Tongass Young Growth Management

Lessons Learned and Questions to Consider

A subgroup of participants during the Young Growth Symposium stand in front of 4 MMBF of young growth timber harvested on Heceta Island from two adjacent Forest Service and State of Alaska timber sales. *Photo Credit: Bob Christensen*

April 18-20, 2016

Tongass National Forest Field Visits to Prince of Wales, Heceta, and Kosciusko Islands

The Tongass Young Growth Field Trips that took place April 18-20, 2016 on Prince of Wales, Heceta, and Kosciusko Islands brought together a key group of stakeholders for field trips and discussion. (See Attachment A for a map of field trip locations and Attachment B for a participant list.) The event was co-hosted by the Tongass Transition Collaborative and the Tongass Collaborative Stewardship Group. Goals of the trip were to identify and create a common understanding of:

- Where we have been, where we are, and where we are going in young growth management;
- The technical reality of management on-the-ground; and
- Creative opportunities for the future of young growth management, restoration projects, and sales.

From conversations with a diverse group of stakeholders, the following lessons were captured.

What is co-intent?

A mandate to maintain the primary intent and objectives of each Land Use Designation and Standard & Guideline while developing and applying forest management activities that will accelerate the transition to young growth management in the Tongass National Forest.

CO-INTENT: Are we doing that already?

In many ways, managers already utilize the values of co-intent. However, 'co-intent' as proposed by the Tongass Advisory Committee provides a specific regulatory change that allows for young growth timber to be removed from some non-development Land Use Designations (LUDs) (e.g., Beach Buffer, Old Growth Reserves, and Riparian Management Areas) – **volume produced from these treatments can be counted toward the Projected Timber Sale Quantity (PTSQ)**. It is a tool that can be used where appropriate to help **advance wildlife habitat conditions and other objectives of the landscape, while also resulting in commercial young growth timber sales**. In this respect, timber becomes a *co-product*, rather than a *by-product*.

In some cases, the amount of timber applied toward the PTSQ may not be significant; however, it may change perspectives that **timber and wildlife values can coexist**. Habitat treatments that improve ecological conditions will benefit wildlife and game populations while also improving the ecological functioning of the larger landscape, and will increase the understanding of effective habitat restoration treatments and allow operators to become more effective at habitat restoration activities. Engaging stakeholders will be key to identifying co-benefits (as opposed to trade-offs), **finding opportunities for win-win management solutions**. While many of the approaches are suggested as a single-entry treatment, reviews will be conducted throughout the transition to determine if the approach is resulting in the desired objectives.

What COMMERCIAL PRODUCTS and MARKETS are we managing for?

International: There is a **steady demand for small diameter timber** in Asian markets. This is the primary current market for Tongass young growth, and will continue to be an important market in the future. Advantages of this market include:

- ***Reliable cash flow:*** A reliable export market can help ensure that an industry is in place in Southeast Alaska and, as an end result, a bridge to a growing local market.

- ***Cost-competitive and desirable products:*** Asian markets prefer spruce with a top diameter of 7-14" and a stump diameter of 24"– a size that many young growth stands have already reached.
- ***Cost-effective transport:*** Southeast Alaska's coastal environment allows for water-based shipping to access export markets; this contrasts with high ground-based transport costs to other regions.

National: A lower-48 market for Alaskan second growth timber currently does not exist and is unlikely in future. Alaskan timber cannot compete in lower-48 markets due to high operating and transportation costs and the economies of scale possible for mills in Washington and Oregon.

Local: Currently, the Southeast Alaskan market for local second growth (as well as operator capacity to harvest and process it) is very limited. Field trip participants expressed a common desire for development of a localized industry providing niche products for a Southeast Alaskan market. There are opportunities to develop this local market and industry, including leveraging cash flow provided by international markets to invest in local product development and integrating biomass utilization of low-grade second growth.

What is the future market for young growth and what does that mean for management?

Round-log export to international markets will continue to be an important component of the timber industry, in combination with local mills supplying the Southeast Alaska market. In order to incentivize industry investment and develop markets for Tongass young growth products, a consistent supply of timber is necessary. Considering the current industry model of exporting smaller (<24") diameter logs to Asia and demand for clear lumber, it is important to recognize that **maximizing diameter growth is not necessarily the best management practice** – indeed, **because of current regulations, we are growing ourselves out of the market**. Restrictions associated with Culmination of Mean Annual Increment (CMAI), in combination with a pre-commercial thinning regime historically meant to maximize fiber production for pulp mills, have led to a situation in which **some young growth timber is already too big for both market preference and logging machinery**. Relaxations introduced in the Southeast Alaska Native Land Entitlement Finalization and Jobs Act allow up to 50,000 acres of the timber base to be cut prior to CMAI, but **policies related to CMAI may need a thorough review and rewrite to allow land managers to effectively respond to changing markets**.

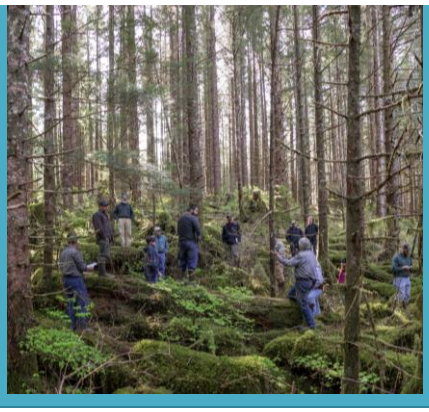
Management in Action: Kosciusko

To create heterogeneity on a single stand, managers on Kosciusko used the following prescription:

◦ Even-age management (≤ 100 acres);

◦ 2-age management (≤ 20 acres), with the remaining harvested in 30 years; and

◦ Uneven-aged management for the remainder of the stand



Pictured here is an example of highly productive young growth stand on Kosciusko Island.
(Photo credit: Bob Christensen)

Can we create a HETEROGENEOUS landscape?

Encouraging heterogeneity across the landscape is important not only for wildlife considerations, but also to encourage stands to reach harvest-age at different times and to grow a variety of merchantable young growth products. A "wall of wood" is scheduled to hit the Tongass, where a large amount of young growth reaches harvest age at the same time. To avoid this boom-bust cycle in the future, different approaches to management are needed. Management at the stand level can take into consideration a holistic view of the stand, allowing for heterogeneity across the landscape. We can improve our ability to **recognize and leverage natural forest heterogeneity in a way that optimizes wildlife benefit, creates a diversity of timber values, and decreases the cost of forest management.** (See *Management in Action: Kosciusko* for an example of mixed management at the stand level.) Even-aged management can still result in heterogeneity across the landscape if timing and location are taken into consideration. Timing of management of adjacent lands should also be considered in creating a mosaic across the landscape, and is important in considering cumulative effects.

At what SCALE are we managing?

Several scales are important when considering any management project: **site, watershed, and landscape contexts.** Site context allows us to answer questions such as: *What specific values does this site provide? What specific treatments are useful here?* Watershed and landscape contexts allow us to connect site-specific work to local workforce development, economic feasibility, mobilization costs, larger management objectives and priorities, landform and geography, and adjacent land ownerships. If we lose sight of any one scale, we risk losing track of important variables – **successful implementation of young growth treatments will take into account all three scales**.

Management in Action: Deer Creek Canopy Gaps

Deer Creek offers an example of constructed canopy gaps that were added in addition to PCT. This approach has been replicated across the island, in some cases with a focus on tree regeneration and species selection for timber (for example, Hemlock reproduction on Kosciusko). From an industry standpoint, this was recognized as a viable option for achieving a preferred species mix and habitat objectives.

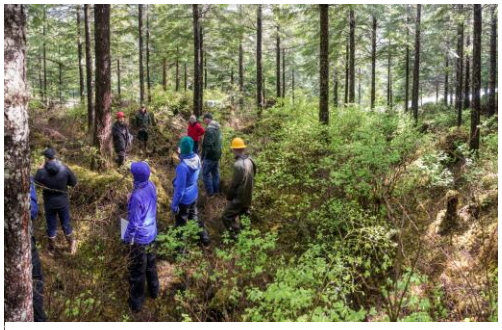
What have we learned regarding TREATMENT options?

When determining treatment options, location and timing are equally important considerations to optimize the specific type of treatment. Below are additional treatment considerations:

Consider the objective of the area: In timber LUDs, management will need to focus on maximizing value through more intensive management for timber production; non-development LUDs, on the other hand, may be approached with both LUD goals and co-intent in mind through prescriptions that result in ecological benefits *and* merchantable timber. However, it may be argued that a similar approach to experimentation, resulting in ecological benefits, could also be applied to timber LUDs. As managers, operators, and other stakeholders work together on the ground, this will be an important consideration.

Not all stands are created equal: Just as different LUDs have different objectives to consider, different stands within a single LUD may react differently to the treatments – for example, thinning or gaps will result in tree regeneration in some places versus

understory growth for wildlife in others. It is important to consider how the particular stand will respond to treatment, and how to best achieve the objective in mind. For example, Staney Creek was managed for terrestrial wildlife, yet tree regeneration is the more likely response. It is important to consider the value that each stand offers, and manage in a way that enhances that value. These considerations may require the flexibility of determining alternate locations for management – for example, some stands currently managed for timber may offer better habitat as an old growth reserve, and vice versa).



A pruning experiment at Salamander Lakes shows benefits of understory development and stand regeneration.
(Photo credit: Bob Christensen)

Understand that there is a window of productivity before stem exclusion: Gaps, pruning, and pre-commercial thinning are only effective at an early age – if too much time passes before treatment, it may be best to let it go, and prioritize a different area. The Big Thorne commercial thinning area on Kasaan Road illustrates what occurs when treatment does not happen early enough. In that location, and similar other areas, managers must ask themselves whether it is worth the investment to treat, or if another area should be prioritized that could have more impact due to a younger age class.

Be willing to experiment: There is a significant amount of research regarding wildlife treatments and ground cover, but less information regarding young growth timber production in Southeast Alaska. Experimentation is also needed in the Timber LUDs. Lessons can also be drawn from previous studies from British Columbia, the United Kingdom, and Denmark, where they have experimented with Sitka Spruce. The Kosciusko landscape, "a microcosm of the Tongass," offers opportunities for experimentation in the near-term in a variety of habitat types.

Soil disturbance is not always a bad thing: At a large scale, soil disturbance can be disruptive for salmon streams, timber production, and watershed intactness. However, at a small scale, soil disturbance can increase stand-level heterogeneity and give opportunities for recruitment of a more diverse species assortment and understory plants for wildlife. Project planners should work with all specialists to figure out how and where various tools can be used in prescriptions and treatments. Soil scientists and botanists may provide insights on how allowing strategic soil disturbance can create more long-term vegetative diversity in stands.

What treatment options exist and where are they most effective?

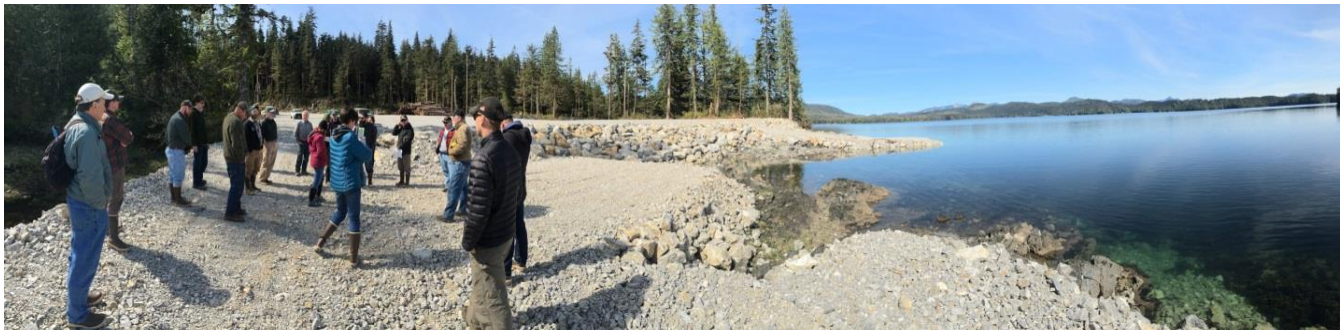
Treatment	Effectiveness	Considerations
Pre-Commercial Thinning (PCT)	Understory growth for wildlife: average 10-15 years' forage.	Effective for wildlife values only when stand is < 25 years old
		Current PCT produces knotty, large diameter, large ring trees – in some cases, larger than what is feasible to cut (e.g. 23-24" stump max diameter). These trees often also have a strong taper (significantly wider base than top).
		Consider site characteristics to determine how long the treatment may last and whether additional treatment will be needed – depending on site characteristics, under-story may persist for longer

Treatment	Effectiveness	Considerations
PCT (Cont.)	Timber benefit by removing un-merchantable material	Apply timber objectives to PCT projects and consider what product is being managed for when deciding whether to PCT and PCT spacing prescription. Smaller spacing may allow for straighter, smaller diameter, taller trees – a better fit for current markets
Commercial Thinning (CT)	When paired with an adjacent timber sale, CT can be a cost-effective treatment option.	To increase cost-effectiveness, consider: coordination with an adjacent sale, market availability, and willingness to experiment. Heceta is an example of a project that effectively applied these considerations.
Pruning	When combined with PCT, a potentially cost-effective treatment that leads to longer-term results – for wildlife habitat and merchantable timber	Only effective in stands where understory already exists or if done when the stand is the right age (<25 years)
Gaps	Small (70') gaps can be done as part of PCT treatments to provide pockets of understory for wildlife	Must be implemented when stand is < 25 years old.
	Can increase productivity for specific species by opening areas for regeneration and growth	Consider preferred species mix and specific placement of gaps to encourage species growth
	Can serve as a perfect use of co-intent – combining silvicultural treatments with habitat improvement	Lower logging cost than even-spaced thinning. Consider limitations (or opportunities) of contracting (e.g., timber is appraised first; contract allows sale of timber product)
	Can reflect natural disturbance patterns and variability	Be willing to experiment and learn by creating a "grid of gaps" - for example by creating "wavy tracks" that lead to an adjacent stand. Activities such as these will retain wind-firmness of the stand

How can we make our projects more COST-EFFECTIVE?

Managers are realizing it is more difficult to find ideal places to apply co-intent projects due to implementation challenges (e.g., access, mobilization, and operating costs). However, there are multiple opportunities for increasing the cost-effectiveness of sales, whether traditional timber sales in development LUDs or co-intent projects in non-development LUDs, including the following:

Economies of Scale through Projects on Adjacent Lands: Timing and location of treatments and sales are not limited to USFS lands – **coordinated timing with adjacent lands can allow for treatments across boundaries that are more cost-effective**. Planning treatment projects that coincide with timber on adjacent lands (whether USFS or other ownerships) can offer significant cost savings through economies of scale and infrastructure sharing. Projects that achieve a scale that allows for a full season of work are most cost-effective for operators. Kosciusko – with USFS, State, Mental Health Trust, and Sealaska landholdings – is a perfect example of the importance of coordinating with adjacent landowners.



Edna Bay Log Transfer Facility provides an illustrative example of coordinating between federal, state, and local partners to be more cost-effective and provide community benefits. Multiple opportunities for dialogue and input ensured a facility that is supported, rather than opposed, by the local community. *(Photo credit: Bob Christensen)*

Early, On-site Coordination between Operators and USFS Specialists: By working together upfront and early in the planning process, efficiencies in time and resources can be achieved. The Heceta commercial thinning project and a stewardship contract on Kosciusko offer examples of missed opportunities – because of a lack of coordination, trees needed to be remarked or roads were improved after projects were completed. In addition to increasing efficiencies, **on-site discussions often reveal opportunities for creative problem solving**, resulting in co-intent objectives. Groups such as the Tongass Transition Collaborative and Tongass Collaborative Stewardship Group can serve as third-party conveners for pre-implementation stakeholder field trips and meetings.

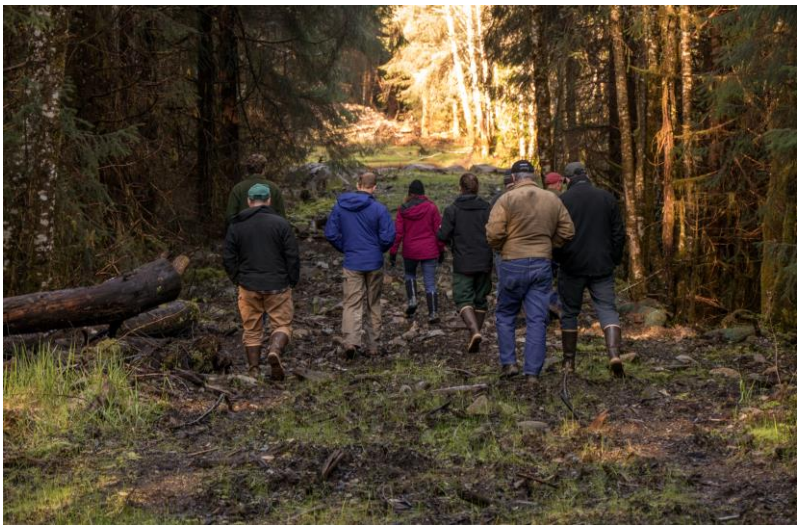
Coordination among Content Specialists within the Agency: At the leadership level, coordination will be essential to ensure a continual young growth supply across the Forest. Timber volume is limited; therefore it is necessary that projects account for timing, location, mobilization costs, working circles, and adjacent projects with other land owners. Leadership will need to coordinate sale offerings, the use of CMAI exemptions, and **create the working relationship between Forest staff specialists in various programs to be innovative and creative to find synergies and win-win scenarios that build projects and momentum across the Forest**. For example, coordination between USFS departments on Heceta Island could have resulted in more cost-effective management by aligning the timing of road maintenance and timber sales.

Contracting Flexibility: Contracting can be used as a tool that provides flexibility and opportunities for efficiency; however, past contracting restrictions have at times proven to be problematic for the project and operator. For example, in Winter Harbor, export restrictions and rigid project design resulted in a volume of timber that a single operator could not process, and therefore resulted in significant financial losses. Similarly, at Staney, gaps were created with a processor, but the majority of the material was left on the ground, including merchantable timber, and unable to be utilized due to contract restrictions. These instances are examples of missed co-intent opportunities due to contractual limitations. In the future, some options for flexibility include:

- Combine treatment areas with adjacent timber sale areas into a single contract;
- Allow purchaser options to determine the best use for timber after harvest, as opposed to size or appraisal requirements;
- Allow options for export or sale between companies for timber that cannot be processed by a single operator; and
- Work closely with operators to understand intents, needs, and intended outcomes, and translate into contracting and sale packaging.

What happens NEXT?

These field trips were the first time a diverse group of operators, Forest staff, and community members were brought together to discuss Tongass Advisory Committee recommendations and the future of young growth management in the field. Local community members voiced clear interest in engaging in this manner in the future. As a next step, **field trip participants prioritized the need to hold a similar event for key Forest, regional, and national leadership, as well as adjacent landowners** such as Sealaska. Topics to cover in more detail in the future include: avenues for local leadership in this work (specifically local tribes and youth), scheduling sales across the Forest in a strategic way to ensure long-term supply and reduction of mobilization costs, better utilization of contracting tools and policies, including flexibility in timing; appraisal process and "deficit sales"; long term monitoring; pre-sale coordination and post-sale review, and shared learning to improve future offerings.



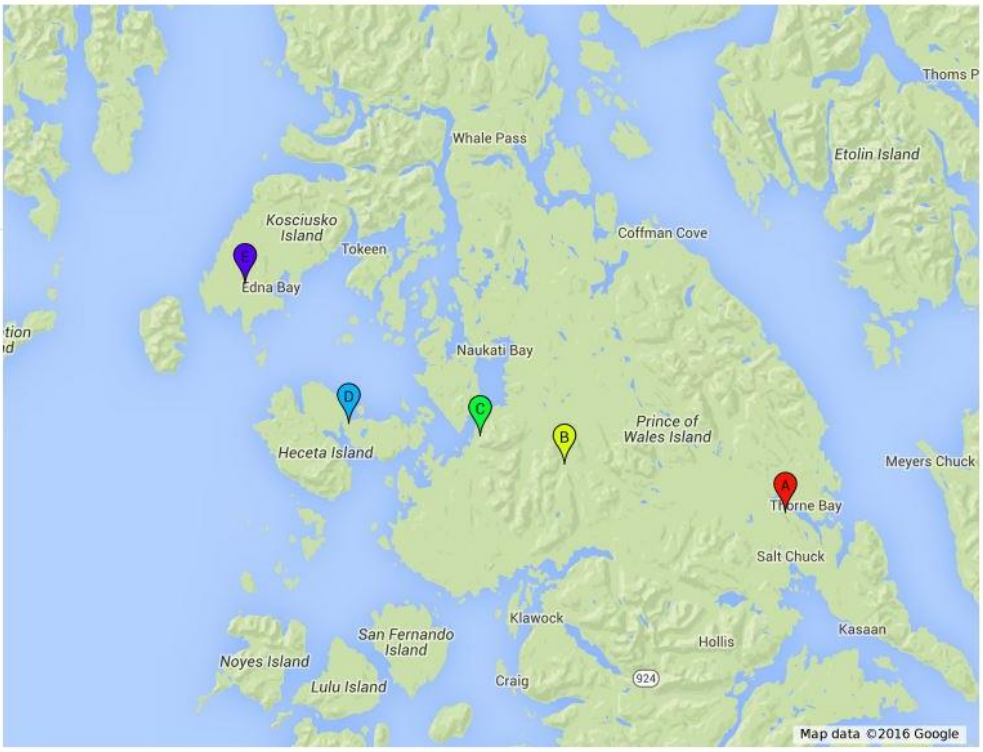
Young Growth Symposium participants visit sites in the Staney Watershed where young growth habitat treatments were conducted in Riparian Management Areas. (*Photo credit: Bob Christensen)*

Attachment A: Young Growth Field Trip Locations

Field Trip Stops

- Thorne Bay
- Staney
- Winter Harbor
- Heceta
- Kosciusko

April 2016 YG field trip to look at "co-intent" and YG timber sale opportunities relevant to the "Tongass Transition".



Attachment B: Participant List

Name	Title	Organization
Dave Albert	Conservation Science Director	The Nature Conservancy
Matt Anderson	POW District Ranger	USFS
Lawrence Armour	Tribal Administrator	Klawock Cooperative Association
Butch Brigham	Forestry Technician	USFS
Delilah Brigham	Planning Program Specialist	USFS
Sarah Campen	Coordinator	Tongass Collaborative Stewardship Group
Peter Chaille	Executive Director	Tatoosh School
Bob Christensen	Regional Catalyst for Community Forestry and Community Fisheries	Sustainable Southeast Partnership
Norman Cohen	Alaska Program Director	The Nature Conservancy
Luke Decker	Wildlife Biologist	USFS
Tyler Gunn	POW Deputy Ranger	USFS
Michael Kampnich	Prince of Wales Field Rep	The Nature Conservancy
Chris Maisch	State Forester and Director	State of Alaska; DNR; Division of Forestry
Lucy Maldonado	Environmental Coordinator	USFS
Quinn Aboudara	Klawock Community Catalyst	Sustainable Southeast Partnership; Klawock Cooperative Association
Eric Nichols	Owner	Alcan Forest Products
Diana Portner	Mediator and Program Associate	Meridian Institute
Conor Reynolds	Conservation Forester	The Nature Conservancy
Pat Richter		Edna Bay Community
Janice Sangunitto	Silviculture Staff Officer	USFS
Patrick Shannon	Pacific Northwest Director	National Forest Foundation
Mike Sheets	Forester; Silviculture	USFS
Ray Slayton	Wildlife Technician	USFS
Erin Steinkruger	Program Director	Tatoosh School
Andrew Thoms	Director	Sitka Conservation Society