

TENTATIVE PROGRAM For LIVE ORAL PRESENTATIONS

(Subject to change without notice)

*Presenter

May 25 (16:00–20:00, Vancouver/Seattle; 15:00–19:00, Alaska)

May 26 (08:00–12:00, Japan/Korea; 09:00–13:00, Russia, Vladivostok)

16:00–16:10 **Welcoming and Opening Remarks**
TBD

16:10–16:25 **Introduction of the IYS**
Mark Saunders (Chair of the IYS North Pacific Director and IYS WG Chairperson)

Topic 1. Salmon Production in Changing Environments

(Moderators: *Ed Farley**, *Jim Irvine**, *Ju Kyoung Kim*, *Svetlana Naydenko*, and *Hirofumi Ueno*,
*Session co-leader)

Topic 1-1. Status and trends of key salmon populations and their environments (chair: Ed Farley)

16:25–16:35 **Introduction (1)**
Ed Farley and Jim Irvine

16:35–17:00 **Keynote Presentation (1): Stock Assessment of the Pacific Salmon in the Russian Far East under the Current Climatic Conditions**
*Andrey Krovnin**, *Vladimir Belyaev*, and *Nataliya Klovach*

17:00–17:15 **Live Oral (1): Features of Pink Salmon Growth as a Possible Indicator of a Decrease in Its Survival in the Marine Life Period**
*Alexander Kaev and Vladimir Radchenko**

17:15–17:30 **Live Oral (2): 'Controlling the Controllables'—What More Can be Done?—State of Atlantic Salmon in Ireland**
*Ciaran Byrne**, *C. Gallagher*, *P. Gargan*, and *M. Millane*

Topic 1-2. Effects of freshwater habitat changes on salmon production (chair: Jim Irvine)

17:30–17:55 **Keynote Presentation (2): Salmon Futures: Resilience and Vulnerabilities across Their Life Cycle**
*Samantha M. Wilson** and *Jonathan W. Moore*

17:55–18:10 **Live Oral (3): Analysis of Temperature Tolerance in Juvenile Chum Salmon**
*Muchammad Fajri**, *Takuto Ouchi*, *Yoshio Takei*, *Susumu Hodo*, and *Makoto Kusakabe*

18:10–18:15 *Break*

Topic 1-3. Survival mechanism of juvenile salmon in changing ocean environments (chair: Svetlana Naydenko)

18:15–18:40 **Keynote Presentation (3): Non-stationary Drivers of Pacific Salmon Productivity**
*Michael J. Malick**

- 18:40–19:05 **Keynote Presentation (4): Atlantic Salmon - Nomads of the Ocean**
*Eva B. Thorstad**, *Audun H. Rikardsen*, and *Vidar Wennevik*
- 19:05–19:20 **Live Oral (4): Ontogeny of Critical Swimming Speeds for Juvenile Chum Salmon**
*Yuki Iino**, *Takashi Kitagawa*, *Takaaki Abe*, *Tsuyoshi Nagasaka*, *Yuichi Shimizu*, and *Katsuhiko Ota*

Topic 1-4. Winter ocean ecology and survivals of Pacific salmon (chair: Ju Kyoung Kim)

- 19:20–19:45 **Keynote Presentation (5): Feeding Habits of Pacific Salmon during the Winter**
*Alexey Somov**, *Anton Khleborodov*, *Aleksander Slabinsky*, *Brian P.V. Hunt*, and *Evgeny A. Pakhomov*
- 19:45–20:00 **Live Oral (5): Zooplankton Community Structure and Development during Late Winter 2019 and 2020 in the Northeastern Pacific Ocean**
*Evgeny Pakhomov**, *Brian Hunt*, *Alexander Slabinsky*, and *Alexei Somov*

May 26 (16:00–20:00, Vancouver/Seattle; 15:00–19:00, Alaska)

May 27 (08:00–12:00, Japan/Korea; 09:00–13:00, Russia, Vladivostok)

Topic 1-5. Linkages between salmon production and climate/ocean changes (chair: Hiromichi Ueno)

- 16:00–16:25 **Keynote Presentation (6): Bottom-up and Top-down Processes Drive the Survival and Abundance of Pacific Salmon**
*Gregory T. Ruggione**, *Brendan Connors*, *James R. Irvine*, and *colleagues*
- 16:25–16:40 **Live Oral (6): The Ups and Downs of Far East Pink Salmon Stocks during Recent Decades: Some Considerations about Possible Causes**
*Andrey Krovnin**, *Kirill Kivva*, and *Gennady Khen*
- 16:40–16:55 **Live Oral (7): Missing Salmon? Salmon Presumed Dead at Sea may be Colonizing the Arctic**
*Karen Dunmall**, *Darcy McNicholl*, *Ed Farley*, and *Jim Reist*

Topic 1-6. Summary and discussion (chairs: Ed Farley and Jim Irvine)

16:55–17:25

17:25–17:30 *Break*

Topic 2. New Technologies/Integrated Information Systems for Salmon Research and Management

(Moderators: *Kazushi Miyashita*, *Dion Oxman*, *Shunpei Sato*, and *Mark Saunders**, *Session leader)

- 17:30–17:40 **Introduction (2)**
Mark Saunders

Topic 2-1. New technologies (chair: Dion Oxman)

- 17:40–18:05 **Keynote Presentation (7): Salmon Genetics at Sea: Three Decades of New Insights**
*William D. Templin**, *Andrew R. Munro*, *Chris Habicht*, *Dion Oxman*, *Sara Gilk-Baumer*, *Wesley Larson*, and *Andrew Gray*

- 18:05–18:30 **Keynote Presentation (8): Physiological Tools for Evaluating Growth Status of Migrating Salmon**
*Muneharu Shimizu**
- 18:30–18:45 **Live Oral (8): Environmental DNA Surveys of the Gulf of Alaska during the 2019 and 2020 IYS Gulf of Alaska Expeditions**
Christoph M. Deeg, Shaoring Li, Brian P.V. Hunt, Svetlana Esenkulova, and Kristina M. Miller*

Topic 2-2. Integrated information and management systems (chairs: Shunpei Sato and Kazushi Miyashita)

- 18:45–19:10 **Keynote Presentation (9): The Salmon of Knowledge: A Road-map to Modernize Salmon Information Processing**
Scott A. Akenhead, J. Scott Carley, and James R. Irvine*
- 19:10–19:25 **Live Oral (9): Integrated Research on Olfactory and Geomagnetic Imprinting and Homing in Pacific Salmon**
Hiroshi Ueda, Nathan F. Putman, Tatsufumi Okino, and David L.G. Noakes*
- 19:25–19:40 **Live Oral (10): The Global Ocean Observation System and Essential Salmon Ocean Ecology Variables**
Brett T. Johnson, Ray Brunsting, Brian Hunt, Eric Peterson, and Mark Saunders*

Topic 2-3. Summary and discussion (chair: Mark Saunders)

19:40–20:00

May 27 (16:00–19:45, Vancouver/Seattle; 15:00–18:45, Alaska)

May 28 (08:00–11:45, Japan/Korea; 09:00–12:45, Russia, Vladivostok)

Topic 3. (Special Session) Resilience for Salmon and People: Lessons from the Great East Japan Earthquake in 2011

(Moderators: Jun Aoyama, Masahide Kaeriyama, and Shigehiko Urawa, *Session leader)*

- 16:00–16:10 **Introduction (3)**
Jun Aoyama

Topic 3-1. Restoration of ecosystems and human society in the coastal zone systems (chair: Masahide Kaeriyama)

- 16:10–16:35 **Keynote Presentation (10): Research Project of TEAMS for Restoration of Ecosystems and Human Society**
Akihiro Kijima
- 16:35–16:50 **Live Oral (11): Challenges to Make Salmon in Sanriku an Icon of the Region**
Jun Aoyama and Susumu Hyodo*
- 16:50–17:05 **Live Oral (12): Effects of the Great East Japan Earthquake and Tsunami on Fisheries and Salmon in Iwate Prefecture**
Tsuyoshi Nagasaka and Yuichi Shimizu*

Topic 3-2. Research for retrieval and sustainable management of salmon populations (chair: Jun Aoyama)

- 17:05–17:30 **Keynote Presentation (11): Recovery from the Critical Disaster and Managing Risk to Conserve Chum Salmon under the Warming Climate in the Sanriku Coast, Northern Honshu, Japan**
*Masahide Kaeriyama**, *Yuichi Shimizu*, *Yuki Minegishi*, and *Jun Aoyama*
-
- 17:30–17:45 **Live Oral (13): Genetic Population Structure of Chum Salmon in the Sanriku-region, Japan**
*Hideharu Tsukagoshi**, *Sayuri Terui*, *Gen Ogawa*, *Shunpei Sato*, and *Syuiti Abe*
- 17:45–18:00 **Live Oral (14): Wild Population and Natural Spawning of Chum Salmon in the Koduchi River on the Sanriku Coast, Japan**
*Yuki Minegishi**, *Tatsuya Kawakami*, and *Jun Aoyama*
- 18:00–18:05 *Break*

Topic 3-3. Risk managements and sustainability for the coastal zone systems and salmon production (chair: Shigehiko Urawa)

- 18:05–18:30 **Keynote Presentation (12): Lessons Learned from Ecological Disasters, Including the 2011 Great East Japan Earthquake (GEJE)**
*James R. Irvine**, *Masahide Kaeriyama*, *Shigehiko Urawa*, and *Jun Aoyama*
- 18:30–18:55 **Keynote Presentation (13): Legacy of a Disaster: Effects of the Tohoku Earthquake and Tsunami on the Northern California Current in the Eastern North Pacific Ocean**
*Richard D. Brodeur**, *Jessica A. Miller*, *John W. Chapman*, and *Gayle I Hansen*
- 18:55–19:10 **Live Oral (15): The Challenge of Reconstruction Faced by the Domestic Salmon Industry after the Great East Japan Earthquake and Tsunami in 2011**
*Ikutaro Shimizu** and *Katsuhiko Miki*

Topic 3-4. Summary and discussion: Overview of lessons learned for future challenges (chairs: Jun Aoyama, Masahide Kaeriyama, and Shigehiko Urawa)

- 19:10–19:40
- 19:40–19:45 **Closing Remarks** *TBD*
-

Pre-recorded Oral Presentations

*Presenter

Topic 1. Salmon Production in Changing Environments

- R-Oral-1 **A Survey of the Coast-wide Decline in Survival of West Coast Chinook and Steelhead**
*David Warren Welch**, *Aswea Dawn Porter*, and *Erin Leanne Rechisky*
- R-Oral-2 **State of Canadian Pacific Salmon 2019 & 2020: Responses to Changing Climate and Habitats**
*Sue C.H. Grant**, *Bronwyn L. MacDonald*, *Jennifer L. Boldt*, *David A. Patterson*, *Kendra A. Robinson*, *Ian Perry*, *Jackie King*, *Chrys M. Neville*, *Dan T. Selbie*, *Keri Benner*, *Lucas Pon*, *Joe A. Tadey*, and *Mike Hawkshaw*
- R-Oral-3 **Recent Trend in Variability of Chum Salmon Stock and its Potential Mechanism in Hokkaido, Japan**
*Hirokazu Urabe**, *Hayato Saneyoshi*, and *Makoto Hatakeyama*
- R-Oral-4 **International Variability of Japanese Chum Salmon Abundance in the Summer Bering Sea during a Long Monitoring Survey in 2007–2019**
*Shunpei Sato** and *Shigehiko Urawa*
- R-Oral-5 **Genetic Mixed Stock Analysis as a Tool for Identifying Immature Chinook Salmon Stock Distribution in the Bering Sea**
*Elizabeth Lee**, *Kathrine Howard*, *Sabrina Garcia*, *Jim Murphy*, *Charles M. Guthrie III*, *Alex Andrews*, *Tyler Dann*, and *Wes Larson*
- R-Oral-6 **Moving Targets: Assessing Fraser River Pink Salmon Run Size During a Period of Change and Uncertainty**
*Merran Hague**, *Rachael Hornsby*, *Jessica Gill*, *Catherine Michielsens*, and *Erica Jenkins*
- R-Oral-7 **The Ecological Context of Aerobic Scope in Cost of Transport for Chum Salmon Migrating Upriver**
*Takaaki K. Abe** and *Takashi Kitagawa*
- R-Oral-8 **Does Long-distance Downstream Migration Influence the Survival of Chum Salmon? Comparison of Adult Returns between the Upper and Lower Reaches Release Sites**
*Kiyoshi Kasugai**, *Mitsuru Torao*, and *Mitsuhiro Nagata*
- R-Oral-9 **The Use of Spatial Stream Network Models to Evaluate the Effects Varying Stream Temperatures on Wild Coho Life History Expression and Survival**
*Marisa N. C. Litz**, *Mickey Agha*, *John J. Winkowski*, *Devin West*, and *Jennifer Kordosky*
- R-Oral-10 **Assessing the Effect of Temperature on Predation Risk of Juvenile Chinook Salmon in the Sacramento-San Joaquin River Delta System**
*Alexandra G. McInturf**, *Ken W. Zillig*, *Dennis Cocherell*, *Cyril Michel*, and *Nann A. Fangue*
- R-Oral-11 **Ocean Carrying Capacity is Regulating the Production of Coho Salmon Rearing as Juveniles in the Strait of Georgia**
*Richard J. Beamish** and *Chrys Neville*
- R-Oral-12 **Density-dependent Marine Survival of Salish Sea Chinook and Coho Salmon Associated with Pink Salmon Presence**
*Neala W. Kendall**, *Benjamin W. Nelson*, and *James P. Losee*

- R-Oral-13 **Prey Selectivity of Juvenile Salmon in Coastal Waters during Contrasting Years and their Relation to Early Marine Survival**
*Elizabeth A. Daly**, Richard D. Brodeur, Cheryl A. Morgan, Brian J. Burke, and David D. Huff
- R-Oral-14 **Return Rates of Chum Salmon are Affected by Different Timings of Juvenile Release**
*Yuya kogame** and Hayato Saneyoshi
- R-Oral-15 **The International Year of the Salmon Pan Pacific High Seas Expedition 2022**
*Stephanie Taylor**, Caroline Graham, Vladimir Radchenko, Ed Farley, Laurie Weitkamp, Dick Beamish, Brian Riddell, Jackie King, Chrys Neville, Shunpei Sato, Shigehiko Urawa, Aleksey Somov, Aleksandr Starovoytov, Sang-Seon Yun, Erika Anderson, Tim Van Der Stap, and Mark Saunders
- R-Oral-16 **Stock Identification of Chum Salmon Overwintering in the Gulf of Alaska by Using a New SNP Baseline**
*Shigehiko Urawa**, Terry Beacham, and Shunpei Sato
- R-Oral-17 **Updated Results on the Winter Energetic Status of Pacific Salmon in the Gulf of Alaska**
*Charles D. Waters**, Todd Miller, Emily Fergusson, Dion Oxman, and Edward Farley Jr.
- R-Oral-18 **Mechanisms, Impacts, and Mitigation for Thiamine Deficiency and Early Life Stage Mortality in California's Central Valley Chinook Salmon**
*Nate Mantua**, Rachel Johnson, John Field, Steve Lindley, Anne Todgham, Nann Fangue, Carson Jeffres, Heather Bell, Dennis Cocherell, Jacques Rinchar, Donald Tillitt, Bruce Finney, Dale Honeyfield, Taylor Lipscomb, Scott Foott, Kevin Kwak, Mark Adkison, Brett Kormos, Steve Litvin, Iliana Ruiz-Cooley
- R-Oral-19 **Changing Ocean Conditions, Growth, and Saltwater Age at Maturity in Steelhead from the Situk River, Alaska (USA)**
*Megan V. McPhee**, Matthew R. Catterson, David C. Love, and Trent M. Sutton
- R-Oral-20 **Salmon Conservation under Changing Conditions and with Freshwater-marine Carryover Effects**
*Jennifer L. Gosselin**, Lisa G. Crozier, Brian J. Burke, and Eric Buhle
- R-Oral-21 **Juvenile Yukon River Chinook Salmon in a Warming Arctic**
*James Murphy**, Kathrine Howard, Sabrina Garcia, Jamal Moss, Wesley Strasburger, Fletcher Sewall, and Elizabeth Lee

Topic 2. New Technologies/Integrated Information Systems for Salmon Research and Management

- R-Oral-22 **Hokkaido-wide eDNA Monitoring for Sakhalin Taimen, Endangered Salmonid Species**
*Hiroki Mizumoto** and Hitoshi Araki
- R-Oral-23 **SNP-based Discrimination of Russian Pink Salmon Stocks: Resolution of the Approach and Possible Ways to Increase It**
*Daria A. Zelenina**, Alexei A. Sergeev, and Valeri A. Soshnina
- R-Oral-24 **Anadromous Fish Monitoring Using Environmental DNA**
*Hitoshi Araki**, Hiroki Mizumoto, Tetsu Yatsuyanagi, and Takashi Kanbe

- R-Oral-25 **The Identification of Individuals with Hatchery and Natural Origin in a Mixed Sample of Amur River Chum Salmon by Otolith Microchemistry**
Pavel B. Mikheev , Denis V. Kotsyuk, Elena V. Podorozhnik, Vsevolod N. Koshelev, Tatiana A. Sheina, Alexey Yu. Puzik*
- R-Oral-26 **Reconstructing Reproductive Life Histories Using Hormones Recovered from Incrementally Grown Structures in Fish**
Dion Oxman , Patrick Charapata, Kevin W. McNeel, and Stephen Trumble*
- R-Oral-27 **Synthesizing Escapement, Harvest, and Genetic Data to Reconstruct Annual Southern BC Chum Salmon Abundance**
*Lingbo Li, Pieter Van Will, and Brittany Jenewein**

Topic 3. Resilience for Salmon and People: Lessons from the Great East Japan Earthquake in 2011

- R-Oral-28 **First Salmon Ceremony in the Southernmost Area of Salmon Habitat**
Kenji Yoshimura and Ryusuke Kodani*
- R-Oral-29 **Downstream Migration and Spatial Distribution of Juvenile Chum Salmon in the Otsuchi Bay, the Sanriku Coast of Iwate, Japan**
Tatsuya Kawakami , Yuki Minegishi, and Jun Aoyama*
- R-Oral-30 **Spawning Environment of Chum Salmon in the Coastal Rivers on the Pacific Side of Northern Japan**
Satoki Oba , Tatsuya Kawakami, Yuki Minegishi, and Jun Aoyama*
- R-Oral-31 **Farmed Non-native Coho Salmon in Sanriku Region Affected by Recent Intense Natural Disasters**
Kei Sasaki , Tadahide Kurokawa, Koh Hasegawa, and Miwa Yatsuya*

E-Poster Presentations

* Presenter

Topic 1. Salmon Production in Changing Environments

- E-Poster-1 **Temporal and Spatial Variations in Body Size of Chum Salmon in Hokkaido**
*Fumi Yamaguchi**, Taro Nakamura, and Hirokazu Urabe
- E-Poster-2 **The Ocean is a Stable Rearing Environment for Sockeye Salmon**
*Skip McKinnell**, Will Duguid, Cameron Freshwater, Jacob Weil, and Francis Juanes
- E-Poster-3 **Microevolution of Asian Sockeye Salmon (*Oncorhynchus nerka*) in the Late Pleistocene and its Link to Modern Diversity of Populations**
*Anastasia M. Khrustaleva, Ekaterina V. Ponomareva, Marya V. Ponomareva, Oksana A. Pilganchuk, Nataliya V. Klovach, and Alexander Bugaev**
- E-Poster-4 **Molecular Characterization and Expression of Synaptic Plasticity-related Genes in the Olfactory Organ and Brain of Chum and Pink Salmon during Seaward and Homeward Migration**
*Takashi Abe** and Hideaki Kudo
- E-Poster-5 **An Overview of the Recent Salmon Returns in Japan: Poor Returns of Chum and Pink Salmon**
Toshihiko Saito
- E-Poster-6 **Initial Growth Characteristics of Poor-return Stocks of Chum Salmon Originated from the Okhotsk and Nemuro Regions in Hokkaido, on the Basis of Scale Analysis**
*Kentaro Honda**, Tomoki Sato, Kyuji Watanabe, and Toshihiko Saito
- E-Poster-7 **Low Nutritional Status in the Freshwater Phase and Temperature at Seawater Entry Reduce Swimming Performance of Juvenile Chum Salmon**
*Mitsuru Torao**, Yasuyuki Miyakoshi, and Munetaka Shimizu
- E-Poster-8 **Survivals of Japanese Chum Salmon during the Early Ocean Life in 2011–2017**
*Shigehiko Urawa** and Alexander V. Bugaev
- E-Poster-9 **Factors Affecting the Migration of Juvenile Chum Salmon (*Oncorhynchus keta*) from the Coast of Hokkaido to the Okhotsk Sea**
*Tomonori Azumaya**, Hiroshi Kuroda, Tatyua Unuma, Takashi Yokota, and Shigehiko Urawa
- E-Poster-10 **Characteristics of Prey Environment during the Early Ocean Life of Juvenile Chum Salmon in Two Coastal Areas around Hokkaido, Northern Japan**
*Tomoki Sato**, Toshihiko Saito, Kentaro Honda, and Kyuji Watanabe
- E-Poster-11 **Effects of High Water Temperature on Histological Changes in Juvenile Chum Salmon (*Oncorhynchus keta*)**
*Hana Kim, Ju Kyoung Kim**, Sung Jin Yang, Sang-woo Lee, Jong Kuk Choi, Young Hyeon Kwon, Seong Jong Yoon, and Doo-Ho Kim
- E-Poster-12 **Early Marine Life of Chum Salmon under Different Marine Environments in Eastern Hokkaido, Japan**
*Yosuke Koshino**, Taro Nakamura, Ryuuji Hashimoto, Kiyoshi Kasugai, and Makoto Fujiwara
- E-Poster-13 **Trace Elements in Cherry Salmon (*Oncorhynchus masou*) in the Southwestern Part of the Sea of Okhotsk**
*Nadezhda K. Khristoforova, Anna V. Litvinenko**, Vasily Yu. Tsygankov, and Maxim V. Kovalchuk

- E-Poster-14 **Consequences of Variable Ocean Carrying Capacity and Biological Interactions among Pacific Salmon in the Changing Climate of the North Pacific Ocean**
Masahide Kaeriyama
- E-Poster-15 **Projected Impacts of the Global Warming on Chum Salmon Stock in Hokkaido, Japan**
Hirokazu Urabe and Akiyoshi Shinada*
- E-Poster-16 **Changes in the Spatial and Temporal Distribution of Salmon Habitat in the North Pacific**
Steve Lindley and Nate Mantua*

Topic 2. New Technologies/Integrated Information Systems for Salmon Research and Management

- E-Poster-17 **Evaluation of the Regional Composition of Mixed Samples of Chum Salmon on the Data of the Autumn Juvenile Salmon Trawl Survey in the Sea of Okhotsk**
*Anastasia D. Denisenko, Oksana A. Pilganchuk, Nina Yu. Shpigalskaya, and Alexander Bugaev**
- E-Poster-18 **Genetic Identification of the Local Stocks of Sockeye Salmon of the Kamchatka River Basin in the Commercial Catches from Kamchatsky Gulf**
*Oksana A. Pilganchuk, Anna A. Kustova, Anastasiya D. Denisenko, and Nina Yu. Shpigalskaya, and Alexander Bugaev**
- E-Poster-19 **Migration and Homing Behavior of Chum Salmon Tagged in the Okhotsk Sea, Eastern Hokkaido**
Hayato Saneyoshi, Yousuke Koshino, Ryoutarou Ishida, Itsuki Tatsuoka, Hokuto Shirakawa, Yasuyuki Miyakoshi, and Kazushi Miyashita*
- E-Poster-20 **Tracking Radio-tagged Masu Salmon (*Oncorhynchus masou*) from the Sky by Use of Drone**
Arimune Munakata, Masaya Suzuki, and Tomoichiro Tanaka*
- E-Poster-21 **Effective Hatchery Releases to Increase Adult Returns of Chum Salmon in the Ishikari River, Hokkaido, Japan**
Toshihiko Saito, Kyuji Watanabe, Kentaro Honda, and Tomoki Sato*
- E-Poster-22 **Quantitative Estimation of the Ecosystem Services Supporting the Growth of Japanese Chum Salmon**
Yuka Karasawa, Hiromichi Ueno, Ryo Tanisugi, Ryo Dobashi, Seokjin Yoon, Akihide Kasai, and Masashi Kiyota*
- E-Poster-23 **Predicting the Port-Catch Volume of Salmon at Eastern Hokkaido**
Yue Zhang, Hiroyuki Shioya and Masaaki Wada*
- E-Poster-24 **Development of Selection Method of Favorable Juvenile Fish by Egg Weight in Masu Salmon (*Oncorhynchus masou*)**
Yoshinari Uematsu, Arimune Munakata, and Hiroyuki Matsuda*
- E-Poster-25 **Development of Age Determination Technique Part 1; Neural-network Based Prediction of Chum Salmon Age by the Scale Images**
Ryoma Hoson, Hiroyuki Shioya, Yasuyuki Miyakoshi, Fumi Yamaguchi, and Hirokazu Urabe*
- E-Poster-26 **Development of Age Determination Technique Part 2; Image Processing for the Age Determination Based on the Annuli of Chum Salmon Scale**
Masanobu Yoshida, Hiroyuki Shioya, Yasuyuki Miyakoshi, Fumi Yamaguchi, and Hirokazu Urabe*

- E-Poster-27 **Challenges to Improve Hatchery Program of Chum Salmon in Kitami Region, Hokkaido**
Yasuyuki Miyakoshi
- E-Poster-28 **Research and Development of a Supporting Information System for Optimization of Salmon Release Operation and Monitoring Coastal Environment in the Okhotsk Coast, Japan**
*Sei-Ichi Saitoh**, *Yasuyuki Miyakoshi*, *Fumihiro Takahashi*, *Takafumi Hirata*, *Masahide Kaeruyama*, *Takashi Hosokawa*, and *Tatsuya Miyoshi*

Topic 3. Resilience for Salmon and People: Lessons from the Great East Japan Earthquake in 2011

- E-Poster-29 **Effects of Environment and Physiological Status on Homing Behavior of Chum Salmon in Otsuchi Bay along the Sanriku Ria-coast**
*Shigenori Nobata**, *Takashi Kitagawa*, *Kiyoshi Tanaka*, *Nobuhiko Sato*, *Katsufumi Sato*, *Yoshio Takei*, and *Susumu Hyodo*
- E-Poster-30 **The Utilization of Cold-water Zooplankton as Prey for Chum Salmon Fry in Yamada Bay, Iwate, Pacific Coast of Northern Japan**
*Yuichiro Yamada**, *Kei Sasaki*, *Kodai Yamane*, *Miwa Yatsuya*, *Yuichi Shimizu*, *Yoshitomo Nagakura*, *Tadahide Kurokawa*, and *Hideki Nikaido*
- E-Poster-31 **Fine-scale Genetic Population Structure of Chum Salmon in the Iwate Coast, Northern Japan**
*Shino Kitamura**, *Tomoaki Goto*, *Hideharu Tsukagoshi*, *Yu-ichi Shimizu*, *Fumihisa Takahashi*, and *Syuiti Abe*
- E-Poster-32 **Genetic Diversity and Population Structure of Masu Salmon (*Oncorhynchus masou*) in the Sanriku-region, Northern Japan**
*Hideharu Tsukagoshi**, *Sayuri Terui*, and *Syuiti Abe*
- E-Poster-33 **Radioactive Cesium in the North Pacific after the Fukushima Dai-ichi Nuclear Power Plant Accident**
Hideki Kaeriyama
-