

FINAL MINUTES
Board of Forestry Meeting
August 12-13, 2013
Kenai River Center, 514 Funny River Road, Soldotna

Monday, August 12, 2013

Call to Order and Roll Call. Chairman Chris Maisch called the meeting to order at 8:05 a.m. The Anchorage, Juneau, and Fairbanks teleconference sites were connected. Jeff Foley, Erin McLarnon, Matt Cronin, Mark Vinsel, Eric Nichols, Wayne Nicolls, and Chris Stark were present. Brian Kleinhenz was present as an alternate for Ron Wolfe. A full Board was present and a quorum was established.

Public Meeting Notice. The meeting was noticed by issuing public service announcements and press releases, mailing announcements to interested parties, and posting a notice on the state and Department of Natural Resources (DNR) websites. (*See handout*)

Approval of Minutes. The Board reviewed and unanimously approved the March 26-27, 2013 minutes with minor technical corrections. (*See handout*)

Announcements.

- US Forest Service (USFS) Chief Tidwell is coming to do an operational review of USFS activities in Alaska; Juneau Board members are invited to an event with the chief on August 28 in Juneau. Tidwell recently toured Alaska with Sen. Murkowski as well, particularly regarding impacts of the Roadless Rule.
- Interior weather has stayed very dry, leading to an active fire season. Some Division of Forestry (DOF) personnel are unable to attend the meeting due to fire responsibilities.
- Cassie Pinkel is moving from the Dept. of Commerce, Community, and Economic Development to Superior Pellets.

Approval of agenda. (*See handout*) The agenda was unanimously approved with changes reflecting DOF staff who could not attend due to active fires in the Interior.

Overview of DOF Kenai-Kodiak Area (KKAO). Hans Rinke, DOF Area Forester, reviewed the history of the spruce bark beetle epidemic in the KKAO, along with fire history, harvesting related to the epidemic, and land ownership. About 80,000 harvested acres were exempted from reforestation; regeneration has established in some areas, but not in others. KKAO offers 250-300 acres of state timber sales/year. The demand is primarily for fuelwood. There are nearly 10,000 wood stoves on the Kenai. About 250 thousand board feet (MBF) may be milled for lumber from state sales. All of the current sales are salvage sales. Standing dry wood is getting harder to find and DOF will have to educate the public on proper use of green wood.

Mike Fastabend noted that there was an active market for wood chips until January, 2004; since then the primary market has been fuel. Prior to that time, most of the harvesting associated with the bark beetle was chipped.

Rinke: most of the regeneration is from local seed sources. Maisch: there wasn't a tree improvement program on the Kenai, just an effort to collect local seed. Nichols: Kenai timber has a terrible reputation for binding when sawn, due to twisting grain. Fastabend: there were provenance trials planted for various species.

Most of the KKAO forest practices activity is on Kodiak and Afognak islands on private land – landowners are harvesting and exporting about 80 million board feet (MMBF)/year. Nichols: some of the export wood is used for pianos; several were brought back to Alaska and distributed to small communities.

Kenai timber inventory. Doug Hanson reported on the 2011-13 KKAO timber inventory. This was the first stand-based inventory on state land classified for forestry and associated uses on the Kenai. It was funded through the Alaska Energy Authority (AEA) for information on biomass resource information. The vegetation classification was produced during the beetle outbreak as part of Kenai Peninsula Borough mapping efforts. The new inventory covers 83,000 acres, half of which was timberland, mostly in spruce stands. Dead timber accounts for 40% of the timber volume. Average total volume is seven cords/acre, including the dead volume. Prior to the epidemic, total volumes were an estimated 20 cords/acre in white spruce stands. Over 60% of the timber classes were in dead spruce or other conifer trees. Most standing dead stands are suitable only for fuelwood. Dead stands were typically about 160-170 years old.

Growth rates on the live residual trees were fast, but net growth at the stand level was low due to mortality, and the stocking of live trees is low. The highest volume, oldest trees are the hemlock stands on the eastern peninsula (9500 bf/acre), but they account for only 2% of the area. Most of the state land was not harvested during the outbreak. Most of the harvesting was on private and trust land. Plantations on the harvested land are doing well – the seedlings are taking off. By comparison, it will be awhile before the stocking levels on the unharvested stands come back. There is little wildlife because of the number of trees on the ground in the unharvested stands. The inventory report has been published and is available on-line.

Nichols: In hindsight, would the State have harvested more aggressively? Freeman: the State offered about 10,000 acres, but much wasn't harvested. Nichols: the State sales were too late for the temporary chip market. There was little stumpage return to any of the landowners because values were low and roads had to be built.

Hanson: the inventory found an average of about 300 trees/acre of regeneration – it's spotty, but it's growing back; stands will be more uneven-aged than in the planted stands. Hares are the main herbivore problem for regeneration, but the main difficulty in getting regeneration is the tall grass.

Maisch: The fire suppression agencies developed a separate fuel type for fire modeling on the Kenai for the grasslands that came in after the infestation. In the early season the dead grass is very hazardous. Embers from the standing dead trees cause spot fires.

Hanson: There is a sufficient wood source to supply potential wood fuel projects at Ionia, Homer, and Seward. Ionia uses about 100 cords/year, and there are 40,000 cords of dead wood

within 15 miles. About 70,000 cords surround Homer. The amount of dead wood in Seward was lower. However, the operability and usability of these stands is declining. Maisch: Transportation and vehicle fuel costs are prohibitive for moving dead wood from the Kenai to the Interior where demand is high.

Stark – the regenerating stands are good for moose in the summer, but not in the winter.

Kenai road condition survey. John Winters, KKAO resource forester, reported that the agencies have surveyed 201 miles of road on five ownerships on the Kenai; about 14 miles are left to survey. The survey assesses roads and stream crossing structures for compliance with Forest Resources and Practices Act (FRPA) requirements. University, Kenai Borough, Cook Inlet Region Inc., Ninilchik Native Association Inc., and State roads were included. Each survey included a DOF forester, ADF&G habitat biologist, and landowner representative. The surveys documented four new anadromous streams. Several culverts rated low. Kenai roads generally pose a lower risk of impacting streams than roads in Southeast. The survey identified some rusted pipes. Bridges were in good shape. Surveyors also did random visual checks of regeneration for stocking levels. Some lands have reforestation exemptions due to losses from bark beetles. Tyonek roads were also surveyed – many of these are active roads for non-forest uses. There are some culvert issues in that area. DNR and the Dept. of Fish and Game (ADF&G) want to do upstream fish habitat surveys above culverts that rated low. In the future, DOF would like to survey the Seldovia, Kodiak, and Afognak roads.

Rep. Seaton asked about regeneration compliance on non-exempt lands. Winters replied that he doesn't have the data yet. Freeman: About 107,000 acres received reforestation exemptions, and work is in progress on about 3,000 non-exempt acres to achieve compliance.

Chugach National Forest (CNF) overview, management, and planning. Clarence Clark (DOF) presented an overview of CNF planning. The plan revision is occurring under the new 2012 planning rules, and is currently in the assessment phase prior to beginning the Environmental Impact Statement process. The draft assessment is in internal review. The State has not officially requested to be a Cooperative Agency. About 1.2 million acres are in a wilderness study area, and are currently managed as a wilderness. About 99% of the CNF is roadless. Initial public meetings were held in communities throughout the Forest with good attendance. There is intense recreational pressure on the Forest, largely for fishing and non-motorized trail use. Vinsel said he hopes that CNF understands the importance of the Forest for fish production for commercial use – it's the number one product from the Forest. Rob DeVelice (CNF) said that the assessment emphasizes the value of salmon. There is also a climate vulnerability assessment for the Kenai Peninsula and Anchorage area that is underway with the CNF, University of Alaska, and other agencies, and it will feed into the assessment.

Cronin: Does the planning process consider administrative costs to the USFS, including for programs other than timber sales? Maisch: there is no allowable cut for timber for the CNF. Robert Stovall (CNF): Other than fees for some activities, there is no revenue from the other resources. The CNF budget averages about \$15 million and is declining. Joe Ford (CNF): Habitat improvement and fuels management under the vegetation management program is funded at about \$300,000. Only 20% of the Forest is in forest vegetation, and only 1% is roaded.

The Forest comprises 5.4 million acres. Cronin: A lot of fish and recreation users receive CNF support without charge – the same benefits should be afforded to timber users. Kleinhenz: The acreage figures still leave a million acres that don't provide any economic activity. Ford: There is active mining in the Seward district; but he doesn't know the income associated with that. Ford and Stovall: The only timber interest on the Forest is in fuelwood, and there is little interest currently in green wood.

Cook Inletkeeper (CIK) water temperature studies. Sue Mauger, Cook Inletkeeper Science Director, reported on the Cook Inletkeeper stream temperature monitoring program. Five-year study results cover 2008-12. She noted that 2013 had much higher air temperatures than the study period. The project studied 48 non-glacial salmon streams in the Cook Inlet watershed. There is considerable variability—e.g., average July temperature over five years ranged from 8 to 18 degrees Celsius; most are in the 10-14C degree range. 2009 was the warmest of the study years.

State water quality standards have three thresholds:

13C – egg and fry and rearing areas stressed

15C – spawning and migrating adults stressed

20C – shouldn't exceed in salmon streams

All 48 streams were above 13C at some time in 2009; several exceeded 20C at some point, and the Deshka and Jim Creek watersheds were above 20C for a week.

Air and water temperature are correlated, but air temperature doesn't drive all the water temperature change. Based on air temperature records, water temperatures have increased over time. SNAP (Scenarios Network for Alaska & Arctic Planning) models from the University predict increased temperatures, particularly in the Mat-Su Valley.

Small, steep, higher elevation waters tend to be colder; large, shallow slope, low elevation (closer to coast) streams are warmer. Based on models, streams sensitive to air temperature increases are also likely to increase in water temperature. Setbacks and buffers are important tools for providing resilience on sensitive streams. CIK is also looking at groundwater connections and wants to make sure the cold groundwater inputs are maintained. Researchers are mapping groundwater input sites with infrared imagery. CIK is developing a manuscript for publication.

Cronin: Is an adaptive response by salmon likely as water temperatures increase? There are salmon in California in warmer waters. Mauger said she doesn't know whether Alaska salmon have more or less tolerance than salmon further south, or whether the temperature thresholds are correct for Alaska fish – they are based on data from Oregon and Washington. There isn't evidence at this point that the full genetic range of Alaska salmon will be maintained at higher temperatures. There is evidence that salmon are moving northward. Stark added that the data for the temperature thresholds are solid throughout the range of salmon; there is not adaptation in the California populations – they are losing their fish.

Nicolls: Are there changes in fish species associated with the changes in temperature? Mauger said she doesn't have data for Cook Inlet, but there are examples elsewhere of incoming species outcompeting Native species.

Vinsel: Do increased temperatures increase the risk of problems when over-escapement occurs? Higher water temperatures down south are causing problems – for example, the Klamath River is currently having issues with high temperatures that may cause major fish kills. Mauger: Temperature correlates with other water quality issues such as lower dissolved oxygen.

Mauger noted that prior CIK research didn't show a stream temperature effect from the spruce bark beetle epidemic and associated harvesting. Harvesting largely occurred away from streams. However, we don't know how harvesting is affecting water yield – with higher flows, water temperature increases are slower.

Kenai fisheries research overview. Coowe Walker, ADF&G-Kachemak Bay Research Reserve (KBRR). Walker and the KBRR have studied headwater systems, overwintering habitat, and outmigration of salmonids. The headwater stream study area includes 43% wetlands, and 80% is in unprotected status. Headwater stream watersheds account for 50% of the total watershed area. Juvenile coho and/or Dolly Varden are in most of the headwater streams; distribution of species and life stages varies with flow rates and stream gradient. The study developed a model for predicting fish habitat and other stream characteristics. Flow-weighted slope is a good fish habitat predictor. Groundwater conveys temperature and nutrients into the streams, including nitrogen from upslope alder. Alder in the watershed is an important driver of watershed productivity, and researchers have seen a lot of alder die-off.

Cronin: Does predation from larger fish force the juveniles upstream? Walker said that distribution reflects many factors, including body type, fish competition, and temperature. Salmonids are the dominant fish in these streams. Stark agreed that fish predation is less of an impact in these systems.

BARK BEETLES AND FORESTRY PANEL

US Fish and Wildlife Service, Kenai National Wildlife Refuge (KNWR). Doug Newbould (USFWS): The KNWR is about 2 million acres, mostly lowlands, and about 1.7 million acres are designated wilderness. The refuge doesn't have the authority to sell timber; its mission is all about the wildlife. KNWR has dealt with the spruce beetle epidemic mostly through hazard fuel mitigation along the boundary with Community Wildfire Protection Plans (CWPPs). If communities can be FireWise, more natural fire can be allowed in the backcountry. The Refuge uses mechanical treatments and allows firewood gathering where possible; in remote areas, natural wildfire is the primary management tool. Lightning is rare, but does occur. For example, in 2004 there were 12 lightning-caused fires on the Refuge. Wildfire provides a mosaic that gives the ecosystem resilience for future fires and insect infestations. Much of the KNWR forested area north of the Kenai River burned in two large fires in the 1940s which greatly reduced the recent spruce beetle infestation in that area. Those fires produced good moose habitat. Since 1990, most of the fires have been south of the Kenai River. Moderate fires will perpetuate the grass coverage. It is difficult to use prescribed fire – when conditions are right to

get a fire intense enough to burn into the duff for hardwood regeneration, fire danger is high and trained fire staff members are busy with other fires. Moose populations are down from historic highs, but populations are now increasing south of the Kenai. South of the Kenai, the forests haven't seen a lot of fire historically – it's a wetter environment. Now that there are grasslands, the Refuge expects more fire in that area.

Kenai Peninsula Borough (KPB), Mike Fastabend (KPB) reported that about 1.4 million acres were infested by SBB. South of Tustumena Lake there is little hardwood in the forest; farther north the stands are more mixed. The spruce stands experienced 90% mortality of the spruce. KPB was involved with the Spruce Bark Beetle Task Force, which developed consensus recommendations. The Task Force made over 50 recommendations for fire prevention/public safety, timber management and reforestation, fuel and fire behavior modeling, public education and assistance, science and research, and long-term planning, including CWPPs. The KPB conducted vegetation mapping to provide information for all the other efforts. The next step was formation of the ongoing Interagency All Hands/All Lands for collaborative planning among public and private land managers. KPB received a total of \$18 million from Sen. Stevens, the American Recovery and Investment Act (ARRA) funding, and the USFS for spruce beetle management activities and emergency response equipment.

KPB had about 4,000 acres of land in the wildland-urban interface, and harvested about 3,700 acres while the Homer chip facility was in operation. The Borough removed hazard trees, conducted regeneration activities on borough and private land, developed CWPPs for all communities other than Tyonek and Beluga, mapped vegetation and hazard areas, funded seasonal fire crews, supported FireWise and other educational activities, installed spruce and pine provenance trials on the Peninsula with seed from circumpolar boreal forests, and conducted *Calamagrostis* control studies.

The beetle infestation legacy includes loss of mature forests, lack of natural regeneration and conversion to grasslands, increased wildfire risks, needs to maintain CWPPs and municipal emergency preparation plans, and needs for treatments on identified Areas of Concern. Seedling survival rates were over 90% in replanted areas following site preparation.

Wade Wahrenbrock (KPB): The beetle infestation changed the fire risk on the Kenai Peninsula dramatically. Many stands now have most of the trees on the ground, but they are still flammable. The agencies have used the Borough's vegetation maps to customize wildfire prediction modeling for the Kenai. With the All Lands/All Hands group, the agencies studied techniques for homeowners to reduce fire hazards around their property using mechanical and chemical approaches. Agencies are recording changes in grass mass and species distribution. KPB is considering updating post-infestation vegetation mapping using Light Detection and Ranging (LIDAR) and other techniques.

KPB surveyed mid-size private ownerships for regeneration – about half had 50% or more of the seedlings required to meet FRPA regeneration standards. The borough is working with landowners with poorly regenerated sites to reduce grass cover. KPB started a free firewood salvage program on areas where hazard trees were felled around subdivisions -- 2000 permits

were issued and 7000 cords were salvaged. The borough spruce bark beetle program also reduced fire risk around the Homer water source.

Fastabend: Most public responses for fire risk reduction were positive, however, the activity focused on areas that communities themselves identified as concerns. In early years, there were diverse opinions on appropriate actions, but by 2004-5 the opposition evaporated for actions addressing public safety. Concern was lowered when people saw the results of good operations. Stark: Early on, the environmental community opposed many actions to counteract the beetle activity. There was little experience with the results of an infestation. Opinions changed as the forest died and forest fires occurred.

Fastabend: Entomologists now believe that there was no way that the infestation could have been stopped. Nicolls: Actions could have slowed it and allowed for better regeneration.

US Forest Service, Chugach National Forest. Robert Stovall reported that CNF had about 40,000 acres of mature spruce killed by spruce bark beetle from the 1950s to early 2000s. During the outbreak, the CNF put together some sales, but many didn't occur following input from the general public and environmental groups. Some sales weren't completed when operators defaulted. The USFS ramped up a salvage program to reduce fuel hazards, and worked with the All Lands/All Hands action plan, focusing on the wildland-urban interface. The CNF has completed projects in the Cooper Landing area, Moose Pass, and other sites near residential areas. They use mechanical and hand treatments to fell and buck beetle-killed trees, then burn slash piles.

Nichols: The rest of the West is following the same path – there was too little action too late, followed by expenditure of a lot of money afterwards. Stovall and Ford: Fuel treatments are getting more expensive due to the lack of operators, poorer access, more hand treatments, and vehicle fuel costs. The most accessible areas were treated first. Fastabend: Felling costs for KPB projects are about \$400/acre; adding decking raises it to \$600/acre. Now there is high enough demand for fuelwood that contractors will take it for no cost in accessible areas. Maisch noted that the Tok sale targets both biomass and fire hazard reduction.

Alaska Division of Forestry. Hans Rinke (DOF) noted that state was slower than Native entities in getting their sales out. Circle DE defaulted on one large sale; Hughes Pellets then picked it up, and they defaulted in 2009. Current timber sales are coming from this prior sale area. Reforestation and competition with grass are now major issues for fire management. The Peninsula has a particularly strong group of municipal, state, and federal partners. Agencies are ground-truthing the fuel model for the Kenai through the *Calamagrostis* study. There is an herbicide trial in the grass control study. Some Native landowners have tried using chemicals to slow grass growth, but chemicals have not been used widely on public land. Curran: All chemical applications have been by backpack or truck spraying; there has been no aerial spraying. Herbicides had limited success and were expensive. Rinke: Spring fires don't burn into the still-frozen soil and they just perpetuate the grass. It is not clear how long grass will continue to restrict tree regeneration on these sites in the absence of site preparation. DOF is prioritizing areas for scarification and replanting.

Karl Potts (Leisnoi, Corp.) reported that in Kodiak replanting was unsuccessful following the last major harvest about FY2000. Now the landowners are coming through grassy areas with Fecons, mowing, and spraying, then replanting several months after the root systems have died off. The early, non-statistical evaluation suggests that this combination will be successful. Snowshoe hare herbivory has also been a challenge for regeneration on Kodiak. More recent harvest units that were replanted immediately after cutting are showing significant growth. DOF has been working with Leisnoi to address their backlog of reforestation.

Rinke: Summertime logging may have resulted in better regeneration of birch in mixed stands. Winter harvesting didn't provide any scarification. DOF has required scalping for hand-planting contracts, and has done mechanical scarification in other areas.

Elizabeth Bluemink (DNR Commissioner's Office) presented a Denali Peak Performance Award nomination to Marty Freeman, Board Liaison.

The Board recessed at 12:45 p.m.

Tuesday, August 13, 2013

The Board reconvened 8:05 a.m. with all members present.

Field trip discussion. The Board visited roads, bridges, harvested units, and various reforestation efforts in the Falls Creek and Ninilchik River drainages on the afternoon of August 12. Vinsel noted that the area harvested prior to the beetle outbreak needed less effort for reforestation and had multiple tree ages on site. Nichols: This area is difficult for commercial forestry. Conditions may be better where there was bigger Lutz and Sitka spruce, but the beetle hit those areas, too. Maisch: DOF's emphasis on the Kenai is back on wood fuel and timber for local use. Stark: The environment looks stunningly good compared to a decade ago.

FRPA budgets and funding. Maisch: The DOF budget is status quo for FY14 and the Division FRPA workload is at a maintenance level. In Southeast, the workload is declining due to decreasing activity on private land. Activity may increase in interior Alaska, including remote areas like communities in the Yukon and Kuskokwim drainages. There are big training and education needs in these more remote areas. The Division will shift FRPA funding as needed to cover the emerging needs. In the Interior, reforestation may be a challenge, for example with winter harvesting on hardwood sites. Nichols: It would be very expensive to replant in remote areas. Maisch: Most sites would meet the reforestation standards with natural regeneration. Buffers will also be an issue because a lot of the harvesting is along rivers.

Ginny Litchfield (ADF&G Habitat Division): The ADF&G General Fund budget for Habitat Division is level with FY13. Habitat priorities are Fish Habitat and Special Area permitting, FRPA and anadromous catalog updates. The Division has no specific FRPA funding, but is committed to meeting obligations within the General Funds. The one-year FY13 increment in general funds was added as an ongoing increment in the FY14 budget.

On the Kenai, there are two full-time Habitat Biologists, a 10-month Habitat Biologist, and a technical/administration position. Staff can drive to most locations, and they spend a lot of time in the field on permitting. There are many habitat issues associated with flooding in the Seward Area, and with management of the Kachemak Bay Critical Habitat Area. The Division works closely with the researchers at the Kachemak Bay Research Reserve.

Kevin Hanley (DEC Water Quality Division): DEC funding for FRPA is level with FY13. Hanley's position is fully funded. Federal 319 funding was at a historic low last year (about \$300,000) and is focused on waterbody recovery efforts.

2013 LEGISLATION AND REGULATIONS

HB 79/SB 28 - Susitna State Forest/negotiated timber sales. Maisch reported that this bill is primarily about State Forest establishment. It was introduced in the 2013 session, but no hearings were held. The Mat-Su Borough did not pass a support resolution, and Valley legislators didn't want to proceed without it. DOF and Governor's Office are working with local officials to get support and then request hearings next year. Access issues beyond the State Forest have affected the discussions – the Borough wants access across the Little Susitna River. Houston had an issue over one parcel, but it is a School Trust section; that section will be dropped from the proposal. DOF hopes to now get a support resolution from Houston. Borough Assembly elections are October 1, so personnel may change. There have been some public comments pro and con additional land sales and access, but the State Forest is consistent with the recently revised state land use plan.

Mass wasting regulations. Marty Freeman (DOF): The mass wasting regulations have been signed by DNR and DEC, reviewed by the AGO agency attorney and regulations attorney, and are in final review at the Lt. Governor's Office. These regulations implement the recommendations developed through the Science and Technical Committee, Implementation Group, and Board review. DOF will reprint the fieldbook for the regulations and distribute it to the Board, operators, and agencies. DOF will also compile documentation of the process used to develop the regulations.

Regulation corrections. When regulations were revised in January 2013 to incorporate the changes to the ACMP regulations, the definition of "commercial operation" was inadvertently omitted from the FRPA regulations. There is also a typo in the definition of "rubble" – "streambed" was misspelled as "streamed". The AGO has requested that these errors be corrected in the next edition of the official published version of the regulations, and they will appear correctly in the fieldbook.

WOOD ENERGY

AEA project updates. Devany Plentovich (AEA) (*see map handouts*): AEA conducts about 20 pre-feasibility studies per year. Projects have been awarded USFS grants for design of wood pellet projects in Haines and at the Ketchikan airport. AEA has applied for a USFS grant for the Alaska Wood Energy Development Task Groups. AEA will accept applications year-round and open the process to private commercial buildings – the agency hopes to get interest that could

lead to district heating systems. Most of the public building opportunities in the small communities with interest have been assessed. Stark expressed some concern that commercial applications will pull support away from public entities. Nichols said it might shift support from rural to more urban area. Plentovich said that the scoring process reflects need strongly, and most of the funding is for underserved areas.

Fort Yukon is creating a district heating loop and CHP power plant. The project has completed the NEPA process. The plan is to start training crews and begin harvesting this winter. Maisch: DOF has a Forest Stewardship grant to work on this project.

Plentovich: Current highlights include:

- Project construction at Chistochina.
- Reviewing options for Kobuk, Ambler, and Shungnak. A chain saw and all the safety equipment required will be offered as a door prize at each public meeting with the goal of starting small projects in these villages. TCC did inventory for these villages.
- AP&T has funding for conceptual design for heating systems involving pellet manufacturing and small pellet-based heating systems in Tok and using waste for power. Maisch: There is a lot of waste heat from power production. AP&T has also discussed densified wood options with Young's Timber. The CHP plant could be located next to Young's Timber. Plentovich: Fort Greeley is moving forward with wood energy studies, but isn't sharing much information.

The request for applications is open for Round 7 grants. Harvested wood can now count as match on design and construction projects; this could encourage advance harvesting to allow wood drying. Grants can now cover wood harvesting equipment.

New technologies:

- There are new "micro" wood chip systems that don't require daily stoking – loads can last a week or more. The technology can be interchangeable with pellets. AEA is working to test a 3rd-party certified system in Mentasta this winter. It will initially get chips from Dry Creek, and will supply clinic, tribal offices, and the community hall.
- A new "Garn Jr." unit targets replacement of outdoor boilers. It is still in the testing and certification process. Capacity is about 1000 gallons of water.

The Circuit Court ruled that carbon emissions from biomass generation must be included in climate change considerations. This could affect decisions to switch from fossil fuels to biomass. AEA will have more info at the fall Board meeting. Analyses should be comparable for biomass and fossil fuels. Cronin: Wood use is carbon-neutral.

State timber sales related to biomass proposals. Mike Curran (DOF): The 25-year Tok competitive timber sale bid deadline is August 20. The minimum bid price is the base rate of \$2.50/ton. It is the first big sale like this in response to interest in biomass in the interior. It took about a year to put it together. In the future, similar sales could be done more quickly now that a process is established.

The Fort Greeley project status is unclear. Siemens seems to be out of the process, but federal agencies are doing additional analyses. DOF has identified timber available if a project goes forward. DOF doesn't want to be in the situation of putting together a sale and then having the project fall apart. DOF continues to put out sales for small biomass users. Nichols: It's a chicken-and-egg situation. DOF doesn't want to invest money in putting up a sale until it knows a purchaser will buy it, but it's hard for a private operator to put in the design investment, without knowing if they have a certain fuel source, especially when it is a competitive sale. There are two sides to the argument.

Curran: The base rate for bids is the State's cost of administering the sale after purchase. For Tok, it's based on costs of unit layout by a Forester II and sale administration costs. Base rates vary by location due to differing costs. Base rate is not based on the product value. State timber cannot be sold for less than the base rate; where product value exceeds the base rate the minimum bid price is the appraised fair market value. For long-term sales, the cost is reviewed every five years. Nichols: The private sector has to know what the costs are going to be before deciding on a project. Costs are fluid when dealing with the public agencies especially on long-term contracts. Curran: DOF has designed and offered a sale that could provide a wood supply for AP&T's original proposal; now the proposal may change. Nichols: Having the public own most of the timber presents a different supply situation than exists in most of the country where there are multiple options from private lands. Maisch: Getting a sale of this scale out in 12 months is a significant accomplishment. Sale documents are on the DOF website. Stark said he pushed hard to make sure the agencies did a good job on this sale, and believe that it could happen much more quickly in the future now that there is a good model.

Maisch noted that Dry Creek is salvaging a lot of wind-thrown timber and trucking it to the pellet facility in North Pole.

Boreal Alaska Learning, Adaptation, and Production (BAKLAP) update. Glenn Juday, University of Alaska Fairbanks (UAF):

- UAF Master's degree student Andrew Allaby is collecting data on plots that were established in the Rosie Creek drainage 1985-1986. His study looks at various site preparation, seeding, and planting treatments on 180 cells 25 years after initial treatment. Prior research by Roseann Densmore and John Zasada found that after 5 and 10 years, there was adequate regeneration under all four scarification methods. Allaby has completed sampling in 69 of the 180 subunits; the goal is to sample 120 units.
- Miho Morimoto is reviewing regeneration results on 44 DOF forest harvest areas from Harding Lake to Nenana where harvest occurred up to 40 years ago. Samples are completed on about 490 of 1,019 subplots in 19 of 44 units. Maisch: This information will be very helpful in reviewing reforestation standards improving information on growth and yield. Juday: This data just didn't exist before. It will complement inventory information. Maisch: The USFS Forest Inventory and Analysis program is also planning a LIDAR-based project for interior inventory for 2014.
- Juday: NDVI (Normalized Difference Vegetation Index) remote sensing has documented browning of interior Alaska and greening of the tundra relative to prior years. A grand transect of the interior forest for growth data has been compared to temperature. Most downriver stands respond positively to temperature increases; most upriver stands show a

negative response to increased temperature. Growth in the negative responders declined since the 1940s; the positive responders' growth has continued to increase. There is an optimum temperature range for growth of white spruce. Over the extent of white spruce in N American, trees need 280 mm of precipitation at minimum, and more water as temperature increases above 15C. Interior temperatures have been outside that range in recent years with increasing frequency. White spruce growth at a Fairbanks study plot shows daily growth peaking early, then declining with increasing warmth, but increasing temporarily after each rain event. The primary control in that area is temperature, and precipitation is the major secondary factor. Effects are greatest on marginal sites. The downriver stands have a great future. We need to consider how to allocate investments in the upriver stands, such as north-facing slopes, higher elevation stands, planting other species, etc.

- Bonanza Creek is one of 27 Long-Term Ecological Research sites (LTERs) nationwide. A network of sites is being established throughout black spruce forests in three boreal ecosystems in interior Alaska. In a recent LTER review, the Bonanza Creek site got good marks for its current work, information management, and outreach on the LTER. Cronin: The amount of work being accomplished on the BAKLAP program is commendable.

Juday: Funding is flat to declining at UAF. Vacancies from university retirees have been closed out, and the Forest Sciences department has had too many retirees to maintain a separate department and will merge into another program.

Guidance for large, long-term sales on state land and FRPA Reforestation standards.

Freeman: A lot of work is occurring that relates to these upcoming projects. In addition to the BAKLAP research on regeneration, DOF has been doing regeneration surveys on a backlog of harvested areas. ADF&G is drafting proposals for a pilot study on herbivory relating to reforestation, and for songbird and microtone diversity to complement the UAF and DOF reforestation and inventory work. The 25-year Tok timber sale is available for bids.

DOF, ADF&G, and UAF plan to meet in September to discuss

- Next steps and timing for review of reforestation standards in Regions II-III, and
- Data needs and strategy for adaptive management on large/long-term state sales to ensure sustainability for forest resources, including wildlife and soils.

The agencies want to ensure that the work is timed to take advantage of the new research data.

Defensible space on the Kenai Peninsula. Judy Reese (DOF): Defensible space is a cost-effective way to provide protection, and transfers some of the responsibility and power for fire protection to the landowner. FireWise is a national program that is simple to understand and based on scientific research. It is beneficial to homeowners, firefighters, and insurance agencies. The goal is to manage flammable fuels in the home ignition zone. The Miller's Reach and Caribou Hills fires in Alaska burned numerous structures and brought wildland-urban interface issues home to Alaska. All communities on the Kenai Peninsula are subject to wildland fire. Programs in response to the spruce beetle infestation helped build the FireWise program on the Kenai. The KPB has been central in working with peninsula communities to develop CWPPs which are required for federal funding. There are FireWise campaigns specific to Alaska – FireWise for All Seasons, Rural Alaska Fire Prevention for villages, and a webpage for FireWise on the Kenai. Defensible space activities provide a bridge between fire prevention and fire

suppression, and between DOF and the public. Concern for wildfire is the main thing that brings people to the Forest Stewardship program. The need for defensible space will always be there. Foley: The Anchorage Hillside remains very vulnerable. Vinsel: We need to shake the attitude that the government is responsible – it's appropriate and more effective to have private owners take on that responsibility. Reese: Cost-share funds can reimburse landowners for up to \$2500 to cover up to 50% of their costs for FireWise actions. Availability of cost-share funding depends on successfully acquiring competitive grants.

FEDERAL PROCESSES

Sealaska entitlement legislation update. Kleinhenz (Sealaska Corp.): Sealaska has about 70,000 acres of unfulfilled land entitlements. A lot of the substantive issues on land location have been resolved with the USFS and environmental community. Legislation has made it through the committees on both the House and Senate sides, and could be introduced in combination with other bills. Likelihood of success is uncertain. Operationally, Sealaska has been running at about 50 MMBF/yr for the last several years, but is now out of places to support all the contractors, such as Phoenix Logging. If a contractor leaves Alaska, it will be hard to get them back. There is just a partial timber supply for next year – one contractor will be lost; the second will be lost the second year; and after that internal staff will be cut. The contractors directly employ 120-150 people. Sealaska is in a very vulnerable place.

Mental Health Trust (MHT) exchange legislation update. Paul Slenkamp (Mental Health Trust Authority – Trust Land Office): The Trust recently signed a Memorandum of Understanding with DOF for forestry support services on Trust land statewide. The Trust is also moving forward with timber inventory – the next inventory will cover Icy Bay. There are small active timber sales on Trust land in Gustavus and Haines, and larger sales planned at Kasaan and Wrangell. The Trust worked with the City of Wrangell and Alcan to find alternative access at Wrangell to reduce impacts on homeowners. MHT has asked that its land exchange with the USFS go forward as part of Sec. Vilsack's focus on the transition to young-growth management on the Tongass. The Trust is hiring a consultant on federal land exchanges, and the proposal is moving forward. Thirteen organizations are on record in support of the exchange, including the Board. The next step is the feasibility study. MHT has committed to fund the study costs, but some parts have to be supplied by the USFS, including an assessment of compatibility with the Tongass Forest Plan.

PUBLIC COMMENT

- **Kent Cross, A1 Timber consultants, working on Kodiak:** Cross supports the findings of the Timber Jobs Task Force and efforts to streamline timber sales. The State has lands adjacent to timber sales on Kodiak. A1 Timber contributed about \$11 million to the economy of Kodiak last year, not counting economic multipliers. They would like the state to open up some of the state land as for timber sales – it is not currently classified as forest land. A1 would like to bid competitively on sales in that area. It is very accessible, and they could supply a map of areas of interest. Maisch noted that there are requirements for a 5-Year Schedule of Timber Sales, Best Interest Finding, and Forest Land Use Plan. DOF will

follow up on A1's request. Curran noted that there is a grazing permit on the area of interest, and the area is managed by the DNR Division of Mining, Land, and Water.

- **Dave Nesheim, A1 Timber Consultants:** Nesheim has a long career in timber work, primarily in the Kodiak Archipelago. Opportunities for timber harvesting in Alaska have dwindled, and he anticipates more declines. He fully supports the Timber Jobs Task Force recommendations. Alaska needs working forests – without them the state will become poorer. The Task Force goals are a good platform to move policy forward. The State should add repeal of the Jones Act to the list to make Alaska more competitive regarding transportation costs. Implementing the Task Force recommendations will strengthen Alaska's economy. Stark cautioned that there may be good reasons outside timber concerns for keeping the Jones Act. Nesheim: We will all gain from leveling the playing field. Local attitudes on Kodiak toward the timber industry vary. Vinsel noted that he hadn't heard any issues from Kodiak fishermen about forest practices in Kodiak. Nesheim thinks that the industry has proven that it is a good citizen in the community; dialogue is more open now, although it can get rocky at times.
- **Karl Potts, Leisnoi Consulting Operations Manager:** Leisnoi owns about 55,000 acres on Kodiak. They have active operations with A1 Timber. Leisnoi supports the Timber Jobs Task Force recommendations and the interests in increasing timber supply in Alaska. The corporation shares Sealaska's concerns over operators leaving the state – it will be harder to bring those skills back in. He urged the Board to continue to push the Task Force recommendations forward. Potts would also like to see changes in statutes for state negotiated timber sales. He understands that there are restrictions intended to support in-state manufacturing, but the forest products industry is capital intensive, and the State shouldn't set aside its resources to wait for in-state processing opportunities while the public resource decays and diminishes in value. The knowledge gained through Leisnoi's intensive management practices can be applied to the State's forest land on Kodiak to enhance the public interest. He encourages the Board to consider the sale of timber on the State land adjacent to Leisnoi land and to coordinate harvesting efforts to improve economies of scale. Leisnoi has already opened roads to this area on a 17b easement, and the costs of the road could be amortized over more timber volume. There is always some opposition to industrial activities of this scale, but in general, the operations have been in the interests of the local community and Leisnoi tries to find common ground with other landowners. In general, Leisnoi allows public access on its land, e.g. to use slash as firewood, and issues permits for other activities. The Board would like to visit operations on Kodiak.
- **Tom Loushin, A1 Timber:** Thanked the Board for listening to the interest in a state timber sale on Kodiak Island. Transportation is a big issue in Alaska, e.g., getting logs off Kodiak. The company has put in a big investment for log transport. A1 will likely mobilize back to Washington after operations are completed in 2-3 years. After that time, the dock facility would not be maintained and the opportunity for a State sale would be gone.

FEDERAL PROCESSES, CONT.

Tongass Forest Plan implementation and update and Working Forest Group. Clarence Clark (DOF):

- The Working Forest Group is participating in the Five-Year Tongass Forest Plan Review, using the “triple bottom line” to evaluate different conservation strategies. The Group finished a young-growth study for the USFS across all ownerships throughout Southeast, and made recommendations for increasing young-growth supply from USFS land. All other owners are at least 20 years behind the USFS in having a supply for young-growth operations, and the USFS is still 30-40 years away from having significant volume to support a timber industry.
- 10-year timber sales – The Wrangell Island sale is in re-scoping and the USFS is going out for another Notice of Intent. There is not enough Wrangell timber to meet the original volume goals for a 10-year sale.
- Mitkof Island – The USFS is targeting more volume to support small local mills for 10 years.
- Thomas Bay – There is mixed old-growth and young-growth on TNF land. The State has about 2000 acres of mostly young-growth in the same area. Neither federal or state volumes are enough to support separate operations – the state and USFS are trying to coordinate sales.
- Clark is working on region-wide timber transport systems for Southeast, including log storage sites.
- Big Thorne Timber Sale – The USFS hopes to have 100 MBF of old growth and young growth under stewardship contract by the end of September. The contract will include some pre-commercial thinning as well.
- Five-Year Review of Tongass Forest Plan – The State submitted comments urging the USFS to recognize the “seek to meet timber demand” requirement in the Tongass Timber Reform Act (TTRA), conform to the Alaska Native Interest Land Claims Act (ANILCA), and reinstate the Tongass Exemption to the Roadless Rule. The 2008 Forest Plan already meets the requirements to consider other resources.

Clark: Since 2008, two of the three mid-size mills in Southeast have shut down. Nichols: In 2008 the USF sold only 5 MMBF of timber, and this was a turning point for some operations. Private land timber in the Pacific Northwest ran out around 2000, and the federal lands were not able to make that up.

Roadless Rule update. Tom Lenhart (Asst. Attorney General): The State tried to make it clear that it’s impossible to implement the Roadless Rule or the rapid transition to young-growth while meeting federal ANILCA and TTRA statutes. Alaska’s appeal on reinstatement of the Roadless Rule in the Ninth Circuit awaits the court’s ruling – the case was argued a year ago. The USDA was the original defendant, but they are on the sidelines in the appeal and the environmental groups are now defending.

The federal government dismissed Alaska’s other appeal on the state’s exemption to the Roadless Rule in the D.C. Court. The ruling was based on expiration of the original appeal period. The State has appealed that ruling and awaits scheduling of the appeal. This is not a short-term solution – it will take a year or two. The USDA is the defendant with environmental groups as intervenors on their side.

USFS transition to young-growth management. USDA Secretary Vilsack issued a memo directing the USFS to focus on young-growth management in Alaska. TNF harvesting first reached high levels in the 1960s, so most young-growth is now 50 years old or younger. Sites with young growth timber ready to harvest are scattered. Young-growth sales of 50 MMBF/year would allow the existing mills to operate at 27% of capacity. 50 MMBF is the estimated sustainable level of young-growth that the Tongass could supply under the Roadless Rule and the Forest Plan. Half of the young-growth acreage is in categories that cannot be harvested under the 2008 Forest Plan and the Roadless Rule. The Forest Plan Review could recommend changes to land use designations (LUDs) to include all previously harvested acres in harvestable LUDs. If all 420,000 acres of young-growth were available, and culmination of mean annual increment (CMAI) was not required, 80-100 MMBF could be produced annually. Much of the second-growth area is within the 1000-foot beach fringe that is intended to provide low elevation wildlife habitat and scenery. Some of the available young-growth units might not appraise positive, further reducing available volume.

Nicolls: Having all TNF sales tied up in lawsuits and appeals did affect the Forest's ability to offer timber. The Secretary's memo is a gross example of poor forestry and conservation, and is politically motivated. The Secretary has usurped all authority from the USFS. Nichols: Under this direction, all current mills would go away; no mills are set up to operate on young growth, and we will lose even the niche markets for high-value added products from old growth. No profitable West Coast sawmills cut such a small volume of young-growth, and an Alaska industry would be trying to compete with high-volume mills.

Kleinhenz: the difficulties of managing federal land elevates the necessity of achieving a different balance in land ownership in Southeast, including Native land entitlements, the Mental Health exchange, and State ownership.

Clark emphasized the need to rebalance forest management to achieve the triple bottom line without pitting one resource against another, and there is room to do so. An overlay of the 2 million acres the state would most want for a State Forest only overlaps with 10% of the area in Trout Unlimited's Tongass 77 concept.

Land trust funding and forestry

- **Mental Health Trust.** Marcie Menefee (MHT Trust Land Office): Thanked the Board of Forestry for its support on Trust timber issues. The Mental Health Trust's intent is in the 1956 Mental Health Enabling Act – it gave the State one million acres of land to support mental health programs in Alaska. Beneficiaries are people with mental illness, developmental disabilities, chronic alcoholism, dementia and Alzheimer's disease, or traumatic brain injury. After a lawsuit over mismanagement of the original Trust land, the Trust got a \$200 million settlement in addition to the land. The Trust assets are managed by a Governor-appointed Board; the Trust Board also recommends funding for programs. The Trust has assets in principal and income. Revenue from land or resource disposals has to be reinvested in a way to provide perpetual support to the Trust. Income from temporary uses can be used for operational expenses. The Trust has \$450 million invested in the Alaska Permanent Fund which receives a 4.25% annual payout.

The DNR Trust Land Office manages the Trust's mineral, oil and gas, forestry, land, and real estate assets. The Trust has reinvested some revenue in Alaska and Lower 48 real estate.

Timber is the only asset whose revenue is treated as both principal (85%) and income (15%). The Trust has received \$40 million in revenue from Southeast timber sales over the last 18 years. It is an important part of a balanced portfolio. The Board is very supportive of the proposed land exchange with the USFS. Over time, the Trust has increased the diversity of its revenue sources. They expect to increase the amount of real estate investment to produce a relatively steady revenue stream.

The State is obligated to fund mental health programs through the General Fund (over \$200 million/year) for programs operated through the departments of Health and Human Services, Corrections, etc. The additional funding from the land trust (about \$25 million /year) goes to develop new programs and facilities. The Mental Health Trust can't spend the corpus of the Trust. The Trust Land Office's job is to make as much money as possible for the Trust.

- **University Land Trust.** Patrick Kelly and Kit Duke (University of Alaska): The University Trust operates almost identically to the MHT Trust Land Office. The Land Grant Endowment Trust Fund is established by State law and managed for the benefit of University of Alaska (UA) Scholars (primarily scholarships for the top 10% of Alaska students). Scholarships are a standard \$11,000 amount.

UA manages 145,610 acres, most of which is investment property. UA timber is managed sustainably to create long-term economic benefits that go into the Trust Fund. UA previously held large timber sales in Icy Bay. It is now trying to reestablish timber revenue, and evaluating young-growth and old-growth opportunities in Southeast, local markets in Haines, and biomass production in Southcentral and Interior Alaska. The University is talking with the Mental Health Trust, DNR, and others to plan for sustainable, coordinated timber harvest operations and achieve an efficient scale of operations.

The University supports the Working Forest Group and the "triple bottom line" of environmental, community, and economic factors. The University's timber harvest plans include young-growth and old-growth at Edna Bay on Kosciusko Island to be harvested in 2014-15.

The UA System Office includes a forester, property managers, and technicians. To get back into timber management, the University has to work with other agencies and pay them to do UA forest management work while they are already out in the field. Maisch: DOF has worked with the Trusts through Reimbursable Service Agreements. Kelly – UA is working with DOF on an agreement in the Haines Area.

Duke: The legislative land settlement to provide additional land to the University was overturned by a lawsuit. The Court ruled that the legislature couldn't commit future funds outside the appropriation process. However, some additional land will come to UA to fulfill prior entitlements and a grant of about 55,000 acres in the Tanana Valley State Forest.

Next meeting date and agenda items: November 12-13, 2013 in Fairbanks

- Fort Greeley biomass project
- Court ruling on carbon emissions from biomass and carbon neutrality
- Research reports:
 - energy plantations (Jeff Graham);
 - Amanda Byrd and Steve Sparrow -- biomass energy,
 - BAKLAP and DOF reforestation studies
- Overview of DPO types
- Timber Jobs Task Force implementation
- Tok sale results
- Fire season recap, projections for future fire seasons, and fire suppression tools
- Road status and road closures on public and private land
- DNR roads office status
- TVSF status and activities; UA land entitlement within TVSF
- Status of NR/forestry at UA
- Updates on ongoing issues
- Field trip to an active logging operation and 2013 fires?

Board comments

- Stark is pleased to be participating and enjoying the conversations
- Nicolls: This was a good meeting
- Nichols: The Board has visited the Mat-Su and Kenai, and biomass operations in the Interior. It's interesting to think about where scarce dollars are best allocated. He appreciated the Mental Health Trust and University coming -- the dollars from timber go somewhere, the landowner derives benefits.
- Cronin appreciated the visitors from Kodiak, and Kleinhenz's participation to fill in for Wolfe.
- Vinsel appreciated seeing a new area and ecosystem. BAKLAP research will play a meaningful role as we look at new areas. He appreciated information on the trusts. State employees seem enthusiastic and their morale is high compared to federal employees – the federal employees are good people, but seem to not have answers to important questions. There's a problem with federal land management.
- Kleinhenz appreciated the visitors from Kodiak and the field trip
- Foley appreciated the public commenters and their sacrifice to come to the meeting. Thank you especially to folks from Kodiak and Southeast – it takes a lot of time to get here.
- McLarnon: Please add people's titles to the agenda.
- Maisch: The State feels a sense of urgency about the Tongass situation and the need for an active landscape and is very engaged. He thanked the public commenters – the most we've had in awhile.

Adjourn Day 2: 3:55 p.m.

Attendees

- Michelle Blackwell, Office of Sen. Lisa Murkowski
- Elizabeth Bluemink, DNR Office of the Commissioner
- Clarence Clark, DOF
- Kent Cross, A1 Timber Consultants
- Mike Curran, DOF
- Tom Dearlove, KPB River Center
- Rob DeVelice – CNF (by phone)
- Jim Eleazer, DOF
- Mike Fastabend, KPB
- Louie Flora, Office of Rep. Seaton
- Joe Ford, USFS-CNF
- Marty Freeman, DOF
- Kevin Hanley, DEC
- Doug Hanson, DOF (by phone)
- Dave Harris, USFS (by phone)
- Glenn Juday, UAF
- Patrick Kelly, UA Land Management
- Cal Kerr, Northern Economics
- Tom Lenhart, AGO (by phone)
- Doug Letch, Office of Sen. Micciche
- Ginny Litchfield, ADF&G
- Tom Loushin (by phone)
- Sue Mauger, Cook Inletkeeper
- Marcie Menefee, AMHTLO
- John Mohorcich, KPB
- Marcus Mueller, KPB
- Dave Nesheim, A1 Timber Consultants
- Doug Newbould, USFWS-KNWR
- Devany Plentovich, AEA
- Karl Potts, Leisnoi, Inc.
- Judy Reese, DOF-Forest Stewardship
- Hans Rinke, DOF-KKAO
- Rep. Paul Seaton
- Paul Slenkamp, Mental Health Trust Land Office
- Keith Snarey, KPB
- Robert Stovall, USFS-CNF Seward Ranger District
- Wade Wahrenbrock, KPB
- Coowe Walker, ADF&G-Kachemak Bay Research Reserve
- John Winters, DOF

Handouts

- Agenda
- Public notice
- November 8-9, 2012 Board of Forestry minutes
- December 14, 2012 Board of Forestry minutes
- Updated BOF contact list
- History of FRPA and FRPA regulations
- State Forester Maisch congressional testimony on forest management of federal land
- Draft compliance monitoring briefing paper
- Regulations
 - Correction to Alaska Administrative Code 11 AAC 95.900 (9) “commercial operation”
 - Correction to Alaska Administrative Code 11 AAC 95.900 (69) “rubble”
- Update of Alaska Timber Jobs Task Force Recommendations and Status
- Draft Compliance monitoring briefing paper
- News Release: Secretary Vilsack Announces Steps to Conserve 17-million acre Tongass National Forest
- Memo from Sec. Vilsack: Addressing Sustainable Forestry in Southeast Alaska, July 2, 2013
- Letter from DNR Commissioner Daniel Sullivan to Forrest Cole, Tongass National Forest re State comments on the Five-Year Review of the 2008 Tongass Forest Plan, July 1, 2013

- DNR Detailed Plan of Operations (DPO) form
- DNR Renewal for Forest Practices Notification form
- AEA Biomass Projects map, 7/8/2013
- AEA Alaska Wood Energy Development Task Force Pre-feasibility Reports map, 7/9/2013
- Chugach National Forest program/budget history
- Powerpoint presentation on University of Alaska Timber & the Land Grant Trust Fund