

**TIMBER HARVEST AND
INVENTORY REPORT-DNR STATE LANDS
For Calendar Years 2019-2020**



**As required by s. 28.025(3)(a), Wis. Stats.
Submitted to the Council on Forestry, May 2021**

BACKGROUND

Wisconsin State Statute 28.025 requires the Department of Natural Resources (DNR) to:

- report biennially to the Council on Forestry the total timber harvest on state lands
- establish an annual allowable timber harvest for these same properties or groups of properties
- maintain a current inventory of forest resources on state forested lands.

28.025 Annual allowable timber harvests.

(1) In this section, "forested property" means forested property owned by this state and under the jurisdiction of the department from which timber is harvested.

(2) The department shall establish annual allowable timber harvests for each forested property. The department may establish a single annual allowable timber harvest that applies to 2 or more forested properties in a particular region of this state, as determined by the department, if each one of those forested properties is smaller than 5,000 forested acres and if all of the proceeds from the sale of timber harvested on those combined forested properties are credited to appropriations under s. 20.370 that provide funding for the same purpose, as determined by the department.

(3) (a) 1. By January 1, 2007, and biennially thereafter, the department shall submit a report to the council on forestry specifying the total timber harvest on each forested property for the previous biennium, except as provided under par. (b).

2. Notwithstanding subd. 1, the department shall submit its report to the council on forestry as required under subd. 1. by January 1, 2009, and biennially thereafter, if the forested property that is the subject of the report has not been inventoried by the department under s. 23.135.

(b) If, under sub. (2), the department establishes an annual allowable timber harvest for combined forest properties, the department may submit a report that specifies the total timber harvest for these combined properties.

(c) If the department submits a report under this section that states that the timber harvest for forested property in any biennium is less than 90 percent, or more than 110 percent, of the allowable timber harvest established under sub. (2), the council on forestry shall prepare a report containing the reasons for noncompliance and recommendations on methods of ensuring that the timber harvest is consistent with the annual allowable timber harvest established by the department under sub. (2). The council on forestry shall submit the report to the governor, to the department, and to the appropriate standing committees of the legislature under s. 13.172 (3).

SUMMARY

The focus of DNR Forestry efforts in CY 2019 and CY 2020 was to:

1. continue achieving our long-term harvest goals
2. improve accuracy of our harvest goals by continuing to update forest reconnaissance (recon) while updating the oldest (>20 years old) forest recon data
3. make progress on the remaining backlog of scheduled timber sales on properties where backlogs exist.
4. assist in updating property master plans or interim forest management plans to specific the future use and management of department properties.

1. Achieve Long Term Harvest Goals

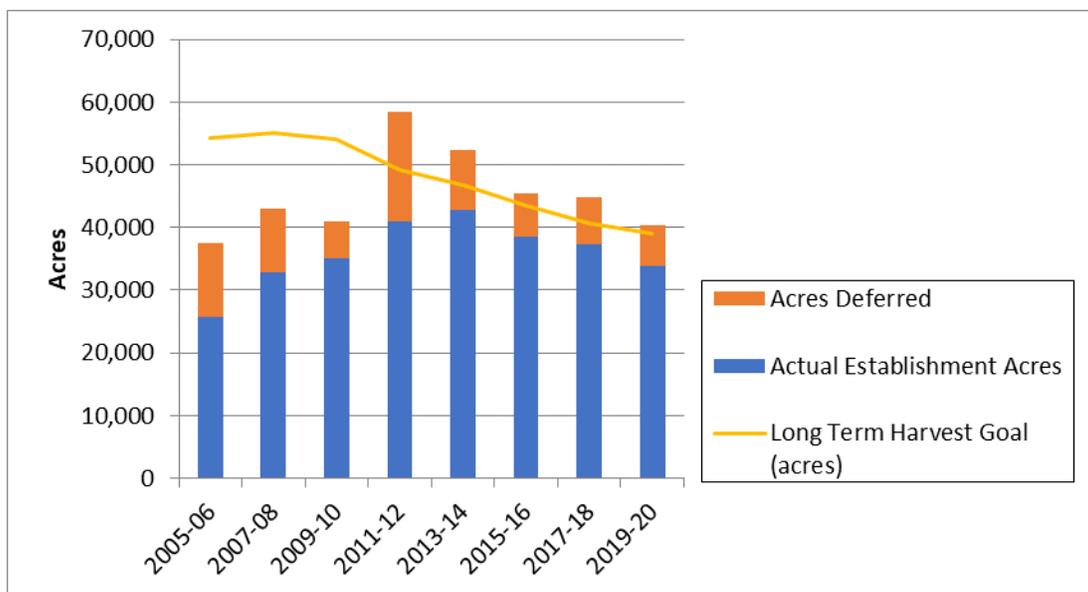
Long Term Harvest Goals scheduled 39,135 acres for harvest evaluation over 2019-20. 33,807 acres, 86%, were silviculturally ready and were established for commercial sale. An additional 6,456 acres were evaluated for timber harvest but were rescheduled to a future year as they were not silviculturally ready for harvest. DNR achieved 103% of the Long Term Harvest Goals, as defined by the total acres established for timber sale plus the acres evaluated for timber sale. The projected revenue from these timber sales is \$12.6 million annually. This is based on the average value per cut acre on all DNR timber sales for sold sales under contract for 2019-2020.

DNR has demonstrated improvement in both timber sale acres established and percentage of our long-term harvest goals, most significantly in the years since 2011 compared from 2005-2011.

STATE LAND HARVEST GOALS

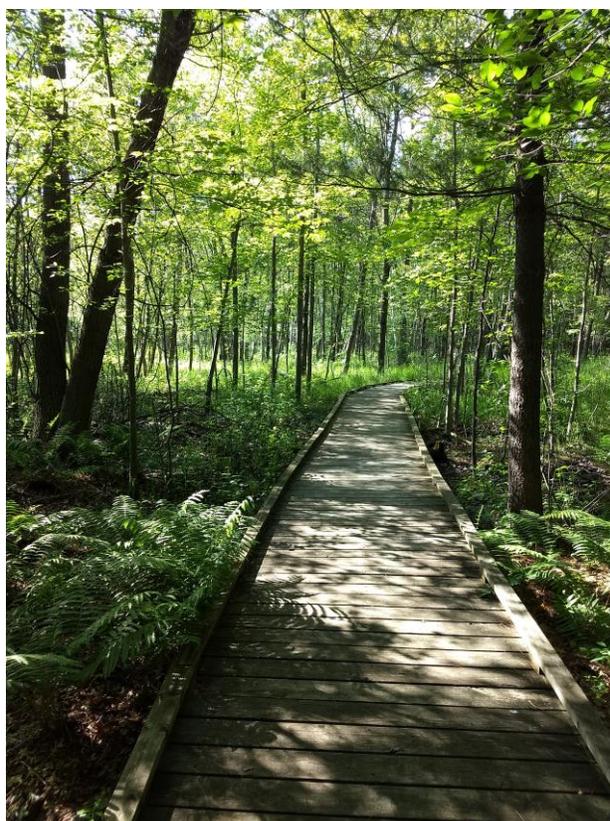
	2005-06	2007-08	2009-10	2011-12	2013-14	2015-16	2017-18	2019-20
Long Term Harvest Goal (acres)	54,250	55,157	54,050	49,117	46,711	43,474	40,761	39,135
Actual Establishment Acres	25,818	32,771	35,105	40,949	42,733	38,446	37,266	33,807
Acres Deferred	11,716	10,150	5,878	17,393	9,700	7,030	7,564	6,456
Total Acres Evaluated For Sale	37,534	42,921	40,983	58,342	52,433	45,476	44,830	40,263
Percentage of Long Term Harvest Goal	69%	78%	76%	119%	112%	105%	110%	103%

Figure 1. Long Term Harvest Goal compared with acres established, evaluated and deferred



Status

The 2019-2020 figures indicate timber harvest activity more closely equals the long-term harvest goals (15-year average). With updated recon information and elimination of back-log timber sales, it is expected that the acres being evaluated and established for sale will level off going forward DNR lands are moving near regulation to provide better estimates for acres and volume of timber being offered for sale on an annual basis. Long term harvest goals were met or exceeded in the last 5 biennia by 3% in 2019-20, 10% in 2017-18, 5% in 2015-16, 12% in 2013-14 and 19% in 2011-12. There were significant shortfalls in meeting goal from 2005 to 2010. The increased harvest activity over the past five reporting periods is due to an emphasis on reaching the long-term allowable harvest levels and a focused evaluation of the stands that had backlogged timber harvests. Addressing the backlogged stands resulted in both additional timber harvest establishment, removal of scheduled practices and deferring practices to future years on stands that were not yet ready for harvest.



Planning efforts over the past several years and improved forest reconnaissance has refined the calculated allowable harvest levels. These improvements helped foresters and property managers better define which forest stands are suitable for harvest given a property’s management goals. Harvest establishment for an individual property or group of properties

can vary significantly year to year for a variety of reasons. Some explanations on variations specific to individual or groups of properties can be found in the comments section in the attached spreadsheet.

In general, the reasons for exceeding the allowable harvest target on individual properties include:

- Expedited establishment of timber harvests on stands that had been scheduled for harvest in previous years but that had not yet been established due to various constraints.
- Properties may have sporadically scheduled harvest activities based on the existing forest conditions, which results in actual harvest establishment that may exceed long term harvest goals in an individual year.
- Weather and forest health conditions can damage forest stands and resulting salvage harvests may exceed long-term harvest goals. Conversely, in years following salvage harvests which exceed goals, the harvest establishment on a property is typically lower than the long-term goals. (July 2019 severe windstorm is a glaring example)

In general, the reasons for not achieving the allowable harvest target on individual properties include:



- Properties may have sporadically scheduled harvest activities based on the existing forest conditions, which results in actual harvest establishment that may fall short of long-term harvest goals in an individual year.
- The challenge of accurately transferring constraints from master planning into the individual stand data. Some stands are shown as ready to evaluate for harvest in the schedule when the property master plan does not allow for it.
- Timber harvest postponement resulting from pending master plan direction and coordination with Wildlife, Fisheries, Parks, and Natural Heritage Conservation programs.
- The challenge of establishing and implementing timber harvests on intensively managed Park properties so harvests integrate with social considerations such as camping season, trail use, and other property user activities.

- Challenges in both establishing timber harvest on forested wetland types such as bottomland hardwood, swamp hardwood, and swamp conifers and in getting them harvested due to wet ground and poor access.
- Continuing decline in pulpwood markets, particularly for areas of the state further from the primary pulp/paper mills.

Process Improvement:

- Continued completion of master plans on DNR properties will further refine the property and stand objectives and will improve the long-term harvest goal estimates. For properties without master plans and those with outdated master plans, interim forest management plans will be completed prior to timber harvest to assess property forestry objectives and solicit public input.
- Contracting of some state land timber sale work will continue to be utilized where cost effective.
- Continued improvement to the database Wisconsin Field Inventory and Reporting System (WisFIRS) will streamline timber sale administration and tracking.

2. Maintaining Updated Forest Reconnaissance (recon) Data

Up-to-date recon data allows for more accurate predictions of management needs, including scheduled timber harvests. This allows foresters and property managers to more effectively work plan and blend in the social, ecological, and economic factors that all contribute to implementing these practices.

As of January 1, 2021, 99.9% of the DNR’s state lands have recon data, totaling over 1.59 million acres contained within nearly 900 properties. Nearly 616,400 acres of inventory were updated and entered into WisFIRS in 2019-20. This was primarily accomplished by Fish, Wildlife and Parks (FWP) staff efforts to evaluate and retype non-forested cover types. The only lands missing data are small parcels not suited for land management activities such as tower sites, boat landings, administrative areas and those that may have just recently been acquired.

View	Map	Comp. Summary	Property	Property Name	Compartment	Planned Treatments
			220	STATE OWNED ISLANDS-ASHLAND	1	PT
			320	STATE OWNED ISLANDS-BARRON	1	PT
			320	STATE OWNED ISLANDS-BARRON	2	PT
			320	STATE OWNED ISLANDS-BARRON	3	PT
			320	STATE OWNED ISLANDS-BARRON	4	PT
			320	STATE OWNED ISLANDS-BARRON	5	PT
			320	STATE OWNED ISLANDS-BARRON	6	PT
			320	STATE OWNED ISLANDS-BARRON	7	PT
			320	STATE OWNED ISLANDS-BARRON	8	PT
			320	STATE OWNED ISLANDS-	9	PT

Status

Nearly all DNR lands now have updated recon data. There are currently only 19,400 acres (1.2% of total) that still have recon data more than 20 years old.

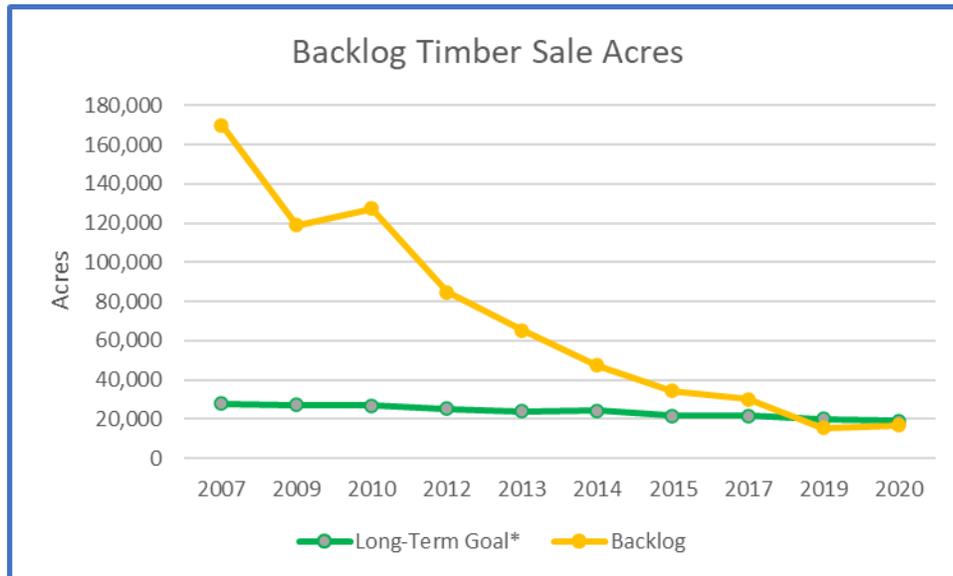
Progress 2019-2020

- Previous reports have described DNR’s efforts to update recon. DNR is now essentially in a maintenance model, periodically updating older recon as it comes due or evaluating stands that are scheduled for harvests.
 - State Forests have essentially eliminated recon that is over 20 years old (3,483 acres remaining – 0.65%)
 - Department Program Lands (excluding State Forests) have continued to reduce recon that is over 20 years old (14,727 acres remaining – 1.4%). In the last 2 years, nearly 7,400 acres of recon older than 20 years was updated. During the next 2 years DNR will focus on reducing the remaining recon over 20 years old on all properties.

3. Reduce Backlogged Timber Sales

In 2019-2020 properties statewide were successful in reducing the amount of backlogged timber sales. Collectively, DNR lands achieved 103% of the long-term harvest goal statewide, which points to the successes of many properties at reducing the amount of backlogged harvests. There has been continued steady progress on all DNR lands to reduce the amount of backlogged timber harvests scheduled.

Total Timber Sale Acreage Backlog - Statewide			
Date	Annual Goal	Long-Term Goal*	Backlog
2007		27,700	170,000
2009		27,300	118,800
2010	154,136	26,750	127,386
2012	110,060	25,293	84,767
2013	89,300	24,070	65,230
2014	71,478	24,188	47,290
2015	55,963	21,530	34,433
2017	51,831	21,725	30,106
2019	35,319	20,007	15,312
2020	35,858	19,128	16,730
*LTG for 2007 & 2009 reconstructed/estimated.			



Status

Currently, on all DNR lands approximately 16,730 acres remain backlogged for harvest evaluation. In 2020, the backlog was reduced by 13,370 acres since 2017, a 44% reduction from 30,100 acres.

Significant work has been done over the last decade to address the large backlog work. The backlog has now reached an acceptable operational level, which is considered the amount of one year’s calculated long-term allowable harvest.

Statutory and Management System Changes

Collaboration across DNR programs will continue to better ascertain in what stands timber harvesting is truly feasible and fits with property objectives. Until those determinations have been finalized (through master planning, interim forest management plans, and integrated property planning meetings) the harvest goals on some properties are variable.

In 2019, DNR revised annual property implementation planning. Revisions include internal property meetings to discuss and codify habitat management treatments, including timber sales and reforestation. In addition, all scheduled forest and habitat treatments are shared with the public for review and comment. Large DNR properties complete an additional Annual Property Implementation Plan that includes a summary of forest and habitat management plans for the upcoming year. Implementation of the annual property implementation meeting and plan will address management needs in an integrated manner on an on-going basis shared with the public.

Interim Forest Management Plans are developed and implemented on properties that do not have property master plans or have a master plan that is significantly out-of-date. These interim plans provide objectives and prescriptions to more comprehensively plan for timber management. The number of interim plans being completed each year has been decreasing over time as more and more department properties are covered by up-to-date master plans. In fact, the department did not need to complete any IFMPs in 2020. Approximately 500,000

acres, one third of DNR's ownership acres, in 2020 are covered with an Interim Forest Management Plan.

An expedited property master planning process has been developed to streamline the planning process, so management practices can proceed. Master plans are being developed by the sixteen Wisconsin Ecological Landscapes. All DNR properties included in an Ecological Landscape plan and references will have management adjusted accordingly to those properties. Six Ecological Landscape plans are completed and three are in progress, with the remaining seven to be completed by 2025.

In 2019, Northern State Forests implemented a legislative directive to adjust master plans through a plan variance. The variance included designating 75% of the forest base into the land management classification "Forest Production" and compliant with new Statute language for Forest Production areas. The master plan variance included a full public involvement process.

In 2019, DNR implemented a department alignment process that codified the Division of Forestry's role in providing professional forest management services to all DNR lands. Forestry provides forest inventory, silvicultural options and recommendations, timber sale establishment and administration and forest regeneration expertise.

2019-2020 ACCOMPLISHMENT REPORT *(attached)*

The conservation fund includes accounts for forestry (FR), fisheries (WR & FM), wildlife (WM), parks (PR), endangered resources (NA) and miscellaneous other ownerships (ZZ) The attached report provides information specified in Act 166 for calendar years 2019 and 2020 specifically the total timber harvest for each state forest and collectively Fish/Wildlife/Park and miscellaneous properties identified in WisFIRS. It is important to note that harvest scheduling identifies those forest stands to be *examined* for harvest and does not necessarily equate to how many acres will actually be harvested. For that reason, comparisons to annual allowable harvest include two figures; the actual harvest establishment acres, plus acreage where the timber sale was evaluated and rescheduled (deferred). The combination of timber sales established, and acres of timber sales deferred, is used to determine the progress on the allowable timber harvest goals. The table also provides the status of recon information for all properties identified in WisFIRS.

TERMINOLOGY

An understanding of the terminology referenced in Act 166 is necessary to fully comprehend the discussion in the report and the data in the following table. Following is a glossary of terms used in the report:

Area control – In the determination of sustainable timber harvest levels, area control is a system whereby a certain number of acres (as opposed to volume) are identified each year for harvest consideration.

Long Term Harvest Goal – Under area control, this is the number of acres that can be harvested each year, on a sustained basis, without depleting the resource over time. It is calculated based on inventoried forest data (see Recon definition below) collected by foresters in combination with long range planning (e.g. master planning) considerations. A property’s ecological, economic, and social constraints are considered in this determination. The forester uses this information to determine a predicted year of harvest for each stand of trees (see definition below). The combination of these stands, and their associated treatments,

represents the number of acres to be evaluated for harvest in a particular year. Yearly fluctuations are common due to changing conditions created by storms, insect & disease infestations, changing timber markets, fires, or backlogged workload. The



The long-term harvest goal in the WisFIRS database is a more stable value that disperses highs and lows in the annual harvest schedule over the planning period and is used to identify the annual allowable timber harvest goal for each property.

Deferred timber sales – Under area control the number of acres are identified for harvest consideration. This is based on the forester’s predicted year of harvest for individual stands of trees. When the scheduled year arrives, the forester examines each stand to determine if the predicted year of harvest was correct and the stand is ready for harvest. Occasionally, the stand does not develop as anticipated or conditions may have changed so that a harvest is not warranted. In those cases, the harvest date is deferred to a later date. Acres of deferred timber sales contribute to the total harvest establishment effort in an acreage control system.

Harvest establishment – The process in which a forester has identified a stand of trees for harvest, appraised the timber to be removed, identified operational specifications for the harvest, and prepared the paperwork necessary to bid out the sale to prospective logging contractors.

Harvest scheduling – The process for allocating harvests over a forest with emphasis on which treatments to apply and when and where to apply them.

Property acres – This is the fee title acreage of a property as reflected by the deed and property tax lister.

Recon (reconnaissance) – Similar to an inventory, this is a term used to describe the collective attributes of a forest stand. Examples of data collected by the forester includes

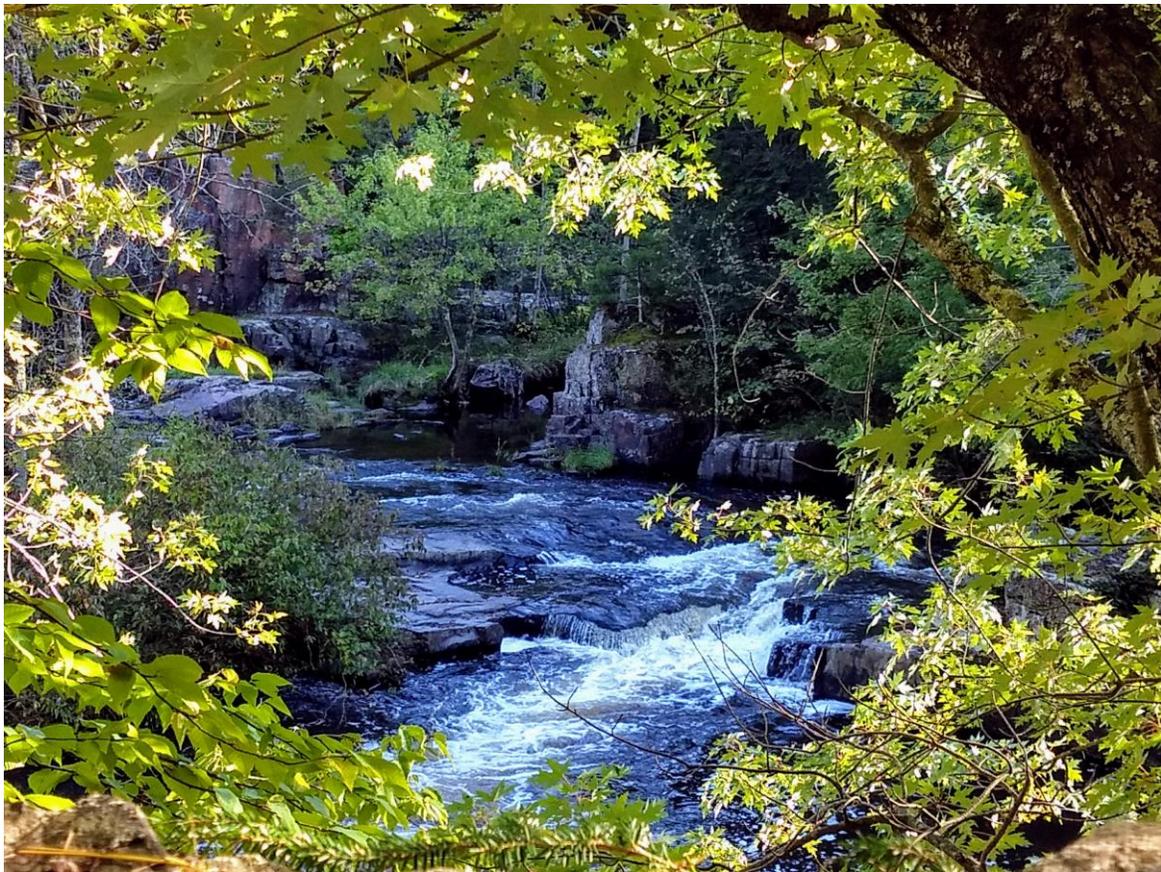
the species present, age, density, volume, height, diameter, ground cover, soil type, and the number of acres in a stand. The forester uses this information to determine an anticipated year in which a forest management treatment is needed. This information is computerized in a tabular format and linked to computerized or hand drawn maps. The data is available locally, but the entire public land recon is maintained in a central database. Storing the recon database in a computerized format provides for the annual and long-term allowable harvest calculation and the associated stand harvest scheduling.

Stands – A contiguous group of trees sufficiently uniform in species composition, structure, and age-class distribution, and growing on a site of sufficiently uniform quality, to be considered a relatively homogenous and distinguishable unit.

WisFIRS – An acronym for the Wisconsin Forest Inventory and Reporting System which is the database housing the tabular recon, GIS spatial representation of stands, and timber sale information for State lands.

Data extraction notes-

- Forest Reconnaissance data from WisFIRS-Forest Recon Stats Report 114, 1/25/2021
- Long Term Harvest Goals data from WisFIRS-Long Term Harvest Goals Report 303, 1/25/2021
- Timber Sale Established and Evaluations data from WisFIRS-Harvest Establishment Monitoring Report 303, 1/25/2021



ACT 166 CY 2019-20' DNR STATE LANDS INVENTORY & TIMBER HARVEST REPORTING

DNR Property	Conservation Fund Account	WisFIRS Property Acres	Recon Acres (Inventory)	% of Property with Recon	2019-20' Long Term Harvest Goal Acres	2019-20' Established Timber Sale Acres	2019-20' Evaluated & Rescheduled Acres	Total Acres Established and Rescheduled	% of Allowable Harvest
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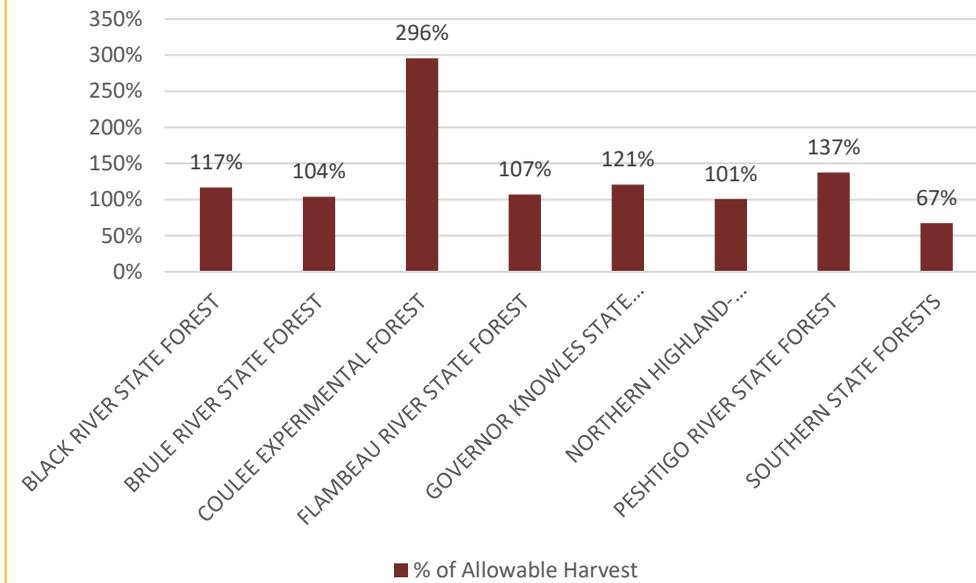
STATE FORESTS

BLACK RIVER STATE FOREST	FR	68,838	68,838	100.0%	2,659	2,494	606	3,100	117%
BRULE RIVER STATE FOREST	FR	47,011	46,957	99.9%	1,928	1,739	267	2,006	104%
COULEE EXPERIMENTAL FOREST	FR	2,843	2,843	100.0%	71	84	126	210	296%
FLAMBEAU RIVER STATE FOREST	FR	95,300	95,300	100.0%	3,885	3,875	278	4,153	107%
GOVERNOR KNOWLES STATE FOREST	FR	21,050	21,050	100.0%	600	516	208	724	121%
NORTHERN HIGHLAND-AMERICAN LEGION STATE FOREST	FR	236,011	235,970	100.0%	8,433	7,449	1,042	8,491	101%
PESHTIGO RIVER STATE FOREST	FR	9,029	9,029	100.0%	305	343	76	419	137%
SOUTHERN STATE FORESTS	FR	58,462	58,318	99.8%	2,257	1,154	362	1,516	67%

State Forests- % of Property with Recon



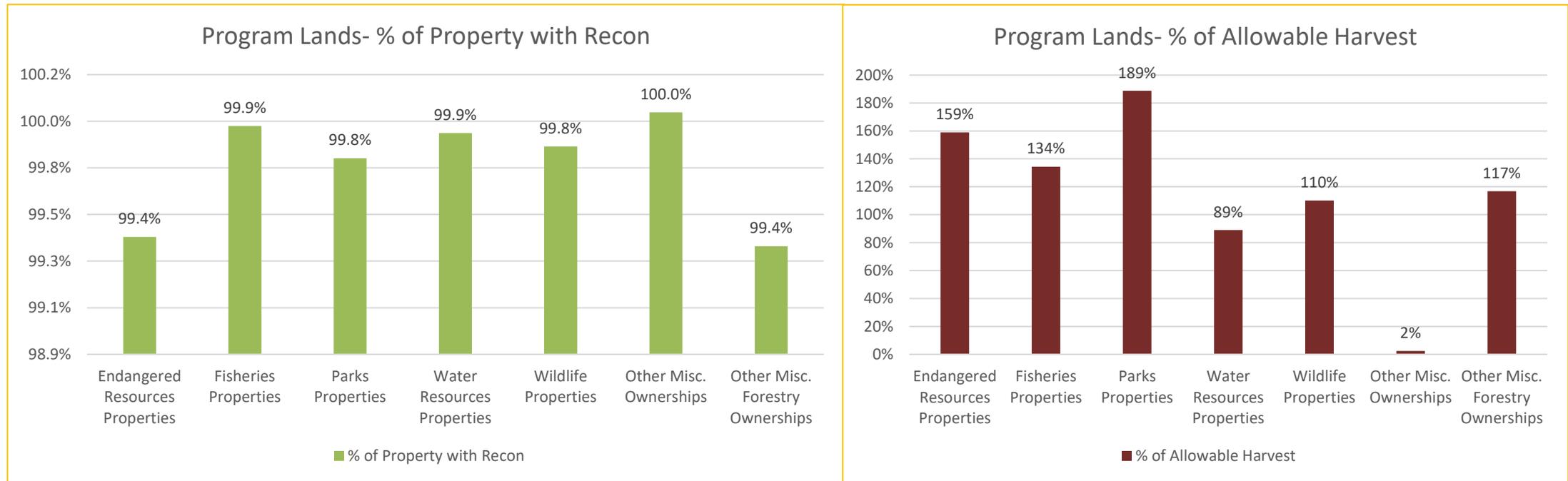
State Forests- % of Allowable Harvest



DNR Property	Conservation Fund Account	WisFIRS Property Acres	Recon Acres (Inventory)	% of Property with Recon	2019-20' Long Term Harvest Goal Acres	2019-20' Established Timber Sale Acres	2019-20' Evaluated & Rescheduled Acres	Total Acres Established and Rescheduled	% of Allowable Harvest
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DNR-PROGRAM LANDS

Endangered Resources Properties	NA	71,957	71,553	99.4%	612	929	44	973	159%
Fisheries Properties	FM	116,612	116,541	99.9%	3,209	3,469	843	4,312	134%
Parks Properties	PR	113,968	113,733	99.8%	1,504	2,257	581	2,838	189%
Water Resources Properties	WR	140,947	140,816	99.9%	3,320	2,211	743	2,954	89%
Wildlife Properties	WM	603,635	602,707	99.8%	10,142	9,901	1,265	11,166	110%
Other Misc. Ownerships	ZZ	4,809	4,809	100.0%	127	3	-	3	2%
Other Misc. Forestry Ownerships	FR	2,488	2,473	99.4%	83	82	15	97	117%



-PLEASE REFER TO THE BACKGROUND SECTION OF THE REPORT FOR A GLOSSARY OF TERMS-