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68th Annual Northwest Fish Culture Concepts Annual Meeting and Workshop

“Conservation, Mitigation, Recreation”

**December 5 – 7, 2017
Red Lion Hotel
Redding, California**

Hosted by:
California Department of Fish and Wildlife
830 S Street, Sacramento, California 95811





Thanks to the 2017 NWFCC Working Group!

Mark Clifford	Linda Radford
Brett Wilson	Michael Ficele
Eric Jones	Jeff Rodzen
Jana Leiran	Jay Rowan
Ann Kastner	Randy Shoup
Penny Crawshaw	Justin Kroeze
Walter Nicolson	Louis LeFrak
Lynette Moran	Margaret Anderson
Sandy Schmidt	John Berwith

Thank you to the American Fisheries Society, Fish Culture Section, particularly Jeff Heindel for his assistance!



Thanks to Jana Leiran and her staff for designing the 2017 logo!

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Day One (Tuesday, December 5th, 2017)

- 9:00AM – 1:00PM **Registration and name tag pick up**
- 1:00PM – 1:10PM **Opening Remarks: Dr. Mark Clifford, Program Manager, CDFW Hatcheries and Aquatic Pathology**
- 1:10PM – 1:20PM **Native American Invocation: Gary Blackhawk Confederated Tribes of the Umatilla (CTUIR)**
- 1:20PM – 1:40PM **Tony Vaught, Board Member, California Aquaculture Association, & California Aquaculture Development Committee**
- 1:40PM – 3:00PM Session 1 “Hatcheries for Conservation”**
Session Chair: Farhat Bajjaliya
- 1:40PM – 2:00PM **Bryan Grant (IDFG)**-Utilizing Conservation Aquaculture for Bonneville Cutthroat Trout in Idaho
- 2:00PM – 2:20PM **Kaitlin Gooding (USFWS)**-USFWS Livingston Stone National Fish Hatchery
- 2:20PM – 2:40PM **Corene Jones (USFWS)**-Applied Conservation Genetics at the Lahontan National Fish Hatchery Complex
- 2:40PM – 3:00PM **Thomas Reeves (USFWS)**-Lahontan Cutthroat Trout Conservation Hatchery: Building on Success and Improving Fish Culture Efficiencies
- 3:00PM – 3:20PM **Afternoon Break**
- 3:20PM – 3:30PM **Prize Drawing #1**
- 3:30PM – 5:00PM Session 2 “Hatcheries for Conservation, and Climate Change”**
Session Chair: Dr. Carlos Garza
- 3:30PM – 3:50PM **Bryan Johnson (Colorado Parks and Wildlife)**-Culturing Colorado’s Native Greenback Cutthroat
- 3:50PM – 4:10PM **Beau Jones (CDFW)**-McCloud River Redband Trout Program
- 4:10PM – 4:30PM **Chris Tatar (NOAA NWFSC)**-Optimizing steelhead smolt production from natural-origin broodstock

Day One (Tuesday, December 5th, 2017), continued

3:30PM – 5:00PM Session 2, continued

Session Chair: Dr. Carlos Garza

- 4:30PM – 4:50PM **Dean Marston** (CDFW)-California Golden Trout: Drought Rescue and Return
- 4:50PM – 5:10PM **Sarah Austing** (USFWS Red Bluff)-Led Astray: The impacts of Drought on Fall Chinook Salmon at Coleman National Fish Hatchery
- 5:10PM – 5:20PM **Prize Drawing #2**
- 5:30PM – 8:00PM **Poster Session and Vendor Social**

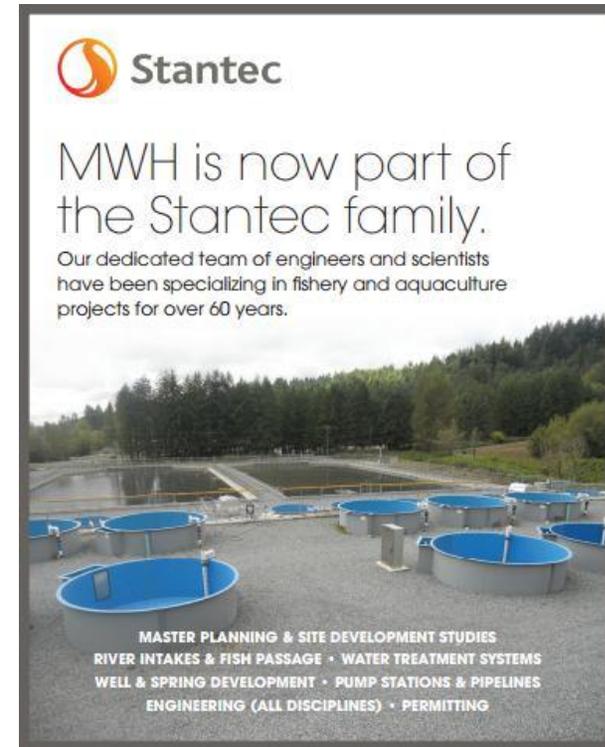
Day Two (Wednesday, December 6th, 2017)

8:00AM – 8:10AM Morning welcome and **Prize Drawing #3**

8:10AM-9:50AM Session 3 “Fish Health and Nutrition”

Session Chair: Dr. Esteban Soto

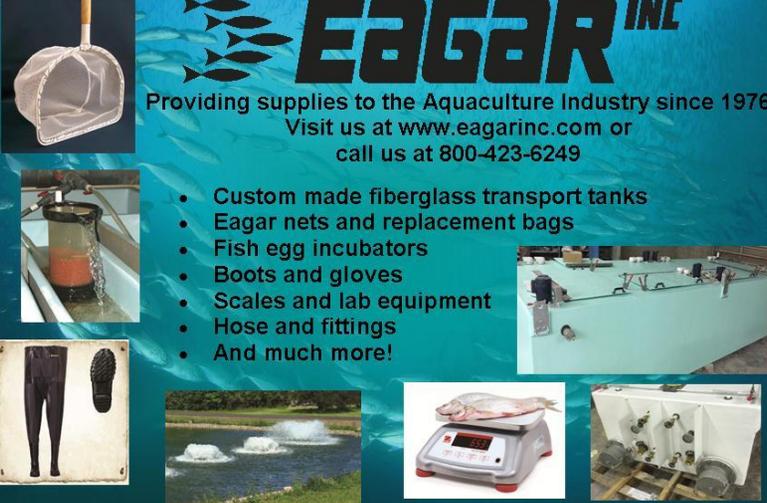
- 8:10AM – 8:30AM **Esteban Soto** (UC Davis)-Environmental and fish health assessment of Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*) from Walker River basin
- 8:30AM – 8:50AM **Bryan Barney** (UC Davis)-Monitoring the Impacts of Pathogens at Increasing Water Temperatures in Chinook Salmon in the Sacramento-San Joaquin Delta
- 8:50AM – 9:10AM **Scott Foott** (USFWS)-*Ceratonova shasta* and *Parvicapsula minibicornis* infection in Sacramento and Feather River juvenile Chinook salmon: Spatial, temporal, and river condition influence on disease severity
- 9:10AM – 9:30AM **Blythe Marshman** (CDFW, Shellfish Health Lab)-Maintaining the health of Endangered White Abalone (*Haliotis sorenseni*) in a Captive Breeding Program
- 9:30AM – 9:50AM **Paul Adelizi** (CDFW)-Managing Precocious Maturation in Chinook Salmon (*Oncorhynchus tshawytscha*) Captive Broodstock
- 9:50AM – 10:10AM **Morning Break**
- 10:10AM – 10:20AM **Prize Drawing #4**





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Day Two (Wednesday, December 6th, 2017), continued

10:10AM - 12:00PM Session 4 "Physiology"

Session Chair: Dean Marston

- 10:20AM – 10:40AM **Deborah Harstad** (NOAA NWFSC)-The Mac & Jack Study: Size and domestication effects on minijack rates of summer Chinook salmon from McCall Fish Hatchery, Idaho
- 10:40AM – 11:00AM **Peter Galbreath** (CRITFC)-Effect of Broodstock Age on Precocial Maturation of Male Chinook Salmon smolts-Minijacks
- 11:00AM – 11:20AM **Dina Spangenburg** (NOAA NWFSC)- Photoperiod: A potentially underappreciated phenomenon in salmon physiology and culture?
- 11:20AM – 11:40AM **Richard Le Boucher** (IMV Technologies)- Year-round availability of genetic material through cryopreservation of milt in salmonids
- 11:40AM – 12:00PM **Hall of Fame**-Brett Wilson (NWFFC Hall of Fame)
- 12:00PM – 1:20PM **Lunch Break**
- 1:20PM – 1:30PM **Prize Drawing #5**

1:30PM – 3:10PM Session 5 "Genetics"

Session Chair: Dr. Jeff Rodzen

- 1:30PM – 1:50PM **Carlos Garza** (NOAA SWFSC)-Genetic Monitoring of salmon and steelhead programs
- 1:50PM – 2:10PM **Neil Thompson** (NOAA SWFSC)-Evidence for Genetic Adaptation to Captivity and a Potential Mechanism to Account for Domestication in Hatchery-Reared Steelhead
- 2:10PM – 2:30PM **Stephen Brightwell** (CDFW Feather River Hatchery)-Chinook and Steelhead Salmon Gamete tracking
- 2:30PM – 2:50PM **Evan Carson** (USFWS Bay Delta)-Razorback sucker, Rio Grande silvery minnow, and considerations on the supplementation of wild populations

Day Two (Wednesday, December 6th, 2017), continued

1:30PM – 3:10PM Session 5 “Genetics”, Continued

Session Chair: Dr. Jeff Rodzen

2:50PM – 3:10PM **Daphne Gille** (UC Davis)-Development of a Hatchery and Genetic Management Plan for Delta Smelt (*Hypomesus transpacificus*)

3:10PM – 3:30PM **Break**

3:30PM – 3:40PM **Prize Drawing #6**

3:40PM - 5:00PM Session 6 “Genetics/Operations and Husbandry”

Session Chair: Dr. Evan Carson

3:40PM – 4:00PM **Jeff Rodzen** (CDFW)-Recommendations for inland trout conservation hatchery programs

4:00PM – 4:20PM **Michael Schwemm** (USFS)-Current status and future management directions of the Devils Hole pupfish

4:20PM – 4:40PM **Jon Lovrak**-(CTUIR Dept. of Natural Resources)-Umatilla Coho Program-A Study On Adaptive Management Strategies For Success

4:40PM – 5:00PM **Dave Lunsford** (CDFW)- Oroville Dam Spillway Response at Feather River Hatchery

5:00PM – 5:10PM **Prize Drawing #7**

Day Three (Thursday, December 7th, 2017)

8:10AM-9:50AM Session 7 “Technology and Infrastructure”

Session Chair: Dr. Mark Adkison

8:00AM – 8:10AM Morning welcome and **Prize Drawing #8**

8:10AM – 8:30AM **Terry McCarthy** (Water Management Technologies)-Microscreen Filtration and UV Disinfection in Fish Culture

8:30AM – 8:50AM **Steve Sharron** (WY Game & Fish Dept)-Use of RAS Technology in Serial Re-Use Fish Culture and Lessons Learned

8:50AM – 9:10AM **Andrew Lemley** (CDFW)-AquaManager Database

Day Three (Thursday, December 7th, 2017) continued

8:10AM-9:50AM Session 7 “Technology and Infrastructure”

Session Chair: Dr. Mark Adkison

9:10AM – 9:30AM **Kostas Seferes** (AquaManager)-Improved production efficiency and fish management using data mining and machine learning

9:30AM – 9:50AM **Steve Dearden** (Whooshh Innovations)-Sockeye Over Cle Elum Dam – A 2017 Fish Passage Pilot

9:50AM – 10:10AM **Morning Break**

10:10AM-12:10AM Session 8 “Technology and Infrastructure/Potpourri”

Session Chair: Andrew Lemley

10:10AM – 10:20AM Prize Drawing #9

10:20AM – 10:40AM Don MacKinlay (Canada DFO)-Optimizing Aeration Tower Design for Salmon Hatcheries

10:40AM – 11:00AM Bill Branch (CDFW)-TRC Triploid Machine Repair and Rebuild (a visual tutorial)

11:00AM – 11:20AM Tony Vaught (CA Aqua Association)-Overview of Private Aquaculture in California

11:20AM – 11:40AM Cody Leonard (CDFW)-CDFW Hatcheries: Fulfilling a Commitment

11:40AM – 11:45AM Closing Remarks – Closing Remarks and Invitation to 2018 NWFCC

11:45AM – 12:00PM Raffle Drawing – Grand Prize Raffle Drawings

Mark your calendars for next year – The National Oceanic and Atmospheric Administration, Fisheries, West Coast Region will host the 69th Annual NWFCC, December 4-6, 2018 in Portland, Oregon. Watch the AFS website and Hatchery International for more information! See you in 2018!

