Integrated Forest Management Information Systems
An International Symposium. October 13–18, 1991. Tsukuba, Japan

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To : Jeff Sirmon, Deputy Chief for International Forestry

I attended the subject meeting as an invited keynote speaker addressing **Integrated Data Collection – a Challenge for the Future** and guest of Japan. Other Forest Service employees attending included John Wells (WO–TM), as an invited speaker on **Integrating Timber Information in the U.S.D.A. Forest Service** in a technical session and Mark Hansen (NC–FIA), presenting a poster display on **Nation Wide Forest Inventory Data Bases in the United States**. This was probably the first IUFRO meeting where NFS people outnumbered Research people 2 to 1 (four to one if you go by weight). Copies of the various papers are available upon requests from the authors.

The symposium was sponsored by the Japan Society of Forest Planning, IUFRO Subject Groups S 4.02 and S 4.04, Japanese Forestry Society, Japanese Forestry Agency, Forest and Forest Products Research Institute, and the Japan Forest Technical Society. Over 100 people from 19 countries attended the meeting. A draft proceedings containing many of the papers was available at the start of the conference. A copy of the proceedings, list of participants, and other handout material is on file in my office.

The following is a summary of the symposium including Objectives, Symposium Recommendations, Notes and Observations, some observations on Japan, Benefits to the Forest Service and Others, and lastly follow-up actions.

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A. Objectives

The purpose of the Symposium was to demonstrate and discuss the integrated forest management information systems (MIS) which have been developed in various forest areas and countries. Other goals were to:

1. Assess forest management situations in newly established plantation areas in terms of resource, silvicultural regimes, planning, and economics.
2. Discuss concepts, design, and implementation of the integrated MIS.
3. Recommend an appropriate scenario to meet the needs of MIS in the 21st century.

The meeting included keynote addresses, technical presentations, demonstrations, poster displays, and field excursions.

B. Symposium Recommendations

The following are draft Symposium Recommendations.

The IUFRO Symposium "Integrated forest management systems" actively promotes integration of forestry disciplines to ensure that each unit is fully aware of the activities of the others and that they work in an integrated manner to achieve the common goal.

An integrated forest information system should bring together any information important to the management of the forest as a whole. Any Management Information Systems (MIS) should provide the link between data, information, and management. The MIS should give the decision-makers the information they need to make their management decisions.

Specific points include:

1. Geographic Information System (GIS) is a subset of MIS. GIS is MIS with a spatial level.
2. Data quality and consistency (standardization) are one of the most important steps towards integration.
3. Any MIS must be developed to match the users (decision-makers) and their level of expertise. It also must be open to those who provide the data.
4. Models are one type of data. Good, well-defined, accurate models are needed

and like any other data, they are critical to the integrity of the information from the MIS.

5. As systems are developed, we need to exchange information, experience and problems between all management and levels and organization levels. Vertical and horizontal integration is required.
6. We need to recognize the limits of our expertise and of our information.

C. Notes and Observations

1. **Technical Presentations.** As indicated above, I have a copy of the preceding proceedings containing many of the papers presented. A final proceedings will probably be issued early next year. Several papers have utility to the Forest Service.

The impact of artificial entities on conceptual data models in natural resources by Matthew Pelkki, USA will have utility to me in my work on a Primer on Evaluating and Using Existing Information for Resource Inventories. A paper by Haruo Sawada (Japan) on **Integration of remote sensing with GIS for tropical forest management** will also be useful for the Primer. We (FS) may want to explore the possibility of doing cooperative research with the Japanese Forestry and Forest Products Institute. We both have a lot to learn.

A series of papers will be of use to WO Information types in building data bases including **FRIYR: an integrated and computerized system for forest management and yield regulation** (Bruce Kilgour, Australia), **Strategic planning of information systems in Finnish forestry** (Eero Mikkola, Finland), **Management information systems: emerging tools for integrated forest management** (Jacques Rondeux, Belgium), and **Development of The Stand Master, a database for forest information** (R.B. Tennent, New Zealand). Mr. Tennent is also a good teacher of the New Zealand mating dance — — — after a couple of beers.

Our own John Well's paper **Integrating timber information in the U.S.D.A. Forest Service** generated the most questions. People asked about multiple use management, public involvement in forest planning, and use of Global Positioning Systems.

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Information on people's attitudes toward forest planning by Masaaki Imanaga (Japan) reported on a survey between people in Japan and Europe. When asked if they would rather visit a church (shrine) or a forest, the Japanese preferred the shrines and the Europeans the forests. Several other interesting results are reported.

A paper by Dieter Kuhnke on **Sustainable development and biodiversity in Canada's boreal forests** caught my interest. Canada is in the process of defining "old growth", "biodiversity", and other environmentally correct terms. Since we have so much land in common and if our definitions differ, I am sure special interest groups can use the differences to their advantage. Some coordination with Canada in developing these definitions may help us all later down the road.

2. Poster Displays. There were several good poster displays.

My good and ancient friend, Yukichi Konohira (Japan) had an interesting display on **An application of a geographic information system — restoration of the original forest condition** trying to reconstruct the extent of the forest back to the 1920s. There is a growing interest in trying to find out what the forest conditions were when. Perhaps this is sparked by Global Climate Change or perhaps getting a hold of deforestation rates.

Gen Takao (Japan) presented a display on **Photogrammetric measurement of stand disposition of each tree's DBH with a rotatory camera**. Gen has a camera that can take a picture 360 degrees around a point. By raising the camera slightly, he develops a three-dimensional model. From this model, he can map out all trees that are visible and make basic measurements on them. This may have utility for forest health monitoring. I suggested to Gen that he consider using a video camera, but they have not tried that as yet.

Mark Hansen (USA) presented his poster on **Nation wide forest inventory data bases in the United States**. Even though it was put together at the last minute, it did generate some interest in FIA techniques and information.

3. Field Tours. We took two field trips. The first was a half day trip to Tokyo traveling by taxi, train, subway, boat, foot, and bus. Among the things we saw were a shrine and the Tokyo Tower (bigger, cleaner, and much more efficiently run than the Eiffel tower in Paris). From the top of the tower we had a spectacular view of Tokyo at night. It was magnificent. The only green that we saw was the palace grounds close to the Ministry of Forestry (the forestry portion of our tour).

The second tour was a two-day excursion to Ibaraki Prefecture. We toured a sawmill in Suifu belonging to a Mr. Koike. The mill was very diversified. Parts of stumps were used for decorative coffee tables. The mill produced lumber, small furniture, veneered beams, and laminated beams. Some of the wood was imported from the United States. I saw a covering from the Ochoco Lumber Company so some of the wood probably came from the Ochoco National Forest — my alma mater.

We then went to Satomi and visited a private forest owned by Mr. Hasumi. Unfortunately it was pouring rain so our vision of the forest was what we could see through the fogged windows of a mini-van. Mr. Hasumi grows cedar using a shelterwood management system. Trees are sold when the market is good. Both treatment for brush and pruning are used. A brush saw is used to remove unwanted understory. The stands really looked good.

We overnighted in Ibaraki at Hotel Tokiwaji which is a ryokan or Japanese Inn. From the outside it appeared to be like a Holiday Inn. Inside, however, the rooms, baths, toilets, and restaurants were true Japanese.

I shared a room with John Wells. Yes, they had one big enough for the both of us. Room sizes are according to number of mats on the floor. Ours was a 6-matter I think. At any rate, our room had two areas — a combination eating/sleeping area and a screened off area with two chairs and a sink for washing. We also had a small balcony with shrubbery (this came in handy during the night). The lavatories were down the hall.

Before entering our room, we had to take off our shoes. Kimonos and slippers were provided for taking trips to the bath and lavatories. Our room was set up for tea.

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That is to say there was a low table in the middle of the room surrounded by 4 small cushions on the floor. There was a thermos of hot water and fixin's for tea on the table. Later in the evening, the housekeeper moved the table and cushions and laid out our mattresses and sleeping gear on the floor. They were quite comfortable.

To use the lavatory, one used slippers to get to the bathroom, and then changed to toilet slippers. The japanese-style toilet is a little different from what we are accustomed to. It is shaped like a life-raft with a small cover at one end. It is flush with the floor and has no seat. Fortunately there was a western style toilet available, complete with instructions on how to use.

The bath was a communal one — divided by sex. As near as I can tell this was a big hot tub that one would relax in after washing using a bucket and soap. I am not one for bathing with others especially those of my own sex, so I forewent this opportunity and used the sink in our room. Since we were at the ryokan only one night this worked well.

Breakfast was served in a common dining area on low tables. Sitting on the floor was no problem. Getting up was.

Hotel Tokiwaji was a delightful experience, exceptionally clean and people very friendly. I would stay there again.

The next morning we went to Hitachi Seaside Government Park. I believe this was built by the Hitachi Corporation and consists of an amusement park and "natural" areas. The park just opened in the first part of October and is not due to be completed for several years. We did get to view some of the natural stands of seashore pine and some that had the understory and competing brush removed showing a managed stand.

We had lunch at O-arai Beach, visited another shrine, and then when to Kasama potteries where we tried our hand at making mugs and painting dishes. Finally we returned to Tsukuba and Hotel Grand Shinonome.

D. Japan

The following are my observations on Japan itself.

1. **Clean.** Japan is an extremely clean country. Litter was very rare. The people are meticulous about cleanliness. Sinks or wash basins are provide as you first enter some restaurants. Often one is given a wash cloth at the start of the meal to clean your hands and face. Of course, people take off shoes before entering some buildings. This saves wear and tear on the flooring as well as keeps street dirt outside.

2. **Courteous.** The Japanese are very polite, courteous, and kind. They are always smiling and friendly. Also they have a great sense of humor which I enjoyed and tried to exploit.

3. **Environmentally Aware.** The Japanese people love their land and take care of it. Traditional Japanese gardens reflect the love they have for nature. Such gardens simulate what I consider the high alpine areas with stunted trees, shrubs, rocks and water. Each in a Japanese garden has a soul and I suspect in in the wild each is regarded accordingly.

Nearly every house I saw in the country side had such a garden. Where space was too limited, bonsai gardens were used.

The country-side and forests were well managed. Many of the road cuts I saw were covered by concrete and painted to look like smooth rocks or boulders trying to eliminate the apparent handiwork of humans.

Farming was confined to the valleys and forests to the hill-sides, We did not see any terracing like one may experience in other countries. Similarly we did not see any open grazing. Animals were kept in stables or feedlots. Fodder (such as straw from rice harvest) was brought to the animals. Very little is wasted.

Even though Japan has a high population, one does not get the impression of crowded conditions when touring the country-side. The homes are well-spaced and quite attractive.

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4. Forestry Problems. Japan has a total of 25.25 million ha of forest land. About 8 million ha are in National Forests. This compares to the 77 million ha we have in National Forest System. Japan has about 25,000 employees in its Forest Service, and we have about 40,000. Forest lands in Japan are managed primarily for timber production and watershed protect. The Japanese Forest Service does not have any wildlife biologists. Ecologists deal primarily with insect and disease problems.

As near as I can tell based upon the questions asked us, there is no public involvement in the forest planning process. There is increased concern by the public about the management of the forest resources for biodiversity (10 million ha of forest lands are plantations). Some of our contacts believe the public should have more say in the management of the public forests. There are some active environmental groups so public involvement will probably come about.

5. Food. The food was great, but it became more or the same over time. We had soup, rice, fish, and salad with every meal — including breakfast. Because many of our meals were group meals and we usually were slightly behind in our schedules, the food was often cold. I must admit I was looking forward to a good old American Hamburger when I got back.

Yes, I did master chopsticks — there is little that can get between me and my favorite hobby. Most meals had some sort of seafood. For breakfast at the Hotel Grand Shinonome, they served something that looked like bean sprouts. Actually they were very tiny fish. The eye was the bean. They were very tasty. I also tried various raw seafood dishes. These were not, however, my favorites. We had a lot of chicken, potatoes, beer and coffee. Japanese drink iced coffee. If you order coffee in a restaurant you need to specify if you want it hot or cold. I must be part Japanese as I drank iced coffee when I was younger and still prefer cold coffee to hot.

E. Benefits to Forest Service and Others

1. Benefits to Forest Service. As you can see by the above, there are quite a few benefits for travelling abroad — learning about different cultures and getting a different perspective on things. From the material we brought back and the contacts we have made we have the opportunity to improve our information management

system. Both John Wells and Mark Hansen, my fellow FS companions, agree to this. In particular, the exposure to the Australian Forest Resources Information and Yield Regulation (FRIYR) program and the exposure to the conceptual data base models and development of these models in a number of countries (Finland, Australia and New Zealand) should be particularly beneficial.

2. Benefits to Others. As near as I can tell, we are one of the few countries that are practicing multiple use management. We may be the only one that has so much public participation in our forest planning process (not that I would wish that on any country). Many participants were interested in these two elements and certainly benefited by our presentations. They also benefited by the exposure to the various Forest Service information management systems and the methods used to develop them.

F. Follow—Up Actions

Noted above in the discussion of technical presentations are several actions the Forest Service may wish to take. Listed below are several follow-up things to do and this list is just a reminder primarily to myself although I would appreciate any help anyone is willing to give. I have addresses for all people indicated.

1. Send material on:

Forest planning (including how we achieve public involvement) to Yukichi Konohira.

Watershed management to Mitsuhiro Minowa. He also wants to come to US for a year on a sabbatical — so need to find some Universities.

Forest health monitoring, CFI and permanent plots to Kyoei Nishikawa.

Multiple use management to Yong-chi Yang in Taiwan.

Remote Sensing in the Forest Service to Haruo Sawada and Kenji Naito,

Inventory publications on inventory integration to Yukio Teraoka

Culture of Shitake Mushrooms in U.S. and a contact in Forest Service on Economics to Kimihiko Hayasi.

2. Send letter to Jacques Rondeux regarding Portland Stand Inventory Workshop.

3. Add people to IUFRO Newsletter Mailing list. Mangala de Zoysa and others for whom expressed an interest.

4. Mark Hansen will be sending manuals and software for NCFIA database

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management to Terri O'Brian in Australia. He was very interested in seeing what we had done.

5. I would like to see the FS consider having a bilingual training program with bonuses to those that speak a second language like Canada has. This would certainly help with our relations abroad.

All in all the meeting was excellent. My good friend Mitsuhiro Minowa organized the conference and deserves much of the credit for the success of the meeting. As we noted during the close of the conference, the that closing and proceedings are not the end of the meeting. They are the beginning of opportunities for new bi-national programs and information-sharing that will benefit all countries.

John Wells and I took quite a few pictures. We will be developing a poster display and perhaps a slide show on our adventures. The display will be outside of TM in the Auditors Building.

/s/ H. Gyde Lund

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