use of a barrier in tributaries of the South Fork Snake River, Idaho  G. LaBar	[15-03] Discerning prey- and piscivore-sized targets in hydroacoustic surveys of pelagic salmonids in Colorado reservoirs  P. Martinez	[13-11] Analysis of riparian cottonwood recruitment potential under alternative flow scenarios in a restored reach of the Provo River, Utah  M. Stamp
10:10	[WD5-04] Predictive relationships: using PCR scores, tam counts and cranial myxospore concentrations to evaluate <i>Myxobolus cerebralis</i> infection  R. Nehring	[02-28] Natural and anthropogenic factors contribute to declines of western great plains fishes  W. Hubert	[03-30] Selective electrofishing removal of nonnative brook trout to facilitate persistence of native cutthroat trout in streams  D. Peterson	[15-04] Effects of seasonal patterns in nearshore and offshore trout distributions on hydroacoustic density estimates  D. Rhea	[13-12] Response of native fishes to habitat variation and introduced species in the Provo River: implications for management and restoration  M. Belk
10:30	<b>Break</b>	<b>Break</b>	<b>Break</b>	<b>Break</b>	<b>Break</b>
10:55	[WD5-05] Evaluation of non-lethal techniques for the detection of <i>Myxobolus cerebralis</i> in naturally exposed rainbow trout  M. Toner	[02-29] New Mexico's high profile imperiled fishes: Rio Grande silvery minnow and Pecos bluntnose shiner  S. Platania	[03-31] Response of isolated cutthroat trout populations to barrier removal: genetics, movement, and demographic changes  A. Harig	[15-05] Conserving native Yellowstone cutthroat trout in Yellowstone Lake via an aggressive lake trout removal program  P. Bigelow	[13-13] Response of Columbia spotted frog to restoration efforts  K. Wilson
11:15	[WD5-06] Rapid and slow filtration techniques and their efficacy at filtering <i>Myxobolus cerebralis</i> triactinomyxons from contaminated water  R. Arndt	[02-30] Summary and status of New Mexico's endangered and threatened fishes  D. Propst	[03-32] Connection or isolation: conservation strategies for westslope cutthroat trout in the United States  B. Shepard	[15-06] Strawberry Part I: Post-treatment fisheries status report for Strawberry Reservoir  R. Wilson	[13-14] Trout response to habitat improvements in the Middle Provo River, Utah  R. Hepworth
11:35	[WD5-07] Evaluation of quantitative real-time PCR for rapid assessments of the exposure of sentinel fish to <i>Myxobolus cerebralis</i>  G. Kelley	[02-31] New Mexico's non-listed fishes: Who will be next to achieve the dubious rank of endangered or threatened  S. Platania	[03-33] Bioinvasive species and the preservation of cutthroat trout in the Western United States: ecological, social, and economic issues  M. Quist	[15-07] Strawberry Part II: Initial fish population and predatory responses to imposition of slot limit at Strawberry Reservoir during 2003  A. Ward	[13-15] Restoration of the mainstem Truckee River – A strategy for recovery of the listed fishes in Pyramid Lake, Nevada  L. Hek
11:55	National Partnership Briefing  G. Rupp	[02-32] Factor 4 - assessing the threat to rare or declining Southwestern native fishes from regulatory inadequacy  S. Stefferud		[15-08] Implications of tournament-associated mortality and regulation exemptions on black bass fisheries at two Connecticut lakes  G. Edwards Jr.	[13-16] Restoration of the Kings Spring system in Ash Meadows National Fish and Wildlife Refuge, Nevada  K. Taylor

<i>Session Name</i>	<b>Aquaculture</b>	<b>Contributed Papers Amphibian Investigations</b>	<b>Instream Flows: Scientific Approaches, Legal Considerations and Public Involvement</b>
<i>Session #</i>	<b>16</b>	<b>08</b>	<b>14</b>
<i>Moderator</i>	<b>Steve Sharon</b>	<b>Paul Thompson</b>	<b>Tom Annear</b>
<i>Venue</i>	<b>Little America</b>	<b>Little America</b>	<b>Little America</b>
<i>Room</i>	<b>Flagstaff</b>	<b>Sun Valley</b>	<b>Tucson</b>
<b>9:05 am</b>	<b><i>Introduction</i></b>	<b><i>Introduction</i></b>	<b><i>Introduction</i></b>
<b>9:10</b>	[16-01] Recent observations for aquaculture along the Nile River and other regions in Egypt  <b><i>R. Heckmann</i></b>	[08-10] Status of Columbia spotted frog <i>Rana luteiventris</i> in Utah  <b><i>C. Bailey</i></b>	[14-05] Quantitative methodology for assessing hydrologic alteration at the watershed scale  <b><i>B. Burnett</i></b>
<b>9:30</b>	[16-02] Managing fish growth at the new Fountain Green Fish Hatchery, Utah  <b><i>T. Howick</i></b>	[08-11] Distribution of western toad <i>Bufo boreas</i> in Utah  <b><i>B. Nadolski</i></b>	[14-06] Mesohabitat analysis to set instream flow levels for the Yampa and Colorado rivers  <b><i>G. Stewart</i></b>
<b>9:50</b>	[16-03] High intensive fish culture – Utah’s Kamas Fish Hatchery  <b><i>T. Hallows</i></b>	[08-12] Distribution of two species [long-toed salamander and northwestern salamander] of pond breeding salamanders in the North Cascade Mountains of Washington  <b><i>R. Nielsen</i></b>	[14-07] Application of a two-dimensional GIS Habitat model for instream flow investigations on the Flathead River, upstream of Flathead Lake, Montana  <b><i>B. Miller</i></b>
<b>10:10</b>	[16-04] Positives from positives – making the best of hatchery interactions with fish health issues in Wyoming  <b><i>S. Sharon</i></b>		[14-08] Protecting and enhancing instream flows in Montana – turning issues into opportunities  <b><i>K. Williams</i></b>
<b>10:30</b>	<b><i>Break</i></b>	<b><i>Break</i></b>	<b><i>Break</i></b>
<b>10:55</b>	[16-05] Utilization of warm well water at the Dubois Fish Hatchery  <b><i>K. Todd</i></b>		[14-09] A template for conducting ecosystem-based instream flow studies  <b><i>T. Annear</i></b>
<b>11:15</b>	[16-06] Fish stocking in high mountain and wilderness lakes the Wyoming way  <b><i>B. Hughes</i></b>		[14-10] Integrating multiple components in developing winter flow recommendations for the Shoshone River, Wyoming  <b><i>P. Dey</i></b>
<b>11:35</b>	[16-07] Overview of rainbow trout broodstock management and egg production techniques at Ennis National Fish Hatchery  <b><i>S. Henderson</i></b>		[14-11] A method for developing ecosystem-based instream flow needs determination for rivers in the south Saskatchewan River Basin, Alberta, Canada  <b><i>K. Clipperton</i></b>
<b>11:55</b>	[16-08] Evaluation of induced spawning techniques and requirements in captive June sucker <i>Chasmistes liorus</i>  <b><i>E. Hansen</i></b>		[14-12] An applied decision support system using multidisciplinary assessment methods for instream flows – Nooksack River Basin  <b><i>T. Hardy</i></b>

**Wednesday afternoon ♦ March 3**

<i>Session Name</i>	<b><u>Whirling Disease</u> Management and Control</b>	<b>Western Native Fishes California/Hawaii Region</b>	<b>Western Native Inland Trout Genetics and Landscape Perspectives: Issues Large and Small</b>	<b>Reservoir Sampling and Management Strategies</b>	<b>Contributed Papers</b>
<i>Session #</i>	<b>WD6</b>	<b>02</b>	<b>03</b>	<b>15</b>	<b>08</b>
<i>Moderator</i>	<b>Ron Goede</b>	<b>Ted Sommer</b>	<b>Mike Young</b>	<b>Roger Schneidervin</b>	<b>Scott Covington</b>
<i>Venue</i>	<b>Grand America</b>	<b>Little America</b>	<b>Little America</b>	<b>Little America</b>	<b>Little America</b>
<i>Room</i>	<b>Savoy</b>	<b>Ballroom A</b>	<b>Ballroom C</b>	<b>Wyoming</b>	<b>Idaho</b>
<b>1:45 pm</b>	<b><i>Introduction</i></b>	<b><i>Introduction</i></b>	<b><i>Introduction</i></b>	<b><i>Introduction</i></b>	<b><i>Introduction</i></b>
<b>1:50</b>	[WD6-01] Improved management practices in the Cache La Poudre River to control <i>Myxobolus cerebralis</i>  <b>G. Schisler</b>	[02-33] Splittail "delisting": the role of recent population trends and restoration activities  <b>T. Sommer</b>	[03-34] Westslope cutthroat trout (WCT), hybridization, and the U.S. Endangered Species Act (ESA)  <b>D. Campton</b>	[15-09] Exotic northern pike populations and habitat in Colorado's high elevation trout reservoirs  <b>D. Orabutt Jr.</b>	[08-13] Combining landscape data and field data to model stream geomorphic attributes  <b>S. Clarke</b>
<b>2:10</b>	[WD6-02] Designing cost effective tubifex habitat isolation berms in fluctuating streams  <b>T. Waddle</b>	[02-34] Status and distribution of the inland fishes of coastal southern California  <b>C. Swift</b>	[03-35] Estimating introgressive hybridization in native populations of California golden trout based on microsatellites and a single copy nuclear (scnDNA) marker <b>J. Cordes</b>	[15-10] Using present and past data to model predator-prey dynamics in Lake Powell, Utah-Arizona: a bioenergetics approach  <b>S. Vatland</b>	[[8-14] Evaluation of the fish assemblage of Thompson Creek and Squaw Creek, Idaho, using the Idaho Department of Environmental Quality Stream Fish Index <b>J. Chadwick</b>
<b>2:30</b>	[WD6-03] Fish culture challenges in <i>Myxobolus cerebralis</i> endemic areas of Idaho  <b>K. Johnson</b>	[02-35] The effects of water management in Central California on the delta smelt <i>Hypomesus transpacificus</i>  <b>K. Fleming</b>	[03-36] Distribution of native westslope cutthroat trout in the Stehekin River drainage, Washington, and hybridization with introduced rainbow trout  <b>C. Ostberg</b>	[15-11] Growth dynamics of smallmouth bass in Lake Billy Chinook, Oregon  <b>T. Shrader</b>	[08-15] Antimycin and rotenone: short-term effects on invertebrates in first order, high elevation streams  <b>K. Cerreto</b>
<b>2:50</b>	[WD6-04] Evaluating the efficacy of physical habitat modifications to reduce the impacts of <i>Myxobolus cerebralis</i> infection in streams  <b>K. Thompson</b>	[02-36] The role of environmental characteristics in structuring stream fish communities on three Hawaiian Islands  <b>C. Lutton</b>	[03-37] An evaluation of genetic diversity and population genetic structure of Yellowstone cutthroat trout in two Idaho river drainages: historical and contemporary influences <b>C. Cegelski</b>	[15-12] Long-term changes in the growth rates of paddlefish, <i>Polyodon spathula</i> , in Fort Peck Reservoir, Montana  <b>B. Bowersox</b>	[08-16] An automated fish recognition and migration monitoring system for biology research  <b>D. Lee</b>
<b>3:10</b>	<b><i>Break</i></b>	<b><i>Break</i></b>	<b><i>Break</i></b>	<b><i>Break</i></b>	<b><i>Break</i></b>
<b>3:35</b>	[WD6-05] Development of a risk assessment based approach for the prevention, management, and control of whirling disease  <b>B. Kerans</b>	[02-37] Status of native Hawaiian stream fishes, a unique amphidromous biota  <b>R. Nishimoto</b>	[03-38] Mitochondrial DNA variation and distribution in Yellowstone cutthroat trout across its native range: implications for management and conservation  <b>M. Campbell</b>	[15-13] Temperature-dependent survival of Snake River fall Chinook salmon juveniles  <b>J. Yanke</b>	[08-17] Computerized fish imaging and population count analysis  <b>C. Strout</b>
<b>3:55</b>	[WD6-06] Modeling effects of <i>Myxobolus cerebralis</i> on the population dynamics of the salmonid and oligochaete, <i>Tubifex tubifex</i> , hosts  <b>M. Santora</b>		[03-39] Using genetic data to uncover population structure and dynamics in cutthroat trout  <b>H. Neville</b>	[15-14] Monitoring the three-dimensional movement and distribution of juvenile salmonids in Columbia River reservoirs using acoustic tag techniques  <b>P. Neilson</b>	[08-18] The efficacy and safety of AQUI-S® as an anesthetic on select freshwater fish  <b>M. Bowman</b>
<b>4:15</b>	[WD6-07] Transferability of tubifex limiting factor models  <b>J. Terrell</b>		[03-40] Spatial structure in small-stream populations of cutthroat trout  <b>M. Young</b>	[15-15] Response of fish populations to low dissolved oxygen releases from Canyon Ferry Dam, Montana  <b>M. Horn</b>	
<b>4:35</b>			[03-41] Seeing the landscape for the trout  <b>J. Dunham</b>	[15-16] Effects of reservoir drawdown on Lake Powell and Glen Canyon Dam release water quality  <b>W. Vernieu</b>	

Session Name	Lessons for the Design of Future Salmon Habitat Restoration and Monitoring Programs	Aquaculture	Instream Flows: Scientific Approaches, Legal Considerations and Public Involvement
Session #	17	16	14
Moderator	Charlie Paulsen Ian Parnell	Joe Valentine	Tom Annear
Venue	Little America	Little America	Little America
Room	Arizona	Flagstaff	Tucson
1:45 pm	<b>Introduction</b>	<b>Introduction</b>	<b>Introduction</b>
1:50	[17-01] Challenges and opportunities in testing the effectiveness of habitat restoration actions  <i>D. Marmorek</i>	[16-09] Effects of winter holding temperature on reproductive characteristics of Pilot Peak Lahontan cutthroat trout  <i>J. Bigelow</i>	[14-13] Effects of stream flow on production of juvenile spring/summer Chinook salmon in the Lemhi River, Idaho, and importance for conservation agreements with water users  <i>J. Morrow</i>
2:10	[17-02] Using redd densities to detect the effects of habitat actions  <i>T. Fisher</i>	[16-10] The history of developing a genetically pure Yellowstone cutthroat brood source with the Wyoming Game and Fish Department  <i>B. Barngrover</i>	[14-14] Supplementary applications of instream flow information: engaging the public, policy and funding decision-makers in watershed restoration  <i>J. Monahan</i>
2:30	[17-03] Have historic restoration actions increased spring-summer Chinook egg-to-par survival rates in the Salmon River Subbasin, Idaho?  <i>I. Parnell</i>	[16-11] Wild cutthroat spawning and captive broodstock development  <i>B. King</i>	[14-15] Water rights data as a tool in planning water use and flow studies on the Salmon-Challis National Forest, Idaho  <i>R. Bockelman</i>
2:50	[17-04] Effects of screened irrigation diversions on Chinook salmon production in the Yakima River Subbasin, Washington  <i>D. Marmorek</i>	[16-12] Development and use of triploid salmonids in Idaho – an overview  <i>J. Kozfkay</i>	[14-16] Pathfinder: The struggle to protect streams in the Grand Mesa, Uncompahgre and Gunnison National Forests  <i>J. Trammell</i>
3:10	<b>Break</b>	<b>Break</b>	<b>Break</b>
3:35	[17-05] Do habitat actions affect juvenile survival? An information-theoretic approach applied to endangered Snake River Chinook salmon <i>Oncorhynchus tshawytscha</i> <i>C. Paulsen</i>	[16-13] A comparison of bacterial load in eyed diploid and triploid rainbow trout eggs  <i>D. Thompson</i>	[14-17] The use of federal "bypass flow" authority for aquatic and riparian habitat conservation  <i>D. Nickum</i>
3:55	[17-06] Quantifying physical and biological responses to stream restoration  <i>S. Clayton</i>	[16-14] Fish vaccinology 101: an overview  <i>D. Thompson</i>	[14-18] The role of state and federal laws for protecting instream flows  <i>T. Annear</i>
4:15	[17-07] Retrospective lessons for the design of prospective habitat restoration projects and associated monitoring  <i>I. Parnell</i>	[16-15] Effects of erythromycin on the intestinal microflora of Chinook salmon  <i>J. Amberg</i>	Panel Discussion  Future trends for integrating multiple components in instream flow needs assessment processes  <i>K. Clipperton</i> <i>T. Hardy</i> <i>J. Morrow</i> <i>K. Williams</i>
4:35	Panel Discussion	[16-16] <i>Centrocestus formosanus</i> , the first occurrence of an emerging fish pathogen in Utah  <i>J. Wilson</i>	Wrap-up (4:45)

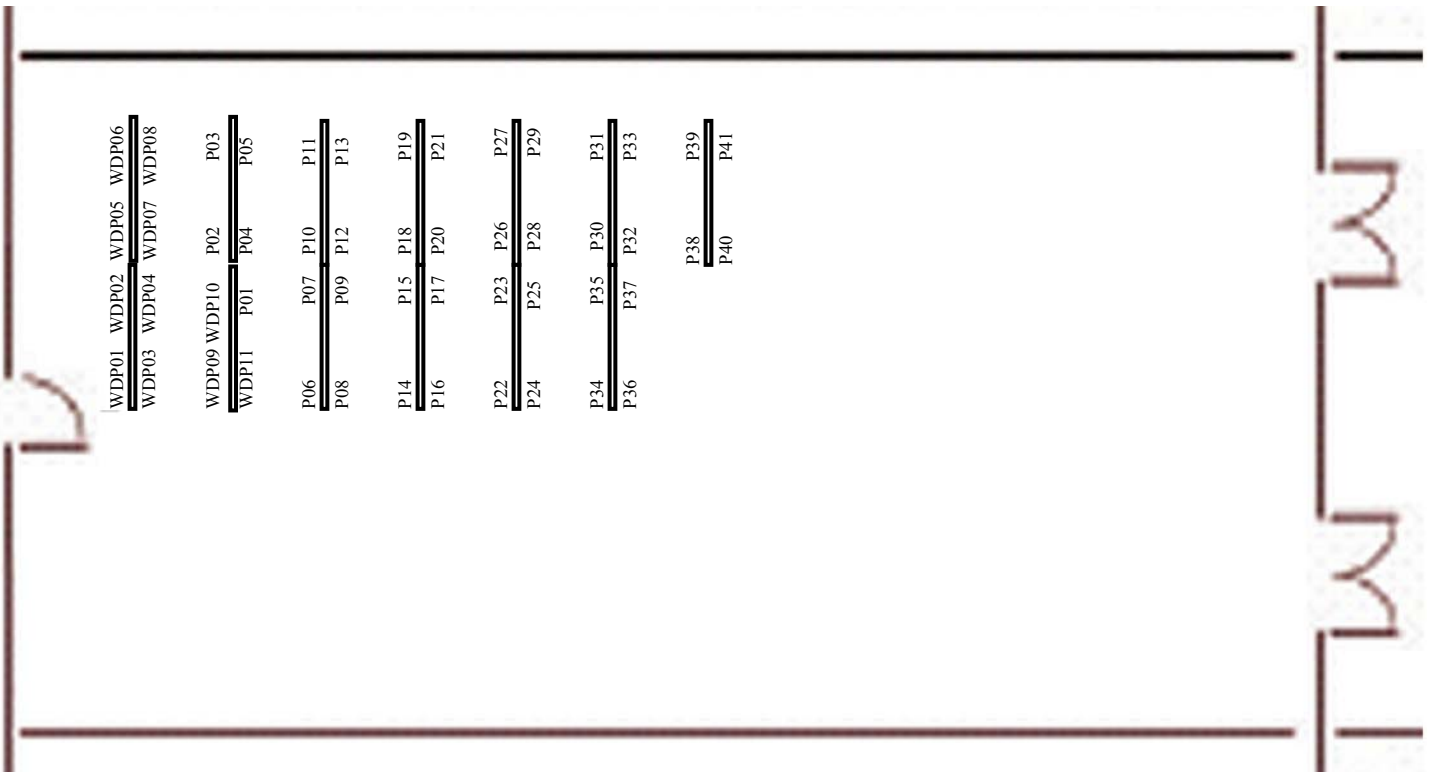
**Poster Session – Little America, Ballroom B**  
**Monday ♦ March 1<sup>st</sup> 12:00 pm to Wednesday ♦ March 3<sup>rd</sup> 3:30 pm**

<i>Abstract #</i>	<i>Title, Author</i>
<b>WDP01</b>	Identification of <i>Myxobolus cerebralis</i> in <i>Triactinomyxon</i> proteins using a novel histochemical procedure, <b>R. Bawa, A. Miller, &amp; E. Wagner</b>
<b>WDP02</b>	Detection of <i>Myxobolus cerebralis</i> myxospores in fish tissue homogenate by ELISA, <b>V. Hubbard &amp; N. Youssef</b>
<b>WDP03</b>	Nitric oxide and polar filament discharge of <i>Myxobolus cerebralis</i> actinospores, <b>R. Arndt</b>
<b>WDP04</b>	Effects of temperature, photoperiod, and <i>Myxobolus cerebralis</i> infection on the demography of <i>Tubifex tubifex</i> lineages, <b>R. DuBey, C. Caldwell, &amp; W. Gould</b>
<b>WDP05</b>	The divergent ecology of <i>Tubifex tubifex</i> : an explanation for regional trends in whirling disease epidemiology?, <b>A. Kaeser, W. Sharpe, &amp; R. Carline</b>
<b>WDP06</b>	Evaluation of management actions to control the spread of <i>Myxobolus cerebralis</i> in a lower Columbia River tributary, <b>D. Latremouille, S. Atkinson, H. Lorz, N. Rudel, D. Stevens, S. Hallett, A. Amandi, &amp; J. Bartholomew</b>
<b>WDP07</b>	Genetic characterisation of <i>Tubifex tubifex</i> populations from three river basins of the Columbia River system, Oregon, with differing whirling disease status, <b>S. Hallett, S. Atkinson, H. Lorz, J. Bartholomew, C. Rasmussen, &amp; J. Winton</b>
<b>WDP08</b>	Real whirling disease in a virtual stream: a laboratory model of the <i>Myxobolus</i> life cycle, <b>P. Reno &amp; H. Lorz</b>
<b>WDP09</b>	Sources of water for Mammoth Creek Fish Hatchery Springs, Utah, and implications for transport of whirling disease. <b>L. Spangler, M. Tong, and W. Johnson</b>
<b>WDP10</b>	<i>Myxobolus cerebralis</i> distribution in Montana, <b>K. Staigmiller</b>
<b>WDP11</b>	Testing contamination assumption of <i>M. cerebralis</i> nested polymerase chain reaction (PCR) results. <b>P. Hotchkiss, D. Money &amp; D. Hawk</b>
<b>P01</b>	Westward Ho': zebra mussels on the move, <b>C. Messer &amp; T. Veldhuizen</b>
<b>P02</b>	Predicting invasions with biologically inspired machine learning, <b>J. Williams</b>
<b>P03</b>	Daniel Fish Hatchery renovation; role, design and equipment, <b>G. Anderson</b>
<b>P04</b>	Providing tools to enhance fisheries management: the NBII Fisheries and Aquatic Resources (FAR) Node, <b>C. Campbell &amp; T. Beard, Jr.</b>
<b>P05</b>	Habitat manipulation has helped Wyoming's native cutthroat trout, <b>A. Binns</b>
<b>P06</b>	Effect of landscape position on growth of Age-0 arctic grayling, <b>P. MacKinnon &amp; C. Luecke</b>
<b>P07</b>	Fall-through-winter habitat selection and movements of adult trout in a foothills stream, <b>J. Lindstrom &amp; W. Hubert</b>
<b>P08</b>	Influence of habitat attributes and spatial variability of capture efficiency of salmonids in small cold-water streams, <b>D. Elverud &amp; B. Roper</b>
<b>P09</b>	Constraints of water temperature on the distribution, habitat use, and recruitment of greenback cutthroat trout in a high elevation lake, <b>D. Simpkins &amp; E. Bergersen</b>
<b>P10</b>	Cutts from the same cloth: can Colorado River cutthroat trout populations be evaluated using a model of translocation success developed for other subspecies?, <b>P. Guenther-Gloss, M. Young, &amp; A. Ficke</b>
<b>P11</b>	Recovery of Lahontan cutthroat trout (LCT) in the northwest distinct population segment through implementation of networked populations, <b>S. Byers, A. Jenne, M. Varner, C. Tait, R. Perkins, J. French, M. Sevon, &amp; T. Walters</b>
<b>P12</b>	Winter ice processes and habitat for salmonids associated with two types of instream habitat structures, <b>C. Barrineau, W. Hubert, P. Dey, &amp; T. Annear</b>
<b>P13</b>	An assessment of introgressive hybridization between Yellowstone cutthroat trout and introduced rainbow trout in the Snake River basin: conservation and management implications, <b>C. Cegelski, M. Campbell, M. Powell, K. Meyer, &amp; D. Teuscher</b>
<b>P14</b>	Relative abundance and distribution of juvenile Yellowstone cutthroat trout <i>Oncorhynchus clarki bouvieri</i> in the Teton River valley, Idaho. <b>M.K. Koenig, J. Kershner &amp; J. Fredericks</b>
<b>P15</b>	A process-driven approach for assessing warmwater streams in Wyoming, <b>M. Quist, W. Hubert, &amp; F. Rahel</b>
<b>P16</b>	Population characteristics and movement of roundtail chub in the Lower Salt and Verde rivers, Arizona, <b>S. Bryan</b>
<b>P17</b>	Razorback sucker status, reproduction, and recruitment in Senator Wash Reservoir, California: Preliminary results, <b>L. Leslie, A. Kretshmann, &amp; J. Slaughter, IV</b>
<b>P18</b>	Smallmouth and channel catfish control in the Lower Yampa River, Colorado, <b>M. Fuller</b>
<b>P19</b>	Snake River white sturgeon stock assessment, Lower Granite Dam to Salmon River, Idaho, <b>S. Everett, M. Tuell, &amp; J. Hesse</b>
<b>P20</b>	Exploring mechanisms of interaction between native least chub <i>Iotichthys phlegenthontis</i> and introduced western mosquitofish <i>Gambusia affinis</i> , <b>M. Mills, R. Rader, &amp; M. Belk</b>
<b>P21</b>	Re-evaluation of the federally endangered Arkansas River shiner, <i>Notropis girardi</i> , in the Canadian River and Revuelto Creek, New Mexico, <b>L. Curry, J. Kehmeier, &amp; J.W. Sigler</b>
<b>P22</b>	Overlap in the seasonal and diel habitat use of native least chub <i>Iotichthys phlegenthontis</i> and invasive western mosquitofish <i>Gambusia affinis</i> , <b>J. Ayala, R. Rader, &amp; M. Belk</b>
<b>P23</b>	Stick to the basics, <b>FISH NEED WATER</b> ; history and progress of recovery activities in the East Clear Creek Watershed to benefit the threatened Little Colorado spinedace <i>Lepidomeda vittata</i> , <b>C. Benedict, M. Whitney, R. Miller, J. Jarosz, &amp; S. Reger</b>
<b>P24</b>	Landmark-based morphometric analysis of phenotypic plasticity and hatchery-induced morphology in juvenile June sucker <i>Chasmistes liorus</i> <b>L. Benson &amp; M. Belk</b>

## Poster Session – Little America, Ballroom B

Monday ♦ March 1<sup>st</sup> 12:00 pm to Wednesday ♦ March 3<sup>rd</sup> 3:30 pm

<b>P25</b>	Recent trends in June sucker spawning and larval drift, <b>D. Speas, J. Rasmussen, K. Wilson, &amp; M. Andersen</b>
<b>P26</b>	Daphnia abundance and the subsequent effects on endemic Bonneville Cisco <i>Prosopium gemmifer</i> in Bear Lake, Utah/Idaho, <b>J. Robinson, C. Luecke, B. Kennedy, &amp; B. Albrecht</b>
<b>P27</b>	Lateral habitat use by native and non-native fishes across the Nyack flood plain, MT, USA, <b>M. Anderson &amp; J. Stanford</b>
<b>P28</b>	A field experiment evaluating resource availability and predation pressure in the Columbia spotted frog <i>Rana luteiventris</i> , <b>E. Harvey &amp; M. Belk</b>
<b>P29</b>	Comparison of USFS and EPA stream protocols and observer precision for physical habitat attributes on Oregon and Idaho streams, <b>H. Whitacre &amp; B. Roper</b>
<b>P30</b>	Beaver influence on fisheries habitat: livestock riparian interactions, <b>G. Ott &amp; D. Johnson</b>
<b>P31</b>	Wild fish habitat initiative: technical resources on habitat restoration for resource professionals and project managers, <b>W. Fraser, M. White, &amp; M. Boucher</b>
<b>P32</b>	Assessing the effectiveness of planted grass beds in Shasta Lake, California: Methods to evaluate the possible benefits for juvenile bass, <b>D. Ratcliff &amp; W. Wurtsbaugh</b>
<b>P33</b>	“Fowl” tips...or managing waterfowl populations in an urban setting, <b>T. McMahon, Q. Cannon, &amp; E. Swanson</b>
<b>P34</b>	Effects of urban storm runoff on stream temperature and water quality in the Great Salt Lake Basins, Utah, <b>C. Albano, S. Gerner, &amp; E. Giddings</b>
<b>P35</b>	Estimating stream residence time and escapement of Pacific salmon from periodic counts of spawners, <b>R. Szerlong, D. Rundio, &amp; J. Goin</b>
<b>P36</b>	Spatial distribution of juvenile anadromous fish passage through Snake River dam spillways, <b>P. Titzler, R. Moursund, K. Ham, &amp; F. Khan</b>
<b>P37</b>	Hatching time as an indicator of environmental incompatibility and outbreeding depression in intraspecific salmon hybrids, <b>I. Wang, W. Smoker, S. Gilk, D. Oxman, &amp; A. Gharett</b>
<b>P38</b>	Precision of trap efficiency experiments to estimate coho salmon smolt abundance in small streams, <b>A. Eskelin, J. Hasbrouck, &amp; F. J. Margraf</b>
<b>P39</b>	Three genetic stocks of bright fall Chinook salmon detected in the Columbia River Basin, USA, <b>S. Narum, A. Talbot, D. Hatch, J. Whiteaker, &amp; M. Powell</b>
<b>P40</b>	The effect of thermal stratification on the success of kokanee in Lake Sammamish, Washington, <b>H. Berge &amp; D. Beauchamp</b>
<b>P41</b>	Free labor!!! The use of high school students as free labor through the American Fisheries Society Hutton Junior Fisheries Program, <b>J. Jarosz, C. Benedict, S. Reger, &amp; M. Rinker</b>



## Continuing Education Workshop Descriptions

### **"POINT OF ORDER"- SKILLS FOR SURVIVING GENERAL ROBERT'S RULES**

Sunday, February 29, 2004. 2:00-5:00 pm. This workshop is **free**.

Most AFS members have attended Chapter, Division or Society business meetings conducted using Parliamentary Procedure (Robert's Rules of Order). Although this meeting format might at first appear cumbersome, the application of parliamentary law is the best method yet devised to conduct official business in a minimum amount of time while providing all participants the opportunity to express opinions and accommodating questions and resulting discussion. Robert's Rules protect the rights AFS members who join together to accomplish common goals and enable them to debate and take action in a fair manner with the least amount of unproductive controversy. Whether acting as Chair or member, effective participation requires a working knowledge of the Rules. As Constitutional Consultant, Dr. Joe Margraf has served as Parliamentarian at numerous meetings of the American Fisheries Society. Joe will provide a basic understanding of Robert's Rules that will allow students to participate effectively in meetings that are conducted using Parliamentary Procedure. A mock meeting will be used to demonstrate key points. All members, particularly Division and Chapter Executive Committee members are encouraged to attend.

Dr. Joe Margraf, Past AFS Constitutional Consultant; University of Alaska at Fairbanks, P.O. Box 757020, Fairbanks, AK 99775-7020, 907-474-6044  
[ffjfm1@uaf.edu](mailto:ffjfm1@uaf.edu)

### **AQUATIC INVASIVE SPECIES THREATS TO WESTERN WATERS**

Thursday, March 4, 2004. Full day. Registration is \$35 Students, \$50 AFS Parent Society Member, and \$75 AFS Nonmember.

This course will cover the following topics in the morning session, and Hazard Analysis Critical Control Point planning and techniques during the afternoon session.

- **Legislation to combat invasive species - Funding and how to get it** , Tina Proctor, FWS – Executive Secretary of the Western Regional Panel of the Aquatic Nuisance Species Task Force
- **New Zealand mudsnail, life history and identification workshop** – David Richards, Montana State University and EcoAnalyst
- **Identification problems, keys and other tools to help fishery workers correctly identify silver, bighead, grass and black carp** . – Wayne Stancill, FWS, Pierre, SD
- **Introduction of HACCP planning as a tool to manage natural resource pathways to prevent spread of non-target and invasive species** – Stewart Jacks, FWS, Arizona Fishery Resources Office
- **How to Draft a Pathway Management Plan**
- **Review Pathway Management Plan Examples**
- **Planning Support Website and Database of Completed Plans** – David Britton
- **Implementing Pathway Management** – Steve Sharon, Wyoming Game & Fish
- **Group Discussion**
  - a. **Where Should You Use This Planning**
  - b. **Where Should Others Use Pathway Planning**
  - c. **How Can It Become Standard Operating Procedure**

Bob Pitman, Aquatic Nuisance Species Coordinator, US Fish & Wildlife Service, PO Box 1306, Rm 3118, Albuquerque, NM 87103-1306, 505-248-6471, [bob\\_pitman@fws.gov](mailto:bob_pitman@fws.gov)

## Continuing Education Workshop Descriptions

### **PREPARATION AND REVIEW OF PROFESSIONAL MANUSCRIPTS**

Thursday, March 4, 2004. Full day. Registration is \$35 Students, \$50 AFS Parent Society Member, and \$75 AFS Nonmember.

Manuscript preparation and all the nuances that go with it are entirely overlooked in our academic training and most of us have to learn the hard way and often times avoid this important aspect of communication. The course will not only improve your own manuscript preparation, but will benefit those of you that are in the editorial or review process. This course will provide training on many important areas of manuscript preparation including: why do we publish, what is publishable, how to organize a manuscript, what to include in a manuscript, what does a journal expect of you, how to submit a manuscript, what to expect in the review process, who is your audience and where do you publish, and more.

Dr. Dave Bennett, University of Idaho and Vaughn Paragamian, Idaho Fish and Game Department

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### **POPULATION VIABILITY ANALYSIS**

Thursday, March 4, 2004. Full day. Registration is \$35 Students, \$50 AFS Parent Society Member, and \$75 AFS Nonmember. Students are encouraged to bring a laptop computer with at least Windows 95 and Excel if possible.

Population Viability Analysis (PVA) is a modeling technique concerned with the probability that a population will exist for a specified length of time or with the minimum size a population can be expected to persist for a specified length of time. In this workshop we will discuss PVA assumptions, data required to build PVA models, the structure of PVA models, the reliability of PVA predictions, and the effect of variance of the estimates on PVA predictions. All discussions and examples will focus on fish populations and fish issues, and above all, this will be a hands-on workshop. Using Excel, each participant will build several population viability (PV) models, incorporate variance, and perform some introductory simulations (bootstrap) to further explore the effect of variance on PVA predictions. Because we will build PV models from scratch, we will not use any specific PVA software. However, understanding the assumptions and data requirements of PVA, which will be highlighted in the construction of PV models, should aid anyone using commercially available PVA software.

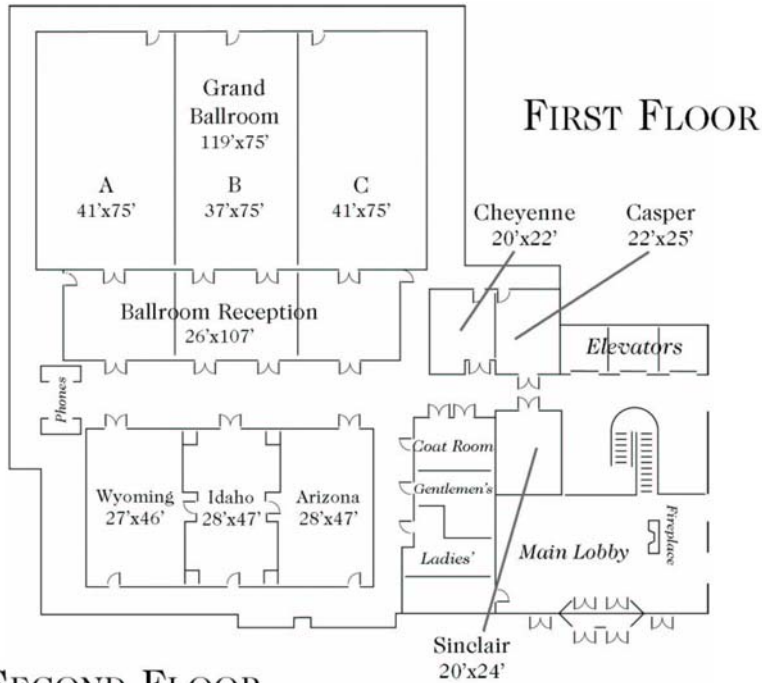
Mary M. Conner, Adjunct Associate Research Professor, Department of Forestry, Range, and Wildlife Sciences, Utah State University, Logan, UT 84322, Phone: 435-797-1481 (USU) or 970-217-3404 (cell), FAX: 435-797-3796

## Film Festival Schedule

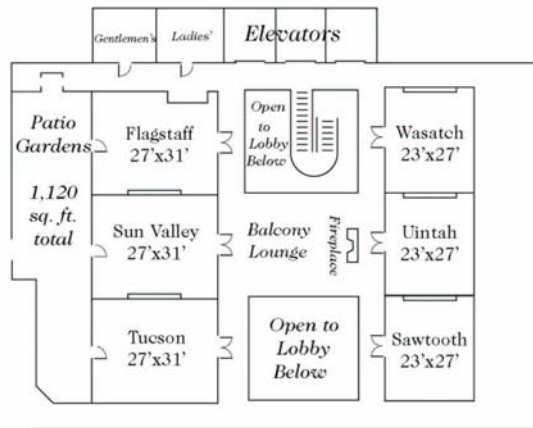
**March 1, 2004 8:30 pm -10:00 pm**  
**Little America, Ballroom AC≅**

- 8:30 pm *Big Fish, Lots of 'Em*** - Provided by Patrick Byorth (Montana Fish Wildlife & Parks) 5 minutes. Produced in the late 1980's, *Big Fish, Lots of >Em* is a bragging rap by Southwestern Montana fishery biologists, with just a little rhythm.
- 8:40 pm *Eradication of the Northern Snakehead*** - The Daily Show, a production of Comedy Central; Video tape provided by Vaughn Paragamian (Idaho Department of Fish and Game) 6 minutes. A spoof on the Maryland DNR bureaucracy that developed to eradicate the northern snakehead, an exotic fish brought into the US for medicinal purposes and as an aquarium fish. This species is top predator and can live out of water for several days and walk across land on their pectoral fins. In the video, Comedy Central features a Dangerous Animal Control Agent that has figured out what he thinks is a simple and environmentally safe method to eradicate the northern snakehead without the bureaucracy.
- 8:50 pm *Chub Busters*** - Provided by Roger Wilson & Bob Spateholts (Utah Division of Wildlife Resources) 6 minutes. **A film unceremoniously documenting the largest rotenone treatment in history at Strawberry Reservoir, Utah set to the sound track of the 1980's movie *AGhostbusters*≅.**
- 9:00 pm *The Graduate*** - Reportedly produced by Fisheries Unit Productions, University of Idaho; Video tape provided by Steve Elle (Idaho Department of Fish and Game) 16 minutes. A tongue-in-cheek documentary of the experiences of a typical graduate student (represented by Dave Burns) attending the University of Idaho during the 1970's.
- 9:20 pm *Riffles and Pools*** - Provided by Jenny Grayson (University of Alaska) 14 minutes. *Riffles and Pools* is an educational video about current salmon research at the Juneau School of Fisheries and Ocean Sciences. Funded as part of a National Fish and Wildlife Foundation research grant, the video focuses on the feeding ecology of juvenile salmonids and depicts a PhD candidates= research process.
- 9:40 pm *Coho Monitoring in the Tongass*** - Provided by Jenny Grayson (University of Alaska) 6 min. Produced for the Juneau Forestry Sciences Lab (USDA Forest Service), this video depicts field crews at work in the Tongass National Forest. The video is meant to introduce a newly initiated salmon monitoring effort. This video is geared towards fisheries biologists and resource managers.

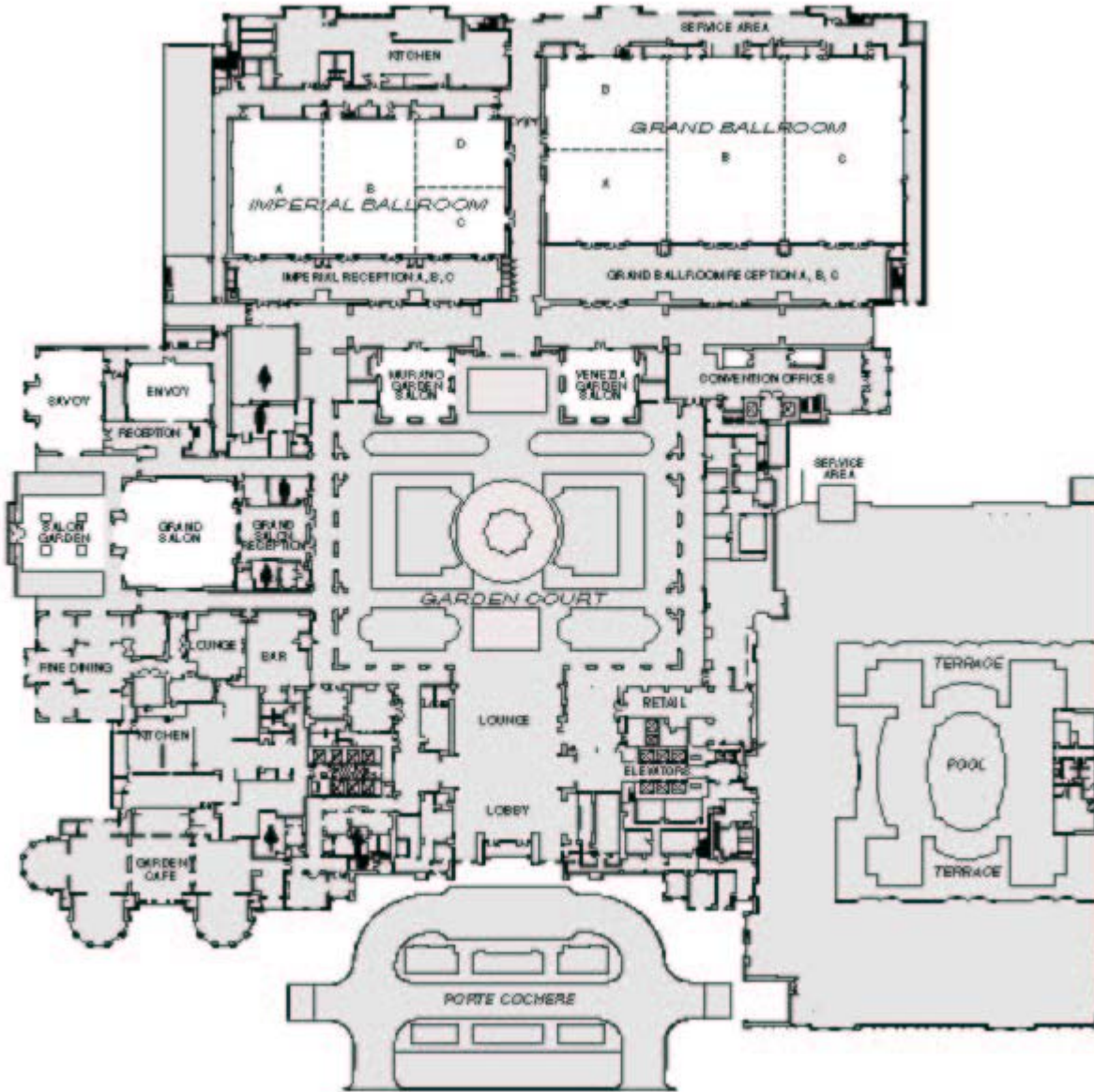
# LITTLE AMERICA HOTEL FLOOR PLAN MAP



## SECOND FLOOR



# Grand America Floor Plan



## Raffle and Auction Donors

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# Chapters of the Western Division



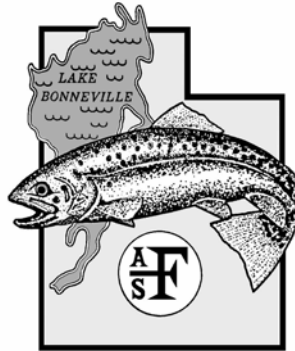
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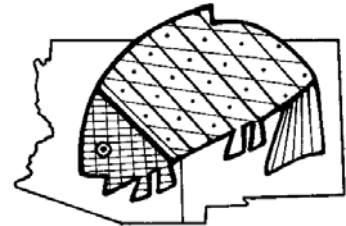
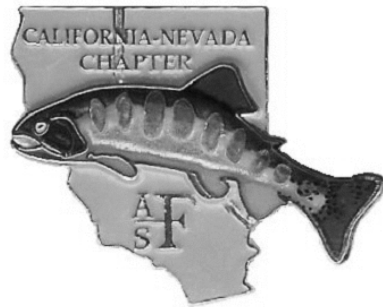


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