MAJOR MINERAL DEPOSITS, METALLOGENESIS, AND TECTONICS OF THE RUSSIAN FAR EAST, ALASKA, AND THE CANADIAN CORDILLERA

Summary and List of Publications for a Collaborative Project by the Russian Academy of Sciences, ROSKOMNEDRA, the Alaska Division of Geological and Geophysical Surveys, the Geological Survey of Canada, and the U.S. Geological Survey

SUMMARY

This project is providing critical information for collaborators and customers on the major metalliferous mineral resources, metallogenic patterns, and crustal origin and evolution of mineralizing systems for the Russian Far East, Alaska, and the Canadian Cordillera (Figure 1).

The major scientific goals and benefits of the project are to: (1) provide a comprehensive international data base on the mineral resources of the region that is the first, extensive knowledge available in English; (2) provide major new interpretations of the origin and crustal evolution of mineralizing systems and their host rocks, thereby enabling enhanced, broad-scale tectonic reconstructions and interpretations; and (3) promote trade and scientific and technical exchanges between the North America and Eastern Asia. Data from the project are providing sound scientific data and interpretations for commercial firms, governmental agencies, universities, and individuals that are developing new ventures and studies in the project area, and for land-use planning studies that deal with both mineral potential issues. The Russian Far East, Alaska and the Canadian Cordillera, have vast potential for known and undiscovered mineral deposits. In addition, major belts of mineral deposits (metallogenic belts) and host geologic units can be traced around the Circum-North Pacific from the Russian Far East into Alaska and the Canadian Cordillera. However, little information existed in English in the West for the Russian part of the project about mineral deposits, metallogenic belts, and hosting geologic units until publication of products from this project. In addition, little information existed on the tracing or correlationof mineral deposit belts and hosting geologic units around the Circum-North Pacific until inception of this project.

The major collaborating agencies for the project are the Russian Academy of Sciences, ROSKOMNEDRA, the Alaska Division of Geological and Geophysical Surveys, the Geological Survey of Canada, the U.S. Geological Survey, the University of Alaska, Michigan State University, Exxon Production Research, and the Geological Survey of Japan. Other Western supporters are Stanford University, the Northwest Mining Association, the Alaska Miners Association, and the Society of Economic Geologists. Customers include scientists and managers in major governmental agencies, universities, private environmental, resource, and information companies, news media, and professional organizations in North America, Eastern Asia, and the Russian Far East. A major international customer is the Commerce Working Group of the Gore-Chernomydrin Commission (GCC) chaired by Vice-President Gore (USA) and Premier Chernomydrin (Russia).

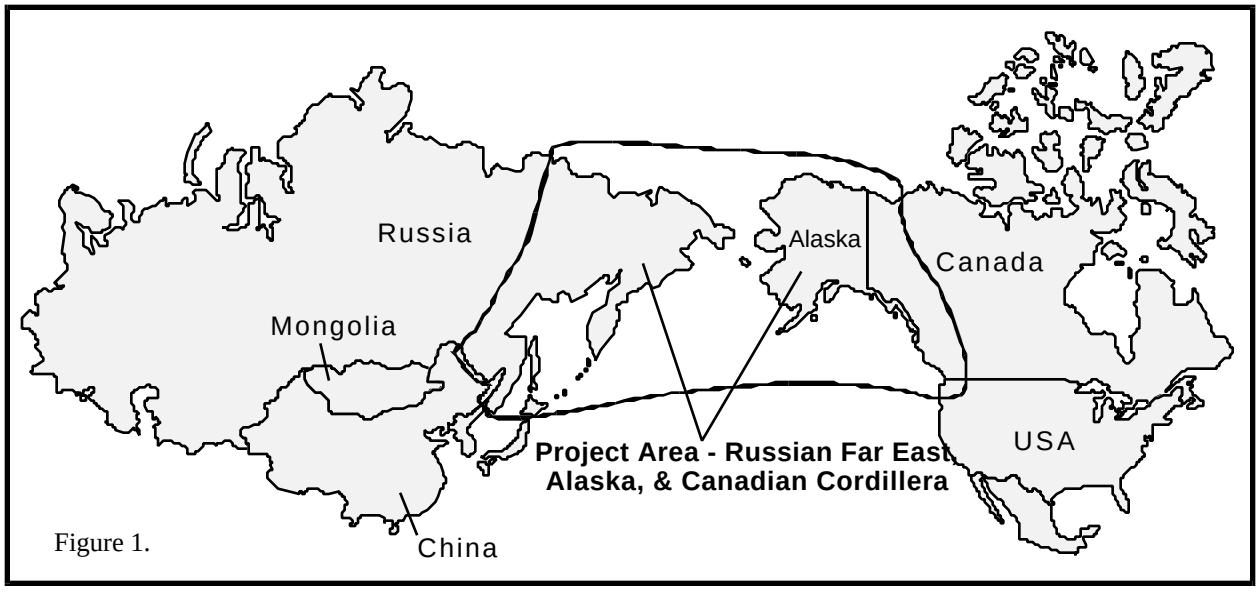

Figure 1.

MAJOR PUBLICATIONS

Metallogenesis of Mainland Alaska and Russian Northeast by Nokleberg, W.J., Bundtzen, T.K., Grybeck, Donald, Koch, R.D., Eremin, R.A., Rozenblum, I.S., Sidorov, A.A., Byalobzhesky, S.G., Sosunov, G.M., Shpikerman, V.I., and Gorodinsky, M.E., 1993: U.S. Geological Survey Open-File Report 93-339, 222 pages, 1 map, scale 1:4,000,000; 5 maps, scale 1:10,000,000 ($48.00 paper format; $6.25 microfiche format; $3.50 shipping, either format).

Circum-North Pacific Tectono-Stratigraphic Terrane Map by Nokleberg, W.J., Parfenov, L.M., and Monger, J.W.H., and Baranov, B.V., Byalobzhesky, S.G., Bundtzen, T.K., Feeney, T.D., Fujita, Kazuya, Gordey, S.P., Grantz, Arthur, Khanchuk, A.I., Natal'in, B.A., Natapov, L.M., Norton, I.O., Patton, W.W., Jr., Plafker, George, Scholl, D.W., Sokolov, S.D., Sosunov, G.M., Stone, D.B., Tabor, R.W., Tsukanov, N.V., Vallier, T.L. and Wakita, Koji, 1994: U.S. Geological Survey Open-File Report 94-714, 2 sheets, scale 1:5,000,000; 2 sheets, scale 1:10,000,000, 211 p. ($54.00 paper format; $8.75 microfiche format; $3.50 shipping, either format).

Significant Metalliferous Lode Deposits and Placer Districts for the Russian Far East, Alaska, and the Canadian Cordillera by Nokleberg, W.J., Bundtzen, T.K., Dawson, K.M., Eremin, R.A., Goryachev, N.A., Koch, R.D. Ratkin, V.V., Rozenblum, I.S., Shpikerman, V.I., Frolov, Y.F., Gorodinsky, M.E., Melnikov, V.D., Ognyanov, N.V., Petrachenko, E.D., Petrachenko, R.I., Pozdeev, A.I., Ross, K.V., Wood, D.H., Grybeck, Donald, Khanchuk, A.I., Kovbas, L.I., Nekrasov, I.Ya., and Sidorov, A.A., 1996: U.S. Geological Survey Open-File Report 96-513-A (paper format), 385 p. ($57.75 paper format; $4.00 microfiche format; $3.50 shipping, either format).

Summary Circum-North Pacific Tectono-Stratigraphic Terrane Map by Nokleberg, W.J., Parfenov, L.M., and Monger, J.W.H., and Baranov, B.V., Byalobzhesky, S.G., Bundtzen, T.K., Feeney, T.D., Fujita, Kazuya, Gordey, S.P., Grantz, Arthur, Khanchuk, A.I., Natal'in, B.A., Natapov, L.M., Norton, I.O., Patton, W.W., Jr., Plafker, George, Scholl, D.W., Sokolov, S.D., Sosunov, G.M., Stone, D.B., Tabor, R.W., Tsukanov, N.V., Vallier, T.L. and Wakita, Koji, 1997: U.S. Geological Survey Open-File Report 96-727 1 sheet, scale 1:10,000,000 ($15.00 plus $3.50 shipping); and Geological Survey of Canada Open 3428, 1 sheet, scale 1:10,000,000 ($19.50 Canadian; includes shipping).

Significant Metalliferous Lode Deposits and Placer Districts for the Russian Far East, Alaska, and the Canadian Cordillera by Nokleberg, W.J., Bundtzen, T.K., Dawson, K.M., Eremin, R.A., Goryachev, N.A., Koch, R.D. Ratkin, V.V., Rozenblum, I.S., Shpikerman, V.I., Frolov, Y.F., Gorodinsky, M.E., Melnikov, V.D., Ognyanov, N.V., Petrachenko, E.D., Petrachenko, R.I., Pozdeev, A.I., Ross, K.V., Wood, D.H., Grybeck, Donald, Khanchuk, A.I., Kovbas, L.I., Nekrasov, I.Ya., and Sidorov, A.A., 1996: U.S. Geological Survey Open-File Report 96-513-A, 385 p. (paper format). ($32.00 plus $3.50 shipping).

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Above G.S.C. Open-Files can be ordered by mail from the Geological Survey of Canada, Map and Publications Sales, 101 - 605 Robson Street, Vancouver, British Columbia, Canada V6B 5J3 (Telephone 604-666-0271).

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http://wrgis.wr.usgs.gov/open-file/of96-513-b
http://minerals.er.usgs.gov/wr/products.html

VOLUME ON MINERAL DEPOSITS OF THE RUSSIAN NORTHEAST BY NORTHEAST SCIENCE CENTER, RUSSIAN ACADEMY OF SCIENCES, MAGADAN

Sketches on Metallogeny and Geology of Mineral Deposits in Northeastern Russia edited by Sidorov, A.A., and Goryachev, N.A., 1994: Northeast Science Center, Magadan, Far East Branch, Russian Academy of Sciences, 106 p. (in Russian). (Supplement to U.S.G.S. Open-File Report 93-339 containing detailed descriptions of mineral deposits and metallogenic belts).

Sketch on Metallogeny by Sidorov, A.A., Eremin, R.A., and Byalobzhesky, S.G., p. 7-11 (in Russian).

Major Metallogenic Belts in Northeastern Russia by Eremin, R.A., Shpikerman, V.I., and Sidorov, A.A., p. 12-31 (in Russian).

Gold by Goryachev, N.A., p. 32-54 (in Russian).
Silver by Savva, N.E., p. 55-63 (in Russian).
Tin Deposits by Pristavko, V.A., p. 64-69 (in Russian).
Tungsten by Goryachev, N.A., p. 70-73 (in Russian).
Cobalt by Goryachev, N.A., p. 74-75 (in Russian).
Gorodinsky, M.E., and Shpikerman, V.I., Copper, p. 76-80 (in Russian).
Lead-zinc by Shpikerman, V.I., p. 81-87 (in Russian).
Antimony by Goryachev, N.A., p. 88-90 (in Russian).
Mercury by Savva, N.E., p. 91-97 (in Russian).
Iron by Shpikerman, V.I., p. 98 (in Russian).

SYMPOSIUM VOLUME ON GEOLOGY AND MINERAL DEPOSITS OF THE RUSSIAN FAR EAST BY ALASKA MINERS ASSOCIATION

The Geology and Mineral Deposits of the Russian Far East edited by Bundtzen, T.K., Fonseca, A.L., and Mann, Roberta, 1995: Alaska Miners Association, Glacier House Publications, Anchorage, Alaska, 156 p. Volume can be purchased for $40.00 (US) from Alaska Miners Association, 501 West Northern Lights, Suite 203, Anchorage Alaska 99503 (Phone: 907-276-0347; FAX: 907-278-7997).
The Russian Far East Mineral Industry - A Brief History by Bundtzen, T.K., p. 11-18.
Magmatic Formations and Mineralization in the Okhotsk-Chukotka Volcanic Belt by Popeko, V.A., p. 19-28.
Placer and Hardrock Gold Deposits of the Central Kolyma Area, Magadan Region, Northeast Russia by Tchapko, Vitali, p. 29-35.
Platinum Occurrences in Ultramafic Massifs of the Koryak-Kamchatka Region by Sidorov, E.G., p. 36-38.
Technologies Employed by the Russian Placer Mining Industry by Bogdanov, E.I., p. 50-59.
Tectonics and Regional Metallogeny of the Verkhoyansk-Kolyma Region by Parfenov, L.M., 1995, p. 61-84.
Lode Mineral Deposits of the Southern Russian Far East by Ratkin, V.V., and Khanchuk, A.I., p, 85-89.
Mesozoic Tectonics of the Southern Russian Far East and its Relationship to the Junction of the Central Asian and Pacific Mobile Belts by Borukayev, C.B., and Natal'in, B.A., p. 90-95.
Genetic Types of Rare Earth Element (REE) Mineralization in the Russian Far East by Nekrasov, I.Ya., p. 96-102.
Metallogeny of Gold-Silver Deposits of Northeast Russia by Sidorov, A.A., and Eremin, R.A., p. 109-120.
About Glaucophane Genesis in Connection with Blueschists near Seldovia by Plyusnina, L.P., and Likhoidov, G.G., Alaska, p. 121-127.
Results of a Thermo-Barometric Study of Hydrothermal Fluids and Magmatic System at Democrat Mine, Richardson District, Alaska by Pakhomova, V., Belyaeva, B., and Tishkin, B., p. 128-133.
Geologic Review of Commercial Mineralization Types of the Okhotsk-Chukotka Volcanic Belt by Goncharov, V.I., p. 134-140.
Mesothermal Lode Gold Deposits of the Russian Far East by Goryachev, N.A., p. 141-152.
Mineral Resources of the Magadan Region and Problems of Their Development by Goncharov, V.I., p.153-156.

DERIVATIVE PUBLICATIONS:

Articles on Mineral Resources of Russian Far East

Metallogeny of the Russian Northeastern Region and Alaska: A Comparative Study, by Sidorov, A.A., and Eremin, R.A., 1994: Geology of Pacific Ocean, v. 11, p. 179-188.
The Russian Far East Mineral Industry, Part I: A Brief History by Bundtzen, T.K., 1994: Russian Far East News, Alaska Center for International Business, American Russian Center, University of Alaska Anchorage, December 1994, p. 1-5, 12.
The Russian Far East Mineral Industry, Part II: The Industry Today, by Bundtzen, T.K., 1995: Russian Far East News, Alaska Center for International Business, American Russian Center, University of Alaska Anchorage, January, 1995, p. 1-4.
The Russian Far East Mineral Industry, Part III: The Industry Today, by Bundtzen, T.K., 1995: Russian Far East News, Alaska Center for International Business, American Russian Center, University of Alaska Anchorage, February, 1995, p. 1-4.
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Pre- And Post-Accretionary Metallogeny of the Southern Russian Far East by Ratkin, Vladimir, 1995: Resource Geology Special Issue 18, p. 127-133.
Mineral Resources of the Northern Far East Russia by Ishihara S., and Kamitani M., 1994: Chishisu News, Geological Survey of Japan., no 480, p.1-13 (in Japanese) (Japanese summary of U.S.G.S. Open-File Report 93-339).
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Regional Metallogeny by Dawson, K.M., Panteleyev, A., Sutherland Brown, A., and Woodsworth, G.J., 1992, Chapter 19, in Geology of the Cordilleran Orogen in Canada, Gabrielse, H., and Yorath, C.J., eds., Geological Society of America: The Geology of North America, v. G-2, p. 707-768.
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Evolution of the Northern North American Cordillera: Generation, Fragmentation, and Displacement and Accretion of Successive North American Plate-Margin Arcs by Monger, J.W.H., and Nokleberg, W.J., 1996, *in* Coyner, A.R., and Fahey, P.L., eds., Geology and Ore Deposits of the American Cordillera: Geological

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Terranes and Accretionary Tectonics of Northeastern Asia by Parfenov, L.M., Natapov, L.M., Sokolov, S.D., and Tsukanov, N.V., 1993: Geotectonics, v. 27, p. 62-72.

Terranes and accretionary tectonics of northeast Asia by Parfenov, L.M., Natapov, L.M., Sokolov, S.D., and Tsukanov, N.V., 1993: Geotektonika, no.1, p. 68-78 (in Russian).

Terrane Analysis and Accretion in Northeast Asia by Parfenov, L.M., Natapov, L.M., Sokolov, S.D., and Tsukanov, N.V., 1993: The Island Arc, v. 2, p. 35-54.

Accretionary History of Northeast Asia by Parfenov, L. M., 1995, *in* Thurston, D. K., and Fujita, K., eds.: Proceedings International Conference on Arctic Margins, Anchorage, Alaska, September, 1992, U.S. Department of the Interior, Minerals Management Service, OCS Study MMS 94-0040, p. 183-188.

Terranes and Formation of the Mesozoic Orogenic Belts of Eastern Yakutia by Parfenov, L.M., 1995,: Tikhookeanskaya Geologia, v. 14, no.6, p. 32-43 (in Russian).

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Articles on Tectonics of Southeastern Russia.

Kuyul Ophiolite terrane by Khanchuk, A.I., Grigorev, V.I., Golozubov, V.V., Govorov, G.I., Krylov, K.A., Kurnosov, V.I., Panchenko, IV., Prainikova, I.E., and Chudaev, O.V., 1990: Russian Academy of Sciences, Far East Branch, Vladivostok, 108 p. (in Russian).

Ganychalan Terrane of the Koryak Highlands by Khanchuk, A.I., Golozubov, V.V., Panchenko, I.V., Ignatev, A.I., Chudaev, O.V., 1992: Pacific Geology, no. 4., p. 82-93 (in Russian).

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Stratigraphic Record of Paleo-Ocean Sediments in the Nadanhada Range and the Adjacent Regions of Sikote-Alin by Khanchuk, A.I., and Phillippov, A.N., 1993: Shenyan Institute of Geology and Mineral Resources, Chinese Academy of Geological Sciences, Memoirs, no. 2, p. 1-19.

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Tectonics of Russian Southeast by Khanchuk, A.I., 1994: Chishitsu News, Geological Survey of Japan, no. 480, p. 19-22 (in Japanese).

Environment of Au Quartz Lodes of Mesozoids in Northeastern Asia by Goryachev, N.A., 1995, *in* Simakov, K.V., and Thurston, D.K., eds.: Proceedings of the International Conference on Arctic Margins, Magadan, Russia, 1994: North East Science Center, Magadan, Far East Branch, Russian Academy of Sciences, p. 259-266.

Sketches on Geology and Minerals of Primorskiy Krai by Khanchuk, A.I., Ratkin, V.V., Ryazantseva, M.D., Golozubov, V.V., and Gonokhova, N.G., 1995: Dalnauka, Vladivostok, Far East Branch, Russian Academy of Sciences, 68 p. (in Russian).

Taukha and Zhuravlevka Terranes of the South Sikhote-Alin—Fragments of the Early Creta-ceous margin of Asia by Golozubov, V.V., and Khanchuk, A.I., 1995: Geology of Pacific Ocean, v. 14, p. p. 13-25 (in Russian).

Geology and Mineral Deposits of Primorsky Krai (territory) by Khanchuk, A.I., Ratkin, V.V., Ryazantseva, M.D., Golozubov, V.V., and Gonokhova, N.G., 1996: Dalnauka, Vladivostok, Far East Branch, Russian Academy of Sciences, 61 p., 3 sheets, scale 1:2,500,000.

Taukha and Zhuravlevka Terranes of the South Sikhote-Alin—Fragments of the Early Cretaceous margin of Asia by Golozubov, V.V., and Khanchuk, A.I., 1996: Geology of Pacific Ocean, v. 12, p. 2-3-220 (in English).

General Interest Article

The Life of Geologists in the Former Soviet Union by Parfenov, L.M., 1996: GSA Today, v. 6, no. 4, p. 6-7.

Abstracts Talks, and Poster Displays

About 35 abstracts for invited talks and poster displays at symposia and seminars at major scientific and professional meetings, and at universities in Russian Far East and North America. Abstracts are on various aspects of mineral deposits, metallogenesis, bedrock geology, and tectonics of region by Russian, Alaskan, and Canadian project members.

MAJOR PUBLICATIONS IN PREPARATION

Circum-North Pacific Tectonostratigraphic Terrane Map (5.0 M scale) (digital format). Being prepared for publication on CD-ROM in ARC-Info and AutoCADD DXF formats in collaboration with S. Klemperer and M. Grenninger, Stanford University. Terrane map will be part of an interactive, GIS analysis of the regional geophysics, geology, and deep crustal structure of the Russian Northeast, Bering Straits, and western Alaska.

Metallogenesis of the Russian Far East, Alaska, and the Canadian Cordillera. Major report being prepared for publication as USGS Open-File Report.

Russian Far East Mining and Metallogenesis. Summary report on major mines and metallogenesis of region being prepared by T.K. Bundtzen, Alaska Division of Geological and Geophysical Surveys, and others for submission to a professional mining journal.

Phanerozoic Tectonic Evolution of the Circum-North Pacific. Manuscript being prepared for publication as a U.S.G.S. Professional Paper.

Metallogenic and Tectonic Evolution of the Russian Far East, Alaska, and the Canadian Cordillera. Manuscript being prepared for publication as a U.S.G.S. Professional Paper.

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