2006 ANNUAL PROGRESS REPORT

WILDLIFE HABITAT MANAGEMENT PROGRAM

for the

HENRY M. JACKSON HYDROELECTRIC PROJECT

FEDERAL ENERGY REGULATORY COMMISSION
Project Number 2157 – License Article 53

Submitted by

PUBLIC UTILITY DISTRICT NO. 1 OF SNOHOMISH COUNTY

and

THE CITY OF EVERETT, WASHINGTON

April 30, 2007

2006 ANNUAL PROGRESS REPORT
WILDLIFE HABITAT MANAGEMENT PLAN

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1.0 SUMMARY

Accomplishments of the year 2006 on the Wildlife Habitat Management Plan (WHMP) for the Henry M. Jackson Hydroelectric Project are presented in this report. A cumulative summary of tasks accomplished since the initiation of the WHMP in 1988 is also presented in this report. Problems or changes needed during implementation of the WHMP are discussed, and updated schedules are presented. A draft of this report was submitted for comments to the U.S. Fish and Wildlife Service (USFWS), the Washington Department of Fish and Wildlife (WDFW), and the Tulalip Tribes. The Washington Department of Natural Resources (DNR) was also consulted.

The basic habitat enhancements, monitoring programs, and reports required by the WHMP to date have been implemented consistent with the WHMP's objectives (Section 3, WHMP, by management tract) and implementation schedule (Section 5.0, WHMP). In some cases, procedures described in the WHMP have been modified or refined to improve the usefulness and reliability of results. Similarly, the details of timber stand boundaries and harvest schedules have been modified to improve operations and reduce impacts, but all such modifications have been within the allowances provided by the WHMP. All significant modifications in procedures have been evaluated relative to the WHMP's management objectives, in consultation with agency reviewers, and have been approved only if the modifications remain consistent with the WHMP's objectives.

As described in Sections 3 and 4 of this report and in previous years' reports, implementation of the WHMP over the past decade has already provided many of the intended wildlife habitat benefits. For example, snag and coarse woody debris creation has provided critical shelter and foraging substrate that was scarce in second growth forest stands, while small-scale timber harvest has created new foraging opportunities for several species. Revegetation of areas disturbed during project construction has provided cover and forage.

1.1 MAJOR TASKS ACCOMPLISHED DURING 2006

- Continued implementation of Lake Chaplain Tract RMAP (Lake Chaplain Tract)
- Complete reforestation of Unit 3 of Phone Line Sale (Lake Chaplain Tract)
- Completed Crazy Bear Sale layout (Lake Chaplain Tract)
- Monitored plantations (Lake Chaplain Tract)
- Set up photo documentation stations at Spada Lake Tract thinned stands
- Continued implementation of Spada Lake Tract RMAP and associated road repairs
- Continued wetland descriptions/ratings on WHMP lands
- Management of noxious and invasive weeds (all WHMP tracts)
- Snag inventories (Lake Chaplain Tract)
- Monitoring of nest structures (Lake Chaplain, Lost Lake and Spada Lake Tracts)
- Water quality monitoring in Chaplain Creek
- Deer forage monitoring (Lake Chaplain Tract)

- Study Plan development for Jackson Project Relicensing, stakeholder meetings.
- Preparation of Supplemental Plan for the Spada Lake Tract

1.2 TASKS SCHEDULED FOR 2007

- Continued implementation of RMAPs (Lake Chaplain, Spada Lake Tracts)
- Sell Crazy Bear Sale (Lake Chaplain Tract)
- Plantation monitoring (Lake Chaplain Tract)
- Monitor thinned stands on Spada Lake Tract
- Snag monitoring (all tracts)
- Monitor nest structures (all tracts)
- Monitor revegetation sites
- Management of noxious and invasive weeds (all WHMP tracts)
- Develop draft SOP to monitor and control noxious weeds (all tracts)
- Water quality monitoring of Chaplain Creek
- Deer forage monitoring (Lake Chaplain Tract)
- Monitor Williamson Creek Tract
- Continue wetland descriptions/rating on WHMP lands
- Initiate relicensing study plans

2.0 INTRODUCTION

The 2006 Annual Progress Report on the Wildlife Habitat Management Plan (WHMP) for the Henry M. Jackson Hydroelectric Project was prepared by Public Utility District No. 1 of Snohomish County (District) and the City of Everett (City), who are co-licensees in the Project. The WHMP project area and management tracts are shown in Figure 1.

The WHMP guides management of the five tracts of land totaling approximately 7,070 acres of land and water. Refer to the WHMP, Wildlife Habitat Management Plan Supplement for the Spada Lake Tract (January 1997), and the Pre-Application Document (PAD) for the Jackson Hydroelectric Project, Section 5.4 (December 2005) for details on management goals and objectives, schedules and updated information. These documents are available on the District's website at **http://www.snopud.com/water/relicensing.ashx?p=2334**.

This annual report describes activities conducted during calendar year 2006 (see Section 3.0) and summarizes activities completed since the management program was initiated in 1988 (see Section 4.0). Activities anticipated for the calendar year 2007 are described (see Section 5.0). Activities, procedures and schedules described in this report are based on the WHMP approved by the Federal Energy Regulatory Commission on May 19, 1989, in compliance with Project License Article 53 and subsequent related orders from the Commission.

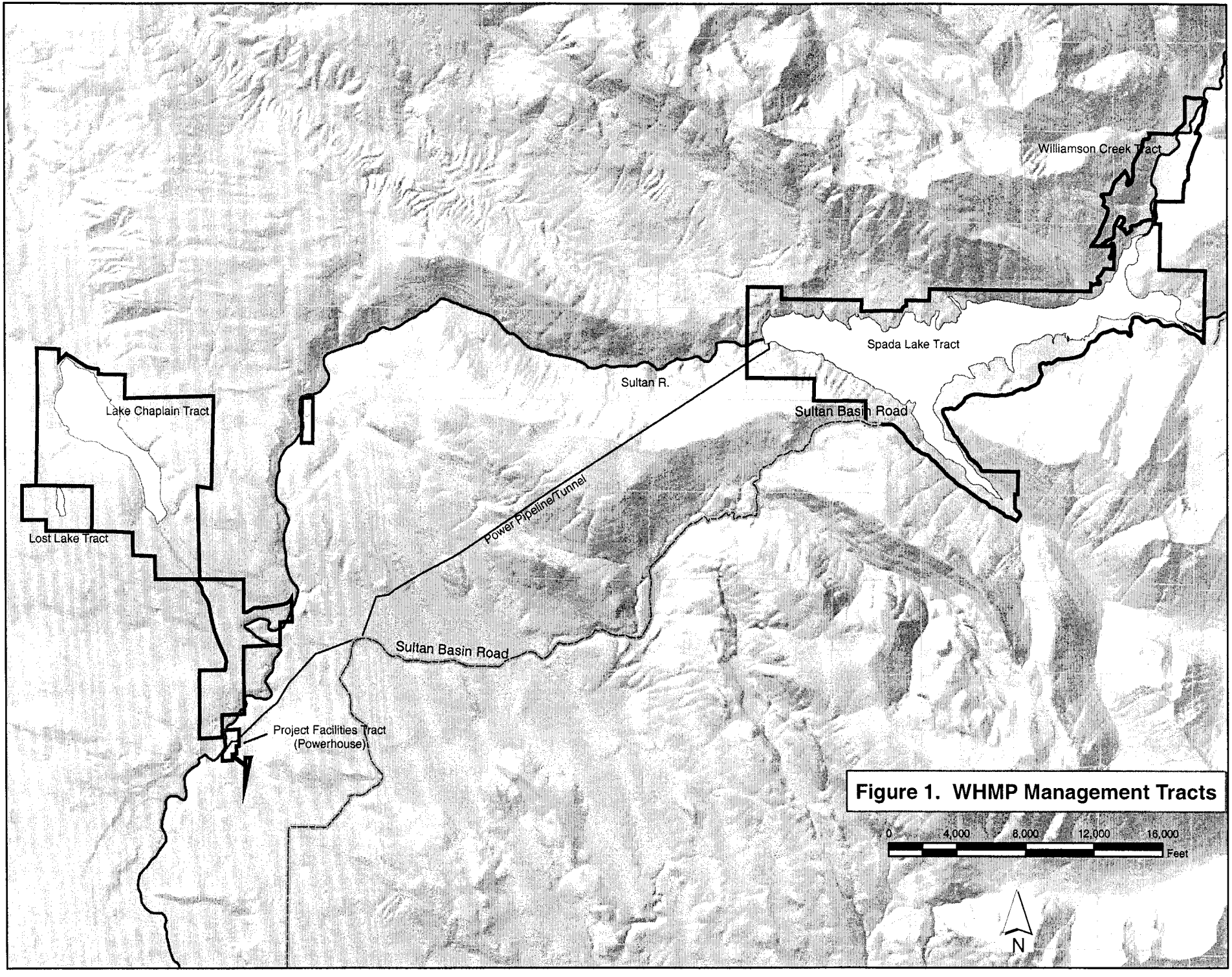


Figure 1. WHMP Management Tracts

3.0 WORK COMPLETED DURING 2006

3.1 FOREST VEGETATION MANAGEMENT ON THE LAKE CHAPLAIN TRACT

3.1.1 Phone Line Sale Harvest

Unit 3 of the Phone Line Sale was completely harvested in 2005 and was planted in 2006 with a mixture of 300 Douglas fir and 50 western red cedar seedlings per acre (Figure 2).

3.1.2 Layout for Crazy Bear Sale

The southern boundary of Unit #2 of the Crazy Bear Sale was modified slightly to provide a 50-foot buffer for a stream located on adjacent DNR ownership (Figure 2). The sale was delayed until 2007 to allow the incoming forester to become familiar with City procedures and to anticipate improving market conditions.

3.1.3 Monitoring of Plantations

Recent plantations were monitored in 2006, and all were in satisfactory condition. Older plantations were checked for bear damage and density of competing hardwoods. Additional, new bear damage was evident in Chap2-91 and Chap3-91, both planted in 1992 (Figure 2).

Hardwoods (alder and cherry) in Divr2-95 were slashed in previous years to moderate competition with conifer seedlings. The WHMP standard calling for hardwoods to comprise 5 to 10 percent of total stem count has been exceeded. Additional hardwoods slashing may be necessary to release overtopped conifers.

3.2 FOREST VEGETATION MANAGEMENT ON THE SPADA LAKE TRACT

Photo-documentation stations were set up to monitor the following stands that were commercially thinned in 2003-4: 9-184, 9-111, 9-121, 9-135 (Figure 3). The objective is to determine whether the understory will respond to increased light levels.

3.3 SNAG AND COARSE WOODY DEBRIS MANAGEMENT

3.3.1 Lake Chaplain Tract

In the spring of 2006, snag creation occurred on 15 units (284 acres) at Lake Chaplain that had been identified and inventoried in 2005. A total of 475 snags were created on these units, including 15 trees that were left with live branches and had "cat faces" carved into them, in an attempt to create a pocket of decaying wood within a live tree that may be turned in to a nest or roost by cavity excavators in the future. Additionally, 6 snags averaging 33" diameter at breast height (dbh) were created to help meet the needs of primary cavity excavators that require large snags for nesting and roosting (primarily the Pileated Woodpecker).

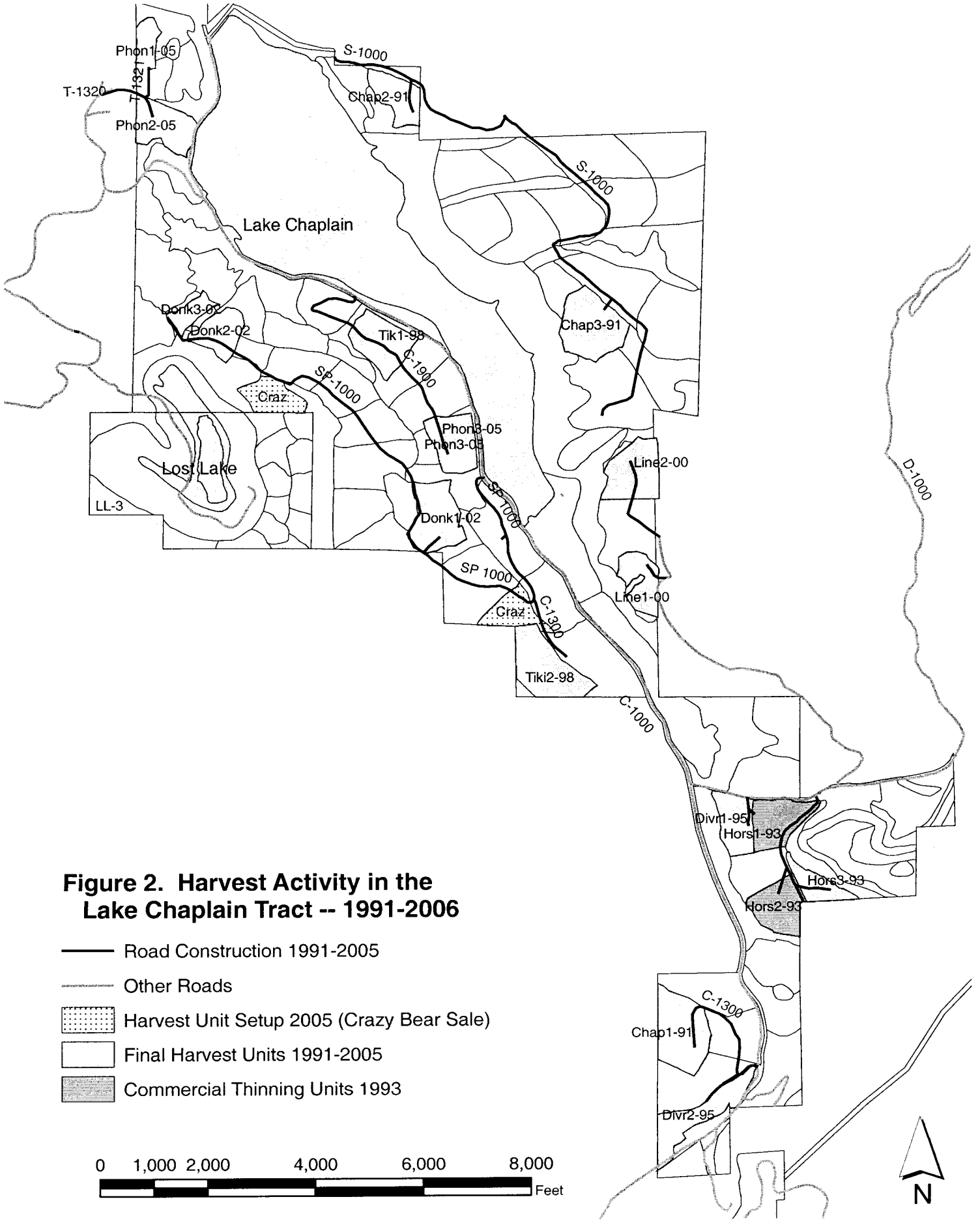


Figure 2. Harvest Activity in the Lake Chaplain Tract -- 1991-2006

- Road Construction 1991-2005
- Other Roads
- Harvest Unit Setup 2005 (Crazy Bear Sale)
- Final Harvest Units 1991-2005
- Commercial Thinning Units 1993

Two of the units where snag creation occurred are scheduled for harvest within 2 years (Crazy Bear Sale), and 3 others are scheduled for harvest between 2025 and 2030, so this was the last entry for snag creation prior to harvest. Units where snag creation occurred in 2006 are shown in Table 1 and Figure 3.

3.3.2 Spada Lake Tract

On the Spada Lake Tract a total of 1,338 snags greater than 11" dbh were created on 435 acres (10 stand complexes), including two stand complexes where snag creation had begun in 2004 (Figure 4 and Table 1). Also as part of the gap creation, most trees within a gap that were less than 11" dbh were either topped or base-girdled. A total of 1,024 trees in this size class were killed to create small snags and allow additional sunlight to reach the forest floor. The canopy gaps were typically triangular in shape, with the longest side (base) toward the south or southwest, to allow maximum exposure to the sun. Within most gaps, several trees along the two remaining sides were topped above several whorls of live limbs to allow the tree to remain alive, and potentially become infected with heart rot. In addition, a couple trees within each gap had "cat faces" carved into them to facilitate cavity excavation.

As each gap is set up for snag creation, photo documentation is made of the existing conditions, and vegetation inventories showing relative abundance of all shrub and herb species present are conducted. Using this baseline information, several gaps from each stand will be monitored into the future to determine a number of parameters, including:

- snag use by cavity excavating species,
- persistence of live-topped snags and any associated rot or cavity creation,
- growth and abundance of shrub and herb species,
- regeneration of conifer tree species, and,
- foraging by deer.

On average, one canopy gap was created every 6.3 acres, with gaps being created more frequently on stands where commercial thinning has not yet occurred or is not feasible due to access limitations (1 gap/5.5 acres) and spaced farther apart in stands where commercial thinning occurred in 2003-2004 (1 gap/6.9 acres). Creating gaps of this size required topping an average of 23 trees greater than 11" dbh and 8 trees less than 11" dbh. In addition, 13 trees per gap less than 11" dbh were base girdled.

Table 1. Summary of Snag Management Activities in 2006

UNIT	ACRES	NUMBER CREATED	AVG. DBH (in.)	AVG. HT. (ft.)	# PER ACRE	NOTES
Lake Chaplain Tract						
CRAZ 1	17.8	57	17.5	66.3	3.2	√Includes natural and created snags
CRAZ 2	23.2	69	17.4	75.7	3.0	√Includes natural and created snags
2025-2	17.3	42	18.2	75.5	4.5	√Includes natural and created snags
2025-5	22.3	52	17.4	64.0	3.4	√Includes natural and created snags
2025-6	15.9	30	18.5	68.3	3.6	√Includes natural and created snags
2035-1	23.4	64	17.6	64.7	3.1	√Includes natural and created snags
2035-2	5.0	11	18.0	77.3	4.1	√Includes natural and created snags
2035-4	12.7	9	17.8	78.9	4.7	√Includes natural and created snags
2035-5	20.0	42	17.9	75.9	4.7	√Includes natural and created snags
2045-1	22.3	41	17.1	65.1	3.2	√Includes natural and created snags
2045-2	27.3	0	30.9	62.2	7.7	√Includes natural snags only
2045-3	11.0	6	17.7	83.3	3.6	√Includes natural and created snags
2045-4	20.0	7	17.4	69.3	4.9	√Includes natural and created snags
2045-5	17.8	68	18.3	68.1	3.8	√Includes natural and created snags
2045-6	27.6	19	18.0	71.2	4.0	√Includes natural and created snags
Spada Lake Tract						
9-90	32.0	143	13.0	45.8	4.5	√Includes created snags only
9-107 complex	33.4	121	14.5	48.7	3.7	√Includes natural and created snags
9-108 complex	73.0	280	13.7	47.5	3.8	√Includes created snags only
9-110	8.4	34	13.0	51.6	4.0	√Includes natural and created snags
9-120	41.0	234	14.1	55.9	5.7	√Created snags only, from 2004 & 2006
9-121 complex	116.0	566	13.6	51.8	5.8	√Natural and created snags from 2004 & 2006
9-133	46.0	0	n/a	n/a	n/a	No trees of adequate size; re-visit in 10 years
9-135 complex	41.0	157	13.6	52.2	3.8	√Includes natural and created snags
9-151 complex	28.7	86	13.9	47.3	3.1	√Includes natural and created snags
9-184	11.0	33	13.1	47.6	3.0	Includes created snags only
	714.1	**2,171**	**16.8**	**63.1**		

Totals and averages for all units where snag management occurred in 2006.

√Meets WHMP requirements for size class distribution and number per acre.

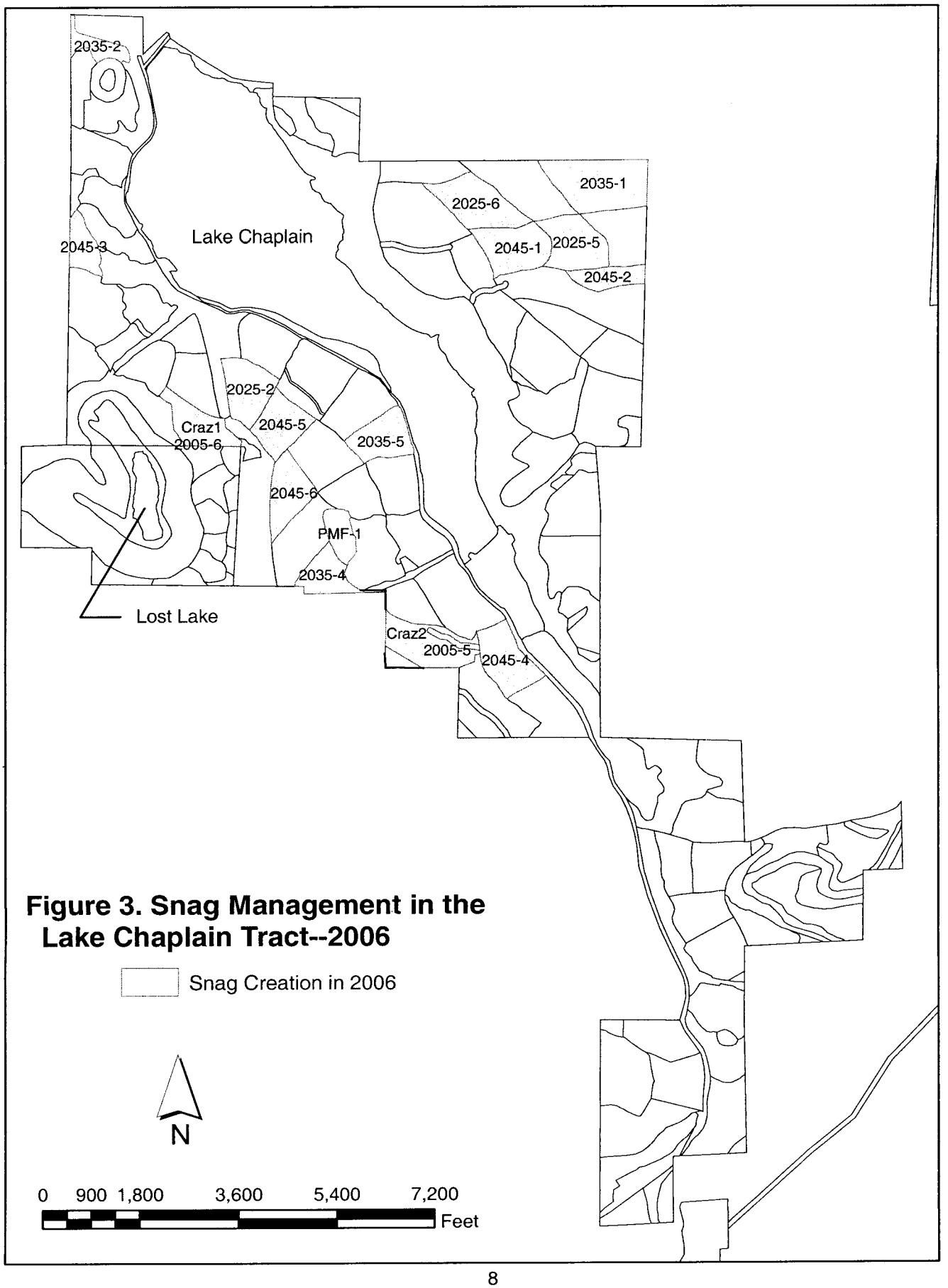


Figure 3. Snag Management in the Lake Chaplain Tract--2006

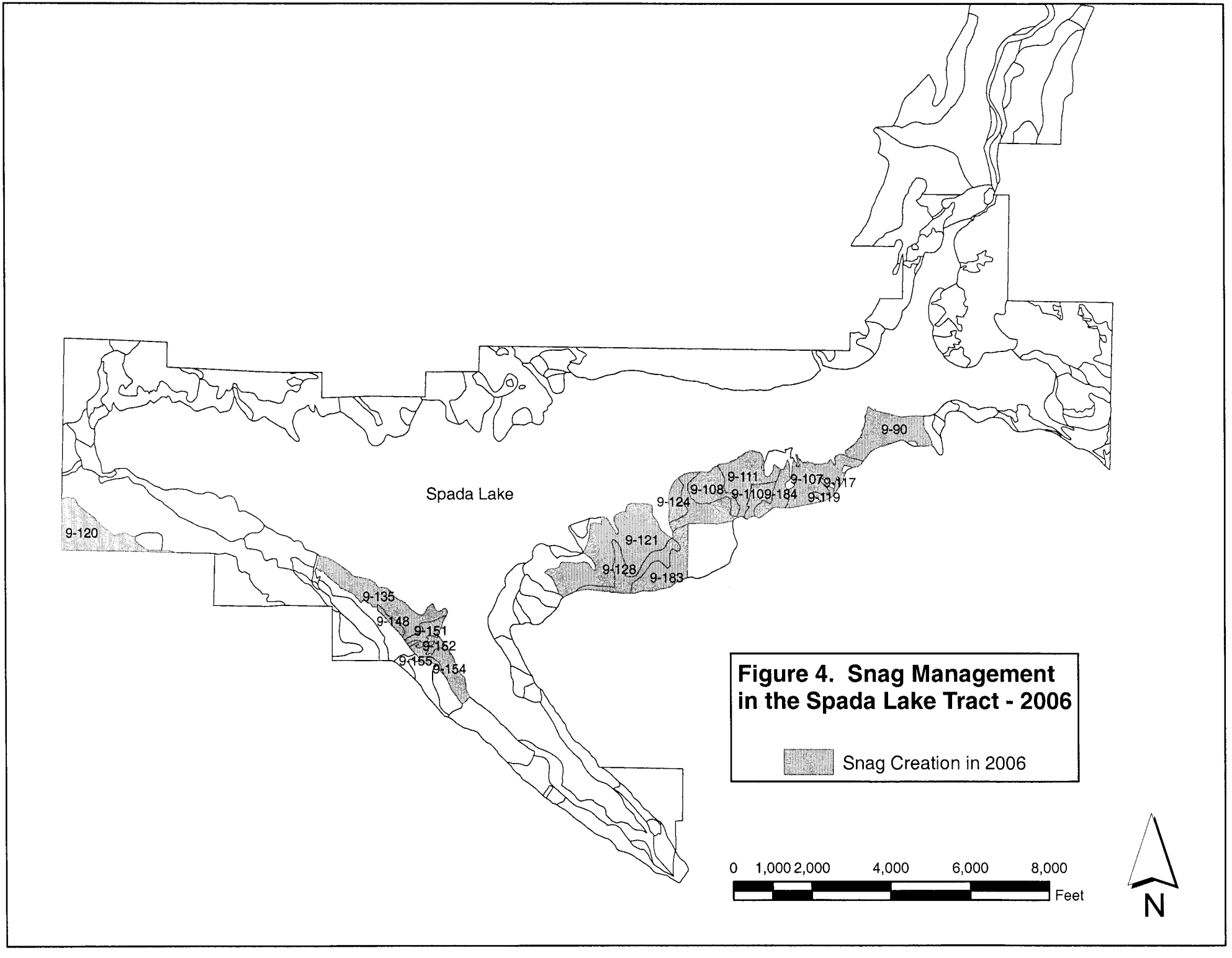


Figure 4. Snag Management in the Spada Lake Tract - 2006

Snag Creation in 2006

3.4 REVEGETATION AND WEED MANAGEMENT

3.4.1 Lake Chaplain Tract

A total of 9,414 noxious weeds (thistles, butterfly bush, and scotch broom) were removed from the Lake Chaplain Tract during the period October 2005 to October 2006. Of that total, 6,403 noxious weeds were removed from within the hydrological boundaries of Lake Chaplain.

Two patches of Japanese knotweed were identified outside of the hydrographic boundary of Lake Chaplain. The patches will be slashed in early summer of 2007 and subsequent sprouts will be treated chemically in early fall of 2007.

A patch of ivy plants is also growing outside of the hydrographic boundary in an area northeast of the North Dam of Lake Chaplain. The ivy plants will be slashed during the summer of 2007 and monitored.

3.4.2 Pipeline ROW

The pipeline Right-of-Way (ROW) was searched for noxious weeds, with a licensed contract sprayer applying herbicide to any found outside of riparian buffer areas and the City of Sultan's watershed area. Typical weeds found were Canadian thistle, scotch broom, Himalayan blackberry, and tansy ragwort. No construction activity or ORV damage took place, so no re-seeding was necessary.

3.4.3 Spada Lake Tract

A wetland adjacent to the South Shore Road near Recreation Site 3 was weeded on several occasions during the spring/summer of 2006. Weeds including thistles and tansy ragwort were pulled and removed from the site early in the season, and later in the season flower heads were clipped and bagged and removed from the site.

Other drivable roads in the Spada Lake Tract were surveyed during drive-throughs during 2006 for noxious weeds, and the patch mentioned in the previous paragraph was the only problem area identified.

3.5 NEST STRUCTURES

3.5.1 Floating Nest Platforms

No use of any of the 4 floating nest platforms was observed in 2006. The platform in the North Fork Sultan River area of Spada Lake broke loose from its anchor and has washed to shore among the floating woody debris. Extremely heavy fall rains and corresponding high instream flows to the reservoir were likely to blame for this, since it had been anchored in the thalweg of the North Fork.

Additionally, one of the platforms at Lost Lake came loose from its anchor twice during the year. It is suspected that this platform was released in an act of vandalism, as the chain and securing device had been unscrewed. Upon repositioning of this platform, additional measures will be taken to reduce the likelihood that this might happen in the future.

3.5.2 Nest Boxes

On the Spada Lake Tract none of the eight boxes installed had been used by cavity nesting waterfowl, although some were being used by squirrels when checked in the fall (Figures 5 and 6, Table 2).

At the wetlands on the Lake Chaplain Tract (Figure 7), after heavy predation by bears last year, including some with predator guards on the tree, many boxes were not re-installed until a better means of protecting the boxes can be devised. Only one box was in place and usable at the beginning of the nesting season, and it was not used (Table 2).

Table 2. Nest Box Use on JHP Lands in 2006

Location	Boxes Available	Boxes Used	Box Success (# boxes that fledged >/= 1 egg)	Number fledged by species
Lost Lake Tract	7	2 (29%)	1 (17%)	3+ ducklings from unknown species fledged
Lake Chaplain Tract	1	0 (0%)	n/a	0
Spada Lake Tract	8	0 (0%)	n/a	0
TOTAL	16	2 (13%)	1 (6%)	3 + unknown species

At Lost Lake (Figure 8), six boxes were available with two being used by waterfowl. One of those was attacked by a bear, with all nesting material missing, but one intact hooded merganser egg was left on the ground near the nest tree. The other box that was used was also attacked by a bear, but likely after fledging, as down and 3 or more egg membranes were found within the nesting material.

3.5.3 Osprey Nest Platforms

District staff monitored the osprey nest platform at Lost Lake (Figure 8) and the two platforms at Spada Lake (Figure 6) at least once a month from April through July 2006. No use was noted during that time, so additional monitoring visits were not necessary.

3.5.4 Bald Eagle Nest

The bald eagle nest established in 1997 on the Lake Chaplain Tract was occupied by nesting bald eagles from April through late June 2006. A fledgling chick was observed on the C-1000 Road (Figure 2), on June 23rd. When approached, the chick flew away, and was not seen subsequently on the Tract. In previous years, chicks produced on this nest have not fledged until late July, so it seems unlikely that this chick survived.

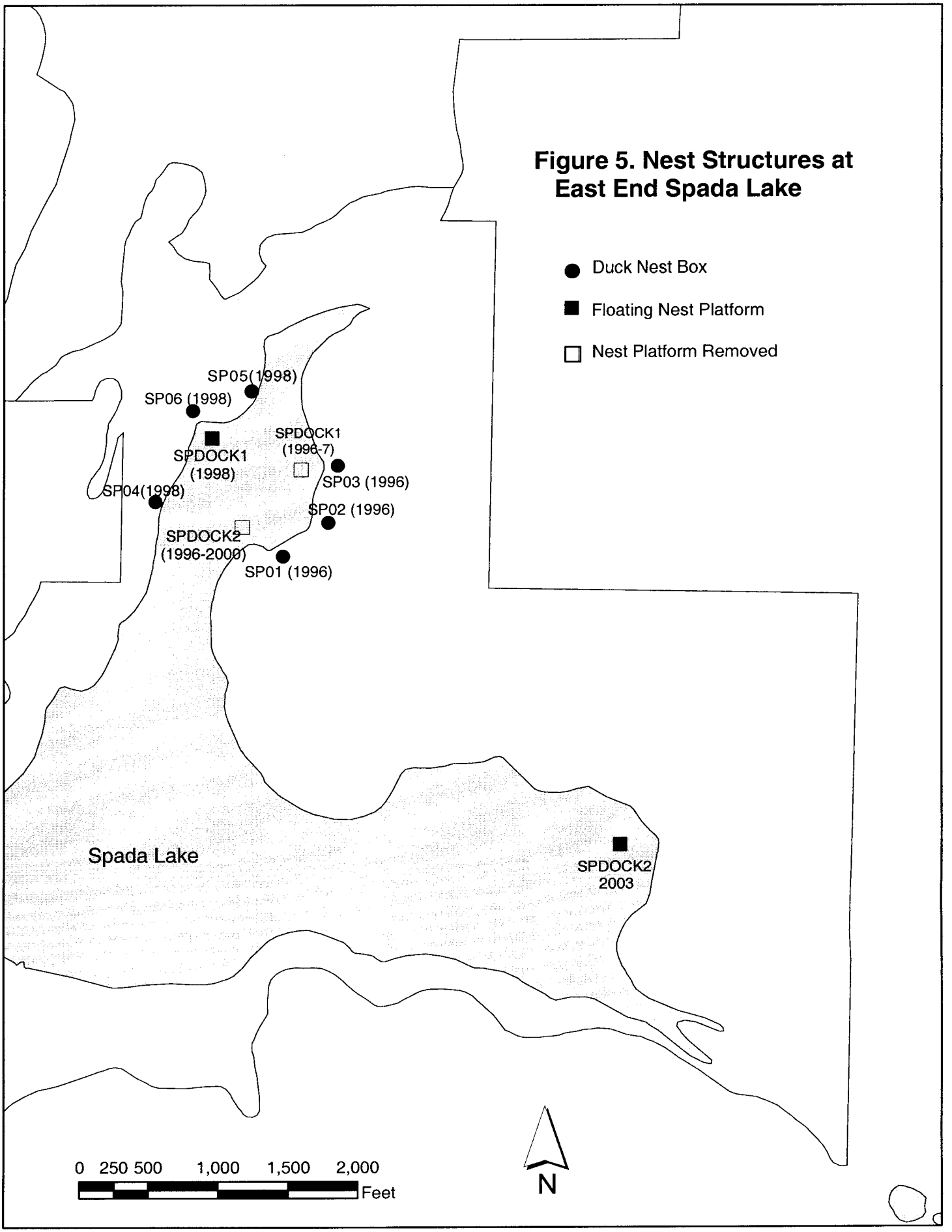
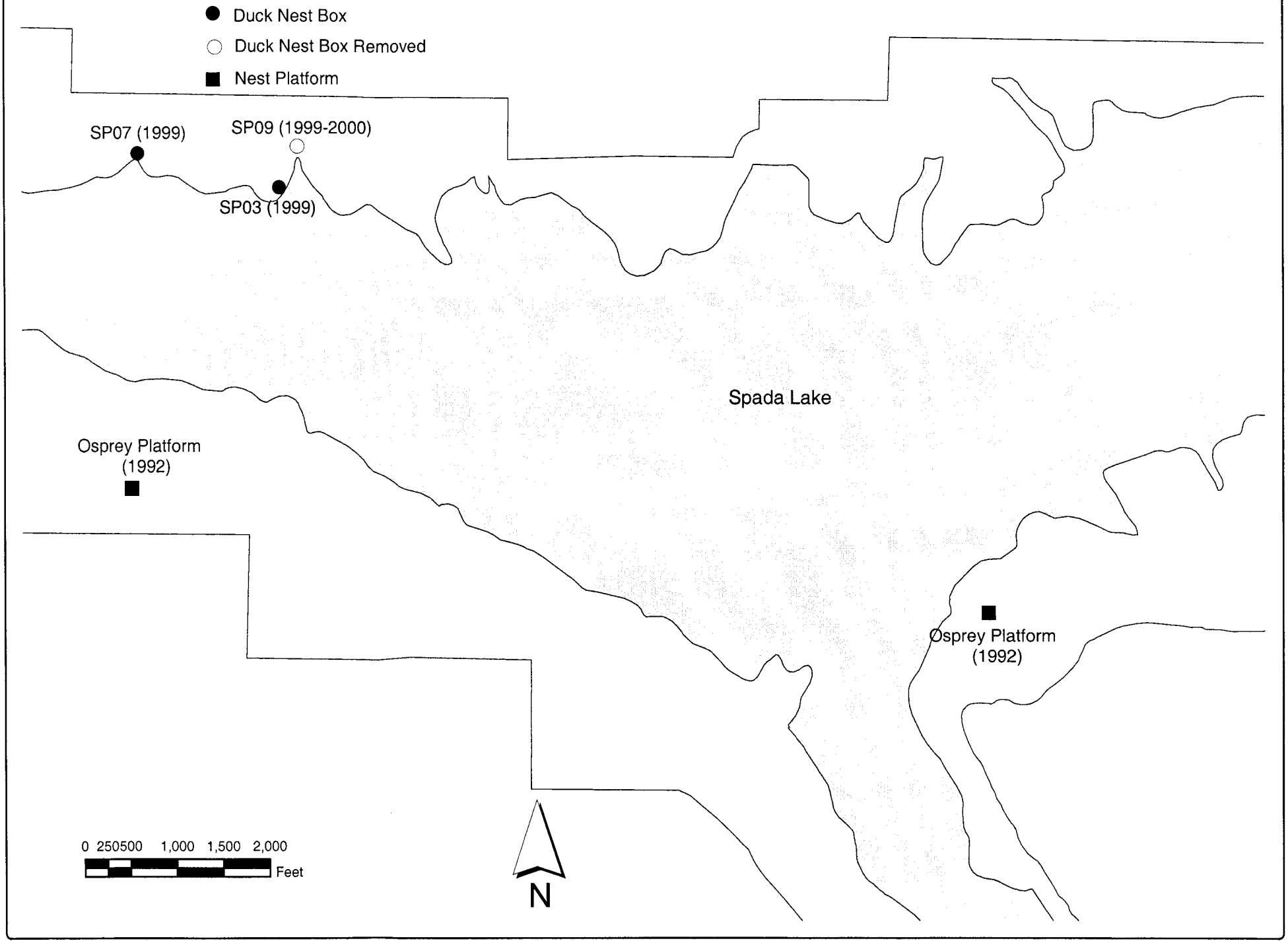
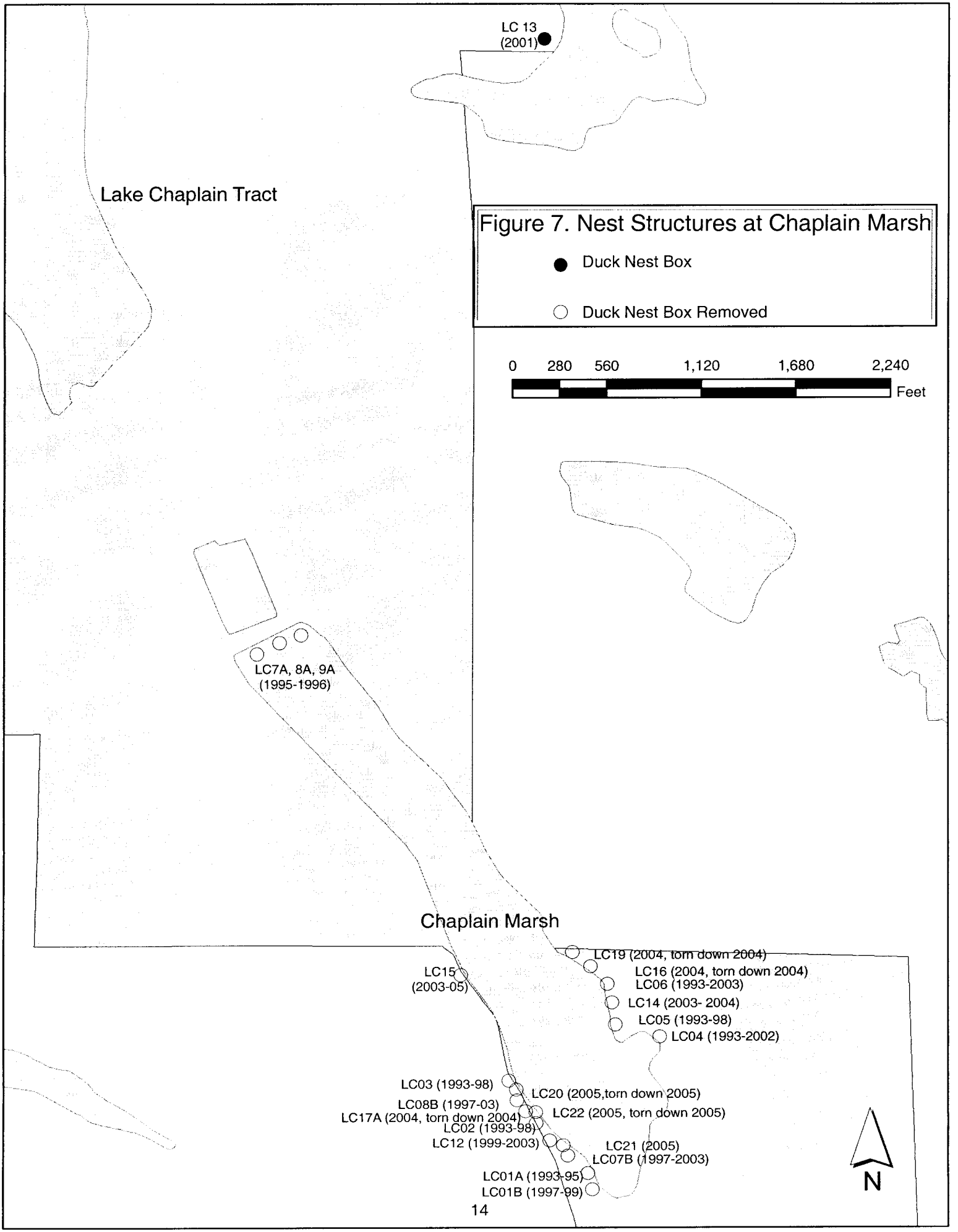


Figure 5. Nest Structures at East End Spada Lake
Duck Nest Box
Floating Nest Platform
Nest Platform Removed
SP05(1998)
SP06 (1998)
SPDOCK1 (1998)
SPDOCK1 (1996-7)
SP03 (1996)
SP04(1998)
SP02 (1996)
SPDOCK2 (1996-2000)
SP01 (1996)
Spada Lake
SPDOCK2 2003
0 250 500 1,000 1,500 2,000
Feet
N

Figure 6. Nest Structures at West End Spada Lake




LC 13
(2001)
Lake Chaplain Tract
Figure 7. Nest Structures at Chaplain Marsh
Duck Nest Box
Duck Nest Box Removed
0 280 560 1,120 1,680 2,240
Feet
LC7A, 8A, 9A
(1995-1996)
Chaplain Marsh
LC19 (2004, torn down 2004)
LC15
(2003-05)
LC16 (2004, torn down 2004)
LC06 (1993-2003)
LC14 (2003- 2004)
LC05 (1993-98)
LC04 (1993-2002)
LC03 (1993-98)
LC20 (2005,torn down 2005)
LC08B (1997-03)
LC17A (2004, torn down 2004)
LC22 (2005, torn down 2005)
LC02 (1993-98)
LC12 (1999-2003)
LC21 (2005)
LC07B (1997-2003)
LC01A (1993-95)
LC01B (1997-99)
N

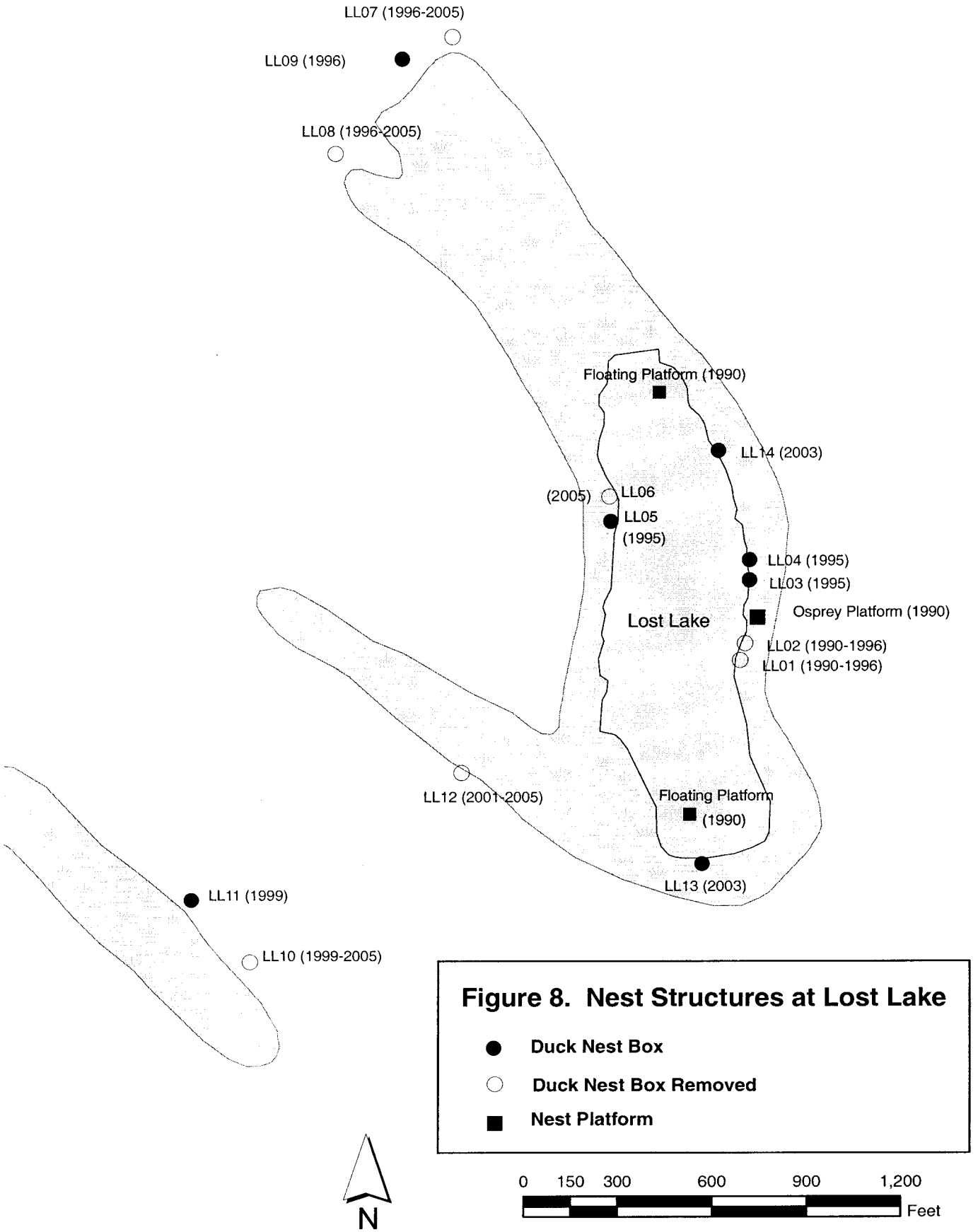


Figure 8. Nest Structures at Lost Lake

- ● Duck Nest Box
- ○ Duck Nest Box Removed
- ■ Nest Platform

3.6 OTHER WILDLIFE OBSERVATIONS

Some incidental observations of wildlife species on WHMP lands are listed in this section. These observations are not the result of systematic surveys for wildlife, but are included in the report to document the presence of these species on management lands.

Table 3. Incidental Wildlife Observations		
DESCRIPTION	**LOCATION**	**DATE**
Cormorant	Lost Lake	2/3/06
Bufflehead pair	Lost Lake	2/3/06
Bear claw marks on large cedar with cavity at 50'	Lake Chaplain	2/7/06
Bald Eagle	Lake Chaplain	2/17/06
Ring-neck ducks; 6 males, 7 females/immatures	Lake Chaplain	2/17/06
Bufflehead; 4 males, 3 females/immatures	Lake Chaplain	2/22/06
Lesser scaup; 7 individuals	Lake Chaplain	2/22/06
Wood Duck pair	Lost Lake	3/2/07
Mallard	Lost Lake	3/2/07
Hooded Merganser pair	Lost Lake	3/3/07
Mallard; 3 pairs	Lost Lake	3/3/07
Bear on roadway.	Lake Chaplain	4/4/06
Pileated Woodpecker: pair, 1 using created snag within PMF	Lake Chaplain	4/4/06
Barred Owl; several calling back and forth	Lake Chaplain	4/18/07
Gray Jay on freshly created snag	Lake Chaplain	4/24/06
Coyote on north dam	Lake Chaplain	4/25/06
Bear on road to Lost Lake	Lake Chaplain	5/10/06
Barred Owl; two calling back and forth	Spada Lake	6/15/06
Bear with cub on road to Lost Lake	Lake Chaplain	6/22/06
Coyote near site 3	Spada Lake	6/27/06
Doe with 2 fawns near site 2	Spada Lake	6/28/06
Loon pair flying low over lake, calling	Lake Chaplain	7/6/06
Cottontail rabbit on road to Lost Lake	Lake Chaplain	7/13/06
Doe with fawn on road to Lost Lake	Lake Chaplain	7/13/06
Red-legged frog near south end of Lost Lake	Lost Lake	7/13/06
Osprey perched along west shore	Lost Lake	7/13/06
Loon calling repeatedly near Site 3; heard occasionally thru September & October as well.	Spada Lake	7/20/06
Bobcat near north end of Lake	Lake Chaplain	9/5/06
Raccoons; 3 immatures climbing trees along South Fork arm	Spada Lake	10/11/06
Coyote on road to powerhouse	Project Facilities	10/31/06
Deer; 2 does and large buck (4pt) on road to Lost Lake	Lake Chaplain	11/7/06
Western Grebes; 3 along west shore	Lake Chaplain	11/7/06
Bufflehead; 6 males, 1 female along west shore	Lake Chaplain	11/7/06
Immature eagle flew by Powerhouse	Powerhouse	1/26/06
Coyote on Pipe Stand Road	Lake Chaplain	3/7/06

Table 3 continued. Incidental Wildlife Observations

DESCRIPTION	LOCATION	DATE
Canada Geese on Lake Chaplain	Lake Chaplain	3/7/06
Fawn born near Powerhouse storage building, black bear observed near same location later in day. Doe and fawn near Culmback Dam, sow and 2 cubs at Rec. Site 8.	Powerhouse, Spada Lake	Week prior to 6/30/06
Chaplain Marsh: female common merganser, 2 pair of ring neck ducks, 4 male and 4 female bufflehead, male kingfisher, female golden crowned kinglet, two female ruby-crowned kinglets and 1 pair of hooded mergansers.	Lake Chaplain	3/7/06
Pair of bald eagles upstream from Powerhouse	Powerhouse	2/10/07
Pair of bald eagles	Lake Chaplain	2/10/07

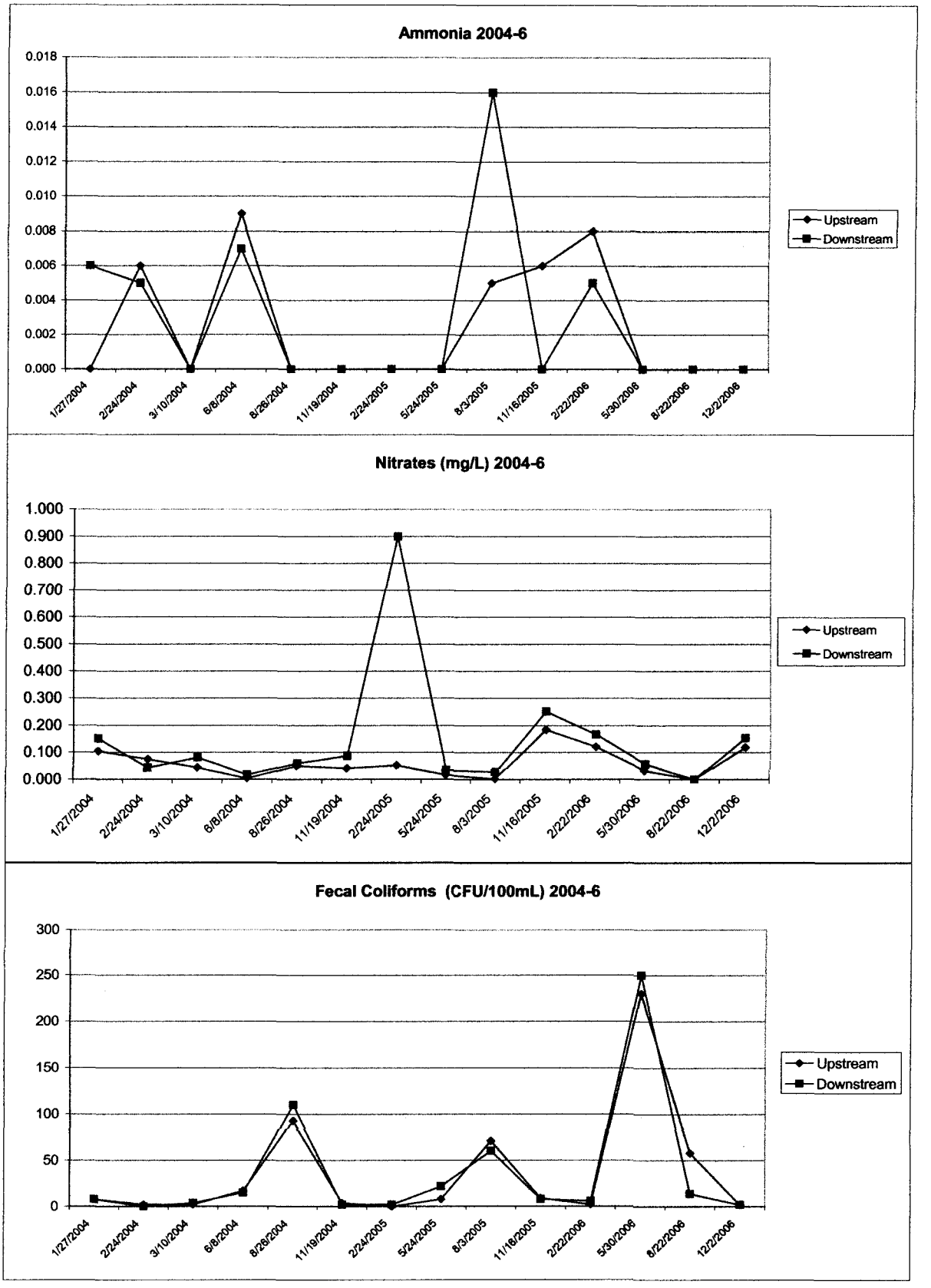
In September 2006, Sarvey Wildlife Center released several injured and rehabilitated animals on the Spada Lake Tract, including wood ducks and mallards. A District biologist contacted the Center and informed them that requests should be made to a District biologist prior to any releases of wildlife on the Tract. WDFW and DNR were informed of the contact, and agreed that only native species should be released and that Eastern gray squirrels and beaver should not be released. Both agencies asked to be kept informed of future releases, and WDFW informed the District and DNR biologists that the permit issued to rehabbers requires that animals be released as close to the point they were picked up as possible. Landowners do not have to allow release of animals onto their property if they came from some other location.

3.7 BIOSOLIDS APPLICATION AND MONITORING

In the fall of 2006 the City of Everett, through subcontractors, applied biosolids to one harvest unit, Line2-00, in the Lake Chaplain Tract. The application site lies outside of the hydrographic boundary of the Lake Chaplain watershed and provides a forested buffer to the watershed. The biosolids were produced at the City's Water Pollution Control Facility and are the stabilized product of the wastewater treatment process. Biosolids contain numerous plant nutrients and soil conditioning organic matter, including nitrogen, sulfur, phosphorus and zinc. Biosolids produced at the City's facility conform to State and Federal standards for these products.

Divr1-95, Hors1-93 and Hors2-93, Hors3-93, and Line2-00 had previous biosolids applications in 1996, 2000 and 2005, as described in the Annual Reports for those years, and the re-application to Line2-00 was intended to supply additional nitrogen where the requirements of forest vegetation are not met by available soil nitrogen, as indicated by current soil tests. Biosolids were applied in semi-solid form (>40% solids) using a side discharge spreader. A total of 206 dry tons or 515 wet tons (8.6 dry tons/acre) were applied during the period September 27 through October 13 to Line2-00.

Figure 9. Water Quality Monitoring 2004-6



The City of Everett has monitored water quality in Chaplain Creek in relation to biosolids applications from August 1996 through November 2006. Figure 9 compares results from 2004, prior to the most recent biosolids application in the Chaplain Creek drainage, with results from 2005 and 2006. Results obtained in 2005 indicate the same patterns of seasonal variations for several contaminants, all within the acceptable range, that have been found in previous years. Earlier patterns were reported for fecal coliforms, nitrates and ammonia in the 2002 Annual Report, Section 3.10, and Figures 12-14). Chaplain Creek normally exhibits increases in fecal coliforms during the summer, and nitrates during the winter. The August 2005 spike in ammonia downstream from the biosolids application sites is within the normal range of variation for this contaminant in Chaplain Creek.

3.8 DEER FORAGE MONITORING

Deer forage availability was sampled in early July on Tiki1-98, Tiki2-98, and Divr1-95, on the Lake Chaplain Tract (Figure 2). Eight years after harvest, Tiki1-98 tree layer was dominated by Douglas fir >6ft, but other hardwood trees were present in 40 percent of sample quadrants (Figure 10). Various *Rubus* species, sword fern, moss, fireweed and other forbs were abundant in the understory on most transects (Figure 11). Bear and deer scat, and mountain beaver burrows were widespread in the unit. Tiki2-98 originated in the same year, but the conifer tree component was much less dense, and Douglas-fir saplings were present in less than half of the sample quadrants (Figure 12). Various hardwood trees, including alder, cascara, big-leaf maple, birch and cherry contributed to the tree canopy of this unit. Mountain beaver burrows and deer sign were frequently encountered. The understory layer of Tiki2-98 was dominated by Rubus species, sword fern, bracken fern and salal (Figure 13).

Divr1-95 had a tree layer dominated by Douglas fir (Figure 14), but these saplings have not yet formed a completely closed canopy in the eleven years since the unit was harvested. The understory of this unit was dominated by bracken fern, sword fern, forbs and grasses, various Rubus species and vine maple (Figure 15).

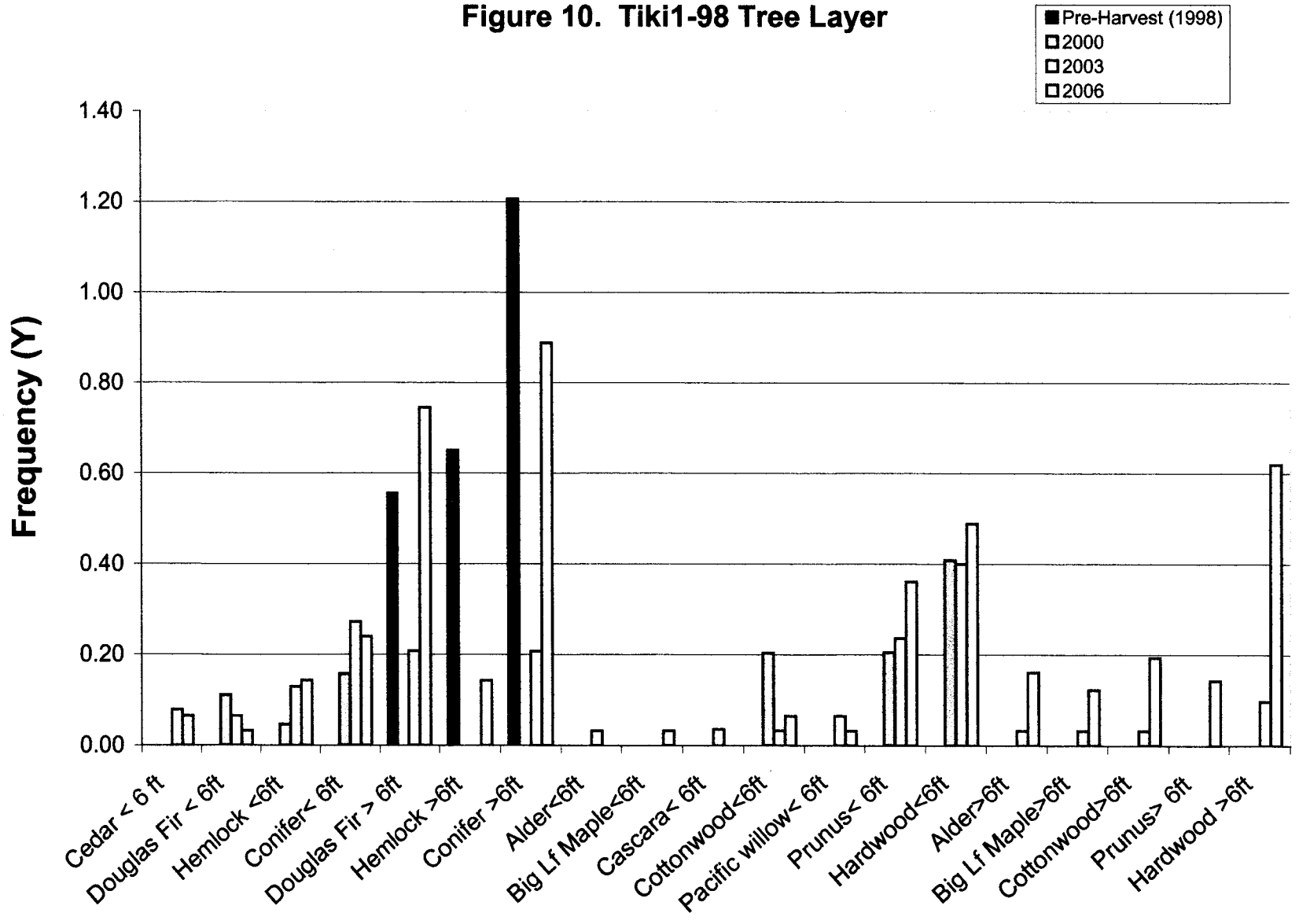
3.9 LAND MANAGEMENT AT LAKE CHAPLAIN

The City of Everett continued implementation of its Road Maintenance and Abandonment Plan (RMAP) in the Lake Chaplain Tract. RMAP activities included brush cutting along roadsides and cleaning of culverts and ditches, as needed. Roads C-1000, T-1000, and S-1100 were resurfaced; portions of roads S-1000, D-1000, and SP-1000 were also resurfaced (Figure 2).

3.10 LAND MANAGEMENT ON DISTRICT PROPERTY

The District continued implementation of its RMAP, which includes the roads on the Spada Lake, Williamson Creek, Lost Lake and Project Facility Lands Tracts. Ditches, culverts and ROWs were inspected and maintained as needed. Particular attention was given to the recently upgraded Culmback Dam road and the culverts on the District's portion of Forest Service road 6122, as requested by DNR. The District submitted the annual Road Maintenance and Abandonment Plan (RMAP) report to DNR as required, for roads on WHMP mitigation lands.

Figure 10. Tiki1-98 Tree Layer



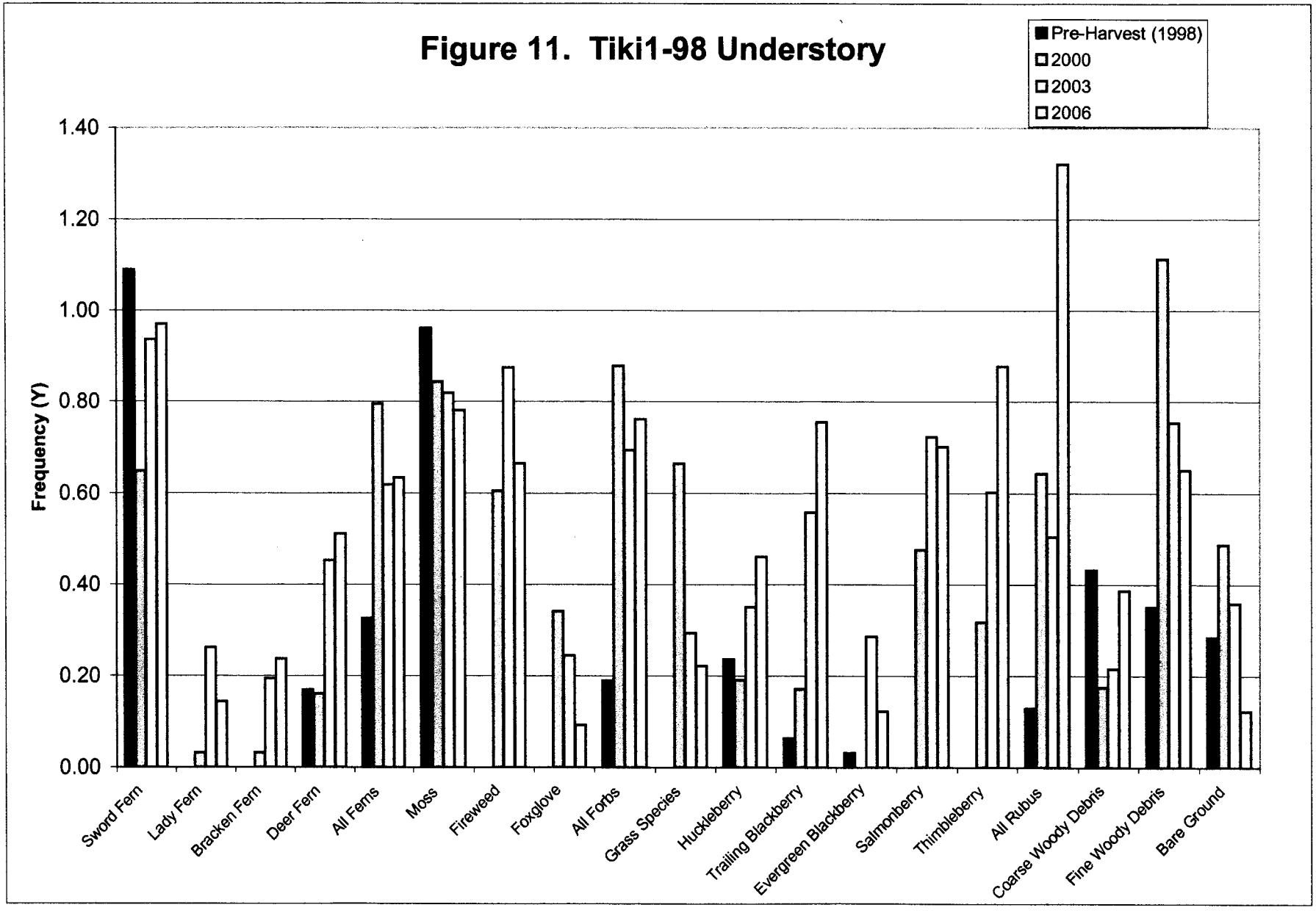


Figure 11. Tiki1-98 Understory
Pre-Harvest (1998)
2000
2003
2006
Frequency (Y)
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
Sword Fern
Lady Fern
Bracken Fern
Deer Fern
All Ferns
Moss
Fireweed
Foxglove
All Forbs
Grass Species
Huckleberry
Trailing Blackberry
Evergreen Blackberry
Salmonberry
Thimbleberry
All Rubus
Coarse Woody Debris
Fine Woody Debris
Bare Ground

Figure 12. Tiki2-98 Tree Layer

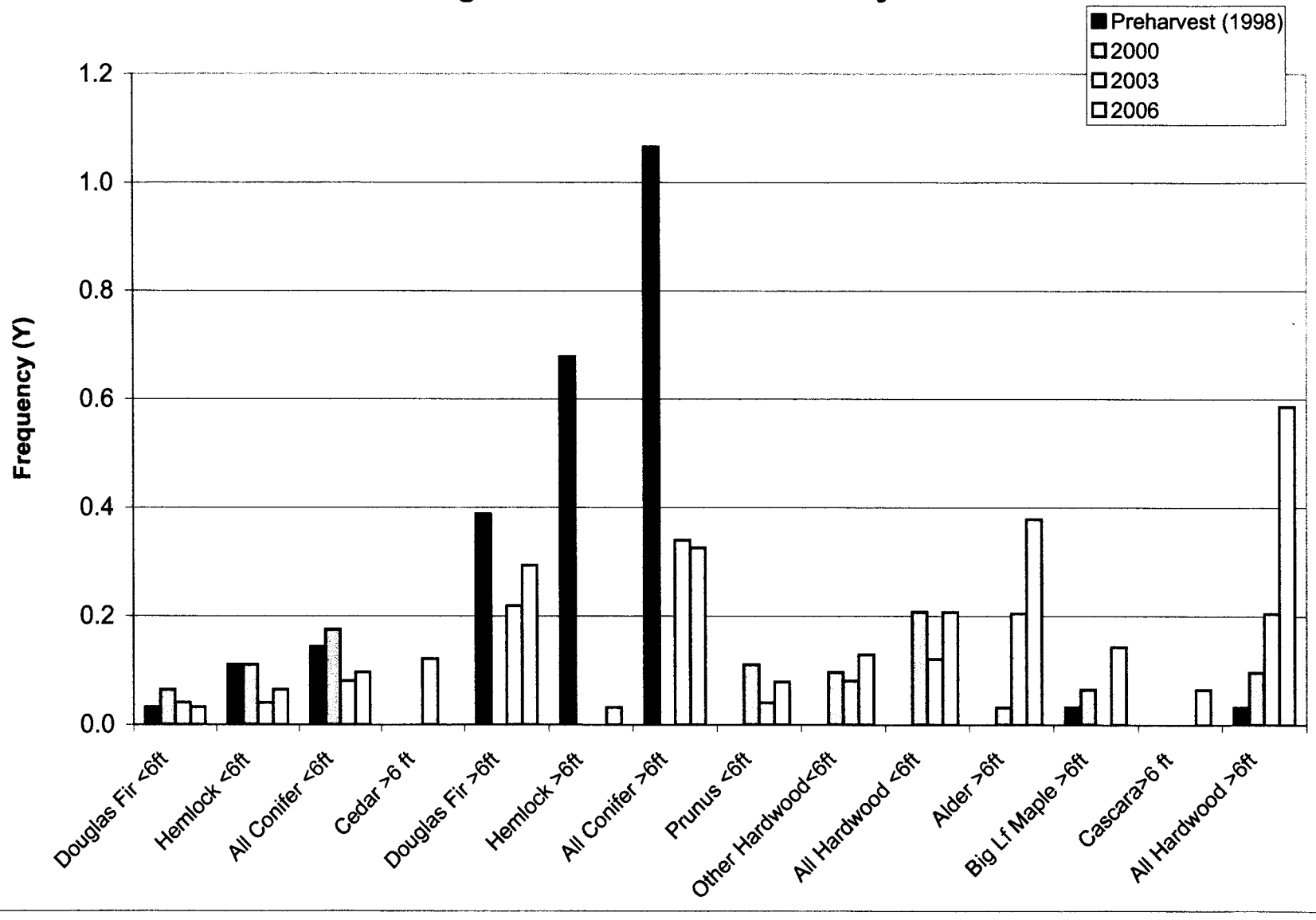


Figure 13. Tiki2-98 Understory

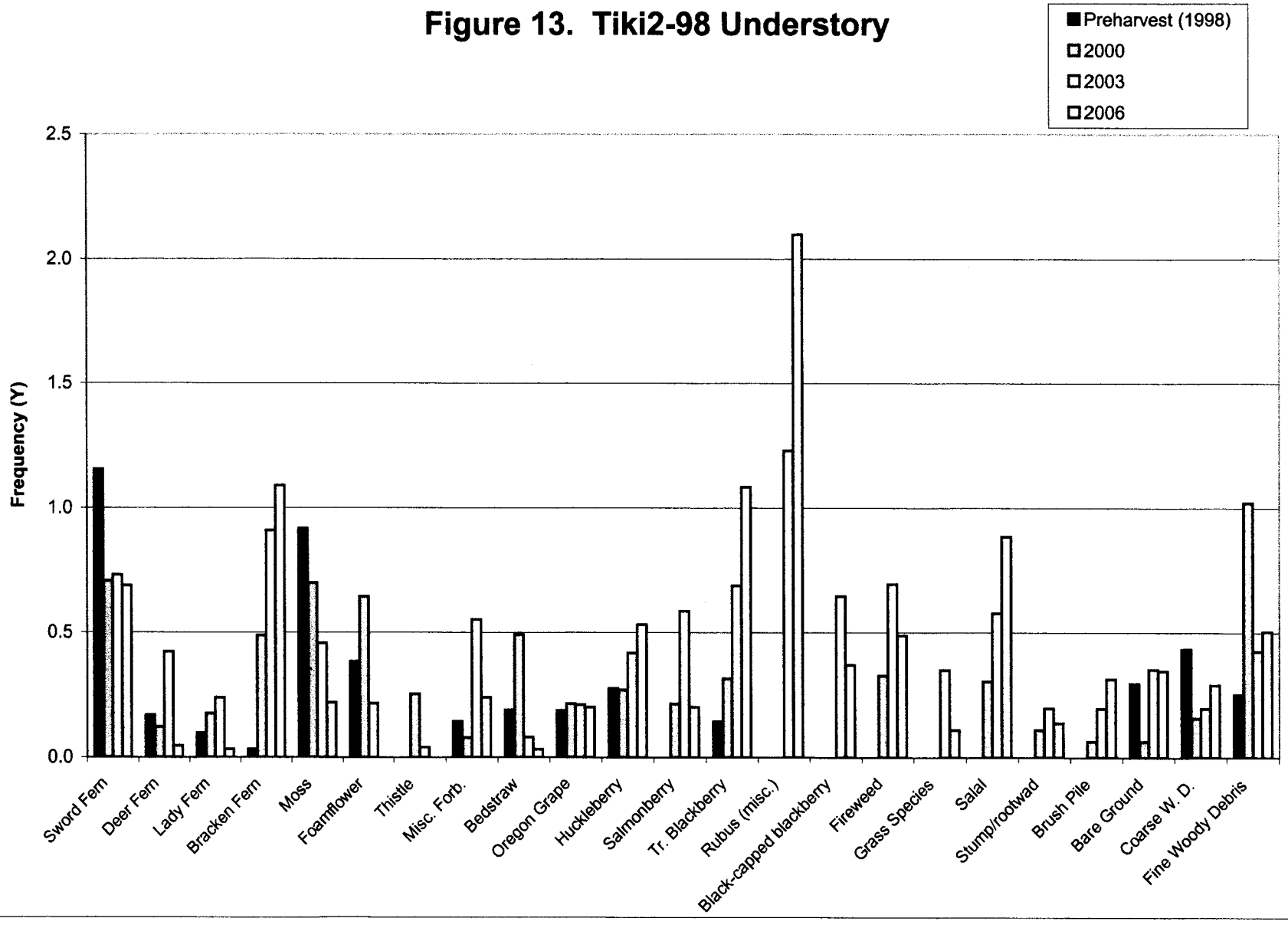


Figure 14. DIVR1-95 Tree Layer

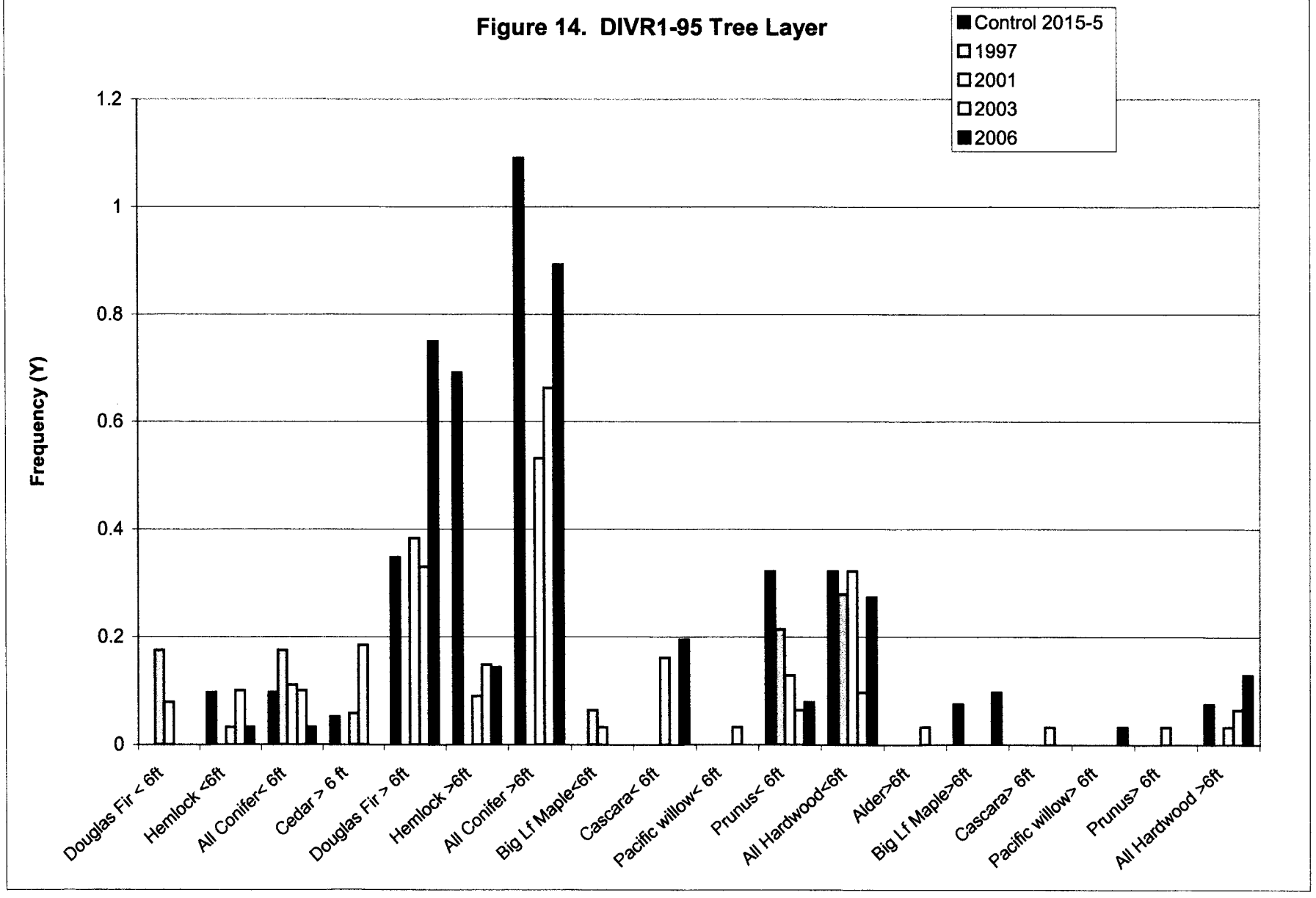
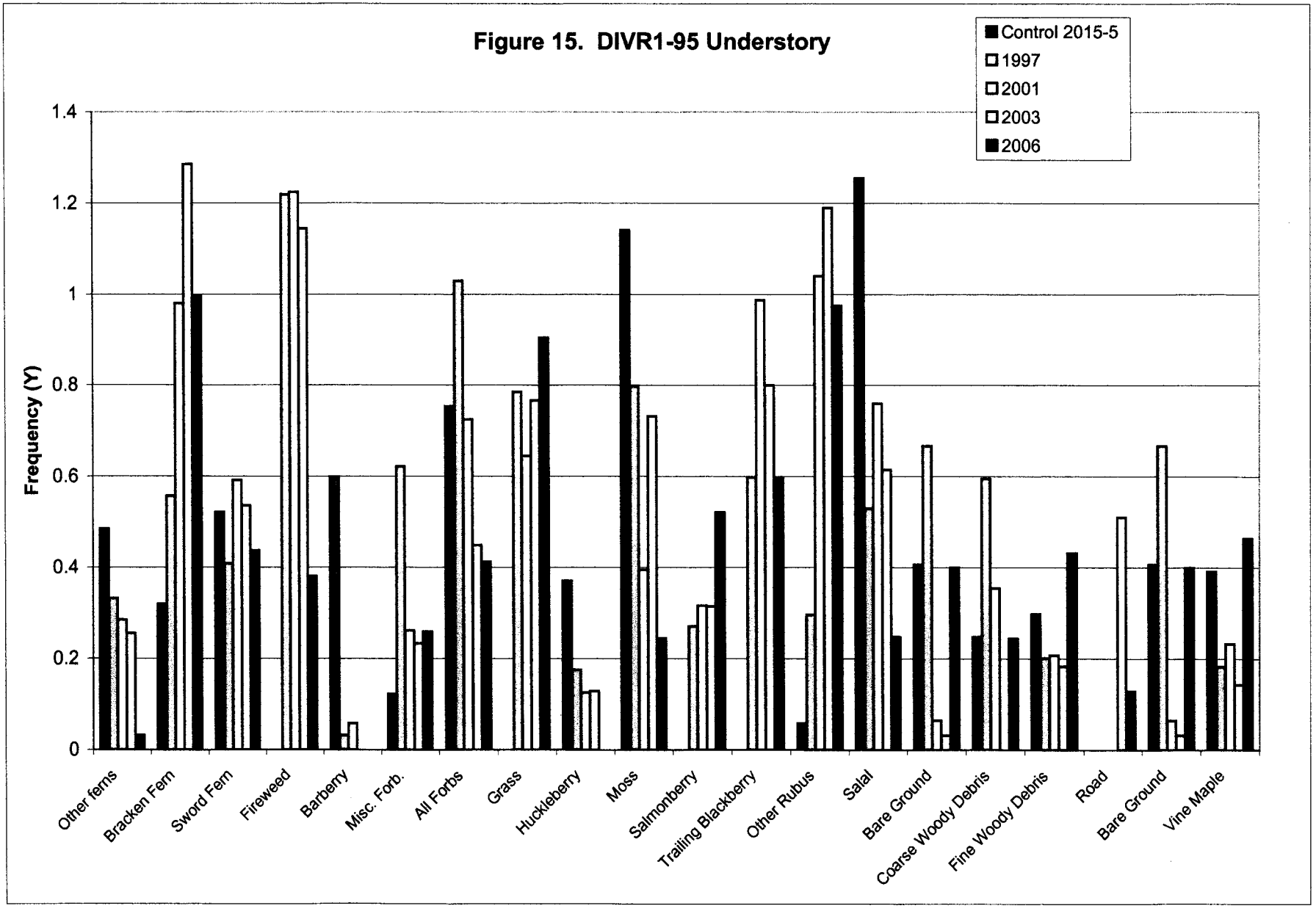


Figure 15. DIVR1-95 Understory



The District continued to stay in contact with DNR and USFS representatives regarding DNR's proposal to abandon the South Shore Road, which leads to four of the District's Jackson Project Recreation Sites and wildlife mitigation lands. Issues that continue to be discussed include maintenance of the road through the current license period (through May 2011) and long term solutions and plans through the next licensing period. Relicensing studies including the Recreation Needs Analysis and consultations with stakeholders during the relicensing process will result in a decision on the future of the South Shore Road.

3.11 SECURITY MEASURES AT LAKE CHAPLAIN/JACKSON PROJECT FACILITIES

Restrictions on access to and across Culmback Dam continued through 2006. The gate on Culmback Dam Road just west of the intersection of USFS road 6122 remains closed. Access for whitewater boaters downstream of Culmback Dam remains open via the USFS road 6122. The co-licensees filed an amendment to the approved Recreation Plan with the FERC in 2005, and provided supplemental information in 2006. The amendment included elimination of public access across Culmback Dam and to Recreation Site 6 (the Culmback Dam Site), including access across the dam to Recreation Sites 7 and 8, and to enhance access to Recreation areas 2 through 5 by keeping gates open except for when there is a safety issue. The requested amendment was approved by FERC "Order Modifying and Amending Recreation Plan (Issued June 28, 2006)".

The District continues to use the installed security systems on the Culmback Dam Road in the vicinity of Culmback Dam. These systems include motion-activated alarms, lights and cameras. Security staff shall continue to work with District wildlife biologists to minimize the potential impact of these systems on wildlife, such as aiming the lights and alarms and reducing the volume of alarms.

3.12 JACKSON PROJECT RELICENSING

Several activities important to the formal relicensing process were conducted in 2006. The Relicensing Team worked with Meridian Environmental to prepare draft relicensing study plans and conduct stakeholder meetings. Study plans were reviewed by stakeholders and revised by the co-licensees based on reviews, and stakeholder and FERC consultation. Final study plans were approved by FERC in October and the co-licensees sent out a Request for Proposals from environmental consultants. Proposals were received, reviewed and a short list of consultants was developed. Interviews were scheduled as needed for January 2007, when a final selection will be made.

More wetlands (in addition to the 10 wetlands evaluated in 2004 and 2005) on WHMP mitigation lands were evaluated using Department of Ecology's Washington State Wetlands Rating System for Western Washington.

Project tours were conducted with Tulalip and Snoqualmie Tribal representatives in 2006.

The District's relicensing website is continually updated and provides the agencies and public with information about relicensing of the Jackson Project and displays many of the documents compiled over the past 20+ years of project history. The website is: **http://www.snopud.com/water/relicensing.ashx?p=2334**

3.13 SPADA LAKE TRACT SUPPLEMENTAL PLAN

The WHMP did not provide management prescriptions for the Spada Lake Tract, aside from a thin fringe of land adjacent to the lake below the 1460 foot elevation. The first Supplemental Plan, covering the period 1996-2005, was prepared in 1996 and approved by the FERC in 1997. In 2005-6 the co-licensees prepared a second Supplemental Plan, incorporating revised management techniques that reflect advances in wildlife habitat management and revised management prescriptions that are consistent with changes in road access to different areas of the Tract. The second Supplemental Plan summarizes the tasks that were accomplished under the first Supplemental Plan and explains revisions in management techniques and activities. Management prescriptions that deal with forest practices, such as forest stand thinning and canopy management were prepared with the participation of a professional forestry consultant, who later reviewed the draft plan.

The management techniques and prescriptions of the second Supplemental Plan were presented to the agencies at the consultation meeting on March 17, 2006 (see Section 3.14 below), and the completed plan was submitted to the agencies for review. The revised version will be submitted to the FERC for approval in 2007.

3.14 AGENCY CONSULTATION

A meeting regarding implementation of the WHMP was held with agency representatives on March 17, 2006. Meeting minutes were reported in the 2005 Annual Report, Appendix 1. Most of the concerns documented in the meeting notes, including requests for technical studies, were subsequently addressed again in the development of study plans for relicensing the Jackson Project. The relicensing website (see Section 3.12) should be consulted to see the studies that will be undertaken beginning in 2007, and discussions of other studies that will not be pursued. The ongoing discussion of management techniques and objectives will be documented on the website during the relicensing process.

4.0 CUMULATIVE SUMMARY

Section 4.0 provides a cumulative summary of WHMP related activities conducted since the beginning of implementation through 2006.

4.1 FOREST VEGETATION MANAGEMENT (LAKE CHAPLAIN TRACT)

4.1.1 Road System Layout and Construction

The main road systems for the northeast side of the Tract, the area south of the Diversion Dam Road, and portions of the west side of the tract have been constructed, as shown in Figure 2. Spur roads were constructed to provide access to individual units as needed for harvest. The RMAP for the Lake Chaplain Tract was completed in 2002, and implementation is underway.

4.1.2 Timber Harvest

Harvest activity and sale layout to date are depicted in Figure 2, which also shows reconfiguration of future harvest units on the west side of Lake Chaplain. All of the harvest unit boundaries have been reconfigured at the time of sale layout relative to the diagram in the WHMP to improve operation feasibility, reduce impacts to streams and wetlands, and reduce the length of access roads. Figure 2 shows these changes and also some changes in unit boundaries that are planned to solve these potential problems when units are set up in the future. It is expected that additional relatively minor changes will be made during sale layout in the future, but the boundaries shown in the figure are a reasonable depiction of future units. As part of the process, boundaries of permanent mixed forest stands, stream and wetland buffer zones, and old growth management areas have been established and many of them have been marked with boundary tags. Although boundaries have shifted somewhat, the WHMP's target acreage for these permanent forested stands has not changed significantly.

There have been some substitutions of final harvest units, as summarized below in Table 4. However, the final harvest program complies with the WHMP's schedule to date, as well as requirements such as the restriction on harvest unit size. To date, a total of 16 units (approximately 327 acres) have been clearcut. The WHMP's 15-year green-up period between adjacent harvest units has been followed within the Tract, but some units adjacent to clear cuts on State land did not allow the full 15-years. The WHMP allows some flexibility in scheduling harvests (i.e. harvest may occur 5 years before or after the target year) on the Lake Chaplain Tract, and the co-licensees attempt to provide as much green-up time as possible within the WHMP's schedule.

Commercial thinning schedule in the WHMP from 1990 to 2005 was modified for several reasons, including potential problems related to access, soil type and timber type. These issues were discussed more fully in the 1996 Annual Report (Section 4.1.3). After on-site evaluation, it was determined that several units would be eliminated from the commercial thinning schedule. The units, and the reasons for not thinning them, are listed in Table 5. Two units (38 acres) that were not scheduled in the WHMP were thinned in 1993 (Table 5).

4.1.3 Management of Roads and Post-Harvest Units

All final harvest units at Lake Chaplain were seeded with a grass/forb mix on bare areas, and planted with Douglas fir and red cedar seedlings. Road ROW's were also seeded, and access roads outside the closed watershed have been gated to prevent vehicular access by the public.

Seedling survival plots have been established in all harvested units after planting, and the results are monitored for at least two years. One unit, Tiki1-98, was replanted one year after initial replanting due to excessive mountain beaver damage.

Small timber salvage sales were held associated with final harvest of some units:

1) adjacent to a 1991 harvest unit following a major storm in January 1993 and,
2) adjacent to two 1998 harvest units and access roads in 1998 and 1999.

Other timber salvage work took place in 2004 following severe winter storms that caused blowdown described in Section 3.1.4.

Monitoring of stocking levels in post-harvest units was started in 1997. Results that year in unit Chap2-91 showed excessive conifers, adequate overall density of hardwoods, but distribution of hardwood species was clumped. In 1998 some hardwood removal and replanting was done in this harvest unit. In 2001 some hardwood removal was done in Divr2-95, and Chap1-91 was precommercially thinned. Chap3-91 was precommercially thinned in 2002 and Chap2-91 was precommercially thinned in 2004.

Table 4. Modifications of the Final Harvest (FH) Schedule on Lake Chaplain Tract

Unit Name	Scheduled FH	Reasons for Modification
2005-5 ("Gold Camp" unit)	1990	Existing wildlife habitat value is high. Unit Divr2-95 (portions of units originally scheduled for FH in 2005 and 2030) was harvested instead of 2005-5 in 1995
2030-3	2005 (part) and 2030 (part)	Units originally scheduled for FH in 2005 and 2030 reconfigured into Divr2-95 and 2030-3
Phon1	2000-3 (part) and 2035-2 (part)	Portions of units originally scheduled for FH in 2000 and 2035 reconfigured into Phon1
Phon2	2005-3 (part) and 2035-2 (part)	Portions of units originally scheduled for FH in 2005 and 2035 reconfigured into Phon2 (see Section 3.1.3 of this annual report for details.

Table 5. Modifications of the Commercial Thinning (CT) Schedule on Lake Chaplain Tract

Unit	Scheduled CT	Reasons for Modification
2010-1	1990	Wet soil; timber type (hemlock) not suited to CT
2010-2	1990	Wet soil; timber type (hemlock) not suited to CT
2015-2	1995	Wet soil
2020-1	1990	Wet soil
2030-2	2005	Steep slope
2030-3	1990	High potential for blowdown; no benefit expected from CT
Hors1-93*	Not scheduled	Opportunity to improve understory vegetation; CT operationally feasible; FH scheduled in 2040
Hors2-93*	Not scheduled	Opportunity to improve understory vegetation; CT operationally feasible; FH scheduled in 2035

4.2 FOREST VEGETATION MANAGEMENT (LOST LAKE TRACT)

Stand 7-4 (approximately 40 acres) was precommercially thinned in 1991 and monitored annually through 2000. The slash has begun to decompose, and access

through the stand has gradually improved over time. The shrub layer, especially salmonberry, has responded to the reduction in the tree canopy, and signs of deer browsing have been observed.

A feasibility study of timber harvest on the Lost Lake Tract was performed by a consultant in 2000; results were summarized in Section 3.1 of the 2000 Annual Report. A detailed timber cruise of the older stands (7-1, 7-1, 7-3) was performed in 2001, and several management options were prepared. The decision was made in 2002, in consultation with the wildlife agencies, not to harvest these stands, as described in Section 3.3 of the 2002 Annual Report.

4.3 FOREST MANAGEMENT (SPADA LAKE TRACT)

4.3.1 Spada Lake Tract Supplemental Plan

The first Supplemental Plan for the Spada Lake Tract for approximately 1,745 acres of land surrounding Spada Lake that were acquired in 1991, was approved by the FERC in 1997. The Spada Supplement calls for commercial and precommercial thinning of some forest stands on the Tract. The first Supplement originally called for thinning treatments on as much as 600 acres, depending on feasibility, during the period 1996-2005. After the Supplement was approved, however, the DNR completed abandonment of the North Shore Road and its tributary roads from a point east of Recreation Site 8 during the summer 1999 (Figure 16). The road had become inaccessible east of Recreation Site 8 due to a massive landslide in 1997, and the DNR chose to perform the work needed to properly abandon the road, and not to maintain it for vehicular use. Therefore, some of the planned forest management activities, including commercial thinning and precommercial thinning, in units formerly served by this road were affected. With the loss of road access, the only option for future commercial harvest north of the lake will be helicopter logging. The second Supplemental Plan, drafted in 2005-6, reflects new management techniques and limitations on road access to the Tract.

4.3.2 Silvicultural Treatments

Three young second growth stands (totaling about 30 acres) on the south shore of Spada Lake were precommercially thinned in September 1996. Two second growth stands totaling about 38 acres on the south fork were precommercially thinned in 2000 and two stands totaling about 38 acres in the northeast corner of the property were precommercially thinned in 2002 (Figure 16).

4.3.3 Timber Harvest

A forestry contractor performed a feasibility study of timber harvest on second growth stands at the Spada Lake Tract that can be accessed by road (see Section 3.1.5 of the 2000 Annual Report). Eight stands were set up for commercial thinning, and Forest Practices applications were approved by the DNR in 2002. Harvest unit boundaries were modified in 2003, following a detailed timber cruise and cost/benefit analysis, and areas requiring road reconstruction and new construction were eliminated from the plan. The modified units (approximately 104 acres) were sold in 2003. Logging began adjacent to unit 9-135 in October 2003 and was completed on the remaining units in May 2004 (Figure 16).

4.4 SNAG MANAGEMENT

Since implementation of the Wildlife Mitigation Plan began in 1989, a total of 2,768 snags have been created on 74 units (1,558 acres) across the Lost Lake and Lake Chaplain Tracts (Figure 17 & Table 6). Of these, 72 units (1,534 acres) currently meet the WHMP guidelines for snag size distribution and density.

On the Spada Lake and Williamson Creek Tracts, 2,157 snags have been created on 30 stands or stand complexes (1,033 acres), as shown in Figures 18 and 19, and Tables 7 and 8, respectively. Twenty-three of these stands/complexes (850 acres) now meet the WHMP guidelines with respect to snag requirements.

Across all Project lands, a total of 4,925 snags have been created, with 95 units or stands (2,383 acres) now meeting WHMP requirements for snag size distribution and number per acre.

4.5 COARSE WOODY DEBRIS MANAGEMENT

The 1995 Annual Report described the first inventories of CWD on the Lake Chaplain Tract, and the subsequent development of the CWD management procedure to ensure compliance with WHMP targets. The procedure was implemented on the 1995 Diversion Sale and the 1998 Tiki Sale. The 1995 and 1996 Annual Reports describe more fully the earlier inventories and consultations with the agencies regarding standards for compliance. In 1996, the inventory/monitoring methods were revised following a consultant's review of the procedures, as described in the 1996 Annual Report. The methods were finalized in 1997; field tested, and implemented on the units of the 1998 Tiki Sale, the Linetree Sale, and all subsequent harvest units. CWD management procedures specific to the Williamson Creek Tract were developed in 1999. Created CWD on two units of the 1995 Diversion Sale was monitored in 1999 per the CWD management methods. Table 9 lists CWD logs created on harvest units from 1995 to date.

4.6 REVEGETATION

4.6.1 Spada Lake Drawdown Zone

Test plots of five wetland emergent species were planted at two sites in October/November 1994 and monitored annually through 2000. Two sedge species became well established and spread vegetatively at Williamson Creek. Most plantings at the North Fork Sultan river site were damaged by wave action and floating debris.

Slough sedge (*Carex obnupta)* recruitment on the sites may be the result of the 1994 plantings since most of these plants are in or among the planted rows (1998 Annual Report, Section 3.4.1). However, natural in-seeding of wetland plants on both sites, especially small fruited bulrush and other herbaceous species, has been far more successful in covering the ground than the test plantings so far. The 1997 Annual Report (Section 4.6.1) describes the response of wetland plantings and natural recruitment on these sites with respect to the management of lake elevation.

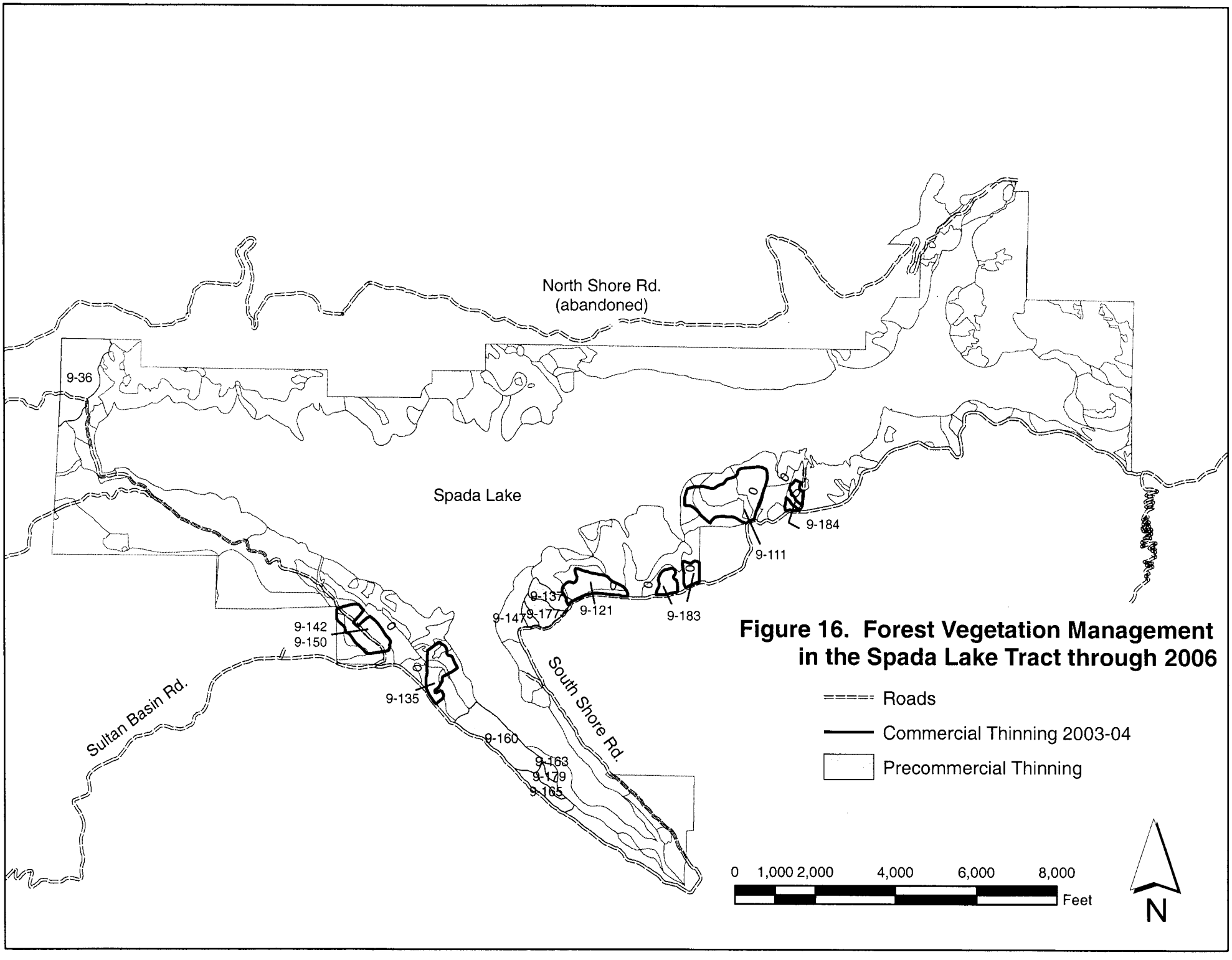


Figure 16. Forest Vegetation Management in the Spada Lake Tract through 2006

Table 6. Summary of Snag Management Through 2006 - Lake Chaplain & Lost Lake Tracts						
UNIT	ACRES	NUMBER CREATED	AVG. DBH (in.)	AVG. HT. (ft.)	# PER ACRE	NOTES
CRAZ 1	**17.8**	**57**	**17.5**	**66.3**	**3.2**	√ Includes natural and created snags
CRAZ 2	**23.2**	**69**	**17.4**	**75.7**	**3.0**	√ Includes natural and created snags
2025-2	**17.3**	**42**	**18.2**	**75.5**	**4.5**	√ Includes natural and created snags
2025-5	**22.3**	**52**	**17.4**	**64.0**	**3.4**	√ Includes natural and created snags
2025-6	**15.9**	**30**	**18.5**	**68.3**	**3.6**	√ Includes natural and created snags
2035-1	**23.4**	**64**	**17.6**	**64.7**	**3.1**	√ Includes natural and created snags
2035-2	**5.0**	**11**	**18.0**	**77.3**	**4.1**	√ Includes natural and created snags
2035-4	**12.7**	**9**	**17.8**	**78.9**	**4.7**	√ Includes natural and created snags
2035-5	**20.0**	**42**	**17.9**	**75.9**	**4.7**	√ Includes natural and created snags
2045-1	**22.3**	**41**	**17.1**	**65.1**	**3.2**	√ Includes natural and created snags
2045-2	**27.3**	**0**	**30.9**	**62.2**	**7.7**	√ Includes natural snags only
2045-3	**11.0**	**6**	**17.7**	**83.3**	**3.6**	√ Includes natural and created snags
2045-4	**20.0**	**7**	**17.4**	**69.3**	**4.9**	√ Includes natural and created snags
2045-5	**17.8**	**68**	**18.3**	**68.1**	**3.8**	√ Includes natural and created snags
2045-6	**27.6**	**19**	**18.0**	**71.2**	**4.0**	√ Includes natural and created snags
2015-1	12.2	15	16.1	66.5	4.5	√ Includes natural and created snags
2015-3	18.0	13	16.9	48.4	7.4	√ Includes natural and created snags
2015-4	18.8	0	20.6	46.1	4.7	√ Includes natural snags only
2015-5	17.7	26	16.0	44.1	5.4	√ Includes natural and created snags
2015-6	19.0	45	17.5	55.4	4.0	√ Includes natural and created snags
2020-1	24.0	50	16.9	61.9	4.9	√ Includes natural and created snags
2020-4	15.3	36	17.0	49.3	4.4	√ Includes created snags only
2020-5	19.1	15	19.1	61.4	9.8	√ Includes natural and created snags
2020-6	12.0	26	17.7	50.5	6.3	√ Includes created snags only
2025-1	28.0	24	16.5	65.4	4.1	√ Includes natural and created snags
2025-3	31.7	86	17.4	65.0	3.9	√ Includes natural and created snags
2025-4	26.0	49	17.0	66.9	4.2	√ Includes natural and created snags
2030-2	22.1	60	17.0	50.3	3.1	√ Includes natural and created snags
2030-3	21.0	0	17.2	70.8	6.8	√ Includes natural snags only
2030-5	24.0	48	18.0	50.0	3.2	√ Includes natural and created snags
2035-3	18.5	30	18.0	55.0	4.9	√ Includes natural and created snags
2040-3	16.3	14	21.4	50.0	6.9	√ Includes natural and created snags
Buffer Zone 1	2.3	15	16.4	63.8	9.8	√ Includes natural and created snags
Buffer Zone 2	1.4	7	15.9	46.6	5.0	√ Includes natural and created snags
Buffer Zone 3	8.7	23	16.6	46.6	4.5	√ Includes natural and created snags
OMA 10	8.6	4	20.0	56.3	18.4	√ Includes natural and created snags
OMA 3	11.8	27	16.2	63.6	6.3	√ Includes natural and created snags
OMA 4	26.5	22	16.1	54.5	6.7	√ Includes natural and created snags
OMA 8	5.3	7	18.1	54.3	18.4	√ Includes natural and created snags
OMA1a	74.8	14	17.9	68.3	4.3	√ Includes natural and created snags
OMA1b	50.5	62	18.4	65.2	3.2	√ Includes natural and created snags
OMA1c	30.7	68	18.1	64.4	4.0	√ Includes natural and created snags
PMF 10	34.1	56	18.3	45.1	4.5	√ Includes natural and created snags

UNIT	ACRES	NUMBER CREATED	AVG. DBH (in.)	AVG. HT. (ft.)	# PER ACRE	NOTES
PMF 11	12.0	25	16.8	43.7	4.3	√ Includes natural and created snags
PMF 15	6.8	0	14.4	35.0	10.6	√ Includes natural and created snags
PMF 17	14.7	35	17.0	58.1	4.4	√ Includes natural and created snags
PMF 4	31.8	54	16.5	46.2	4.9	√ Includes created snags only
PMF 5	27.4	0	23.5	47.3	5.3	√ Includes natural snags only
PMF 6	13.3	0	23.9	64.3	6.0	√ Includes natural snags only
PMF 7a \1	15.5	20	17.8	58.5	2.5	Includes natural and created snags
PMF 7b	15.8	38	18.1	66.0	4.6	√ Includes natural and created snags
PMF 8	8.5	24	17.5	65.2	3.2	√ Includes natural and created snags
PMF 9	52.2	71	17.3	54.9	3.1	√ Includes natural and created snags
Stand 1-3 \2	4.4	0	n/a	n/a	3.1+	√ Natural snags only
TIKI 1-98	21.0	54	17.5	55.6	3.1	√ Includes natural and created snags
TIKI 2-98	23.8	73	18.0	56.1	3.1	√ Includes natural and created snags
Wetland Buffer 1	8.7	12	19.0	47.9	1.4	Includes created snags only
Wetland Buffer 2	35.5	65	17.2	56.4	3.1	√ Includes natural and created snags
CHAP1-91	26.0	75	16.6	33.5	3.1	√ Includes natural and created snags
CHAP2-91	15.0	46	16.1	27.4	3.1	√ Includes created snags only
CHAP3-91	24.0	55	18.0	31.0	3.6	√ Includes natural and created snags
DIVR1-95	15.6	42	16.8	50.3	3.1	√ Includes natural and created snags
DIVR2-95	19.7	59	18.3	47.9	3.1	√ Includes natural and created snags
DONK 1-01	23.5	67	17.1	65.3	3.1	√ Includes natural and created snags
DONK 2-01	21.4	58	18.0	67.6	3.0	√ Includes natural and created snags
HORS1-93	20.0	0	14.5	89.0	11.5	√ Includes natural snags only
HORS2-93	18.0	23	16.9	55.2	4.6	√ Includes natural and created snags
HORS3-93	13.7	37	16.0	33.8	3.1	√ Includes natural and created snags
LINE 1-00	14.8	42	18.0	65.4	3.0	√ Includes natural and created snags
LINE 2-00	22.0	62	17.4	66.4	3.1	√ Includes natural and created snags
Phone Line - 3	19.0	58	16.5	66.6	3.1	√ Includes natural and created snags
TOTALS	**1,402**	**2,422**	Totals for the 69 Lake Chaplain units which meet WHMP requirements.			
	1,426	**2,454**	Totals for all 71 Lake Chaplain units having snag mgmt activity to date.			
LOST LAKE TRACT						
Lost Lake 7-1	93.7	234	18.1	62.2	3.3	√ Includes natural and created snags
Lost Lake 7-2	34.0	80	17.3	61.7	3.2	√ Includes natural and created snags
Lost Lake 7-3	4.0	0	n/a	n/a	3.1+	√ Natural snags only
TOTALS	**132**	**314**	Totals for all 3 Lost Lake units having snag management activity to date, all of which meet WHMP requirements for snags.			

BOLD denotes those units where snag management activity occurred in 2006

√ Meets WHMP requirements for size class distribution and number per acre.

\1 Fewer than 3.07 snags/acre exist due to lack of overstory trees in this forested wetland area. Unit will be revisited in 10 years for further snag opportunities.

\2 Remainder of stand, exclusive of already delineated units.

Table 7. Summary of Snag Management Through 2006 - Spada Lake Tract						
UNIT	ACRES	NUMBER CREATED	AVG. DBH (in.)	AVG. HT. (ft.)	# PER ACRE	NOTES
9-90	**32.0**	**143**	**13.0**	**45.8**	**4.5**	√ Includes created snags only
9-107 complex [1]	**33.4**	**121**	**14.5**	**48.7**	**6.4**	√ Includes natural and created snags
9-108 complex [1]	**73.0**	**280**	**13.7**	**47.5**	**3.8**	√ Includes created snags only
9-110	**8.4**	**34**	**13.0**	**51.6**	**4.0**	√ Includes natural and created snags
9-120	**41.0**	**234**	**14.1**	**55.9**	**5.7**	√ Created snags only, from 2004 & 2006
9-121 complex [1]	**116.0**	**566**	**13.6**	**51.8**	**4.9**	√ Natural and created snags from 2004 & 2006
9-133	**46.0**	**0**	**n/a**	**n/a**	**n/a**	no trees of adequate size; re-visit in 10 years
9-135 complex [1]	**41.0**	**157**	**13.6**	**52.2**	**4.4**	√ Includes natural and created snags
9-151 complex [1]	**28.7**	**86**	**13.9**	**47.3**	**3.9**	√ Includes natural and created snags
9-184	**11.0**	**33**	**13.1**	**47.6**	**3.0**	Includes created snags only
Stand 9-8	106.0	326	15.2	60.5	3.3	√ Includes natural and created snags
Stand 9-24 [2]	12.1	19	15.7	62.0	2.1	Includes natural and created snags
Stand 9-35	4.5	13	15.9	54.9	3.9	√ Includes natural and created snags
Stand 9-47	4.3	10	15.7	64.0	3.0	√ Includes natural and created snags
Stand 9-114 [2]	53.0	0	n/a	n/a	n/a	no trees of adequate size; re-visit in 10 years
Stand 9-125 [2]	33.0	0	n/a	n/a	n/a	no trees of adequate size; re-visit in 10 years
Stand 9-126 [2]	23.7	0	16.3	44.5	0.4	Natural snags only, re-visit in 10 years
Stand 9-173	20.5	0	34.9	58.8	5.8	√ Natural snags only
Stand 9-180	7.4	14	21.4	65.0	4.2	√ Includes natural and created snags
TOTALS	**516**	**1,984**	Totals for those 13 stands/complexes which meet WHMP requirements.			
	695	**2,036**	Totals for all 19 stands/complexes having snag mgmt activity to date.			

Table 8. Summary of Snag Management Through 2006 - Williamson Creek Tract

UNIT	ACRES	NUMBER CREATED	AVG. DBH (in.)	AVG. HT. (ft.)	# PER ACRE	NOTES
Stand 10-1 \3	21.2	68	16.4	57.1	3.2	√ Created snags only
Stand 10-2 \2	4.2	0	15.1	12.0	1.3	Natural snags only
Stand 10-3	18.7	28	19.3	32.9	3.0	√ Includes natural and created snags
Stand 10-4	7.5	13	16.8	40.1	3.5	√ Includes natural and created snags
Stand 10-5	15.1	12	22.7	37.0	3.5	√ Includes natural and created snags
Stand 10-6	133.4	0	31.3	34.6	12.3	√ Natural snags only
Stand 10-7	68.8	0	29.3	38.5	11.1	√ Natural snags only
Stand 10-8	8.5	0	31.0	43.8	9.0	√ Natural snags only
Stand 10-9	3.7	0	24.2	45.0	9.5	√ Natural snags only
Stand 10-11	50.5	0	32.3	46.0	6.0	√ Natural snags only
Stand 10-12	6.3	0	30.7	38.3	6.0	√ Natural snags only
TOTALS	**334**	**121**	Totals for those 10 units which meets WHMP requirements.			
	338	**121**	Totals for all 11 units having snag management activity to date.			

BOLD denotes those units where snag management activity occurred in 2006

√ Meets WHMP requirements for number per acre, but due to lack of large trees, size class distribution cannot be met at this point on any stand except for old growth.

\1 A stand complex is a collection of stands, typically one larger stand with several small stands (less than 2 acres) scattered within its boundaries, that for the purpose of management, are combined and treated largely as a single unit.

\2 Trees not of adequate size for snag creation, re-evaluate in 10 years.

\3 No natural snags found during inventory.

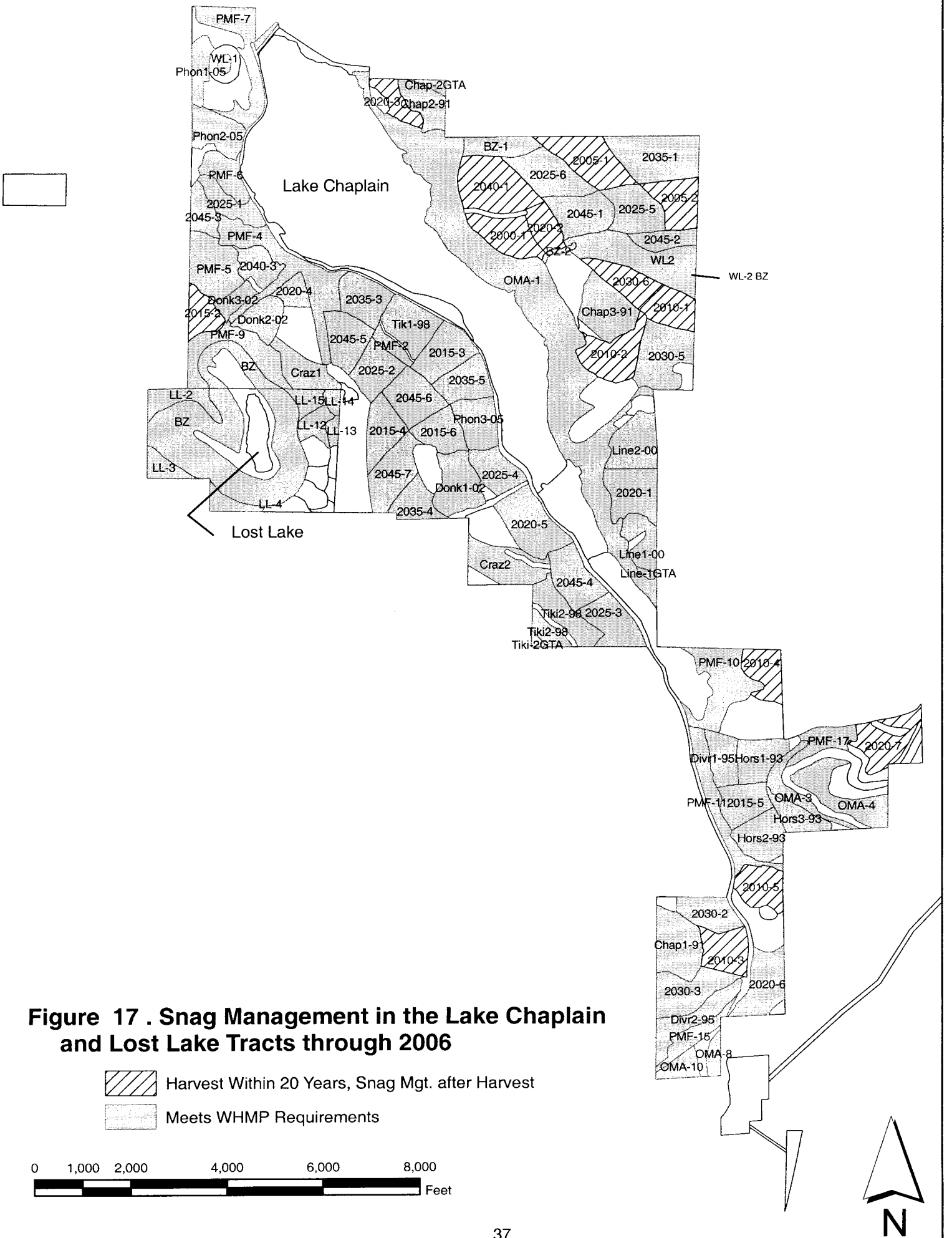


Figure 17 . Snag Management in the Lake Chaplain and Lost Lake Tracts through 2006

Harvest Within 20 Years, Snag Mgt. after Harvest

Meets WHMP Requirements

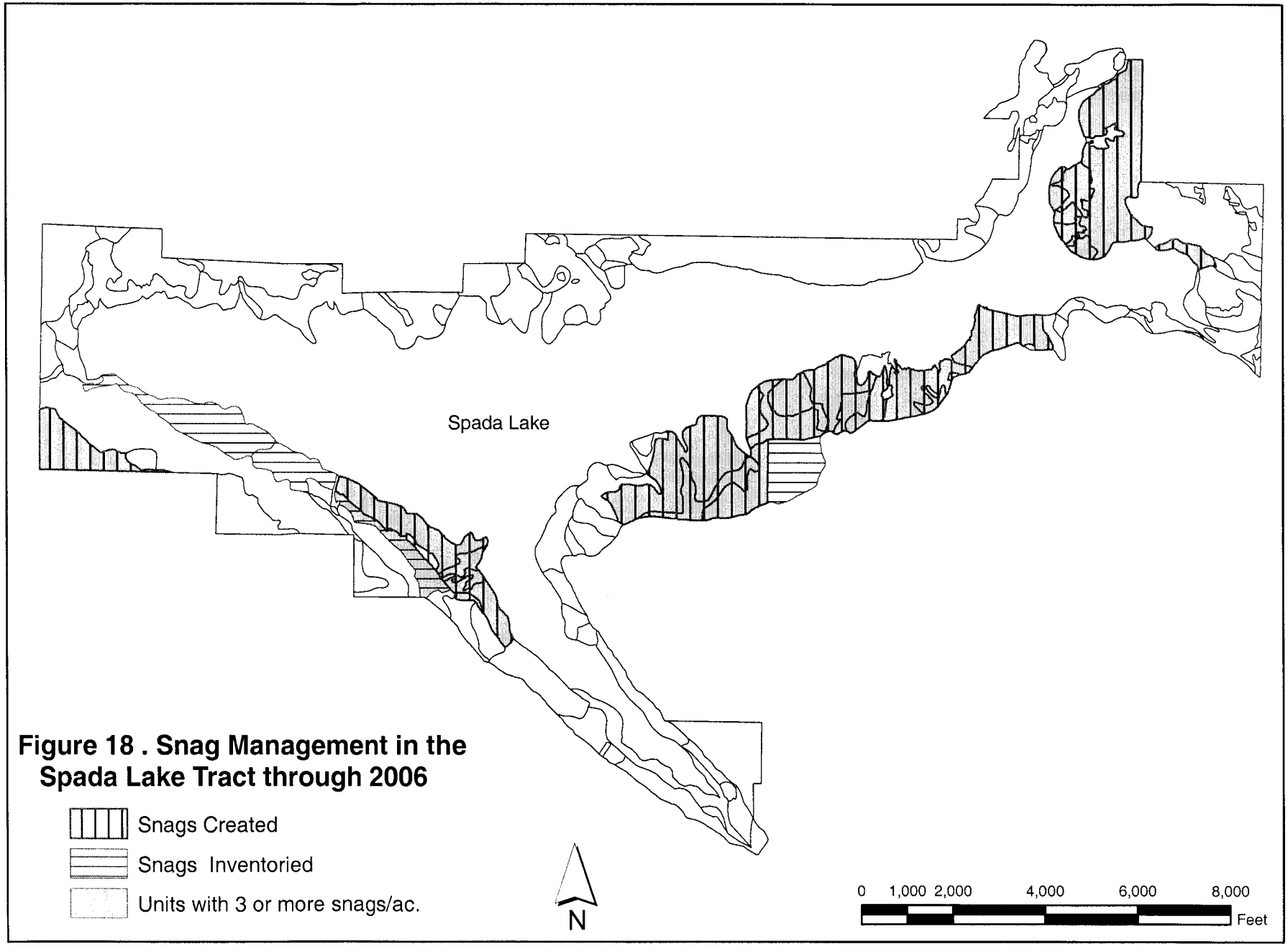


Figure 18 . Snag Management in the Spada Lake Tract through 2006

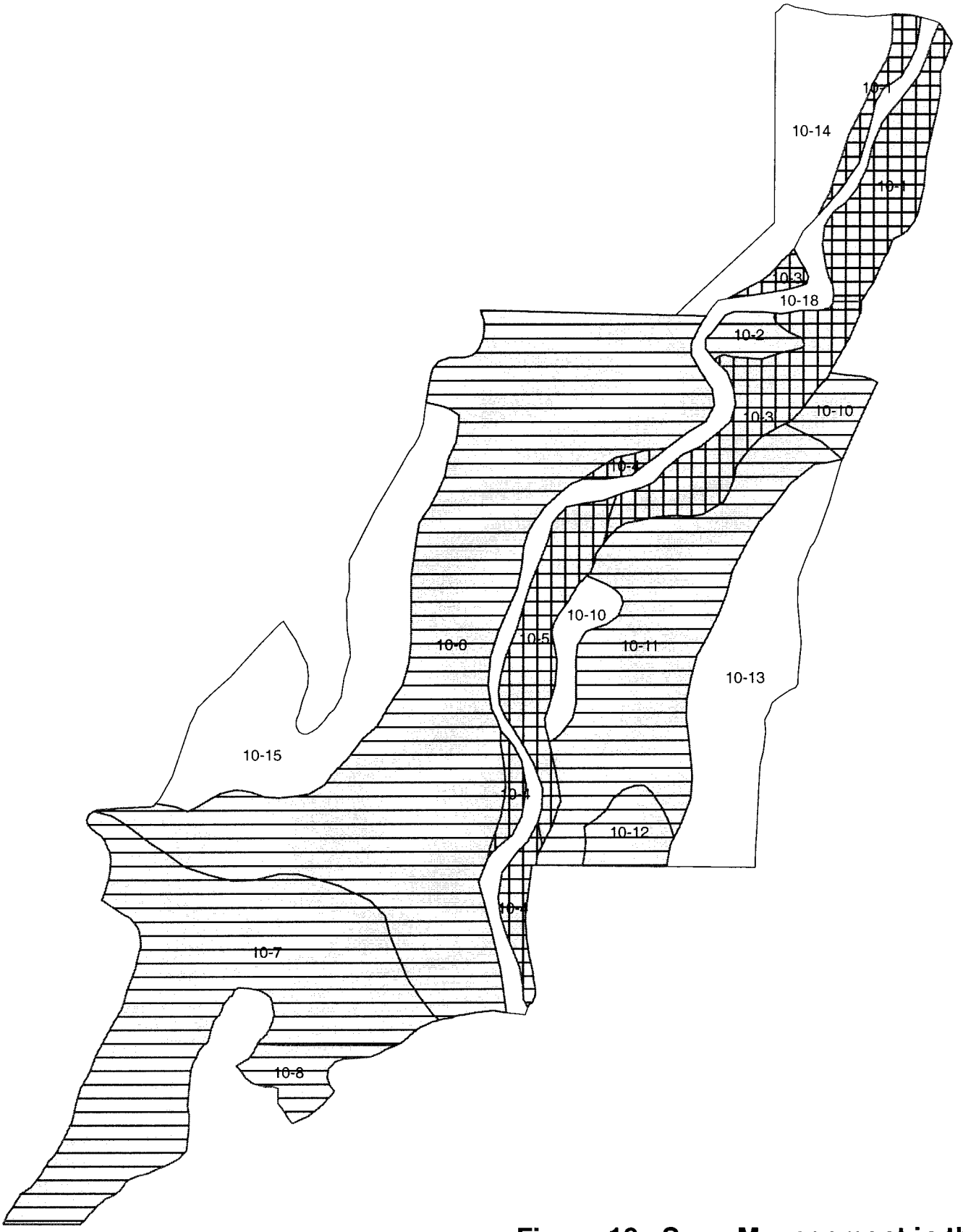


Figure 19. Snag Management in the Williamson Creek Tract through 2006

Subsequent monitoring visits (1999 and 2002) document the condition of the planting sites.

4.6.2 Power Pipeline ROW

Annual maintenance on the Pipeline ROW includes mowing to reduce tree growth and to keep the tall grasses from impeding visual inspection of the pipeline corridor. Off-road vehicle intrusion has been reduced greatly compared to the early 1990's, and now occurs primarily when gates are left open during logging operations.

Noxious weed control is conducted several times each year, as different species are more noticeable at different times of the growing season. Mowing helps to reduce some of the noxious weed infestations, but herbicide applications outside of riparian buffers and the City of Sultan's watershed are the most effective means of control. Mapping with GPS has helped to promote repeated visits to sites that in previous years were infested, enabling closer monitoring and control of weeds.

4.6.3 Lake Chaplain Tract

The required plantings at the north end of Lake Chaplain were monitored twice annually from the time of planting in 1992 through 1995, and once in the following years. Survival of western red cedar at the north end of the lake from the time of planting to 1998 was 80 percent. Douglas fir saplings have had excellent growth, with overall survival over 90 percent. Excess alders were removed in 1998 and 2001 to release planted conifers and delay conversion of grass/shrub habitat to hardwood thickets. The area was reseeded in 2001 following alder removal.

Species planted in 1993 adjacent to Chaplain Marsh included western red cedar, English holly, huckleberry, serviceberry, red-osier dogwood, nootka rose and red-flowering current. Many volunteer shrubs have grown on the margin of the marsh as well, including Pacific willow, western hemlock, Douglas fir, big-leaf maple, twinberry, spirea, salmonberry, thimbleberry, vine maple and trailing blackberry. The required plantings were monitored twice annually from the time of planting in 1993 through 1995, and once in the following years. Alders growing among the plantings were cut down in 1998 to release the planted shrubs from competition. As a result, the density of the vegetative screen between the Lake Chaplain Road and the marsh decreased temporarily, but the desired species composition was retained. At the time of this annual report, the planted and volunteers shrub layer is sufficiently dense to screen the marsh from view from the road.

4.6.4 Powerhouse Site

Shrub and tree plantings were monitored at least twice each growing season between planting in 1993 and 1995, and once annually from 1996-1998. In 1997, we planted 5 cascara saplings and in 2003 we planted Oregon grape to test whether these species are suitable for the site. As of 2003, only one of the cascara saplings survived. Survival of the tree species has been greater than 90 percent, with variable growth: crabapples have performed better than ash and hawthorn. Of the shrubs, only Nootka rose has grown well and spread on this site. Some huckleberries and serviceberries have persisted, but have grown very slowly. Volunteer species that have done well on this site include non-native Buddleia sp.

Table 9. Summary of Created CWD on Lake Chaplain Harvest Units

UNIT	ACRES	NUMBER LOGS CREATED	# LIVE TREES	# SNAGS AND EXISTING LOGS	AVG. DIAMETER OF TREE	# LOGS/ACRE
Divr1-95	15.6	120	34 Douglas fir	0	25.4	7.7
Divr2-95	19.7	160	30 Douglas fir	18 Douglas fir	23.7	8
Tiki1-98	21	166	32 Douglas fir	5 Douglas fir, 2 Hemlock	29.9	7.9
Tiki2-98	23.8	189	42 Douglas fir	5 Douglas fir, 9 Hemlock	27.9	7.9
Line1-00	14.8	124	29 Douglas fir	5 Douglas fir, 1 Hemlock	26	8.4
Line2-00	22	176	44 Douglas fir	3 Hemlock	25.3	8
Donk1-02	23.5	190	42 Douglas fir	9 Douglas fir, 11 Hemlock	24.2	8.1
Donk2-02	14.3	115	22 Douglas fir, 3 Cedar, 4 Hemlock	2 Hemlock	26.4	8
Donk3-02	7.1	61	13 Douglas fir	1 Douglas fir, 1 Hemlock	25.4	8.6
Phon1-04	10.5	21	*	19 Hemlock, 2 Cedar	17	tbd**
Phon2-04	18.1	30	*	30 Hemlock	18	tbd**
Phon3-05	18.3	153	33 Douglas fir	9 Douglas fir, 6 Hemlock	24.2	8.4
Sum	193.1	1505	327			

* Snags and CWD were not created in Phon1-04 and Phon2-04, as described in the 2002 Annual Report, Sec.3.1.3, p.4

** See previous footnote and discussion in 2002 Annual Report. Edge of unit and adjacent GTA provide sufficient logs/acre.

and native thimbleberry, red alder and salmonberry. The Buddleia have been removed annually since 2004, but since they have reappeared, we will continue to remove them wherever they appear. Alder trees that encroach on the shrub/tree clusters will be removed as well.

4.7 NEST STRUCTURES

Figures 5 through 8 of this report show locations of nest structures in existence in 2005, including several that were newly-placed this year. Locations of nest structures that have been damaged, destroyed or relocated are also shown in these figures.

4.7.1 Required Nest Structures

All of the nest structures that were required by the WHMP have been installed and monitored annually thereafter. In 1990, two floating nest platforms and two duck nest boxes were installed at Lost Lake. One osprey platform was installed at Lost Lake in 1990 and two at Spada Lake in 1992.

4.7.2 Floating Nest Platforms

The floating nest platforms provided by the co-licensees have primarily been used for resting and loafing by otters, and occasionally by waterfowl. On only a few occasions have nesting or nesting attempts been noted, and as a result, monitoring is conducted infrequently, while performing other duties at each location.

4.7.3 Nest Boxes

Nest box success over the past 17 years has varied greatly from a high of about 53% use to a low of 4.5%. Black bear predation in recent years has been the greatest cause of nest box damage and associated reduction in availability to nesting waterfowl. Very infrequently is conclusive evidence available to show whether a nest and/or clutch were contained in the box at the time of the predation.

4.7.4 Osprey Nest Platforms

Since the osprey platform was installed at Lost Lake in 1990, there have been 5 or 6 years with nesting attempts, with 2 fledglings produced in at least 2 of those years. The osprey returned to the platform only one year since abandoning it for a site on DNR property to the south of the Tract, but that attempt was unsuccessful.

The two platforms at Spada Lake have never been successfully used to fledge young. The platform near the South Fork Sultan River was partially built up in 1994, and adult were observed setting on the nest early in the 1995 nesting season, but apparently the nesting attempt failed. In 1996, a natural nest was constructed in the Sultan River gorge about a quarter mile downstream of Culmback dam. That nest was used for 3 years, when the top of the snag broke, resulting in the osprey constructing another nest on the same hillside in 1999. This nest site has been only casually observed, since it is not on project lands and is not easily viewed, therefore, results are uncertain.

4.7.5 Bald Eagle Nest

The natural bald eagle nest constructed along the east shore of Lake Chaplain in 1996 has fledged at least 9 eaglets since initiation, plus an additional chick that left the nest prematurely in 2006. In conjunction with the Washington Department of Fish and Wildlife, the City of Everett created a nest site management plan that restricts timber harvest within 800' of the nest site from February 1 through August 15.

4.8 BIOSOLIDS APPLICATION

The City of Everett applied biosolids on various occasions to harvested units on the Lake Chaplain Tract, as summarized in Table 10.

Table 10. Summary of Biosolids Applications to WHMP Lands

Unit	Year	Product	Application Rate
Hors1-93	1996	biosolids	12.5 dry tons/ac.
Hors2-93	1996	biosolids	12.5 dry tons/ac
Hors1-93,	2000	2:1::biosolids:wood ash	37.5 dry tons/ac.
Hors2-93	2000	2:1::biosolids:wood ash	37.5 dry tons/ac.
Hors3-98	2000	2:1::biosolids:wood ash	45 dry tons/ac.
Divr1-95	2000	2:1::biosolids:wood ash	45 dry tons/ac.
Hors3-93	2005	Biosolids	24 dry tons/ac.
Divr1-93	2005	Biosolids	26 dry tons/ac.
Line2-00	2005	Biosolids	39 dry tons/ac.
Line2-00	2006	Biosolids	8.6 dry tons/ac.

Two water quality monitoring sites were established on Chaplain Creek to identify possible contamination of the stream from biosolids applied to adjacent harvest units (Hors 1, and 2, and Divr1). Creek waters were sampled monthly beginning in August 1996 through the end of 2001, and at least quarterly afterward. Parameters examined were nitrates, phosphorus, fecal coliform, ammonia, and chloride. Water quality monitoring has indicated no deleterious biosolids effect on the water quality parameters measured.

Vegetation monitoring was conducted from 1996 to 1999 and again in 2001 in accordance with the vegetation monitoring plan described in the 1996 Annual Report. No vegetation monitoring was conducted in 2000 because biosolids application at the sample sites disturbed the vegetation. No vegetation monitoring has been conducted since 2000

4.9 DEER FORAGE MONITORING

A revised sampling procedure was finalized in 1997, after several other procedures proved unsatisfactory in previous years. The 1997 procedure has been used in monitoring Lake Chaplain Tract harvest units, as listed in the 2004 Annual Report, Table 9.

4.10 LAND ACQUISITION

In 1988 the District purchased the Lost Lake Tract (230 acres) as part of the WHMP requirement. This tract contains a high quality lake and wetlands complex and other high quality wetlands.

The District/USFS/DNR land exchange was completed in 1991. The District acquired over 4000 acres at Spada Lake and Williamson Creek. This included the entire Williamson Creek Tract identified for acquisition in the WHMP. The 376-acre tract includes 268 acres of old growth, 28 acres of mixed forest, 34 acres of riparian forest and at least 6 acres of wetland, all of which will be preserved and protected. With the exception of existing recreation sites and areas used for hydroelectric operations, the land in the Spada Lake Tract has been incorporated into the wildlife habitat management program as prescribed by the WHMP and the Spada Lake Tract Supplemental Plan. The WHMP called for at least 700 acres from the land exchange be added to the original Spada Tract of 1938 acres. An additional 1059 acres was obtained in the exchange and incorporated into the WHMP for a current tract of 3697 acres. The Supplemental Plan was approved by the FERC on April 18, 1997 and will guide future forest vegetation management for that tract. The Spada Tract includes 214 acres of old growth forest, 26 acres of wetlands and over 11 acres of riparian forest.

The City/DNR land exchange was completed in late 1991. All of the land specified in the WHMP in the Lake Chaplain Tract was acquired by the City and dedicated to management under the WHMP.

4.11 WILLIAMSON CREEK TRACT

Monitoring of the Williamson Creek tract (Figure 17) has focused on baseline inventories of the stands for snags, CWD, understory vegetation, wetlands and photo documentation. The status of inventorying on each stand is summarized in Table 11. Note that old growth inventory includes snags, CWD, understory vegetation inventory and photo documentation. Wetland monitoring will be conducted at least every five years. Baseline inventory was completed in 2003. Monitoring activities will continue in the future.

Field procedures beyond those described in the WHMP have been developed specifically for the Williamson Creek Tract, as described more fully in the Williamson Creek Standard Operating Procedures (PUD 1999). Baseline surveys were conducted in old growth stands to descriptively characterize snags, CWD and understory vegetation. Baseline surveys began in 1998 and were completed in 2003. Snags and CWD were inventoried following the standards for sampling these elements on the Lake Chaplain and Lost Lake Tracts. The minimum size for snags was 10' tall and 11" DBH, for CWD it was 10' long and 11" diameter at the large end.

On the Williamson Creek Tract, transects were located along reasonably accessible walking routes determined in the field. The goal was to sample enough transects within each stand to provide at least 5 percent coverage. Each transect was 330' x 66' (0.5 acres). Understory vegetation on old growth stands was inventoried by sampling 1/100th-acre circular plots at each end of the snag and CWD transects. Species occurrence was noted and notes were taken describing the biologist's overall characterization of the stand. During the surveys, photos were taken to illustrate stand characteristics that the biologists consider representative of these stands and descriptive notes were taken.

Table 11. Williamson Creek Baseline Inventory Summary through 2003

Stand #	% Complete	Type of Inventory	Year of Inventory
10-1	100	Snags, CWD, photodoc.	2000
10-2	100	Old growth	2000
10-3	100	Snags, CWD, photodoc	2000
10-4	100	Snags, CWD, photodoc	2000
10-5	100	Snags, CWD, photodoc	2000
10-6	100	Old growth	2000,2002,2003
10-7	100	Old growth	1999,2000,2003
10-8	100	Old growth	2003
10-9	100	Old growth	1999
10-10	100	Wetlands	1998
10-11	100	Old growth	2001,2002
10-12	100	Old growth	2001
10-13	100	Photodoc	1998
10-14	100	Photodoc	1998,1999
10-15	100	Photodoc	1999

Tables 12 and 13 summarize baseline inventory data for natural snags and CWD collected to date. Additional snags have been created in stands 10-1, 10-3, 10-4 and 10-5 (Table 12). The number of snags on the old growth stands ranges from 1.3 to 12.3 per acre. The amount of CWD on old growth stands ranges from 12.0 to 52.4 per acre.

The second growth and riparian forested stands (10-1, 10-3, 10-4, and 10-5) adjacent to Williamson Creek (Figure 19) were inventoried in 2000. The WHMP calls for retaining stands 10-1 and 10-4 as riparian forest without harvesting through the life of the plan. These stands were cover-typed as riparian, mixed, and small saw timber coniferous forest in the WHMP, which requires snag management, maintenance and monitoring in these stands. No snags were found within the transects in stand 10-1 and an average of 1.8 natural snags/acre were found within the transects in stand 10-4 (Table 12). Snags were created in 2001 in stand 10-1 and were completed in 2002 (Table 8). This stand is primarily composed of small (10-15") conifers and alders. As a result, snag creation potential is limited at this

time. Snag creation in stand 10-4 was completed in winter 2001, with 13 snags created (Table 8).

Table 12. Williamson Creek Tract Natural Snag Cumulative Inventory Summary, Completed 2003

Stand #	Cover Type	SNAGS/ac (all decay classes)	Avg. Diameter (in.)	Avg. Height (ft.)
10-1	Small Saw/Riparian	0.0	0.0	0.0
10-2	Old Growth	1.3	15.1	12.0
10-3	Riparian/Mixed	0.4	21.8	14.0
10-4	Riparian/Mixed	1.8	17.0	32.6
10-5	Large Saw/Riparian	2.8	24.3	31.3
10-6	Old Growth	12.3	31.3	34.6
10-7	Old Growth	11.1	29.3	38.5
10-8	Old Growth	9.0	31.0	43.8
10-9	Old Growth	9.5	24.2	45.0
10-11	Old Growth	5.6	29.9	43.6
10-12	Old Growth	6.0	30.7	38.3

Table 13. Williamson Creek Natural CWD Cumulative Inventory Summary, Completed 2003

Stand #	Cover Type	CWD/ac. (all decay classes)	Avg. Diameter (in.)	Avg. Length (ft.)
10-1	Small Saw/Riparian	3.0	24.3	25.7
10-2	Old Growth	12.9	19.8	63.6
10-3	Riparian/Mixed	4.0	18.8	24.7
10-4	Riparian/Mixed	1.5	27.3	50.8
10-5	Large Saw/Riparian	2.1	19.7	56.5
10-6	Old Growth	38.0	22.8	40.6
10-7	Old Growth	21.1	29.0	49.2
10-8	Old Growth	12.0	29.5	54.7
10-9	Old Growth	52.4	24.0	43.9
10-11	Old Growth	37.6	25.7	41.8
10-12	Old Growth	36.0	24.9	54.7

The WHMP calls for retaining stands 10-3 and 10-5 for late successional stage species. These stands were cover-typed as mixed, deciduous, riparian, and large saw timber coniferous forests in the WHMP, which requires ensuring adequate snags and CWD on these two stands. Snag management and monitoring is required

for the life of the plan. The baseline snag and CWD inventories were completed in these two stands in 2000. The average number of snags/acre was 0.4 and 2.8 on stands 10-3 and 10-5 respectively (Table 12). The average number of CWD/acre was 3.9 and 2.1 on stands 10-3 and 10-5 respectively (Table 13). Snag creation was completed for both stands during the fall/winter of 2001. Twenty-eight snags were created in stand 10-3 and 12 snags were created in stand 10-5 (Table 9). Stand 10-3 had several irregularly distributed pockets of natural snags which were found, and thereby reduced the number of created snags required.

4.12 LAND MANAGEMENT

The co-licensees have worked with landowners in the Sultan Basin since the WHMP was initiated in an effort to coordinate land use activities so that they are consistent with, or at least do not interfere with management of the WHMP. Activities on adjacent property have included recreational pursuits, timber harvest, surveying, and road maintenance and abandonment.

The DNR is in the process of preparing a Natural Resource Conservation Area (NRCA) plan for the Upper Sultan Basin and the co-licensees have been following that process and providing input since 1999. The co-licensees have provided comments to DNR during the planning process and on working drafts of the plan.

In compliance with Washington Forest Practice Rules (WAC 222-24-050 through 052), the District prepared and submitted in 2001, a Road Maintenance and Abandonment Plan (RMAP) Inventory Scheduling Proposal and an RMAP covering all of the District owned wildlife mitigation lands. Implementation of the RMAP began in 2002. Spur roads SL-22, SL-61, SL-48 and SL-67 were officially abandoned in the Sultan Basin under WAC 222-24-052(3). The District hired a geotechnical engineer in 2003 to prepare plans for maintaining the road from Olney Pass to the dam. Plans were completed, appropriate permits were obtained and the work was completed in spring 2005. District biologists observed Culmback Dam Road repairs and stayed apprised of activities to assure that Forest Practices were followed. The City completed its RMAP for the Lake Chaplain Tract in 2002 and obtained DNR approval.

The District and the DNR negotiated a Routine Road Maintenance Agreement in 2001 for roads associated with project mitigation lands in the Sultan Basin. Annual meetings are held between the co-licensees and DNR to discuss road and land management activities. Also in 2001, a supplemental easement was obtained on a portion of road CD-147 (see District RMAP) owned by DNR.

4.13 JACKSON PROJECT RELICENSING

Activities accomplished to date are summarized in Section 3.12 of this report. Table 4 shows a summary of wetlands on WHMP lands that have been evaluated in 2004 through 2006 using the Department of Ecology's Washington State Wetlands Rating System for Western Washington.

5.0 WORK PLANNED FOR 2007

5.1 FOREST VEGETATION MANAGEMENT

The Crazy Bear timber sale on the Lake Chaplain Tract will be sold in 2007, with the possibility that logging may begin in the same year.

Tree seedlings on all harvested units of the Phone Line Sale (planted in 2005 and 2006) will be monitored for survival and vigor, and the density and distribution of hardwoods will be evaluated on selected older units. The older plantations will be monitored for bear damage. In some units, including Divr2-95, it is possible that hardwood density in certain patches may be reduced; however, the target hardwood overstory composition will remain 5 to 10 percent.

5.2 SNAG AND CWD MANAGEMENT

In 2007, snag management will focus on units at the Lake Chaplain Tract where 10 years has elapsed since initial snag creation began. These units will be re-inventoried and each created snag will be revisited to verify its status. Any deficiencies in snag quotas will be remedied at that time. Also, stands along the South Shore Road at Spada Lake will be inventoried, with creation to follow.

5.3 REVEGETATION

5.3.1 Spada Lake Drawdown Zone

Annual monitoring of wetland plantings and natural recruitment of vegetation was completed in 2002, but the sites may be informally monitored when District staff is in the vicinity.

5.3.2 Power Pipeline Right-of-Way

Noxious weeds will be controlled as in previous years, with their locations and control efforts noted.

5.3.3 Lake Chaplain Tract and Powerhouse Site

Monitoring and routine maintenance will be conducted as in previous years. Some tree seedlings and small shrubs will be added to plantings in the Sultan Bridge area to compensate for ground cover plantings that did not survive in 2004.

5.4 NEST STRUCTURES

Floating nest platforms will be monitored when other activities are conducted at Lost Lake and Spada Lake, and will be checked at the end of the nesting season to record any signs of use.

Nest boxes will be cleaned and repaired as necessary by the end of February in preparation for the upcoming nesting season. Due to the increasing problem of predation, when reinstalled, boxes will be placed further apart and each tree will be wrapped with three to four vertical feet of flashing, in an attempt to deter bears from

climbing the trees. Until the success of these measures can be determined, all boxes that have been damaged may not be replaced. Boxes will be checked in early summer to record species use and nesting success rates.

The osprey platforms at Spada and Lost Lakes, and the bald eagle nest at Lake Chaplain will be monitored in conjunction with other activities, but typically at least once per month, to record nesting use.

5.5 DEER FORAGE MONITORING

The following harvest units will be monitored in 2007: Hors3-93, Donk2-02.

5.6 WILLIAMSON CREEK TRACT

Baseline inventories have been completed on the Williamson Creek Tract. Standard Operating Procedures call for monitoring of the wetlands, old growth and mixed forest stands on a continuing, but less intense basis. Monitoring of the wetlands is scheduled for the Williamson Creek Tract in 2007.

5.7 LAND MANAGEMENT

The District will continue implementation of the RMAP and will prepare and submit an annual report to DNR. The City will implement its RMAP on the Lake Chaplain Tract.

The Co-licensees will continue to work with DNR on their NRCA plan for the Upper Sultan Basin, providing comments and suggestions on plans (habitat objectives, fire management, etc.) as needed and coordinating land management in the basin.

5.8 JACKSON PROJECT RELICENSING

District biologists will participate in implementing relicensing study plans and other associated relicensing activities.

District biologists will continue to study project wetlands, using the Department of Ecology's Washington State Wetlands Rating System for Western Washington.

5.9 SPADA LAKE TRACT SUPPLEMENTAL PLAN

The Spada Supplemental Plan for the period 2006-2015 will be submitted to the FERC for approval.

5.10 SECURITY MEASURES AT LAKE CHAPLAIN/JACKSON PROJECT FACILITIES

The District will continue testing the operations of the security systems installed in the vicinity of Culmback Dam. District biologists will review the systems.

6.0 SCHEDULE OF ACTIVITIES FOR 2007

Major Activities	Location	Quantity
Road Construction	Lake Chaplain Tract	TBD
Timber Sale (Crazy Bear Sale)	Lake Chaplain Tract	2 units
Thinned unit monitoring	Spada Lake Tract	All commercial thinning units
Final harvest unit monitoring	Lake Chaplain Tract, Phone Line Sale, older plantations	3 units, others TBD
Snag Creation	Spada Lake Tract	7+_units
Snag Inventory	Lake Chaplain Tract, Spada Lake Tract	TBD
CWD Creation	Lake Chaplain Tract	TBD, if Crazy Bear Sale is harvested
Revegetation		
Grass seeding/fertilizer Shrub plantings	Pipeline ROW	As needed to improve bare spots
Monitoring		
Revegetation Site Monitoring/Maintenance	West side, Chaplain Marsh North end, Lake Chaplain Powerhouse site Pipeline ROW	Monitoring of all planted/seeded areas. Maintenance as needed: Weeding, brush thinning, etc.
Deer Forage	Lake Chaplain Tract	2 units
Snags	Lake Chaplain, Lost Lake Tracts	Created snag trees
Nesting Structures	Lost Lake, Spada Lake, and Chaplain Tract	Monitor all structures
Wetland Monitoring	Lost Lake, Williamson Creek	All wetlands designated in SOPs
Williamson Creek monitoring		Wetlands
Noxious weeds	All WHMP lands	Develop monitoring plan SOP and control weeds as needed
Biosolids Application	Lake Chaplain Tract	None planned
Understory monitoring		None planned
Major Activities	**Location**	**Quantity**
Water quality monitoring	Chaplain Creek	2 stations
GTA and BZ Management	All established units	Boundary tag, monitor and develop long-term management plans
Land Management	Spada Lake Tract	RMAP implementation.
	Lake Chaplain Tract	RMAP implementation
Relicensing	All WHMP lands	Implement study plans;

		related relicensing activities.
Spada Lake Tract Supplemental Plan	Spada Lake Tract	Submit plan to the FERC