

Table of Contents

I. Preface	i
II. Table of Contents.....	iii
III. Opening Remarks	ix
IV. Introductory Remarks	xi
V. Background Papers	
<i>Historical trends of fisheries, stock condition, and hatchery production</i>	
Trends in the status of Pacific salmon populations in Washington, Oregon, California, and Idaho Robert KOPE and Tom WAINWRIGHT	1
History and status of Pacific salmon in British Columbia M.A. HENDERSON and C.C. GRAHAM	13
Historical trends of salmon fisheries and stock conditions in Japan Osamu HIROI	23
Historical trends of fisheries and stock condition of Pacific salmon in Russia V.I. RADCHENKO	28
A historical perspective on salmonid production from Pacific Rim hatcheries Conrad MAHNKEN, Gregory RUGGERONE, William WAKNITZ, and Thomas FLAGG	38
VI. Topic 1	
<i>Components of salmonid life history concerning stock assessment and status</i>	
Growth studies from 1956-95 collections of pink and chum salmon scales in the central North Pacific Ocean R.V. WALKER, K.M. MYERS, and S. ITO.....	54
Seasonal growth patterns of Pacific salmon (<i>Oncorhynchus</i> spp.) in offshore waters of the North Pacific Ocean Yukimasa ISHIDA, Soto-o ITO, Yasuhiro UENO, and Junko SAKAI	66
Changes in size and age at maturity of two North American stocks of chum salmon (<i>Oncorhynchus keta</i>) before and after a major regime shift in the North Pacific Ocean John H. HELLE and Margaret S. HOFFMAN	81
Dynamics of a chum salmon, <i>Oncorhynchus keta</i> , population released from Hokkaido in Japan Masahide KAERIYAMA.....	90

Biochemical approach to assessing growth characteristics in salmonids Teruo AZUMA, Takashi YADA, Yasuhiro UENO, and Munehico IWATA.....	103
Correlations between homing, migration, and reproduction of chum salmon Hiroshi UEDA.....	112
Numerical simulations of Fraser River sockeye salmon homing migration routes in a dynamic marine environment Dale KOLODY and Michael HEALEY.....	118
Blood plasma levels of insulin-like growth Factor-I in Pacific salmon in offshore waters in winter Katherine W. MYERS, Nancy D. DAVIS, Walton W. DICKHOFF, and Shigehiko URAWA.....	129
Variation in prey size selectivity of fingerling chum salmon (<i>Oncorhynchus keta</i>) in sea life: effects of stomach fullness and prey abundance Toshiya SUZUKI and Masa-aki FUKUWAKA	138
Caloric value of high-seas salmon prey organisms and simulated salmon ocean growth and prey consumption N.D. DAVIS, K.W. MYERS, and Y. ISHIDA	146
Life history strategy and migration pattern of juvenile sockeye (<i>Oncorhynchus nerka</i>) and chum salmon (<i>O. keta</i>) in Japan: a review Masahide KAERIYAMA and Hiroshi UEDA.....	163
Age determination and growth of lacustrine sockeye salmon, <i>Oncorhynchus nerka</i> , in Lake Toya Hiroyuki SAKANO, Masahide KAERIYAMA, and Hiroshi UEDA.....	172
Scale and otolith patterns prove growth history of Pacific salmon Masa-aki FUKUWAKA	190

VII. Topic 2

Salmon population ecology affecting stock assessment and status

Stock identification of chinook salmon (<i>Oncorhynchus tshawytscha</i>) in the north Pacific Ocean and Bering Sea by parasite tags S. URAWA, K. NAGASAWA, L. MARGOLIS, and A. MOLES.....	199
Are naturally-occurring parasite "tags" stable? An appraisal from four case histories involving Pacific salmonids L. MARGOLIS	205
Simulations of the even-year Asian pink salmon (<i>Oncorhynchus gorbuscha</i>) genetic baseline to determine accuracy and precision of stock composition estimates S. HAWKINS, N. VARNAVSKAYA, J. POHL, and R.L. WILMOT	213
Genetic stock identification of chum salmon in highseas test fisheries in the western North Pacific Ocean and Bering Sea Gary A. WINANS, Paul B. AEBERSOLD, Yukimasa ISHIDA, and Shigehiko URAWA	220
A comparison of methods of stock identification for sockeye salmon (<i>Oncorhynchus nerka</i>) in Barkley	

Sound, British Columbia T.D. BEACHAM, L. MARGOLIS, and R.J. NELSON.....	227
Estimating salmon escapement using area-under-the-curve, aerial observer efficiency, and stream- life estimates: the Prince William Sound pink salmon example Brian G. BUE, Stephen M. FRIED, Samuel SHARR, Daniel G. SHARP, John A. WILCOCK, and Harold J. GEIGER.....	240
Ocean mortality of northeast Kamchatka pink salmon and influencing factors V.I. KARPENKO.....	251
Migration timing, a life history trait important in the genetic structure of pink salmon A.J. MCGREGOR, S. LANE, M.A. THOMASON, L.A. ZHIVOTOVSKY, W.W. SMOKER, and A.J. GHARRETT	262
Determining area of origin of pink salmon juveniles on their catadromous migration in the Okhotsk Sea in 1995 using genetic stock identification techniques N.VARNAVSKAYA, V. EROKHIN, and V.A. DAVYDENKO.....	274
Genetic stock identification of chum salmon harvested incidentally in the 1994 and 1995 Bering Sea trawl fishery Richard L. WILMOT, Christine M. KONZELA, Charles M. GUTHRIE, and Michele S. MASUDA.....	285
Allozyme, mtDNA, and microsatellite variants describe structure of populations of pink and sockeye salmon in Alaska James E. SEEB, Christopher HABICHT, Jefferey B. Olsen, Paul Bentzen, James B. Shaklee, and Lisa W. SEEB	300
Identification of long and short-term reared masu salmon with quantified scale characteristics Kazumasa OHKUMA.....	319
On the possibility of using the pink salmon survival measure (R/E) in the forecast of chum salmon returns in north-east Kamchatka S.A. SINYAKOV and A.G. OSTROUMOV.....	327
Salmon abundance in offshore waters of the North Pacific Ocean and its relationship to coastal salmon returns Yukimasa ISHIDA and Soto-o ITO	334
Review of the stock condition and fishery of masu and pink salmon of the Sea of Japan V.V. TSIGER and V.G. MARKOVITSEV.....	340
Abundance and biology of Kamchatkan salmon during the initial year of ocean residence V.I. KARPENKO, V.G. EROKHIN, and V.P. SMORODIN	352
Incidental by-catch of Pacific salmon during Russian bottom trawl surveys in the Bering Sea and some remarks on its ecology V.I. RADCHENKO and I.I. GLEBOV	367
Artificial propagation of chum salmon (<i>Oncorhynchus keta</i>) in Korea Ki Baek SEONG	375
Evaluation of the reliability of in-season run size estimation techniques used for southern British Columbia chum salmon (<i>Oncorhynchus keta</i>) runs P. RYALL.....	380

VIII. Topic 3

Relation of North Pacific ecosystem, climate and oceanographic changes to salmon stock production

Long-term variability in Alaskan sockeye salmon abundance determined by analysis of sediment cores	
Bruce P. FINNEY.....	388
Thermal limits on the ocean distribution of steelhead trout (<i>Oncorhynchus mykiss</i>)	
D.W. WELCH, Y. ISHIDA, K. NAGASAWA, and J.P. EVESON	396
Do hatchery salmon affect the North Pacific Ocean ecosystem?	
William R. HEARD	405
Interaction between chum salmon and fat greenling juveniles in the coastal Sea of Japan off northern Hokkaido	
Hiroshi KAWAMURA, Mahito MIYAMOTO, Mitsuhiro NAGATA, and KAZUO HIRANO.....	412
Predation by salmon sharks (<i>Lamna ditropis</i>) on Pacific salmon (<i>Oncorhynchus</i> spp.) in the North Pacific Ocean	
Kazuya NAGASAWA.....	419
Ecological functioning of Lake Kuril relative to sockeye salmon production	
L.V. MILOVSKAYA, M.M. SELIFONOV, and S.A. SINYAKOV	434
Recent changes in the marine distribution of juvenile chum salmon off Canada	
R.J. BEAMISH and M. FOLKES	443
On the coherence of salmon abundance trends and environmental factors	
D.J. NOAKES, R.J. BEAMISH, L. KLYASHTORIN, and G.A. MCFARLANE	454
Long-term climate change and pink salmon stock fluctuations	
L.B. KLYASHTORIN and F.N. RUKHLOV.....	464
Fish and seabird predation on juvenile chum salmon (<i>Oncorhynchus keta</i>) in Japanese coastal waters, and an evaluation of the impact	
Kazuya NAGASAWA.....	480
Fluctuations in abundance of pink salmon (<i>Oncorhynchus gorbuscha</i>) in the North Pacific Ocean	
M.J. JAENICKE, O.A. MATHISEN, and V.I. RADCHENKO	496

IX. Other Presentations (abstract only)

Predation risk as an opportunity for compensatory growth in juvenile coho salmon?	
Ulrich G. REINHARDT and Michael C. HEALEY	503
Genetic variation in Asian populations of chum salmon, <i>Oncorhynchus keta</i> (Walbaum)	
N.V. VARNAVSKAYA, R.L. WILMOT, C.M. KONDZELA, V. EFREMOV, V.A. DAVYDENKO, Xi. LUAN, E.A. SBOEVA, and C.M. GUTHRIE III	504
An attempt to identify Okhotsk Sea chum salmon origin and life history by means of scale features	

A.M. KAEV	505
Mark-recapture estimation of masu salmon (<i>Oncorhynchus masou</i>) smolt numbers in the Masuhiro River, northern Hokkaido Hirofumi HAYANO, Yasuyuki MIYAKOSHI, Makoto FUJIWARA, Kei-ichi SUGIWAKA, Mahito MIYAMOTO, Mitsuhiro NAGATA, James R. IRVINE.....	506
Change in number of Sakhalin-Kuril Pacific salmon in connection with hatchery development L.D. KHOREVIN	507
The role of riparian vegetation in the environment of masu salmon juveniles, <i>Oncorhynchus masou</i> Mitsuhiro NAGATA, Hirokazu SATO, Mahito MIYAMOTO, Shin-ichi OHKUBO, Seiji YANAI, Yu NAGASAKA, Tomoya AOYAMA, Tatsuya TAKAMI, Hiroshi KAWAMULA and Hiroshi KAWAMURA.....	508
Regions of optimal reproduction of pink salmon O.F. GRITSENKO and N.V. KLOVACH	509
X. Symposium Review	511
XI. Closing Remarks.....	513

