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ICAIS

17TH INTERNATIONAL CONFERENCE ON AQUATIC INVASIVE SPECIES

August 29 to September 2, 2010

Westin San Diego, San Diego, USA



The introduction and spread of invasive species in freshwater and marine environments is a worldwide problem that is increasing in frequency. There are various pathways by which nonindigenous invertebrate, fish, and plant species are introduced, become established and cause significant damage to coastal and freshwater ecosystems, and to the economies that depend upon them.

The Bureau of Reclamation is hosting the 17th International Conference on Aquatic Invasive Species that will be held in San Diego, California, USA, August 29 to September 2, 2010.

This conference series continues to evolve to incorporate new and emerging issues related to aquatic invasive species. This is the most comprehensive international forum for the review of accumulated scientific knowledge; presentation of the latest field research; introduction of new technological developments for prevention, monitoring and control; and discussion of policy, legislation, public education and outreach initiatives to raise awareness of the impacts of aquatic invasive species and prevent new introductions. The conference typically involves over 400 participants from 30 countries representing academia, industry, government agencies, NGOs and other stakeholders involved in these issues and seeking opportunities for cooperation and collaboration to address them.

Conference Chair

Bob Quint, Bureau of Reclamation

Technical Program Committee

Curt Brown, Bureau of Reclamation, Technical Program Committee Chair

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David F. Reid, Retired, formerly National Oceanic and Atmospheric Administration, Past Co-Chair

Abraham bij de Vaate, Chair, Waterfauna Hydrobiologisch Adviesbureau

Beth Brownson, Ontario Ministry of Natural Resources

Dorn Carlson, National Sea Grant

Renata Claudi, RNT Consulting Inc.

Alfred F. Cofrancesco, Jr., US Army Engineer Research & Development Center

Joseph M. DiVittorio, Bureau of Reclamation

Richard Everett, US Coast Guard

Sharon Gross, US Geological Survey

Michelle Harmon, National Oceanic and Atmospheric Administration

Jim Houston, International Joint Commission, Canada Section

Rob Leuven, Radboud University Nijmegen

Frances Lucy, Institute of Technology, Sligo, School of Science

Fred R. Nibling, Jr., Bureau of Reclamation

Don McLean, US Fish & Wildlife Service

Tony Van Oostrom, Ontario Power Generation

Stephen Phillips, Pacific States Marine Fisheries Commission

Sanjeevi (Raju) Rajagopal, Radboud University Nijmegen

Gerard van der Velde, Radboud University Nijmegen

Conference Partnering Organizations



Environmental Laboratory
US Army Engineer Research
and Development Center



Fisheries and Oceans
Canada

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Canada



Transport
Canada



Transports
Canada

Travel to San Diego

The San Diego International Airport is a major hub for U.S., Canadian and International airlines. See the ICAIS website for additional travel information www.icaiss.org.

Hotel Accommodation

All Conference sessions are being held at the Westin San Diego, the official hotel for the Conference. The Westin San Diego is offering Conference participants the reduced rate of USD\$147.00 single/double occupancy and includes complimentary wired or wireless Internet access in guest rooms, and complimentary airport shuttle service. This link takes you to the hotel's online reservation form for the Conference:

<http://www.starwoodmeeting.com/StarGroupsWeb/booking/reservation?id=0911122780&key=EECD0>

There are a limited number of rooms in the Conference block, so be sure to make your reservation early. The cut-off date for reservations is **July 29, 2010** and after that date, accommodation will only be provided based on availability at the time of booking, and at the prevailing rate.

Conference Registration

The early registration deadline for the conference is June 25, 2010. Please complete the form at the back of this brochure, or on-line through the Conference Web site, and send payment by check or money order in \$USD payable to **ICAIS**. Send payment to:

Elizabeth Muckle-Jeffs
Conference Administrator
1027 Pembroke Street East, Suite 200
Pembroke ON K8A 3M4 Canada

T: North America: 1-800-868-8776

T: International: (01) 613-732-7068

F: (01) 613-732-3386

E: elizabeth@theprofessionaledge.com

W: www.icaiss.org

To pay by Visa or Mastercard please contact the Conference Administrator and provide the information by telephone, or send the completed form by fax to the number indicated above.

Please note that for currencies other than \$USD, the registration fee will be converted to the currency of the card at the applicable exchange rate at the time the transaction is processed.

Payments by bank wire transfer are subject to a \$30 Administration Fee.

Refund Policy

Registration fees are refundable, less a \$50 administration fee, provided that written notification of cancellation is provided to the Conference Administrator at the address indicated above by July 30, 2010. Refunds will not be issued until after the conference.

Monday, August 30 Morning

Plenary Session

8:30 am

Welcoming Remarks from the Bureau of Reclamation

9:00 am

AIS on the Move: Bioinvasions from East to West

Keynote Presentation, Speaker TBD

9:30 am

Questions and Discussion

10:00 am

Break

Concurrent Session A-1

Western Dreissenids

10:30 am

Interbasin Transfer of Zebra Mussels from Lake Texoma, Oklahoma to the Trinity River Basin in Texas

Everett Laney, U.S. Army Corps of Engineers

10:50 am

Settlement and Growth of Quagga Mussels (*Dreissena bugensis*) in Lake Mead, USA

David Wong and Shawn Gerstenberger, University of Nevada Las Vegas; Wen Baldwin and Bryan Moore, National Park Service

11:10 am

From Sink to Source? An Overview of Zebra Mussel (*Dreissena polymorpha*) Population Dynamics in Reservoirs of the South-Central USA

Chad Boeckman and Joseph Bidwell, Oklahoma State University; Jason Goeckler, Kansas Department of Wildlife and Parks; Everett Laney, U.S. Army Corps of Engineers

11:30 am

Quagga Mussel Recruitment: Is Southern California Really Paradise for this Invader?

Carolynn Culver, California Sea Grant Extension Program; Daniel Daft, City of San Diego

11:50 am

Quagga Mussel Monitoring for the Central Arizona Project

Albert Graves and T. Dewey, Central Arizona Project; Renata Claudi and Carolina Taraborelli, RNT Consulting, Canada

12:15 pm

Luncheon

Concurrent Session B-1

Ecological and Ecosystem Impacts

10:30 am

The Big Picture: Using Macroecology to Understand the Impacts of Freshwater Invasions

Anthony Ricciardi, McGill University

10:50 am

Effects of Climate Change on Native and Exotic Freshwater Mollusks in Riverine Ecosystems

Rob Leuven, Laura Verbrugge, Mark Huijbregts, Aafke Schipper and Gerard van der Velde, Radboud University Nijmegen; Abraham bij de Vaate, Waterfauna Hydrobiologisch Adviesbureau

11:10 am

How to Take into Account the Xenodiversity of Freshwater Communities in Biological Monitoring and What Can We Learn With this Approach?

Jean-Nicolas Beisel, Nicolas Kaldonski and Serge Muller, Université de Metz, Laboratoire Interactions Ecotoxicologie Biodiversité Ecosystèmes

11:30 am

Influence of Exotic Species on the Macroinvertebrate Community in the Harbour of Ghent (Belgium)

Pieter Boets, Koen Lock and Peter Goethals, Ghent University

11:50 am

Examining Ecological and Ecosystem-Level Impacts of Aquatic Invasive Species in Lake Michigan Using an Ecosystem Productive Model, LM-Eco

David Miller and Russell Kreis, Jr., U.S. Environmental Protection Agency; Xiangsheng Xia and Wilson Melendez, CSC

12:15 pm

Luncheon

Concurrent Session C-1

Education, Outreach and Scientific Data Exchange

10:30 am

Aquatic Invasive Species Prevention: Start With Behavior

Douglas Jensen, University of Minnesota Sea Grant Program

10:50 am

Live Organisms in the Classroom: Value and Implications for Invasive Species Management

Jeff Brinsmead, Ontario Ministry of Natural Resources; Patrice Charlebois, Robin G. Goettel and Terri Hallesy, Illinois-Indiana Sea Grant; Charles Jacoby, St. Johns River Water Management District; Denise Lach and Skye Root, Oregon State University; Kevin Moua, Oregon Sea Grant Extension Intern; Kristin TePas, Illinois Natural History Survey; Wei Ying Wong, Connecticut College; Sam Chan and Tania Siemens, Oregon Sea Grant

11:10 am

AIS in the Classroom" Pathway: How do Biological Supply Houses Factor in?

Patrice Charlebois and Kristin TePas, Illinois-Indiana Sea Grant/Illinois Natural History Survey; Samuel Chan and Tania Siemens, Oregon Sea Grant; Wei Ying Wong, Goodwin-Niering Center for Conservation Biology & Environmental Studies; Charles Jacoby, University of Florida; Jeff Brinsmead, Ministry of Natural Resources; Denise Lach, Oregon State University; Robin Goettel and Terri Hallesy, Illinois-Indiana Sea Grant

11:30 am

One-Stop-Shop for AIS Regulations: A National Database of State and Federal Laws

Patrice Charlebois and Kristin TePas, Illinois-Indiana Sea Grant & Illinois Natural History Survey; Nicole Furlan, and Angela Archer, Illinois-Indiana Sea Grant

11:50 am

Enhancements to the Great Lakes Aquatic Non-indigenous Species Information System (GLANSIS)

Rochelle Sturtevant, Great Lakes Sea Grant Network at NOAA's Great Lakes Environmental Research Laboratory; David F. Reid, National Oceanic and Atmospheric Administration, Great Lakes Environmental Research Laboratory (Retired)

12:15 pm

Luncheon

Monday, August 30 Afternoon

Concurrent Session A-2

Western Dreissenids

1:30 pm

Prioritizing Zebra and Quagga Mussel Monitoring in the Columbia River Basin

Timothy Counihan and Amy Puls, United States Geological Survey; Steve Wells and Mark Sytsma, Portland State University, Center for Lakes and Reservoirs

1:50 pm

New Instrument to Detect and Identify Invasive Dreissenid Veligers Using a Continuous Imaging Particle Analyzer (Flowcam XP)

Harry Nelson, Matthew Duplisea and Benjamin Spaulding, Fluid Imaging Technologies

2:10 pm

Quagga/Zebra Mussels in California: A 2010 Update from the California Department of Fish and Game

Susan Ellis, California Department of Fish and Game

2:30 pm

The Continuing Saga of Quagga Mussels in Southern Nevada

Peggy Roefer, Southern Nevada Water Authority

2:50 pm

Break

Concurrent Session B-2

Ecological and Ecosystem Impacts

1:30 pm

Exotic Invertebrates Alter Benthic Community in Lake Erie

Lyubov Burlakova and Alexander Karatayev, Buffalo State College

1:50 pm

Engineering by the Invasive Asian Clam *Corbicula fluminea*: Impacts on Macrozoobenthic Assemblages

Ronaldo Sousa, Universidade do Minho, Departamento de Biologia

2:10 pm

Aquatic Invaders in Dutch Coastal Waters: A World Heritage Site at Risk?

Tom M. van der Have, Ministry Agriculture, Nature & Food Quality; Adriaan Gittenberger, GiMaRIS

2:30 pm

***Celtodoryx ciocalyptoides*: The First Record of a Sponge Species Invaded from One World Ocean into Another by Human Activity**

Daniela Henkel, Forschungsinstitut und Naturmuseum Senckenberg

2:50 pm

Break

Concurrent Session C-2

Education, Outreach and Scientific Data Exchange

1:30 pm

Wanted: Invasive Plants!

Hélène Godmaire, Caroline Larivière and Valerie Lacourse, Great Lakes United – Union Saint-Laurent Grands Lacs; Blaise Barrette, Un monde à part

1:50 pm

Reducing the Risks of Schools, Science Curricula and Biological Science Suppliers as Potential Pathways for Spreading Aquatic Invasive Species: Turning a “Home Town” Problem into Education and Prevention Opportunities of Bi-National Scope: Phase 1

Samuel Chan, Tania Siemens, Denise Lach, Tim Miller-Morgan and Skye Root, Oregon State University; Robin Goettel and Pat Charebois, Illinois Indiana Sea Grant; Matthias Herborg, BC Ministry of Environment; Jeff Brinsmead, Ontario Ministry of Natural Resources; Charles Jacoby, University of Florida; Susan Zaleski and Kevin Moua, University of Southern California Sea Grant; Rochelle Sturtevant, NOAA; Wei-Ying Wong, Connecticut College; Helen Domske, Cornell University; Jeff Adams and Julian Olden, University of Washington

2:10 pm

Reducing the Risks of Schools, Science Curricula and Biological Science Suppliers as Potential Pathways for Spreading Aquatic Invasive Species: Turning a “Home Town” Problem into Education and Prevention Opportunities of Bi-National Scope: Phase 2

Samuel Chan, Tania Siemens, Denise Lach, Tim Miller-Morgan and Skye Root, Oregon State University; Robin Goettel and Pat Charebois, Illinois Indiana Sea Grant; Matthias Herborg, BC Ministry of Environment; Jeff Brinsmead, Ontario Ministry of Natural Resources; Charles Jacoby, University of Florida; Susan Zaleski and Kevin Moua, University of Southern California Sea Grant; Rochelle Sturtevant, NOAA; Wei-Ying Wong, Connecticut College; Helen Domske, Cornell University; Jeff Adams and Julian Olden, University of Washington

2:30 pm

Using Risk Perception to Determine if *Didymosphenia geminata* Poses a Risk to Tasmania, Australia

Marnie Campbell, Nicole Cliff and Chad Hewitt, National Centre for Marine Conservation and Resource Sustainability, Australian Maritime College

2:50 pm

Break

Monday, August 30 Afternoon

Concurrent Session A-3

Western Dreissenids

3:20 pm

Aquatic Invasive Species Control and Prevention Plan for the Priest Rapids Hydroelectric Project, Mid-Columbia River, Washington

Ross Hendrick and Carson Keeler, Public Utility District No. 2 of Grant County, Washington

3:40 pm

The Quagga Mussel: Reclamation's Control Options for Dealing with an Invasive Species

Leonard Willett, Bureau of Reclamation

4:00 pm

Salt River Project's Invasive Mussel Outreach and Education Efforts in Phoenix, Arizona

Lesly Swanson, SRP Environmental Siting and Studies

4:20 pm

Interagency Monitoring Action Plan (I-MAP): Quagga Mussels in Lake Mead National Recreation Area

Kent Turner, National Park Service

4:40 pm

Zebra Mussel Growth and Seasonal Reproductive Cycles in San Justo Reservoir, California, USA

Tanya Veldhuizen and Jeff Janik, California Department of Water Resources

Concurrent Session B-3

Ecological and Ecosystem Impacts

3:20 pm

***Xenopus laevis* in Golden Gate Park: A Field Study**

Steve Felt, David Chu, Antwain Howard and Sherril Green, Stanford University School of Medicine, Department of Comparative Medicine

3:40 pm

A Successful Invasion of *Rapana venosa* in the Río de la Plata: Interactions between the Physical Environment, Food Supply and Lack of Competitors

Diego A. Giberto, Agustín Schiariti and Claudia S. Bremec, Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET) and Instituto Nacional de Investigación y Desarrollo Pesquero (INIDEP)

4:00 pm

Investigating the Microbiology of an Invasive Marine Oyster: Gulf of Eilat vs. the Eastern Mediterranean Sea

Dror Zurel, Yehuda Benayahu and Uri Gophna, Tel Aviv University, Department of Molecular Microbiology and Biotechnology

Concurrent Session C-3

Education, Outreach and Scientific Data Exchange

3:20 pm

Uniform Minimum Protocols and Standards for Watercraft Interception Programs for Dreissenid Mussels in the Western United States

Stephen Phillips and Bill Zook, Pacific States Marine Fisheries Commission

3:40 pm

Watercraft Inspections Using Scent Detection Dogs: An Evaluation of the Efficacy of California Department of Fish and Game's Canines to Detect Dreissenid Mussels

Martha Volkoff, California Department of Fish and Game

4:00 pm

It's in the Bag – Managing the Potential Spread of AIS from Crane Testing Water Weights

Paul Heimowitz, U.S. Fish and Wildlife Service; Joe DiVittorio, Bureau of Reclamation; Angelo Cimini, Imes Inc.

4:20 pm

Invading Species Watch: A Volunteer Based Monitoring Program in Ontario's Inland Lakes

John Zoltak and Francine MacDonald, Ontario Federation of Anglers and Hunters

Monday, August 30, 6:00 pm to 8:00 pm

Poster Session

**Office of Spill Prevention and Response's (OSPR)
Marine Invasive Species Program**

Karen Bigham, California Department of Fish and Game

**Rapid Assessment Surveys and Protocols for Lionfish
Invasions in National Parks**

Jeffrey Cross, Eva DiDonato and Rita Beard, National Park Service

**Aquatic Disease Biosecurity: Moving Away from an
Approach Based on Pathogens**

Marty Deveney, South Australian Research and Development Institute; Ramesh Perera, Biosecurity Australia; J. Jones, Department of Fisheries

**Managing Aquatic Invasive Species in Ocean and
Coastal National Parks**

Eva DiDonato, Rita Beard and Julia Brunner, National Park Service

**California Department of Fish and Game's Invasive
Species Program**

Holly Gellerman and Susan Ellis, California Department of Fish and Game

**Multiple introductions and invasion pathways for
the invasive ctenophore *Mnemiopsis leidyi* in Eurasia**

Sara Ghabooli, Aibin Zhan, Melania Cristescu and Hugh MacIsaac, University of Windsor; Tamara Shiganova, Russian Academy of Sciences, P. Shirshov Institute of Oceanology; Peyman Eghtesadi-Araghi, Iranian National Center for Oceanography

**The Proof of the Exotic Whelk is in the Diet:
Feeding Ecology of the Gastropod *Rapana venosa*
(Valenciennes, 1846) from the Rio de la Plata
Estuary, Southwestern Atlantic**

Diego Agustín Giberto, Agustín Schiariti and Claudia Silvia Bremec, National Council for Scientific Research and National Institute for Fisheries Research (INIDEP)

**Educators and the Erie Canal: An Effective Partnership
for AIS Training**

Michael Goehle, U.S. Fish & Wildlife Service; Helen Domske, New York Sea Grant – Cornell University

**Interdicting Aquatic Nuisance Species through
Emergency Treatment of Ballast Water:
A Management Perspective**

Phyllis Green, National Park Service

**Evaluation of a Habitat Suitability Model for the
Invasive European Green Crab (*Carcinus maenas*)
Using Species Occurrence Data from Western
Vancouver Island, British Columbia**

Jodi Harney, Coastal and Ocean Resources Inc; Linda Shaw, NOAA National Marine Fisheries Service

**Zebra and Quagga Mussel Monitoring in the
California State Water Project**

Jeff Janik and Tanya Veldhuizen, California Department of Water Resources

**Monitoring of Invasive Alien Species in Constanta
Harbor**

Cristina Preda and Marius Skolka, Ovidius University of Constanta

**Creating Tools for Invasive Species Decision Support
at a Global Scale: Distribution Maps and Models of
Predicted Potential Distribution**

Annie Simpson, U.S. Geological Survey

**Salinity Tolerance of the Exotic Round Goby:
Experimental Implications for Seawater Ballast
Exchange**

Carol Stepien, Susanne Karsiotis and Lindsey Pierce, University of Toledo; Joshua Brown, NOAA Sea Grant

**How the Physical Dispersion of Ballast Water
Influences the Risk of Aquatic Invasive Species
Establishment – Field Observations and Modelling**

Yajun Sun, University of Toronto

**Ecosystem Impacts of Quagga Mussels in Lake Mead
Arizona-Nevada, USA**

Todd Tietjen and Peggy Roefer, Southern Nevada Water Authority; G. Chris Holdren, Bureau of Reclamation

**Interactive Mapping of *Dreissena* Infestations
through GIS and Field Survey in Bulgaria**

Teodora Trichkova and Lubomir Kenderov, Bulgarian Academy of Sciences, Institute of Zoology; Alexander Kotsev and Dimitar Kozuharov, Sofia University

Tuesday, August 31 Morning

Plenary Session

8:30 am

Keynote Presentation

Speaker TBD

9:00 am

Keynote Presentation

Speaker TBD

9:30 am

Questions and Discussion

10:00 am

Break

Concurrent Session A-4

Industrial Control Technologies

10:30 am

Mexel Efficiency Study – Results of Year-long Pilot Study at American Electric Power's DC Cook Nuclear Plant

Thomas Armon, H-O-H Water Technology

10:50 am

Developing Use Pattern for Potential Open-Water Application of Zequanox™ – A Microbial-Based Technology for Selective Control of Invasive Dreissenid Mussels

Mark Heilman, Tyler Koschnick and Brad Franklin, SePRO Corporation; Sarahann Dow and Dustin Ottman, Marrone Bio Innovations

11:10 am

Evaluating Zebra Mussel (*Dreissena polymorpha*) Response to Desiccation at a Central California Water Supply Reservoir

Ned Gruenhagen and Michelle Chapman, Bureau of Reclamation

11:20 am

Demonstration Trials at DeCew II Generating Station at Ontario Power Generation Using Zequanox

Tony Van Oostrom, Ontario Power Generation; Kelly Peterson-Murray, ASI Group; Sarahann Dow, Marrone Bio Innovations

11:50 am

Surveillance, Maintenance, Instrumentation and Monitoring of Underwater Infrastructure; with Focus on Dreissenid Mussels

Robert Clarke, ASI Group Ltd.; Albert Graves, Central Arizona Project

12:15 pm

Luncheon

Concurrent Session B-4

Molecular Techniques and Applications to AIS Monitoring and Detection

10:30 am

Towards "Next Generation" Molecular Detection Methods for the Surveillance and Monitoring of Marine Pests in New Zealand

Douglas Mountfort, Cawthron Institute

10:50 am

Modeling and Estimating Uncertainty in Environmental DNA Surveillance of Invasive Asian Carps

Cameron R. Turner, Derryl J. Miller, Christopher L. Jerde, Andrew R. Mahon, Matthew A. Barnes and David M. Lodge, University of Notre Dame, Center for Aquatic Conservation; W. Lindsay Chadderton, The Nature Conservancy

11:10 am

Using Two Robotic Platforms Developed at the Monterey Bay Aquarium Research Institute (MBARI) for Molecular Detection and Monitoring of Marine Invertebrate Larvae and Major Copepod Groups *in situ*

Julio B. J. Harvey, Roman Marin III, John P. Ryan, Nilo Alvarado, Shannon B. Johnson, Chris Preston, Christopher A. Scholin and Robert C. Vrijenhoek, Monterey Bay Aquarium Research Institute

11:20 am

Nucleic Acid Probes for Detection and Management of Marine Pests: Applications and Capabilities, Prospects and Limitations in a Genomic Era

Jawahar Patil, CSIRO

11:50 am

Unique RT-PCR test for Replicating VHS Virus with Internal Control

Carol Stepien, Lindsey Pierce, James Willey, Erin Crawford and Douglas Leaman, University of Toledo

12:15 pm

Luncheon

Concurrent Session C-4

Policy and Programs

10:30 am

Early Detection of Invasive Alien Aquatic Species in the St. Lawrence River and Estuary through a Commercial Fisherman Network: A Three-year Experiment Evaluation.

Guy Verreault, Genevieve Bourget, Anne-Marie Pelletier, Réhaume Courtois and Anouk Simard, Ministère des Ressources naturelles et de la Faune, Quebec

10:50 am

From Paper to Practice: Launching the World's Most Stringent Ballast Water Standards

Nicole Dobroski, Christopher Scianni, Lynn Takata and Maurya Falkner, California State Lands Commission

11:10 am

(Re)thinking Aquatic Non-indigenous Species Impact Assessment

Alisha Dahlstrom, Marnie Campbell and Chad Hewitt, University of Tasmania, Australian Maritime College

11:20 am

Rapid Response Planning for Aquatic Invasive Species in the Lake Champlain Basin

Speaker TBD

11:50 am

Building a Decision Support System for Improved Management of Aquatic Invasive Species

Leah Sharpe, University of Minnesota

12:15 pm

Luncheon

Tuesday, August 31 Afternoon

Concurrent Session A-5

Industrial Control Technologies

1:30 pm

pH and Calcium – Natural Limits in Zebra Mussel Spread

Frances Lucy, Institute of Technology, Sligo

1:50 pm

Adjustment of pH as Method of Control for Dreissenid Mussels

Albert Graves, Central Arizona Project; Renata Claudi, Robert Prescott and Carolina Taraborelli, RNT Consulting

2:10 pm

Novel Approaches for Management of Invasive Quagga Mussels in a Large Water Supply System

Ricardo De Leon, William Taylor, Paul Rochelle, Sun Liang, Anthea Lee, Metropolitan Water District of Southern California

2:30 pm

Macrofouling Control of Invasive Species: A Critical Evaluation of Current Methods, Efficacy and Shortcomings

Sanjeevi Rajagopal and Gerard van der Velde, Radboud University Nijmegen; Vayalam Venugopalan, BARC Facilities; Henk Jenner, KEMA Power Generation and Sustainables

2:50 pm

Break

Concurrent Session B-5

Molecular Techniques and Applications to AIS Monitoring and Detection

1:30 pm

Toward Practical, PCR-based Detection Methods for the Surveillance of Marine Pests from South Australian Ports and Waterways.

Nathan Bott, Alan McKay, Kathy Ophel-Keller and Marty Deveney, South Australian Research and Development Institute

1:50 pm

Identification of Ballast Sediment Invertebrate Species Using Resting Eggs and Mitochondrial Markers

Hugh MacIsaac, University of Windsor

2:10 pm

Zebra Mussels – Bioindicators for Seasonal Trends in Cryptosporidiosis

Frances Lucy, Institute of Technology, Sligo; Thaddeus Graczyk, Johns Hopkins Bloomberg School of Public Health

2:30 pm

Something Old and Something New: Tracking AIS Incursions through Space and Time Using Molecular Data from Established Populations

Sharyn Goldstien and David Schiel, University of Canterbury; Graeme Inglis, NIWA; Neil Gemmill, University of Otago

2:50 pm

Break

Concurrent Session C-5

Policy and Programs

1:30 pm

Bi-National, Economic Considerations in Co-Managing Invasive Species and Water Quality for California and Baja California Coastal Boats

Leigh Johnson and Linda Fernandez, University of California, Riverside

1:50 pm

Plan to Eradicate Invasive Spartina from the West Coast

Mark Sytsma, Portland State University

2:10 pm

Lake Superior Aquatic Invasive Species Complete Prevention Plan

Roger Eberhardt, Michigan Department of Environmental Quality; Susan Greenwood, Ontario Ministry of Natural Resources; Amy Thomas, Battelle; Elizabeth LaPlante, United States Environmental Protection Agency; Nancy Stadler-Salt, Environment Canada

2:30 pm

Management of Marine Pests in the Australian Context: Biofouling Policy Development

Sonia Gorgula, Australian Government Department of Agriculture, Fisheries and Forestry

2:50 pm

Break

Tuesday, August 31 Afternoon

Concurrent Session A-6

Industrial Control Technologies

3:20 pm

Assessing the Efficiency and Safety of the Antifouling MXD-100 for Control of Invasive Species

***Limnoperna fortunei* (Dunker, 1857) in Power Plants**

Carlos Alberto Dias and Frederico Augusto Ribeiro da Mata, Maxclean Ambiental e Química S/A; Mônica de Cássia Souza Campos and Fábio de Castro Patrício, Fundação Centro Tecnológico de Minas Gerais

3:40 pm

The Use of Barriers in Combination with Chemical Treatment to Eradicate the Fatal Atlantic Salmon (*Salmo salar*) Parasite *Gyrodactylus salaris*

Jarle Steinkjer, Directorate for Nature Management

4:00 pm

Evaluation of Zequanox™ for Adult Invasive Mussel Treatment and Settlement Prevention at Davis Dam

Frederick Nibling and Joseph Kubitschek and Leonard Willett, Bureau of Reclamation; Sarahann Dow, Marrone Bio Innovations

4:20 pm

Evaluation of Auto-Backwash Filters in an Irrigation System to Control Dreissenid Mussels

Garry Smythe, Shaw Environmental and Infrastructure Inc.; Gary Osminski, Huron County

4:40 pm

Evaluation of New Coating Products for Mitigation of Zebra/Quagga Mussel Colonization

Allen Skaja and David Tordonato, Bureau of Reclamation

5:00 pm

Mussel Eradication: A Portable Option

Dan Butts, ASI Group

Concurrent Session B-6

Molecular Techniques and Applications to AIS Monitoring and Detection

3:20 pm to 4:30 pm

Ask the Experts: Question and Discussion Forum

Concurrent Session C-6

Policy and Programs

3:20 pm

Binational Aquatic Invasive Species Rapid Response Assessment and Planning International Joint Commission Work Group Activities

Mark Burrows, International Joint Commission Great Lakes Regional Office

3:40 pm to 4:45 pm

Workshop

Using the Bureau of Reclamation Equipment Inspection and Cleaning Manual

Joseph DiVittorio, Bureau of Reclamation

Wednesday, September 1 Morning

Plenary Session

8:30 am

Keynote Presentation

Speaker TBD

9:00 am

Keynote Presentation

Speaker TBD

9:30 am

Questions and Discussion

10:00 am

Break

Concurrent Session A-7

Shipping: Testing Treatment Systems and Management Practices

10:30 am

Evaluation of Ballast Water Treatment Systems: Programmatic Overview of U.S. Coast Guard Research and Development Efforts

Richard A. Everett, U.S. Coast Guard, Environmental Standards Division

10:50 am

Ballast Water Research Program: Parsing the Problem

Penny Herring, Gail Roderick and Marion Lewandowski, U.S. Coast Guard R&D Center

11:10 am

A Statistical Treatment of Ballast Water Discharge Sampling for the Evaluation of Treatment Efficacy and the Implications for Regulatory Purposes

Edward Lemieux, Kevin Burns and Lisa Drake, Naval Research Laboratory

11:30 am

Ballast Water Discharge Sampling: Approximating Zooplankton Retention Efficiencies Using Microbeads

Lisa Drake, Mia Steinberg, Stephanie Robbins and Scott Riley, Science Applications International Corporation; Tim Wier, EXCET, Inc.; Wayne Hyland, Azimuth Technical Consultants; Edward Lemieux, U.S. Naval Research Laboratory

11:50 am

Quantifying Viability in Protists Discharged in Ballast Water Using Two Fluorescent Vital Stains

Mia Steinberg, Scott Riley, Stephanie Robbins, Edward Lemieux and Lisa Drake, Naval Research Laboratory; Bruce Nelson, Battenkill Technologies

12:15 pm

Luncheon

Concurrent Session B-7

Crustaceans

10:30 am

Habitat Use and Dispersal Capacity of the Non-indigenous Isopod *Cirrolana harfordi*

Denise Bunting, University of Sydney, Ross Coleman, Will Figueira, University of Sydney; Emma Johnston, The University of New South Wales

10:50 am

Distribution and Habitat Preferences of the Invasive Crustacean *Hemimysis anomala* in the Great Lakes

Kelly Bowen, Jocelyn Gerlofsma and Marten Koop, Fisheries and Oceans Canada; Tim Johnson, Ontario Ministry of Natural Resources

11:10 am

Life History Traits and Reproductive Capacity of the Marmorkrebs, *Procambarus* sp., Under Laboratory Conditions: A Strong *r*-strategist

Manfred Pöckl, University of Vienna

11:30 am

Influence of Temperature on Predation Capacity of *Mesocyclops* Against *Aedes aegypti*

R. Ramanibai, and S. Kanniga, University of Madras

11:50 am

Anti-predator Behaviours in Native and Exotic Amphipods: Relationships Between Aggregation, Activity Level, Refuge Use and Swimming Speed

Pascal Sornom and Jean-Nicolas Beisel, Université de Metz, Laboratoire Interactions Ecotoxicologie Biodiversité Ecosystèmes (LIEBE); Vincent Médoc, Université de Bourgogne, Laboratoire de Biogéosciences

12:15 pm

Luncheon

Concurrent Session C-7

Aquatic Plants

10:30 am

Integrating Landscape-Level Strategies and Tools to Manage Invasive *Egeria densa* in the Sacramento-San Joaquin Delta, California, USA

Lars Anderson, U.S. Department of Agriculture-ARS; Tyler Koschnick and Scott Shuler, SePRO Corporation; Scott Ruch, RuchLogic; Marica Carlock, California Department of Boating and Waterways; Maria J. Santos, University of California, Davis; Susan L. Ustin, Center for Southeastern Tropical Advanced Remote Sensing

10:50 am

New Data on the Reproductive Phenology of the Introduced Kelp *Undaria pinnatifida* (Phaeophyceae, Laminariales) in Port Phillip Bay (Victoria, Australia)

Carmen Primo, Marnie L. Campbell and Chad L. Hewitt, Australian Maritime College – University of Tasmania

11:10 am

Understanding the Lifecycle and Morphology of the Invasive *Lagarosiphon major* in Lough Corrib, Ireland, in Order to Develop Effective Control Practices

Michael Millane, Stephanie Evers, Joseph M. Caffrey, Helen Moran and Shireen Sayed, Central Fisheries Board

11:30 am

Control of *Lagarosiphon major* and Restoration of Indigenous Communities Using a Biodegradable Geotextile to Exclude Light

Joseph M. Caffrey, Stephanie Evers, Michael Millane, Helen Moran and Shireen Sayed, Central Fisheries Board; M. Butler, Western Regional Fisheries Board

11:50 am

Genetic Population Structure of an Invasive Aquatic Weed, *Elodea canadensis*, in Finland – One or Multiple Invasions?

Tea Huotari, Helena Korpelainen, Elina Leskinen, University of Helsinki; Kirsi Kostamo, Finnish Environment Institute

12:15 pm

Luncheon

Wednesday, September 1 Afternoon

Concurrent Session A-8

Shipping: Testing Treatment Systems and Management Practices

1:30 pm

Automated Analyses of Ballast Water Samples for the Enumeration of Viable Organisms in the $\geq 50 \mu\text{m}$ Size Class

Bruce N. Nelson, Mia Steinberg, Scott Riley, Stephanie Robbins, Edward J. Lemieux, Penny Herring, and Lisa A. Drake, Naval Research Laboratory; Bruce Nelson, Battenkill Technologies

1:50 pm

Flow-through Discharge Sampling: Design and Validation

Timothy Wier, EXCET Inc.; Lisa Drake and Edward Lemieux, Naval Research Laboratory; Jonathan Grant, Battenkill Technologies

2:10 pm

An Automation and Control System Specification for Verification of Ballast Water Treatment Systems

Jonathan Grant, Battenkill Technologies, Inc.; Timothy Wier, Excet, Inc.; Edward Lemieux, U.S. Naval Research Laboratory

2:30 pm

Intercomparison of U.S. Ballast Water Test Facilities

Lisa Drake, Science Applications International Corporation; Tim Wier, EXCET, Inc.; Jonathan Grant, Battenkill Technologies, Inc.; Edward Lemieux, Naval Research Laboratory

2:50 pm

Break

Concurrent Session B-8

Crustaceans

1:30 pm

A Quick Test to Establish the Predation Capacity in Exotic and Native Gammaridean Species

Gerard van der Velde, Bart Stoffels, Jeroen Tummers and Rob Leuven, Radboud University Nijmegen; Dirk Platvoet, University of Amsterdam

1:50 pm

Mitigation Strategies for the Control of the European Green Crab, *Carcinus maenas*, in Placentia Bay, Newfoundland, Canada

Cynthia McKenzie, Terri Wells, Andrew Vickerson, Brooks Pilgrim, Fisheries & Oceans Canada; Janice Ryan, Fish Food and Allied Workers; Robert O'Donnell and Philip Sargent Memorial University of Newfoundland

2:10 pm

2:30 pm

Potential Impact of Chinese Mitten Crab (*Eriocheir sinensis*) on Turbidity and Submerged Vegetation in Lake Zuidlaardermeer, Northern Netherlands

J.H. Wanink, R. Bijkerk and M.J.J.E. Loonen, Koeman en Bijkerk bv, Ecological Research and Consultancy; M.L.C. Heukels and R.W. de Jong Van Hall Instituut, Department of Animal Management; Van Hall Instituut, Department of Animal Management; P.P. Schollema and H. Wanningen, Water Board Hunze en Aa's

2:50 pm

Break

Concurrent Session C-8

Aquatic Plants

1:30 pm

Alien Attack – Invasion of *Alternanthera philoxeroides* (Mart.) Griseb (Alligator weed) in Wular Lake of Kashmir, India

Ather Masoodi and Fareed Khan, Aligarh Muslim University

1:50 pm

Classical Biological Control of *Hygrophila*: Results of Native Range Surveys

Abhishek Mukherjee, James Cuda, William Overholt, University of Florida; Matiyar Khan, Bidhan Chandra Krishi Viswavidyalaya

2:10 pm

Caulerpa taxifolia in South Australia and Queensland: Parallel Histories

Marty Deveney, Keith Rowling, Kathryn Wiltshire and Jason Tanner, South Australian Research and Development Institute; Dana Burfeind, Griffith University, Australia; James Udy, The University of Queensland

2:30 pm

Research and Testing of a System for Precision Littoral Zone Application of Aquatic Herbicides

Thomas McNabb and Thomas Moorhouse, Clean Lakes, Inc.; Bruce Sabol, U.S. Army Engineer Research and Development Center

2:50 pm

Break

Wednesday, September 1 Afternoon

Concurrent Session A-9

Shipping: Testing Treatment Systems and Management Practices

3:20 pm

U.S. Coast Guard Experience with Implementation of a Prototype Ballast Water Management Equipment Evaluation Program

LCDR Brian Moore and Richard Everett, United States Coast Guard

3:40 pm

Assessment of Plankton Density in Ballast Water Samples Using a High Resolution Laser Optical Plankton Counter and FlowCAM®

Jocelyn Gerlofsma and Sarah Bailey, Fisheries and Oceans Canada

4:00 pm

Verification Trial of IMO Type Approved Ballast Water Management Systems

Peter Neimanis, Australian Quarantine and Inspection Service

4:20 pm

Tales from the Crypt: Instrument Records from Inside Operating Ballast Tanks

David Reid, National Oceanic and Atmospheric Administration, Great Lakes Environmental Research Laboratory (Retired); Thomas Johengen, University of Michigan-SNRE; Tony Wang, University of Windsor; Sarah Bailey and Christopher Wiley, Fisheries and Oceans Canada/Transport Canada; Philip Jenkins, Philip T. Jenkins & Associates, Ltd.; Hugh MacIsaac, University of Windsor

Concurrent Session B-9

Asian Carp

3:20 pm to 4:30 pm

Speakers to be Announced

Concurrent Session C-9

Aquatic Plants

3:20 pm to 4:30 pm

Ask the Experts: Question and Discussion Forum

Thursday, September 2 Morning

Plenary Session

8:30 am

Keynote Presentation

Speaker TBD

9:00 am

Keynote Presentation

Speaker TBD

9:30 am

Questions and Discussion

10:00 am

Break

Concurrent Session A-10

Shipping: Ballast Water Treatment and Management

10:30 am

Bactericidal Effect of Increased pH to Aquatic Pathogenic and Ship Ballast Environmental Bacteria

Clifford Starliper and Barnaby Watten, U.S. Geological Survey, Leetown Science Center

10:50 am

Refinement of a Hydroxide Stabilization Process for Treatment of Ballast: Effect of Relative Headspace Volume, Ventilation Rate and Liquid Phase Mixing on pH Depression

Barnaby Watten and Philip Sibrell, U.S. Geological Survey, Leetown Science Center; Scott Smith, U.S. Geological Survey, Western Fisheries Research Center

11:10 am

On-board Ship Tests in the Great Lakes Measured the Efficiency of Basic Dosing Methods for Treating Ballast Tanks

Noah Adams, Barnaby Watten and Scott Smith, U.S. Geological Survey; Kevin Reynolds, The Glosten Associates; Phyllis Green, National Park Service

11:30 am

Fresh Water; Neglected in Shipboard Ballast Water Treatment Testing and Approval –A Potential Solution

Christopher J. Wiley, Transport Canada – Ontario Region

11:50 am

Computational Analysis of Reagent Mixing in Ballast Tanks

Wesley Wilson, Naval Surface Warfare Center – Carderock Division; Barnaby Watten, U.S. Geological Survey, Leetown Science Center

12:15 pm

Luncheon

Concurrent Session B-10

Dreissenids

10:30 am

A New Mention for an Aquatic Invasive Species at the Northern Limit of its Range: Dynamics of an Asian Clam Population in Association with a Power Plant

Anouk Simard, Annie Paquet, Yves Robitaille and Courtois Réhaume, Ministère des Ressources naturelles et de la Faune du Québec; Charles Jutras and Pierre Blier, Université du Québec à Rimouski; André Martel, Musée canadien de la nature

10:50 am

Exotic Species Replacement: A Tale of Two Mussels

Lisa Jones and Anthony Ricciardi, McGill University

11:10 am

Assessment of the Invasion of *Limnoperna fortunei* in the Lower Paranaíba River and its Tributaries of the Right Bank – the Stretch Between São Simão (GO) and Paranaíba (MS)

Mônica de C.S. Campos, Fabiano Alcísio e Silva and Pedro Henrique Rolin Benini, Fundação Centro Tecnológico de Minas Gerais

11:30 am

Environmental Aspects of the Invasion of *L. fortunei* in the Upper Parana River (Minas Gerais, Goiás, Brazil)

Mônica de Cássia Souza Campos, Fundação Centro Tecnológico de Minas Gerais; Maria Edith Rolla, Helén Regina Mota and Fabiano Alcísio e Silva, Companhia Energética de Minas Gerais - CEMIG

11:50 am

Population Genetic History of the Dreissenid Mussel Invasion: Expansion Patterns Across North America

Carol Stepien, University of Toledo; Joshua Brown, National Oceanic and Atmospheric Administration

12:15 pm

Luncheon

Concurrent Session C-10

Fishes

10:30 am

Impacts of the Round Goby (*Neogobius melanostomus*) Invasion on Fish Community and Food Web energy Transfer in the St. Lawrence River (Québec, Canada) from 1997 to 2009

Yves Paradis and Philippe Brodeur, Ministère des Ressources naturelles et de la Faune du Québec; Yorick Reyjol, Office national de l'eau et des milieux aquatiques; Marc Mingelbier, Pierre Dumont, Yves Mailhot, Jolyane Roberge, Nathalie Vachon and Tiphonie Rivieres, Ministère des Ressources naturelles et de la Faune du Québec

10:50 am

Developmental Plasticity and Successful Fish Invasions

Vladimír Kováč, Comenius University

11:10 am

Do Long-time and Recently-established Populations of Topmouth Gudgeon (*Pseudorasbora parva*) Follow Different Ontogenetic Trajectories and Life-histories?

Eva Záhorská and Vladimír Kováč, Comenius University

11:30 am

Morphological Variability of Non-native Black Bullhead *Ameiurus melas* Populations in Four European Countries

Andrea Novomeská, Vladimír Kováč, and Stanislav Katina, Comenius University; Gordon Copp, Salmon and Freshwater Team, Cefas

11:50 am

Invasive Fishes in the Aral Sea Basin, Central Asia

Ernest Khurshut, Uzbek Academy of Sciences

12:15 pm

Luncheon

Thursday, September 2 Afternoon

Concurrent Session A-11

Shipping: Risk, Policy and Programs

1:30 pm

Elements of Marine Biofouling Risk

Chad Hewitt, Marnie Campbell and Alisha Dahlstrom, University of Tasmania, Australian Maritime College; Ashley Coutts and Derek Shields, Aquenal, Joe Valentine, Hobart

1:50 pm

Patterns of Compliance, Geography and Management of Ballast Water in California

Lynn Takata, Chris Scianni, Nicole Dobroski and Maurya Falkner, California State Lands Commission

2:10

An Analysis of the Fouling-Related Practices of Commercial Vessels in California

Christopher Scianni, Nicole Dobroski, Lynn Takata and Maurya Falkner, California State Lands Commission

2:30 pm

Canada's Ballast Water Program – Science, and Risk Supporting Internationally Based Regulatory Regime

Paul Topping and David Yard, Transport Canada

2:50 pm

Break

3:20 pm

National Risk Assessment of Ship-mediated ANS Introductions to Canada's Four Coasts

Sarah Bailey, Johanna Bradie, Matthew Deneau, Nathalie Simard, Cynthia McKenzie, Kim Howland, Jennifer Martin and Terri Sutherland Fisheries and Oceans Canada; Farrah Chan, University of Windsor

3:40 pm

Collaborative Efforts Towards Better Ballast Water Management

Marvourneen Dolor, U.S. Department of Transportation

4:00 pm

Minimizing the Spread of Marine Non-indigenous Invasive Species Through Application of Boat Hull Antifouling Strategies: To Clean or Not to Clean?

Leigh Johnson andCarolynn Culver, University of California; Henry Page and Jennifer Dugan, University of California, Santa Barbara

Concurrent Session B-11

Dreissenids

1:30 pm

Forecasting the Range Expansion of Zebra Mussel in Italy

Elena Tricarico, Simone Cianfanelli, Gabriele Orioli and Francesca Gherardi, University of Florence; Michele Scardi and Lorenzo Tancioni, University of Rome Tor Vergata

1:50 pm

Invasion Paradox: Why *Dreissena rostriformis bugensis*, Being Less Invasive, Outcompete *D. polymorpha*?

Alexander Karatayev, Lyubov Burlakova, Sergey Mastitsky, Buffalo State College; Dianna Padilla, Stony Brook University; Edward Mills, Cornell Biological Field Station

Concurrent Session C-11

Fishes

1:30 pm

Fathead Minnow *Pimephales promelas* in Europe: Preliminary Results on the Environmental Biology of a Feral Population of 'Rosy Reds'

Michael Godard and Gordon Copp, Bournemouth University and Centre for Environment, Fisheries and Aquaculture Science; Grzegorz Zięba, University of Łódź

1:50

Potential Freshwater Fish Invaders to the North American Arctic

Ross Tallman and Kimberly Howland, Fisheries and Oceans Canada

2:10

Food Web Changes Following Introduction of Nile Perch (*Lates niloticus*) into Lake Victoria

J.H. Wanink, M. Kische-Machumu and F. Witte, University of Leiden, Institute of Biology Leiden

2:30 pm

How Exotic Hosts May Affect the Dynamic of Local Freshwater Parasites

Vincent Médoc, Thierry Rigaud and Loïc Bollache, Université de Bourgogne

2:50 pm

Break

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(June 26, 2010 or later)

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