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A New Bridge for East Asian Taxonomy and Biodiversity Conservation
Linking South and North

LEE Byung-Hoon
Chair, East Asian Network for Taxonomy
and Biodiversity Conservation

    Last June we had "International Conference for Taxonomy and Biodiversity Conservation in East Asia" in Seoul, represented by twelve countries of the region in addition to a keynote speaker from U.S. It was to ameliorate the extremely poor situation with taxonomy and collections in East Asia but also to comply with "Capacity Building for Taxonomy" which was one of the strong recommendations by SBSTTA and Conference of Parties of the Convention on Biological Diversity held in fall 1996.

    In the Seoul Conference we adopted the Resolution and formed the "East Asian Network for Taxonomy and Biodiversity Conservation"(EANetTBC) as cooperational body of the region. In line with the objective envisaged in the Resolution we started the preliminary survey of the status in taxonomy in the region, preparing directory of East Asian

recognition that the resources of collections are used indirectly by all individuals of society and over many generations. Philanthropy from corporations, foundations, and individuals also can play an important role. More immediate users of biodiversity information can and should pay for taxonomic resources and services they receive from natural history collections and curators.

East Asian efforts to preserve biodiversity will be strengthened if the need for collections is recognized. Collections in this region can help themselves by forming a regional consortium or organization similar to the Association of Systematics Collections (ASC) in North America or the European Consortium of Taxonomic Facilities (CETAF).

* This article is the summary of the Dr.Hoagland's plenary speech given at the 'International Conference for Taxonomy and Biodiversity Conservation in East Asia' held in June 12-14, 1997 in Seoul   — Editor

"International Conference for Taxonomy and Biodiversity Conservation in East Asia"   June 12-14, 1997 Seoul
— a personal view

Yuri Zhuravlev
Director, Institute_of_Biology_&_Soil_Science
Vladivostok, Russia

Dear Professor Lee,

As far as my own impression of the Conference is concerned I believe that it was the timely and necessary Forum. For the first time taxonomists of the Asian part of Pacific region have gathered together to evaluate the whole complex of problems confronting the specialists engaged in study of biodiversity of the region. It was extremely important that before the Conference a range of questions was raised for participants which was needed to cover in their reports.

As a result, the participants of the Conference could first visualize a situation of studies on biodiversity in different countries and latitudes. Groups of species which are mostly subject to clinal variability were recognazed. Rare species of variously categoried requiring protection were differentiated. A good base was created for development of biodiversity conservation in the region at the ecosystem level. Some of papers touched upon essential problems of involving the local population in the cadaster and nature protection activity. Modern design of the conference hall and professional organization of the Committee members were prominent bringing finally the success to the Conference.

Prof. Lee Byung-Hoon, director KIBIO and president KOBIC, and Dr.Choe Jae C., the Conference Secretary, allowed to bring closer every report to the main subjects of the Conference and that is why it became so target-oriented and monolithic.

Sincerely yours,
Prof. Yu.Zhuravlev,
Director IBSS

Biodiversity Assessment and Planning Biodiversity Conservation in the Russian Far East

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D. G. Miquelle, Biodiversity Manager, USAID Environmental Policy and Technology Project, Vladivostok;
S. M. Krasnopeev, Far Eastern Branch, Institute of Geography, Russian Academy of Science, Vladivostok;
V. A. Rosenberg, Far Eastern Branch Institute of Biology and Soils, Russian Academy of Sciences;
W.T.Merrill, Landscape Dynamics Lab, University of Idaho, Moscow, ID., USA.

Under the auspices of the Russian Far East USAID Environmental Policy and Technology Project, we initiated biodiversity assessment and planning program for the Sikhote-Alin Ecosystem. This forested, mountainous ecosystem stretches some 1000 kilometers north to south, covers two administrative units (Primorye and Khabarovsk Krai), and is considered one of the biologically richest areas in Russia.Because the region represents a merger point between two bioregions, the East Asian and Far East Boreal forests, biodiversity is high for north temperate forests, and there is a unique assemblage of flora and fauna. Nowhere else in the world do Asian species such as the tiger, Himalayan black bear, and ginseng overlap with northern species such as the lynx, brown bear, and spruce.

Because it is impossible to save all lands from humandisturbance and influence, the primary value of a

biodiversity assessment should be to provide indicators of where areas of high biodiversity exist, and a description of the variety of plant and animal communities across the landscapes. Thus, biodiversity assessments should be a management tool for decision-making, i.e., an aid to determining where are the priority areas for biodiversity protection. Our goal, therefore was two-fold: 1) for assessment - to develop a comprehensive GIS database that could adequately describe and map biodiversity over the entire Sikhote-Alin Ecosystem; and, 2) for planning - to use that database in assessing existing plans, and to develop plans for insuring protection of the biodiversity of this unique region.

Biodiversity Assessment. We developed a 3-layered approach to biodiversity inventory. 1) We selected one umbrella species, the Amur tiger, which has large land requirements across a variety of habitat types, as a key species that should be included in biodiversity planning. Protection of an umbrella species should result in protection of a great variety of other species. 2) We used plant communities as a coarse filter designed to capture the majority of plant and animal species. Because many species are associated with specific habitat types, or an array of habitat types, plant communities act as surrogate measures of species distributions.. Therefore, by identifying all habitat types, and including them into a system to protect biodiversity, most species can be protected without having to plan reserves for each species individually. It has been estimated that 85-90% of all species can be protected by this coarse filter approach. 3) A second, fine-grain filter was used to identify areas of high species richness (areas of maximum overlap in the ranges of mapped species). These areas should also be given priority for biodiversity protection because they represent areas where maximum efficiency (protecting the most species with the least amount of land) can be achieved. Species richness should be measured not only for rare species, but for common ones as well.

Gap analysis is a technically efficient biodiversity assessment whose aim is to identify gaps or holes in existing biodiversity plans by comparing the distribution of natural communities and the location of species-rich areas to the positioning of existing or proposed protected areas. The process provides a means of identifying potential inadequacies in existing plans, with concrete proposals on how to correct existing deficiencies. The process combines an assessment of existing biodiversity with an overlay of existing/proposed protected areas and landuse. We used gap analyses at two levels of resolution: 1) to assess species richness, we looked at cumulative species distribution across entire administrative units to compare species richness in the Sikhote-Alin Ecosystem and elsewhere. 2) Within the Sikhote-Alin Ecosystem, we assessed the distribution of forest cover types (community types) and looked for gaps in protection of these forest types.

Development of the database took nearly two years, and included the following:
1. Forest cover map of Sikhote-Alin ecosystem. This database was developed from Russian Forest Service inventory data, and represents a fine resolution description of 65
forest cover types for each forest stand (which averages 30 ha) across the all Forest Service lands within the Sikhote-Alin Ecosystem in Primorski Krai. This data base is unique in Russia, and provides the opportunity to do fine scale assessment and planning.
2. Land cover map of Primorye and Khabarovsk Krai. This cover was based on satellite imagery of the region, and provides an up-to-date portrayal of present land uses.
3. Habitat type cover map. Representatives of Khabarovski Krai developed a GIS habitat cover map that resolves land cover types into 20 categories.
4. Land ownership map. Planning for biodiversity requires knowledge of ownership, which often dictates the feasibility of projected management regimes for a region. This map delineated the entire region into Forest Service lands, agricultural lands, villages and townships, etc.
5. Endangered species distribution. We developed individual range maps for all species of flora and fauna listed as endangered in the Russian Red data book, as well as species considered locally endangered. Separate databases were developed for each administrative unit.
6. Distribution of all land vertebrate species. For all bird, mammal, reptile, and amphibian species we developed distribution maps as indices of species richness.
7. Protected Areas map. We developed data layers that consisted of all existing protected areas, all proposed protected areas, all existing and proposed ethnological areas, and all existing management regimes that enhance biodiversity conservation. This layer allowed us to assess the adequacy of
both existing and proposed protected areas and management regimes in conserving biodiversity.

Results indicated that:
1) Protection of 50 adult resident breeding female tigers would require approximately 22,500 km2 of habitat in a mosaic of connected protected territories and ecological corridors. A plan was developed that sought to minimize the need for creation of new protected areas by linking existing and
proposed protected areas.
2). An assessment of both rare and endangered, and all vertebrate species indicated that the areas of highest

biodiversity richness occurred, not necessarily in protected areas, but in the major river drainages within the Sikhote-Alin system, and the Ussuri Basin. Although species richness may have been originally high in these riverine complexes, they are also some the most intensively used habitats within the Sikhote-Alin, and consequently, opportunities for protection are limited to specific regions where development has not yet occurred. Use of the forest type and land-use covers allowed identification of these regions.

3) Gap analyses over the entire administrative units of Primorye and southern Khabarovsk Krais suggested that, on a low scale of resolution, if existing plans for protected areas
are implemented, including creation of ethnological areas, most of the habitat types in the region would receive adequate protection. However, existing protected areas do a relatively poor job of protecting habitats.

4) Gap analyses of forest cover types identified those types that are exceedingly rare, and which presently receive inadequate protection.

These results form the basis for making concrete recommendations to regional and federal administrations responsible for biodiversity protection.

International Conference on
Taxonomy and Biodiversity Conservation in East Asia",
12-14 June, 1997, Seoul

The Korean Biodiversity Council (KOBIC) and the Korean Institute for Biodiversity held this meeting at the Hoam Faculty House Convention Center of Seoul National University in Korea. This meeting was motivated by poor taxonomic resource base in East Asia, cofirmed in a few regional meetings on biodiversity during a couple of past years and also by the strong recommendation for "Capacity Building for Taxonomy" by the meetings of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) (September, 1996) and of the Conference of the Parties of Convention on Biological Diversity (November, 1996).

The conference was supported by the Ministry of Environment, Korea Science and Engineering Foundation, Korean Research Institute for Bioscience and Biotechnology, Forestry Research Institute, Daewoo Foundation and Asiana Airlines.

Twelve countries from East Asia were represented as invited speakers in addition to a keynote speaker from the United States. Seventeen papers were presented over five sessions. A series of questions were raised to address issues and concerns pertaining to manpower, reference collections, research institutes, fund-granting policy, job opportunities, local problems as well as possibilities in taxonomy and related biodiversity activities, which were essential to identifying problems and to determining potentials for cooperation in the region. Invited speakers and their titles of presentations are shown as follows.

Reviewing the Resolution draft at the Seoul Conference