Contents

Page

1 SHIRAIWA Takayuki Preface

3 SHIRAIWA Takayuki

Synthesis Final report of the Amur Okhotsk project 2005-2009

21 OHSHIMA Kay I., NAKANOWATARI T., NIHASHI S., NISHIOKA J., NAKATSUKA T. and WAKATSUCHI M.

Group Report 1 Impact of sea ice production and its recent reduction on overturning and material circulation in the Okhotsk Sea and North Pacific

31 NAKATSUKA T., NISHIOKA J., SUZUKI K. and All members of Group 2

Group Report 2 Iron transport processes and their impacts on primary productivity in the Sea of Okhotsk

41 NAGAO S., TERASHIMA M., SEKI O., TAKATA H., KAWAHIGASHI M., KODAMA H., KIM V.I., SHESTERKIN V. P., LEVSHINA S. I. and MAKINOV A. N.

Group Report 3 Biogeochemical behavior of iron in the lower Amur River and Amur-Liman

51 YOH M., SHIBATA H., ONISHI T., KAWAHIGASHI M., GUO Y., OHJI B.,
YAMAGATA K., SHAMOV V. V., LEVSHINA S. I., NOVOROTSKAYA A.,
MATYUSHKINA L., YAN B., WANG D., PAN X., ZHANG B., CHEN X., HUANG B.,
CHI G., SHI Y., SHI F., XU X., ZHANG K., CAI T. and SHENG H.
Group Report 4
Iron dynamics in terrestrial ecosystems in the Amur River basin

63 **KAKIZAWA H., PARK H., SAKASHITA A. and YAMANE M.** Group Report 5 Analyses on underlying causes behind Land-use / Land-cover changes

Page

71 HARUYAMA S., KONDOH A. , YAMAGATA K., MUROOKA M. and MASUDA Y. Group Report 6

Land use and land cover change study

75 MATOBA S., MINAMI H., NISHIOKA J., ONO T., NOMURA M., NARITA Y., UEMATSU M., MURAVYEV Y. D. and SHIRAIWA T.

Group Report 7 Spatial distribution of air-borne Fe deposition into the northern North Pacific

83 ONISHI T., TACHIBANA Y., KUBOTA J. and TAKAHARA H.

Group Report 8 Natural variability of the hydro-metrological and hydro-chemical conditions

85 MITSUDERA F., UCHIMOTO K., NAKAMURA T., NISHIOKA J., KISHI M. J., OKUNISHI T., ONO Y., YAMASHITA T., TSUMUNE D., MISUMI K. and MATSUDA H.

Group Report 9

Modeling intermediate water and iron in the Sea of Okhotsk and the northern North Pacific

87 HANAMATSU Y., HORIGUCHI T. and ENDO T.

Group Report 10

The legal, political situations and a future conservation strategy of the giant fish-breeding forest

—Appendix 1—

Agenda Statement for the Conservation of the Amur-Okhotsk Ecosystem — Appendix 2—

Joint Declaration by Researchers toward the Environmental Conservation of the Sea of Okhotsk and Surrounding Regions

Contents

Page

117 MAKHINOV Alexei N.

Natural factors of Amur runoff and sediment deposit formation

123 IVANOVA Elena G.

Experience of joint Russian - Chinese monitoring of water quality in the transboundary water objects

129 KIM Vladimir. I.

Hydrological regime of the Amur River and changes caused by economic activities

139 KIM V. I., KOZLOVSKY V. B., MAKHINOV A. N., SHESTERKIN V. P., KUZNETSOV A. M., RYZHOV D. A., NAGAO S., SEKI O. and KAWAHIGASHI M.

Dynamics of water turbidity in the Amur lower reaches and the Amur Liman

147 SHESTERKIN Vladimir.P.

Multiyear dynamics of nitrogen mineral forms in Amur water near Khabarovsk

151 KONDRATYEVA Lyubov M.

Biogeochemical factors of water quality formation in the Amur Liman

163 LEVSHINA Svetlana I.

Organic matter and iron geochemical migration in Amur River waters

169 KULAKOV Valery V.

Geochemistry of fresh ground water of Artesian basins in the Russian part of Priamurye

175 KULAKOV Valery V.

Geochemistry and sources of thermal water content in the Russian part of the Amur basin

183 YAN B. , ZHANG B., YOH M. and PAN X.

Concentration and species of dissolved iron in waters in Sanjiang plain, China

Page

195 CHEN X., CHI G., HUANG B., KAWAHIGASHI M., SHI Y. and YOH M. Impacts of reclamation on distribution and transport of iron in soils of Sanjiang

plain, northeast China

203 XU X., ZHANG K., CAI T., SHENG H. and SHIBATA H.

Iron dynamics in forest ecosystems: effects of topography and vegetation type

213 **ONISHI T., SHIBATA H., YOH M., NAGAO S., PARK H. and SHAMOV V.V.** Evaluation of land cover change impacts on dissolved iron flux of the Amur River

225 SHMAKIN Andrey B.

Weather conditions suitable for spring floods in north Eurasia and their frequency during the last decades

235 ZHANG B., LIU W., WANG Z. and SONG K.

Land use change of Sanjiang plain--the middle reach of the Amur River basin in China after 2000 year

243 MUROOKA M., HARUYAMA S., YAMAGATA K. and KUWAHARA Y.

The wetland distributions of the Kiya river using remote sensing

251 GANZEY S. S., ERMOSHIN V. V. and. MISHINA N. V.

The landscape changes after 1930 using two kinds of land use maps (1930 and 2000)

263 ERMOSHIN V. V. and GANZEY S.S.

GIS creation of Amur River basin for land-use management: results and prospects (Amur River basin: Russia, China, Mongolia)

273 **MISHINA N. V.**

Foreign trade relations between Russia, China and Japan as factor of Land use/cover changes in the Amur River basin

Contents

Page

283 PARK H. and SAKASHITA A.

Characteristic of agricultural development on Sanjiang plain, China -from a macro aspect of the paddy fields development of state farm-(in Japanese) 朴紅・坂下明彦 中国三江平原における農業開発の特質

-国有農場の水田開発に着目して-

291 YAMANE Masanobu

Temporal and spatial dynamics of human impacts on forest resources in the Amur River basin after the mid-twentieth century

311 VORONOV Boris. A.

Ecological state of the Amur River

315 BAKLANOV P. Ya. and VORONOV B. A.

Threats and risks to sustainable development in the Amur River basin