

**TIMBER HARVEST AND
INVENTORY REPORT-DNR STATE LANDS
For Calendar Years 2021-2022**



**As required by s. 28.025(3)(a), Wis. Stats.
Submitted to the Council on Forestry, May 2023**

**Respectfully submitted by DNR Division of Forestry
Heather Berklund, Division Administrator and Chief State Forester**

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 Calendar Year (CY) 2021 and CY 2022 was to:

1. achieve our long-term timber harvest goals
2. improve accuracy of our timber harvest goals by continuing to update forest inventory reconnaissance while updating the oldest (>20 years old) forest data
3. make progress on the backlog of scheduled timber sales.
4. participate in the Ecological Landscape Master Planning process and/or update interim forest management plans to specify the management objectives of department properties.

1. Achieve Long-Term Timber Harvest Goals

Long-Term Harvest Goals (LTHG) scheduled 38,346 acres for timber harvest evaluation for CY 2021 and CY 2022. Of the 38,346 acres, 34,065 acres, or 89%, were silviculturally ready and were established for commercial timber sale. An additional 8,991 acres were evaluated for timber harvest but were rescheduled (deferred) to a future year as they were not silviculturally ready for harvest. DNR achieved 112% of the Long-Term Harvest Goals, as defined by the total acres established for timber sale plus the acres evaluated, for timber sale and deferred to a future year. The projected revenue from the CY 2021 and CY 2022 timber sales is \$22.4 million. This is based on the contracted value of timber sales sold during this period.

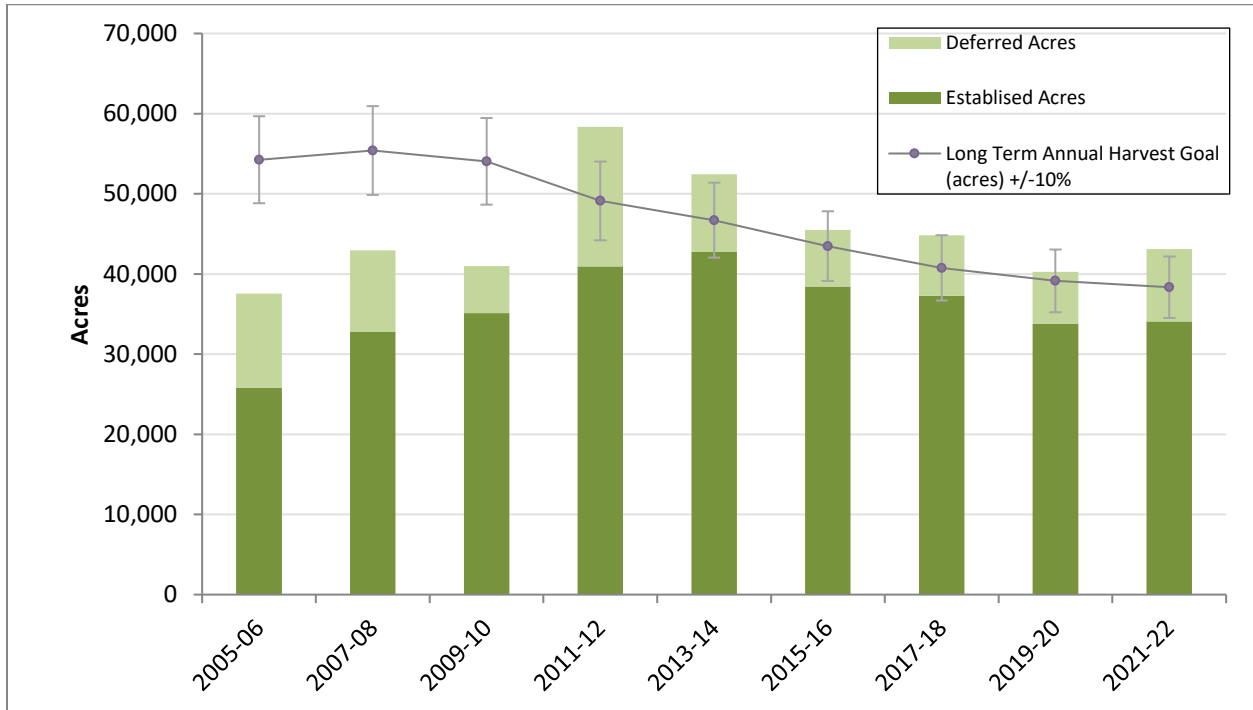
Annual Accomplishments and Trends

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

Table 1. State Land Harvest Goals and Accomplishments, calendar year 2005 through 2022.

	2005-06	2007-08	2009-10	2011-12	2013-14	2015-16	2017-18	2019-20	2021-22
Long Term Harvest Goal (acres)	54,250	55,400	54,050	49,117	46,711	43,474	40,761	39,135	38,346
Actual Establishment Acres	25,818	32,771	35,105	40,949	42,733	38,446	37,266	33,807	34,092
Acres Deferred	11,716	10,150	5,878	17,393	9,700	7,030	7,564	6,456	9,005
Total Acres Evaluated for Management	37,534	42,921	40,983	58,342	52,433	45,476	44,830	40,263	43,097
Percentage of Long-Term Harvest Goal	69%	78%	76%	119%	112%	105%	110%	103%	112%

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



Status and Future Projections

The 2021-2022 accomplishments indicate timber harvest evaluation exceeded the long-term harvest goals by 12%. With updated reconnaissance information and elimination of backlog 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 have been met or exceeded since 2009-10. 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 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 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, the harvest establishment on a property is typically lower than the long-term goals.

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

- Closure of significant primary pulpwood consuming mills (e.g. Verso mill closure) which further a continuing decline in pulpwood markets, particularly for areas of the state further from the primary pulp/paper mills.
- 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.
- Accurately transferring constraints from master planning into the individual stand data poses challenges. 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.



Process Improvement for more accurate timber harvest schedules and implementation

- Continued completion of Ecological Landscape plans on DNR properties will further refine individual property and stand objectives
- Contracting of some state land timber sale establishment will continue to be utilized where cost effective.
- Continued improvement to the Wisconsin Field Inventory and Reporting System (WisFIRS) will streamline timber sale administration and tracking.

2. Maintaining Updated Reconnaissance Data

Up-to-date reconnaissance allows for more accurate schedules of management needs. 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 timber sale practices.

As of January 1, 2023, 99.9% of the DNR's state lands have reconnaissance data, totaling over 1.6 million acres contained within nearly 900 properties. Nearly 203,700 acres of inventory were updated and entered into WisFIRS in 2021-22. This was accomplished by Forestry staff (158,400 acres) and Fish, Wildlife and Parks (FWP) staff (45,300 acres). 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-BARRON	9	PT

Status

Nearly all DNR lands now have updated reconnaissance data. There are currently only 18,600 acres (1.2% of total) that still have reconnaissance data more than 20 years old. The Department has a policy which states reconnaissance will not be greater than 20 years old and work plans to ensure this policy is met.

Progress 2021-2022

- Previous reports have described DNR's efforts to update reconnaissance. DNR is now essentially in maintenance mode, periodically updating older reconnaissance as it comes due or evaluating stands that are scheduled for harvests.
 - State Forests continue to have a very small portion of reconnaissance that is over 20 years old (5,505 acres remaining – 1.02%)
 - State lands excluding State Forests have (13,107 acres over 20 years old– 1.2%).
 - During the next 2 years DNR will continue to focus on reducing the remaining reconnaissance over 20 years old on all properties.

3. Reduce Backlogged Timber Sales

In 2021-2022 properties statewide were successful in reducing the amount of backlogged timber sales. Backlogged timber sales refer to more acres are scheduled for evaluation in the current year, than the long-term harvest goals for a property. Collectively, DNR lands achieved 112% of the long-term harvest goal statewide, which points to the successes of many properties at reducing the number of backlogged harvests.

Table 2. Total Timber Sale Acreage Backlogged, calendar year 2007 through 2022.

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	40,765	20,374	20,391
2021	35,858	19,425	16,433
2022	33,443	18,921	14,518

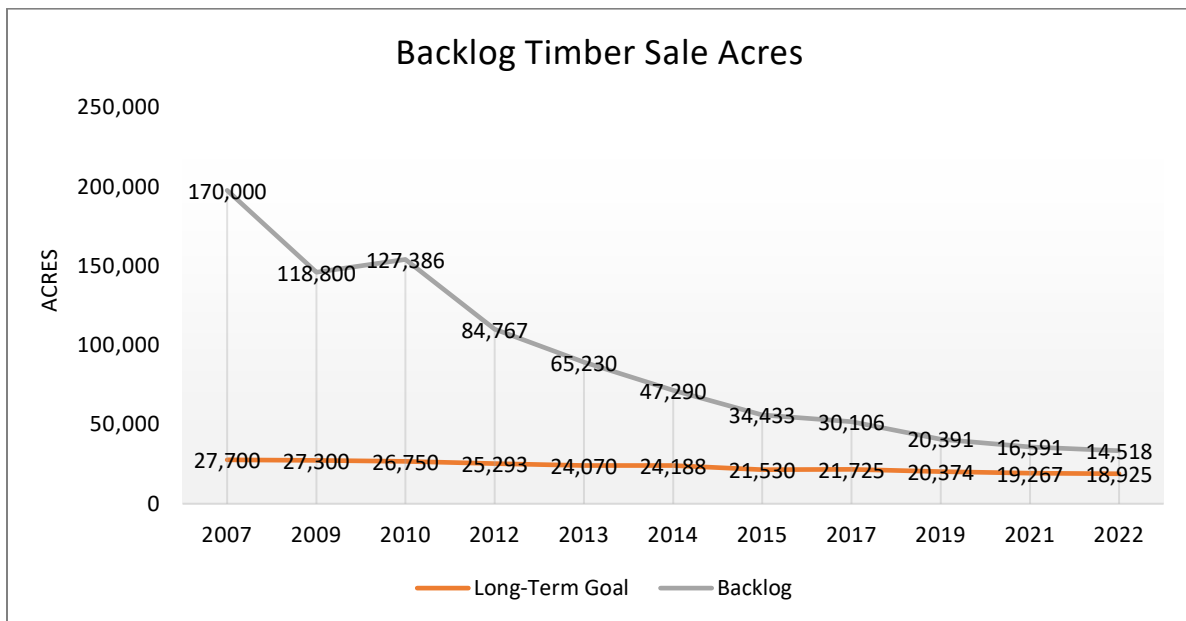
*LTG for 2007 & 2009 reconstructed/estimated.

Status

Currently, on all DNR lands approximately 14,518 acres remain backlogged for harvest evaluation. In 2022, the backlog was reduced by 15,588 acres, a 52% reduction from 30,100 acres in 2017.

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

Figure 2. Backlog timber sale acres compared to long-term harvest goal, calendar year 2007 through 2022



4. *Participate in planning process*

Statutory and Management System Changes

Collaboration across DNR programs will continue to better ascertain in what stands timber harvesting is feasible and implements property management 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.

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. Seven Ecological Landscape plans are complete (1.2 million acres); four are in progress (173,000 acres), with the remaining five to be completed by 2025 (270,000 acres).

For those properties without an approved Ecological Landscape plan (443,000 acres), Interim Forest Management Plans were developed and implemented. These interim plans provide objectives and prescriptions to plan for timber management more comprehensively.

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.

2021-2022 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 2021 and 2022, 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 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 to a future year. The combination of timber sales established, and acres of timber sales rescheduled, is used to determine the progress on the long-term timber harvest goals. The attached report also provides the status of reconnaissance 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 attached report. 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 Reconnaissance 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 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.

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 reconnaissance is maintained in a central database. Storing the reconnaissance 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 reconnaissance, GIS spatial representation of stands, and timber sale information for State lands.

Data extraction notes-

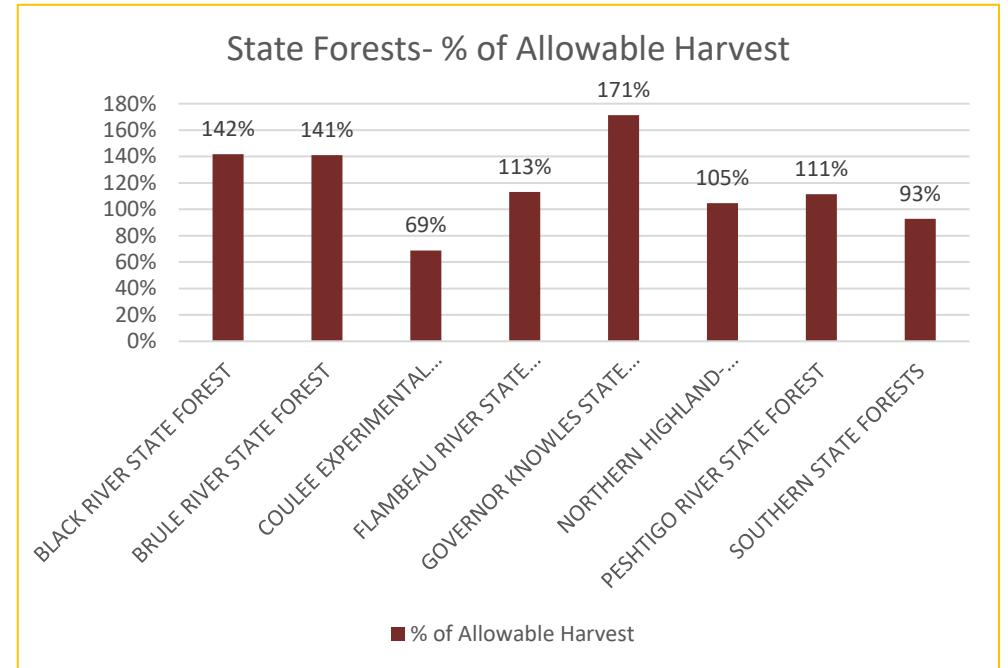
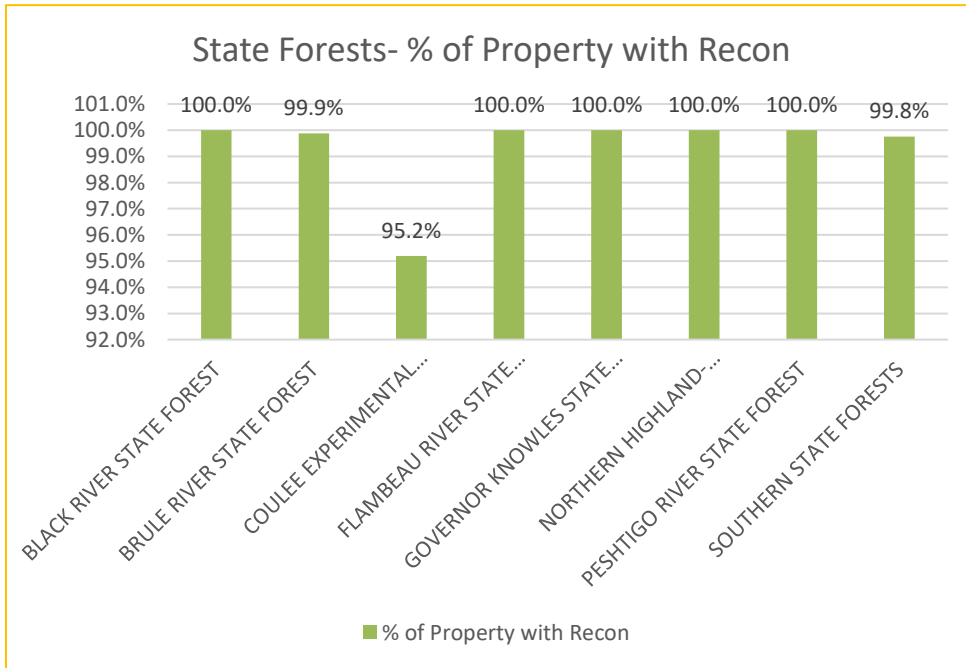
- Forest Reconnaissance data from WisFIRS-Forest Recon Stats Report 114, 2/1/2023
- Long Term Harvest Goals data from WisFIRS-Long Term Harvest Goals Report 303, 2/1/2023
- Timber Sale Established and Evaluations data from WisFIRS-Harvest Establishment Monitoring Report 303, 2/1/2023



ACT 166 CY 2021-22' DNR STATE LANDS INVENTORY & TIMBER HARVEST REPORTING

DNR Property	Conservation Fund Account	WisFIRS Property Acres+	Recon Acres (Inventory)+	% of Property with Recon	2021-22' Long Term Harvest Goal Acres #	2021-22' Established Timber Sale Acres*	2021-22' Evaluated & Deferred Acres #	Total Acres Established and Deferred	% of Allowable Harvest
BLACK RIVER STATE FOREST	FR	68,970	68,970	100.0%	2,709	2,653	1,183	3,836	142%
BRULE RIVER STATE FOREST	FR	47,227	47,172	99.9%	1,882	1,818	836	2,654	141%
COULEE EXPERIMENTAL FOREST	FR	2,995	2,851	95.2%	77	31	22	53	69%
FLAMBEAU RIVER STATE FOREST	FR	94,361	94,360	100.0%	4,140	3,909	773	4,682	113%
GOVERNOR KNOWLES STATE FOREST	FR	21,182	21,182	100.0%	601	716	314	1,030	171%
NORTHERN HIGHLAND-AMERICAN LEGION S.F.	FR	237,368	237,368	100.0%	8,965	8,129	1,254	9,383	105%
PESHTIGO RIVER STATE FOREST	FR	9,219	9,219	100.0%	263	293	0	293	111%
SOUTHERN STATE FORESTS	FR	58,863	58,718	99.8%	2,165	1,875	132	2,007	93%

STATE FORESTS

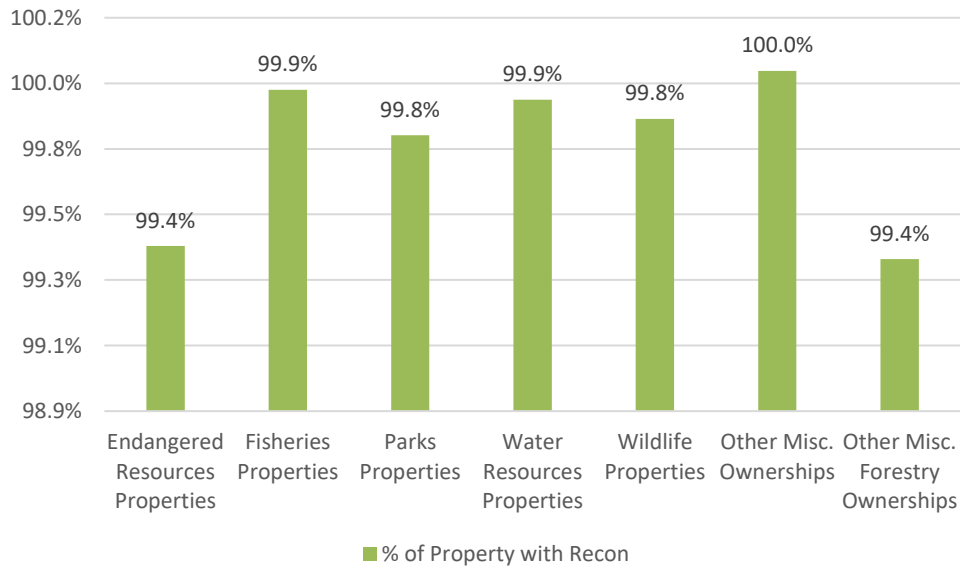


DNR Property	Conservation Fund Account	WisFIRS Property Acres	Recon Acres (Inventory)	% of Property with Recon	2021-22' Long Term Harvest Goal Acres #	2021-22' Established Timber Sale Acres*	2021-22' Evaluated & Deferred Acres #	Total Acres Established and Deferred	% of Allowable Harvest
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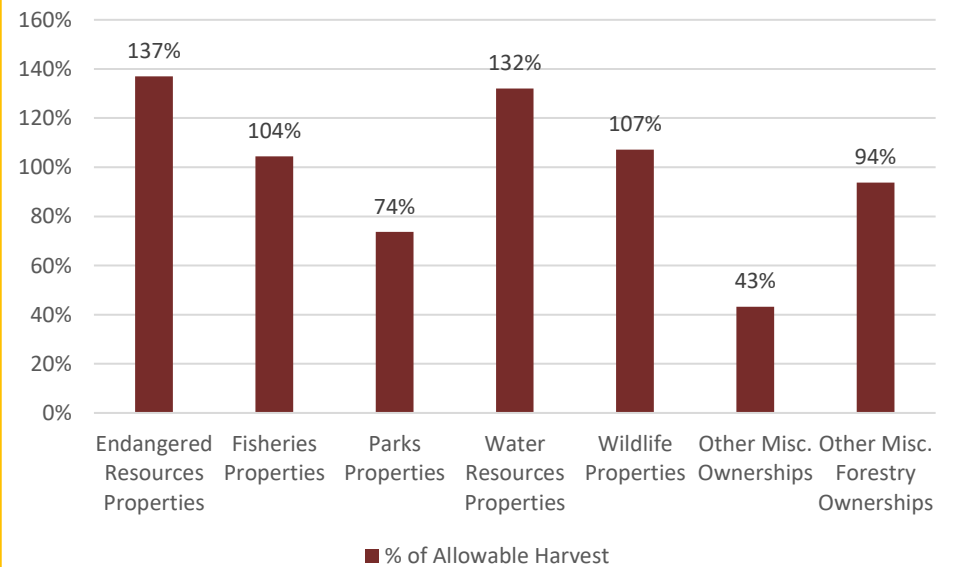
DNR-PROGRAM LANDS

Endangered Resources Properties	NA	71,957	71,553	99.4%	620	649	200	849	137%
Fisheries Properties	FM	116,612	116,541	99.9%	2,718	2,288	550	2,838	104%
Parks Properties	PR	113,968	113,733	99.8%	1,559	991	157	1,148	74%
Water Resources Properties	WR	140,947	140,816	99.9%	3,332	2,975	1,425	4,400	132%
Wildlife Properties	WM	603,635	602,707	99.8%	9,170	7,684	2,145	9,829	107%
Other Misc. Ownerships	ZZ	4,809	4,809	100.0%	81	21	14	35	43%
Other Misc. Forestry Ownerships	FR	2,488	2,473	99.4%	64	60	0	60	94%

Program Lands- % of Property with Recon



Program Lands- % of Allowable Harvest



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