



# NORTH AMERICAN FOREST COMMISSION

## TWENTY-NINTH SESSION

Edmonton, Canada, 19 - 21 September 2017

### REPORT OF THE FOREST INVENTORY, MONITORING AND ASSESSMENT WORKING GROUP

PERIOD: January 2016 – September 2017

#### 1. WORKING GROUP COMPOSITION

| Chairperson                   | Country | Organization             |
|-------------------------------|---------|--------------------------|
| Graham Stinson                | Canada  | Natural Resources Canada |
| Members                       | Country | Organization             |
| Enrique Serrano Gálvez        | Mexico  | CONAFOR                  |
| Raúl Rodríguez Franco         | Mexico  | CONAFOR                  |
| Juan Carlos Leyva Reyes       | Mexico  | CONAFOR                  |
| Sergio Armando Villela Gaytan | Mexico  | CONAFOR                  |
| Sonja Oswalt                  | USA     | USDA Forest Service      |
| Greg Reams                    | USA     | USDA Forest Service      |
| Pat Miles                     | USA     | USDA Forest Service      |
| Graham Stinson                | Canada  | Natural Resources Canada |
| Alex Song                     | Canada  | Natural Resources Canada |

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|             |        |  |
|-------------|--------|--|
| Jeff Dechka | Canada | Natural Resources Canada                           |
| Joe Kapron  | Canada | Ontario Ministry of Natural Resources and Forestry |

## 2. LIST OF ACTIVITIES COMPLETED DURING THE PAST 2 YEARS

| Meetings  | Location                              | Date                       |
|---|---------------------------------------|----------------------------|
| Working Group meeting   | <i>St.Petersburg,<br/>Florida</i>     | <i>May 24-26<br/>2016</i>  |
| Working Group meeting   | <i>Victoria,<br/>British Columbia</i> | <i>April 5-7<br/>2017</i>  |
| Expert Consultation on Global Forest Resources Assessment: towards FRA 2020 | <i>Joensuu,<br/>Finland</i>           | <i>June 12-16<br/>2017</i> |

### ACTIVITIES:

- Developing a North American Forest Database
  - Technical documentation of the database, its geographic stratification system and its data harmonization was produced and submitted to the peer-reviewed scientific journal, *Environmental Monitoring and Assessment*, in May of 2017. The peer-review and publication process can be expected to take 4 to 6 months, so it is likely that the paper – if accepted by the journal – will be published in late 2017.
  - Online reporting tool: funding was secured from Natural Resources Canada, Canadian Forest Service, to develop an interactive online reporting tool to give public access to the database. Development started in May 2017 and will be completed before the end of the year.
  - Database expansion scoping: An informal survey of NAFC Working Groups was conducted in late 2016 to help set priorities for future database expansion. The NAFC working group (WG) liaison provided a list of contacts who were asked to provide advice on which additional reporting and assessment variables would be of greatest value. Survey results were evaluated and discussed at the NAFC Inventory and Monitoring WG meeting in Victoria (April, 2017).
  
- Evaluating Alternative Methods for Mangrove Ecosystem Inventory and Monitoring
  - Following the meeting of the NAFC Inventory and Monitoring WG in Florida (May, 2016), the US Forest Service (USFS) collaborated with CONAFOR to secure the CONAFOR field manual for measuring mangroves. The manual was translated into English. Mangrove plots in Florida were selected for measurement using two methodologies: current US Forest Service field measurement procedures and a modified single-subplot larger design that the US Forest Service currently uses to trees in urban areas. Methods used by CONAFOR to determine DBH in red mangroves were adopted for the study. In addition to testing the two designs, the Florida Forest Service and USFS have partnered with NASA to incorporate G-LiHT technology into mangrove sampling procedures. Once field measurements are complete, analyses will be conducted between the two plot designs as well as between estimates generated using G-LiHT versus field plots to better understand the possibilities for accurate, efficient, and cost-effective measurement of these difficult-to-access forests.

- Expert Consultation on Global Forest Resources Assessment
  - A meeting of national correspondents and global expert consultants convened in Joensuu, Finland, to discuss forest assessment definitions and reporting protocols. Members of the NAFC Inventory and Monitoring WG attending the meeting included Sonja Oswald (USA), Greg Reams (USA), Raul Rodriguez (Mexico), Graham Stinson (Canada), and recently retired WG member, Brad Smith (USA). Prior to the meeting, the WG agreed upon three topics of priority concern for our region: 1) the concept of forests with primary designated functions, 2) reporting tables limiting the reporting of forest employment to those working in the woods, thus downplaying the importance of wood-related industries in developed economies, and 3) 'primary forest' definitions and reporting difficulties. All three topics were discussed and North America's suggestions were positively received by the assembled experts, the Global Forest Resources Assessment Advisory Group, and the FAO secretariat. The final table structure for FRA 2020 will be presented to national correspondents sometime between now and January 2018. NAFC Inventory and Monitoring WG members are as well positioned as they can be to provide input during the finalization process. WG members will be involved in piloting the new FRA online platform and investigate options for resolving the reporting issues with primary forest in collaboration with other international experts.

### 3. PLANNED ACTIVITIES FOR NEXT 2 YEARS

| Activity   | Location       | Date                    | Status (ongoing/new) |
|--|----------------|-------------------------|----------------------|
| Evaluating Alternative Methods for Mangrove Ecosystem Inventory and Monitoring   | <i>Florida</i> | <i>2016-2018</i>        | <i>ongoing</i>       |
| Expert consultation on Global Forest Resources Assessment (online platform piloting and investigation of options for resolving issues with 'primary forest') |                | <i>2017-2020</i>        | <i>ongoing</i>       |
| North American Forest Database (NAFD) technical publication in the peer-reviewed scientific journal, <i>Environmental Monitoring &amp; Assessment</i>        |                | <i>2017</i>             | <i>ongoing</i>       |
| North American Forest Database (NAFD) online reporting tool maintenance  |                | <i>2017-2020</i>        | <i>new</i>           |
| North American Forest Database (NAFD) expansion to include additional reporting variables  |                | <i>2017-2018</i>        | <i>new</i>           |
| FRA 2020 reporting coordination to maximize North American data quality and consistency  |                | <i>2018</i>             | <i>new</i>           |
| Mexico will host the next WG meeting and the chair's gavel will be passed from Canada to Mexico  | <i>Mexico</i>  | <i>To be determined</i> | <i>Planning</i>      |

### 4. WORKING GROUP FINANCIAL INVESTMENTS AND/OR NETWORKING

The Inventory and Monitoring WG made no investments of NAFC funds during 2016-2017 but WG activities during this period leveraged cash and in-kind investments by the Canadian Forest Service, USDA Forest Service, Florida Forest Service, CONAFOR and NASA.

## 5. REQUEST FOR FUNDING AND/OR OTHER SUPPORT

The Canadian Forest Service invested \$17 000 in the development of an interactive online reporting tool to give stakeholders access to North American Forest Database (NAFD) data. The tool will give stakeholders access to information about forest ecosystems that cross the Canada-USA and USA-Mexico borders in a seamless and consistent format. Until now, forest assessments of this type have only been accessible to experts who have the time and resources to compile forest inventory data from multiple jurisdictions and have the expertise to deal with data consistency issues and conduct their own statistical analyses. The tool will also serve as an example of how regional and global forest assessment could be advanced by shifting toward an ecosystem perspective. Until now, global forest assessment has focussed on national-scale reporting which means, for example, that one statistic is presented for all of the USA (lumping together all forests in the lower 48 states, Alaska and Hawaii). For large and ecologically diverse countries like Canada, USA and Mexico, sub-national reporting on ecosystems provides stakeholders with far more useful information, especially when done consistently across borders. What's more, the NAFD provides an ideal platform for promoting and demonstrating North American-led improvements to global forest resources assessment reporting variables and international forest sustainability indicators. Lastly, the database and online tool will stimulate engagement by other NAFC working groups in the specification of future NAFD expansions to meet a wider range of cross-border data harmonization needs.

The Inventory and Monitoring WG requests \$5 000 CAD per year for three years to maintain the online reporting tool, plus \$1000 CAD to do a print run of the NAFD brochure in all three NAFC languages to promote the tool at meetings and events, for a total of \$16 000 CAD over three years (2018-2020). This investment will make it possible to maintain the computing infrastructure (software and hardware) and conduct the cyber security enhancements that will inevitably be required as online security threats evolve.

## 6. CLOSING REMARKS

The Inventory and Monitoring WG made notable progress on scientific and technical collaboration and fostering compatible approaches to forest inventory, monitoring and assessment during 2016-2017. Inventory and Monitoring WG members have established close working relationships and received excellent support from their institutions to enable collaborative work.

Forest inventory and monitoring are long-term activities that require practitioners and institutions to take a long-term perspective. The Inventory and Monitoring WG has pursued its activities with this perspective in mind; each WG activity is designed to provide the foundation for future advances. The Inventory and Monitoring WG is well positioned to build on its successes and members look forward to continued collaboration.

Finally, working group members would like to acknowledge and celebrate the lifetime of achievements by our recently retired colleague, W. Brad Smith of the USDA Forest Service. Brad has long been a driving force of our WG and we will miss his enthusiastic and visionary leadership.