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# Animal Damage Control Program

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## 2005 Annual Report



**Georg Ziegltrum**  
**December 2005**

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## Executive Summary

The **Animal Damage Control Program (ADCP)** has been under the umbrella organization of the **Washington Forest Protection Association (WFPA)** since 1959, but has an independent budget and membership. The ADCP supervisor manages the program for nine months of the year. The program is a joint effort of private, government and tribal forestland managers in Washington and Oregon. In 2005, the ADCP had 32 participants in Washington and managed animal damage on 3,138,138 acres of forestland, of which about 0.8 million acres are vulnerable to black bear and other animal damage. The continuing primary goal of the ADCP is to protect forests, in an economically feasible, socially acceptable and ecologically unobjectionable manner, from black bear damage.

Non-lethal approaches to damage control are the preferred options of the ADCP. Since 1985, our members have concentrated their efforts on the **supplemental bear feeding program** during the spring months to minimize black bear damage. In 2005, the ADCP used 480,400 pounds of food pellets in western Washington and in about 850 feeding stations and 37,900 pounds in Oregon in 40 feeders with a total of 518,300 pounds for both states. The University of Zagreb, Croatia is testing our pellet formula this year.

Lethal control efforts have been used only in heavy damage areas and were not undertaken in areas with high bear populations but no damage. In 2005, the ADCP organized 225 **bear removal hunts** with hounds, providing hunting opportunities on private land to approximately 100 hunters. The Aldridge foot snare was used 15 times for damage control purposes. Requests for lethal bear removal increased again this year. Total bear harvest was 190 through Depredation Permits and 15 bears were snared.

The ADCP experienced an excellent working relationship with the **Washington State Department of Fish & Wildlife (WDFW)** and the **F&W Commission** this year. An electronic depredation permit process was developed in 2003 with the WDFW Enforcement leadership and

implemented last year. The result was a streamlined process with quick turnarounds on depredation permits.

The **ADCP budget** in 2005 was \$113,774. The assessment per acre was \$0.032 plus a \$500 membership fee for large companies and \$100 for small companies. “Out-of-state” members paid \$750.

The ADCP gave 9 **presentations** to maintain public and regulatory support.

The “Supplemental Feeding Economy Study” was accepted for publication in the Wildlife Society Bulletin in April. This trilogy of papers investigated the efficacy, economy and ecology of supplemental bear feeding programs used on industrial lands.

The ADCP financially supported the USDA/APHIS **research** team to learn more about mountain beaver ecology and biology. New information will be used to facilitate operations in the field and for political processes such as amendments to Initiative 713 (anti-trapping).

## Program Background

With the beginning of intensive forest management during the mid-40s in western Washington came the increased need to protect these forests from animal damage. The principal objective of the ADCP is to reduce spring black bear (*Ursus americanus*) damage to Douglas-fir (*Pseudotsuga menziesii*), western hemlock (*Tsuga heterophylla*) and western redcedar (*Thuja plicata*). The ADCP also provides expertise and technical assistance in damage management for a broad range of other wildlife species, including beaver (*Castor canadensis*), mountain beaver (*Aplodontia rufa*), porcupine (*Erethizon dorsatum*), and ungulates (*Cervus and Odocoileus spp.*). The program supervisor is responsible for program management and administration, support of individual member activities, research, surveys, monitoring, presentations and education.

During the spring, black bear partly strip or girdle the bark off trees to feed on the newly forming vascular tissue. Damage inflicted through this behavior can be extremely detrimental to the health and economic value

of timber stands. Complete girdling is lethal, while partial girdling provides avenues for subsequent insect and disease infestation. The severity of timber loss is compounded because bears tend to select the most vigorous trees within the most productive stands or where stand improvements, such as thinning, have been implemented.

Bear foraging on vascular tissue occurs almost exclusively in spring, presumably because alternative forages are limited and spring sapwood provides a source of carbohydrates. Damage generally starts with bud burst as the relative abundance of carbohydrates increases. Preference of bears for a particular tree or tree species may change with the phenological stage of the tree. Hemlocks are generally damaged earlier in the spring than Douglas-fir because of an earlier bud burst. Damage generally declines during early July as berries and other alternative foods become more readily available.

Bears feed on the vascular tissue by removing the bark with their claws and teeth and scraping the sapwood (phloem) from the heartwood (xylem) with their incisors. Feeding generally takes place on the lower bole of the trees in stands between 15 – 30 years of age. Any age tree, however, is vulnerable and bears occasionally strip an entire tree. Damage within a stand can be extensive, as a single foraging bear may peel bark from as many as 50 to 70 trees per day.

Timber stands with girdled trees are readily identified through aerial surveys in the spring and early summer. Trees completely girdled appear red as their vigor declines and their needles become discolored. Partially girdled trees are generally physiologically stressed and their needles will appear light green to yellow. Gray trees are dead. Areas suspected to contain bear damaged trees are mapped from the air and later verified by ground proofing. A greater number of damaged trees are generally revealed during ground proofing than are originally detected from the air.

Damage inflicted by bears is easily identifiable. Stripped bark is on the ground around the base of the tree and vertical tooth and claw marks are generally visible on the bole. Beaver and mountain beaver also girdle the bole of similar age trees near the ground, though damage inflicted by these species is usually easily distinguishable from bear damage. Conical shaped stumps and large wood chips are good

indicators of beaver activity. Mountain beaver girdling on a tree bole generally occurs within 50 cm of the ground and tooth marks are smaller and are horizontal with irregular claw marks rather than vertical. Porcupine damage generally occurs higher in the tree canopy with quills and fecal material often found at the base of the tree.

## **Activities and Accomplishments**

### **1. Program Management and Administration**

#### **ADCP Committee**

The ADCP chairman, John Todd of the Weyerhaeuser Company in Cosmopolis, along with a two-member committee, sets goals and objectives for the program and advises the program supervisor. Committee members are: Dick Carter, Rayonier and Gerald Lester, Green Diamond Resource Company. The Animal Damage Control Program supervisor is Georg J. Ziegltrum.

The annual ADCP meeting was held on December 14, 2005 at the Green Diamond's Colonial House in Shelton. At this time, the full membership approved and adopted the 2006 budget unanimously.

#### **Agency/Commission/Landowner Cooperation**

ADCP's working relationship with the WDFW was excellent. Chief of Enforcement Bruce Bjork, program manager Sean Carrell and the ADCP appreciated the electronic depredation permit process which facilitated the process significantly.

WDFW data shows that bear sport harvest in Washington has increased annually since 1998 primarily due to policy changes implemented by the Fish & Wildlife Commission. These changes include a two bear bag limit in western Washington and a longer general hunting season. In addition, the tag prices for bear (and cougar) decreased to encourage random harvest by elk and deer hunters. Boot hunters seemed to have learned over the last three years to hunt bears effectively. However, hounds are still needed to manage damage in an area where damage is ongoing and timing is essential.

#### **DNR Relations**

The ADCP maintained a good relationship with DNR and supported DNR's spring bear hunting efforts in Capitol Forest and Enumclaw.

Currently, the DNR is not permitted to use lethal damage control tools during the spring damage season, since Initiative 655 allows only private land managers to work with hunters, dogs and snares. DNR is presently not an ADCP member.

### Supplemental Feeding Contracts

Contracts were signed in March 2005. The first batch of pellets was delivered by April 1, 2005 as directed by contract. The second order was partly shipped out by the last week in May upon member request, the rest of the order by beginning of June. The ADCP ordered a total of 518,300 pounds of pellets. Washington received 480,400 pounds and Oregon 37,900 pounds.

The University of Zagreb, Croatia worked closely with the ADCP over the last 10 years. Our pellet formula is tested right now on the European Brown bear. If successful, Croatia will implement the Washington Feeding Program this year.

### Summary of Feeding in Washington and Oregon

Year	Pounds of Pellets	# Feeders
1985	5,000	10
1986	10,000	22
1987	20,000	52
1988	40,000	152
1989	80,000	260
Switched to 50 gallon feeding stations		
1990	99,000	280
1991	159,000	320
1992	210,250	350
1993	308,000	500
1994	310,000	600
1995	357,150	610
1996	450,040	730
1997	595,100	810
1998	381,200	810
1999	474,100	850
2000	517,000	850
2001	418,300	850
2002	422,550	850
2003	442,100	850
2004	468,550	850
2005	480,400	850

OREGON		
Year	Pounds of Pellets	# Feeders
1992	21,000	20
1993	45,000	70
1994	62,000	90
1995	60,850	90
1996	87,500	90
1997	78,500	90
1998	71,300	90
1999	80,000	90
2000	41,000	50
2001	35,000	40
2002	37,700	40
2003	67,000	45
2004	34,000	40
2005	37,900	45

## **ADCP Member Recruitment**

The ADCP welcomes the land managers of the Manke Lumber Company, Inc. in Shelton.

## **Meat Donations**

Donating meat to charity was always problematic for our industry because of the liability issue associated with it. Bears harvested under damage control permits are the property of the state of Washington. Therefore, pelts were donated to charity or returned to the WDFW. Professionally processed meat went to food banks, church groups, county correction facilities and needy families. Hunters enjoy the hunt but can not keep any parts of the bear.

Discussions with WDFW are ongoing to eliminate the liability issue for our industry by having contractors collect all harvested damage control bears. A process is not agreed on yet and all options are considered.

## **2. Support of Individual Member Activities**

Timber companies monitor their properties throughout the year through aerial and land surveys. Upon notification, the ADCP usually ground-proofs damage locations and establishes cause of tree injury or death. Damage management strategies are discussed with the landowner once the cause and extent of the problem is identified.

The ADCP received damage complaints about black bear, porcupine, ungulates, mountain beaver and flat tailed beaver. The purpose of the ADCP is to protect private forests, not to kill bears or other forest damaging animals. Therefore, our preferred damage management tool to minimize bear damage is the supplemental feeding program. Unfortunately, non-lethal approaches still have to be balanced with population control measures, especially since the bear populations in western Washington are increasing. The WDFW was helpful, supportive and responded quickly to protect timber resources.

## Damage Control Data Summary 2005

### Depredation Permits Hunts by Counties

#### Region 4

Whatcom	1
Skagit	18
Snohomish	13
King	8
Pierce	4

#### Region 5

Lewis	65
Cowlitz	6
Clark	6
Skamania	8
Klickitat	0
Clark	6
Wahkiakum	0

#### Region 6

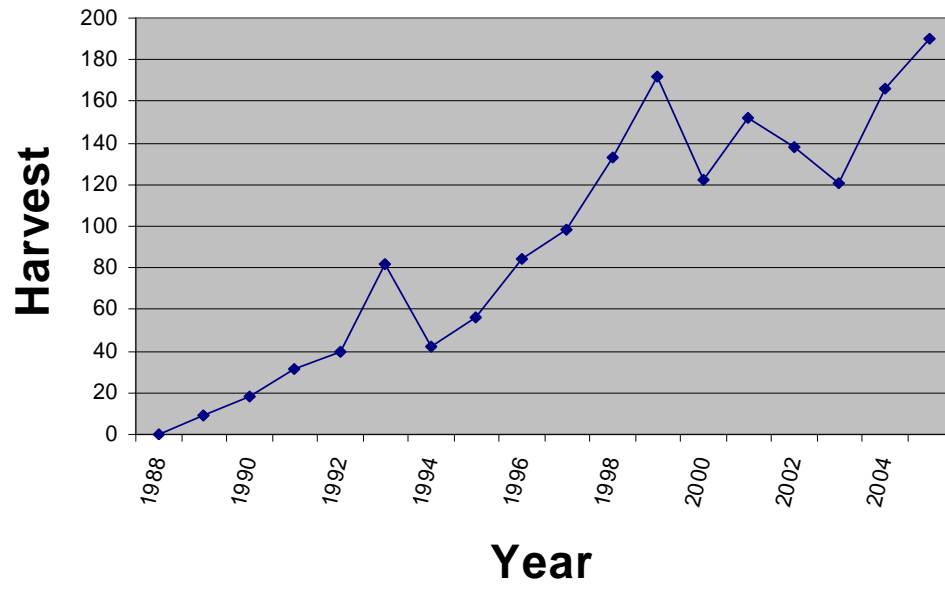
Clallam	33
Jefferson	3
Grays Harbor	27
Pacific	18
Thurston	9
Mason	0
Kitsap	0

**Total Hunts            225**

**Total Harvest:**        190 (Bores 111, Sows 65, Unknown 24)

### Damage Control Harvest

1988 - 2005



### **3. Presentations and Publications**

Nine presentations on black bear damage management and forest/wildlife ecology were given to the public.

1. January 14: Fish and Wildlife Commission. Washington's Depredation Permit Process.
2. March 9: Black Bear Damage Management. Washington Farm and Forest Association (WFFA).
3. March 23: Economy Paper accepted by The Wildlife Society Bulletin.
4. April 1-2: Black Bear Biology, Ecology and Concepts of Damage Management. WDFW, Yakima.
5. April 15: Wildlife Management in Working Forests. Forest Field Day, 4 H Camp.
6. April 22-23: Black Bear Damage, Supplemental Feeding and Depredation Process. WFFA Annual Meeting, Ocean Shores.
7. May 1: Black Bear Supplemental Feeding Program Joins Group of Management Tools Used in Helping Bear Damage to Trees. WFPA, FYI publication.
8. June 13: Black Bear Damage in Washington. KIRO TV.
9. July 25: Efficacy, Economy and Ecology of the WA State Supplemental Bear Feeding Program. Seminar, TU Munich, Germany.

The ADCP gained international recognition over the last couple of years because of publications and presentations on black bear damage management techniques in Washington. Information was passed-on outside our state's boundaries as well. This resulted in working relationships, research information exchanges and cross training of students and teachers among the ADCP and Universities in Germany (Munich and Heidelberg), Austria (Vienna), Norway (Oslo), Croatia (Zagreb) and one University in Japan. Foreign students continued to stay in touch with the ADCP.

## 4. Research, Evaluations and Surveys

### Mountain Beaver Research

The ADCP committee and full membership made a financial commitment in 2002 of \$12,500 annually for 3 years (commitment ends in 2005) to study mountain beaver ecology. Leading agency is the USDA/APHIS. New information was gained about mountain beaver traveling patterns, home range use and reproductive behavior. APHIS is also investigating more efficient methods of capturing the mountain beaver and tests existing agent.

### Supplemental Feeding Economy, Ecology Study

The study was accepted for publication in the January 2006 edition of the Wildlife Society Bulletin. The ecology study is ongoing.

**Abstract:** In 2004 I concluded that the black bear (*Ursus americanus*) supplemental feeding program was an effective, non-lethal damage control tool to protect conifers during the spring in western Washington, USA (Ziegltrum 2004). Consequently, I analyzed the costs of the supplemental feeding program which is used for about 10 years from stand age 15 to 25 and the costs of accepting bear tree damage. One Douglas-fir (*Pseudotsuga menziesii*) stand with known yield data served as a model. I assumed 15, 25, and 35% bear tree damage in this stand at age 15 and allowed the stand to grow to 35, 40, and 45 year rotations. Present value calculations (PV) were performed for the costs of the feeding program to determine if it was the best expenditure for the Animal Damage Control Program (ADCP) in comparison. For the sensitivity analysis I used 5, 6, and 7% interest rates. I found that the costs of feeding bears for 2.5 months annually were always lower than the costs of the bears' tree damage. Therefore, I concluded that the supplemental feeding program was a cost effective damage control tool.

# 2005 and Proposed 2006 Budget

INCOME:				ACTUAL	2005		2006	2005 - 2006		
				TO 11/30/05	ADOPTED	FORECAST	PROPOSED	BUDGET		
					BUDGET		BUDGET	DIFFERENCE		
Participant's Assessments:										
<b>2005</b>										
actual	3,138,138	acres @	\$0.03200 + basic fee	\$113,774		\$113,774				
			\$100,207 \$13,567							
budget	3,088,308	acres @	\$0.03200 + basic fee		\$111,976					
			\$98,826 \$13,150							
<b>2006</b>	3,135,681	acres @	\$0.03200 + basic fee				\$112,492		\$516	
			\$100,342 \$12,150							
<b>TOTAL INCOME</b>				<u>113,774</u>	<u>111,976</u>	<u>113,774</u>	<u>112,492</u>		<u>516</u>	
EXPENSE:										
Salary Expense 9 months	47,181			52,969	52,969	52,969	54,771	(1)	1,802	
Payroll Expense & Employee Benefits	12,900			18,015	17,000	17,000	18,185	(2)	170	
Transportation	3,557			8,000	4,000	4,000	5,600	(3)	(2,400)	
Lodging & Meals	834			2,500	1,000	1,000	2,500	(3)	0	
Meeting & Conference	80			1,250	1,250	1,250	1,250		0	
Administration (5% operating costs)	0			5,500	5,500	5,500	4,750	(4)	(750)	
State Excise & Fed Tax & Licenses	1,900			1,905	1,900	1,900	1,925	(5)	20	
Office Expense	326			500	500	500	500	(6)	0	
Printing & Publications	0			1,250	250	250	1,500		250	
Program Postage	111			500	250	250	500		0	
Miscellaneous	77			500	500	500	500		0	
Telephone/Cell Phone	649			1,750	800	800	1,000		(750)	
Field Supplies	0			500	0	0	500		0	
Day Wages	2,110			5,000	3,000	3,000	4,000		(1,000)	
Mileage	1,024			2,000	1,500	1,500	1,750		(250)	
Research	12,900			12,500	13,000	13,000	0		(12,500)	
<b>TOTAL EXPENSE</b>	<u>83,649</u>			<u>114,639</u>	<u>103,419</u>	<u>103,419</u>	<u>99,231</u>		<u>(15,408)</u>	
<b>INCOME OVER (UNDER) EXPENSE</b>				<u>30,125</u>	<u>(2,663)</u>	<u>10,355</u>	<u>13,261</u>		<u>15,924</u>	
<b>FUND BALANCE BEGINNING OF YEAR</b>				<u>64,694</u>	<u>64,694</u>	<u>64,694</u>	<u>75,049</u>		<u>10,355</u>	
<b>FUND BALANCE END OF YEAR</b>				<u>\$94,819</u>	<u>\$62,031</u>	<u>\$75,049</u>	<u>\$88,310</u>		<u>\$26,279</u>	

- 1) Salary expense includes 9 months with 3.5% increase
- 2) Payroll expense includes: payroll taxes - \$6,610 and employee benefits - \$11,575
- 3) 7,000 miles @ .80/mile = \$5,600. \$2,500 for lodging & meal expenses.
- 4) WFPA administration fee - 5% of operating expenses
- 5) State/City excise tax rate is \$.017 \* revenue.
- 6) Office expense includes stationery & supplies

## Membership List

1. Arbor Pacific Forestry Services, Inc.
2. Bloedel Timberlands
3. City of Bremerton – Water
4. Campbell Group – Cathlamet
5. Crown Pacific, Ltd. – Port Angeles
6. City of Hoquiam
7. Eaton Timber, Jerry
8. Forest Systems
9. GMO Renewable Resources LLC
10. Green Crow
11. Green Diamond Resource Company
12. Hampton Resources
13. Hancock Forest Mgmt. Inc
14. Jim Creek Properties
15. JLCG LLC
16. Longview Fibre Company
17. Manke Lumber Company, Inc.
18. Menasha Forest Products Corporation
19. Murphy Tree Farms, Jim
20. Olympic Resource Management
21. Pacific West Timber (Campbell Group)
22. Port Blakely Tree Farms
23. Professional Forestry Services
24. Quinault Indian Nation
25. Rainier Timber LLC (Campbell Group)
26. Rayonier
27. RD Merrill Co.
28. Ring Family Limited Partnership
29. Rosboro Lumber
30. Tacoma Public Utilities
31. University of Washington, Pack Forest
32. Weyerhaeuser – Twin Harbors, Longview, Cascade Region

## ADCP Work Load Summary

Program	% of Total Time	Direct Costs	Indirect Costs	Total
Program management, administration & policy	40	\$33,223	\$12,287	\$45,510
Support of individual members activity	43	35,714	13,209	48,923
Research, monitoring , & surveys	10	8,334	3,043	11,377
Presentation & education	7	5,814	2,150	7,964
<b>TOTAL</b>	<b>100%</b>	<b>\$82,960</b>	<b>\$30,814</b>	<b>\$113,774</b>

Direct costs are 73% of the total budget, indirect costs are 27%.

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