

**FOREST SERVICE HANDBOOK  
NATIONAL HEADQUARTERS - WASHINGTON OFFICE  
WASHINGTON, DC**

**FSH 4809.11 FOREST SURVEY HANDBOOK**

**CHAPTER 70 CODES**

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FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

---

**TABLE OF CONTENTS**

<b>71- Geographic Areas.....</b>	<b>4</b>
<b>71.1 Section 1, North .....</b>	<b>4</b>
71.11- Survey Region 1. New England States .....	4
<b>71.12-Survey region 2, Middle Atlantic States .....</b>	<b>5</b>
<b>71. 2- Section 2 South. ....</b>	<b>26</b>
<b>This section is divided into four survey regions.....</b>	<b>26</b>
71. 21-Survey Region 1 South Atlantic States.....	26
71. 22-Survey Region 2, East Gulf States.....	30
71.24 - Survey Region 4, West Gulf States.....	37
05 Arkansas .....	37
<b>71.3 - Section 3, Pacific. This section is divided into two Survey regions .....</b>	<b>40</b>
71.31 - Survey Region 1, Pacific Northwest.....	40
71.32 - Survey Region 2, Pacific Southwest States .....	42
<b>71.4 - Section 4, Rocky Mountain. This section is divided into two Survey regions.....</b>	<b>43</b>
71.41 - Survey Region 1, Northern Rocky Mountain States .....	43
71.42 - Servey Region 2, Souther Rocky Mountain States .....	45
<b>72 - SYSTEM. ....</b>	<b>47</b>
<b>72.1 - Region 1 Northern.....</b>	<b>47</b>
<b>72.2 Region 2 Rocky Mountain. ....</b>	<b>47</b>
<b>72.3 - Region 3 Southwestern.....</b>	<b>48</b>
<b>72.4 Region 4 Intermountain.....</b>	<b>48</b>
<b>72.5 Region 5 California. ....</b>	<b>49</b>
<b>72.6 Region 6 Pacific Northwest. ....</b>	<b>50</b>
<b>72.7 Region 8 Southern.....</b>	<b>50</b>
<b>72.8 Region 9 Eastern. ....</b>	<b>51</b>
<b>72.9 Region 10 Alaska. ....</b>	<b>52</b>
<b>73 TREE SPECIES. ....</b>	<b>52</b>
<b>74 - GEOGRAPHIC FOREST TYPES.....</b>	<b>64</b>
<b>74. 1 Section 1, Eastern.....</b>	<b>64</b>
<b>75.1 Softwood Saw Logs, East. This is for Eastern United States logs. ....</b>	<b>69</b>
75.11 Southern Pine Saw Logs .....	69
75.12 White Pine Saw Logs.....	70
<b>75.2 Softwood Saw Logs, Western United States.....</b>	<b>71</b>
75.22 - Inland Douglas-fir.....	72
75.23 - White and Red Fir.....	73
75.24 Hemlock.....	74
75.25-Ponderosa and Sugar Pine.....	76
75.26 Code Redwood. These codes and captions are for 20-foot logs.....	77

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

---

75.27 - Sitka Spruce.....	78
75.3 Hardwood Saw Logs. ....	81
75.4 Red Alder Saw Logs .....	83

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

---

This chapter lists all codes used in a forced survey, except those included in chapter 40.

## **71- Geographic Areas**

This section divides the United States into four major sections. Each section and its subdivisions are given a separate code number and caption.

### **71.1 Section 1, North**

This section is divided into 4 survey regions.

#### **71.11- Survey Region 1. New England States**

Lists the counties of the states from the related region.

##### **09 Connecticut**

<b>Survey Unit</b>	<b>Connecticut Counties</b>
1	001 Fairfield
1	003 Hartford
1	005 Litchfield
1	007 Middlesex
1	009 New Haven
1	011 New London
1	013 Tolland
1	015 Windham

##### **23 Maine**

<b>Survey Unit</b>	<b>Maine Counties</b>
1	001 Androscoggin
1	003 Aroostook
1	005 Cumberland
1	007 Franklin
1	009 Hancock
1	011 Kennebec
1	013 Knox
1	015 Lincoln

<b>Survey Unit</b>	<b>Maine Counties</b>
1	017 Oxford
1	019 Penobscot
1	021 Piscataquis
1	023 Sagadahoc
1	025 Somerset
1	027 Waldo
1	029 Washington
1	031 York

##### **25 Massachusetts**

Urban county Suffolk and two island counties, Duke and Nantucket, are excluded from the survey.

<b>Survey Unit</b>	<b>Massachusetts Counties</b>
1	001 Barnstable
1	003 Berkshire
1	005 Bristol
1	009 Essex
1	011 Franklin
1	013 Hampton

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

Survey Unit	Massachusetts Counties
1	015 Hampshire
1	017 Middlesex
1	021 Norfolk
1	023 Plymouth
1	027 Worcester

### **33 New Hampshire**

Survey Unit	New Hampshire Counties
1	003 Carroll
1	007 Coos
1	009 Grafton
2	001 Belknap
2	005 Cheshire
2	0111 Hillsboro
2	013 Merrimack
2	015 Rockingham
2	017 Stratford
2	019 Sullivan

### **44 Rhode Island**

Survey Unit	Rhode Island Counties
1	001 Bristol
1	003 Kent
1	005 Newport
1	007 Providence
1	009 Washington

### **50 Vermont**

Grand Isle county excluded by survey.

Survey Unit	Vermont Counties
1	005 Caledonia

Survey Unit	Vermont Counties
1	009 Essex
1	011 Franklin
1	015 Lamoille
1	017 Orange
1	019 Orleans
1	023 Washington
2	001 Addison
2	003 Bennington
2	021 Rutland
2	025 Windham
2	027 Windsor
3	007 Chittenden

### **71.12-Survey region 2, Middle Atlantic States**

#### **10 Delaware**

Survey Unit	Delaware Counties
1	001 Kent
1	003 New Castle
1	005 Sussex

#### **24 Maryland**

Baltimore City is excluded by the Survey.

Survey Unit	Maryland Counties
1	003 Anne Arundel
1	005 Baltimore
1	011 Caroline
1	013 Carroll
1	015 Cecil
1	021 Frederick
1	025 Hartford

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

Survey Unit	Maryland Counties
1	027 Howard
1	029 Kent
1	031 Montgomery
1	033 Prince George's
1	035 Queen Annes
1	041 Talbot
1	043 Washington
2	001 Allegheny
2	023 Garrett
3	009 Calvert
3	017 Charles
3	037 Saint Mary's
4	019 Dorchester
4	039 Somerset
4	045 Wicomico
4	047 Worcester

### **34 New Jersey**

Urban counties of Hudson and union excluded by the Survey.

Survey Unit	New Jersey Counties
1	001 Atlantic
1	003 Bergen
1	005 Burlington
1	007 Camden
1	009 Cape May
1	011 Cumberland
1	013 Essex
1	015 Gloucester
1	019 Hunterdon
1	021 Mercer
1	023 Middlesex
1	025 Monmouth

Survey Unit	New Jersey Counties
1	027 Morris
1	029 Ocean
1	031 Passaic
1	033 Salem
1	035 Somerset
1	037 Sussex
1	041 Warren

### **36 New York**

Urban counties of Bronx, kings, New York, Queens, and Richmond excluded by survey.

Survey Unit	New York Counties
1	019 Clinton
1	033 Franklin
1	045 Jefferson
1	089 Saint Lawrence
2	011 Cayuga
2	029 Erie
2	037 Genesee
2	051 Livingston
2	053 Madison
2	055 Monroe
2	063 Niagara
2	067 Onondaga
2	069 Ontario
2	073 Orleans
2	075 Oswego
2	099 Seneca
2	117 Wayne
2	121 Wyoming
2	123 Yates
3	035 Fulton

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

Survey Unit	New York Counties
3	043 Herkimer
3	049 Lewis
3	065 Oneida
4	031 Essex
4	041 Hamilton
4	113 Warren
5	003 Allegheny
5	009 Cattaraugus
5	013 Chautauqua
5	101 Steuben
6	007 Broome
6	015 Chemung
6	017 Chenango
6	023 Cortland
6	025 Delaware
6	077 Otsego
6	097 Schuyler
6	107 Tioga
6	109 Tompkins
7	001 Albany
7	021 Columbia
7	057 Montgomery
7	083 Rensselaer
7	091 Saratoga
7	093 Schenectady
7	115 Washington
8	027 Dutchess
8	039 Greene
8	059 Nassau
8	071 Orange
8	079 Putnam
8	087 Rockland
8	095 Schoharie
8	103 Suffolk
8	105 Sullivan
8	111 Ulster

Survey Unit	New York Counties
8	119 Westchester

#### 42 Pennsylvania

Urban counties of Delaware and Philadelphia excluded by survey.

Survey Unit	Pennsylvania Counties
1	001 Adams
1	003 Allegheny
1	005 Armstrong
1	007 Beaver
1	009 Bedford
1	011 Berks
1	013 Blair
1	015 Bradford
1	017 Bucks
1	019 Butler
1	039 Crawford
1	049 Erie
1	059 Greene
1	063 Indiana
1	073 Lawrence
1	085 Mercer
1	125 Washington
1	129 Westmoreland
2	023 Cameron
2	027 Centre
2	031 Clarion
2	033 Clearfield
2	035 Clinton
2	047 Elk
2	053 Forest
2	065 Jefferson
2	081 Lycoming
2	083 McKean

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

Survey Unit	Pennsylvania Counties
2	105 Potter
2	113 Sullivan
2	117 Tioga
2	121 Venango
2	009 Bedford
2	013 Blair
2	021 Cambria
2	051 Fayette
2	111 Somerset
4	015 Bradford
4	025 Carbon
4	037 Columbia
4	069 Lackawanna
4	079 Luzerne
4	089 Monroe
4	093 Montour
4	097 North Cumberland
4	103 Pike
4	107 Schuylkill
4	115 Susquehanna
4	127 Wayne
4	131 Wyoming
5	001 Adams
5	011 Berks
5	017 Bucks
5	029 Chester
5	041 Cumberland
5	071 Lancaster
5	075 Lebanon
5	077 Lehigh
5	091 Montgomery
5	095 Northampton
5	133 York
6	043 Dauphin
6	055 Franklin

Survey Unit	Pennsylvania Counties
6	057 Fulton
6	061 Huntingdon
6	067 Juniata
6	087 Mifflin
6	099 Perry
6	109 Snyder
6	119 Union
6	123 Warren

**54 West Virginia**

Survey Unit	West Virginia Counties
1	001 Barbour
1	003 Berkeley
1	007 Braxton
1	023 Grant
1	027 Hampshire
1	031 Hardy
1	033 Harrison
1	037 Jefferson
1	041 Lewis
1	057 Mineral
1	065 Morgan
1	071 Pendleton
1	077 Preston
1	083 Randolph
1	091 Taylor
1	093 Tucker
1	097 Upshur
1	101 Webster
2	005 Boone
2	015 Clay
2	019 Fayette
2	039 Kanawha
2	045 Logan
2	047 McDowell



FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

Survey Unit	West Virginia Counties
2	055 Mercer
2	059 Mingo
2	063 Monroe
2	067 Nicholas
2	075 Pocahontas
2	081 Raleigh
2	089 Summers
2	109 Wyoming
3	009 Brooke
3	011 Cabell
3	013 Calhoun
3	017 Doddridge
3	021 Gilmer
3	025 Greenbrier
3	029 Hancock
3	035 Jackson
3	043 Lincoln
3	049 Marion
3	051 Marshall
3	053 Mason
3	061 Monongalia
3	069 Ohio
3	073 Pleasants
3	079 Putnam
3	085 Ritchie
3	087 Roane
3	095 Tyler
3	099 Wayne
3	103 Wetzel
3	105 Wirt
3	107 Wood

Survey Unit	Michigan Counties
1	003 Alger
1	033 Chippewa
1	041 Delta
1	095 Luce
1	097 Mackinac
1	109 Menominee
1	153 Schoolcraft
2	013 Baraga
2	043 Dickinson
2	053 Gogebic
2	061 Houghton
2	071 Iron
2	083 Keweenaw
2	103 Marquette
2	131 Ontonagon
3	001 Alcona
3	007 Alpena
3	009 Antrim
3	011 Arenac
3	017 Bay
3	019 Benzie
3	029 Charlevoix
3	031 Cheboygan
3	035 Clare
3	039 Crawford
3	047 Emmet
3	051 Gladwin
3	055 Grand Traverse
3	069 Iosco
3	073 Isabella
3	079 Kalkaska
3	085 Lake
3	089 Leelanau
3	101 Manistee
3	105 Mason
3	107 Mecosta

**71. 13-Survey Region 3, Lake states**

**26 Michigan**

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

Survey Unit	Michigan Counties
3	111 Midland
3	113 Missaukee
3	119 Montmorency
3	121 Muskegon
3	123 Newaygo
3	127 Oceana
3	129 Ogemaw
3	133 Osceola
3	135 Oscoda
3	137 Otsego
3	141 Presque Isle
3	143 Roscommon
3	165 Wexford
3	005 Allegan
3	015 Barry
3	021 Berrien
3	023 Branch
3	025 Calhoun
3	027 Cass
3	037 Clinton
3	045 Eaton
3	049 Genesee
3	057 Gratiot
3	059 Hillsdale
3	063 Huron
3	065 Ingram
3	067 Iona
3	075 Jackson
3	077 Kalamazoo
3	081 Kent
3	087 Lapeer
3	091 Lenawee
3	093 Livingston
3	099 Macomb
3	115 Monroe
3	117 Montcalm

Survey Unit	Michigan Counties
3	125 Oakland
3	139 Ottawa
3	145 Saginaw
3	147 Saint Clair
3	149 Saint Joseph
3	151 Samlac
3	155 Shiawassee
3	157 Tuscola
3	159 Van Buren
3	161 Washtenaw
3	163 Wayne

**27 Minnesota**

Survey Unit	Minnesota Counties
1	017 Carlton
1	031 Cook
1	075 Lake
1	115 Pine
1	137 Saint Louis
2	001 Aitkin
2	005 Becker
2	007 Beltrami
2	021 Cass
2	029 Clearwater
2	035 Crow Wing
2	057 Hubbard
2	061 Itasca
2	159 Wadena
3	071 Koochiching
3	077 Lake Of The Woods
4	003 Anoka
4	009 Benton
4	019 Carver
4	025 Chisago

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

Survey Unit	Minnesota Counties
4	037 Dakota
4	041 Douglas
4	045 Fillmore
4	049 Goodhue
4	053 Hennepin
4	055 Houston
4	059 Isanti
4	065 Kanabec
4	079 Le Sueur
4	095 Mille Lacs
4	097 Morrison
4	109 Olmsted
4	111 Otter Tail
4	123 Ramsey
4	131 Rice
4	139 Scott
4	141 Sherburne
4	145 Stearns
4	153 Todd
4	157 Wabasha
4	163 Washington
4	169 Winona
4	171 Wright
5	011 Big Stone
5	013 Blue Earth
5	015 Brown
5	023 Chippewa
5	033 Cottonwood
5	039 Dodge
5	043 Faribault
5	047 Freeborn
5	051 Grant
5	063 Jackson
5	067 Kandiyohi
5	073 Lac Qui Parle
5	081 Lincoln

Survey Unit	Minnesota Counties
5	083 Lyon
5	085 Mcleod
5	091 Martin
5	093 Meeker
5	099 Mower
5	101 Murray
5	103 Nicollet
5	105 Nobles
5	117 Pipestone
5	121 Pope
5	127 Redwood
5	129 Renville
5	133 Rock
5	143 Shibley
5	147 Steele
5	149 Stevens
5	151 Swift
5	155 Traverse
5	161 Waseca
5	165 Watonwan
5	167 Wilkin
5	173 Yellow Medicine
6	027 Clay
6	069 Kitson
6	087 Mahnomen
6	089 Marshall
6	107 Norman
6	113 Pennington
6	119 Polk
6	125 Red Lake
6	135 Roseau

**38 North Dakota**

Survey Unit	North Dakota Counties
1	001 Adams

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Survey Unit	North Dakota Counties
1	003 Barnes
1	005 Benson
1	007 Billings
1	009 Bottineau
1	011 Bowman
1	013 Burke
1	015 Burleigh
1	017 Cass
1	019 Cavalier
1	021 Dickey
1	023 Divide
1	025 Dunn
1	027 Eddy
1	029 Emmons
1	031 Foster
1	033 Golden Valley
1	035 Grand Forks
1	037 Grant
1	039 Griggs
1	041 Hettinger
1	043 Kidder
1	045 La Moure
1	047 Logan
1	049 McHenry
1	051 McIntosh
1	053 McKenzie
1	055 McLean
1	057 Mercer
1	059 Morton
1	061 Mountrail
1	063 Nelson
1	065 Oliver
1	067 Pembina
1	069 Pierce
1	071 Ramsey
1	073 Ransom

Survey Unit	North Dakota Counties
1	075 Renville
1	077 Richland
1	079 Rolette
1	081 Sargent
1	083 Sheridan
1	085 Sioux
1	087 Slope
1	089 Stark
1	091 Steele
1	093 Stutsman
1	095 Towner
1	097 Traill
1	099 Walsh
1	101 Ward
1	103 Wells
1	105 Williams

**46 South Dakota (East)**

Survey Unit	South Dakota East Counties
1	003 Aurora
1	005 Beetle
1	007 Bennett
1	009 Bon Homme
1	011 Brookings
1	013 Brown
1	015 Brule
1	017 Buffalo
1	021 Campbell
1	023 Charles Mix
1	025 Clark
1	027 Clay
1	029 Coddington
1	031 Corson
1	033 Custer
1	035 Davison

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Survey Unit	South Dakota East Counties
1	037 Day
1	039 Deuel
1	041 Dewey
1	043 Douglas
1	045 Edmonds
1	049 Faulk
1	051 Grant
1	053 Gregory
1	055 Haakon
1	057 Hamlin
1	059 Hand
1	061 Hanson
1	065 Hughes
1	067 Hutchinson
1	069 Hyde
1	071 Jackson
1	073 Jerauld
1	075 Jones
1	077 Kingsbury
1	079 Lake
1	083 Lincoln
1	085 Lyman
1	087 McCook
1	089 McPherson
1	091 Marshall
1	093 Meade
1	095 Mellette
1	097 Miner
1	099 Minnehaha
1	101 Maddy
1	103 Pennington
1	105 Perkins
1	107 Potter
1	109 Roberts
1	111 Sanborn
1	113 Shannon

Survey Unit	South Dakota East Counties
1	115 Spink
1	117 Stanley
1	119 Sully
1	121 Todd
1	123 Tripp
1	125 Turner
1	127 Union
1	129 Walworth
1	131 Washabaugh
1	135 Yankton
1	137 Ziebach

**55 Wisconsin**

Survey Unit	Wisconsin Counties
1	037 Florence
1	041 Forest
1	067 Langlade
1	069 Lincoln
1	075 Marinette
1	078 Menominee
1	083 Oconto
1	085 Oneida
1	115 Shawano
1	125 Vilas
2	003 Ashland
2	005 Barron
2	007 Bayfield
2	'013 Burnett
2	031 Douglas
2	051 Iron
2	095 Polk
2	099 Price
2	107 Rusk
2	113 Sawyer
2	119 Taylor

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

Survey Unit	Wisconsin Counties
2	129 Washburn
3	001 Adams
3	017 Chippewa
3	019 Clark
3	035 Eau Claire
3	053 Jackson
3	057 Juno
3	073 Marathon
3	077 Marquette
3	081 Monroe
3	097 Portage
3	135 Alpaca
3	137 Waushara
3	141 Wood
4	011 Buffalo
4	023 Crawford
4	033 Dunn
4	043 Grant
4	049 Iowa
4	063 Lacrosse
4	065 Lafayette
4	091 Pepin
4	093 Pierce
4	103 Richland
4	109 Saint Croix
4	111 Sauk
4	121 Trempealeau
4	123 Vernon
5	009 Brown
5	015 Calumet
5	021 Columbia
5	025 Dane
5	027 Dodge
5	029 Door
5	039 Fond Du Lac
5	045 Green

Survey Unit	Wisconsin Counties
5	047 Green Lake
5	055 Jefferson
5	059 Kenosha
5	061 Kewaunee
5	071 Manitowoc
5	079 Milwaukee
5	087 Outagamie
5	089 Ozaukee
5	101 Racine
5	105 Rock
5	117 Sheboygan
5	127 Walworth
5	133 Waukesha
5	131 Washington
5	139 Winnebago

**17 Illinois**

Survey Unit	Illinois Counties
1	003 Alexander
2	005 Bond
2	013 Calhoun
2	023 Clark
2	025 Clay
2	027 Clinton
2	033 Crawford
2	035 Cumberland
2	047 Edwards
2	049 Effingham
2	051 Fayette
2	055 Franklin
2	059 Gallatin
2	061 Greene
2	065 Hamilton
2	069 Hardin
2	077 Jackson

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Survey Unit	Illinois Counties
2	079 Jasper
2	081 Jefferson
2	083 Jersey
2	087 Johnson
2	101 Lawrence
2	117 Macoupin
2	119 Madison
2	121 Marion
2	127 Massac
2	133 Monroe
2	135 Montgomery
2	145 Perry
2	151 Pope
2	153 Pulaski
2	157 Randolph
2	159 Richland
2	163 Saint Clair
2	165 Saline
2	173 Shelby
2	181 Union
2	185 Wabash
2	189 Washington
2	191 Wayne
2	193 White
2	193 Williamson
3	001 Adams
3	007 Boone
3	009 Brown
3	011 Bureau
3	015 Carroll
3	017 Cass
3	019 Champaign
3	021 Christian
3	029 Coles
3	031 Cook
3	037 De Kalb

Survey Unit	Illinois Counties
3	039 De Witt
3	041 Douglas
3	043 Du Page
3	045 Edgar
3	053 Ford
3	057 Fulton
3	063 Grundy
3	067 Hancock
3	071 Henderson
3	073 Henry
3	075 Iroquois
3	085 Jo Davies
3	089 Kane
3	091 Kankakee
3	093 Kendall
3	095 Knox
3	097 Lake
3	099 Lasalle
3	103 Lee
3	105 Livingston
2	107 Logan
3	109 McDonough
3	111 McHenry
3	113 Mclean
3	115 Macon
3	123 Marshall
3	125 Mason
3	129 Menard
3	131 Mercer
3	137 Morgan
3	139 Moultrie
3	141 Ogle
3	143 Peoria
3	147 Piatt
3	149 Pike
3	155 Putnam

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

Survey Unit	Illinois Counties
3	161 Rock Island
3	167 Sangamon
3	169 Schuyler
3	171 Scott
3	175 Stark
3	177 Stephenson
3	179 Tazewell
3	183 Vermilion
3	187 Warren
3	195 Whiteside
3	197 Will
3	201 Winnebago
3	203 Woodford

**18 Indiana**

Survey Unit	Indiana Counties
1	021 Clay
1	027 Daviess
1	051 Gibson
1	055 Greene
1	083 Knox
1	101 Martin
1	121 Parke
1	125 Pike
1	129 Posey
1	133 Putnam
1	153 Sullivan
1	163 Vanderburg
1	165 Vermillion
1	167 Vigo
2	013 Brown
2	019 Clark
2	025 Crawford
2	037 Dubois
2	043 Floyd

Survey Unit	Indiana Counties
2	061 Harrison
2	071 Jackson
2	093 Lawrence
2	105 Monroe
2	109 Morgan
2	117 Orange
2	119 Owen
2	123 Perry
2	143 Scott
2	147 Spencer
2	173 Warwick
2	175 Washington
3	029 Dearborn
3	041 Fayette
3	047 Franklin
3	077 Jefferson
3	079 Jennings
3	115 Ohio
3	137 Ripley
3	155 Switzerland
3	161 Union
4	001 Adams
4	003 Allen
4	005 Bartholomew
4	007 Benton
4	009 Blackford
4	011 Boone
4	015 Carroll
4	017 Cast
4	023 Clinton
4	031 Decatur
4	033 Dekalb
4	035 Delaware
4	039 Elkhart
4	045 Fulton
4	049 Fulton



FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Survey Unit	Indiana Counties
4	053 Grant
4	057 Hamilton
4	059 Hancock
4	063 Hendricks
4	065 Henry
4	067 Howard
4	069 Huntington
4	073 Jasper
4	075 Jay
4	081 Johnson
4	085 Kosciusko
4	087 Lagrange
4	089 Lake
4	091 La Porte
4	095 Madison
4	097 Marion
4	099 Marshall
4	103 Miami
4	107 Montgomery
4	111 Newton
4	113 Noble
4	127 Porter
4	131 Pulaski
4	135 Randolph
4	139 Rush
4	141 Saint Joseph
4	145 Shelby
4	149 Starke
4	151 Steuben
4	157 Tippecanoe
4	159 Tipton
4	169 Wabash
4	171 Warren
4	177 Wayne
4	179 Wells
4	181 White

Survey Unit	Indiana Counties
4	183 Whitley

**19 Iowa**

Survey Unit	Iowa Counties
1	005 Allamakee
1	011 Benton
1	019 Buchanan
1	031 Cedar
1	043 Clayton
1	045 Clinton
1	055 Delaware
1	061 Dubuque
1	065 Fayette
1	095 Iowa
1	097 Jackson
1	103 Johnson
1	105 Jones
1	113 Linn
1	139 Muscatine
1	157 Poweshiek
1	163 Scott
1	171 Tama
1	191 Winneshiek
2	007 Appanoose
2	015 Boone
2	039 Clarke
2	049 Dallas
2	051 Davis
2	053 Decatur
2	057 Des Moines
2	077 Guthrie
2	087 Henry
2	101 Jefferson
2	107 Keokuk
2	111 Lee

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Survey Unit	Iowa Counties
2	115 Louisa
2	117 Lucas
2	121 Madison
2	123 Mahaska
2	125 Marion
2	135 Monroe
2	153 Polk
2	159 Ringgold
2	177 Van Buren
2	179 Wapello
2	181 Warren
2	183 Washington
2	185 Wayne
2	187 Webster
2	001 Adair
2	003 Adams
2	009 Audubon
2	013 Blackhawk
2	017 Bremer
2	021 Buena Vista
2	023 Butler
2	025 Calhoun
2	027 Carroll
2	029 Cass
2	033 Cerro Gordo
2	035 Cherokee
2	037 Chickasaw
2	041 Clay
2	047 Crawford
2	059 Dickinson
2	063 Emmet
2	067 Floyd
2	069 Franklin
2	071 Fremont
2	073 Greene
2	075 Grundy

Survey Unit	Iowa Counties
2	079 Hamilton
2	081 Hancock
2	083 Hardin
2	085 Harrison
2	089 Howard
2	091 Humboldt
2	093 Ida
2	099 Jasper
2	109 Kossuth
2	119 Lyon
2	127 Marshall
2	129 Mills
2	131 Mitchell
2	133 Monona
2	137 Montgomery
2	141 O'Brien
2	143 Osceola
2	145 Page
2	147 Palo Alto
2	149 Plymouth
2	151 Pocahontas
2	155 Pottawattamie
2	161 Sac
2	165 Shelby
2	167 Sioux
2	169 Story
2	173 Taylor
2	175 Union
2	189 Winnebago
2	193 Woodbury
2	195 Worth
2	197 Wright

**20 Kansas**

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Survey Unit	Kansas Counties
1	005 Atchison
1	013 Brown
1	027 Clay
1	041 Dickinson
1	043 Doniphan
1	045 Douglas
1	059 Franklin
1	061 Geary
1	085 Jackson
1	087 Jefferson
1	091 Johnson
1	103 Leavenworth
1	117 Marshall
1	121 Miami
1	131 Nemaha
1	139 Osage
1	149 Pottawatomie
1	161 Riley
1	177 Shawnee
1	197 Wabaunsee
1	201 Washington
1	209 Wyandotte
1	001 Allen
1	003 Anderson
1	011 Bourbon
1	015 Butler
1	017 Chase
1	019 Chautauqua
1	021 Cherokee
1	031 Coffey
1	035 Cowley
1	037 Crawford
1	049 Elk
1	073 Greenwood
1	099 Labette
1	107 Linn

Survey Unit	Kansas Counties
1	111 Lyon
1	115 Marion
1	125 Montgomery
1	127 Morris
1	133 Neosho
1	205 Wilson
1	207 Woodson
3	007 Barber
3	009 Barton
3	023 Cheyenne
3	025 Clark
3	029 Cloud
3	033 Comanche
3	039 Decatur
3	047 Edwards
3	051 Ellis
3	053 Ellsworth
3	055 Finney
3	057 Ford
3	063 Gove
3	065 Graham
3	067 Grant
3	069 Gray
3	071 Greeley
3	075 Hamilton
3	077 Harper
3	079 Harvey
3	081 Haskell
3	083 Hodgeman
3	089 Jewell
3	093 Kearny
3	095 Kingman
3	097 Kiowa
3	101 Lane
3	105 Lincoln
3	109 Logan

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Survey Unit	Kansas Counties
3	113 McPherson
3	119 Meade
3	123 Mitchell
3	129 Morton
3	135 Ness
3	137 Norton
3	141 Osborne
3	143 Ottawa
3	145 Pawnee
3	147 Phillips
3	151 Pratt
3	153 Rawlins
3	155 Reno
3	157 Republic
3	159 Rice
3	163 Rooks
3	165 Rush
3	167 Russell
3	169 Saline
3	171 Scott
3	173 Sedgwick
3	175 Seward
3	179 Sheridan
3	181 Sherman
3	183 Smith
3	185 Stafford
3	187 Stanton
3	189 Stevens
3	191 Sumner
3	193 Thomas
3	195 Trego
3	199 Wallace
3	203 Wichita

Survey Unit	Kentucky Counties
1	071 Floyd
1	095 Harlan
1	119 Knott
1	131 Leslie
1	133 Letcher
1	159 Martin
1	193 Perry
1	195 Pike
2	019 Boyd
2	043 Carter
2	063 Elliott
2	089 Greenup
2	115 Johnson
2	127 Lawrence
2	135 Lewis
2	153 Magoffin
2	165 Menifee
2	175 Morgan
2	197 Powell
2	205 Rowan
2	237 Wolfe
3	013 Bell
3	025 Breathitt
3	051 Clay
3	065 Estill
3	109 Jackson
3	121 Knox
3	125 Laurel
3	129 Lee
3	147 McCreery
3	189 Owsley
3	203 Rockcastle
3	235 Whitley
4	005 Anderson
4	011 Bath
4	015 'Boone

**21 Kentucky**

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Survey Unit	Kentucky Counties
4	017 Bourbon
4	021 Boyle
4	023 Bracken
4	037 Campbell
4	041 Carroll
4	049 Clark
4	067 Fayette
4	069 Fleming
4	073 Franklin
4	077 Gallatin
4	079 Garrard
4	081 Grant
4	097 Harrison
4	103 Henry
4	111 Jefferson
4	113 Jessamine
4	117 Kenton
4	137 Linc5in
4	151 Madison
4	161 Mason
4	167 Mercer
4	173 Montgomery
4	181 Nicholas
4	185 Oldham
4	187 Owen
4	191 Pendleton
4	201 Robertson
4	209 Scott
4	211 Shelby
4	215 Spencer
4	223 Trimble
4	229 Washington
4	239 Woodford
5	001 Adair
5	027 Breckinridge
5	029 Bullitt

Survey Unit	Kentucky Counties
5	045 Casey
5	053 Clinton
5	057 Cumberland
5	085 Grayson
5	087 Green
5	091 Hancock
5	093 Hardin
5	099 Hart
5	123 Larue
5	155 Marion
5	163 Meade
5	169 Metcalfe
5	179 Nelson
5	199 Pulaski
5	207 Russell
5	217 Taylor
5	231 Wayne
5	003 Allen
5	009 Barren
5	031 Butler
5	033 Caldwell
5	047 Christian
5	055 Crittenden
5	059 Daviess
5	061 Edmonson
5	101 Henderson
5	107 Hopkins
5	141 Logan
5	149 Mclean
5	171 Monroe
5	177 Muhlenberg
5	183 Ohio
5	213 Simpson
5	219 Todd
5	225 Union
5	227 Warren

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

<b>Survey Unit</b>	<b>Kentucky Counties</b>
5	233 Webster
7	007 Ballard
7	035 Calloway
7	039 Carlisle
7	075 Fulton
7	083 Graves
7	105 Hickman
7	139 Livingston
7	143 Lyon
7	145 McCracken
7	157 Marshall
7	221 Trigg

**29 Missouri**

<b>Survey Unit</b>	<b>Missouri Counties</b>
1	017 Bollinger
1	023 Butler
1	035 Carter
1	055 Crawford
1	065 Dent
1	093 Iron
1	123 Madison
1	149 Oregon
1	179 Reynolds
1	181 Ripley
1	187 Saint Francois
1	203 Shannon
1	221 Washington
1	223 Wayne
2	009 Barry
2	043 Christian
2	067 Douglas
2	091 Howell
2	119 McDonald
2	145 Newton

<b>Survey Unit</b>	<b>Missouri Counties</b>
2	153 Ozark
2	209 Stone
2	213 Taney
2	215 Texas
2	225 Webster
2	229 Wright
3	015 Benton
3	029 Camden
3	039 Cedar
3	059 Dallas
3	085 Hickory
3	105 Laclede
3	125 Maries
3	131 Miller
3	141 Morgan
3	161 Phelps
3	167 Polk
3	169 Pulaski
3	185 Saint Clair
4	011 Barton
4	013 Bates
4	037 Cass
4	053 Cooper
4	057 Dade
4	077 Greene
4	083 Henry
4	095 Jackson
4	097 Jasper
4	101 Johnson
4	107 Lafayette
4	109 Lawrence
4	159 Pettis
4	195 Saline
4	217 Vernon
5	500 Adair
5	003 Andrew

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Survey Unit	Missouri Counties
5	005 Atchison
5	007 Audrain
5	021 Buchanan
5	025 Caldwell
5	033 Carroll
5	041 Chariton
5	045 Clark
5	047 Clay
5	049 Clinton
5	061 Daviess
5	063 Dekalb
5	075 Gentry
5	079 Grundy
5	081 Harrison
5	087 Holt
5	103 Knox
5	111 Lewis
5	113 Lincoln
5	115 Linn
5	117 Livingston
5	121 Macon
5	127 Marion
5	129 Mercer
5	137 Monroe
5	147 Nodaway
5	163 Pike
5	165 Platte
5	171 Putnam
5	173 Ralls
5	175 Randolph
5	177 Ray
5	197 Schuyler
5	199 Scotland
5	205 Shelby
5	211 Sullivan
5	227 Worth

Survey Unit	Missouri Counties
6	000 City Of Saint Louis
6	019 Boone
6	027 Callaway
6	033 Cape Girardeau
6	051 Cole
6	071 Franklin
6	073 Gasconade
6	089 Howard
6	099 Jefferson
6	135 Moniteau
6	139 Montgomery
6	151 Osage
6	157 Perry
6	183 Saint Charles
6	189 Saint Louis
6	193 Saint Genevieve
6	219 Warren
7	069 Dunklin
7	133 Mississippi
7	143 New Madrid
7	155 Pemiscot
7	201 Scott
7	207 Stoddard

**31 Nebraska**

Survey Unit	Nebraska Counties
1	001 Adams
1	011 Boone
1	019 Buffalo
1	021 Burt
1	023 Butler
1	025 Cass
1	027 Cedar
1	035 Clay
1	037 Colfax

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Survey Unit	Nebraska Counties
1	039 Cuming
1	041 Custer
1	043 Dakota
1	047 Dawson
1	051 Dixon
1	053 Dodge
1	055 Douglas
1	059 Fillmore
1	061 Franklin
1	063 Frontier
1	065 Furnas
1	067 Gage
1	073 Gosper
1	077 Greeley
1	079 Hall
1	081 Hamilton
1	083 Harlan
1	087 Hitchcock
1	093 Howard
1	095 Jefferson
1	097 Johnson
1	099 Kearney
1	109 Lancaster
1	119 Madison
1	121 Merrick
1	125 Nance
1	127 Nemaha
1	129 Nuckolls
1	131 Otoe
1	133 Pawnee
1	137 Phelps
1	139 Pierce
1	141 Platte
1	143 Polk
1	145 Red Willow
1	147 Richardson

Survey Unit	Nebraska Counties
1	151 Saline
1	153 Sarpy
1	155 Saunders
1	159 Seward
1	163 Sherman
1	167 Stanton
1	169 Thayer
1	173 Thurston
1	175 Valley
1	177 Washington
1	179 Wayne
1	181 Webster
1	185 York
2	003 Antelope
2	005 Arthur
2	007 Banner
2	009 Blaine
2	013 Box Butte
2	015 Boyd
2	017 Brown
2	029 Chase
2	031 Cherry
2	033 Cheyenne
2	045 Dawes
2	049 Deuel
2	057 Dundy
2	069 Garden
2	071 Garfield
2	075 Grant
2	085 Hayes
2	089 Holt
2	091 Hooker
2	101 Keith
2	103 Keya Paha
2	105 Kimball
2	107 Knox



FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

Survey Unit	Nebraska Counties
2	111 Lincoln
2	113 Logan
2	115 Loup
2	117 McPherson
2	123 Morrill
2	135 Perkins
2	149 Rock
2	157 Scotts Bluff
2	161 Sheridan
2	165 Sioux
2	171 Thomas
2	183 Wheeler

**39 Ohio**

Survey Unit	Ohio Counties
1	001 Adams
1	015 Brown
1	025 Clermont
1	053 Gallia
1	071 Highland
1	079 Jackson
1	087 Lawrence
1	11 Pike
1	141 Ross
1	145 Scioto
2	009 Athens
2	073 Hocking
2	105 Meigs
2	115 Morgan
2	127 Perry
2	163 Vinton
2	167 Washington
3	013 Belmont
3	019 Carroll
3	031 Coshocton

Survey Unit	Ohio Counties
3	059 Guernsey
3	067 Harrison
3	075 Holmes
3	081 Jefferson
3	111 Monroe
3	119 Muskingum
3	121 Noble
3	157 Tuscarawas
4	005 Ashland
4	007 Ashtabula
4	029 Columbiana
4	035 Cuyahoga
4	043 Erie
4	055 Geauga
4	071 Huron
4	085 Lake
4	093 Lorain
4	099 Mahoning
4	103 Medina
4	133 Portage
4	139 Richland
4	151 Stark
4	153 Summit
4	155 Trumbull
4	169 Wayne
5	003 Allen
5	011 Auglaize
5	017 Butler
5	021 Champaign
5	023 Clark
5	027 Clinton
5	033 Crawford
5	037 Darke
5	039 Defiance
5	041 Delaware
5	045 Fairfield

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Survey Unit	Ohio Counties
5	047 Fayette
5	049 Franklin
5	051 Fulton
5	057 Greene
5	061 Hamilton
5	063 Hancock
5	065 Hardin
5	069 Henry
5	083 Knox
5	089 Licking
5	091 Logan
5	095 Lucas
5	097 Madison
5	101 Marion
5	107 Mercer
5	109 Miami
5	113 Montgomery
5	117 Morrow
5	123 Ottawa
5	125 Paulding
5	129 Pickaway
5	135 Preble
5	137 Putnam
5	143 Sandusky
5	147 Seneca
5	149 Shelby
5	159 Union
5	161 Van Wert
5	165 Warren
5	171 Williams
5	173 Wood
5	175 Wyandot

**71. 2- Section 2 South.**

This section is divided into four survey regions.

**71. 21-Survey Region 1 South Atlantic States**

**37 North Carolina**

Survey Unit	North Carolina Counties
1	017 Bladen
1	019 Brunswick
1	047 Columbus
1	051 Cumberland
1	061 Duplin
1	079 Greene
1	085 Harnett
1	093 Hoke
1	101 Johnston
1	103 Jones
1	105 Lee
1	107 Lenoir
1	125 Moore
1	129 New Hanover
1	133 Onslow
1	141 Pender
1	153 Richmond
1	155 Robeson
1	13 Sampson
1	165 Scotland
1	191 Wayne
2	013 Beaufort
2	015 Bertie
2	029 Camden
2	031 Carteret
2	041 Chowan
2	049 Graven
2	053 Currituck

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Survey Unit	North Carolina Counties
2	055 Dare
2	065 Edgecombe
2	073 Gates
2	083 Halifax
2	091 Hertford
2	095 Hyde
2	117 Martin
2	127 Nash
2	131 Northampton
2	137 Pamlico
2	139 Pasquotank
2	143 Perquimans
2	147 Pitt
2	177 Tyrrell
2	187 Washington
2	195 Wilson
3	001 Alamance
3	003 Alexander
3	007 Anson
3	025 Cabarrus
3	033 Caswell
3	035 Catawba
3	037 Chatham
3	045 Cleveland
3	057 Davidson
3	059 Davie
3	063 Durham
3	067 Forsyth
3	069 Franklin
3	071 Gaston
3	077 Granville
3	081 Guilford
3	097 Iredell
3	109 Lincoln
3	119 Mecklenburg
3	123 Montgomery

Survey Unit	North Carolina Counties
3	15 Orange
3	145 Person
3	149 Polk
3	151 Randolph
3	157 Rockingham
3	159 Rowan
3	161 Rutherford
3	167 Stanly
3	169 Stokes
3	171 Surry
3	179 Union
3	181 Vance
3	183 Wake
3	185 Warren
3	197 Yadkin
4	005 Alleghany
4	009 Ashe
4	011 Avery
4	021 Buncombe
4	023 Burke
4	027 Caldwell
4	039 Cherokee
4	043 Clay
4	075 Graham
4	087 Haywood
4	089 Henderson
4	099 Jackson
4	111 McDowell
4	113 Macon
4	115 Madison
4	121 Mitchell
4	173 Swain
4	175 Transylvania
4	189 Watauga
4	193 Wilkes
4	199 Yancey

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

**45 South Carolina**

Survey Unit	South Carolina Counties
1	003 Aiken
1	005 Allendale
1	009 Ban1berg
1	011 Barnwell
1	013 Beaufort
1	017 Calhoun
1	029 Colleton
1	035 Dorchester
1	049 Hampton
1	053 Jasper
1	063 Lexington
1	075 Orangeburg
2	015 Berkeley
2	019 Charleston
2	025 Chesterfield
2	027 Clarendon
2	031 Darlington
2	033 Dillon
2	041 Florence
2	043 Georgetown
2	051 Horry
2	055 Kershaw
2	061 Lee
2	067 Marion
2	069 Marlboro
2	079 Richland
2	085 Sumter
2	089 Williamsburg
3	001 Abbeville
3	007 Anderson
3	021 Cherokee
3	023 Chester
3	037 Edgefield
3	039 Fairfield
3	045 Greenville

Survey Unit	South Carolina Counties
3	047 Greenwood
3	057 Lancaster
3	059 Laurens
3	065 McCormick
3	071 Newberry
3	073 Oconee
3	077 Pickens
3	081 Saluda
3	083 Spartanburg
3	087 Union
3	091 York

**51 Virginia**

Independent Cities: 650 Hampton. 550 Chesapeake, 810 Virginia Beach, and 700 Newport News.

Survey Unit	Virginia Counties
1	001 Accomack
1	025 Brunswick
1	033 Caroline
1	*036 Charles City*
1	041 Chesterfield
1	053 Dinwiddie
1	057 Essex
1	073 Gloucester
1	081 Greenville
1	085 Hanover
1	087 Henrico
1	093 Isle Of Wight
1	095 James City
1	097 King And Queen
1	099 King George
1	101 King William
1	103 Lancaster

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Survey Unit	Virginia Counties
1	115 Mathews
1	119 Middlesex
1	123 Nansemond
1	127 New Kent
1	131 Northampton
1	133 Northumberland
1	149 Prince George
1	159 Richmond
1	175 Southampton
1	181 Surry
1	183 Sussex
1	193 Westmoreland
1	199 York
1	650 Hampton
1	550 Chesapeake
1	810 Virginia Beach
1	700 Newport News
2	007 Amelia
2	011 Appomattox
2	019 Bedford
2	029 Buckingham
2	031 Campbell
2	037 Charlotte
2	049 Cumberland
2	067 Franklin
2	083 Halifax
2	089 Henry
2	111 Lunenburg
2	117 Mecklenburg
2	135 Nottoway
2	141 Patrick
2	143 Pittsylvania
2	145 Powhatan
2	147 Prince Edward
3	003 Albemarle
3	009 Amherst

Survey Unit	Virginia Counties
3	013 Arlington
3	047 Culpeper
3	059 Fairfax
3	061 Fauquier
3	065 Fluvanna
3	075 Goochland
3	079 Greene
3	107 Loudoun
3	109 Louisa
3	113 Madison
3	125 Nelson
3	137 Orange
3	153 Prince William
3	157 Rappahannock
3	177 Spotsylvania
3	179 Stafford
4	005 Alleghany
4	015 Augusta
4	017 Bath
4	023 Botetourt
4	043 Clarke
4	045 Craig
4	069 Frederick
4	091 Highland
4	139 Page
4	161 Roanoke
4	163 Rockbridge
4	165 Rockingham
4	171 Shenandoah
4	187 Warren
5	021 Bland
5	027 Buchanan
5	035 Carroll
5	051 Dickenson
5	063 Floyd
5	071 Giles

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

Survey Unit	Virginia Counties
5	077 Grayson
5	105 Lee
5	121 Montgomery
5	155 Pulaski
5	167 Russell
5	169 Scott
5	173 Smyth
5	185 Tazewell
5	191 Washington
5	195 Wise
5	197 Wythe

**71. 22-Survey Region 2, East Gulf States**

**12 Florida**

Survey Unit	Florida Counties
1	001 Alachua
1	003 Baker
1	007 Bradford
1	019 Clay
1	023 Columbia
1	029 Dixie
1	031 Duval
1	035 Flagler
1	041 Gilchrist
1	047 Hamilton
1	067 Lafayette
1	075 Levi
1	079 Madison
1	083 Marion
1	089 Nassau
1	107 Putnam
1	109 Saint John's
1	121 Suwannee

Survey Unit	Florida Counties
1	123 Taylor
1	125 Union
1	127 Volusia
2	005 Bay
2	013 Calhoun
2	033 Escambia
2	037 Franklin
2	039 Gadsden
2	045 Gulf
2	059 Holmes
2	063 Jackson
2	065 Jefferson
2	073 Leon
2	077 Liberty
2	091 Okaloosa
2	113 Santa Rosa
2	129 Wakulla
2	131 Walton
2	133 Washington
3	009 Brevard
3	017 Citrus
3	027 Desoto
3	049 Hardy
3	053 Hernando
3	055 Highlands
3	057 Hillsboro
3	061 Indian River
3	069 Lake
3	081 Manatee
3	093 Okeechobee
3	095 Orange
3	097 Osceola
3	101 Pasco
3	103 Pinellas
3	105 Polk
3	111 Saint Lucie

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

Survey Unit	Florida Counties
3	115 Sarasota
3	117 Seminole
3	119 Sumter
4	011 Broward
4	015 Charlotte
4	021 Collier
4	025 Dade
4	043 Glades
4	051 Hendry
4	071 Lee
4	085 Martin
4	087 Monroe
4	099 Palm Beach

**13 Georgia**

Survey Unit	Georgia Counties
1	001 Appling
1	003 Atkinson
1	005 Bacon
1	025 Brantley
1	029 Bryan
1	031 Bulloch
1	039 Camden
1	043 Candler
1	049 Charlton
1	051 Chatham
1	065 Clinch
1	069 Coffee
1	091 Dodge
1	101 Echols
1	103 Effingham
1	107 Emanuel
1	109 Evans
1	127 Glynn
1	161 Jeff Davis

Survey Unit	Georgia Counties
1	165 Jenkins
1	167 Johnson
1	175 Laurens
1	179 Liberty
1	183 Long
1	191 McIntosh
1	209 Montgomery
1	229 Pierce
1	251 Screven
1	267 Tattnall
1	271 Telfair
1	279 Toombs
1	283 Treutlen
1	299 Ware
1	305 Wayne
1	309 Wheeler
2	007 Baker
2	017 Ben Hill
2	019 Berrien
2	027 Brooks
2	071 Colquitt
2	075 Cook
2	081 Crisp
2	087 Decatur
2	093 Dooly Marien
2	099 Early
2	131 Grady
2	155 Irwin
2	173 Lanier
2	185 Lowndes
2	201 Miller
2	205 Mitchell
2	253 Seminole
2	275 Thomas
2	277 Tift
2	287 Turner

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Survey Unit	Georgia Counties
2	315 Wilcox
2	321 Worth
3	009 Baldwin
3	021 Bibb
3	023 Bleckley
3	033 Burke
3	035 Butts
3	037 Calhoun
3	053 Chattahoochee
3	061 Clay
3	073 Columbia.
3	079 Crawford
3	095 Dougherty
3	125 Glascock
3	133 Greene
3	141 Hancock
3	145 Harris
3	153 Houston
3	159 Jasper
3	163 Jefferson
3	169 Jones
3	171 Lamar
3	177 Lee
3	181 Lincoln
3	189 McDuffie
3	193 Macon
3	197 Marion
3	207 Monroe
3	211 Morgan
3	215 Muscogee
3	225 Peach
3	231 Pike
3	235 Pulaski
3	237 Putnam
3	239 Quitman
3	243 Randolph

Survey Unit	Georgia Counties
3	245 Richmond
3	249 Schley
3	259 Stewart
3	261 Sumter
3	263 Talbot
3	265 Taliaferro
3	269 Taylor
3	273 Terrell
3	289 Twiggs
3	293 Upson
3	301 Warren
3	303 Washington
3	307 Webster
3	317 Wilkes
3	319 Wilkinson
4	011 Banks
4	013 Barrow
4	045 Carroll
4	059 Clarke
4	063 Clayton
4	067 Cobb
4	077 Coweta
4	089 De Kalb
4	097 Douglas
4	105 Elbert.
4	113 Fayette
4	117 Forsyth
4	119 Franklin
4	121 Fulton
4	135 Gwinnett
4	139 Hall
4	143 Haralson
4	147 Hart
4	149 Heard
4	151 Henry
4	157 Jackson



FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Survey Unit	Georgia Counties
4	195 Madison
4	199 Meriwether
4	217 Newton
4	219 Oconee
4	221 Oglethorpe
4	223 Paulding
4	233 Polk
4	247 Rockdale
4	255 Spalding
4	285 Troup
4	297 Walton
5	015 Bartow
5	047 Catoosa
5	055 Chattooga
5	057 Cherokee
5	083 Dade
5	085 Dawson
5	111 Fannin
5	115 Floyd
5	123 Gilmer
5	129 Gordon
5	137 Habersham
5	187 Lumpkin
5	213 Murray
5	227 Pickens
5	241 Rabun
5	257 Stephens
5	281 Towns
5	291 Union
5	295 Walker
5	311 White
5	313 Whitfield

**01 Alabama**

Survey Unit	Alabama Counties
1	003 Baldwin
1	039 Covington
1	053 Escambia
1	097 Mobile
1	129 Washington
2	023 Choctaw
2	025 Clarke
2	035 Conecuh
2	091 Marengo
2	099 Monroe
2	119 Sumter
2	131 Wilcox
3	001 Autauga
3	005 Barbour
3	011 Bullock.
3	013 Butler
3	017 Chambers
3	021 Chilton
3	031 Coffee
3	041 Crenshaw
3	045 Dale
3	047 Dallas
3	051 Elmore
3	061 Geneva
3	067 Henry
3	069 Houston
3	081 Lee
3	085 Lowndes
3	087 Macon
3	101 Montgomery
3	109 Pike
3	113 Russell
3	123 Tallapoosa
4	007 Bibb
4	057 Fayette
4	063 Greene

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Survey Unit	Alabama Counties
4	065 Hale
4	075 Lamar
4	093 Marion
4	105 Perry
4	107 Pickens
4	125 Tuscaloosa
5	009 Blount
5	015 Calhoun
5	019 Cherokee
5	027 Claymake
5	029 Cleburne
5	037 Coosa
5	043 Cullman
5	055 Etowah
5	073 Jefferson
5	111 Randolph
5	115 St. Clair
5	117 Shelby
5	121 Talladega
5	127 Walker
5	133 Winston
6	033 Colbert
6	049 De Kalb
6	059 Franklin
6	071 Jackson
6	077 Lauderdale
6	079 Lawrence
6	083 Limestone
6	089 Madison.
6	095 Marshall
6	103 Morgan

**28 Mississippi**

Survey Unit	Mississippi Counties
1	011 Bolivar

Survey Unit	Mississippi Counties
1	027 Coahoma
1	051 Holmes
1	053 Humphreys
1	055 Issaquena
1	083 Leflore
1	119 Quitman
1	125 Sharkey
1	133 Sunflower
1	135 Tallahatchie
1	143 Tunica
1	149 Warren
1	151 Washington
1	163 Yazoo
2	003 Alcorn
2	009 Benton
2	013 Calhoun
2	015 Carroll
2	017 Chickasaw
2	019 Choctaw
2	025 Clay
2	033 De Soto
2	043 Grenada
2	057 Itawamba
2	071 Lafayette
2	081 Lee
2	087 Lowndes
2	093 Marshall
2	095 Monroe
2	097 Montgomery
2	105 Oktibbeha
2	107 Panola
2	115 Pontotoc
2	117 Prentiss
2	137 Tate
2	139 Tippah
2	141 Tishomingo

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Survey Unit	Mississippi Counties
2	145 Union
2	155 Webster
2	161 Yalobusha
3	007 Attala
3	023 Clarke
3	061 Jasper
3	069 Kemper
3	075 Lauderdale
3	079 Leake
3	099 Neshoba
3	101 Newton
3	103 Noxubee
3	121 Rankin
3	123 Scott
3	127 Simpson
3	129 Smith
3	159 Winston
4	031 Covington
4	035 Forrest
4	039 George
4	141 Greene
4	045 Hancock
4	047 Harrison
4	059 Jackson
4	065 Jefferson Davis
4	067 Jones
4	073 Lamar
4	077 Lawrence
4	091 Marion
4	109 Pearl River
4	111 Perry
4	131 Stone
4	147 Walthall
4	153 Wayne
5	001 Adams
5	005 Amite

Survey Unit	Mississippi Counties
5	021 Claiborne
5	029 Copiah
5	037 Franklin
5	049 Hinds
5	063 Jefferson
5	085 Lincoln
5	089 Madison
5	113 Pike
5	157 Wilkinson

**47 Tennessee**

Survey Unit	Tennessee Counties
1	017 Carroll
1	023 Chester
1	033 Crockett
1	045 Dyer
1	047 Fayette
1	053 Gibson
1	069 Hardeman
1	075 Haywood
1	077 Henderson
1	079 Henry
1	095 Lake
1	097 Lauderdale
1	109 McNairy
1	113 Madison
1	131 Obion
1	157 Shelby
1	167 Tipton
1	183 Weakley
2	005 Benton
2	039 Decatur
2	071 Hardin
2	081 Hickman
2	083 Houston

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Survey Unit	Tennessee Counties
2	085 Humphreys
2	099 Lawrence
2	101 Lewis
2	135 Perry
2	161 Stewart
2	181 Wayne
3	003 Bedford
3	015 Cannon
3	021 Cheatham
3	027 Clay
3	031 Coffee
3	037 Davidson
3	041 De Kalb
3	043 Dickson
3	055 Giles
3	087 Jackson
3	103 Lincoln,
3	111 Macon
3	117 Marshall
3	119 Maury
3	125 Montgomery
3	127 Moore
3	147 Robertson
3	149 Rutherford
3	159 Smith
3	165 Sumner
3	169 Trousdale
3	187 Williamson
3	189 Wilson
4	007 Bledsoe
4	013 Campbell
4	035 Cumberland
4	049 Fentress
4	051 Franklin
4	061 Grundy
4	115 Marion

Survey Unit	Tennessee Counties
4	129 Morgan
4	133 Overton
4	137 Pickett
4	141 Putnam
4	151 Scott
4	153 Sequatchie
4	175 Van Buren
4	177 Warren
4	185 White
5	001 Anderson
5	009 Blount
5	011 Bradley
5	019 Carter
5	025 Claiborne
5	029 Cocke
5	057 Grainger
5	059 Greene
5	063 Hamblen
5	065 Hamilton
5	067 Hancock
5	073 Hawkins
5	089 Jefferson
5	091 Johnson
5	093 Knox
5	105 Loudon
5	107 McMinn
5	121 Meigs
5	123 Monroe
5	139 Polk
5	143 Rhea
5	145 Roane
5	155 Sevier
5	163 Sullivan
5	171 Unicoi
5	173 Union
5	179 Washington

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

**71.24 - Survey Region 4, West Gulf States**

**05 Arkansas**

<b>Survey Unit</b>	<b>Arkansas Counties</b>
1	001 Arkansas
1	017 Chicot
1	041 Desha
1	069 Jefferson
1	077 Lee
1	079 Lincoln
1	085 Lonoke
1	095 Monroe
1	107 Phillips
1	117 Prairie
2	021 Clay
2	031 Craighead
2	035 Crittenden
2	037 Cross
2	055 Greene
2	067 Jackson
2	075 Lawrence
2	093 Mississippi
2	111 Poinsett
2	123 St. Francis
2	147 Woodruff
3	003 Ashley
3	011 Bradley
3	013 Calhoun
3	019 Clark
3	025 Cleveland
3	027 Columbia
3	039 Dallas
3	043 Drew
3	053 Grant
3	057 Hempstead
3	059 Hot Spring

<b>Survey Unit</b>	<b>Arkansas Counties</b>
3	061 Howard
3	073 Lafayette
3	081 Little River
3	091 Miller
3	099 Nevada
3	103 Ouachita
3	109 Pike
3	133 Sevier
3	139 Union
4	051 Garland
4	083 Logan
4	097 Montgomery
4	105 Perry
4	113 Polk
4	119 Pulaski
4	125 Saline
4	127 Scott
4	131 Sebastian
4	149 Yell
5	005 Baxter
5	007 Benton
5	009 Boone
5	015 Carroll
5	023 Cleburne
5	029 Conway
5	033 Crawford
5	045 Faulkner
5	047 Franklin
5	049 Fulton
5	063 Independence
5	065 Izard
5	071 Johnson
5	087 Madison
5	089 Marion
5	101 Newton
5	115 Pope

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

Survey Unit	Arkansas Counties
5	121 Randolph
5	129 Searcy
5	135 Sharp
5	137 Stone
5	141 Van Buren
5	143 Washington
5	145 White

**22 Louisiana**

Survey Unit	Louisiana Counties
1	025 Catahoula
1	029 Concordia
1	035 East Carroll
1	041 Franklin
1	065 Madison
1	067 Moorehouse
1	083 Richland
1	107 Tensas
1	123 West Carroll
2	001 Acadia
2	005 Ascension
2	007 Assumption
2	009 Avoyelles
2	023 Cameron
2	045 Iberia
2	047 Iberville
2	051 Jefferson
2	055 Lafayette
2	057 Lafourche
2	071 Orleans
2	075 Plaquemines
2	077 Pointe Coupee
2	087 St. Bernard
2	089 St. Charles
2	093 St. James

Survey Unit	Louisiana Counties
2	095 St. John the Baptist
2	097 St. Landry
2	099 St. Martin
2	101 St. Mary
2	109 Terrebonne
2	113 Vermilion
2	121 West Baton Rouge
2	125 West Feliciana
3	003 Allen
3	011 Beauregard
3	019 Calcasieu
3	039 Evangeline
3	043 Grant
3	053 Jefferson Davis
3	059 La Salle
3	069 Natchitoches
3	079 Rapides
3	085 Sabine
3	115 Vernon
4	033 East Baton Rouge
4	037 East Feliciana
4	063 Livingston
4	091 St. Helena
4	103 St. Tammany
4	105 Tangipahoa
4	117 Washington
5	013 Bienville
5	015 Bossier
5	017 Caddo
5	021 Caldwell
5	027 Claiborne
5	031 De Soto
5	049 Jackson
5	061 Lincoln

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

Survey Unit	Louisiana Counties
5	073 Ouachita
5	081 Red River
5	111 Union
5	119 Webster
5	127 Winn

**40 Oklahoma**

Survey Unit	Oklahoma Counties
1	005 Atoka
1	023 Choctaw
1	029 Coal
1	061 Haskell
1	077 Latimer
1	079 Le Flore
1	089 McCurtain
1	121 Pittsburg
1	127 Pushmataha
2	001 Adair
2	021 Cherokee
2	041 Delaware
2	091 McIntosh
2	097 Mayes
2	101 Muskogee
2	115 Ottawa
2	135 Sequoyah

**48 Texas**

Survey Unit	Texas Counties
1	005 Angelina
1	071 Chambers
1	199 Hardin
1	201 Harris
1	225 Houston

Survey Unit	Texas Counties
1	241 Jasper
1	245 Jefferson.
1	291 Liberty
1	339 Montgomery
1	351 Newton
1	361 Orange
1	373 Polk
1	403 Sabine
1	405 San Augustine
1	407 San Jacinto
1	455 Trinity
1	457 Tyler
1	471 Walker
2	001 Anderson
2	037 Bowie
2	063 Camp
2	067 Cass
2	073 Cherokee
2	159 Franklin
2	183 Gregg
2	203 Harrison
2	315 Marion
2	343 Morris
2	347 Nacogdoches
2	365 Panola
2	387 Red River
2	401 Rusk
2	419 Shelby
2	423 Smith
2	449 Titus
2	459 Upshur
2	499 Wood
3	015 Austin
3	021 Bastrop
3	041 Brazos
3	051 Burleson

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

Survey Unit	Texas Counties
3	055 Caldwell
3	089 Colorado
3	119 Delta
3	149 Fayette
3	161 Freestone
3	177 Gonzales
3	185 Grimes
3	187 Guadalupe
3	213 Henderson
3	223 Hopkins
3	277 Lamar
3	285 Lavaca
3	287 Lee
3	289 Leon
3	293 Limestone
3	313 Madison
3	331 Milam
3	379 Rains
3	395 Robertson
3	467 Van Zandt
3	473 Waller
3	477 Washington

**71.3 - Section 3, Pacific.** This section is divided into two Survey regions.

**71.31 - Survey Region 1, Pacific Northwest**

**41 Oregon**

Survey Unit	Oregon Counties
0	005 Clackamas
0	007 Clatsop
0	009 Columbia
0	027 Hood River

Survey Unit	Oregon Counties
0	047 Marion
0	051 Multnomah
0	053 Polk
0	057 Tillamook
0	067 Washington
0	071 Yamhill
1	003 Benton
1	039 Lane
1	041 Lincoln
1	043 Linn
2	011 Coos
2	015 Curry
2	019 Douglas
2	029 Jackson
2	033 Josephine
3	013 Crook
3	017 Deschutes
3	021 Gilliam
3	031 Jefferson
3	035 Klamath
3	037 Lake
3	055 Sherman
3	065 Wasco
3	069 Wheeler
4	001 Baker
4	023 Grant
4	025 Harney
4	045 Malheur
4	049 Morrow
4	059 Umatilla
4	061 Union
4	063 Wallowa

**53 Washington**



FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

Survey Unit	Washington Counties
5	029 Island
5	033 King
5	035 Kitsap
5	053 Pierce
5	055 San Juan
5	057 Skagit
5	061 Snohomish
5	073 Whatcom
6	009 Clallam
6	027 Grays Harbor
6	031 Jefferson
6	045 Mason
6	067 Thurston
7	011 Clark
7	015 Cowlitz
7	041 Lewis
7	049 Pacific
7	059 Skamania
7	069 Wahkiakum
8	005 Benton
8	007 Chelan
8	017 Douglas
8	025 Grant
8	037 Kittitas
8	039 Klickitat
8	047 Okanogan
8	077 Yakima
9	001 Adams
9	003 Asotin
9	013 Columbia
9	019 Ferry
9	021 Franklin
9	023 Garfield
9	043 Lincoln
9	051 Pend Oreille
9	063 Spokane

Survey Unit	Washington Counties
9	065 Stevens
9	071 Walla Walla
9	075 Whitman

**02 Alaska**

Survey Unit	Alaska Counties
N/A	001 Aleutian Islands Division
N/A	003 Angoon Division
N/A	005 Barrow Division
N/A	007 Bethel Division
N/A	009 Bristol Bay Borough
N/A	011 Bristol Bay Division
N/A	013 Cordova McCarthy Division
N/A	015 Gateway Borough
N/A	017 Greater Anchorage Area Boro
N/A	019 Greater Juneau Borough
N/A	021 Greater Sitka Borough
N/A	023 Kenai Peninsula Boro-NW
N/A	025 Kenai Peninsula Boro-SE
N/A	027 Kobuk Division
N/A	029 Kodiak Island Borough
N/A	031 Kuskokwim Division
N/A	033 Lynn Canallcy Straits Division

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

Survey Unit	Alaska Counties
N/A	035 Matanuska-Susitna Borough
N/A	037 Nome Division
N/A	039 North Star Borough
N/A	041 Outer Ketchikan Division
N/A	043 Prince of Wales Division
N/A	045 Southeast Fairbanks Division
N/A	047 Upper Yukon Division
N/A	049 Valdez-Chitina-Whittier Division
N/A	051 Wade Hampton Division
N/A	053 Wrangell-Petersburg Division
N/A	055 Yukon-Koyukuk Division

**71.32 - Survey Region 2, Pacific Southwest States**

**06 California**

Survey Unit	California Counties
N/A	001 Alameda
N/A	003 Alpine
N/A	005 Amador
N/A	007 Butte
N/A	009 Calaveras
N/A	011 Colusa
N/A	013 Contra Costa

Survey Unit	California Counties
N/A	015 Del Norte
N/A	017 El Dorado
N/A	019 Fresno
N/A	021 Glenn
N/A	023 Humboldt
N/A	025 Imperial
N/A	027 Inyo
N/A	029 Kern
N/A	031 Kings
N/A	033 Lake
N/A	035 Lassen
N/A	037 Los Angeles
N/A	039 Madera
N/A	041 Marin
N/A	043 Mariposa
N/A	045 Mendocino
N/A	047 Merced
N/A	049 Modoc
N/A	051 Mono
N/A	053 Monterey
N/A	055 Napa
N/A	057 Nevada
N/A	059 Orange
N/A	061 Placer
N/A	063 Plumas
N/A	065 Riverside
N/A	067 Sacramento
N/A	069 San Benito
N/A	071 San Bernardino
N/A	073 San Diego
N/A	075 San Francisco
N/A	077 San Joaquin
N/A	079 San Luis Obispo
N/A	081 San Mateo
N/A	083 Santa Barbara
N/A	085 Santa Clara

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

Survey Unit	California Counties
N/A	087 Santa Cruz
N/A	089 Shasta
N/A	091 Sierra
N/A	093 Siskiyou
N/A	095 Solano
N/A	097 Sonoma
N/A	099 Stanislaus
N/A	101 Sutter
N/A	103 Tehama
N/A	105 Trinity
N/A	107 Tulare
N/A	109 Tuolumne
N/A	111 Ventura
N/A	113 Yolo
N/A	115 Yuba
N/A	

**15 Hawaii**

Survey Unit	Hawaii Counties
2	007 Kauai (Kauai Island)
2	007 (Niihau Island)
3	003 Honolulu (Oahu Island)
4	009 Maui (Kahoolawe Island)
4	009 (Lanai Island)
4	009 (Molokai Island)
6	009 (Maui Island)
8	001 Hawaii (Hawaii Island)
N/A	005 Kalawao

**71.4 - Section 4, Rocky Mountain. This section is divided into two Survey regions.**

**71.41 - Survey Region 1, Northern Rocky Mountain States**

**16 Idaho**

Survey Unit	Idaho Counties
1	009 Benewah
1	017 Bonner
1	021 Boundary
1	035 Clearwater
1	049 Idaho
1	055 Kootenai
1	057 Latah
1	061 Lewis
1	069 Nez Perce
1	079 Shoshone
2	001 Ada
2	003 Adams
2	005 Bannock
2	007 Bear Lake
2	011 Bingham
2	013 Blaine
2	015 Boise
2	019 Bonneville
2	023 Butte
2	025 Camas
2	027 Canyon
2	029 Caribou
2	031 Cassia
2	033 Clark
2	037 Custer
2	039 Elmore
2	041 Franklin
2	043 Fremont

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

Survey Unit	Idaho Counties
2	045 Gem
2	047 Gooding
2	049 Idaho
2	051 Jefferson
2	053 Jerome
2	059 Lemhi
2	063 Lincoln
2	065 Madison
2	067 Minidoka
2	071 Oneida
2	073 Owyhee
2	075 Payette
2	077 Power
2	081 Teton
2	083 Twin Falls
2	085 Valley
2	087 Washington
2	089 Yellowstone National Park

**30 Montana**

Survey Unit	Montana Counties
1	023 Deer Lodge
1	029 Flathead
1	039 Granite
1	047 Lake
1	049 Lewis and Clark
1	053 Lincoln
1	061 Mineral
1	063 Missoula
1	077 Powell
1	081 Ravalli
1	089 Sanders
1	093 Silver Bow
2	001 Beaverhead

Survey Unit	Montana Counties
2	003 Big Horn
2	005 Blain
2	007 Broadwater
2	009 Carbon
2	011 Carter
2	013 Cascade
2	015 Chouteau
2	017 Custer
2	019 Daniels
2	021 Dawson
2	023 Deer Lodge
2	025 Fallon
2	027 Fergus
2	031 Gallatin
2	033 Garfield
2	035 Glacier
2	037 Golden Valley
2	041 Hill
2	043 Jefferson
2	045 Judith Basin
2	049 Lewis and Clark
2	051 Liberty
2	055 McCone
2	057 Madison
2	059 Meagher
2	065 Musselshell
2	067 Park
2	069 Petroleum
2	071 Phillips
2	073 Pondera
2	075 Powder River
2	079 Prairie
2	083 Richland
2	085 Roosevelt
2	087 Rosebud
2	091 Sheridan

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

Survey Unit	Montana Counties
2	093 Silver Bow
2	095 Stillwater
2	097 Sweet Grass
2	099 Teton
2	101 Toole
2	103 Treasure
2	105 Valley
2	107 Wheatland
2	109 Wibaux
2	111 Yellowstone
2	113 Yellowstone National Park

**46 South Dakota (West)**

Survey Unit	South Dakota West Counties
2	019 Butte
2	033 Custer
2	047 Fall River
2	063 Harding
2	081 Lawrence
2	093 Meade
2	103 Pennington

**56 Wyoming**

Survey Unit	Wyoming Counties
1	001 Albany
1	56 Wyoming
1	003 Big Horn
1	005 Campbell
1	007 Carbon
1	009 Converse
1	011 Crook
1	013 Fremont

Survey Unit	Wyoming Counties
1	015 Goshen
1	017 Hot Springs
1	019 Johnson
1	021 Laramie.
1	023 Lincoln
1	025 Natrona
1	027 Niobrara
1	029 Park
1	031 Platte
1	033 Sheridan
1	035 Sublette
1	037 Sweetwater
1	039 Teton
1	041 Uinta
1	043 Washakie
1	045 Weston
1	047 Yellowstone National Park

**71.42 - Servey Region 2, Souther Rocky Mountain States**

**04 Arizona**

Survey Unit	Arizona Counties
1	001 Apache
1	003 Cochise
1	005 Coconino
1	007 Gila
1	009 Graham
1	011 Greenlee
1	013 Maricopa
1	015 Mohave
1	017 Navajo

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

Survey Unit	Arizona Counties
1	019 Pima
1	021 Pinal
1	023 Santa Cruz
1	025 Yavapai
1	027 Yuma

**08 Colorado**

Survey Unit	Colorado Counties
1	001 Adams
1	003 Alamosa
1	005 Arapahoe
1	007 Archuleta
1	009 Baca
1	011 Bent
1	013 Boulder
1	015 Chaffee
1	017 Cheyenne
1	019 Clear Creek
1	021 Conejos
1	023 Costilla
1	025 Crowley
1	027 Custer
1	029 Delta
1	031 Denver
1	033 Dolores
1	035 Douglas
1	037 Eagle
1	039 Elbert
1	041 El Paso
1	043 Fremont
1	045 Garfield
1	047 Gilpin
1	049 Grand
1	051 Gunnison

Survey Unit	Colorado Counties
1	053 Hinsdale
1	055 Huerfano
1	057 Jackson
1	059 Jefferson
1	061 Kiowa
1	063 Kit Carson
1	065 Lake
1	067 La Plata
1	069 Larimer
1	071 Las Animas
1	073 Lincoln
1	075 Logan
1	077 Mesa
1	079 Mineral
1	081 Moffat
1	083 Montezuma
1	085 Montrose
1	087 Morgan
1	089 Otero
1	091 Ouray
1	093 Park
1	095 Phillips
1	097 Pitkin
1	099 Prowers
1	101 Pueblo
1	103 Rio Blanco
1	105 Rio Grande
1	107 Routt
1	109 Saguache
1	111 San Juan
1	113 San Miguel

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

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## **72 - SYSTEM.**

This section divides the United States into nine Regions. Each region and its subdivision are given a separate number and caption.

### **72.1 - Region 1 Northern.**

This region has 16 National Forests.

<b>National Forest</b>	<b>Working Circle</b>
02 Beaverhead	1 West Beaverhead, 2 Ruby-Madison
03 Bitterroot	1 Bitterroot
05 Clearwater	1 North Fork, 2 Pierce Lochsa, 3 Powell
06 Coeur d'Alene	1 Coeur d'Alene, 2 Mineral
07 Colville	1 Colville
08 Custer	1 Ashland, 2 Beartooth, 3 Sioux
09 Deerlodge	1 Deerlodge
10 Flathead	1 Coram, 2 Glacier View, 3 Kalispell, 4 Swan
11 Gallatin	1 Gallatin
12 Helena	1 Helena, 2 Lincoln, 3 Belt
13 Kaniksu	1 Cabinet, 2 Kaniksu, 3 Newport
14 Kootenai	1 Kootenai
15 Lewis and Clarke	1 Belt, 2 Four Rivers, 3 Lewistown
16 Lolo	1 Mineral, 2 Missoula, 3 Thompson
17 Nezperce	1 Nezperce
18 St. Joe	1 St. Joe

### **72.2 Region 2 Rocky Mountain.**

This region has 15 National Forests.

<b>National Forest</b>	<b>Working Circle</b>
01 Arapaho	1 Arapaho
02 Bighorn	1 Bighorn
03 Black Hills	1 Black Hills
04 Grand Mesa-Uncompahgre	1 Grand Mesa, 2 Uncompahgre
05 Gunnison	1 Gunnison
06 Medicine Bow	1 Laramie Peak, 2 Medicine Bow
07 Central Plains	1 Central Plains
08 Pike	1 Pike
09 Rio Grande	1 Rio Grande
10 Roosevelt	1 Roosevelt

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

<b>National Forest</b>	<b>Working Circle</b>
11 Routt	1 North Park, 2 Yampa River
12 San Isabel	1 San Isabel
13 San Juan	1 San Juan
14 Shoshone	1 Cody, 2 Wind River
15 White River	1 Holy Cross, 2 White River

### 72.3 - Region 3 Southwestern.

This region has 12 National Forests.

<b>National Forest</b>	<b>Working Circle</b>
01 Apache,	4 Black River, 5 Clifton, 6 Luna, 7 Springerville
02 Carson,	2 Arriba, 3 Jicarilla, 4 Taos
03 Cibola,	2 East Cibola, 3 Grants-Gallup, 4 Magdalena (Nonreg.), 5 San Mateo
04 Coconino	1 Flagstaff
05 Coronado,	2 Douglas (Nonreg.), 3 Mt. Graham, 4 Santa Catalina (Nonreg.), 5 Other (Nonreg.)
06 Gila	1 Gila
07 Kaibab,	2 Mt. Trumbull (Nonreg.), 3 North Kaibab, 4 Williams, 5 Flagstaff F.S.Y.U.
08 Lincoln,	2 Guadalupe (Nonreg.), 3 Lincoln, 4 Sacramento
09 Prescott	1 Prescott
10 Santa Fe,	4 Chama, 5 Cuba, 6 Jemez, 7 Las Vegas, 8 Pecos, 9 Tesuque
11 Sitgreaves,	2 Chevelon, 3 Heber, 4 Show Low-Pinedale
12 Tonto,	2 Payson, 3 Pleasant Valley, 4 Other (Nonreg.)

### 72.4 Region 4 Intermountain.

This region has 17 National, www, Forests.

<b>National Forest</b>	<b>Working Circle</b>
01 Ashley	1 Ashley
02 Boise	1 Boise
03 Bridger	1 Bridger
04 Cache	1 Cache
05 Caribou	1 Caribou
06 Challis	1 Challis



FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

<b>National Forest</b>	<b>Working Circle</b>
07 Dixie	1 Dixie
08 Fishlake	1 Fishlake
10 MantiLa Sal	1 La Sal, 2 Manti
12 Payette	1 Payette
13 Salmon	1 Salmon
14 Sawtooth	1 Sawtooth
15 Targhee	1 Targhee
16 Teton	1 Teton
17 Toiyabe	1 Toiyabe
18 Uinta	1 Uinta
19 Wasatch	1 Wasatch

**72.5 Region 5 California.**

This region has 17 National Forests.

<b>National Forest</b>	<b>Working Circle</b>
01 Angeles	1 Angeles
02 Cleveland	1 Cleveland
03 Eldorado	1 Amador, 2 Consumnes, 3 Georgetown, 4 Pacific, 5 Placerville
04 Inyo	1 Cannell Meadow, 2 Owens River
05 Klamath	1 Goosenest, 2 Happy Camp, 3 Salmon River, 4 Scott, 5 Seiad, 6 Yreka
06 Lassen	1 Almanor, 2 Eastern Lassen, 3 Hat Creek, 4 Pit, 5 Western Lassen
07 Los Padres	1 Los Padres
08 Mendocino	1 Alder Springs, 2 (Clear Lake -Sanhedrin), 3 Eel River, 4 Stoney Creek, 5 Thomas Creek
09 Modoc	1 Alturas, 2 Big Valley, 3 East Warners, 4 Lavas
10 Six Rivers	1 Del Norte, 2 Humboldt, 3 Mad River
11 Plumas	1 American Valley, 2 Eastern Plumas, 3 Indian Valley, 4 Western Plumas
12 San Bernardino	1 San Bernardino
13 Sequoia	1 Cannell-Meadow, 2 Kern West-Greenhorn, 4 Kings River
14 Shasta Trinity	1 Shasta, 2 Trinity, 5 Pit

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

<b>National Forest</b>	<b>Working Circle</b>
15 Sierra	1 Chiquito, 2 Kings River North, 3 Mariposa, 4 San Joaquin South, 5 Willow Creek
16 Stanislaus	1 Calaveras, 2 Groveland, 3 Stanislaus, 4 Tuolumne
17 Tahoe	1 Auburn, 2 Bear Valley, 3 North Yuba, 4 Sagehen

## 72.6 Region 6 Pacific Northwest.

This region has 19 National Forests.

<b>National Forest</b>	<b>Working Circle</b>
01 Deschutes	1 Deschutes
02 Fremont	1 Klamath Basin, 2 Lakeview
03 Gifford Pinchot	1 Gifford Pinchot
04 Malheur	1 Burns, 2 John Day
05 Mt. Baker	1. North Mt. Baker, 2 South. Mt. Baker
06 Mount Hood	1 East Side, 2 West Side
07 Ochoco	1 Burns, 2 Crooked River
08 Okanogan	1 Okanogan
09 Olympic	1 Quilcene, 2 Quinalt, 3 Shelton, 4 Soleduck
10 Rogue River	1 Rogue Basin
11 Siskiyou	1 Siskiyou
12 Siuslaw	1. Siuslaw
13 Snoqualmie	1 Cedar River, 2 Green River, 3 Mineral, 4 NachesTieton, 5 Skykomish, 6 Snoqualmie, 7 White River
14 Umatilla	1 North Umatilla, 2 South Umatilla
15 Umpqua	1 Umpqua
16 Wallowa-Whitman	1 Wallowa, 2 Whitman
17 Wenatchee	1 Chelan, 2 Ellensburg, 3 Entiat, 4 Wenatchee
18 Willamette	1 North Willamette, 2 South Willamette
20 Winema	1 Klamath Basin

## 72.7 Region 8 Southern.

This region has 13 National Forests.

<b>National Forest</b>	<b>Working Circle</b>
01 Alabama	1 Bankhead, 2 Conecuh, 3 Cheaha, 4 Oakmulgee, 5 Tuskegee

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

<b>National Forest</b>	<b>Working Circle</b>
02 Cumberland	1 Cumberland
03 Georgia	1 Armuchee, 2 Blue Ridge, 3 Oconee, 4 Dalton
04 Cherokee	1 Sequoyah, 2 Tsali
05 Florida	1 Apalachicola, 2 Ocala, 3 Osceola
06 Kisatchie	1 Caney, 2 Catahoula, 3 Evangeline, 4 Kisatchie, 5 Vernon, 6 Winn
07 Mississippi	1 Bienville, 2 Delta 3 Chickasawhay, 4 Gulf, 5 Holly Springs, 6 Homochitto, 7 Tombigbee, 8 Yalobusha
08 George Washington:	1 George Washington
09 Ouachita	1 Kiamichi, 2 Ouachita, 3 Tiak
10 Ozark	1 Boston Mountain, 2 Magazine, 3 Sylamore, 4 St. Francis
11 North Carolina	1 Croatan, 2 Nantahala, 3 Pisgah, 4 Uwharrie, 5 Franklin
12 South Carolina	1 Francis Marion, 2 General Pickens, 3 Enoree, 4 Long Cane
13 Texas	1 Angelina, 2 Davy Crockett, 3 Sabine, 4 Sam Houston
14Jefferson	1 Jefferson

**72.8 Region 9 Eastern.**

This region has 15 National Forests.

<b>National Forest</b>	<b>Working Circle</b>
02 Chequamegon	1 Chequamegon
03 Chippewa	1 Chippewa
04 Huron-Manistee	1.Huron, 2 Manistee
05. Clark	1 Clark
06 Nicolet	1 Nicolet
07 Ottawa	1 Ottawa
08 Shawnee	1 Shawnee
09 Superior	1 Superior
10 Hiawatha	1 Hiawatha
11 Wayne-Hoosier	1 Hoosier, 2 Wayne
18 Mark Twain	1 Mark Twain
19 Allegheny	1 Allegheny

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

National Forest	Working Circle
20 Green Mountain	1 Green Mountain
21 Monongalia	1 Monongalia
22 White Mountain	1 White Mountain

### 72.9 Region 10 Alaska.

This region has three National Forests.

National Forest	Working Circle
03 North Tongass,	1 Juneau, 2 Petersburg-Wrangell, 3 Sitka, 4 Yakutat
04 Chugach	1 Cordova, 2 Kenai
05 South Tongass	1 Ketchikan-Craig

### 73 TREE SPECIES.

Codes from 010 to 299 are for softwoods, and from 300 to 998 are for hardwoods. Within those groups numbers are listed in sequence alphabetically by scientific names of genera, species, and varieties. Each genus has been assigned a code ending in zero to record either an unidentified species or a genus as a group. Vacant codes may be assigned for important exotics as needed. Codes are primarily for use in recording trees tallied on field plots taken on Forest Survey and timber management inventories and for subsequent automatic data processing. Codes marked # are for use, as needed to supplement species codes, only in quarterly reports of timber cut and sold (specified in FSM 2493. 43). Tree species within a designated area which do not develop into trees suitable for industrial products may be classed as noncommercial species in Regional or Station supplements to this section. The code 999 may also be used for noncommercial species when no separation by species is required.

#### Softwoods

Code	Common Name	Species	Genus
001#	Softwoods not elsewhere specified	Blank	Blank
002#	Cull softwoods	Blank	Blank
004#	Hardwoods not elsewhere specified	Blank	Blank
005#	Cedar	Blank	Blank
006#	Tropical species	Blank	Blank

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Code	Common Name	Species	Genus
007#	Combined species for optional use with product classes other than sawtimber or pulpwood	Blank	Blank
10	fir	sp.	Abies
11	Pacific silver fir	amabilis	Abies
12	balsam fir	balsamea var. balsamea	Abies
13	bracted balsam fir	balsamea var. phanerolepsis	Abies
14	bristlecone fir	bracteata	Abies
15	white fir	concolor	Abies
16	Fraser fir	fraseri	Abies
17	grandfir	grandis	Abies
18	corkbark fir	lasiocarpa var. arizonica	Abies
19	subalpine fir	lasiocarpa var. lasiocarpa	Abies
20	California red fir	magnifica var. magnifica	Abies
21	Shasta red fir	magnifica var. shastensis	Abies
22	noble fir	procera	Abies
025#	True firs (excl. noble fir in R6 West side from Willamette and northerly)	Blank	Abies
30	Araucaria	sp.	Araucaria
31	NorfolkIsland pine	excelsa	Araucaria
40	whitecedar	sp.	chamaecyparis
41	Port-Orford-cedar	lawsoniana	chamaecyparis
42	Alaska-cedar	nootkatensis	chamaecyparis
43	Atlantic white-cedar	thyoides	chamaecyparis
50	cypress	sp.	cupressus
51	Arizona cypress	arizonica	cupressus
60	Juniper	sp	Juniperus
61	Ashe juniper	ashei	Juniperus

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Code	Common Name	Species	Genus
62	California juniper	Californica	Juniperus
63	alligator juniper	deppeana	Juniperus
64	western juniper	occidentalis	Juniperus
65	Utah juniper	osteosperma	Juniperus
66	Rocky Mt. juniper	Scopulorum	Juniperus
67	southern redcedar	silicicola	Juniperus
68	eastern redcedar	virginiana	Juniperus
70	larch	sp.	Larix
71	tamarack	laricina	Larix
72	subalpine larch	lyallii	Larix
73	western larch	occidentalis	Larix
80	incensecedar	sp.	Librocedrus
81	incensecedar	decurrens	Librocedrus
90	spruce	sp.	Picea
91	Norway spruce	abies	Picea
92	Brewer spruce	breweriana	Picea
93	Engelmann spruce	engelmannii	Picea
94	white spruce	glauca	Picea
95	black spruce	mariana	Picea
96	blue spruce	pungens	Picea
97	red spruce	rubens	Picea
98	Sitka spruce	sitchensis	Picea
100	pine	sp.	Pinus
101	whitebark pine	albicaulis	Pinus
102	bristlecone pine	aristata	Pinus
103	knobcone pine	attenuata	Pinus
104	foxtail pine	balfouriana	Pinus
105	jack pine	banksiana	Pinus
106	Mexican pinyon	cembroides	Pinus

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Code	Common Name	Species	Genus
107	sand pine	clausa	Pinus
108	lodgepole pine	contorta	Pinus
109	Coulter pine	coulteria	Pinus
110	shortleaf pine	echinata	Pinus
111	slash pine	elliottii	Pinus
112	Apache pine	engelmannii	Pinus
113	limber pine	flexilis var. flexilis	Pinus
114	Mexican white pine	flexilis var. reflexa	Pinus
115	spruce pine	glabra	Pinus
116	Jeffrey pine	jeffreyi	Pinus
117	sugar pine	lambertiana	Pinus
118	Chihuahua pine	leiophylla var. Chihuahuana	Pinus
119	western white pine	monticola	Pinus
120	bishop pine	muricata	Pinus
121	longleaf pine	palustris	Pinus
122	ponderosa pine	ponderosa	Pinus
123	Table-mountain pine	pungens	Pinus
124	Monterey pine	radiata	Pinus
125	red pine	resinosa	Pinus
126	pitch pine	rigida	Pinus
127	Digger pine	sabiniana	Pinus
128	pond pine	serotina	Pinus
129	eastern white pine	strobus	Pinus
130	Scotch pine	sylvestris	Pinus
131	loblolly pine	taeda	Pinus
132	Virginia pine	virginiana	Pinus
150	Ponderosa pine and Jeffrey pine group	Blank	Pinus
160	Eastern white	pine and red pine group	Pinus

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Code	Common Name	Species	Genus
170	Southern pine	Blank	Pinus
200	Douglasfir	sp.	Pseudotsuga
201	bigcone Douglasfir	macrocarpa	Pseudotsuga
202	Douglasfir	menziesii	Pseudotsuga
204	East Side and Rocky Mountain Douglas fir	Blank	Pseudotsuga
205	West Side -fir in R6 and on Klamath and Six Rivers NFS in R5	Blank	Pseudotsuga
210	sequoia	sp.	Sequoia
211	redwood	sempervirens	Sequoia
212	giant sequoia	gigantea	Sequoia
220	Baldcypress	sp.	Taxodium
221	Baldcypress	distichum var. distichum	Taxodium
222	Pondcypress	distichum var. nutans	Taxodium
230	yew	sp.	Taxus
231	Pacific yew	brevifolia	Taxus
240	thuja	sp.	Thuja
241	northern white cedar	occidentalia	Thuja
242	western red cedar	plicata	Thuja
250	torreya	sp.	Torreya
251	California Torreya	californica	Torreya
260	hemlock	sp.	Tsuga
261	eastern hemlock	canadensis	Tsuga
262	Carolina hemlock	caroliniana	Tsuga
263	western hemlock	heterophylla	Tsuga
264	mountain hemlock	mertensiana	Tsuga
300	acacia	sp.	Acacia
301	Koa	Koa	Acacia
310	maple	sp.	Acer



FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Code	Common Name	Species	Genus
311	Florida maple	barbatum	Acer
312	bigleaf maple	macrophyllum	Acer
313	boxelder	negundo	Acer
314	black maple	nigrum	Acer
315	striped maple	pensylvanicum	Acer
316	red maple	rubrum var. rubrum	Acer
317	silver maple	saccharinum	Acer
318	sugar maple	saccharum	Acer
319	mountain maple	spicatum	Acer
330	buckeye	sp.	Aesculus
331	Ohio buckeye	glabra	Aesculus
332	yellow buckeye	octandra	Aesculus
340	ailanthus,	sp.	Ailanthus
341	ailanthus	altissima	Ailanthus
350	alder	sp.	Alnus
351	red alder	rubra	Alnus
360	madrone	sp.	Arbutus
361	Pacific madrone	menziessii	Arbutus
370	birch	sp.	Betula
371	yellow birch	alleghaniensis	Betula
372	sweet birch	lenta	Betula
373	river birch	nigra	Betula
374	water birch	occidentalia	Betula
375	paper birch	papyrifera var. papyrifera	Betula
376	western paper birch	papyrifera var. commutata	Betula
377	Alaska paper birch	papyrifera var. humilis	Betula
378	northwestern paper	papyrifera var. subcordata	Betula
379	gray birch	populifolia	Betula

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Code	Common Name	Species	Genus
390	hornbeam	sp.	Carpinus
391	American hornbeam	caroliniana	Carpinus
400	hickory	sp.	Carya
401	water hickory	aquatica	Carya
402	bitternut hickory	cordiformis	Carya
403	pignut hickory	glabra	Carya
404	pecan	illinoensis	Carya
405	shellbark hickory	laciniosa	Carya
406	nutmeg hickory	myristicaeformis	Carya
407	shagbark hickory	ovata	Carya
408	black hickory	Blank	Carya
409	mockernut hickory	tomentosa	Carya
420	chestnut; chinkapin	sp.	Castanea
421	American chestnut	dentata	Castanea
422	Ashe chinkapin	pumila var. ashei	Castanea
430	Chinkapin	sp.	Castanopsis
431	golden chinkapin	chrysophylla	Castanopsis
440	casuarina	sp.	Casuarina
441	horsetail casuarina	equisetifolia	Casuarina
450	catalpa	sp.	Catalpa
451	southern catalpa	bignonioides	Catalpa
452	northern catalpa	speciosa	Catalpa
460	hackberry	sp.	Celtis
461	sugarberry	laevigata	Celtis
462	hackberry	occidentalis	Celtis
470	redbud	sp.	Cercis
471	eastern redbud	canadensis	Cercis
480	yellowwood	sp.	Cladrastis
481	yellowwood	lutea	Cladrastis

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Code	Common Name	Species	Genus
490	dogwood	sp.	Cornus
491	flowering dogwood	florida	Cornus
492	Pacific dogwood	nuttallii	Cornus
500	hawthorn	sp.	Crataegus
510	eucalyptus	sp.	Eucalyptus
520	persimmon	sp.	Diospyros
521	Common persimmon	virginiana	Diospyros
530	beech	sp.	Fagus
531	American beech	grandifolia	Fagus
540	ash	sp.	Fraxinus
541	white ash	americana	Fraxinus
542	oregon ash	latifolia	Fraxinus
543	black ash	nigra	Fraxinus
544	green ash	pennsylvanica	Fraxinus
545	pumpkin ash	profunda	Fraxinus
546	blue ash	quadrangulata	Fraxinus
547	Hawaiian ash	uhdei	Fraxinus
550	honeylocust	sp.	Gleditsia
551	waterlocust	aquatica	Gleditsia
552	honeylocust	triacanthus	Gleditsia
555	loblolly-bay	lasianthus	Gordonia
560	Grevillea	sp.	Grevillea
561	Silk oak	robusta	Grevillea
570	coffeetree	sp.	Gymnocladus
571	Kentucky coffeetree	dioicus	Gymnocladus
580	silverbell	sp.	Halesia
581	Carolina silverbell	carolina	Halesia
590	holly	sp.	Ilex
591	American holly	opaca	Ilex

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Code	Common Name	Species	Genus
600	walnut	sp.	Juglans
601	butternut	cinerea	Juglans
602	black walnut	nigra	Juglans
610	sweetgum	sp.	Liquidambar
611	sweetgum	styraciflua	Liquidambar
620	yellowpoplar	sp.	Liriodendron
621	yellowpoplar	tulipifera	Liriodendron
625#	Group of yellow-poplar basswood and cucumber	Blank	Liriodendron
630	tanoak	sp.	Lithocarpus
631	tanoak	densiflorus	Lithocarpus
640	Osage-orange	sp.	Maclura
641	Osage-orange	pomifera	Maclura
650	magnolia	sp.	Magnoa
651	cucumbertree	acuminata	Magnoa
652	southern magnolia	grandiflora	Magnoa
653	sweetbay	virginiana	Magnoa
660	apple	sp.	Malus
670	Blank	sp.	Metrosideras
671	ohia	polymorpha	Metrosideras
680	mulberry	sp.	Morus
681	white mulberry	alba	Morus
682	red mulberry	rubra	Morus
690	tupelo	sp.	Nyssa
691	water tupelo	aquatica	Nyssa
692	ogeechee tupelo	ogeche	Nyssa
693	black tupelo	sylvatica var. sylvatica	Nyssa
694	swamp tupelo, blackgum	sylvatica var. biflora	Nyssa
700	hophornbeam	sp.	Ostrya

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Code	Common Name	Species	Genus
701	eastern hophornbeam	virginiana	Ostrya
710	sourwood	sp.	Oxydendrum
711	sourwood	arboreum	Oxydendrum
720	persea	sp.	Persea
721	redbay	borbonia	Persea
730	sycamore	sp.	Platanus
731	American sycamore	occidentalis	Platanus
740	cottonwood; poplar	sp.	Populus
741	balsam poplar	balsamifera	Populus
742	eastern cottonwood	deltoides	Populus
743	bigtooth aspen	grandidentata	Populus
744	swamp cotton wood	heterophylla	Populus
745	plains cottonwood	sargentii	Populus
746	quaking aspen	tremuloides	Populus
747	black cottonwood	trichocarpa	Populus
760	cherry; peach; plum	sp.	Prunus
761	pin cherry	pensylvanica	Prunus
762	black cherry	serotina	Prunus
763	common choke cherry	virginiana	Prunus
800	oak	sp.	Quercus
801	California live oak	agrifolia	Quercus
802	white oak	alba	Quercus
803	Arizona white oak	arizonica	Quercus
804	swamp white oak	bicolor	Quercus
805	canyon live oak	chrysolepsis	Quercus
806	scarlet oak	coccinea	Quercus
807	blue oak	douglasii	Quercus
808	Durand oak	durandii	Quercus
809	northernpin oak	ellipsoidalis	Quercus

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Code	Common Name	Species	Genus
810	Emory oak	emoryi	Quercus
811	Englemann oak	engelmannii	Quercus
812	southern red oak	falcata	Quercus
813	cherrybark oak	falcata var. pagodaefolia	Quercus
814	Gambel oak	gambelii	Quercus
815	Oregon white oak	garryana	Quercus
816	bear oak	illicifolia	Quercus
817	shingle oak	imbricaria	Quercus
818	California black oak	kelloggii	Quercus
819	turkey oak	laevis	Quercus
820	laurel oak	laurifolia	Quercus
821	California white oak	lobata	Quercus
822	overcup oak	lyrata	Quercus
823	bur oak	macrocarpa	Quercus
824	blackjack oak	marilandica	Quercus
825	swamp chestnut oak	michauxii	Quercus
826	chinkapin oak	muehlenbergii	Quercus
827	water oak	nigra	Quercus
828	nuttall oak	nuttallii	Quercus
829	Mexican blue oak	oblongifolia	Quercus
830	pin oak	palustris	Quercus
831	willow oak	phellos	Quercus
832	chestnut oak	prinus	Quercus
833	northern red oak	rubra	Quercus
834	Shumard oak	shumardii	Quercus
835	post oak	stellata var. stellata	Quercus
836	Delta post oak	stellata var. mississippiensis	Quercus
837	black oak	velutina	Quercus

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Code	Common Name	Species	Genus
838	live oak	virginiana	Quercus
839	interior live oak	wislizenii	Quercus
900	locust	sp.	Robinia
901	black locust	pseudoacacia	Robinia
910	palmetto	sp.	Sabel
911	cabbage palmetto	palmetto	Sabel
920	willow	sp.	Salix
921	peachleaf willow	amygdaloides	Salix
922	black willow	nigra	Salix
930	sassafras	sp.	Sassafras
931	sassafras	albidum	Sassafras
940	mahogany	sp.	Swietenia
941	West Indies mahogany	mahagoni	Swietenia
950	basswood	sp.	Tilia
951	American basswood	americana	Tilia
952	white basswood	heterophylla	Tilia
960	Blank	sp.	Toona
961	Australian red cedar	ciliata var. australes	Toona
970	elm	sp.	Ulmus
971	winged elm	alata	Ulmus
972	American elm	americana	Ulmus
973	cedar elm	crassifolia	Ulmus
974	Siberian elm	pumila	Ulmus
975	Slippery elm	rubra	Ulmus
976	September elm	serotina	Ulmus
977	rock elm	thomassii	Ulmus
980	California laurel	sp.	Umbellularia
981	California laurel	california	Umbellularia

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

Code	Common Name	Species	Genus
999	Noncommercial, not coded in other more specific codes.	Blank	Noncommercial species

## 74 - GEOGRAPHIC FOREST TYPES.

This section divides the forest types into two major sections of the United States. Each section and its subdivisions are given a separate number and caption.

**74. 1 Section 1, Eastern.** This section is divided into 11 forest types.

**00 General:** White-red-jack pine. Forests in which eastern white pine, red pine, or jack pine, singly or in combination, comprises a plurality of the stock-ing. (Common associates include hemlock, aspen, birch, and maple.)

**Code/Local Types:** 01 jack pine, 02 red pine, 03 red pine, 03 white pine, 04 white pine-hemlock, 05 hemlock

**10 General:** Spruce fir. Forests in which spruce or true firs, singly or in combination, comprise a plurality of the stocking. (Common associates include white cedar, tamarack, maple, birch, and hemlock.)

**Code/Local types:** 11 balsam fir, 12 black spruce, 13 red spruce-balsam fir, 14 northern white-cedar, 15 tamarack, 16 white spruce

**20 General:** Long leaf-slash pine. Forests in which long leaf or slash pine, singly or in combination comma comprises a plurality of the stocking. (Common associates include other southern pines, oak, and gum.)

**Code/Local Types:** 21 long leaf pine, 22 slash pine

**30 General:** Lly-Shortleaf pine. Forest in which loblolly shortleaf pine, or other southern yellow pines except long leaf or slash pine, singly or in combination, comprises a plurality of the stocking. (Common associates include oak, hickory, and gum.)

**Code/Local Types:** 31 loblolly pine, 32 short leaf pine, 33 Virginia pine, 34 sand pine, 35 eastern red cedar, 36th pond pine, 37 spruce pine, 38 pitch pine, 39 table-mountain pine

**40 General:** Oak-pine. Forests in which hardwoods (usually upland Hawks) comprise a plurality of the stocking but in which pines comprise 25 to 50% of their stocking. (Common associates include gum, hickory, and yellow-poplar.)

**Code/Local Types:** white pine-northern red oak-white ash, 42 eastern red cedar-hardwood, 43 long leaf pine-shrub oak, 44 short leaf pine-oak, 45 Virginia pine-southern red oak, 46 loblolly pine-hardwood, 47 slash pine-hardwood, 49 other oak-pine



FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

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**50 General:** Oak-hickory. Forest in which upland oaks or hickory, singly or in combination comprises a plurality of the stocking. Except where pines comprise 25 to 50%, in which case the stand should be classified oak-pine. (Common associates include yellow-popular, elm, maple, and black walnut.)

**Code/Local Types:** 51 post doc, black oak or bear oak, 52 chestnut oak, 53 white oak-red oak-hickory, 54 white oak, 55 northern red oak, 56 yellow poplar-white oak-northern red oak, 57 southern scrub oak, 58 sweetgum-yellow poplar, 59 mixed hardwoods

**60 General:** in which Tupelo, black gum, sweet, oaks, or southern cypress, singly or in combination comprises a plurality of the stocking. Except where pines comprise 25 to 50%, in which case the stand should be classified oak-pine. (Common associates include cottonwood, willow, ash, elm, hackberry, and maple.)

**Code/Local Types:** 61 swamp chestnut oak-cherrybark oak, 62 sweetgum-nuttall oak-willow oak, 63 sugarberry-American elm-green ash, 65 overcup oak-water hickory, 66 Atlantic white cedar, 67 baldcypress-water tupelo, 68 sweetbay-swamp tupelo-red maple

**70 General:** Elm-ash-cottonwood. Forest in which elm then, ash, where Cottonwood, singly or in combination, comprises a plurality of the stocking. (Common associates include willow, sycamore, beach, and maple.)

**Code/Local Types:** 71 black ash-American elm-red maple, 72 river birch-sycamore, 73 cottonwood, 74 willow, 75 sycamore-pecan-American elm

**80 General:** Maple-beach-birch. Forest in which maple, beach, or yellow birch, singly or in combination, comprises a plurality of the stocking. (Common associates include hemlock column elm, basswood and white pine.)

**Code/Local Types:** 81 sugar maple beech, yellow birch

**90 General:** Aspen-birch. Forest in which Aspen, balsam popular, paper birch, or Gray birch, singly or in combination, comprises a plurality of the stocking. (Common associates include maple and balsam fir.) called/ local types 91 Aspen, 92 paper birch

**99 General:** Nonstocked

74.2 – Section 2, Western. This section is divided into 11

**00 General:** Douglas fir. Forest in which Douglas-fir comprises a plurality of the stocking. (Common associates include western hemlock, western red cedar, the true fir, redwood, ponderosa pine, and larch.)

**Code/Local Types:** 01 douglas-fir, 02 douglas-fir-western hemlock, 03 port-orford-cedar-douglas fir

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

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**10 General:** Ponderosa pine. Forest in which ponderosa pine comprises a plurality of the stocking. (Common associates include Jeffrey pine, sugar pine, limber pine, Arizona pine, Apache pine or Chihuahua find, Douglas-fir, incense cedar, and white fir.)

**Code/Local Types:** 11 ponderosa pine, 12 jeffrey pine, 13 ponderosa pine, sugar pine-fir

**20 General:** Western white pine. Forests in which white pine comprises a plurality of the stocking. (Common associates are western red cedar, large, white fir, Douglas-fir, lodge pole pine, and Engelmann spruce.)

**code/local types:** 21 western white pine

**30 General:** Fir-spruce. Forest in which 2 firs (AB IES Engelmann spruce, or Colorado blue spruce, singly or in combination, comprises a plurality of the stocking. (Common associates are mountain hemlock and lodge pole pine.)

**Code/Local Types:** 31 white fir, 32 red fir, 34 Pacific Silver fir hemlock, 35 Engelmann spruce, 36 Engelmann spruce subalpine fir

**40 General:** Hemlock-Sitka spruce. Forest in which western hemlock and/ 4 Sitka spruce comprises a plurality of the stocking. (Common associates include Douglas-fir, silver fir, and western red cedar.)

**Code/Local Types:** 41 western red cedar, 42 Sitka spruce, 47 mountain hemlock subalpine fir, 48 western hemlock

**50 General:** Larch. Forest in which western large comprises a plurality of the stocking. (Common associates are Douglas-fir, grand fir, western red cedar, and western white pine.)

**Code/Local Types:** 55 large-Douglas-fir, 56 grand fir-large-Douglas-fir, 57 ponderosa pine-large-Douglas-fir

**60 General:** Lodge pole pine. Forest in which lodge pole pine comprises a plurality of the stocking. (Common associates are Alpine for, western white pine, Engelmann spruce, aspirin, and larch.)

**Code/Local Types:** 61 lodge pole pine

**70 General:** Redwood. Forest in which redwood comprises a plurality of the stocking call. (, and associates include Douglas-fir, grand fir, and tan oak.)

**Code/Local Types:** 71 redwood

**80 General:** Hardwoods. Forest in which Aspen, red Alder, or other western hard-woods, singly or in combination, comprises a plurality of the stocking.

**Code/Local Types:** 81 red alder, 82 popular-birch, 83 aspen, 84 California black oak, 85 cottonwood-willow, 86 canyon live oak, 87 oak-madrone, 88 chaparral, 89 ohia

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

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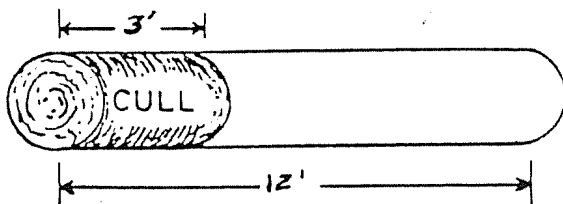
**90 General:** Noncommercial types. Forest in which pinion pine, Coulter pine, digger pine, juniper, knobcone pine, bristlecone pine, whitebark pine, or chaparral singly or in combination comprise a plurality of the stocking.

**Code/Local Types:** 91 coulter pine, 92 digger pine-oak, 93 opinion-juniper, 94 knob corn pine, 95 bristlecone pine, 96 white bark pine, 97 chaparral. Forest of heavily branched dwarf trees or shrubs, usually Evergreen, the crown canopy of which at maturity covers more than 50% of the ground, and whose primary value is watershed protection. The more common chaparral constituents are species of *Quercus*, *Cercocarpus*, *Garrya*, *Ceanothus*, *Arctostaphylos*, and *Adenostoma*. Types dominated by such shrubs as *Artetemisias*, *Opuntia*, *Purshia*, *Gutierrezia*, or semi desert species are not commonly considered chaparral.

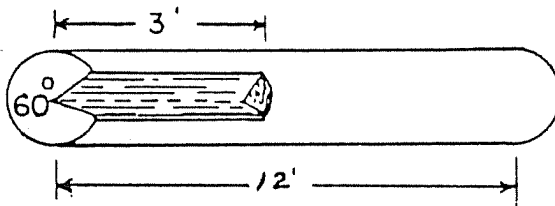
**99 General:** Nonstocked

75 Log Grade. This section divides logs into three uses. The following discussions are suggestions for estimating cull in logs.

If section of log is affected, deduct length of log length affected. Example:  $\frac{3}{12} \times 100 = 25$  percent board foot cull. The illustration below shows a 12 foot long with a 3 foot long cull length.



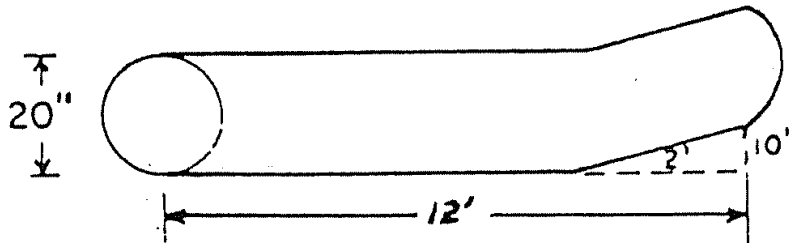
If sector is affected, multiply percent of circle times percent of length. The illustration below shows a 12 foot log with a 3 foot long 60 degree wedge cull.



Example:  $\frac{60}{360} \times \frac{3}{12} \times 100 = 4$  percent board foot cull.

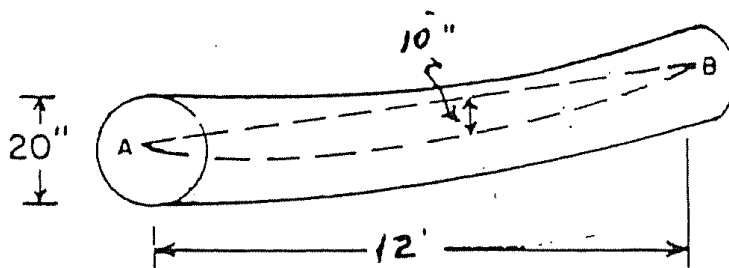
FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

For a crook, multiply proportion of diameter displaced times proportion of log length affected by crook. The illustration below shows a 12 foot log, 20 inch diameter log with a 3 foot long 10 inch crook cull.



Example:  $\frac{10}{20} \times \frac{3}{12} \times 100 = 8$  percent board foot cull.

For sweep, determine sweep departure and subtract 2 inches. Divide this by minimum log diameter. The illustration below shows a 12 foot log, 20 inch diameter log with with an area within the log determined by length between A and B with a height of 10 inches.



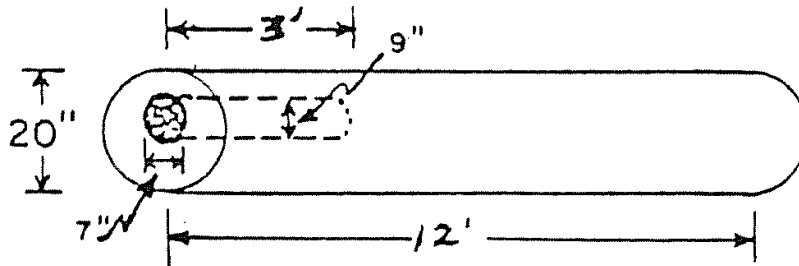
$\frac{10-2}{20} \times 100 = 40$  Example: 20 percent board foot cull.

For interior defect, determine the defective material as percent of total volume of the log. Add 1 inch to width and thickness of defect, and divide by one less than average scaling diameter of the log.

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

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The illustration below shows a 12 foot log, 20 inch diameter log with an internal 3 foot long by 7 inch beginning diameter terminating with a 9 inch diameter.



Example:  $\frac{8 \times 10}{20 - 1} \times \frac{3}{12} \times 100 = 11$  percent board foot cull.

#### 75.1 Softwood Saw Logs, East. This is for Eastern United States logs.

##### 75.11 Southern Pine Saw Logs

Grade 1. Logs with 3 or 4 clear faces. Code 1. A face is one-fourth of the circumference in width extending full length of the log. Clear faces are those free of: knots measuring more than one-half inch in diameter, overgrown knots of any size, holes more than one-fourth inch in diameter. The faces may be rotated if necessary to obtain the maximum number of clear ones.

Grade 2. Logs with 1 or 2 clear faces. Code 2.

Grade 3. Logs with no clear faces. Code 3.

After the tentative log grade is established from above, the log will be degraded one grade for each of the following, except that no log can be degraded below grade 3.

1. Sweep. Degrade any tentative 1 or 2 log one grade if sweep amounts to 3 or more inches and equals or exceeds one third ( $1/3$ ) the diameter inside bark at small end. This is the final grade if there is no evidence of heart rot.
2. Heart rot. Degrade any tentative 1 or 2 log one grade if conk, massed hyphae, or other evidence of advanced heart rot is found anywhere in it.

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

**75.12 White Pine Saw Logs**

Log Grade and Code	Minimum Size		Defect allowance		Maximum weevil injury	Allowable knot size (inches) on 3 best faces or minimum clear- ness on 4 faces
	Diameter	Length <sup>1/</sup>	Sweep or crook	Total cull including sweep		
	<u>Inches</u>	<u>Feet</u>	<u>Percent</u>	<u>Percent</u>	<u>Number</u>	<u>Inches</u>
Code 1 No. 1 (Select)	12 & 13	8-16	20	50	0	4 faces free of knots 1/2" or larger full length of log.
	14+	10-16	20	50	0	2 faces free of knots 1/2" or larger full length of log, or 4 faces free of knots 1/2" or larger 50% length of log (6' mini- mum length), or 2/
Code 2 No. 2 (Finish)	6+	8-16	30	50	0	Sound red knots $\leq \frac{3}{D/6}$ and no larger than 3". Black knots: Butt logs $\leq D/12$ and no larger than 1-1/2". Upper logs $\leq D/10$ and no larger than 1-1/2". or 4 faces free of knots 1/2" or larger 50% length of log.
Code 3 No. 3 (Premium)	6+	8-16	40	50	8' logs: 1 weevil	Sound red knots $\leq D/3$ and no larger than 5".
					10' + logs: 2 weevil	Black knots $\leq D/6$ and no larger than 2-1/2".
Code 4 No. 4 (Standard)	6+	8-16	50	50	No limit	No limit

- <sup>1/</sup> Plus trim.  
<sup>2/</sup> If the sum of the diameters of sound red knots plus 2X (sum of the diameters  
dead or black knots) in inches is  $\leq \frac{1}{2}$  the diameter of the log (in inches).  
<sup>3/</sup>  $\leq$  means equal to or less than.

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

## 75.2 Softwood Saw Logs, Western United States

### 75.21 West Side Douglas-fir

C o d e	Log grade	Min. dbh	Knots	Knot indicators	Conks or swollen knots	Knot <sup>3/</sup> clust. 1/2 circ. & burls	Knot clusters less than 1/2 circ.	Catfaces	Max. per- cent <sup>2/</sup> cull <sup>1/</sup>		
1	1-P	38	None in 4' above log no. 1	None 8' above log no. 1	None 12' above log no. 1	1	none	8' max lgh none 10" from pith	50		
2	2-P	38	None 4' above log no. 1	Any no. 1 1/2" & less in top 4' of butt log	None 8' above log no. 1	1	none	Same as 1	50		
3	3-P	31	Allowed combinations of 1 1/2" & 1" K's	Any no. 1 1/2" & less allowed	None in butt. Allowed in 2nd log	1	Treat as largest knot in cluster	Same as 1	50		
										1 1/2"	1" & smaller
										4	0
										3	3
			2	6							
			1	8							
			0	10							
4	Spec. P	23	Same as for a number 3 peeler -----							50	
5	1-S	38	A number 1 peeler that cannot be peeled (butt rot, deep catf. )							66.6	
6	2-S	15	1. Any no. 2 1/2" & less 2. Lgr. than 2 1/2" a. if on 1 16' face b. if 70% is clear in 1/6' panels	Any no.	Any	Any	Any	Any	66.6		
7	3-S	11	All other logs that are not cull-----							66.6	
0	cull log -----										

<sup>1/</sup> Seventy percent in clear 6-foot panels means that 45 feet must be clear in panels 6 feet long or longer and one-fourth of log circumference wide.

<sup>2/</sup> Sweep and crook only used to determine percent cull.

<sup>3/</sup> All peeler logs must be suitable for rotary cutting. They must not have defects which prevent them from being held by a "chuck" and turned on a lathe. In standing trees, the only indicators of this are deep cat faces and butt rot, and often butt rot cannot be detected. A deep cat face goes to within 10 inches of pith.

Knot clusters over one-fourth of the log circumference and burls are called deductible. This means they are scaled out and therefore do not affect the log grade.

Knot clusters under one-fourth of the log circumference are not scaled out and therefore do affect the log grade. They are called nondeductible.

## 75.22 - Inland Douglas-fir.

The grades are designed for application to 16-foot logs in standing timber. All logs to be graded must be at least 6 inches in diameter and one-third sound.

Grade 1 and Code 1:

**Knots:** Any number less than 1 inch in diameter permitted.

**Sweep or crook:** Cruise volume deduction for sweep and/or crook must be less than 10 percent of gross log volume. Logs with 10 percent or more and otherwise grade 1, drop to grade 2.

**Basal scars:** Butt logs must be free from all basal scars (cat faces, fire scars, seams, and overgrown lightning scars). Butt logs with basal scars that meet the grade 1 specifications for knots, sweep, and crook, will be dropped to grade 2.

Grade 2 and Code 2:

**Knots:** Live knots. Any number 3 inches or less in diameter permitted.

**Dead knots.** Any number 2 inches or less in diameter permitted.

**Sweep or crook:** Cruise volume deduction must be less than 20 percent of gross log volume.

**Basal scars:** None permitted; butt logs with scars, if other- wise grade 2, will be dropped to grade 3

**Grade 3 and Code 3:** Any log at least 6 inches in diameter and at least one-third sound that does not meet the requirements for grade 2.

**Code 0:** Cull log.



FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

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**75.23 - White and Red Fir.**

These grades are those given in "Lumber Grade Recovery from Old Growth White Fir," by H. F. Wise and R. H. May, United States Forest Service, 1958

Code	Log grade	Description
1	No. 1 (Select).	At least 90 percent surface clear; straight and generally smooth. Spiral grain not to exceed 1 in 5. Admits 1 of: 1. knot in central zone over 3"; 3. two scattered knots in central zone under 3" (or 4 pin knots); 4. any number of knots within foot of end; 5. grouping of knots or other defects not over 1/4 circumference and within 6' of end; 6. a line of knots under 3" diameter for length of log (1 larger knot permitted) if covering space not wider than 3/10 d. i. b. at small end; or 7. one straight-grained frost crack.
2	No. 2 (Shop)	At least 50 percent surface clear in length or circumference. On shop-type logs 50 percent of the surface in clear areas, at least 8' long and 6" or more in width between knots and blemishes.
3	No. 3 (High Common)	Less than 50 percent surface clear. Any number or combination of knots or blemishes, but knots must not exceed 3" in diameter
4	No. 4 (Low Common)	Logs not qualifying for higher grades, above 8" in diameter and 10 feet in length, and having more than 50 percent net scale

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

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**75.24 Hemlock.** These are the general log grading rules for Sitka spruce and western Hemlock, Alaska Region, U. S. Forest Service, 1959.

**Log grade/Description**

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

Log Grade	Description
Peeler Code 1	<ol style="list-style-type: none"> <li>1. Minimum diameter 24".</li> <li>2. Minimum length 16'.</li> <li>3. 100% surface clear.</li> <li>4. No knots or knot indicators.</li> <li>5. Slope of grain not to exceed:               <ol style="list-style-type: none"> <li>a. 3" per ft. on logs 24" to 35"</li> <li>b. 5" per ft. on logs 36" and over.</li> </ol> </li> <li>6. Usually in butt 32' log, rarely above.</li> </ol>
No. 1 Code 2	<ol style="list-style-type: none"> <li>1. Minimum diameter 24".</li> <li>2. Minimum length 16'.</li> <li>3. 75% surface clear.</li> <li>4. 3 faces full length, 2 faces full length, and bottom of 2 faces 1/2 length, or lower 3/4 length of all faces, must be free of knots and/or knot indicators.</li> <li>5. Slope of grain must not exceed:                3" per ft. on logs 24" to 35" 511                5" per ft. on logs 36" and over.</li> <li>6. Usually in butt 32' log, rarely above.</li> </ol>
No. 2 Code 3	<ol style="list-style-type: none"> <li>1. Minimum diameter 14".</li> <li>2. Minimum length 16'.</li> <li>3. No percent of surface clear requirements.</li> <li>4. Knots:                Common lumber type log. Any numbeve knots 2-1/2" and/or dead knots 1-1/4 smaller, respectively.                Shop type log. Larger knots spaced at least 3' apart longitudinally by 1/4 of circumference in width when staggered, or 6' apart when in whorls.                Must be surface clear between knots.                Slope of grain not to exceed:                3" per ft. on logs 14" to 35"                5" per ft. on logs 36" and over.</li> <li>6. Located in any position in tree.</li> </ol>

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

No. 3 Code 4	1. Minimum diameter 6". 2. Minimum length 16'. 3. No surface clear requirements. 4. Knots -exceed requirements of No. 2 logs. 5. Slope of grain--no limit. 6. Located in any position, but usually top log in tree. Forest Service Handbook
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**75.25-Ponderosa and Sugar Pine.** The general specifications and definitions are given below.

1. Apply to 16-foot logs as cruised.
2. Must be live logs with one-third net scale.
3. Grading defects apply without reference to scaling practice.
4. Grading defects: log-surface abnormalities that influence quality of lumber sawn from long.
5. Primary defects: log knots" overgrown knots.
6. limbs, stubs, limb holes, Secondary defects: scars, large or unsound burls, forks, crooks, cracks, cankers.
7. Log knots within scars disregarded if 2 inches or smaller and 5 inches or more below normal wood surface; otherwise counted.
8. False defects (disregard): small sound burls, bumps, flutes or flanges, bird peck, minor bark distortions.
9. Indeterminate defects (disregard): sweep, spiral grain.
10. Panel: one-fourth circumference, 4 feet long. May be scattered over log, but must not overlap.
11. Primary defect takes precedence over secondary on any panel.

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

**Ponderosa pine sugar pine log grades and Permitted Defects**

Grade Code	Primary (log knots)	Secondary(Scars, etc.)
1	One log knot not over one-half inch diameter	Confined to 3 panels or less
2	Confined to 4 panels or less	Secondary plus primary confined to 6
3	6 panels free of all grading defects	Blank
4	a) 80 percent bark limbs b) Bark limbs not exceed one-sixth log diameter Other log knots not exceed one-twelfth log diameter c) Not more than 24 near maximum size	Confined to 3 panels or less
5	All other logs, if net scale one-third or more of gross 5	All other logs, if net scale one-third or more of gross 5
0	0 Cull log	0 Cull log

**75.26 Code Redwood.** These codes and captions are for 20-foot logs.

Code	Log grade	Description
1	No. 1a	30 d. i. b. and over. At least 18' continuous clear surface on 4 faces. Knots: Maximum of 1 through and 1 old sap knot or old sap knots.
1	No. 1b	29 d. i. b. and under. At least 19' continuous clear surface on 4 faces. No knots permitted.
2	No. 2	At least 15' clear on 4 faces, or 20' clear on 3 faces. Knots: Any number on 1 face, or on 25 percent of length; or lacking 75 percent clear surface, scattered knots not exceeding 1 for each 8" of d. i. b. (for example, 40" d. i. b. permits 5 knots).
3	No. 3	At least 10' clear on 4 faces, or 20' clear on 2 faces. Knots: Any number on balance or scattered knots, not exceeding 3 for each 8" of d. i. b. (for example, 40" d. i. b. permits 15 knots).
4	No. 4	Merchantable logs not qualifying for Grade Number 1, 2, or 3.
0	No. 0	Cull logs with less than 1/3 sound volume.

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

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**75.27 - Sitka Spruce.**

These are the general log grading rules for Sitka spruce and western Hemlock, Alaska Region, U. S. Forest Service, 1959.

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

Log grade	Description
Select Code 1	<ol style="list-style-type: none"><li>1. Minimum diameter 30".</li><li>2. Minimum length 16'.</li><li>3. 100% surface clear.</li><li>4. No knots or knot indicators.</li><li>5. Slope of grain must not exceed: 1" per ft. on logs 30" to 35" 1-1/2" per ft. on logs 36" to 50" 2" per ft. on logs 51" to 60" 2-1/2" per ft. on logs 61" and over.</li><li>6. Usually in butt 32' log, rarely above.</li></ol>
No. 1 Code 2	<ol style="list-style-type: none"><li>1. Minimum diameter 24".</li><li>2. Minimum length 16'.</li><li>3. 75% surface clear.</li><li>4. 3 faces full length, 2 faces full length, and March 1967 bottom of 2 faces 1/2 length, or lower 3/4 length of all faces, must be free of knots and/or knot indicators.</li><li>5. Slope of grain must not exceed: 1" per ft. on logs 24" to 35" 1-1/2" per ft. on logs 36" to 50" 2" per ft. on logs 51" to 60" 2-1/2" per ft. on logs 61" and over. Logs qualifying for Select except for slope of grain permitted, but not to exceed 3" per foot.</li><li>6. Usually in butt 32' log, rarely above.</li></ol>

FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

No. 2 Code 3	<ol style="list-style-type: none"><li>1. Minimum diameter 14".</li><li>2. Minimum length 16'.</li><li>3. No percent of surface clear requirements.</li><li>4. Knots: 5. Common lumber type log. Any number live knots 2-1/2" and/or dead knots 1-1/4" and smaller, respectively. Shop type log. Larger knots spaced at least 3' apart longitudinally by 1/4 of circumference in width when staggered, or 6' apart when in whorls. Must be surface clear between knots.</li><li>5. Slope of grain must not exceed: 2-1/2" per ft. on logs 14" to 20" 3" per ft. on Logs 21" to 35" 4" per ft. on logs 36" to 50" 5" per ft. on logs 51" and over.</li><li>6. Located in any position in tree.</li></ol>
No. 3 Code 4	<ol style="list-style-type: none"><li>1. Minimum diameter 6"</li><li>2. Minimum length 16'.</li><li>3. No surface clear requirements.</li><li>4. Knots--exceed requirements for No. 2 logs.</li><li>5. Slope of grain--no limit.</li><li>6. Located in any position, but usually top log in tree.</li></ol>



FSH 4809 11 FOREST SURVEY HANDBOOK  
CHAPTER 70 Codes  
Amendment Directive Number: WO 4809.11-5  
Effective Date: 5/1/1971

### 75.3 Hardwood Saw Logs.

These log grades apply to all areas of the United States, except for red alder in the west. A clear cutting is a portion of a face free of defects, extending the width of the face. A face is one-fourth the surface of the log as divided lengthwise.

GRADE FACTORS*		SPECIFICATIONS							
		Log grade 1 Code 1			Log grade 2 Code 2			Log grade 3 Code 3	
Position in tree		Butts only	Butts & uppers		Butts & uppers			Butts & uppers	
Minimum diameter (inches)		13-15 <sup>1/</sup>	16-19	20+	11 <sup>2/</sup>		12+	8+	
Minimum length (feet)		10+	10+	10+	10+	8-9	10-11	12+	8+
Clear cuttings on 3 best faces	Min. length (ft.)	7	5	3	3	3	3	3	2
	Max. number	2	2	2	2	2	2	3	--
	Min. yield in face length	5/6	5/6	5/6	2/3	3/4	2/3	2/3	1/2
Max. sweep and crook allowance (percent of gross volume)		15			30			50	
Max. cull and sweep allowance (percent of gross volume)		40 <sup>3/</sup>			50 <sup>4/</sup>			50	

\*A clear cutting is a portion of a face free of defects, extending the width of the face. A face is one-fourth the surface of the log as divided lengthwise.

<sup>1/</sup> Ash and basswood butts can be 12 inches if otherwise meeting requirements for small No. 1's.

<sup>2/</sup> 10-inch logs of all species can be No. 2 if otherwise meeting requirements for small No. 1's.

<sup>3/</sup> Otherwise No. 1 logs with 41 to 50 percent cull can be No. 2

<sup>4/</sup> Otherwise No. 2 logs with 51 to 60 percent cull can be No. 3.

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

**Code 4 Tie and Timber**

<b>GRADE FACTORS</b>	<b>SPECIFICATIONS</b>
Position in tree	Butts and uppers
Scaling diameter (inches)	8 Plus
Length, without trim (feet)	8 Plus
Clear cuttings	No requirements: not graded on cutting basis.
Max. sweep allowance	One-fourth d. i. b. of small end for half logs, and one-half d. i. b. for logs 16 feet long.
Sound surface defects permitted-Single knots	Any number, if none has an average collar diameter that is more than one-third of log diameter at point of occurrence.  Knot collar is the average of the vertical and horizontal diameters of the limb or knot swelling as measured flush with the surface of the log.
Sound surface defects permitted Whorled knots	Any number, provided the sum of the collar diameters does not exceed one-third the log diameter at point of occurrence.
Sound surface defects permitted-Holes	Any number not exceeding knot specifications if they do not extend more than 3 inches into the contained tie or timber.
Unsound surface defects permitted Interior defects are not visible in standing trees. They are considered in grading cut logs. No interior defects are permitted except one shake not more than one-third the width of the contained tie or timber, and one split not more than 5 inches long.	**Any number and size if they do not extend into contained tie or timber. If they extend into contained tie or timber, they shall not exceed size, number and depth of limits for sound defects.

FSH 4809 11 FOREST SURVEY HANDBOOK  
 CHAPTER 70 Codes  
 Amendment Directive Number: WO 4809.11-5  
 Effective Date: 5/1/1971

**75.4 Red Alder Saw Logs**

<b>Log grade</b>	<b>Code</b> Any log not qualifying for a grade 1 or 2 for any reason will be a grade 3.	<b>Minimum size requirement</b>	<b>Percent of clearcutting faces</b>	<b>Rot</b>	<b>Sweep or Crook</b>
1	Code 1	15" d. i. b. - top of log	75%	25%	Not to exceed 1/2 mid-diameter
2	Code 2	10 d. i. b.	Same as 1	Same as 1	Same as 1
3	Code 3 (Pulp stick)	Less than 10" d. i. b. top of log	Any	50% if d. b. h. 5-10.9" 75% if d. b. h. 11. 0"+	Same
0	0	Cull logs	Blank	Blank	Blank

In the determination of percent of clearcutting faces, the following must be considered:

1. Any combination of clear panels totaling 24 feet makes up 75 percent.
2. Clear panels must be one-fourth the tree circumference and at least 3 feet long.
3. Panels may be moved up or down the log or staggered to get the best possible grade.
4. Log must have at least one knot on each of three faces to reduce the grade.