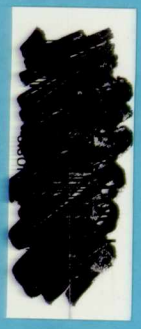

A Fiscal Summary of Research Projects with the Agricultural and Forestry Experiment Station FY 1986

Agricultural and Forestry Experiment Station
School of Agriculture and Land Resources Management
University of Alaska-Fairbanks
Fairbanks, Alaska 99775-0080

James V. Drew, Dean and Director

AGRICULTURAL RESEARCH

UNIVERSITY OF ALASKA
UNITED STATES DEPARTMENT OF AGRICULTURE, COOPERATING

A Fiscal Summary of Research with the Agricultural Experiment Station

FY 1986

Fairbanks Research Center

Palmer Research Center

July 1, 1986

Agricultural and Forestry Experiment Station
University of Alaska-Fairbanks
Fairbanks, Alaska 99775-0080

James V. Drew, Director

TABLE OF CONTENTS

INTRODUCTION

The purpose of this report is to list the objectives of research projects at the Alaska Agricultural and Forestry Experiment Station for the 1986 fiscal year (from July 1, 1985 to June 30, 1986). In addition, the report summarizes the budgets of these projects in terms of the sources and distribution of funds, expenditures by major functions, state goals, national goals, and national research problem areas.

The financial data given in this report represent the amounts expended for individual projects. In general, the financial data presented are based on the University's accounting system. The dollar amounts should not be taken as an official accounting, but rather as an index of the distribution of funds by research areas. The scientists' years (Sys) are estimates of time committed by the professional staff for all projects and include SYs reported in the CRIS system.

This research summary was compiled by Debra Shugert.

INDEX OF STAFF AND DISCIPLINES, FY 1986

*Agricultural Research, Science and Education Administration, USDA Cooperating
**Institute of Arctic Biology

SOURCE AND DISTRIBUTION OF FUNDS, FY 1986

Funding Source	Salary*	Other**	Salary Plus Other	Percent of Total
State	$2,776,633	$1,379,247	$4,155,880	62
Hatch General	391,346	183,359	574,705	9
Hatch Regional	77,587	28,175	105,762	2
USDA-ARS	147,536	84,068	231,604	4
McIntire-Stennis	133,672	44,689	178,361	3
Other Grants & Contracts	511,878	892,772	1,404,650	20
TOTAL	$4,038,652	$2,612,310	$6,650,962	100%

*Does not include benefits.
**Personnel benefits, travel, supplies, equipment, contractual services, postage and freight.

GRANTS AND CONTRACTS BY SOURCE AND AMOUNT, FY 1986

State of Alaska:	
Special Appropriations	$ 315,421
Alaska Council on Science and Technology	39,675
Department of Natural Resources	86,925
Department of Health and Social Services	67,572
Department of Transportation and Public Facilities	1,121
State of Alaska Power Authority	2,000
Department of Commerce and Economic Development	10,790
Federal:	
Sea Grant	58,694
USDA Forest Service	59,990
Department of Energy	60,548
USDA Animal & Plant Health	13,226
USDA Science & Education	10,330
National Science Foundation	457,766
USDA Cooperative State Research Service	1,849
Other:	
Standard Alaska Production Company	218,284
University of Alaska - Faculty Small Grants Program	459
TOTAL	$1,404,650

SUMMARY OF EXPENDITURE BY MAJOR FUNCTION, FY 1986

Function	Salary*	Other**	Salary Plus Other	Percent of Total
Research Projects	$2,749,011	$1,492,321	$4,241,332	64
Administration	567,777	537,108	1,104,885	17
Maintenance	389,129	450,580	839,709	13
Public Service	332,735	132,301	465,036	6
TOTAL	$4,038,652	$2,612,310	$6,650,962	100%

*Does not include benefits.
**Personnel benefits, travel, supplies, equipment, contractual services, postage and freight.

RESEARCH PROJECTS

SUMMARY OF RESEARCH PROJECT EXPENDITURES
BY SOURCE AND AMOUNT, FY 1986

Funding Sources	Salary*	Other**	Salary Plus Other	Percentage of Total
State	$1,659,646	$ 570,344	$2,229,990	53
Hatch General	350,227	167,143	517,370	12
Hatch Regional	75,967	20,143	96,110	2
USDA-ARS	147,537	84,068	231,604	5
McIntire-Stennis	133,672	44,689	178,361	4
Other Grants & Contracts	381,963	605,934	987,897	24
TOTAL	$2,749,011	$1,492,321	$4,241,332	100%

*Does not include benefits.
**Personnel benefits, travel, supplies, equipment, contractual services, postage and freight.

DISTRIBUTION OF RESEARCH PROJECT EXPENDITURES
BY STATE GOALS, FY 1986

		Amount	%
Goal 1:	Increase the efficiency of production systems for food and wood products, including energy conservation and the development of new lands	$3,530,012	83
Goal 2:	Improve processing, transportation and marketing of food and wood products in Alaska for markets in Alaska and for export	27,965	1
Goal 3:	Improve resource inventories and develop land-use planning for agriculture and forestry that will enhance environmental quality	120,083	3
Goal 4:	Develop resource management for improving the quality of life, including revegetation procedures, landscaping and home gardening, and outdoor recreation	563,272	13
	TOTAL	$4,241,332	100%

DISTRIBUTION OF RESEARCH PROJECT EXPENDITURES
BY NATIONAL GOALS, FY 1986

			Amount	%
Goal I:	Insure a stable and productive agriculture for the future through wise management of natural resources			
	RPA 102	Soil, Plant, Water Nutrient Relationship	$ 265,456	
	RPA 104	Alternative Uses of Land	103,651	
	RPA 107	Watershed Protection and Management	10,148	
	RPA 109	Adaptation to Weather and Weather Modification	15,829	
	RPA 110	Appraisal of Forest and Range Resources	176,603	
	RPA 111	Biology, Culture and Management of Forests and Timber-Related Crops	813,716	
	RPA 112	Improvement of Range Resources	364.209	
		TOTAL	$1,749,612	
Goal II:	Protect forests, crops and livestock from insects, diseases and other hazards			
	RPA 205	Control of Diseases and Nematodes of Fruit and Vegetable Crops	$ 23,181	
	RPA 208	Control of Diseases and Nematodes of Field Crops and Range	85,107	
	RPA 211	Control of Diseases of Livestock, Poultry and Other Animals	9,318	
		TOTAL	$ 117,606	
Goal III:	Produce an adequate supply of farm and forest products at decreasing real production costs			
	RPA 304	Improvement of Biological Efficiency of Fruit and Vegetable Crops	$ 235,669	
	RPA 305	Mechanization of Fruit and Vegetable Crop Production	68,404	
	RPA 307	Improvements of Biological Efficiency of Field Crops	221,762	
	RPA 309	Production Management Systems for Field Crops	309,202	
	RPA 311	Improvement of Biological Efficiency in Production of Livestock, Poultry and Other Animals	691,231	
	RPA 313	Production Management Systems for Livestock, Poultry and Other Animals	279,366	
	RPA 315	Improvement of Structure, Facilities and General Purpose Farm Supplies and Equipment	98,643	
	RPA 318	Non-Commodity-Oriented Biological Technology and Biometry	104,943	
		TOTAL	$2,009,220	

		Amount	%
Goal IV:	Expand the demand for farm and forest products by developing new and improved products and processes and enhancing product quality		
	RPA 401 New and Improved Forest Products	$ 12,193	
	TOTAL	$ 12,193	
Goal V:	Reduce prices paid by consumers, increase returns to farmers and marketers, and expand markets through improved efficiency in the marketing system		
	RPA 501 Improvement of Grades and Standards - Crop and Animal Products	$ 15,772	
	TOTAL	$ 15,772	
Goal IX:	Promote community improvement including development of beauty, recreation, environment, economic opportunity, and public service		
	RPA 901 Alleviation of Soil, Water and Air Pollution and Disposal of Wastes	$ 80,932	
	RPA 902 Outdoor Recreation	67,603	
	RPA 904 Fish and Other Aquatic Life, Fur-Bearing Animals and Other Wildlife	188,394	
	TOTAL	$ 336,929	
	TOTAL - All Goals	$4,241,332	

NATIONAL GOAL I: FUNDING SOURCES

Insure a stable and productive agriculture for the future through wise management of Natural Resources.

Funding Sources	Salary*	Other**	Salary Plus Other	Percentage of Total
State	$ 657,275	189,103	846,378	48
Hatch General	146,876	36,110	182,986	11
Hatch Regional	12,596	3,233	15,829	1
McIntire-Stennis	133,672	44,689	178,361	10
Other Grants & Contracts	249,353	276,687	526,058	30
TOTAL	$1,199,772	$549,822	$1,749,612	100%

*Does not include benefits

**Personnel benefits, travel, supplies, equipment, contractual services, postage and freight.

Title: FERTILITY EVALUATION AND IMPROVEMENT OF ALASKAN SOILS

Acct. No.: 33336-150040, 36226-230694, 36226-230695 Termination: 9/30/'87

National Goal: I, RPA:102 SYs. 0.9
State Goal: 1

Principal Investigator: C.L. Ping

Objectives: This project is to develop and correlate soil nutrients with plant responses for Alaskan conditions; to survey the fertility status of remote Alaskan soils as an aid in evaluating their agricultural potential; and to relate (for specific soil types) appropriate composition and quantities of required fertilizer.

Funding Sources:	Salary	Other	Total
State	2,849	2,509	5,358
Hatch General	79,204	18,127	97,331
Total	82,053	20,636	102,689

Title: FATE OF FERTILIZER NITROGEN IN AGRICULTURAL SOILS IN INTERIOR ALASKA

Acct. No.: 33216-254060 Termination: 12/31/'85
National Goal: I, RPA:102
State Goal: 1

Principal Investigator: S. Sparrow

Objectives: This project is to determine the behavior of fertilizer nitrogen in agricultural soils in Interior Alaska.

Funding Source:	Salary	Other	Total
Alaska Council on Science & Technology	15,945	23,730	39,675

Title: CROP ECOLOGY: SOIL NITROGEN RELATIONSHIPS

Acct. No.: 33372-150040
National Goal: I, RPA:102 SYs. 1.4
State Goal: 1

Principal Investigator: S. Sparrow
C. Knight

Objectives: The purpose of this project is to determine if the use of anhydrous ammonia as a nitrogen fertlizer for small grains is feasible in Alaska and determine under what conditions it can be used effectively.

Funding Source:	Salary	Other	Total
State	86,351	25,779	112,130

Title: IMPROVED BIOLOGICAL N(2) FIXATION BY ALFALFA IN ALASKA THROUGH SELECTION OF SUPERIOR RHIZOBIA STRAIN

Acct. No.: 36248-230694, 36248-230695 Termination: 3/31/'86
National Goal: I, RPA: 102 SYs. 0.1
State Goal: 1

Principal Investigator: S. Sparrow

Objectives: This project is to designed to determine if root - nodule bacteria (rhizobia) isolated from alfalfa grown at northern latitudes are better adapted to a subarctic environment than are rhizobia from temperate zones. This information can be used in the development of rhizobia strains which are superior in terms of N_2 fixation with alfalfa grown under subarctic conditions.

Funding Source:	Salary	Other	Total
Hatch General	8,718	2,244	10,962

Title: ECONOMICS OF AGRICULTURAL DEVELOPMENT

Acct. No.: 33371-150040
National Goal: I, RPA:104 SYs. 0.8
State Goal: 1

Principal Investigator: W. Thomas

Objectives: To investigate the economics of agricultural development in Alaska with special reference to agricultural policy.

Funding Source:	Salary	Other	Total
State	65,725	16,989	82,714

Title: PRIVATE LAND USE IN ALASKA

Acct. No.: 33354-150040
National Goal: I, RPA:104 SYs. 0.2
State Goal: 3

Principal Investigator: W. Workman

Objectives: This research is to examine the efficiency and equity implications of various institutions affecting private land use in Alaska. The various institutions that have been and/or are continuing to be examined include development rights purchase, land disposal practices including agricultural interest-only restrictions, and grazing fees on rangelands. The work is designed to provide continuing input to policy makers concerning programs and regulations that affect the use of Alaska lands.

Funding Source:	Salary	Other	Total
State	16,736	4,201	20,937

Title: WATER BALANCE PROCEDURES FOR A BOREAL WATERSHED

Acct. No.: 36217-230704, 36217-230705 Termination: 9/30/'86

National Goal: I, RPA:107 SYs. 0.1
State Goal: 4

Principal Investigator: J. Fox

Objectives: This project is to establish, test, and/or improve water balance procedures for small, boreal forest watersheds. Precipitation at five stations in the Spinach Creek watershed will be monitored. Solar radiation, temperature and relative humidity will be monitored at one location, vegetation surveys will be continued, and a stream gaging station will be operated on Spinach Creek. A Parshall flume will be installed.

Funding Source:	Salary	Other	Total
McIntire-Stennis	7,997	2,151	10,148

Title: ENVIRONMENTAL CONDITIONS AFFECTING CROP GROWTH IN ALASKA

Acct. No.: 36231-230684, 36231-230685 (NC-94) Termination: 9/30/'85

National Goal: I, RPA:109 SYs. 0.1
State Goal: 3

Principal Investigator: L. Allen

Objectives: This project is to relate observed weather parameters to plant development, yield and quality; to define mathematical models for predicting development, yield and quality; and to evaluate methods of improving the plant micro-environment.

Funding Sources:	Salary	Other	Total
Hatch Regional	12,596	3,233	15,829

Title: ESTIMATION OF POTENTIAL TIMBER VOLUME IN THE TANANA VALLEY AVAILABLE FOR CONVERSION TO WOOD CHIP FUEL

Acct. No.: 33216-252135 Termination: 11/30/'86
National Goal: I, RPA: 110
State Goal: 1

Principal Investigator: A. Richmond

Objectives: Determine the volume of various timber species available for chipping in the Fairbanks, Delta Junction and Nenana areas on a sustained annual basis.

Estimate the cost of harvesting and delivering wood chips from these lands to concentration points in Fairbanks, Delta Junction and Nenana.

Determine the feasibility of harvesting the estimated volume based on management constraints, costs, volumes per acre and accessibility.

Funding Source:	Salary	Other	Total
Department of Commerce and Economic Dev.	2,166	1,280	3,446

Title: ROSIE CREEK RESEARCH IV

Account No. 33292-535100 thru 33292-535107

National Goal: I, RPA: 111 SYs. 0.2
State Goal: 1

Principal Investigator: G. Juday

Objectives: The purpose of this project is to determine the structure and origin of major forest types affected by the Rosie Creek Fire, to complete seedling and direct seeding plantation establishment, to complete nutrient cycling studies, and to complete analysis of wood-decomposing fungi affecting burned wood.

Funding Source:	Salary	Other	Total
State Special Appropriation	27,477	12,850	40,327

Title: TIMBER THINNING

Acct. No.: 33228-150040
National Goal: I, RPA: 111
State Goal: 1

Principal Investigator: A. Richmond

Objectives: Demonstrate and evaluate silvicultural practices which maintain or increase the biological productivity of interior Alaska forest lands.

Demonstrate and evaluate wood utilization practices which maintain or increase the economic productivity of interior Alaska forest lands.

Funding Source:	Salary	Other	Total
State	64,666	25,111	89,777

Title: TWIG AND FOLIAR BIOMASS

Acct. No.: 33216-231140 Termination: 3/1/'87
National Goal: I, RPA:111 SYs. 0.2
State Goal: 1

Principal Investigator: J. Yarie

Objectives: Regressive equations relating percent cover to biomass of twigs less than 5 mm in diameter and foliage of understory plants commonly found in southeast Alaska are being developed. These equations will be used with percent cover data collected by the Renewable Resources Evaluation Unit of the U.S. Forest Service to describe the vertical structure of understory in southeastern forests.

Funding Source:	Salary	Other	Total
USDA Forest Service	13,104	4,826	17,930

Title: RANGE RESOURCE APPRAISAL FOR IMPROVED MANAGEMENT

Acct. No.: 33249-150040
National Goal: I, RPA:110 SYs. 0.4
State Goal: 3

Principal Investigator: J. McKendrick

Objectives: This project is designed to acquire data on the production and carrying capacity of the major range types in southcentral Alaska. Changes in seasonal forage quality and changes in animal forage preferences as well as animal performances will be determined.

Funding Source:	Salary	Other	Total
State	63,561	19,756	83,317

Title: FOREST MANAGEMENT IN INTERIOR ALASKA

Acct. No.: 33397-150040
National Goal: I, RPA:110 SYs. 0.9
State Goal: 1

Principal Investigator: E. Packee

Objectives: Forest Management, within the context of multiple use, has the goal of providing information to "produce maximum, practicable per acre yields of usable wood fiber." Objectives include: 1) identify potential forest products to meet Alaskan needs and justify management; 2) develop realistic forest management objectives to maintain or increase the productivity of the land base and to ensure sustained yield; and 3) provide a data base for forest management to assist in forest planning, timber appraisals, and facility development. Initial emphasis is on growth and yield of the Boreal Forest, potential forest products' markets, and the silviculture of tamarack.

Funding Source:	Salary	Other	Total
State	59,114	13,453	72,567
McIntire-Stennis	13,328	3,945	17,273
	72,442	17,398	89,840

Title: FOREST SOILS LABORATORY RESEARCH SUPPORT

Acct. No.: 33292-150040
National Goal: I, RPA:111 SYs. 0.2
State Goal: 1

Principal Investigator: K. Van Cleve

Objectives: This work provides laboratory support for research on relationships between forest types within the framework of nutrient cycling. These relationships are important in determining controls for forest productivity in interior Alaska.

Funding Source:	Salary	Other	Total
State	112,554	30,198	142,752

Title: SOIL NITROGEN SUPPLY IN RELATION TO FOREST PRODUCTIVITY AND SUCCESSIONAL PATTERNS IN INTERIOR ALASKA

Acct. No.: 36241-230704, 36241-230705 Termination: 11/4/'87
National Goal: I, RPA:111 SYs. 0.4
State Goal: 1

Principal Investigator: K. Van Cleve

Objectives: This project is to evaluate the control of soil temperature and moisture on the supply of soil nitrogen for tree growth in the principal forest types of interior Alaska.

Funding Source:	Salary	Other	Total
McIntire-Stennis	112,347	38,593	150,940

Title: ROSIE CREEK FIRE RESEARCH

Acct. No.: 33292-250425 Termination Date: 10/31/'85
National Goal: I RPA:111
State Goal: 1

Principal Investigator: G. Juday

Objectives: The purpose of this research is to determine immediate post-fire effects of the Rosie Creek fire near Fairbanks, Alaska, especially, site stabilization, revegetation, natural reforestation, erosion, and nutrient movement.

Funding Source:	Salary	Other	Total
State of Alaska Department of Natural Resources Division of Forestry	-0-	1,527	1,527

Title: ROSIE CREEK FIRE RESEARCH II

Acct. No.: 33292-532060 through-532065
National Goal: I RPA III SYs. 0.1
State Goal: 1

Principal Investigator: G. Juday

Objectives: The second post-fire year of studies of the Rosie Creek Fire emphasized controls of a major wood borer outbreak, woodpecker predation on insects, wood product salvage, nutrient cycling & soil fertility, and fungal decay of wood.

Funding Source:	Salary	Other	Total
State Special Appropriation	5,291	17,388	22,679

Title: THE ROLE OF SALT-AFFECTED SOILS IN PRIMARY SUCCESSION ON THE TANANA RIVER FLOODPLAIN OF INTERIOR ALASKA

Acct. No.: 36254-246050 Termination: 5/31/'87
36254-246051 5/31/'88

National Goal: I, RPA 111 SYs. 0.6
State Goal: 1

Principal Investigator: K. Van Cleve

Objectives: To determine the mechanisms responsible for the development of salt affected soils on the Tanana River floodplain of Interior Alaska, and to assess the impact of this pedogenic process on forest development.

Funding Source:	Salary	Other	Total
National Science Foundation	143,083	204,683	347,766

Title: PALMER BEEF RESEARCH

Acct. No.: 33255-150040
33394-150040

National Goal: III RPA 311w SYs. 0.9
State Goal: 1

Principal Investigator: B. Bruce

Objectives: This research is to investigate suitability of feedstuffs grown in Alaska for producing beef cattle. Trace minerals, especially selenium, protein and energy content of Alaskan feeds are being studied to determine optimal use for growing, maintaining, and producing red meat from beef cattle.

Funding Source:	Salary	Other	Total
State	48,510	34,242	82,752

Title: BISON DIET STUDY

Acct. No.: 33389-150040
National Goal: I, RPA:112 SYs. 0.3
State Goal: 1

Principal Investigator: J. McKendrick

Objectives: This project is aimed at identifying plant species that are important in the natural diet of the Delta bison herd. The various range types used by the bison will be identified and the seasonal change in the forage quality of those plants will be measured.

Funding Source:	Salary	Other	Total
State	25,074	7,470	32,544

Title: APPLIED REINDEER RESEARCH - RANGE MANAGEMENT

Acct. No.: 33399-150040
National Goal: I, RPA:112 SYs. 0.9
State Goal: 1

Principal Investigator: A. Epps

Objectives: This project is to develop procedures for herd management that will increase the efficiency of reindeer production and the marketability of meat, while protecting the substained yield of the range forage resource. The primary objective is to determine ways of increasing individual animal and herd productivity through low-stress handling, improved herd management, implementation of modern animal production practices, and to improve the quality and efficiency of slaughter and carcass handling.

Funding Source:	Salary	Other	Total
State	55,537	11,975	67,512

Title: DEVELOPMENT AND APPLICATION OF PLANT MATERIALS FOR FORAGE, PASTURE, TURF, AND CONSERVATION USES

Acct. No.: 33306-150040, 36223-230694, 36223-230695 Termination: 3/31/'88

National Goal: I, RPA:112 SYs. 0.8
State Goal: 4

Principal Investigator: W. Mitchell

Objectives: This research is to select superior performing grasses within native species and compare them with standard forage grasses in different agricultural regions of the state; to determine response of selections and standards to range of fertilizer treatments and determine forage quality as related to different conditions; to determine applicability of forage and grazing entries for supplemental pasture; to select superior performing grasses for conservation uses in different regions of the state; to select superior performing grasses for turf purposes; and to expand upon knowledge base for additional exploratory and collection efforts.

Funding Sources:	Salary	Other	Total
State	61,349	19,605	80,954
Hatch General	58,954	15,739	74,693
Total	120,303	35,344	155,647

Title: RESEARCH ON RED MEAT - AGRONOMY

Acct. No.: 33261-150040

National Goal: I, RPA:112 SYs. 0.1
State Goal: 1

Principal Investigator: W. Mitchell

Objectives: This research is to study the management of native bluejoint hayland; compare performance of experimental perennials with standard varieties to provide improved species for forage production and grazing; and to test the use of annuals for forage production on the Kenai Peninsula.

Funding Source:	Salary	Other	Total
State	34,384	9,581	43,965

Title: RED MEAT RANGE MANAGEMENT

Acct. No.: 33259-150040
National Goal: I, RPA:112 SYs. 0.1
State Goal: 1

Principal Investigator: J. McKendrick

Objectives: This research is to investigate range-carrying capacities and effects of grazing intensities by cattle on range conditions and trends in the Palmer vicinity.

Funding Source:	Salary	Other	Total
State	9,375	2,476	11,851

Title: PHYSIOLOGIC, GENETIC, AND MANAGEMENT FACTORS INFLUENCIN PERFORM GRASSES AND LEGEUMES FOR FORAGE, TURF, AND REVEGETATION IN ALASKA

Acct. No.: 33280-189013
National Goal: I, RPA:112 SYs. 0.8
State Goal: 1

Principal Investigator: L. Klebesadel and R. Taylor

Objectives: Identify physiologic parameters influencing subarctic plant adaptation; exploit that knowledge in developing improved, better adapted selections and cultivars of grasses and legumes for forage, pasture, turf and other uses, and in devising optimum managerial practices for establishment, persistence, seed production, and maximum production of high-quality forage.

Funding Source:	Salary	Other	Total
State	42,287	10,403	52,690

NATIONAL GOAL II: FUNDING SOURCES

Protect forests, crops and livestock from insects, diseases and other hazards.

Funding Sources	Salary*	Other**	Salary Plus Other	Percentage of Total
State	$60,322	$24,785	$ 85,107	72
Other Grants & Contracts	7,340	25,177	32,499	23
TOTAL	$67,662	$49,962	$117,606	100%

*Does not include benefits.
**Personnel benefits, travel, supplies, equipment, contractual services, postage and freight.

Title: DISEASE AND NEMATODE RESEARCH ON VEGETABLE CROPS IN ALASKA

Acct. No.: 33236-250285 Termination: 7/1/'86
National Goal: II RPA 205
State Goal: 1

Principal Investigator: D. Carling

Objectives: The objectives of this study are to determine the impact of fungus and nematode diseases on vegetable and other agricultural crops in this state; to establish species and populations of plant parasitic nematodes present in various parts of Alaska; to establish losses due to Rhizoctonia solani in potatoes and vegetables, and propose control measures; to identify local weeds as potential hosts for the Columbia Root Knot Nematode; and to investigate survivability of the Columbia Root Knot Nematode in southcentral Alaska.

Funding Source:	Salary	Other	Total
State of Alaska Department of Natural Resources Div. of Agriculture	1,290	20,879	22,169

Title: INTERACTIONS BETWEEN RHIZOCTONIA SOLANI AG-2-1 AND DELIA FLORALIS ON CAULIFLOWER

Acct. No.: 33236-231060 Termination: 6/30/'87
National Goal: II, RPA:205
State Goal: 1

Principal Investigator: D. Carling

Objectives: To quantitate the destructive capacity of R. solani AG-2-1 on cauliflower, and the destructive capacity of D. floralis on cauliflower.

To evaluate the interaction of R. solani and D. floralis on cauliflower, and to evaluate efficacy of Diazinon and PCNB in controlling these diseases.

Funding Source;	Salary	Other	Total
USDA Science & Education	-0-	1,012	1,012

Title: INTEGRATED PEST MANAGEMENT TO CONTROL CROP DISEASES IN ALASKA

Acct. No.: 33386-150040
National Goal: II, RPA:208 SYs. 0.5
State Goal: 1

Principal Investigator: J. McBeath

Objectives: This project is to identify the important diseases on crops in Alaska; study and understand these pathogens; and to investigate the means by which crops might be protected against these plant pathogens.

Funding Source	Salary	Other	Total
State	60,322	24,785	85,107

Title: BRUCELLOSIS IN REINDEER - VACCINE TESTING

Acct. No.: 33411-230734 Termination: 7/16/'88
National Goal: II, RPA:211
State Goal: 1

Principal Investigator: R. Dieterich

Objectives: Brucellosis in Alaskan reindeer remains one of the major problems faced by the industry. Four vaccines have been tested during the last several years and encouraging results were obtained with a killed vaccine made from the actual organism (Brucella suis type 4) which causes the disease in reindeer. This vaccine is now being tested in the field using 500 reindeer as experimentally vaccinated subjects and 500 reindeer as controls. This testing involves measuring the response of experimentally vaccinated reindeer to infection and documenting their serologic response to both vaccination and infection. Additional studies are underway to document the duration of immunity after vaccination.

Funding Source:	Salary	Other	Total
USDA - Science & Education	6,050	3,268	9,318

NATIONAL GOAL III: FUNDING SOURCES

Produce an adequate supply of farm and forest products at decreasing real production costs.

Funding Sources	Salary*	Other**	Salary Plus Other	Percentage of Total
State	$ 884,554	$331,301	$1,175,855	58
Hatch General	203,351	131,033	344,384	18
Hatch Regional	36,976	10,113	47,089	1
USDA-ARS	147,536	84,068	231,604	12
Other Grants & Contracts	108,813	111,475	220,288	11
TOTAL	$1,341,230	$667,990	$2,009,220	100%

*Does not include benefits.
**Personnel benefits, travel, supplies, equipment, contractual services, postage and freight.

Title: IMPROVEMENT OF VEGETABLE PRODUCTION FOR SOUTHCENTRAL ALASKA

Acct. No.: 33396-150040
National Goal: III, RPA:304 SYs. 0.9
State Goal: 1

Principal Investigator: D. Carling

Objectives: To evaluate and compare production practices of value in southcentral and other regions of Alaska. Carrot variety trials, potato yield trials, potato seed handling studies will be conducted. Transplanting techniques and nitrogen fertilization in lettuce will be studied. Research on soil borne diseases of potatoes and vegetables will be emphasized.

Funding Source:	Salary	Other	Total
State	116,819	35,845	152,664

Title: HORTICULTURAL CROP IMPROVEMENT FOR INTERIOR ALASKA

Acct. No.: 33335-150040
National Goal: III, RPA:304 SYs. 0.8
State Goal: 1

Principal Investigator: M. Griffith

Objectives: The objective of the horticultural crop improvement project is to evaluate and select new vegetable, fruit, and ornamental cultivars for Alaska and to devise cultural practices to improve yields of adapted crops.

Funding Source:	Salary	Other	Total
State	64,536	18,469	83,005

Title: WASTE HEAT UTILIZATION FOR HORTICULTURAL CROPS

Acct. No.: 33379-150040
National Goal: III, RPA:305 SYs. 0.2
State Goal: 1

Principal Investigator: M. Griffith

Objectives: The objective of the waste heat project is to devise cultural practices for ornamental cut-rose production using waste heat and to determine the commercial applications of these practices.

Funding Source:	Salary	Other	Total
State	51,263	17,141	68,404

Title: INTRODUCTION, MULTIPLICATION, MAINTENANCE, EVALUATION, AND CATALOGING OF PLANT GERM PLASM

Acct. No.: 36235-230684, 36235-230685 (W-6) Termination: 9/30/'90
National Goal: III, RPA:307 SYs. 0.2
State Goal: 1

Principal Investigator: F. Wooding

Objectives: This research is to evaluate germ plasm developed in other northern regions of the world for crops currently being grown in Alaska (wheat, oats, barley, and rapeseed) and to evaluate germ plasm for potential new crops for Alaska (flax, safflower, sunflower, buckwheat, millet, and grain amaranth).

Funding Source:	Salary	Other	Total
Hatch Regional	16,755	4,121	20,876

Title: SMALL-GRAIN PRODUCTION IN THE TANANA VALLEY OF INTERIOR ALASKA

Acct. No.: 33300-150040, 36225-230694 Termination: 9/30/'85

National Goal: III, RPA:307 SYs. 0.8

State Goal: 1

Principal Investigator: F. Wooding

Objectives: This research is to develop sufficient technical knowledge, through a broad research program of variety testing and cultural practices, to make possible efficient production of barley, oats, and wheat in a subarctic environment; to evaluate triticale as a potential new grain crop; and to determine the quality of Alaska-produced grains.

Funding Sources:	Salary	Other	Total
State	73,079	22,846	95,925
Hatch General	3,510	864	4,374
Total	76,589	23,710	100,299

Title: CROP GERMPLASM: INTERNATIONAL EXCHANGE AND COOPERATION

Acct. No.: 33236-251965 Termination: 6/30/'86

National Goal: III, RPA: 307 SYs. 0.4

State Goal: 1

Principal Investigator: R. Taylor, L. Klebesadel

Objectives: Accelerate crop germplasm exchange between Alaska and Northern areas of Canada and Europe; also expand scientific contacts thus promoting broadened evaluations of plant genetic resources for direct applications as crop variatal transfers or as a breeding line for future desirable selection, crossing, or hybridization.

Funding Source:	Salary	Other	Total
State of Alaska Department of Natural Resources	39,386	8,815	48,201

Title: IMPROVED CEREAL VARIETIES ADAPTED TO THE AGRICULTURAL ENVIRONMENTS OF ALASKA

Acct. No.: 33281-189013
National Goal: III, RPA 307 Sys. 0.5
State Goal: 1

Principal Investigator: R. Taylor

Objectives: Develop populations and varieties of barley, wheat, and oats with disease resistance, improved adaptation to cold soils and cool, short growing seasons at high latitudes. Develop techniques of variety development for maximizing efficient small-grain production under conditions of conservation tillage.

Funding Source:	Salary	Other	Total
State Special Appropriation	42,043	10,343	52,386

Title: AGRICULTURAL RESEARCH SERVICE CROP RESIDUE & FERTILIZER MANAGEMENT COOPERATIVE AGREEMENT

Acct. No.: 33216-230665 Termination: 9/30/'86
33216-230666
33216-231120
National Goal: III, RPA:309 SYs. 0.1
State Goal: 1

Principal Investigator: C. Lewis

Objectives: This research is to determine the effect of crop residue and tillage management on soil erosion and barley yields in a continuous cropping system. Varying amounts of crop residues are allowed to remain on plots to determine their effectiveness in erosion control when coupled with tillage and grain seeding systems ranging from disking twice using a hoe-opener drill for seeding to no tillage using a double-disk, press-wheel drill. Measurements other than grain yield, grain quality and soil aggregation include soil moisture and temperatures, wind speed and the radiation budget. Energy and cost are monitored and analyzed.

Funding Source:	Salary	Other	Total
USDA - Agricultural Research Service Agreement	147,536	84,068	231,604

Title: MANAGEMENT SYSTEMS FOR SMALL-GRAIN AND LIVESTOCK PRODUCTION IN INTERIOR ALASKA

Acct. No.: 33381-150040
National Goal: III, RPA:309 SYs. 0.9
State Goal: 1

Principal Investigator: C. Lewis

Objectives: Various types of management systems and their effects on costs of production of small grains, rapeseed, and livestock are investigated. Enterprise reports are prepared concerning economies of size, alternatives in use of land, labor, and machinery. An emphasis is placed on optimizing returns to management.

Funding Sources:	Salary	Other	Total
State	61,066	16,532	77,598

Title: PLANT MARINE WASTE COMPLEMENTARITY IN DAIRY CATTLE RATIONS

Acct. No.: 36260-220694
16838-220697

National Goal: III, RPA 311
State Goal: 1

Principal Investigator: B. Bruce

Objectives: This project will define limits using salmon meal as a protein supplement in mixed concentrates for lactating dairy cows. Secondary objectives will be to define limits for using salmon meal as a protein supplement in mixed concentrates for growing dairy animals, and as a protein supplement for feeding dairy steers to market grades for slaughter. This will obtain necessary performance data to recommend uses of salmon meal for dairy cows, growing stock, and finishing cattle. Major considerations will be possible adverse consequences of salmon meal inclusion on feed palatability and consumer acceptance of milk and meat produced by animals fed salmon meal. Also of interest will be possible ruminoreticulum bypass characteristics of salmon meal and synergistic effect of animal performance from using salmon meal in specified amounts.

Funding Source:	Salary	Other	Total
Federal	15,077	43,617	58,694
Sea Grant			

Title: IMPROVING DAIRY CATTLE THROUGH BREEDING WITH SPECIAL EMPHASIS ON SELECTION

Acct. No.: 36219-230694 (NC-2) Termination: 9/30/87
36219-230695

National Goal: III, RPA:311
State Goal: 1

Principal Investigator: B. Bruce

Objectives: This research is to evaluate the effectiveness and the limitation of single-trait selection for milk yield among sires available in artificial insemination in designed experiments partially replicated at different locations, including measurement of correlated responses in traits of economic and theoretical interest.

Funding Source:	Salary	Other	Total
Hatch General	68,971	56,264	125,235

Title: ACCEPTABILITY OF STRAW & SALMON MEAL IN RATIONS FOR MILK PRODUCTION

Acct. No.: 36249-230694 (NC-115) Termination: 9/30/'87
36249-230695

National Goal: III, RPA:311
State Goal: 1

Principal Investigator: B. Bruce

Objectives: This research is to determine the utilization of fish waste as an alternative protein source for lactating dairy cows and growing dairy steers and heifers. The research will determine the effect on milk production and contents. Also correct levels will be determined for use with other Alaskan feedstuffs.

Funding Source:	Salary	Other	Total
Hatch General	73,351	48,666	122,017

Title: DAIRY CATTLE BREEDING AND MANAGEMENT FOR MILK PRODUCTION IN ALASKA

Acct. No.: 33304-150040
National Goal: III, RPA:311
State Goal: 1

Principal Investigator: B. Bruce

Objective: This reseach is to evaluate the interrelationship of dairy cattle breeding and selection for milk production with selected elements of dairy cattle management in Alaska.

Funding Sources:	Salary	Other	Total
State	89,622	68,360	157,982

Title: UTILIZATION OF HIGH-PROTEIN CEREAL GRAINS PRODUCED IN ALASKA FOR QUALITY PORK PRODUCTION

Acct. No.: 36227-230694, 36227-230695 Termination: 9/30/88
National Goal: III, RPA:311 SYs. 0.6
State Goal: 1

Principal Investigator: F. Husby

Objectives: This research is to determine the nutritional value and quality of Alaska's barley varieties produced in northern latitudes for efficient pork production, and to evaluate marine by-products, plant protein or crystaline amino acids as the source of limiting amino acids to improve the protein quality of these barley varieties for growing and finishing pigs.

Funding Sources:	Salary	Other	Total
Hatch General	57,519	25,239	82,758

Title: RED MEAT RESEARCH - INTERIOR ALASKA

Acct. No.: 33378-150040
National Goal: III, RPA:311 SYs. 0.4
State Goal: 1

Principal Investigator: F. Husby

Objectives: This research is to determine the nutritional value of Alaska produced feedstuffs for beef animals under Alaska's conditions for optimum production.

Funding Source:	Salary	Other	Total
State	48,371	13,422	61,793

Title: REINDEER PRODUCTION

Acct. No.: 33211-150040
National Goal: III, RPA:313 SYs. 0.9
State Goal: 1

Principal Investigator: A. Epps

Objectives: To develop herd management practices that increase efficiency of reindeer production, including meat production, and provide for the sustained yield of range resources.

To determine ways of increasing individual animal and herd productivity through low-stress handling, improved herd management, appropriate slaughter and carcass handling while recognizing meat inspection standards and implementation of appropriate modern animal production practices.

Funding Source:	Salary	Other	Total
State	124,889	59,029	183,918

Title: FORAGE PRODUCTION AND UTILIZATION SYSTEMS AS A BASE FOR LIVESTOCK PRODUCTION

Acct. No.: 36232-230684 (NC-114) Termination: 9/30/'87
36232-230685

National Goal: III, RPA:313
State Goal: 1

Principal Investigator: W. Mitchell and B. Bruce

Objectives: This research is to study production and utilization of annual forage (barley/peas, oats/peas, alfalfa, sweet clover, and winter rye) and perennial forages (Bering hairgrass, bromegrass, timothy and others); to study forage quality components as a function of time, species, and morphological parts of plants; and to utilize agronomic and animal science data from the project to evaluate economic alternatives within various livestock and crop combinations.

Funding Source:	Salary	Other	Total
Hatch Regional	20,221	5,992	26,213

Title: APPLIED REINDEER RESEARCH - ANIMAL STUDIES

Acct. No.: 33398-150040
National Goal: III, RPA:313 SYs. 0.2
State Goal: 1

Principal Investigator: R. Dieterich

Objectives: Results from this research will assist the northwest Alaskan reindeer industry in improving productivity as well as product quality. Specific objectives are to improve the nutritional status of reindeer through development of more efficient grazing management and animal husbandry practices; to determine the feasibility of utilizing supplemental or alternate feeds in reindeer herds that might not have continuous access to high quality winter range; and to improve the training of new and established herders by developing educational aids on various aspects of reindeer herding.

Funding Source:	Salary	Other	Total
State	59,084	10,151	69,235

Title: ALTERNATE ENERGY SOURCES

Acct. No.: 33393-150040
National Goal: III, RPA:315 SYs. 0.4
State Goal: 1

Principal Investigator: S. Restad

Objectives: This research is to investigate the availability of renewable energy sources and consider some applications to Alaska's high-latitude agriculture and to evaluate energy efficient structures as a means of reducing conventional energy use.

Funding Sources:	Salary	Other	Total
State	75,510	23,133	98,643

Title: DEVELOPMENT OF PHOTOSYNTHETIC MEMBRANES IN TWO LEAF POPULATIONS

Acct. No.: 38661-150160
National Goal: III, RPA:318
State Goal: 1

Principal Investigator: M. Griffith

Objectives: When Puma rye (Secale cereale cv. Puma) is grown at 5 degrees C, the leaves produced are physiologically and morphologically different from leaves produced when the plant is grown at 20 degrees C. The objective of this study is to characterize the process by which photosynthetic membranes are developed in the two leaf populations.

Funding Source:	Salary	Other	Total
University of Alaska-Small Grants Program	-0-	459	459

Title: LOW TEMPERATURE PLANT PHYSIOLOGY

Acct. No.: 33334-150040
National Goal: III, RPA: 318
State Goal: 1

Principal Investigation: M. Griffith

Objectives: Crop plants will be studied to determine the effects of low temperatures and long photoperiods on root growth and development. Roots produced under different growth conditions will be compared morphologically, anatomically, and physiologically.

Funding Sources:	Salary	Other	Total
State	31,805	12,131	43,936

Title: DECOMPOSITION IN ARCTIC TERRESTRIAL ENVIRONMENTS - RATES AND QUALITY

Acct. No.: 33292-243431 Termination: 7/'86
National Goal: III RPA 318 SYs. 0.1
State Goal: 4

Principal Investigator: G. Laursen

Objectives: To elucidate decomposition processes attributed to soil fungi in an arctic terrestrial environment as those processes relate to the structure and function of decomposition in cold dominated peat soils of northern Alaska.

Funding Sources:	Salary	Other	Total
United States Department of Energy	12,307	48,241	60,548

NATIONAL GOAL IV

Expand the demand for farm and forest products by developing new and improved products and processes and enhancing product quality.

Funding Source	Salary*	Other**	Total	Percentage of Total
Other Grants and Contracts	$1,500	$10,693	$12,193	100%

*Does not include benefits.
**Personnel benefits, travel, supplies, equipment, contractual services, postage and freight.

Title: STORING FROZEN BIOMASS CHIPS

Acct. No.: 33216-230900 Termination: 9/30/'86
National Goal: IV, RPA:401
State Goal: 2

Principal Investigator: J. McBeath

Objectives: Determining the technical feasibility of storing wood chips produced from vegetation removed during land clearing for agricultural development in Alaska. Stored wood chips have potential use as an energy source for power plants.

Funding Source:	Salary	Other	Total
USDA Forest Service	-0-	2,593	2,593

Title: POTENTIAL FOR WOOD BURNING CHIPS I & II

Acct. No.: 33216-231050 TERMINATION: 6/30/'87
National Goal: IV RPA: 401
State Goal: 2

Principal Investigator: A. Gasbarro
A. Richmond

Objectives: Determine the feasibility of burning wood chips in mixture with coal at the Municipal Utilities System Power Plant.

Funding Source:	Salary	Other	Total
USDA Forest Service	1,500	6,100	7,600
AK Power Authority	-0-	2,000	2,000
	1,500	8,100	9,600

NATIONAL GOAL V: FUNDING SOURCES

Reduce prices paid by consumers, increase returns to farmers and markets, and expand markets through improved efficiency in the marketing system.

Funding Source	Salary*	Other**	Salary Plus Other	Pecentage of Total
State	$5,500	$2,928	$8,428	54
Other Grants and Contracts	-0-	7,344	7,344	46
	$5,500	$10,272	$15,772	100%

*Does not include benefits.

**Personnel benefits, travel, supplies, equipment, contractual services, postage and freight.

Title: REINDEER MANAGEMENT AND MARKETING

Acct. No.: 33227-150040
National Goal: V RPA:501 SYs. 0.1
State Goal: 2

Principal Investigator: W. Thomas

Objectives: To conduct research into the management and marketing of reindeer.

Funding Sources:	Salary	Other	Total
State	5,500	2,928	8,428

Title: LARGE SCALE WOOD CHIP/COAL TEST BURN

Acct. No.: 33216-252305 Termination: 12/31/'86
National Goal: V, RPA: 501
State Goal: 2

Principal Investigator: A. Richmond

Objectives: Determine the maximum percentage by weight of wood chips to coal which can be handled by existing stoking systems at the Ft. Wainwright Power Plant while maintaining satisfactory steam loads.

Determine the stack particulate levels which occur when burning wood chips and coal at varying ratios.

Determine a deliverable price/ton for wood chips in the Fairbanks area.

Funding Source:	Salary	Other	Total
State of Alaska Department of Commerce & Economic Development Economic Dev.	-0-	7,344	7,344

NATIONAL GOAL IX: FUNDING SOURCES

Promote community improvement including development of beauty, recreation, environment, economic opportunity, and public service.

Funding Source	Salary*	Other**	Salary Plus Other	Percentage of Total
State	$ 91,995	$22,227	$114,222	34
Hatch Regional	26,395	6,797	33,193	10
Other Grants & Contracts	14,957	174,558	189,515	56
TOTAL	$133,347	$203,582	$336,929	100%

*Does not include benefits.
**Personnel benefits, travel, supplies, equipment, contractual services, postage and freight.

Title: OUTDOOR RECREATION AND THE PUBLIC INTEREST: EVALUATION OF BENEFITS AND COSTS IN FEDERAL AND STATE RESOURCES PLANNING

Acct. No.: 33353-150040, 36234-230684, 36234-230685 (W-133) Termination: 9/30/'87

National Goal: IX, RPA:902 Sys. 0.6
State Goal: 4

Principal Investigator: A. Jubenville

Objectives: The overall objective is to provide an evaluation of federal outdoor recreation benefit-cost methodologies - both conceptually and empirically. There are two specific objectives: 1: to apply empirically Water Resources Council (WRC) recreation valuation methods and procedures; travel cost method (TCM); contingent valuation method (CVM); and unit day value (UDV) to selected land and water projects; and 2: to compare and evaluate the alternative WRC recreation valuation methods and procedures for western resource situations. When warranted, appropriate improvements will be suggested of methodologies.

Funding Resource:	Salary	Other	Total
State	30,137	4,274	34,411
Hatch Regional	26,395	6,797	33,192
	56,532	11,071	67,603

Title: SUCCESSION ON SEVERELY DISTURBED SITES IN INTERIOR ALASKA: SPECIES CHARACTERISTICS AND VEGETATIONAL PATTERNS.

Acct. No.: 33219-150040
National Goal: IX RPA:901 SYs. 0.2
State Goal: 4

Principal Investigator: B. Neiland

Objectives:

1. Detection of major plant species, communities and physical features of importance in succession over a 20 year period following severe disturbance in Interior Alaska.

2. Delineation of major patterns of vegetational and physical environmental changes during that time period.

3. Assessment of possible correlations between changes in vegetation and changes in physical features.

4. Experimental investigation of techniques and methods of possible use for successional modification of successional patterns and development of desired community types.

Funding Sources:	Salary	Other	Total
State	15,180	3,734	18,914

Title: AGRICULTURAL ENGINEERING RESEARCH

Acct. No.: 33373-150040
National Goal: IX, RPA:901 SYs. 1.0
State Goal: 4

Principal Investigator: R. Cullum

Objectives: This project is to adapt engineering techniques in the area of waste management for the development of the State's Codes of Practice. The objectives are to determine the potential detrimental effects of concentrated dairy-waste storage and disposal on surface and ground-water systems within the Point MacKenzie project area; and to develop best management practices for storage and disposal of dairy waste under northern climatic conditions.

Funding Source:	Salary	Other	Total
State	46,678	14,219	60,897

Title: EFFECTS OF SITE PREPARATION AND FERTILIZATION

Acct. No.: 33216-250395 Termination: 12/31/'86
National Goal: IX RPA: 901
State Goal: 4

Principal Investigator: R. Densmore

Objectives: This study will evaluate whether site preparation and/or fertilization will promote natural revegetation of a severely disturbed gravel pit in northern Alaska.

Funding Sources:	Salary	Other	Total
Department of Transportation and Public Facilities	-0-	1,121	1,121

Title:	ARCTOPHILA FEASIBILITY STUDY
Acct. No.:	33236-259950 Termination: 3/30/'87 33237-259950
National Goal:	IX, RPA: 904 SYs. 0.1
State Goal:	4
Principal Investigator	J. McKendrick
Objectives:	This project has three main objectives: 1) to determine the life history, reproduction and seasonal growth patterns of Arctophila fulva, 2) to measure selected physical and chemical attributes of Arctophila fulva's environment and 3) to determine the distribution of Arctophila fulva in oil fields near Prudhoe Bay, Alaska.

Funding Source:	Salary	Other	Total
Standard Alaska Production Co.	14,957	173,437	188,394

ADMINISTRATIVE PROJECTS

SUMMARY OF ADMINISTRATIVE PROJECT EXPENDITURES
BY SOURCE AND AMOUNT, FY 1985

Funding Source	Salary*	Other**	Salary Plus Other	Percentage of Total
State	$448,796	$329,893	$ 778,689	70
Hatch General	41,119	16,216	57,335	6
Hatch Regional	1,620	8,032	9,652	0
Other Grants & Contracts	76,242	182,967	259,209	24
TOTAL	$567,777	$537,108	$1,104,885	100%

*Does not include benefits.
**Personnel benefits, travel, supplies, equipment, contractual services, postage and freight.

Title: DIRECTOR'S OFFICE

Acct. No.: 33346-150040

Administrative Personnel: J. Drew, S. Restad, C. Hartman

Administrative Function: This account is for the overall administration of the Agricultural and Forestry Experiment Station.

Funding Source:	Salary	Other	Total
State	240,115	103,454	343,569

Title: REGIONAL AGRICULTURAL RESEARCH COORDINATION

Acct. No.: 36236-230684 (W-106)
36236-230685

Administrative Personnel: J. Drew

Administrative Function: This account is for the planning and coordination of regional agricultural research and for the accounting and disbursement of travel funds for regional research (U.S. Western Region).

Funding Source:	Salary	Other	Total
Hatch Regional	1,620	8,032	9,652

Title: PALMER ADMINISTRATION

Acct. No.: 33232-150040, 36224-230694
36224-230695

Administrative Personnel: S. Restad

Administrative Function: This account is for administrative support for research at the Palmer Research Center which administers agricultural research at the Palmer Research Center and areas of the state served by the Center, and coordinates research activities with other state and federal agencies involved in agriculture.

Funding Sources:	Salary	Other	Total
State	135,262	62,474	197,736
Hatch General	41,119	16,216	57,335
Total	176,381	78,690	255,071

Title: PALMER LIBRARY ACCOUNT

Acct. No.: 33239-150040

Administrative Personnel: S. Restad

Administrative Function: This fund provides library materials at Experiment Station Research Centers. Because of the number of staff members located away from the University library, a number of books and journals of special interest are purchased and maintained at the Experiment Station facilities. Journals are catalogued with the Matanuska Susitna Community college.

Funding Source:	Salary	Other	Total
State	8,431	19,111	27,542

Title: TITLE V SENIOR COMMUNITY SERVICE EMPLOYMENT PROGRAM

Acct. No.: 33236-252055

Administrative Personnel: S. Restad Termination: 6/30/'85

Administrative Function: The Title V program provides retraining and part-time employment for people over 55. The participants in the program have been steady, sincere workers that appreciate the opportunity to participate. The program has provided some excellent research assistance.

Funding Source:	Salary	Other	Total
State of Alaska Department of Health & Social Services	58,114	9,458	67,572

Title: PUBLICATIONS - SCHOOL OF AGRICULTURE AND LAND RESOURCES MANAGEMENT

Acct. No.: 33215-150040

Administrative Personnel: M. Murray

Administrative Function: This account contains funds for the production and distribution of all publications and other public information functions for the School of Agriculture and Land Resources Management.

Funding Source:	Salary	Other	Total
State	64,285	62,959	127,244

Title: AGRICULTURAL AND FORESTRY EXPERIMENT STATION RESEARCH EQUIPMENT

Acct. No.: 33212-535030

Administrative Personnel: J. Drew

Administrative Function: This was a capital project which provided funds for equipment and other expenses associated with moving into the new laboratory at the Matanuska Farm.

Funding Source:	Salary	Other	Total
State Special Appropriation	-0-	51,747	51,747

Title: STANDARD ALASKA PRODUCTION COMPANY
ENVIRONMENTAL FIELD COORDINATION

Acct. No.: 33236-255115 Termination: 12/31/'86

Principal Investigator: C. Herlugson

Objectives: Serve as Field Coordinator for the Endicott Environmental Monitoring Technical Program. Serve as Technical Reviewer for written technical documents produced from field work. Attend meetings to assist in documenting proceedings and to serve as reference for field activities. Serve as Technical Reviewer for various other research projects and monitoring programs dealing with exploration, development, and production of petroleum reserves on the North Slope.

Provide an important service to industry by means of technical input into an environmental monitoring program directed jointly by federal, state, and local governments.

Funding Source:	Salary	Other	Total
Standard Alaska Production Co.	18,128	11,762	29,890

Title: FAIRBANKS ADMINISTRATION

Acct. No.: 33212-150040

Administrative Personnel: C. Hartman

Administrative Function: This account is to distribute the overhead expenses from research projects for the Agricultural and Forestry Experiment Station.

Funding Source:	Salary	Other	Total
State	-0-	52,761	52,761

Title: AGRICULTURAL RESEARCH RESERVE

Acct. No.: 33222-150040

Administrative Personnel: C. Hartman

Administrative Function: The purpose of this account is to provide a reserve for unexpected and unusual expenses for research projects for the Agricultural and Foretry Experiment Station.

Funding Source:	Salary	Other	Salary
State	703	29,134	29,837

Title: ELECTRON MICROSCOPE

Acct. No.: 33216-247050

Principal Investigator: J. McBeath

Administrative Function: To purchase a transmission electron microscope for research purposes.

Funding Source:	Salary	Other	Total
National Science Foundation	-0-	110,000	110,000

MAINTENANCE PROJECTS

SUMMARY OF MAINTENANCE PROJECT EXPENDITURES
BY SOURCE AND AMOUNT, FY 1986

Funding Source	Salary*	Other**	Salary Plus Other	Percentage of Total
State	$378,490	$379,049	$757,539	90
Other Grants & Contracts	10,639	71,531	82,170	10
TOTAL	$389,129	$450,580	$839,709	100%

*Does not include benefits.
**Personnel benefits, travel, supplies, equipment, contractual services, postage and freight.

Title: COLLEGE PLANT - FAIRBANKS

Acct. No.: 33214-150040

Administrative Personnel: J. Holty

Administrative Function: This account is for utilities and the maintenance of facilities and machinery at the Agricultural and Forestry Experiment Station, Fairbanks Experiment Farm.

Funding Source:	Salary	Other	Total
State	40,468	34,847	75,315

Title: COLLEGE RESEARCH SERVICES - FAIRBANKS

Acct. No.: 33213-150040

Administrative Personnel: J. Holty

Administrative Function: This account is to support the development and operation of the Agricultural and Forestry Experiment Station, Fairbanks Experiment Farm.

Funding Source:	Salary	Other	Total
State	42,312	33,277	75,589

Title: PALMER PLANT

Acct. No.: 33234-150040

Administrative Personnel: S. Restad

Administrative Function: This fund is for the administration of the Palmer Research Center physical plant. As an off-campus facility, administration and maintenance of the plant is handled separately from on-campus facilities.

Funding Source:	Salary	Other	Total
State	123,416	132,292	255,708

Title: MATANUSKA PLANT

Acct. No.: 33231-150040

Administrative Personnel: S. Restad, J. Ross

Administrative Function: The Matanuska Farm is an off-campus facility of the Agricultural and Forestry Experiment Station which includes Pt. McKenzie and new laboratory facilities and is maintained by the local staff.

Funding Source:	Salary	Other	Total
State	132,034	148,285	280,319

Title: ANIMAL HUSBANDRY RESEARCH SUPPORT MATANUSKA FARM

Acct. No.: 33240-150040

Administrative Personnel: S. Restad, J. Ross

Administrative Function: This fund is for farm operations in support of maintenance of the livestock herd at Matanuska.

Funding Source:	Salary	Other	Total
State	40,260	30,348	70,608

Title: AGRICULTURAL EQUIPMENT UPGRADE AND REPLACEMENT

Acct. No.: 33214-532010
33214-534030

Principal Investigator: J. Drew

Objectives: To replace and upgrade obsolete and worn-out equipment.

Funding Source:	Salary	Other	Total
State	-0-	57,953	57,953
Special Appropriation			

Title: REPAIR AND RENOVATION OF UNIVERSITY OF ALASKA-FAIRBANKS AGRICULTURAL AND FORESTRY EXPERIMENT STATION FARM BUILDINGS AND FACILITIES

Acct. No.: 27026-529159
27059-529159

Principal Investigator: J. Holty

Objectives: Repair and Renovation of University of Alaska-Fairbanks Agricultural and Forestry Experiment Station Farm Buildings and Facilities.

Funding Source:	Salary	Other	Total
State	10,639	13,578	24,217
Special Appropriation			

PUBLIC SERVICE PROJECTS

SUMMARY OF PUBLIC SERVICE PROJECT EXPENDITURES
BY SOURCE AND AMOUNT, FY 1986

Funding Source	Salary*	Other**	Salary Plus Other	Percentage of Total
State	$289,701	$ 99,961	$389,662	82
Other Grants & Contracts	43,034	32,340	75,374	18
TOTAL	$332,735	$132,301	$465,036	100%

*Does not include benefits.
**Personnel benefits, travel, supplies, equipment, contractual services, postage and freight.

Title: RESEARCH APPRENTICESHIP PROGRAM

Acct. No. 33236-231150 Termination: 9/30/'86
33236-231151

Principal Investigator: D. Carling

Objectives: The object of this program is to stimulate interest among the minority communities in science related careers. Funding was provided to high school students to work with principal investigators on research projects for the Agricultural and Forestry Experiment Station.

Funding Source:	Salary	Other	Total
USDA Cooperative State Research Service	1,849	-0-	1,849

Title: FIELD DOCUMENTATION OF THREE CHUGACH NATIONAL FOREST RESEARCH NATURAL AREAS

Acct. No.: 33216-231240 Termination: 5/12/'87

Principal Investigator G. Juday

Objectives: To document the environmental features of the Schwan Glacier Terminus, Copper Sands, and Green Island Research Natural Areas in the Chugach National Forest. Methods include survey of glacier margins and recession, sand accumulation on active dunes, plant collection, establishment of reference forest plot, and soil sampling.

Funding Source:	Salary	Other	Total
USDA Forest Service	6,580	1,679	8,259

Title: DOCUMENTATION OF RESEARCH NATURAL AREAS FOR 1986

Acct. No.: 33216-231230 Termination: 2/20/'87

Principal Investigator: G. Juday

Objectives: To compile information from and prepare reports describing natural features of the Limestone Jags and Mount Prindle Research Natural Areas, and Pete Dahl Slough Research Natural Areas, and to define Research Natural Area needs in the eastern units of the Tanana Valley State Forest.

Funding Source:	Salary	Other	Total
USDA Forest Service	11,355	3,767	15,122

Title: FORESTRY RESEARCH AREAS

Acct. No.: 33229-150040

Principal Investigator: G. Juday

Objectives: To identify, study, and describe areas important for forestry research, and to obtain appropriate land use designations for them. Focus in 1986 was on sex proposed Research Natural Areas in the Tanana Valley State Forest, especially old growth forests at Caribou Crossing and Oblique Lake, as part of an extensive study of mature forest structure.

Funding Source:	Salary	Other	Total
State	37,054	9,116	46,170

Title: RESOURCE MAPPING FOR ALASKA

Acct. No.: 33392-150040

Principal Investigator: S. Restad, P. Scorup

Objectives: Provide resource mapping as required by various School of Agriculture and Land Resources Management projects.

Funding Source:	Salary	Other	Total
State	44,744	12,162	56,906

Title: ALASKA CROP AND LIVESTOCK STATISTICS

Acct. No.: 33236-250007 Termination: 6/30/'86

Principal Investigator: S. Restad

Objectives: The Alaska Crop and Livestock Statistics program provides agricultural statistics for national and state needs. It is operated by the USDA Crop and Livestock Statistical Reporting Service with the cooperation of the University of Alaska Agricultural and Forestry Experiment Station, the Cooperative Extension Service, and the Alaska Division of Agriculture.

Funding Source:	Salary	Other	Total
State of Alaska Department of Natural Resources	11,842	3,186	15,028

Title: MATANUSKA VALLEY BREEDERS DAIRY HERD IMPROVEMENT

Acct. No.: 33244-150040

Principal Investigator: B. Bruce

Objectives: This work is to encourage artificial insemination for the dairy industry, and dairy herd improvement.

Funding Source:	Salary	Other	Total
State	41,833	12,787	54,620

Title: SOIL AND PLANT ANALYSIS - LABORATORY SERVICES

Acct. No.: 33247-150040

Principal Investigator: S. Restad

Objectives: This work provides soil and tissue analysis for various research projects, soil and plant testing of farmers' samples for Cooperative Extension Service, and contract analysis for other clients.

Funding Source:	Salary	Other	Total
State	151,235	57,647	208,882

Title: ALASKA PLANT PEST SURVEY AND DETECTION PROGRAM

Acct. No.: 33216-231032 Termination: 9/30/'84

Principal Investigator: J. McBeath

Objectives: This project is to establish a computer-based plant pest survey and detection data storage and retrieval network in the state with connection to the national system, and to improve plant pest survey and detection techniques.

Funding Source:	Salary	Other	Total
US Department of Agriculture Animal and Plant Health Inspection Service	6,114	7,112	13,226

Title: FEED TESTING SERVICE FOR BALANCING ALASKAN LIVESTOCK RATIONS

Acct. No.: 33233-150040

Principal Investigator: S. Restad

Objectives: The Feed Testing Service Program was started in February 1982 as a cooperative project between the Agricultural and Forestry Experiment Station (AFES) and the Cooperative Extension Service (CES). Feed samples are submitted by Alaska's feed and livestock producers to CES, and are analyzed by AFES for nutritive value at about one-third of the actual cost. This service provides the information necessary for producers to correctly balance a livestock ration. Data from these analyses are also used by AFES and CES personnel to build a data base on Alaska's feeds.

Funding Source:	Salary	Other	Total
State	-0-	4,010	4,010

Title: VETERINARY EDUCATION PROGRAM

Acct. No.: 33226-150040

Principal Investigator: R. Dieterich

Objectives: Educational and research studies demonstrating veterinary medicine techniques in Alaska for pre-veterinary students and the veterinary profession.

Funding Source:	Salary	Other	Total
State	14,835	4,239	19,074

Title: ESTABLISHMENT OF ALASKA RESEARCH NATURAL AREAS

Acct. No.: 33216-231130 Termination: 3/14/'86

Principal Investigator: G. Juday

Objectives: To define and locate endemic plant species and unusual geologic features of western Alaska, and define a set of Research Natural Areas on the public domain which include them with minimal impact on important resource management programs.

Funding Source:	Salary	Other	Total
US Forest Service	2,200	6,286	8,486

Title: FORESTRY RESEARCH AREAS

Acct. No.: 33292-532100

Principal Investigator: G. Juday

Objectives: To discern and document, in the Tanana Valley State forest, those geologic features, plant species, and animals that are rare, or that are likely to decline under management, and to propose Research Natural Areas to represent them.

Funding Sources:	Salary	Other	Total
State	3,094	10,310	13,404
