



BAYFIELD COUNTY FORESTRY AND PARKS DEPT.



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BAYFIELD COUNTY FORESTRY & PARKS DEPARTMENT **ANNUAL WORK PLAN**

January 1 through December 31, 2016

The Bayfield County Forestry and Parks Department Work Plan for the 2016 calendar year gives direction and meaning to the Forestry and Parks budget, further defines and supplements the Comprehensive Fifteen Year Land Use Plan, and emphasizes current needs of the County Forest, Parks and Trails Programs. **This plan also complies with Chapter NR47 Wisconsin Administrative Rules for the administration of the County Forest Administrator Grant Program.**

SUSTAINABLE TIMBER HARVEST

One of the primary missions of the Bayfield County Forestry and Parks Department is to manage, conserve, and protect the natural resources of the County Forest. Multiple use and sustainable forest management practices will be utilized to provide a wide variety of forest products and amenities for current and future generations. Sustainable forest management is commonly defined as meeting the forest resource needs and values of the present without compromising the similar necessities of future generations.

Timber harvests are important for the economic well-being of Bayfield County, as well as for the health and vigor of the forest. One of the major objectives of timber management is to produce a perpetual sustained yield of forest products. In part, this is realized through the analysis and scheduling of forest stands for management and, ultimately, the development of sustainable annual and long term harvest goals.

Implementation of professionally recognized, sound forest management and harvesting techniques is essential. Existing reconnaissance data, along with thorough field inspections conducted by Bayfield County Forestry and Parks Department staff (hereafter "Department") and DNR foresters, will be used to determine which stands are ready for treatment. In addition, the long term monitoring of stands that have previously received treatment is crucial in determining the success of past management practices. The results of previous management will aid in the development and implementation of future prescriptions.

Annual Sustainable Harvest Goal

The estimated 2016 sustainable harvest goal for the Bayfield County Forest is 5,060 acres. This represents an increase of 415 acres (roughly 9%) when compared to the harvest goal for 2015.

Numerous factors impacted the harvest goal for this coming year. In the jack pine type, the Department has made an attempt to carry mature stands on the landscape as long as possible. This was done primarily to provide a relative even flow of annual harvest, as well as to maintain a level of mature jack pine on the landscape. However, currently, many stands are experiencing significant mortality, at levels exceeding 30%. The Department can no longer carry these mature stands without experiencing even greater losses of volume. As a result, the short term plan is to manage all stands experiencing 30% or greater mortality within the next two years. In 2016, the goal will be to manage the worst stands and those that are located within the Barnes Barrens. The remainder will be managed in 2017. Once the stands with the greatest amount of mortality have been managed, the Department will evaluate the remaining and plan accordingly. If the county discovers that many stands need to be managed immediately, the goal for 2016 may be adjusted accordingly. It is anticipated that a majority of the mature jack pine will be managed within the next five years. Afterwards, very little jack pine will be managed until the next larger age classes reach maturity, which would be around the year 2030.

In the northern hardwood type, prescriptions for existing stands have repeatedly conflicted with field observations. Previously, the standard prescription given to nearly all northern hardwood stands was all-aged management (or a thinning). On many sites, especially sites of marginal quality (or potential), this prescription is oftentimes incorrect and the stand is ultimately managed with even-aged methods. In response, one goal for 2016 (and 2017) is to update all stand and prescription information in the northern hardwood type. In the meantime, the 2016 goal for all-aged management was decreased slightly and even-aged management increased slightly, as a temporary response to current observations. Once all stands have been updated, it is anticipated that most stands on poor to medium-poor sites will be managed with even-aged methods, while stands on medium to good sites will be managed with un-even aged methods.

The Department is also in the process of updating information in all mature red oak stands, primarily in an attempt to better capture management needs. To date, updated stand information has revealed a significant decrease in acres ready for, or otherwise in need of, a thin. It is anticipated that the total amount of acres suitable for a thin will significantly decrease. We anticipate finishing red oak updates in 2016. The slight increase in the 2016 goal is a result of adding stands ready for an overstory removal. Overstory removal is primarily based on a stand's response to previous even-aged management (typically a shelterwood or seed tree harvest) and overall readiness to release established desired regeneration. Responses are highly variable and difficult to predict. Subsequently, these stands are treated on a case by case basis. The 2016 goal may increase (or decrease) depending on actual responses to previous treatments.

Small, natural increases in the aspen and red pine types and decreases in the paper birch and white pine types were the other more notable changes, when compared to the goals for 2015. The primary reason for the increase in red pine was due to the recent acquisition of property (via

the Stewardship grant). Most of the properties purchased with the assistance of the Stewardship grant were red pine plantations, many of which were ready for immediate management.

Table 1 displays the sustainable harvest goal (acres) per primary timber type for 2016 (during the season, the annual harvest goal may be adjusted for a variety of reasons, i.e. response to unanticipated natural events or significant changes in reconnaissance data or as otherwise stated above). The goal for 2015 is also included for comparison:

Table 1: Sustainable Harvest Goal (acres)

Timber Type	2015	2016
Aspen	1,300	1,340
Northern Hardwood	835	895
Red Oak	820	870
Paper Birch	40	30
Scrub Oak	250	255
Red Pine	855	935
Jack Pine	165	365
White Pine	100	90
Swamp Conifer	130	140
Swamp Hardwood	110	100
Fir/Spruce	40	40
Total	4,645	5,060

One of the objectives in managing the forest is to strive for a regulated, even flow of harvests, equally distributed over the landscape. However, sustainable harvest goals typically fluctuate slightly from year to year. Most fluctuations are explained by the irregular distribution of age classes over the entire forest and, subsequently, when they are ready for management.

Among other things, fluctuations are also a result of a change in management direction for individual timber types, responses to natural disturbances or other unforeseen natural events, a relatively poor response in growth from previous management, modifications in response to accomplishments from the previous year (i.e. the management of backlogged stands) or land acquisition.

On the Bayfield County Forest, the primary annual differences in sustainable harvest goals are a result of a variety of factors, some of which include: improved reconnaissance information, a significant increase in the number of stands reaching management age (particularly in the aspen and red pine types), the inclusion of harvest goals for the swamp hardwood and swamp conifer timber types, adjustments in the management approaches of the aspen, red oak and northern hardwood timber types, and modifications as a result of previous accomplishments.

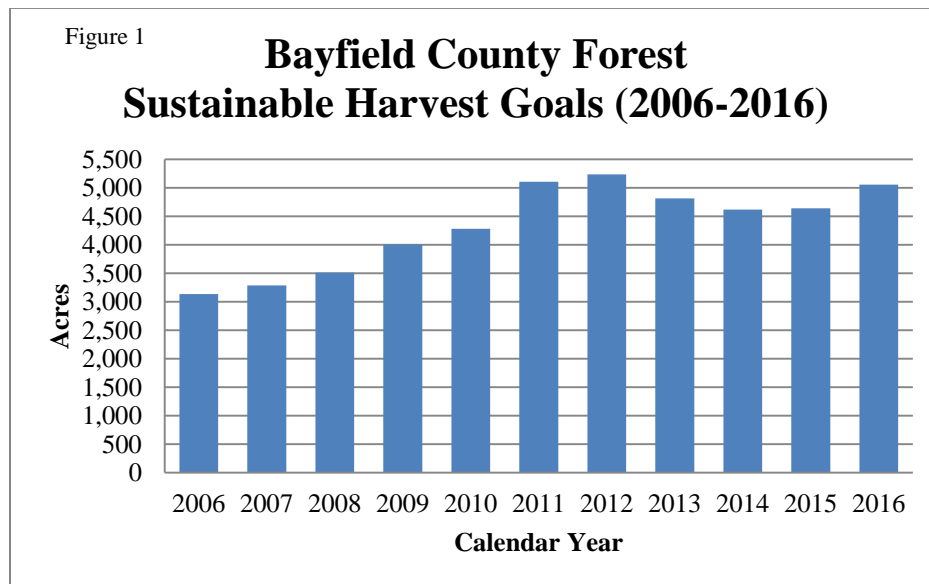
In 2015, the county purchased 1,855 acres of industrial forest lands with the assistance of the Stewardship grant. The county also included 747 acres of county owned, non-county forest

lands, as a match. In total, 2,602 acres were added to the County Forest program. These acres will naturally provide an increase in harvest levels, particularly in the red pine type.

Over the past decade, the sustainable harvest goal has changed significantly. The peak harvest goal was in 2012, with a target of 5,238 acres. This was primarily due to the addition of numerous older, backlogged stands. Now that most of the backlogged stands have been managed, the annual sustainable harvest goal should hover between 4,500 and 5,000 acres per year.

Since 2006, the sustainable harvest goal has increased by approximately 61%; from 3,134 acres to 5,060 acres in 2016.

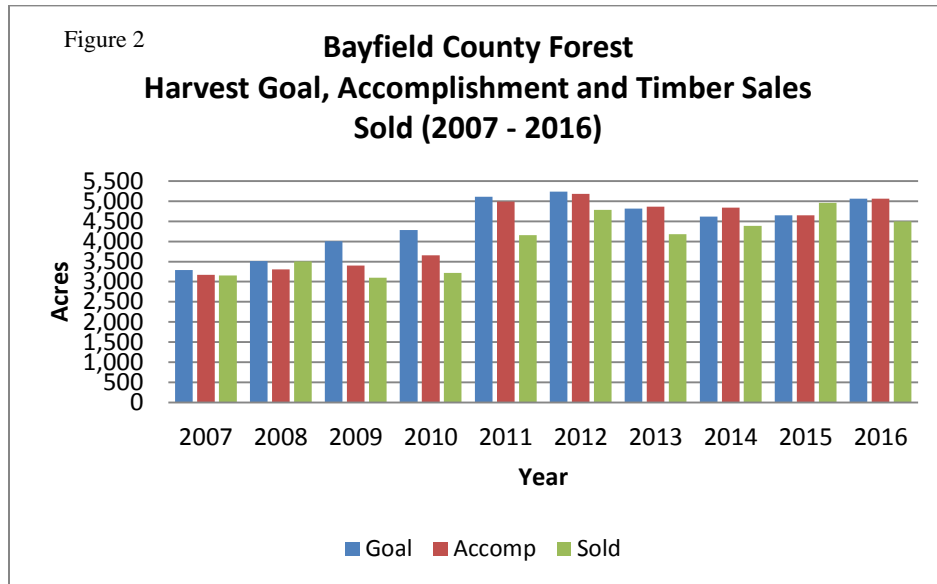
Figure 1 displays the total sustainable harvest goals since 2006.



Maximizing the sustainable management of the county forest was a primary goal heading into calendar year 2011. As displayed in Figure 1, the average sustainable harvest goal from 2011 through 2016 increased by over 1,250 acres per year when compared to the average goals from 2006 through 2010. The significant increase in the sustainable harvest goal created a substantial increase in the amount of time required to successfully accomplish the goal. In addition, numerous other forest management responsibilities increased over the same time period creating a significant deficit in time required to accomplish both annual and long term goals.

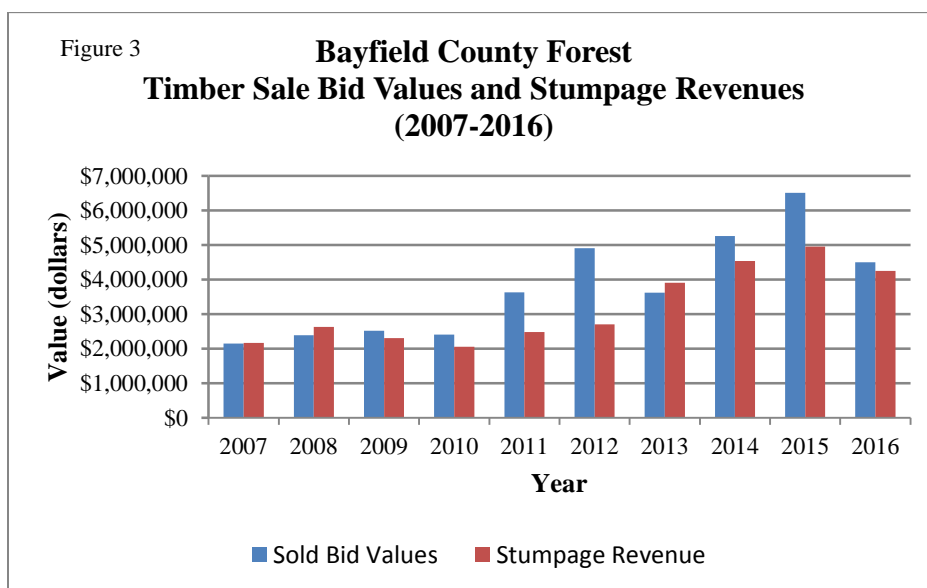
To address the deficit, one full time forester position was added to the staff in early 2011. The impact of the additional forester was immediate. A recreation forester position was created in 2013. In addition to the recreational responsibilities, this position also maintains forest management duties (roughly 15 to 20%).

Figure 2 displays the annual sustainable harvest goal, accomplishment and sold timber sales from 2007 through 2016 (2015 and 2016 are estimates):



Prior to 2011, the Department averaged 45 timber sales, covering 3,044 acres per year. The average total winning bid value for those sales was approximately \$2.36 million. Since 2011, the Department has averaged 56 sales, covering over 4,500 acres. During that time, the average total winning bid values have more than doubled, from roughly \$2.36 million to nearly \$4.8 million. The total winning bid values in 2015 topped \$6.5 million!

Figure 3 displays the total sold value of timber sales and actual revenues from stumpage (harvested timber) from 2007 through 2016 (2016 is a conservative estimate):



Bayfield County generated nearly \$5.0 million in total stumpage revenue in 2015, a stark contrast to the average \$2.285 million generated between 2007 and 2010. Ten percent of the total stumpage revenues generated from the County Forest are distributed to Townships that contain County Forest land. Distribution is prorated and based solely upon the total amount (percentage) of acres located within each Town.

Maximizing the sustainable harvest of the forest has numerous benefits. Not only does it have the potential to significantly increase revenues, but it also supports numerous local jobs, fosters new job growth, provides additional recreational opportunities, provides exceptionally well managed products to local wood industries, improves forest health and productivity and creates/maintains a diversity of wildlife habitat.

FOREST INVENTORY

Correct, up-to-date stand information is imperative in the development of accurate short and long term sustainable harvest goals. There is a direct correlation between the quality and accuracy of the reconnaissance data and the ability for forest managers to confidently develop precise short and long term sustainable harvest goals. The accuracy of any sustainable harvest goal is only as good as the data from which it was derived. Therefore, it is important to update a certain level of stand information on an annual basis.

Table 2 summarizes the inventory goal (compartment and stands) and actual accomplishments since 2008:

Table 2: Bayfield County Forest Inventory (acres)

Year	Goal	Accomplishment
2008	17,000	9,807
2009	10,000	2,872
2010	10,000	4,079
2011	10,000	9,728
2012	10,000	8,135
2013	10,000	9,316
2014	10,000	8,552
2015	12,500	12,500
2016	12,500	12,500
Average	11,333	8,610

Starting in 2014, the Department focused on updating select individual cover types rather than entire compartments, though a few compartments were still updated. In 2014, the two major cover types targeted for update were mature stands of red oak and mature stands of jack pine. The goal of re-inventory was to develop a system to better prioritize the future management of these two types. In 2015, the target species were the remaining stands of mature red oak and northern hardwood, for similar reasons.

In 2016, a few remaining stands of red oak will be updated, but the focus will be acquiring better information on stands of northern hardwood. One of the goals will be to develop accurate prescriptions that will incorporate growth potential based, in part, upon site or habitat quality. In total, approximately 12,500 acres of the County Forest will be re-inventoried.

In the red oak timber type, the county forest contains roughly 12,000 acres of mature stands, mostly between 85 and 95 years old. The goal is to spread out the regeneration of these stands over the next 25 to 35 years. In order to do that effectively, we need to identify which stands need management now and which are capable of being harvested in the distant future. Data acquired from the re-inventory process will be used to help schedule future red oak thinnings and will be integral in the development of accurate annual sustainable harvest goals. A portion of the red oak type was inventoried in 2014. More was targeted in 2015. The remainder should be completed in 2016.

Site quality, and, subsequently, stand quality are highly variable within the northern hardwood type. In the past, the prescription applied to nearly every stand, by default, has been all-aged management (individual tree selection). While this prescription is preferred on much of the cover type, it is not sustainable on many of the moderate, and nearly all of the poor quality sites. The goal of northern hardwood re-inventory is to better capture site and stand quality as part of the silvicultural prescription. Once the re-inventory is complete, it is anticipated that the total acreage slated for all-aged management will decrease slightly, with a small increase in even-aged management (especially on the poor to moderately poor quality sites). However, the use of group selection as an alternative to the traditional individual tree selection method may be applied on moderate to poor quality sites. This will maintain a more uneven-aged structure and allow mature stands to perpetuate on the landscape.

There will still be approximately 5,000 acres of compartment updates in 2016. Since 2001, 179 of 202 compartments, totaling over 145,000 acres have been updated. The goal is to re-inventory the remaining 23 compartments over the next 4 years. Once completed, it will put the Department on pace to achieve the 15 year re-inventory goal. At which time, a 15 year, modified re-inventory cycle will be implemented.

When updating entire compartments, priorities will be placed on those that contain a larger percentage of old data (≥ 20 years old), as well as compartments that contain a larger percentage of stands prescribed for management in the near future.

REFORESTATION

Reforestation, be it natural or artificial, is a core building block of forest sustainability and a fundamental component of any forest management program. A successful reforestation program provides numerous benefits, some of which include: the restoration of forest productivity, fertility and environmental function; the assurance of a perpetual, sustainable supply of forest resources and amenities for future generations; the protection of soil and water quality; and the establishment and development of quality wildlife habitat.

Table 3 summarizes the reforestation efforts that are planned for 2016:

Table 3: Bayfield County Forest Reforestation Program Summary 2008 - 2016 (acres)

Year	Planting				Seeding	Site Preparation				Maintenance				Monitoring
	Red Pine	Jack Pine	White Pine	Other ¹	Jack Pine	Trench	Fire Plow	Scarify	Spray	Fire	Spray	TSP ²	Bud Cap	Regen
2008	378	207	24	0	0	796	88	0	442	0	0	0	0	1,683
2009	487	415	0	0	0	726	72	0	348	40	0	0	0	2,652
2010	367	196	0	0	0	363	118	0	420	42	305	0	0	2,183
2011	319	153	35	68	0	900	88	0	186	21	324	0	0	1,424
2012	295	107	274	0	0	0	177	120	727	32	609	0	0	2,736
2013	281	174	92	0	558	264	0	40	0	0	449	0	239	2,522
2014	0	0	0	0	0	503	20	115	264	0	273	0	239	2,929
2015	62	0	129	0	202	717	0	99	634	0	0	1	239	2,337
2016	203	39	0	0	393	450	0	100	496	0	230	40	209	2,500
Avg.	266	143	62	8	128	524	63	53	378	15	243	5	103	2,330

¹ In 2011, tamarack and white spruce.

² Timber Stand Improvement - Hand release of established regeneration

Spring Planting

The planting program has significantly changed since 2013. In 2014, zero acres were planted, the first time that had happened in recent memory. The primary reasons for the decrease are: 1) old fuel break areas have been mostly re-planted. The remaining 144 acres will be seeded to jack pine in 2016; 2) a general lack of previously open areas, which, in the past, were planted to red pine; 3) a lack of mature red pine stands that are ready for regeneration; 4) movement towards primarily jack pine regeneration in the Barnes Barrens Management Area; 5) an emphasis on seeding when attempting to regenerate jack pine.

In 2015, 62 acres were planted with containerized red pine stock. Also, 124 acres were planted with containerized white pine stock (some of those acres will be mixed with white spruce). All of the white pine will be planted underneath existing canopies (shelterwoods).

In 2016, 203 acres will be planted with containerized red pine, with a total of approximately 152,000 seedlings (planted at a rate of roughly 750 seedlings per acre). Also, 39 acres will be planted with containerized jack pine, with a total of approximately 29,000 seedlings. Regarding the jack pine plantings, one 6 acre site is located in the Barrens, but was determined to be too small to seed, while the other 33 acre site is located north of Highway 2. Seeding is still the preferred option to regenerate jack pine in the Barrens, but planting will most likely be used in areas outside of the Barrens or when seeding doesn't make sense.

In the future, the general expectation is that red pine plantings will hover between 100 and 200 acres or less per year, while white pine underplantings will vary, depending on the availability of suitable sites. We will continue to analyze red pine to determine if there is a need to begin regeneration harvests sooner, in an attempt to evenly distribute age classes over the landscape. If so, annual harvest levels would be adjusted accordingly.

Spring Seeding

The seeding program also changed significantly over the past few years. Before 2013, the Department had generally moved away from artificial seeding. Starting in 2013, the Department began implementing objectives that were developed in the Barnes Barrens Management Plan.

Amongst other things, the plan identifies a preference to regenerate a jack pine dominated landscape (within the Barrens area), with artificial seeding as the preferred reforestation method, primarily because seeding has the potential to create a more natural regenerating landscape.

Before a site is seeded it needs to be mechanically prepped and usually sprayed. This provides a better seedbed for the delicate jack pine seed to germinate and develop. Also, there needs to be enough acres available before local contractors are interested in the work. Acres that were trenched in 2015 will be sprayed in 2016. These sites would then be seeded in 2017.

The timing of timber harvests also has a direct impact on how many acres will be available for reforestation. Timber sales are sold under two year contracts. The contractor can request up to two - one year extensions (meaning it can take up to four years to complete the sale).

In 2016, approximately 393 acres will be seeded with jack pine, using about 100 pounds of seed (seeded at a rate of roughly 4 ounces per acre). For the time being, the seeding program will be somewhat cyclic, generally occurring in alternating years. As the program progresses, we should reach a level where seeding occurs on an annual basis.

Site Preparation

In 2016, approximately 450 acres are planned for site preparation via power trenching, 496 acres will be treated with chemical and 0 acres will be fire plowed. Site preparation goals reflect the amount of known sales that have been completed within the past year (and are in need of site prep). Occasionally, other timber sales are finished in time to be added to the site prep goals. When that happens, the goal is adjusted accordingly, as budgets allow.

In addition, approximately 100 acres of red oak, paper birch and/or northern hardwoods will be scarified, usually with a dozer and straight blade. Scarification will facilitate the natural regeneration of red oak and paper birch, as well as reduce competition from non-desirable species, such as ironwood and, in some stands, red maple. If fire plow sites become available in 2016, there may be some additional acres treated, again, as budgets allow.

Release

The spraying (release) of young red pine plantations is treated on an as needed basis. Occasionally, young plantations need to be treated in order to release seedlings from undesirable vegetative competition. This release can significantly increase seedling growth and improve the rate of survival. In 2016, approximately 230 acres of young red pine plantations may be aerial sprayed to release the conifers from competition. These stands will be monitored once again in the spring before determining if release is required. Similarly, a few stands may be added if determined to be in need of treatment.

The prescribed burn program is still under review to gauge the effectiveness of fire. As a result, 0 acres will be treated with fire in 2016, though the DNR still maintains portions of the fuel break via prescribed fire.

Approximately 40 acres of red oak and/or white pine may be mechanically released (TSI with a chain or brush saw), if conditions allow. Other types, like northern hardwoods, may also benefit from mechanical release. These stands will be treated on a case by case basis, as time allows.

In the future, it is anticipated that some form of TSI will be required to improve the growth potential and survival of desired regeneration in many previously managed hardwood stands i.e. northern hardwoods, red oak, birch, etc., as well as some conifer stands (primarily white pine underplantings). Internally, time is a limiting factor, as mechanical hand release is very labor intensive. The Department may need to develop TSI contracts to manage the anticipated workload.

Seedling Protection

Starting in 2013, the Department used bud caps to protect young jack pine seedlings from browsing by white tailed deer. In total, 239 acres were bud capped. This literally involves stapling a 3"x 3" piece of copy paper over the terminal bud/leader of each planted seedling. The reason: plantation monitoring in this area has shown signs of excessive deer browsing. Failure to protect the seedlings could lead to plantation failure. Bud capping would need to be repeated every year until the seedlings are beyond the reach of the deer, which typically takes 3 or 4 years. Currently, the focus is on stands that are planted with containerized jack pine (as these seedlings are a little more nutrient rich when compared to bare root stock or natural regeneration).

These same stands were capped in 2014 and 2015. One stand has reached the desired height and will be removed from future capping. The goal for 2016 will be 209 acres. Because most of the jack pine in the future will be regenerated via seed, bud capping will most likely only be used when absolutely necessary, and mostly on jack pine stands that were planted with containerized stock.

Natural Regeneration

Thousands of acres of natural regeneration will occur on a variety of forest types. The exact amount is solely dependent on the total number of acres harvested in previous years. Forest types such as northern hardwoods and aspen regenerate naturally via seed, stump sprouting and/or coppicing (vegetative sprouting from existing root system) and require very little additional input from the Department. However, the natural regeneration of hardwood forest types such as red oak and paper birch often require additional Departmental maintenance efforts.

Natural regeneration monitoring is also starting to find excessive ironwood competition in stands of northern hardwoods. These stands may require additional inputs from the Department in order to achieve the desired future stand condition.

Examples of additional inputs include: pre or post sale site scarification to prepare a favorable seed bed and reduce competition, pre or post sale burning or timber stand improvement (TSI) to reduce competition from undesirable tree seedlings and/or prepare favorable seedbeds, and deer browse protection i.e. fencing, repellents, etc. to improve the tree seedlings chance of survival. These additional inputs occur when opportunities arise and are treated on a case by case basis.

Seedling Counts

All planting sites and many areas that were regenerated naturally require survival counts. Data collected from the counts are used to determine stocking levels of desired tree species and, ultimately, to evaluate the success of the reforestation attempt. Seedling counts are administered at one, two, three and five years after the regeneration attempt on most planted sites. Seedling counts on naturally regenerating hardwood stands are typically administered two to four years after harvest (depending on the forest type) and also include one to two additional surveys to determine success.

In 2016, seedling counts will be administered on roughly 1,500 acres of sites that were regenerated artificially (planted or seeded) and on roughly 1,000 acres of sites regenerated naturally.

Counts administered on natural sites generally focus on: stands that require additional inputs i.e. mechanical scarification, prescribed fire, etc.; cover types that are typically difficult to regenerate i.e. red oak, paper birch; stands where competition from undesirable species has traditionally been more prevalent i.e. ironwood in stands of northern hardwood; and stands that have a history of excessive browsing from white tailed deer.

Prescribed Fire

Prescribed fires has traditionally been used to maintain portions of the fuel breaks located in the Township of Barnes, as well as to facilitate natural red oak reproduction in stands located throughout the county forest.

In 2016, 0 acres of forested stands will be treated with prescribed fire. Portions of the existing fuel breaks may be treated with fire if conditions allow. Fuel break burns are coordinated by the DNR. If conditions allow, portions of the existing fuel break may receive maintenance burns.

WILDLIFE

A number of wildlife projects will again be undertaken in 2016. The majority of wildlife habitat improvement work conducted on County Forest land will be accomplished utilizing funding from Wisconsin DNR grant programs, specifically, the County Conservation Aids and Nickel-an-Acre programs. The Nickel-an-Acre program reflects a change from the previous Dime-an-Acre funding. As indicated in the name, the program funding was cut in half starting in 2010 and will continue to be funded at a nickel an acre into the foreseeable future. The County Conservation Aid grant requires a 50% county match on eligible projects.

The Conservation Aids project for 2016 have yet to be determined. There is approximately \$3,993 available for eligible projects. Additional monies may also be available, as determined by the total amount of unallocated funds.

The Nickel-an-Acre grant totals \$8,467. This grant has been used to fund a variety of County Forest wildlife projects in the past.

Potential projects for 2016 could include, but are not limited to:

- Site prep and seeding for jack pine in the Barnes Barrens Management Area.
- Mechanical and/or chemical treatments for wildlife opening maintenance (currently roughly 100 acres combined per year).
- Wildlife habitat development/improvement.
- Mechanical site prep for natural white birch, red oak or northern hardwood regeneration.
- Prescribed burning of wildlife openings and oak regeneration areas.
- Fish habitat projects.
- Habitat projects on old homesteads.
- Wildlife monitoring.
- Breeding bird surveys.
- Land acquisition.
- Invasive species eradication.
- Deer exclosures for red oak regeneration (fencing).
- Seedling protection (bud capping, spraying, etc.).

ACCESS MANAGEMENT

The revised Access Management Plan (Chapter 700) was finalized and approved in 2013. Implementation of the Plan began in 2014 and will continue through 2016. The focus will be on the placement of road and trail markers, informational signage, minor repairs of existing roads and trails and the installation or removal of restrictive features (i.e. berms, gates, etc.) to manage motorized access.

Also, the Department will monitor existing road and trail infrastructure to determine future use status or need. All new roads created as part of a timber sale will also need to be reviewed to determine the future use status. Motorized and non-motorized uses are consistently increasing. The Department will continue to address recreational needs and requests on a case by case basis.

Repair and maintenance of the infrastructure will occur on an as needed basis, as funding allows. Road building projects may also be developed, especially on those that receive high levels of use, are located in more sensitive areas in need of minor attention, and/or provide access into current or future timber sales and have the potential to increase future stumpage prices. Road projects can be performed by Department staff, DNR staff or general contractors.

The Access Management plan will also be reviewed periodically to determine effectiveness and/or in response to general feedback. Any and all proposed updates to the Plan will be presented to the Committee for review.

The Department will continue to maintain roughly 40 miles of Primary Forest roads, for which we receive DOT County Forest Road Aids (currently \$336/mile). The Department will also continue to identify, plan and/or develop additional forest roads and trails, as the need arises, for later entry into the County Forest Road program.

BAYFIELD COUNTY FOREST PLAN

The existing County Forest Comprehensive Land Use Plan for the period 2006 – 2020 may be amended to reflect changes and/or updates. Some items that may require updating in 2016 include, but are not limited to:

- Integrated Resource Management Unit (IRMU) summaries.
- IRMU boundaries.
- Barnes Barrens Management Plan summary.
- Timber sale contract language.
- Firewood permit language.
- Miscellaneous forest products permit language.
- Timber sale rutting policy.
- Forest certification (addition of FSC).
- Silvicultural revisions/updates on individual forest types.

OTHER ACTIVITIES

Recreation:

The Department will continue to work with the County Tourism Department and interested user groups regarding recreational activities occurring on the County Forest. The demand for recreational use on County Forest land continues to increase. Over the past few years, the Forestry and Parks Committee has approved numerous re-routes of snowmobile and ATV trails, the construction of a new mountain bike trail network and improvements to existing cross country ski trails.

Requests to host events on trails located within the Forest continues to increase as well. Some of the more notable events that utilize portions of trails located on the Forest include: the American Birkebeiner Cross Country Ski Race, the Chequamegon Fat Tire Mountain Bike Race, the Cable Area Off-Road Classic Mountain Bike Race and the Apostle Islands Sled Dog Race.

Requests for new or improvements to existing motorized and non-motorized trail systems are expected to continue in 2016 and beyond. Requests for additional trails will be treated on a case by case basis, as per the Access Management Plan.

Trail counters have been used in a variety of settings to determine actual use of certain trails and/or areas. Data received from these counters will provide the County with valuable information needed to determine future direction. Counters will continue to be used throughout the forest to monitor usage in 2016.

Throughout any given year, the Department will explore additional opportunities to enhance and improve the recreational use of the Forest. Existing networks are routinely analyzed and areas are explored for new recreational potential. Some potential projects for 2016 include:

1. Finish minor repairs and signing on the Lost Creek Falls Trail.
2. Finish the construction of two yurts on County Forest land. One yurt will be constructed in the Cable area and one near Mt. Ashwabay. The development of an online reservation/payment system will also be required.
3. Explore the potential of creating new, or improvements to existing, multi-use, non-motorized trails at numerous locations including: Lost Creek Falls, Glacial Kettles Area, Spring Creek Area and Menard Road Area and/or other locations throughout the Forest. Pursue as funding allows.
4. Explore the potential of improving or expanding the existing motorized trail networks on public lands (both state funded and non-funded). This may require collaborating with other public land managers i.e. USFS, DNR, etc., the Red Cliff Tribe, interested user groups and the general public.
5. Explore the potential of creating dispersed camping sites on other portions of the County Forest. Pursue as funding allows.
6. Develop online story boards or other similar methods of advertising and/or promoting recreation on the County Forest. This may include collaborating with the Tourism Department, as well as other agencies or local businesses where tourism is a primary objective.
7. Generate a new recreational trail development and maintenance strategy, with an emphasis on identifying critical trail connections and areas for new construction or enhancement. The plan would include strategies for both motorized and non-motorized recreation, as well as the development of incentives or other appreciation type programs for private landowners when trails are located on private land.

Insects and Disease:

The Department is continuing to monitor the effects of forest insects such as the jack pine budworm, two-lined chestnut borer, emerald ash borer, and gypsy moth. If any additional sites containing a significant amount of damage are discovered, they will be promptly managed. Also, as new threats are encountered, the Department may need to alter management plans accordingly.

The most notable “new” threat regarding the overall health of the forest is the gypsy moth. Gypsy moth numbers, and subsequent defoliation, have been previously observed in very high numbers in the Bayfield Peninsula. The greatest numbers have been found along higher elevations located in the general vicinity of Jammer Hill and Echo Valley Roads. Red oak and aspen are their preferred primary food sources and are the most susceptible to potential mortality, especially the suppressed and over mature individuals. Significant defoliation of red oak and aspen occurred in these areas during the summer of 2012.

However, egg mass numbers declined dramatically in 2013 and remained low in 2014 and 2015, indicating that defoliation may only be minor in 2016 and beyond. As a result, we will resume all red oak management in the areas where egg mass counts were high in 2012 (currently IRMU’s 1 and 8). If gypsy moth numbers significantly increase in 2016, oak management may be adjusted accordingly. If oak management is reduced in specific units, the sustainable goal in all other units may be adjusted accordingly.

The Department is continuing to work with the DNR to determine the best course of action regarding general forest management practices in the face of a threatening gypsy moth defoliation event.

Emerald ash borer (EAB) was discovered in Douglas County and, most recently, in Oneida County. As a result, those counties have been quarantined, meaning, in general, that there are now restrictions on the movement of wood.

To date, EAB has not been discovered in Bayfield County. It is estimated that ash contributes approximately 0.5% of annual stumpage revenues and is present, as a dominant forest type, on approximately 1.5% of the County Forest. Other than targeting ash a little more often during management (and encourage maple regeneration), Bayfield County is not expecting a major change in forest management practices if EAB is found on the forest, though the movement of ash products would be regulated if quarantined.

Invasive Species:

The Department routinely inspects roads and timber sales for the presence of invasive species. If located, a plan for treatment is developed. The presence of invasive species (both native and non-native) is relatively rare on the Forest. The Department typically treats a few small patches of land per year.

The most common non-native invasive species treated on the County Forest are buckthorn (in the forest) and spotted knapweed (on roads and trails). Black locust has been the most common native invasive to be treated on the Forest, typically occurring in small isolated patches in the vicinity of old, abandoned homesteads.

Treatments have traditionally been performed by Department staff, usually involving chemicals. In general, the Department treats less than 10 acres of invasive species per year. In 2016, that number is expected to be as high as 50 acres. Consequently, it may become necessary to contract out treatment, especially if other Department activities require more time or become higher priority. All occurrences are managed on a case by case basis, as funding allows.

In 2014, the Department received a Sustainable Forestry Grant for the treatment of spotted knapweed on 50 miles of forest roads in the Barnes Barrens Management Area. The project was completed in 2015. However, spotted knapweed maintains a persistent and viable seedbed for around 7 years, meaning multiple successive treatments are required to reduce the population. The same 50 miles of road will be treated again in 2016. The long term goal is to use herbicide to manage and eventually eliminate knapweed in the area and, hopefully, prevent any further spread into the barrens. The project focuses on roads that are the most heavily infested, but more still needs to be done.

Permits:

Every year, the Department reviews numerous requests to utilize portions of the Forest. Requests vary, but the most common ones include: providing access to private lands; providing

access to land or trails for hosting organized recreational events; collecting balsam boughs; and collecting firewood. All requests are treated on a case by case basis and are typically handled with a use permit.

Table 4 summarizes the total permits and approvals issued by the Department from 2008-2016 (2016 is an estimate):

Table 4: Bayfield County Forest Summary of Issued Permits and Approvals

Year	Fire Wood	Balsam Boughs	Cones	Christmas Trees	Birch Stems	Access	Events	Disabled Hunting	Storage
2008	360	8	0	1	0	2	9	3	1
2009	423	5	1	1	0	0	10	3	1
2010	436	5	1	1	0	3	10	3	2
2011	503	7	1	6	0	9	10	10	2
2012	441	6	1	7	0	8	12	7	2
2013	406	16	13	3	2	6	17	6	2
2014	486	9	6	4	1	7	21	5	2
2015	394	8	5	5	0	10	18	9	1
2016	450	8	5	4	1	8	18	8	1
Avg.	433	8	4	4	0	6	14	6	2

Many of the permit templates are old or outdated. The Department will periodically review existing permits, including permit fees, or identify the need for new ones and bring all recommendations to the Committee for review.

Town Road Aids:

In 2010, Bayfield County developed the Town Road Aid Fund. This fund was created to help improve problem areas on Town Roads that provide critical access to the County Forest. Town Road Aids were initially funded at 1% of total annual timber sale revenues (enacted once actual revenues exceed the budgeted amount). Starting in CY 2014, Bayfield County increased the funding level to 2%, with a cap of \$80,000. As a result, in CY 2015, there was \$80,000 available for eligible Town Road projects.

It is anticipated that \$80,000 will be available in 2016. All projects are submitted to the Department and ultimately approved by the Forestry and Parks Committee. The Department works closely with each Town in the development and administration of each potential project.

Land Acquisition:

The Department will continue efforts to acquire private properties on a willing seller, willing buyer basis, when advantageous to the long term goals of Bayfield County. A priority will be given to land located within the existing County Forest blocking.

In December 2014, the Department received preliminarily approval for two Knowles-Nelson

Stewardship Land Acquisition Grants. The grants were officially awarded in June 2015. As a result, Bayfield County purchased 1,392 acres from Meteor Timber and 463 acres from Lyme Timber. Additionally, the county provided a match of 747 acres of county owned, non-county forest land. In total, 2,602 acres of land was added to the County Forest.

By using the appraised value of county owned land as the required match, the Department can tailor projects that significantly reduce (or eliminate) out of pocket expenses. The Meteor Timber and Lyme Timber acquisition projects totaled roughly \$2.616 million (including the cost of land, appraisals and other associated fees). The county received approximately \$2.265 million from the Stewardship grant (primarily from the appraised value of matched lands). As a result, the county spent roughly \$350,000, out of pocket, to purchase over \$2.6 million in productive forest land.

In the most recent state budget, County Forests received a separate line of appropriation under the Knowles-Nelson Stewardship Grant for \$5.0 million each year. The county still maintains ownership of approximately 245 acres of non-County Forest lands that could be used as a match in a future Stewardship project. These properties were appraised at \$423,000, meaning they would have roughly \$211,500 worth of buying (match) power (properties owned for more than one year are valued at ½ of the appraised assessment). The Department will continue to examine the potential for future Stewardship projects, using these or other suitable county owned, non-County Forest lands as a match.

Management of Other Bayfield County Owned Lands:

Currently, Bayfield County owns approximately 3,000 acres of County tax title lands, not including lots and other small parcels, in addition to the above listed County Forests Lands. Also, the County owns approximately 3,100 acres of land located in the Bibon Swamp.

On occasion, the Department will monitor these parcels for land and/or timber sales, monitor for potential trespass issues, negotiate road, utility and recreational easements or permits and explore for sand and gravel potential. As new parcels are acquired, typically through tax delinquency, the Department will commonly inspect for timber management potential and/or for potential retention and enrollment into County Forest Law.

Good Neighbor Authority:

The US Forest Service has been authorized to enter into cooperative agreements with States to carry out approved forest, rangeland and watershed restoration services, including timber sales, on Federal land, as per the Good Neighbor Authority (GNA). Under a cooperative agreement between the US Forest Service and the DNR, the DNR may conduct forest management activities on Federal lands. Further, the DNR may contract with a County for the purposes of conducting forest management activities on Federal lands, as outlined under the GNA agreement.

Recently (fall 2015), the DNR and the Chequamegon-Nicolet National Forest (CNNF) signed a ten year Agreement, which will be reviewed annually to update the scope of work, as well as to identify additional timber and restoration treatments. The partnership enables the CNNF to more

fully implement their Forest Plan and increase the amount of timber offered for sale. The goal for the CNNF in FY 2016 is to reach 100 million board feet in timber sales. Through the GNA, the DNR has a goal of assisting the CNNF in accomplishing approximately 25 million board feet (roughly 5,500 acres) of additional timber sales in FY 2016 (that may not have been established otherwise).

The DNR anticipates 15 to 20% of the timber sale work identified under the Agreement to be accomplished by interested counties. If interested, a County can decide their level of involvement, which could include the use of existing staff or hiring part time employees. Counties would be reimbursed for all expenses, including salary, fringe, supplies and service costs, and overhead. Also, if interested, each County would need to adopt a Resolution, which approves entering into an MOU with the DNR. As per the MOU, each County would need to enter into a GNA program contract with the State, which describes the level of involvement and project budget (i.e. rates of reimbursement).

Under the current Agreement, there are no timber sale projects identified within the Washburn Ranger District. However, new projects are currently in the process of approval and should be made available shortly. At that time, Bayfield County will have an opportunity to determine interest and, if so, the general level or scope of involvement.

Many Department staff members have expressed an interest in timber sale establishment as per the GNA, but only as overtime. The Department would not have any available free time to establish Federal timber sales during normal County hours, without sacrificing our County Forest goals.

It is anticipated that the Department could allocate roughly 500 hours of time towards the establishment of timber sales on Federal land within the Washburn Ranger District. Again, this would be as overtime, which would be identified and reimbursed as such under any contract signed with the DNR. It is anticipated that Bayfield County will formally discuss the GNA in early 2016 to determine a desired level of involvement, if any.

PARKS

The management of all Bayfield County parks and campgrounds was assigned to the Forestry Department in September 2010. The four parks and campgrounds include:

1. Twin Bear Campground
2. Delta Lake Campground
3. Big Rock Campground
4. Atkins Lake Park

Since 2010, numerous changes and upgrades have been made to many of the campgrounds. Some of the more significant improvements include:

1. Twin Bear Campground
 - a. Complete electrical rebuild and upgrade throughout entire

campground.

- b.** Repair of all major outbuildings and store.
- c.** New fishing pier near the beach area.
- d.** New ADA ramp construction near beach area.
- e.** Creation of new tent camping site.
- f.** Re-establishment of sand beach.
- g.** New individual gas water heaters for each of the three showers.
- h.** New playground equipment near the beach area.
- i.** Re-surfacing of walking path near Puig's Point.
- j.** New wireless high speed internet access throughout the entire campground.
- k.** New locks/keysets on all outbuildings (all keyed the same).
- l.** Added canoe and kayak rentals.

2. Delta Lake Campground

- a.** Complete re-grade on nearly all existing campsites.
- b.** New playground equipment near beach area.
- c.** New fishing pier.
- d.** Repair of all major outbuildings.
- e.** New electric added to remaining campsites.
- f.** New wireless high speed internet access throughout the entire campground.
- g.** Installation of new mooring dock and small picnic area.
- h.** Modifications to the ADA ramp/path.
- i.** New locks/keysets on all outbuildings (all keyed the same).
- j.** Added canoe and kayak rentals.

All parks and campgrounds undergo routine cleanup of brush and downed trees on a regular basis. Parks and campgrounds are also regularly inspected for hazard trees, which are removed as needed. The removal of hazard trees typically occurs when camping is inactive, usually in the late fall or early spring. Most of the trees are cut up and left on site to be used as firewood. Every year, there will be some removal of hazard trees.

Some anticipated projects or minor repairs needed to the parks and campgrounds in 2016 include:

1. Twin Bear Campground

- a.** Continue hazard tree removal and overhead branch mitigation, as needed.
- b.** Inspection of retaining walls on a few campsites for future repair.
- c.** Re-grade on a few existing campsites and road surfaces.
- d.** Explore the need to add gutters on the cabin store to divert water away from the entrance to the building.

- e. Explore the potential for two new tent campsites on the hill behind shower building. Clear area and remove hazard trees. Develop as funding allows.
 - f. Install/re-establish speed bumps at multiple locations.
 - g. Install fencing around new electrical box near garage.
 - h. Upgrade/repair fence around garage.
 - i. Replacement of numerous old picnic tables.
 - j. Transplant trees from hill behind the shower building to the perimeter of the beach to provide future shade.
 - k. Draft and implement a noxious weed mitigation plan for the campground. Continue to monitor for new infestations. Treat as required.
 - l. Install additional mooring docks, if needed.
 - m. Monitor existing infrastructure, repair as needed and as budgets allow.
2. Delta Lake Campground
- a. Add water line to back loop of campground.
 - b. Evaluate the condition of all primitive toilets in the campground. Replace as necessary.
 - c. Re-deck and/or rebuild the ADA access ramp near the beach area.
 - d. Explore potential of tent camping on County owned island.
 - e. Some minor clean up and rehabilitation of grounds may still be necessary after the winter 2014/2015 timber sale, which removed all hazardous trees.
 - f. Replacement of numerous old picnic tables.
 - g. Install additional mooring docks, if needed.
 - h. Monitor existing infrastructure, repair as needed and as budgets allow.
3. Big Rock Campground
- a. Explore the potential of adding a covered pavilion near entrance of campground.
 - b. Minor repair on access roads. Most likely will require additional surface material.
 - c. Explore potential of developing a primitive walking/nature trail within the 40 acre county parcel.
 - d. Replacement of numerous picnic tables.
 - e. Explore the potential of developing a hike in campsite on the property.
4. Atkins Lake Park
- a. Replace sign leading into the park.
 - b. Replacement of dock and old picnic tables, if necessary.

Numerous unknown issues or projects will undoubtedly surface throughout the year. All unknown issues will be addressed based on significance and/or importance, as time and budgets

allow.

TRAILS AND RECREATION

The management of county recreational trails was assigned to the Forestry and Parks Department in July 2013. Primarily, this involves the management/oversight of all state funded motorized trails located on county and private land. To help accomplish this task, Bayfield County maintains agreements with the Bayfield County Snowmobile Alliance and local ATV clubs.

Table 5 displays the total miles and annual maintenance funds received from the State of Wisconsin per trail type:

Table 5: Mileage and Funding For Trails Managed by Bayfield County

Trail Type	Miles	Rate/Mile	Total
Snowmobile	437	\$250	\$109,250
ATV Summer	86.75	\$600	\$52,050
ATV Winter	168.15	\$100	\$16,815
UTV	86.75	\$100	\$8,675
Total	778.65		\$186,790

In addition to the routine maintenance performed on these trails by the Alliance and local clubs, below is a listing of anticipated Trails projects or issues that may be addressed in 2016:

1. Generate a recreational trail development and maintenance strategy, with an emphasis on identifying critical connections and areas for new construction or enhancement. This may require input from existing partners and user groups, as well as the general public.
2. Re-establish roles and responsibilities with the BCSA, snowmobile clubs and ATV clubs.
3. Update contracts with the BCSA and other clubs.
4. Continue to resolve numerous landowner disputes regarding land ownership and/or trail location.
5. Continue to work, along with the County Tourism Department, on building a supportive network of local Chambers, business owners and community members that will help in the financial and/or logistical support of the Bayfield County trail networks
6. Maintain a database identifying each club and officers, as well as location and mileage maintained for snowmobile and ATV trails.
7. Develop and maintain a database identifying the location and condition of all bridges, culverts, gates and outbuildings on snowmobile and ATV trails.
8. Creating a maintenance/inspection schedule for #7.
9. Develop and maintain a database for all existing permits or easements allowing snowmobile and ATV trails to occur on private land.
10. Develop and maintain a database that categorizes the importance of each trail to the overall network/community i.e. high, medium, low. The database would help ascertain

the importance of future repair work. For example, a major repair on a trail designated as low importance might not be a high priority.

11. Combine #'s 9 and 10 to determine where to focus obtaining future easements or access permits.
12. Develop updated permit/easement form.
13. Pursue the concept of compensation to private landowners who allow recreational trails on their land.
14. Complete repair work on Trail 1 off Klemik Road.
15. Complete the re-route of Snowmobile/ATV Trail 24/31.
16. Complete the installation of the new privy at Trail 22/24 intersection.
17. Close out the installation of the new clearspan bridge on snowmobile/ATV Trail 3, over the East Fork of the Flag River.
18. Continue to pursue funding for the Mason-Sanborn snowmobile trail connector, including the acquisition of a clear span bridge over a significant water crossing.
19. Re-grade and/or re-surface Trail 17 (Banana Belt Road) in Iron River.
20. Continue to work on funding a new trailhead shelter on Trail 3, near the intersection of Flag Road and the Battleaxe.
21. Finalize plans for a bridge installation on Trail 63 within the Bibon Swamp State Natural Area.
22. Finalize plans for a clearspan bridge over North Pike's Creek on Trail 31/1 near Compton Lane, or find a suitable re-route around the problem area. Working with Land and Water Conservation to re-establish the natural stream channel and repair streambank bed.
23. Compile a list of beaver dam issues impacting trail infrastructure. Coordinate with USDA APHIS Animal Control Services to eradicate the problem animals and destroy associated dam structures.

The above listed items are known issues or projects that need attention in 2016. All or most of the projects that will require significant repair work or new construction/installation will be submitted to the State for funding.

Numerous unknown issues or projects will undoubtedly surface throughout the year. All unknown issues will be addressed based on significance and/or importance, as time and budgets allow.

Submitted by Jason Bodine, Forestry & Parks Administrator, December 23, 2015.