

North Korea Salmon Stronghold Conservation Assessment Terms of Reference

Vision: A series of formally protected and managed salmon stronghold river basins in the Democratic Peoples' Republic of Korea (DPRK, or North Korea), complementing the stronghold salmon river network proposed by the Wild Salmon Center around the North Pacific.

Objective: To develop a preliminary stronghold-based salmon conservation strategy proposal for the territory of North Korea, in anticipation of normalization of relations and closer international collaboration within the next three years.

Scope: The geographic focus of this project is North Korea, with a time perspective ranging from the 1930s to the present. Completion of this project will likely require a published and gray literature review in Korean and Japanese, and interviews with salmon and land use specialists from the Korean Peninsula, Japan, and possibly Russia and China.

Deliverables:

1. Assessment of current levels of salmon abundance and diversity in North Korea (post-2000 preferred);
2. Best expert judgment regarding potential salmon river strongholds in North Korea and the DMZ;
3. Draft wild salmon conservation strategy for North Korea;

Timeline:

- Preliminary products to the Wild Salmon Center for technical review by January 31, 2009;
- Technical review at Wild Salmon Center, January 31-February 20, 2009.
- Final product to Wild Salmon Center by March 15, 2009 for review and acceptance.
- Delivery to funder by March 31st, 2009.

Total Project Budget: \$16,000, including all travel, expenses and hourly contract charges.

Proposals: Maximum three-page narrative proposal plus budget required, cover letter strongly suggested. The ideal candidate will have Korean language skills. Fisheries and wildlife training or experience preferred.

Please send proposals electronically to: Xan Augerot, xaugerot@easystreet.net, with DPRK Salmon in the subject line.

Primary Point of Contact: Dr. Xanthippe Augerot
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Wild Salmon Technical Review Team:

Dr. Peter Rand
Mr. Brian Caouette
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Wild Salmon Center Final Review Team

Mr. Greg Block
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DELIVERABLES

1. **Assessment of salmon distribution, abundance and diversity in North Korea** (post-2000 preferred). A tabular, cartographic and narrative presentation of data regarding current salmonid species distribution, including members of the *Oncorhynchus*, *Brachymystax*, *Salvelinus* and *Hucho* genera. *Onchorynchus spp.* are the most important for the purpose of this assessment, and should receive primary emphasis.

If historical distribution and relative abundance data (pre-WWII) are available, they should be included in this deliverable. It is possible that there may be historical data available in Japanese archives, given Japanese occupation of the Korean Peninsula from 1910-1945.

An overview of the DPRK environmental situation may be found in *DPR Korea: State of the Environment 2003*. Available at:

http://www.nautilus.org/DPRKBriefingBook/environment/DPRK_SOE_Report.pdf

Although there is no mention of salmon per se, fish and fisheries are briefly described. A two-stage country-wide biodiversity assessment project was recommended by the report authors. If initiated, it might also serve as an information source for this project. The principal DPRK institution involved is the Biology Branch of the North Korean Academy of Sciences. The Ministry of Land and Environmental Protection would also likely be involved.

The Wild Bird Society of Japan (BirdLife International in Japan), has worked with partners to develop a preliminary list of Important Bird Areas in North Korea and the Demilitarized Zone (DMZ). This work is represented in the Asia-Pacific Migratory Waterbird Conservation Strategy, 2001-2005, published in 2001 by Wetlands International (ISBN 983 9663 39 5). This has become a multinational project titled the

Australasian Flyway Partnership, with a Secretariat in Australia. The best contacts among the bird conservation community are:

Doug Watkins
Wetlands International
P.O. Box 787
Canberra, ACT 2601 Australia
Doug.watkins@deh.gov.au

Wild Bird Society Japan
(call Dr. Augerot for best contact)

Salmon biologists from the Republic of Korea (South Korea) have had intermittently collegial relations with their counterparts in the DPRK, primarily regarding technology transfer for salmon hatcheries. To pursue this line of inquiry, the best contact may be:

Dr. Sukyang Kang
Yongdong Inland Fisheries Research Institute, National Fisheries Research and Development Institute
424-1, Songhyun-ri, Sonyang-myeon
Yangyang-Gun, Gangwon-Do 215-821
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2. Best expert judgment regarding potential salmon river strongholds in North Korea and the DMZ. Results should be presented in map form, with mapped depictions of estimated basin condition, and the presence or absence of salmon hatcheries and artificial salmon releases.

The best approach to this task may be to examine satellite-derived land cover maps (e.g., GeoCover-LC) overlaid with the best available river hydrography (e.g., World Wildlife Funds's Hydrosheds dataset). Each river basin should be ranked for degree of development of road network, extent of forest conversion to agriculture, extent of urbanization, and extent of natural river sinuosity (1= channelized; 2=channelized segments with some river segments retaining meandering or braided pattern; 3=mostly meandering or braided in low gradient segments). This is intended to be a rough first cut analysis, and should not require significant satellite image processing.

Narrative text should include as much description as possible regarding the state of freshwater habitat in forested, agricultural, urban and intertidal lands. Current and potential threats should be noted, including development of mineral deposits, forest harvest, major civil engineering projects (dams, canals, etc.), and threats to water quality.

Potential stronghold sites should be those basins with the highest species diversity, wild salmon abundance, and habitat intactness. There may be as few as one or two such basins at the scale of ocean-draining catchments.

3. Preliminary wild salmon conservation strategy for North Korea. This narrative deliverable should describe any potential domestic or international partnership opportunities for habitat protection, restoration, and wild salmon management in the DPRK. For each of the potential stronghold salmon river basins identified in Deliverable 3, outline the rough parameters of a conservation project.

Some questions to consider include:

- Who lives in the river basin, and what is their relationship (economic, cultural, legal) to the salmon? How many people live in the river basin?
- What is the level of knowledge and training in North Korea with respect to natural river dynamics and salmon ecology?
- What might the balance of habitat protection (protected area designation or conservation purchases) and habitat restoration be?
- How extensive is the salmon hatchery program, and does it currently pose a major threat to wild salmon populations at this site?

And from a national legislative perspective:

- Would water quality and quantity need to be a major focal theme of any salmon conservation strategy?
- Do the current fisheries or forestry laws make any provisions for habitat protection, including riparian buffer zones to protect natural river function?
- What would a national salmon conservation policy agenda look like for North Korea?
- Will conservation set-asides (government protected areas) be possible?
- Is there any potential for land privatization on the horizon, and might conservation easements be an option?
- Would a payment for ecological services regime (PES), paying the government for the ecological regulating services of forest lands and wetlands (e.g., water filtration and flood control) or supporting services (e.g., the salmon role in contributing marine-derived nutrients to terrestrial and aquatic systems), be considered adequate trade-off for local food, fuel and construction material production capacity?
- Who are the in-country champions for salmon conservation, if any?