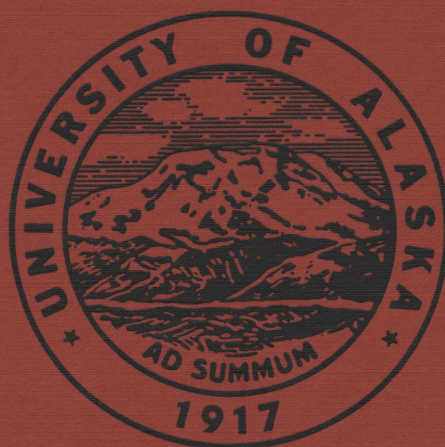


A Fiscal Summary of Research Projects
with the
Agricultural Experiment Station
FY 1984



Agricultural Experiment Station
University of Alaska-Fairbanks
Fairbanks, Alaska 99701

James V. Drew, Director

“ AGRICULTURAL RESEARCH

UNIVERSITY OF ALASKA, FAIRBANKS
UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING ;

A Fiscal Summary of Research with the Agricultural Experiment Station,
FY 1984 “

Fairbanks Research Center
Palmer Research Center
Homer Research Center

July 1, 1984

Agricultural Experiment Station
University of Alaska-Fairbanks
Fairbanks, Alaska 99701

James V. Drew, Director

ALASKA
S
541.5
A4
455
1984

TABLE OF CONTENTS

	Page
INTRODUCTION.	1
INDEX OF STAFF AND DISCIPLINES, FY 1984	2
SOURCE AND DISTRIBUTION OF FUNDS, FY 1984	3
GRANTS AND CONTRACTS BY SOURCE AND AMOUNT, FY 1984.	4
SUMMARY OF EXPENDITURE BY MAJOR FUNCTION, FY 1984	5
RESEARCH PROJECTS	7
Summary of Research Project Expenditures by Source and Amount, FY 1984	9
Distribution of Research Project Expenditures by State Goals, FY 1984.	10
Distribution of Research Project Expenditures by National Goals, FY 1984	11
National Goal I: Funding Sources	13
Research Projects	15
National Goal II: Funding Sources	27
Research Projects	29
National Goal III: Funding Sources	33
Research Projects	35
National Goal IV: Funding Sources	47
Research Projects	49
National Goal V: Funding Sources	51
Research Projects	53
National Goal VI: Funding Sources	55
National Goal VII: Funding Sources	57
National Goal VIII: Funding Sources	59
National Goal IX: Funding Sources	61
Research Projects	63
ADMINISTRATIVE PROJECTS	67
Summary of Administrative Project Expenditures by Source and Amount, FY 1984.	69
MAINTENANCE PROJECTS.	75
Summary of Maintenance Project Expenditures by Source and Amount, FY 1983.	77
PUBLIC SERVICE PROJECTS	83
Summary of Public Service Project Expenditures by Source and Amount, FY 1984.	85

INTRODUCTION

The purpose of this report is to list the objectives of research projects at the Alaska Agricultural Experiment Station for the 1984 fiscal year (from July 1, 1983 to June 30, 1984). 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 scientist 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 1984

Administration	Project Pages(s)
J.V. Drew, Ph.D.	Director. 71, 79, 80
S.H. Restad, M.S.	Assistant Director. 71, 72, 79, 80, 81, 88, 89
C.W. Hartman	Executive Officer 71
M.S. Murray	Editor. 73
 Research Staff:	
L.D. Allen, M.S.	Associate Professor, Agricultural Engineering . 19, 45
J. Blanchard	Research Associate 44
A.L. Brundage, Ph.D.	Professor, Animal Science 41, 42, 44, 90
D.E. Carling, Ph.D.	Assistant Professor, Horticulture 29, 36
W.B. Collins, Ph.D.	Assistant Professor, Range Management 26
*J.S. Conn, Ph.D.	Weed Scientist. 30, 31, 32
R.F. Cullum, Ph.D.	Assistant Professor, Agricultural Engineering . 64
R. Densmore	Research Associate 64
**R.A. Dieterich, Ph.D.	Professor, Veterinary Science 32, 92
M. Griffith	Assistant Professor of Plant Pathology 35
J.V. Drew, Ph.D.	Professor, Agronomy 63
J.D. Fox, Ph.D.	Assistant Professor, Resource Management. . . . 18
A.F. Gasbarro, M.S.	Instructor, Forestry.
M.L. Herlugson	Research Associate 91
F.M. Husby, Ph.D.	Associate Professor, Animal Science 43
A. Jubenville, Ph.D.	Associate Professor, Resource Management. . . . 65
G.P. Juday, Ph.D.	Visiting Associate Professor. 23, 87, 88
*L.J. Klebesadel, Ph.D.	Research Agronomist 24
C.W. Knight, M.S.	Instructor, Agronomy. 39, 90
*W.M. Laughlin, Ph.D.	Research Soil Scientist 16, 40
G.A. Laursen, Ph.D.	Visiting Assistant Professor. 15, 87
C.E. Lewis, Ph.D.	Associate Professor, Resource Management. . . . 40, 53
J.H. McBeath, Ph.D.	Assistant Professor, Plant Pathology. 30, 31, 49, 91
J.D. McKendrick, Ph.D.	Associate Professor, Agronomy 20, 25, 26
W.W. Mitchell, Ph.D.	Professor, Agronomy 24, 25, 44, 63
B.J. Neiland, Ph.D.	Professor, Botany
E.C. Packee, Ph.D.	Assistant Professor, Forest Management. 19
A. Peischel, Ph.D.	Instructor, Animal Science. 81
C. Ping, Ph.D.	Assistant Professor, Agronomy 15, 90
S.H. Restad, M.S.	Assistant Director. 20
S.D. Sparrow, Ph.D.	Assistant Professor, Agronomy 16, 17
W. Steigers	Instructor. 23
*R.L. Taylor, M.S.	Research Agronomist 24, 37, 38, 73
W.C. Thomas, Ph.D.	Professor, Economics. 53
K. Van Cleve, Ph.D.	Professor, Forestry (Soils) 21, 22, 88
R.B. Weeden, Ph.D.	Professor of Resource Management and Wildlife .
F.J. Wooding, Ph.D.	Professor, Agronomy 37, 38
W.G. Workman, Ph.D.	Associate Professor, Economics. 18, 65
J. Yarie, Ph.D.	Research Associate, Forest Soils. 22

*Agricultural Research, Science and Education Administration, USDA Cooperating

**Institute of Arctic Biology

SOURCE AND DISTRIBUTION OF FUNDS, FY 1984

Funding Source	Salary*	Other**	Salary Plus Other	Percent of Total
State	\$2,374,064	1,137,076	3,511,140	55
Hatch General	528,256	227,183	755,439	12
Hatch Regional	91,606	32,965	124,571	1
USDA-ARS	184,143	504,757	688,900	11
McIntire-Stennis	133,541	40,346	173,887	3
Coop. Agreement	150,410	59,979	210,389	4
Grants & Contracts	<u>498,241</u>	<u>381,132</u>	<u>879,373</u>	<u>14</u>
TOTAL	3,990,261	2,383,438	6,343,699	100

*Does not include benefits.

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

GRANTS AND CONTRACTS BY SOURCE AND AMOUNT, FY 1984

State of Alaska:

Alaska Council on Science and Technology	\$ 151,359
Department of Natural Resources	109,409
Office of the Governor	84,309
Department of Health and Social Services	31,855
Other Transportation and Public Facilities	2,923

Federal:

Soil Conservation Service	23,951
Forest Service	138,041
Department of Energy	65,475
Department of the Navy	56,353
Department of Agreement	16,613
USDA Animal & Plant Health	2,160
Science & Education	20,053

Other:

Union Carbide Corporation	70,360
Harza Ebasco	105,586
University of California, Davis	926
TOTAL	\$879,373

SUMMARY OF EXPENDITURE BY MAJOR FUNCTION, FY 1984

<u>Function</u>	<u>Salary</u>	<u>Other</u>	<u>Salary Plus Other</u>	<u>Percent of Total</u>
Research Projects	\$2,823,298	1,572,165	4,395,463	69
Administration	434,407	237,861	672,268	11
Maintenance	414,043	450,901	864,944	14
Public Service Projects	<u>288,513</u>	<u>122,511</u>	<u>411,024</u>	<u>6</u>
TOTAL	\$3,990,261	2,383,438	6,343,699	100

RESEARCH PROJECTS

SUMMARY OF RESEARCH PROJECT EXPENDITURES
BY SOURCE AND AMOUNT, FY 1984

Funding Sources	Salary	Other	Salary Plus Other	Percentage of Total
State	1,417,864	445,912	1,863,776	49
Hatch General	464,051	207,825	671,876	16
Hatch Regional	90,396	22,583	112,979	3
USDA-ARS	162,147	489,503	651,650	19
Coop Agreement	140,757	57,485	198,242	5
McIntire-Stennis	133,541	40,346	173,887	4
Grants & Contracts	<u>414,542</u>	<u>308,511</u>	<u>723,053</u>	<u>4</u>
TOTAL	2,853,298	1,572,165	4,395,463	100

DISTRIBUTION OF RESEARCH PROJECT EXPENDITURES
BY STATE GOALS, FY 1984

	Amount	%
Goal 1: Increase the efficiency of production systems for food and wood products, including energy conservation and the development of new lands	\$3,844,932	88
Goal 2: Improve processing, transportation and marketing of food and wood products in Alaska for markets in Alaska and for export	17,587	0
Goal 3: Improve resource inventories and develop land-use planning for agriculture and forestry that will enhance environmental quality	171,687	4
Goal 4: Develop resource management for improving the quality of life, including revegetation procedures, landscaping and home gardening, and outdoor recreation	361,257	<u>8</u>
TOTAL	\$4,395,463	100

DISTRIBUTION OF RESEARCH PROJECT EXPENDITURES
BY NATIONAL GOALS, FY 1984

	Amount	%
Goal I: Insure a stable and productive agriculture for the future through wise management of natural resources		
RPA* 101 Appraisal of Soil Resources	56,355	
RPA 102 Soil, Plant, Water Nutrient Relationship	444,719	
RPA 104 Alternative Uses of Land	129,020	
RPA 107 Watershed Protection and Management	12,361	
RPA 109 Adaptation to Weather and Weather Modification	80,862	
RPA 110 Appraisal of Forest and Range Resources	124,017	
RPA 111 Biology, Culture and Management of Forests and Timber-Related Crops	453,009	
RPA 112 Improvement of Range Resources	720,833	
TOTAL	\$2,021,176	46
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	40,714	
RPA 208 Control of Diseases and Nematodes of Field Crops and Range	93,895	
RPA 209 Control of Weeds and Other Hazards of Field Crops and Range	258,162	
RPA 211 Control of Diseases of Livestock, Poultry and other Animals	15,053	
TOTAL	\$ 407,824	9
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	229,070	
RPA 305 Mechanization of Fruit and Vegetable Crop Production	53,198	
RPA 307 Improvements of Biological Efficiency of Field Crops	230,609	
RPA 309 Production Management Systems for Field Crops	237,666	
RPA 311 Improvement of Biological Efficiency in Production of Livestock, Poultry and Other Animals	645,429	
RPA 313 Production Management Systems for Livestock, Poultry and Other Animals	214,644	
RPA 315 Improvement of Structure, Facilities and General Purpose Farm Supplies and Equipment	74,220	
TOTAL	\$1,751,412	40

*USDA National Research Problem Areas

NATIONAL GOAL I: FUNDING SOURCES

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

<u>Funding Sources</u>	<u>Salary</u>	<u>Other</u>	<u>Salary Plus Other</u>	<u>Percentage of Total</u>
State	\$605,862	184,095	789,957	39
Hatch General	225,062	57,624	282,681	14
Hatch Regional	30,872	7,279	38,151	2
McIntire-Stennis	133,541	40,346	173,887	20
USDA-ARS	93,434	316,166	409,600	9
Coop Agreement	11,943	1,478	13,421	0
Grants & Contracts	<u>178,354</u>	<u>165,125</u>	<u>343,479</u>	<u>16</u>
TOTAL	1,279,068	772,113	2,051,176	100

TITLE: BIOPHYSICS OF COLD ADAPTATION AND ACCLIMATIZATION

Acct. No.: 33292-233250

National Goal: I, RPA:101 Termination: 6/30/'84

State Goal: 1 SYs. 0.4

Principal Investigator: G. Laursen

Objectives: Objectives of the study are to relate the presence and abundance of fungal mycelia (biomass): 1) to habitat type; 2) to substrate quality (lignin, cellulose, hemicellulose, solubles and residuals) of several native litter types; 3) to nutrient (N,P,K and C) release and dynamics within the soil ecosystem; and 4) to the degradative potential (lignase, cellulase, chitinase) via enzyme activities in situ at Barrow, Meade River, Driftwood, Prudhoe Bay, Toolik Lake and Fairbanks.

Funding Source:	Salary	Other	Total
Office of Naval Research	23,068	33,287	56,355

TITLE: FERTILITY EVALUATION AND IMPROVEMENT OF ALASKAN SOILS

Acct. No.: 33336-150040, 36226-230693

National Goal: I, RPA:102 Termination: 9/30/'86

State Goal: 1 SYs 0.6

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	\$ -0-	4,480	4,480
Hatch	75,278	27,083	102,361
Total	75,278	31,563	106,841

TITLE: DETERMINATION OF SOIL AMENDMENTS FOR OPTIMUM CROP PRODUCTION ON AGRICULTURAL SOILS IN ALASKA

Acct. No.: FR/SEA WRU 5618-20780, 33222-230450
National Goal: I, RPA:102 Termination: 1985
State Goal: 1 SYs 0.7

Principal Investigator: W. Laughlin

Objectives: This project is to develop optimum soil management practices for production of forages, oil seeds and small grains; and to determine nitrogen mineralization rates and phosphorus release rates in cold soils.

Funding Source:	Salary	Other	Total
USDA Agricultural Research Service	46,717	158,083	204,800

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

Acct. No.: 33216-254060
National Goal: I, RPA:102 Termination: 6/30/'85
State Goal: 1 SYs 0.0

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	\$24,859	26,772	51,631

Title: CROP ECOLOGY: SOIL NITROGEN RELATIONSHIPS

Acct. No.: 33372-150040
National Goal: I, RPA:102 SYs 0.6
State Goal: 1

Principal Investigator: S. Sparrow

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

Funding Source:	Salary	Other	Total
State	\$47,839	15,106	62,945

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

Acct. No.: 36248-230693 Termination: 9/30/'84
National Goal: 1, RPA: 102 Sys 0.4
State Goal: 1

Principal Investigator: S. Sparrow

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

Funding Source:	Salary	Other	Total
Hatch	20,093	4,800	24,893

TITLE: PRIVATE LAND USE IN ALASKA
 Acct. No.: 33354-150040
 National Goal: I, RPA:104
 State Goal: 3 SYs 0.2

Principal Investigator: W. Workman

Objectives: This research is to examine the efficiency and equity implications of various institutions affecting private land use in Alaska.

Funding Source:	Salary	Other	Total
State	\$23,127	6,066	29,193

TITLE: ECONOMICS OF AGRICULTURAL DEVELOPMENT
 Acct. No.: 33371-150040
 National Goal: I, RPA:104
 State Goal: 1 SYs 0.8

Principal Investigator: W. Thomas

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

Funding Source:	State	Other	Total
State	\$80,885	18,942	99,827

TITLE: WATER BALANCE PROCEDURES FOR A BOREAL FOREST WATERSHED
 Acct.No.: 36217-230703, 36217-230702
 National Goal: I, RPA:107 Termination: 9/30/'85
 State Goal: 4 SYs 0.2

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 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	\$10,907	1,454	12,361

TITLE: ENVIRONMENTAL CONDITIONS AFFECTING CROP GROWTH IN ALASKA

Acct. No.: 36231-230683,36231-230693
36220-230692,36220-230693

National Goal: I, RPA:109 Termination: 9/30/'85
State Goal: 3 SYs 0.2

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 General	34,613	8,098	42,711
Hatch Regional	30,872	7,279	38,151
Total	65,485	15,377	80,862

TITLE: FOREST MANAGEMENT IN INTERIOR ALASKA

Acct. No.: 33397-150040

National Goal: I, RPA:110
State Goal: 1 SYs 1.0

Principal Investigator: E. Packee

Objectives: Forest Management, within the context of multiple use, has the general objective of providing information to "produce maximum, practicable per acre yields of usable wood fiber." This includes 1) identification of potential forest products to meet Alaskan needs and justify forest management; 2) develop realistic forest management practices to maintain or increase the productivity of the land base to ensure sustained yield at levels to meet identified fiber needs; 3) provide an economic data base for forest management to assist in forest planning, timber appraisals, and facility development. Emphasis is on Interior Alaska and initially on tree growth and yield, and markets for forest products.

Funding Source:	Salary	Other	Total
State	\$53,300	14,054	67,354

TITLE: FORAGE SAMPLING EVALUATION FOR KEY REINDEER FORAGE

Acct. No.: 33236-230930 Termination: 9/30/'83
National Goal: I, RPA: 110 SYs.: 0.0
State Goal: 3

Principal Investigator: S. Restad

Objectives: The objectives of this research are:

1. Provide provisional nutritional information for key Reindeer forage plants on the Seward Peninsula.
2. Develop a procedure for combining plant tissue analyses in conjunction with vegetative composition and yield data as a means to inventory nutrients and rate forage quality among disease range types.

Funding Source	Salary	Other	Total
Soil Conservation Service USDA	3,951	1,018	4,969

TITLE: RANGE RESOURCE APPRAISAL FOR IMPROVED MANAGEMENT

Acct.No.: 33249-150040
National Goal: I, RPA:110
State Goal: 3 SYs 0.2

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	\$44,652	12,011	56,663

Title: FOREST SOILS LABORATORY RESEARCH SUPPORT

Acct.No.: 33292-150040

National Goal: I, RPA:111

State Goal: 1 SYs 0.5

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	\$113,461	33,672	147,133

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

Acct. No.: 36241-230703

National Goal: I, RPA:111

State Goal: 1 Termination: 11/4/'86

SYs 0.5

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	\$122,634	38,892	161,526

Title: WOOD FOR ENERGY IN THE TAIGA - EVALUATION OF POTENTIAL SPECIES AND THEIR GROWTH RATES

Acct. No.: 33292-243311, 33292-243312
National Goal: I, RPA:111 Termination: 6/30/'84
State Goal: 1 SYs 0.6

Principal Investigator: J. Yarie

Objectives: The primary goal of this project is to provide a short rotation, intensive silvicultural prescription for hardwoods on a site specific basis for interior Alaska. The initial phases of this project deal with species selection and herbivory.

Funding Source:	Salary	Other	Total
Union Carbide Corp.	\$35,746	34,614	70,360

Title: SOIL NUTRIENT ON PRODUCTIVE WHITE SPRUCE SITES BEFORE & AFTER FIRE

Acct. No.: 33292-231000
National Goal: I RPA:111 Termination date: 9/30/'84
State Goal: 1 0.0

Principal Investigator: K. Van Cleve

Objectives: The objective of this research is to understand the immediate and long-term effects of fire on site productivity, and soil fertility.

Funding Source:	Salary	Other	Total
Forest Service USDA	5,115	1,394	6,509

Title: ROSIE CREEK FIRE RESEARCH

Acct. No.: 33292-250425

National Goal: I RPA: 111 Termination Date: 10/18/'84

State Goal: 1 0.1

Principal Investigator: Juday

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

Funding Source:	Salary	Other	Total
Department of Natural Resources Division of Forestry	28,194	19,875	48,069

Title: MOOSE BROWSE PILOT STUDY - SUSITNA HYDROELECTRIC PROJECT

Acct. No.: 33236-259201
36250-259201
36251-259201

National Goal: I, RPA: 112 Termination: 6/30/'84

State Goal: 1 SYs: 0.4

Principal Investigator: W. Steigers

Objectives: The objective of the plant phenology study was to evaluate vegetation and snow depth factors affecting moose distribution in the potential impoundment of the Susitna Hydroelectric Project. This is part of the assessment of impacts of the project.

Funding Source:	Salary	Other	Total
Harza Ebasco	\$ 57,421	48,165	105,586

Title: BREEDING AND PRODUCTION - FORAGE CROPS FOR HAY, PASTURE,
AND OTHER USES INCLUDING TURF

Acct.No.: AR/SEA WRU 5618-20100
36238-230662, 36238-230663

National Goal: I, RPA:112 Termination: 9/30/'84
State Goal: 1 SYs .3

Principal Investigators: L. Klebesadel and R. Taylor

Objectives: This research is to develop better adapted, improved varieties of grasses and legumes for forage; devise management techniques for seed increase and for optimum production, quality, and persistence of forages in Alaska; and investigate basic plant/climate interrelationships to better understand unique subarctic photoperiodic influences on adaptation, winter survival, and reproductive behavior.

Funding Sources:	Salary	Other	Total
USDA Agricultural Research Service	\$ 46,717	158,083	204,800
Coop Agreement	11,943	1,478	13,421
Total	\$ 58,660	159,561	218,221

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

Acct.No.: 33306-150040, 36223-230692, 36223-230693

National Goal: I, RPA:112 Termination: 9/30/'87
State Goal: 4 SYs 0.6

Principal Investigator: W. Mitchell

Objectives: This research is to select superior performing grasses within native species and compare 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	\$ 58,935	17,833	76,768
Hatch	57,021	17,643	74,664
Total	\$115,956	35,476	151,432

Title: RESEARCH ON RED MEAT - AGRONOMY/HOMER

Acct. No.: 33261-150040

National Goal: I, RPA:112

State Goal: 1 SYs 0.2

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 test use of annuals for forage production.

Funding Source:	Salary	Other	Total
State	\$32,698	8,849	41,547

Title: RESEARCH ON RED MEAT - RANGE/HOMER

Acct. No.: 33259-150040

National Goal: I, RPA:112

State Goal: 1 SYs 0.3

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 Homer vicinity.

Funding Source:	Salary	Other	Total
State	\$27,365	9,044	36,409

Title: BISON DIET STUDY
 Acct.No.: 33389-150040
 National Goal: I, RPA:112
 State Goal: 1 SYs 0.4

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	\$28,026	8,278	36,304

Title: APPLIED REINDEER RESEARCH - RANGE MANAGEMENT

Acct. No.: 33399-150040
 National Goal: I, RPA:112
 State Goal: 1 SYs 1.0

Principal Investigator: W. Collins

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. Primary objectives are 1) to determine ways of increasing individual animal and herd productivity through low stress handling, improved herd management, implementation of modern animal production practices, and improved quality and efficiency of slaughter and carcass handling; and 2) to determine responses of range plant communities to grazing pressures, seasons of use, frequency of use, and fire.

Funding Source:	Salary	Other	Total
State	\$95,574	35,760	131,334

NATIONAL GOAL II: FUNDING SOURCES

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

<u>Funding Sources</u>	<u>Salary</u>	<u>Other</u>	<u>Salary Plus Other</u>	<u>Percentage of Total</u>
State	\$72,043	21,852	93,895	23
USDA-ARS	46,717	158,083	204,800	50
Grants & Contracts	341	-0-	341	0
Coop Agreement	<u>66,777</u>	<u>42,011</u>	<u>108,788</u>	<u>27</u>
TOTAL	185,878	221,946	407,824	100

NATIONAL GOAL II: RESEARCH PROJECTS

Title: YIELD REDUCTION POTENTIAL AND CHEMICAL CONTROL OF RHIZOCTONIA DISEASE OF POTATO

Acct. No.: 33236-230980
 National Goal: II, RPA:205 Termination: 3/31/'84
 State Goal: 1 SYs 0.1

Principal Investigator: D. Carling

Objectives: The objectives of this project are to evaluate the yield reducing capacity of Rhizoctonia solani in potato production, and to evaluate and compare chemical methods currently available to control this disease.

Funding Source:	Salary	Other	Total
USDA Science and Education	\$4,063	\$937	\$5,000

Title: DISEASE AND NEMATODE RESEARCH ON VEGETABLE (NEW) CROPS IN ALASKA

Acct. No.: 33236-250285
 National Goal: II RPA 205 Termination: 7/1/'86
 State Goal: I 0.1

Principal Investigator: D. Carling

Objectives: The objectives of this study are as follows:

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

Funding Source:	Salary	Other	Total Dept. of
Natural Resources Div. of Agriculture	27,586	8,128	35,714

Title: INTEGRATED PEST MANAGEMENT TO CONTROL CROP DISEASES IN ALASKA

Acct. No.: 33386-150040
National Goal: II, RPA:208
State Goal: I Sys. 0.9

Principal Investigator: J. McBeath

Objectives: This project is to 1) identify the important diseases on crops in Alaska, 2) study and understand these pathogens, and 3) to investigate the means by which crops might be protected against these plant pathogens.

Funding Source	Salary	Other	Total
State	72,043	21,852	93,895

Title: PERSISTENCE OF HERBICIDES

Acct. No.: 33216-254160
National Goal: II, RPA:209 Termination: 2/28/'85
State Goal: 1 SYs 0.1

Principal Investigator: J. Conn

Objectives: Objectives of this research are to determine the rates of soil decomposition of six herbicides commonly used in Alaska, and to determine whether crops grown in rotation with barley are affected by the soil residues of these herbicides. Additional objectives are to determine the influence of incorporation depth, soil pH and temperature on degradation rates.

Funding Source:	Salary	Other	Total
AK Council on Science and Technology	\$22,999	29,096	52,095

Title: INTEGRATED PEST MANAGEMENT TO CONTROL CROP DISEASES IN ALASKA

Acct. No.: 33386-150040
National Goal: II, RPA:208
State Goal: 1 SYs 0.9

Principal Investigator: J. McBeath

Objectives: This project is to 1) identify the important diseases on crops in Alaska, 2) study and understand these pathogens, and 3) to investigate the means by which crops might be protected against these plant pathogens.

Funding Source:	Salary	Other	Total
State	\$72,043	21,852	93,895

Title: WEED CONTROL TECHNOLOGY FOR PROTECTING CROPS, GRAZING LANDS, AQUATIC SITES, AND NONCROPLAND

Acct. No.: AR/SEA WRU 5618-20280
36247-230663
National Goal: II, RPA:209 Termination: 1985
State Goal: 1 SYs 0.9

Principal Investigator: J. Conn

Objectives: This project is (1) to determine the vulnerability of weeds to different control practices, (2) the effects and fate of chemical weed control practices on crops and soils, and (3) integrated weed management systems to reduce tillage and erosion.

Funding Source:	Salary	Other	Total
Coop Agreement	\$ 341	-0-	341
USDA Agricultural Research Service	46,717	158,083	204,800
Total	47,058	158,083	205,141

Title: CONTROL OF FOXTAIL BARLEY WITH PRONAMIDE

Acct. No.: 33216-230990 '83
National Goal: II, RPA:209 Termination: 7/31/'85
State Goal: I Sys. 0.0

Principal Investigator: J. Conn

Objectives: This project is to investigate the ability of pronamide, a herbicide, to control foxtail barley in smooth bromegrass pastures and hayfields.

Funding Source:	Salary	Other	Total
University of California Davis	926	-0-	926

Title: BRUCELLOSIS IN REINDEER - VACCINE TESTING - SEROLOGY FY 83

Acct. No.: 33411-230732
National Goal: II, RPA:211 Termination: 9/30/'84
State Goal: 1 SYs 0.1

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.

Funding Source:	Salary	Other	Total
USDA - Science & Education	\$ 11,203	3,850	15,053

NATIONAL GOAL III: FUNDING SOURCES

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

<u>Funding Sources</u>	<u>Salary</u>	<u>Other</u>	<u>Salary Plus Other</u>	<u>Percentage of Total</u>
State	705,084	210,545	915,629	53
Hatch General	367,046	150,201	517,247	30
Hatch Regional	50,102	12,812	62,914	4
USDA-ARS	21,996	15,254	37,250	2
Coop Agreements	<u>132,365</u>	<u>56,007</u>	<u>188,372</u>	<u>11</u>
TOTAL	1,276,593	444,819	1,721,412	100

NATIONAL GOAL III: RESEARCH PROJECTS

Title: FRUIT IMPROVEMENT FOR ALASKA
 Acct. No.: 33334-150040, 36221-230692, 36221-230693
 National Goal: III, RPA:304 Termination: 9/30/'84
 State Goal: 1 SYs 0.1

Principal Investigator: M. Griffith

Objectives: Fruit cultivars and strains from indigenous and exotic sources will be compared and tested for adaptation. Cultural practices will be devised for the day neutral type strawberries that are designed to develop annual production. Propagation techniques will be devised to increase desirable clones of hardy tree fruit and small fruit.

Funding Sources:	Salary	Other	Total
State	\$14,900	4,785	19,685
Hatch	-0-	363	363
Total	\$14,900	5,148	20,048

Title: HORTICULTURAL CROP IMPROVEMENT FOR INTERIOR ALASKA
 Acct. No.: 33335-150040, 36228-230692, 36228-230693
 National Goal: III, RPA:304 Termination: 9/30/'84
 State Goal: 1 SYs 0.1

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	\$23,791	9,826	33,617
Hatch	22,636	5,279	27,915
Total	\$46,427	15,105	61,532

Title: IMPROVEMENT OF VEGETABLE PRODUCTION FOR SOUTHCENTRAL ALASKA

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

Principal Investigator: D. Carling

Objectives: To evaluate and compare old and new procedures and products utilized in potato and vegetable production in southcentral Alaska. Fertilizers, herbicides, seed treatments and fungicides will be among the chemicals tested. Proper handling of potato seed will be studied, along with potato cultivar testing. Disease control studies will be emphasized.

Funding Source:	Salary	Other	Total
State	\$112,544	34,946	147,490

Title: WASTE HEAT UTILIZATION FOR HORTICULTURAL CROPS

Acct. No.: 33379-150040
National Goal: III, RPA:305
State Goal: 1 SYs 0.1

Principal Investigator: M. Griffith

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

Funding Source:	Salary	Other	Total
State	\$41,055	12,143	53,198

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

Acct. No.: 33281-189013

National Goal: III, RPA 307

State Goal: 1 Sys. 0.3

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	24,893	-0-	24,893

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

Acct. No.: 33300-150040, 36225-230692, 36225-230693

National Goal: III, RPA:307 Termination: 9/30/'84

State Goal: 1 SYs 0.6

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	\$68,101	17,769	85,870
Hatch	12,599	3,155	15,754
Total	\$80,700	20,924	101,624

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

Acct. No.: 36235-230682, 36235-230683 (W-6)
National Goal: III, RPA:307 Termination: 9/30/'84
State Goal: 1 SYs 0.1

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 rape-seed) 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	\$12,226	2,430	14,656

Title: IMPROVED BARLEY, OAT AND WHEAT VARIETIES AND PRODUCTION PRACTICES FOR ALASKA

Acct. No.: AR/SEA WRU 5618-20050, 36239-230662, 36239-230663
National Goal: III, RPA:307 Termination: 1985
State Goal: 1 SYs 0.3

Principal Investigator: R. Taylor

Objectives: This project is to develop new barley, oat, and wheat varieties with improved adaptation to Alaska and techniques for maximizing efficient production of superior quality grain and forage.

Funding Source:	Salary	Other	Total
USDA Agricultural Research Service	\$ 21,996	15,254	37,250
Cooperative Agreement	36,706	8,817	45,523
Total	\$ 58,702	24,071	82,773

Title: IMPROVING RAPESEED PRODUCTION

Acct. No.: 36222-230692, 36222-230693

National Goal: III, RPA:307

Termination: 4/30/'84

State Goal: 1

SYs 0.1

Principal Investigator: C. Knight

Objectives: This research is to evaluate rapeseed varieties and cultural practices for interior Alaska. Major emphasis is placed in the use of rapeseed in crop rotation and conservation tillage systems.

Funding Sources:	Salary	Other	Total
Hatch	5,482	1,181	6,663

Title: CULTURAL PRACTICES FOR RAPESEED IN ALASKA

Acct. No.: 33218-150040

National Goal: III, RPA:309

Termination Date:

State Goal: I

SYs. 0.2

Principal Investigator: C. Knight

Objectives: Evaluate cultural practices which will result in a rapeseed crop that will consistently reach maturity before the crop is damaged by fall freezing. Some cultural practices to be evaluated include: planting date, fertilizer placement, and method of seedbed preparation.

Funding Sources:	Salary	Other	Total
State	7,269	1,609	8,878

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

Acct. No.: 33381-150040, 36246-230692, 36246-230693
 National Goal: III, RPA:309 Termination: 1/31/'85
 State Goal: 1 SYs 0.8

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 land, labor, and machinery; and financial management returns.

Funding Sources:	Salary	Other	Total
State	\$59,399	14,774	74,173
Hatch	11,794	3,864	15,658
Total	\$71,193	18,638	89,831

Title: CROP RESIDUE AND FERTILIZER MANAGEMENT

Acct. No.: 33216-230873, 33236-230873
 33216-230872, 33236-230872
 National Goal: III, RPA:309 Termination: 9/30/'84
 State Goal: 1 SYs 0.2

Principal Investigators: C. Lewis and W. Laughlin

Objectives: This research is to determine the effect of crop residue management on soil erosion and barley yields using three types of straw treatments; 1) stubble and straw remaining; 2) stubble remaining, straw baled; 3) as much straw and stubble as possible removed; four tillage treatments: 1) no tillage, 2) maximum tillage, 3) minimum tillage with fall treatment, 4) minimum tillage with spring treatment; and three drill treatments: 1) hoe-type no-till drill, 2) double-disk opener no-till drill, and 3) disker-seeder no-till drill. Barley is continuously cropped. Measurements include soil moisture and temperatures, windspeed, albedo, climatic variables, and grain yields. Energy and cost requirements are monitored and analyzed.

Funding Source:	Salary	Other	Total
USDA Coop Agreement			
Fairbanks	\$77,179	43,424	120,603
Palmer	14,588	3,766	18,354
Total	91,767	47,190	138,957

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

Acct. No.: 36249-230693 (NC-115)
National Goal: III, RPA:311 Termination:
State Goal: 1 SYs 0.4

Principal Investigator: A. Brundage

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. Also, to assess the concurrent utilization of straw in rations for lactating dairy cows.

Funding Source:	Salary	Other	Total
Hatch	108,424	35,661	144,085

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

Acct. No.: 33304-150040, 36219-230692, 36219-230693
National Goal: III, RPA:311 Termination: 9/30/'84
State Goal: 1 SYs 0.2

Principal Investigator: A. Brundage

Objective: This research 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	\$111,438	75,757	187,195
Hatch	78,674	66,173	144,847
Total	\$190,112	141,930	332,042

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

Acct. No.: 36230-230682, 36230-230683 (NC-2)
National Goal: III, RPA:311 Termination: 9/30/84
State Goal: 1 SYs 0.1

Principal Investigator: A. Brundage

Objectives: This research is to evaluate the effectiveness and the limitation of single trait selection for milk yield among sires available in A.I. 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 Regional	\$9,687	2,435	12,122

Title: BEEFALO RESEARCH - SOUTHCENTRAL ALASKA

Acct. No.: 33394-150040
National Goal: III, RPA:311
State Goal: 1 SYs 0.0

Principal Investigator: A. Brundage

Objectives: This project is to increase the genetic contribution from beefalo to crossbred holstein x beefalo cattle and to assess the potential of these animals for crossbreeding with European beef breeds, such as Simmental.

Funding Source	State	Other	Total
State	\$6,048	1,543	7,591

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

Acct. No.: 36227-230692, 36227-230693
National Goal: III, RPA:311 Termination: 9/30/84
State Goal: 1 SYs 0.5

Principal Investigator: F. Husby

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

Funding Sources:	Salary	Other	Total
Hatch	67,437	34,525	101,962

Title: RED MEAT RESEARCH - INTERIOR ALASKA

Acct. No.: 33378-150040
National Goal: III, RPA:311
State Goal: 1 SYs 0.3

Principal Investigator: F. Husby

Objectives: This research is to determine the nutritional requirements of beef animals under Alaskan conditions for optimum production.

Funding Source:	Salary	Other	Total
State	\$36,938	10,223	47,161

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

Acct. No.: 36232-230682 (NC-114)
36232-230683

National Goal: III, RPA:313 Termination: 9/30/'84
State Goal: 1 SYs 0.1

Principal Investigator: W. Mitchell and A. Brundage

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, brome grass, and timothy); 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	\$28,189	7,947	36,136

Title: APPLIED REINDEER RESEARCH - ANIMAL STUDIES

Acct. No.: 33398-150040

National Goal: III, RPA:313

State Goal: 1 SYs 0.6

Principal Investigator: John Blanchard

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; to improve the training of new and establishment herders by developing educational aids on various aspects of reindeer herding.

Funding Source:	Salary	Other	Total
State	\$96,343	11,657	108,000

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

Principal Investigator: L. Allen

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	\$57,098	17,122	74,220

NATIONAL GOAL IV

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

<u>Funding Source</u>	<u>Salary</u>	<u>Other</u>	<u>Total</u>	<u>Percentage of Total</u>
Grants and Contracts	-0-	1,295	1,295	100

Title: STORING FROZEN BIOMASS CHIPS

Acct. No.: 33216-230900

National Goal: IV, RPA:401

Termination: 9/30/86

State Goal: 2

SYs 0.0

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	\$ -0-	1,295	1,295
Forest Service			

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.

<u>Funding Source</u>	<u>Salary</u>	<u>Other</u>	<u>Salary Plus Other</u>	<u>Percentage of Total</u>
State	\$6,588	\$7,165	\$13,753	84
Hatch Regional	<u>1,534</u>	<u>1,005</u>	<u>2,539</u>	<u>16</u>
TOTAL	\$8,122	\$8,170	\$16,292	100

Title: REINDEER MARKETING

Acct. No.: 33227-150040

National Goal: V RPA: 501

Sys.: 0.1

State Goal: 2

Principal Investigator: W. Thomas

Objectives: The purpose of this research is to conduct research in the marketing and realated management of reindeer.

Funding Source:	Salary	Other	Total
State	6,588	7,165	13,753

Title: Marketing and Delivery of Quality Cereals and Oilseeds in Domestic and Foreign Markets.

Acct. No.: 36229-230682 (NC-151)

National Goal: V, RPA:503

State Goal: 2

Termination: 9/30/'83

Sys.: 0.1

Principal Investigator: C. Lewis

Objectives: Determine the effect of quality, particularly protein content in barley, on market price. Determine alternate transportation modes for moving grains and oilseeds to tidewater port in Alaska. Determine the effect of different methods of drying on length of possible storage time and grain and oilseed quality.

Funding Source:	Salary	Other	Total
Hatch Regional	1,534	1,005	2,539

NATIONAL GOAL VI

Expand export markets and assist developing nations.

<u>Funding Sources</u>	<u>Salary</u>	<u>Other</u>	<u>Salary Plus Other</u>	<u>Percentage of Total</u>
	0	0	0	0

NATIONAL GOAL VII

Protect consumer health and improve nutrition and well-being of the American people.

<u>Funding Source</u>	<u>Salary</u>	<u>Other</u>	<u>Salary Plus Other</u>	<u>Percentage of Total</u>
	0	0	0	0

NATIONAL GOAL VIII: FUNDING SOURCE

Assist rural Americans to improve their level of living.

<u>Funding Source</u>	<u>Salary</u>	<u>Other</u>	<u>Salary Plus Other</u>	<u>Percentage of Total</u>
	0	0	0	0

NATIONAL GOAL IX: FUNDING SOURCES

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

<u>Funding Source</u>	<u>Salary</u>	<u>Other</u>	<u>Salary Plus Other</u>	<u>Percentage of Total</u>
State	80,823	22,255	103,078	52
Hatch Regional	7,888	1,487	9,375	5
USDA-ARS	<u>40,938</u>	<u>44,073</u>	<u>85,011</u>	<u>43</u>
TOTAL	129,649	67,815	197,464	100

NATIONAL GOAL IX: RESEARCH PROJECTS

Title: REVEGETATION OF ALASKAN COAL MINE SPOILS
 Acct. No.: 33236-243162
 National Goal: IX, RPA:901 Termination: 5/31/'84
 State Goals: 4 SYs 0.1

Principal Investigator: W. Mitchell

Objectives: This research is to determine plant materials appropriate for use on coal mine spoils and disturbances; characterize soils and spoil materials and determine amendments necessary to establish and sustain growth; and study natural revegetation processes relevant to mine spoil revegetation.

Funding Source:	Salary	Other	Total
U.S. Department of Energy	\$32,066	33,409	65,475

Title: SOIL AND WATER CONSERVATION IN ALASKA (PHASE I AND II)
 Acct. No.: 33216-230531
 National Goal: IX, RPA:901 Termination: 9/30/'84
 State Goal: 4 SYs 0.0

Principal Investigator: J. Drew

Objectives: This research is to develop soil and management systems for effectively controlling soil and water erosion in interior Alaska. Major efforts are directed toward developing tillage systems and residue management systems for controlling soil and water erosion during the production of barley and rapeseed.

Funding Source:	Salary	Other	Total
U.S. Department of Agriculture	\$8,872	7,741	16,613

Title: AGRICULTURAL ENGINEERING RESEARCH

Acct. No.: 33373-150040

National Goal: IX, RPA:901

State Goal: 4 SYs 1.0

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	\$44,389	11,989	56,378

Title: EFFECTS OF SITE PREPARATION AND FERTILIZATION

Acct. No.: 33216-250395

National Goal: IX RPA 901 Termination Date: 12/31/'85

State Goal: IV Sys. 0.0

Principal Investigator: R. Densmore

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

Funding Source:	Salary	Other	Total
Department of Transportation and Public Facilities	-0-	2,923	2,923

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

Acct. No.: 33353-150040, 36234-230682, 36234-230683 (W-133)
National Goal: IX, RPA:902 Termination: 9/30/'84
State Goal: 4 SYs 0.6

Principal Investigators: W. Workman and 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. Council (WRC) method and evaluate and when suggested for application in western settings.

Funding Source:	Salary	Other	Total
State	\$36,434	10,266	46,700
Hatch Regional	7,888	1,487	9,375
Total	\$44,322	11,753	56,075

ADMINISTRATIVE PROJECTS

SUMMARY OF ADMINISTRATIVE PROJECT EXPENDITURES
BY SOURCE AND AMOUNT, FY 1983

Funding Source	Salary	Other	Salary Plus Other	Percent of Total
State	309,658	186,203	495,861	73
Hatch General	64,205	19,358	83,563	12
Hatch Regional	1,210	10,382	11,592	2
USDA-ARS	21,996	15,254	37,250	6
Coop Agreement	9,653	2,494	12,147	2
Grants and Contracts	<u>27,685</u>	<u>4,170</u>	<u>31,855</u>	<u>5</u>
TOTAL	434,407	237,861	672,268	100

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 Experiment Station.

Funding Source:	Salary	Other	Total
State	\$175,751	77,194	252,945

Title: REGIONAL AGRICULTURAL RESEARCH COORDINATION
 Acct. No.: 36236-230682, (W-106)
 36236-230683
 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.

Funding Source:	Salary	Other	Total
Hatch Regional	\$1,210	10,382	11,592

Title: PALMER ADMINISTRATION
 Acct. No.: 33232-150040, 36224-230692
 36224-230693
 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	\$83,525	39,555	123,080
Hatch	64,205	19,358	83,563
Total	\$147,730	58,913	206,643

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.

Funding Source:	Salary	Other	Total
State	\$5,133	18,225	23,358

Title: TITLE V SENIOR COMMUNITY SERVICE EMPLOYMENT PROGRAM

Acct. No.: 33236-251823

Administrative Personnel: S. Restad Termination: 9/30/'84

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
Department of Health & Social Services	\$27,685	4,170	31,855

Title: PUBLICATIONS, AGRICULTURAL EXPERIMENT STATION
 Acct. No.: 33215-150040
 Administrative Personnel: M. Murray
 Administrative Function: This account contains funds for the production and distribution of all experiment station publications. The costs incurred in the production of publications related to specific research projects are charged to the projects on which they are based.

Funding Source:	Salary	Other	Total
State	\$45,249	51,229	96,478

Title: USDA FEDERAL AGRICULTURAL RESEARCH-ADMINISTRATION
 Acct. No.: WRU 5618-02010
 Administrative Personnel: R. Taylor (B. Leckwold)
 Administrative Function: This account provides administrative management, and business opportunities for the Federal employees within the AR/USDA group in Alaska. Includes preparation of the budget and accountability of all funds. Maintains records on operations cost, utilization and safety inspections of motor vehicles. Advises federal employees on personnel matters and keeps all employees informed on rules and regulations, and procedures which affect their status, both Federal and University regulations.

Funding Source:	Salary	Other	Total
Federal	\$21,996	15,254	37,250
USDA Agricultural Research Service	9,653	2,494	12,147
Total	\$31,649	17,748	49,397

MAINTENANCE PROJECTS

SUMMARY OF MAINTENANCE PROJECT EXPENDITURES
BY SOURCE AND AMOUNT, FY 1983

Funding Source	Salary	Other	Salary Plus Other	Percentage of Total
State	414,043	404,200	818,243	95
Grants & Contracts	<u>-0-</u>	<u>46,701</u>	<u>46,701</u>	<u>5</u>
TOTAL	414,043	450,901	864,944	100

Title: STORAGE FACILITY FOR FIELD RESEARCH WITHIN POINT MACKENZIE AGRICULTURAL PROJECT

Acct. No.: 33236-250075

Administrative Personnel: S. Restad

Administrative Function: Develop capital improvements on University tract to allow for improved plot research and cooperative work with the Cooperative Extension Service and the Agricultural Action Council.

Funding Source:	Salary	Other	Total
State RSA	\$ -0-	10,025	10,025

Title: COLLEGE PLANT, FAIRBANKS

Acct. No.: 33214-150040

Administrative Personnel: J. Drew (M. Stark)

Administrative Function: This fund is for utilities and maintenance at the Fairbanks AES Experiment Farm. Most maintenance of facilities and improvements are done by farm staff. The maintenance function includes a support facility capable of vehicle and machinery maintenance and repair. This repair capability is essential to the mission of the farm because of the extent and diversity of equipment which must be kept in operation.

Funding Source:	Salary	Other	Total
State	\$34,053	27,325	61,378

Title: COLLEGE RESEARCH SERVICES, FAIRBANKS
 Acct. No.: 33213-150040
 Administrative Personnel: J. Drew (M. Stark)
 Administrative Function: This fund is for research support for research of the Fairbanks AES Experiment Farm. Significant effort is devoted to the production of feed for the AES animal program. A part of the farming for sustained feed supply is the ongoing program of clearing new ground, cleaning debris from clearing, fallowing areas and continuing to improve field drainage. Construction projects and fencing projects are also undertaken.

Funding Source:	Salary	Other	Total
State	\$33,565	33,373	66,938

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	\$108,843	134,270	243,113

Title: MATANUSKA PLANT
 Acct. No.: 33231-150040
 Administrative Personnel: S. Restad (F. Perkins)
 Administrative Function: The Matanuska Farm is an off-campus facility of the Experiment Station which is maintained by the local staff.

Funding Source:	Salary	Other	Total
State	\$97,021	129,849	226,870

Title: ANIMAL HUSBANDRY RESEARCH SUPPORT, MATANUSKA FARM
 Acct. No.: 33240-150040
 Administrative Personnel: S. Restad (F. Perkins)
 Administrative Function: This fund is for farm operations in support of maintenance of the livestock herd at Matanuska.

Funding Source:	Salary	Other	Total
State	\$49,524	31,082	80,606

Title: HOMER RESEARCH CENTER - OPERATIONAL FUNDING
 Acct. No.: 33255-150040
 Administrative Personnel: A. Peischel Termination: 3/30/'84
 Administrative Function: This funding was used for the administration of the Homer Research Center physical plant. As an off-campus facility, administration and maintenance of the plant was handled separately from on-campus facilities. This facility was closed March, 1984.

Funding Source:	Salary	Other	Total
State of Alaska, Office of the Governor	\$91,037	48,301	139,338

Title: HOMER RESEARCH CENTER - UPGRADE AND EQUIPMENT
 Acct. No.: 33256-252770
 Administrative Personnel: A. Peischel Termination: 3/30/'84
 Administrative Function: This funding was being used to improve the Homer Research Center facilities, to clear land near the center for silage production and pastures, and to purchase equipment needed to conduct red meat research at Homer, Alaska.

Funding Source:	State	Other	Total
State of Alaska, Office of the Governor	\$ -0-	36,676	36,676

PUBLIC SERVICE PROJECTS

SUMMARY OF PUBLIC SERVICE PROJECT EXPENDITURES
BY SOURCE AND AMOUNT, FY 1983

<u>Funding Source</u>	<u>Salary</u>	<u>Other</u>	<u>Salary Plus Other</u>	<u>Percentage of Total</u>
State	232,499	100,761	333,260	81
Grants and Contracts	<u>56,014</u>	<u>21,750</u>	<u>77,764</u>	<u>19</u>
TOTAL	288,513	122,511	411,024	100

Title: ECOLOGICAL RESERVES FOR ALASKA

Acct. No.: 33216-230940,33216-231010
33212-529170

Principal Investigator: G. Juday Termination: 1984

Objectives: This project is to 1) identify sites in Alaska important for various types of field research and to document the scientific values of high priority areas; 2) to formally establish scientific research and educational areas which are useful as either manipulative experimental areas or as undisturbed baseline study areas; and 3) to develop a system for efficiently sharing research results and site descriptive information from these areas.

Funding Source:	Salary	Other	Total
State	\$21,726	19,857	41,583
Forest Service	25,094	6,950	32,044
Total	46,820	26,807	73,627

Title: HUMAN PERFORMANCE IN THE COLD

Acct. No.: 33292-233240

Principal Investigator: G. Laursen Termination Date: 1/31/'84

Objectives: To edit 23 manuscripts, oversee manuscript preparation, galley submission, corrections, press negotiations and publication of the proceedings of the first ONR-sponsored symposium on Human Performance in the Cold.

Funding Source:	Salary	Other	Total
Office of Naval Research	\$5,024	13,098	18,122

Title: COLUMBIA GLACIER-GRANITE COVE RESEARCH
Acct. No.: 33216-230950
Principal Investigator: G. Juday Termination: 3/30/'84

Objectives: Document the baseline environment of the current terminus of Columbia Glacier in order to document expected changes from the drastic retreat of the Glacier.

Funding Source:	Salary	Other	Total
USDA Forest Service	\$5,834	2,166	8,000

Title: ENVIRONMENTAL CHEMISTRY CHARACTERISTICS OF TAIGA SETTINGS
Acct.No.: 33292-230820 Termination: 9/30/'83
Principal Investigator: K. Van Cleve

Objectives: This project is to perform and report chemical land nutrient analysis of selected stream, lake, and terrain samples (water, terrestrial, and aquatic vegetation, soils) from taiga environments.

Funding Source:	Salary	Other	Total
USDA Forest Service	\$719	258	977

Title: RESOURCE MAPPING FOR ALASKA - SEWARD PENINSULA
Acct. No.: 33392-150040
Principal Investigator: S. Restad (P. Scorup)

Objectives: To complete Soil and Range Surveys for all reindeer grazing allotments on the Seward Peninsula and provide other resource mapping as required by various SALRM projects.

Funding Source:	Salary	Other	Total
State	\$31,737	9,354	41,091

Title: COOPERATIVE SOIL-RANGE SURVEYS ON THE SEWARD PENINSULA

Acct. No.: 33236-230562 Termination: 10/31/'84

Principal Investigator: S. Restad (P. Scorup)

Objectives: This is a cooperative project with the Soil Conservation Service, and the State Department of Natural Resources, Division of Agriculture with a primary objective to complete soil and range surveys for all reindeer grazing allotments on the Seward Peninsula. Landsat imagery, computer data, and color infrared photographs are being utilized to obtain range composition and yield data, develop range site descriptions, and produce maps. Data from this project will ultimately be used to develop comprehensive range management plans for the reindeer industry and serve multi-resource planning and development interests in northwest Alaska.

Funding Source:	Salary	Other	Total
USDA Soil Conservation Service	\$11,738	7,244	18,982

Title: ALASKA CROP AND LIVESTOCK STATISTICS

Acct. No.: 33236-230721 Termination: 6/30/'84

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 Experiment Station and Cooperative Extension Service and the Alaska Division of Agriculture.

Funding Source:	Salary	Other	Total
Department of Natural Resources	\$12,629	2,972	15,601

Title: CROP IMPROVEMENT ASSOCIATION ASSISTANCE

Acct. No.: 33242-150040

Principal Investigator: C. Knight

Objectives: The objectives of this project are to increase and distribute public varieties of seed, and assist in seed certification for Alaska.

Funding Source:	Salary	Other	Total
State	\$10,818	3,275	14,093

Title: MATANUSKA VALLEY BREEDERS - DAIRY HERD IMPROVEMENT

Acct. No.: 33244-150040

Principal Investigator: A. Brundage

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

Funding Source:	Salary	Other	Total
State	\$43,911	13,215	57,126

Title: SOIL AND PLANT ANALYSIS - LABORATORY SERVICES

Acct. No.: 33247-150040

Principal Investigator: C.L. Ping

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

Funding Source:	Salary	Other	Total
State	\$103,702	45,730	149,432

Title: ALASKA PLANT PEST SURVEY AND DETECTION PROGRAM
 Acct. No.: 33216-231030 Termination: 9/30/'84
 Principal Investigator: J. McBeath

Objectives: This project is to 1) establish a computer-based plant pest survey and detection data storage and retrieval network in the state with connection to the national system. 2) improve plant pest survey and detection techniques.

Funding Source:	Salary	Other	Total
USDA Animal and Plant Health Inspection Service	-0-	2,160	2,160

Title: FEED TESTING SERVICE FOR BALANCING ALASKAN LIVESTOCK RATIONS

Acct. No.: 33233-150040
 National Goal:
 State Goal:

Principal Investigator: M.L. Herlugson

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

Funding Source:	Salary	Other	Total
State	7,145	5,937	13,082

Title: VETERINARY EDUCATION PROGRAM
Acct. No.: 33226-150040
Principal Investigator: Dr. Robert 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	\$13,460	\$3,393	16,853