2013

Silviculture Field Report

On behalf of the Forestry Futures Committee

INTRODUCTION

The Forestry Futures Trust (FFT) has distributed over 180 million dollars in support of eligible silviculture projects on Ontario's Crown forest lands since it was established in 1995. Although Forestry Futures Committee (FFC) members have visited a number of the projects from inception through to completion on an ad-hoc basis, there has been no formal field evaluation. This year, a structured field inspection plan was designed to:

1. Document the success or failure of a funded project.
2. Provide an opportunity to discuss challenges encountered in completing the project with the proponent or forest manager.
3. Identify lessons learned from implementing the planned treatments.
4. Evaluate opportunities to implement similar projects under similar conditions.
5. Produce a summary report of funded FFC silviculture project accomplishments.

The sampling design was focus-based, not random, in order to meet the following requirements:

- address projects where specific concerns had been raised (e.g., reference in an IFA),
- capture older projects (visit the early projects from the 1990's and 2000's),
- represent the three Ministry of Natural Resources (MNR) Regions (NW, NE, S),
- inspect projects that received large investments of capital, and,
- represent three broad treatment types: disturbance renewal, spacing treatments, and stand conversions.

Year 1 of the program targeted a field visit to eight projects. The original project applicants and/or current forest managers were contacted to participate in the field visits and to provide background information to supplement the information documented in the FFT Final Project Work Reports. Sarah Bros carried out the site visits and provided photographs, accompanied on occasion by one of the FFC members and/or Tracey Bradley. Anastasia Frisby provided editorial review and final document formatting. Thanks are extended to all of those individuals who provided background documentation, logistical support, and editorial review for this project.

Summaries of the site visit field notes are provided in the following section, organized by treatment type.

FIELD NOTE SUMMARIES

Natural Disturbance Renewal Projects

1. **Project 50-2-R1 -** ***Pakwash Blowdown, Abitibi Consolidated, Kenora and Trout Lake Forest ($4.8 million)***

This project was designed to treat 10,124 ha of a 191,000 ha 1991 blowdown on the Pakwash Forest. Planting after salvage operations (1991-1994) was designed to minimize the long-term negative effect of the blowdown on the future conifer wood supply.

Photo 1: A mixture of pure conifer and mixedwood forests have established in the project area.

The implementation of this project contributed to a number of lessons learned including: how to manage the challenges associated with salvage harvests; recognition of the need to establish fire breaks in blowdowns and implications for post-disturbance treatments; the need for a collective effort of forest companies and several levels of government in order to design and execute projects of this large size in a timely fashion; and a number of silvicultural challenges that are created when the salvage operations span 4 years.

2. **Project 52-2-R1 -** ***Renewal of budworm-damaged stands, Hearst Forest Management Inc., Hearst Forest ($1.1 million)***

This project renews budworm-depleted forests to Free-to-Grow (FTG) standards. Three sites were proposed for a prescribed burn, after chemical site preparation to create suitable fuel loads, followed by the planting of large transplant stock and tending. The final project footprint was 1,420ha and 2.7 Million seedlings planted.

Photo 2: Field visit revealed the success of the post-burn renewal efforts.

The project treatment was successful in reducing the presence of balsam fir (Bf) on the project area. Reducing the presence of Bf on the forest landscape may reduce the need for pest protection in the future. The treatment reclaimed slash piles, returning that land to area to productive forest.

3. **Project 156-2-R3; 157-2-**R3 - *Budworm-damaged prescribed burn, Ministry of Natural Resources, Lake Nipigon Forest ($524,000)*

This project proposed a large-scale prescribed burn to treat budworm-depleted stands and to reduce balsam fir regeneration. Operational concerns from MNR Fire Branch lead to a revised plan to carry out heavy site preparation and/or several small burns, planting and/or seeding, followed by aerial tending. The planned mechanical SIP project and the prescribed burn project were combined for operational efficiencies.

The varied project treatments in the area resulted in very different forest types. It was evident that those areas that received tending treatments achieved greater success in establishing conifer renewal. Those sites that did not receive tending treatment regenerated to mixed wood and/or hardwood dominated stand conditions that did not meet the objectives of the project. In areas where heavy mechanical site preparation was used without follow-up planting and/or tending there is minimal establishment of conifer. This site visit points to a need for follow-up monitoring and tending (as needed) of Forestry Futures projects.

Photo 3: The site inspection revealed that the regenerating spruce-pine stands contained a 20-30% balsam fir component.

4. **Project 315-2-R9 -** *Wildfire Remediation, Timiskaming Forest Alliance, Timiskaming Forest ($2.0 million)*

A 1997 a wild fire burned 4,147 ha of forest. This project funded the regeneration of the area through mechanical and chemical site preparation, planting and tending. This project had a footprint of 2,558 ha.

Photo 4: A panoramic view of the project shows a well-established conifer plantation.

5. **Project 490-2-R17** - *Wind damage restoration, Mazinaw-Lanark Forest Management Company, Mazinaw-Lanark Forest ($75,000)*

This project regenerated a salvage operation from wind-burst damage in 2002. The focus of the project was site preparation and tree planting with a minor component of release. The pockets that that were less successful occurred on shallow soils. This supports the need for detailed site descriptions in applications to prioritize FFT funding on deeper-soiled sites and ensure the most productive sites are targeted with FFT funds. The project funded the regeneration of 82 ha.

Photo 5 and 6: Photos of pockets of pine regeneration.

Spacing Treatment Projects

6. **Project 301-1-R8; 770-1-R30** - *White pine, red pine and jack pine thinning and intensive stand management of white spruce and red pine plantations, Ministry of Natural Resources, Temagami Crown Management Unit ($800,000)*

This 1999 project funded the pre-commercial thinning and tending of pine plantations established in 1983 to increase sawlog potential. A follow up 2010 project, funded the pre-commercial thinning of the pine plantations to improve the yield and potential as poles. Combined these projects supported 916 ha of tending and 268 ha of thinning.

Photo 7: Site visit confirmed successful spacing and row thinning results.

The stands are projected to be available for harvest as early as 2028 (45 years old) as a result of site conditions and early thinning (16-18 years old) in phase one of the project. It is too early to gauge the response from the second phase of the project.

7. **Project 467-1-R17** - *Late Spacing, Bowater, English River Forest $1.7 million)*

Funding was provided to pre-commercially thin 4,160 ha of older (15-25 year old) jack pine plantation and seeded areas, utilizing both a manual with brush saws only treatment and/or a mechanical brush cutter and manual brush saw combination. The plan was to reduce a projected short term "age class gap" created by large forest fires of 1976 and 1980.

Photos 8 and 9: The results of this project appeared quite variable across the different site types. Establishing a control plot in each site type for this type of treatment would be beneficial for gauging the response to the thinning treatment.

Stand Conversion Projects

8. **Project 292-1-R8** - *White Pine Stand Conversion, Bancroft-Minden Forest Management Company, Bancroft-Minden Forest ($53,000)*

This project was a multi-stage intensive stand conversion from mixed-wood forest condition to pure white pine. The project included the purchase of nursery stock, clear-cutting the stand rather than applying a shelterwood prescription, site preparation, tree planting, monitoring, auditing, survival and free to grow assessments, covering 146 ha.

Photo 10: Site visit confirmed successful white and red pine regeneration.

The white pine has regenerated well and appears to be healthy. More traditional and cost-effective treatments are producing successful white pine plantations albeit not pure white pine.

SUMMARY

The site visits provided an opportunity for both the FFC and the SFL and/or MNR forest managers to return to past projects to view the response of the treatments 15-18 years post treatment. These site visits provide a valuable step in assessing a project from planning through to treatment response. It is important to note that the FFT Site Visit Project was well received by both SFL and MNR project proponents. Based on this pilot year, the FFC has decided to create a 3-year site visit schedule as part of their due-diligence in administering the FFT Silviculture Component.