

MORIOKA SALMON WORKSHOP

bridging fisheries research and education for sustainable salmon fishery

February 8 to 10, 2016

Hotel Metropolitan Morioka New Wing, Morioka, Iwate Prefecture, Japan

BACKGROUND AND PURPOSE

Iwate University decided to establish a new graduate school and undergraduate course of fisheries science to promote rehabilitation of the fisheries industry in Sanriku-region heavily damaged by a massive earthquake and devastating tsunami on March 11, 2011. Sanriku fisheries industry is largely relying on salmon catch. The purpose of this workshop, open for public, is to help launch a new fisheries science education in Iwate University for promotion of salmon research to help sustain Sanriku fisheries industry.

SCHEDULE

February 8 (Mon)	8:45 – 20:30	Workshop and evening welcome reception
February 9 (Tue)	9:30 – 15:50	Workshop and poster session
February 10 (Wed)	9:00 – 17:30	Field tour, coastal hatcheries and tsunami sites

TOPICS (with English and Japanese interpretation for all oral presentations and panel discussions)

The workshop includes the following topics and sessions.

Plenary lecture

1. Pacific salmon production: management education
 - a. North America
 - b. Russia
 - c. Japan
2. Salmon biology: enhancement education
 - a. Genetics
 - b. Physiology
 - c. Ecology
3. Panel discussion
4. Salmon and fisheries education
 - a. Ecosystem
 - b. Socio-economics
 - c. Regional program
 - d. Global marketing
5. Poster presentation
6. Wrap-up panel discussion

ORAL PRESENTERS

Please save your power point presentation on a USB memory stick and give it to the receptionist at the registration desk at the workshop. A lap-top computer may be used to check your presentation on a separate desk. Please submit your power point material at least 90 min before your presentation.

If your presentation time is:

Bring your presentation to the registration desk by:

February 8, morning

February 8 by 8:30 a.m.

February 8, afternoon

February 8 by 11:00 a.m.

February 9, morning

February 8 by 17:00 p.m.

Presentation time slot for:

Plenary Oral Presentation; 40 min

Contributed Oral Presentations; 25 min including 20 min talk and 5 min question/discussion

POSTER PRESENTERS

Please set up your poster (B1 size; 728x1030 mm or 28.66x40.55 inches) at registration on Monday, February 8, between 8:00 and 8:30 a.m.

Posters should be removed on Tuesday, February 9, by 16:00. Posters not removed by 16:00 may be discarded by the hotel.

PROGRAM

**Presenter*

February 8

8:45 – 8:50 Welcome note Hitoshi Yashiro

8:50 – 9:05 Opening Remarks Syuiti Abe

9:05 – 9:45 Plenary lecture (convener: Toru Nagasawa)

Planning for the future of Pacific salmon Production:
Richard J. Beamish

9:45 – 10:00 – Break –

Session 1, Pacific salmon production: management education (conveners: Toru Nagasawa, Marc Trudel)

10:00 – 10:25 a. North America **The use of marine ecosystem metrics for preseason forecasts of salmon harvest:** Andrew K. Gray*, Joe Orsi, Jim Murphy, Alex Wertheimer, and Emily Fergusson

10:25 – 10:50 a. North America **Applying genetic markers to manage sustainable fisheries for salmon in Alaska:** James E. Seeb*

10:50 – 11:15 b. Russia **Russian salmon production: past, present, future:** Alexander Zavolokin*

11:15 – 11:40 c. Japan **Status of chum salmon populations and research program for their rehabilitation in the Pacific coast of northern Japan:** Shigehiko Urawa*

11:40 – 13:00 – Lunch –

13:00 – 13:25 c. Japan **Recent status of chum and pink salmon stocks in Hokkaido, northern Japan:** Yasuyuki Miyakoshi*

13:25 – 13:50 c. Japan **Chum salmon (*Oncorhynchus keta*) production in the Sanriku-region, Japan:** Gen Ogawa* and Kodai Yamane

13:50 – 14:15 d. NPAFC coordination **NPAFC coordination: fisheries enforcement and scientific research on salmon in the North Pacific:** Nancy Davis* and Vladimir I. Radchenko

Session 2, Salmon biology: enhancement education (conveners: Yoshitaka Nagahama, Graham young)

14:15 – 14:40 a. Genetics **Fisheries genetics in the era of genomics:** Lisa W. Seeb*

14:40 – 15:05 a. Genetics **Ocean distribution and abundance of Japanese and other stocks of chum salmon in the summer Bering Sea estimated by genetic methods:** Shunpei Sato* and Shigehiko Urawa

15:05 – 15:15 – Break –

15:15 – 15:40	b. Physiology	Reforming hatchery rearing practices to improve effectiveness of supplementation and conservation hatcheries for Pacific salmon and steelhead (<i>Oncorhynchus</i> sp.): Penny Swanson*, Jon Dickey, Mollie Middleton, and Donald Larsen
15:40 – 16:05	b. Physiology	Atlantic salmon aquaculture in Norway: Birgitta Norberg*, Anna Wargelius, Eva Andersson, Tom Hansen, Per Gunnar Fjellidal, Lene Kleppe, Rolf Brudvik Edvardsen, and Geir Lasse Taranger
16:05 – 16:30	b. Physiology	Physiological mechanisms of imprinting and homing migration in Pacific salmon: Hiroshi Ueda*
16:30– 16:55	c. Ecology	Migration and survival of salmon in a changing climate: Marc Trudel* and Strahan Tucker
16:55 – 17:10		– Break –
Session 3, Panel discussion		
17:10 – 18:15		Syuiti Abe (convener), Andrew K. Gray, Alexander Zavolokin, Shigehiko Urawa, Lisa W. Seeb, Penny Swanson, Marc Trudel
18:30 – 20:30		– Welcome reception –

February 9

Session 4, Salmon & fisheries education (conveners: Noriyuki Tanaka, Penny Swanson)

- 9:30 – 9:55 a. Ecosystem **Ecosystem-based sustainability science of Pacific salmon and paradigm shift of fisheries education:** Masahide Kaeriyama*
- 9:55 – 10:20 b. Socio-economics **Interdisciplinary learning in fisheries and aquaculture:** Kathrine Tveiterås*
- 10:20 – 10:45 c. Regional program **Structuring research programs to address industry priorities and ensure technology transfer: the US Regional Aquaculture Center program model:** Graham Young*
- 10:45 – 11:00 – Break –
- 11:00 – 11:25 d. Global marketing **Sustainability of diversification by salmon producing countries in global salmon markets:** Ikutaro Shimizu*
- 11:25 – 11:50 d. Global marketing **Searching for new market strategy for Iwate chum salmon:** Gakushi Ishimura*
- 11:50 – 13:00 – Lunch –

Session 5, Poster session

13:00 – 14:30

14:30 – 14:45 – Break –

Session 6, Wrap-up (Panel discussion)

14:45 – 15:45

Noriyuki Tanaka (convener), Richard J. Beamish, Toru Nagasawa, Akihisa Urano, Kathrine Tveiterås, Graham Young, Birgitta Norberg, Gakushi Ishimura

15:45 – 15:50 Closing comments Kohei Yamauchi

February 10

Field tour, coastal hatcheries and tsunami sites (an interpreter will be accompanied)

No charge for tour participation, but need 1,500 JPY for lunch.

8:45	Bus will leave the Hotel Metropolitan New Wing in Morioka — Tohoku Express Way to Kunohe IC
11:00	Pass by Kuji city
11:30	Akka River hatchery
12:00	Lunch at Eboshi-so
12:30	Leaving Eboshi-so
13:10	Taro tsunami site
13:30	Leaving Taro tsunami site
14:00	Pass by Miyako city
14:10	Tsugaruishi River hatchery
14:50	Leaving Tsugaruishi to Morioka
17:30	Arriving the Hotel Metropolitan New Wing in Morioka

*Arriving time may be changed according to traffic condition.

POSTER PRESENTATIONS

Pacific salmon production

- Poster- 1 **A comparison of the returns of chum salmon released from net-pens and rivers in Nemuro Bay, eastern Hokkaido, northern Japan:** Kiyoshi Kasugai*, Hiroyuki Sakamoto, Yasuyuki Miyakoshi, and Mitsuhiro Nagata
- Poster- 2 **Effect of turbidity in rearing water on the early life stages of chum salmon *Onchorhynchus keta*:** Kouhei Kishi*, Rei Onodera, Yuriko Matsubayashi, and Hisayuki Arakawa
- Poster- 3 **Observations of salmon run up through river mouth with morphological change:** Yuriko Matsubayashi* and Naoto Sawa
- Poster- 4 **Target strength measurement of free-swimming fish in a controlled large experimental tank: A case study on TS measurement of whole marine life stages in chum salmon:** Hokuto Shirakawa*, Kenji Minami, Yohei Kawauchi, Makoto Tomiyasu, Huamei Shao, Yuta Maruoka, Yuichi Tsuda, Akira Shinohara, Motoki Kobayashi, Takeru Umetsu, Hideharu Tsukagoshi, Syuiti Abe, and Kazushi Miyashita
- Poster-5 **Age composition and behavior of homing chum salmon, *Onchorhynchus keta*, in Otsuchi Bay:** Sigenori Nobata*, Takashi Kitagawa, Kaede Saito, Yoshinori Aoki, Katsufumi Sato, Yoshio Takei, and Susumu Hyodo

Salmon biology

- Poster- 6 **Genetic evaluation of chum salmon, *Onchorhynchus keta*, river population after tsunami disaster in Fukushima and Miyagi Prefecture:** Takeru Kudo* and Masamichi Nakajima
- Poster- 7 **Genetic differentiation of chum salmon in the Sanriku-region, Japan, inferred from microsatellite DNA analysis:** Hideharu Tsukagoshi*, Sayuri Terui, Gen Ogawa, Shunpei Sato, and Syuiti Abe
- Poster- 8 **Genetic population structure of masu salmon in the Sanriku-region, Japan, inferred from microsatellite DNA analysis:** Hideharu Tsukagoshi*, Sayuri Terui and Syuiti Abe
- Poster- 9 **Next-generation sequencing (NGS)-based development of polymorphic microsatellite DNA markers of pink salmon in the Sanriku-region, Japan, for their genetic characterization:** Sayuri Terui*, Hideharu Tsukagoshi, Shunpei Sato, and Syuiti Abe

- Poster- 10 **Migration history of masu salmon *Oncorhynchus masou masou* in Miyako bay, Iwate, Japan, as inferred from otolith microchemistry:** Keisaku Ariga* and Tsuyoshi Sasaki, Carlos Augusto Strussmann, Tatsuya Kawakami, and Tsuguo Otake
- Poster-11 **Diversity of the intestinal microflora in chum salmon (*Oncorhynchus keta*):** Keiko Shimizu*, Hiroaki Kasai, Yukie Inomata, Noriko Wakabayashi, and Shunsuke Moriyama
- Poster-12 **Changes of insulin-like growth factor mRNA levels of chum salmon fry:** Shunsuke Moriyama*, Eri Inaba, Hiroko Okamoto, Haruna Amano, Keiko Shimizu, Hiroaki Kasai, and Tadahide Kurokawa
- Poster-13 **Proteomic response of chum salmon to thermal acclimation:** Takuya Satoh*, Tetsuro Yamashita and Syuiti Abe
- Poster-14 **Homing chum salmon with unusually yellowed body caught in the Sanriku coast:** Hiroshi Kawajiri*, Ken-ichi Ohmoto, Yukio Sawajiri, Takuya Satoh, and Syuiti Abe

Salmon and fisheries education

- Poster-15 **Using masu salmon to support aquatic marine environmental education for endogenous watershed development:** Shimon Mizutani* and Tsuyoshi Sasaki

Oral Presentations

Poster Presentations