Moscow, June, 1951 Experiment Station Bulletin No. 286

LAND CAPABILITY for SOIL and WATER CONSERVATION in IDAHO

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in cooperation with
THE UNITED STATES DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

Foreword

The Soil Conservation Service in cooperation with the Idaho Agricultural Experiment Station has been making soil conservation surveys since 1935. This survey records the physical land facts which are interpreted into land-capability classes, sub-classes, and capability units. The first two are shown on the map accompanying this report. These interpretations furnish the basis for well balanced development of soil and water conservation programs on farms and ranches.

Land and water inventories were made by the Soil Conservation Service in 1948-49 for each county in the state. The physical facts were mapped on a scale of ¼-inch to the mile. This information was the basic material from which the generalized county land-capability maps were prepared.

This publication supplements the accompanying generalized land-capability map prepared from the county land-capability maps. It is intended to illustrate use of the physical facts of the land in developing conservation programs based on the needs of the land and best interests of the land owner.

This is the first information assembled dealing with the State's most vital resource on a state-wide basis. Information contained herein about all the land is on a state and county basis by land-capability classes and sub-classes and by present land use. The principal recommended uses and treatments for different kinds of land also are presented. Five major drainage basins were recognized in the state and the physical land circumstances by land-capability class and sub-class by present land usages are presented along with the major problems for each.

Illustrative material depicting some of the inherent physical land features, climatic factors, and other conditions are presented to portray better some of the natural limitations man has to overcome in wise land use. Figures are presented also to illustrate some of the major conservation measures and practices being applied by farmers and ranchers through the medium of soil conservataion district programs.

If Idaho's lands are called on again for all-out production of food, fiber, and feed, they will suffer from overcropping and erosion unless protection is provided. These land inventories furnish the basis for treating each acre of land according to its capabilities and needs within the limitations of economy and efficiency. The information will not be useful as a basis for planning individual farms or other uses requiring exact detail and location. Only broad patterns of physical conditions and dominant capabilities are shown here.

Physical land facts and land-capability information will be found useful to planning groups associated with agriculture, teachers, public officials, private landowners, and others in their efforts to safeguard and properly use this indispensable resource.

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LAND CAPABILITY FOR SOIL AND WATER CONSERVATION IN IDAHO

CHARLES F. PARROTT AND G. ORIEN BAKER[1]

Idaho is noted for its production of potatoes, peas, wheat, vegetable seed, livestock, and livestock products. These are produced on 40,284 farms and ranches throughout the state. Only about 10 percent of the State's entire area, however, is suitable for crop production. Most of the land is too mountainous or too steep for farming. Some is rocky with shallow soil or no soil at all. Some is wet, salty or alkali land. A few of the valleys are too high and cold for any use except for grazing or native hay. Some of the dry land consists of good soil that could be used for crop production if irrigation water were available. Most of the land not suitable for cultivation can be used safely for forests or for grazing. Much of it is valuable for the snow that accumulates on it and melts during spring and summer to give a constant supply of irrigation water.

Nearly all the land, including that suitable for cultivation, is subject to one or more natural limitations. Sloping land must have special care to control runoff and soil erosion. Land that is shallow, or sandy, or subject to waterlogging must be irrigated with special care because of these limiting features. Whether land is used for crops, grazing, forestry, wildlife, or for some other use, its natural features and limitations determine in a large measure how it can be used and what treatment it needs. Physical facts about land are essential for any program of soil conservation, flood control, or other work that involves use and treatment of land.

Information about Idaho's land is being obtained by the Soil Conservation Service in 27 soil conservation districts. Each district has requested technical help in soil and water conservation. As part of the technical help that is furnished, surveys of the necessary land facts are made on farms or groups of farms. Each survey shows the kind of soil, steepness of slope, degree of soil erosion if any, and other land facts if they are important. Each survey is interpreted in terms of the land-capability classification that is explained later in this bulletin. The information used in planning soil conservation and water control measures that will fit the natural land features will also meet the needs of the farmer or rancher. A total of more than 2,700,000 acres of land has been surveyed in this way since 1935. Information is accumulated in sufficient detail to show the areas on each farm or ranch that may best

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be used or treated differently or that will have different responses when they are used and treated according to their need and capabilities.

Physical land information on a broader scale has also been collected for the entire state in county land-and-water inventories. These general maps show the kind of soil, steepnes of slope, and degree of erosion but on a scale too small and in a pattern too generalized to be used in planning or treatment of land on individual farms or ranches. The county maps, like those of the farm and ranch surveys, have been interpreted in terms of the capability of land for crops, grazing, woodlands, and wildlife. From them has been compiled a generalized land-capability map of the State. A copy of the State map is in the envelope at the back of this bulletin.

The State land-capacity map is useful for broad purposes in planning programs of soil conservation, water management, and flood control. It is of interest to agricultural groups, public officials, teachers, research workers and others who are concerned about soil and water conservation, land use, and related activities. It is not detailed enough to show the specific land conditions on an individual farm or ranch.

Information from the county land and water inventories has been assembled for five major drainage basins in the State. These are the Columbia basin, the upper, middle, and lower divisions of the Snake river basin, and the Bear river basin. They are shown in figure 1.

Figure 1. Five major watersheds in the State.

1. **Upper Columbia river basin**
2a. **Upper Snake river basin**
2b. **Middle Snake river basin**
2c. **Lower Snake river basin**
3. **Bear river basin**

Factors Affecting Land-Capability and Land Use

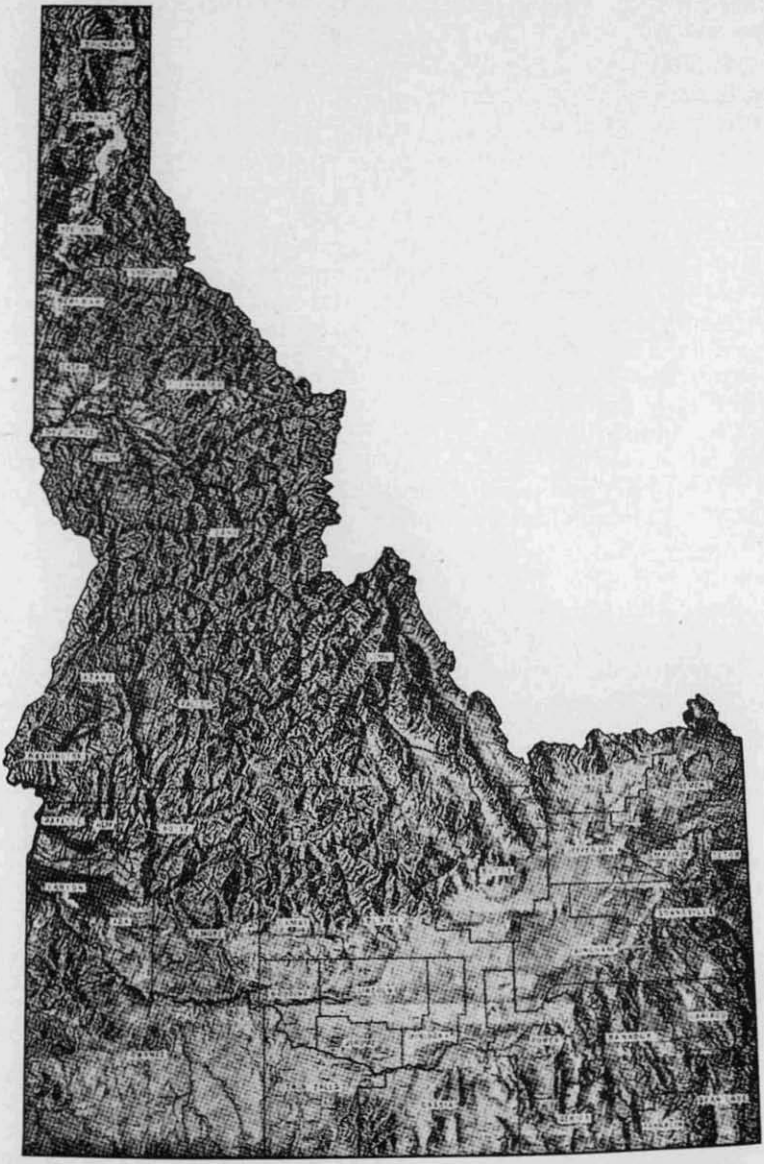
Physical land factors, including climate, determine how the land can be used and the kind and amount of treatment that it needs for use without damage to it. Slope of the land, for example, influences land use and conservation practices. Sloping land must be farmed with special care to control runoff and erosion. The steepest slopes that can be cultivated safely in any locality must be determined in relation to soils, climate, and other factors. Experience of farmers must be observed and evaluated. In irrigated farming, where, as a rule, only favorable slopes are selected, soil factors such as depth, permeability, and water-holding capacity are often the limiting factors in land capability. Excess water is another land factor that limits land use wherever water accumulates and remains in the soil. Any one of these physical land factors, or any of several others, can be the main limiting factor in land capability. The land user is concerned, however, with the combined effect of all physical land factors rather than with any one by itself.

Climate is always a significant factor in land use and land capability. It is a limiting factor wherever the rainfall is not enough or the temperature is not suitable for best production of crops or other useful plants.

The relatively permanent physical factors that affect land capability can be grouped into soil factors, associated land features, and climate. Soil factors include depth of usable soil material, available moisture capacity, texture and workability of the present topsoil, permeability of the different layers in the soil, soil reaction with respect to acidity and alkalinity, soluble salts if they are present in excess amounts, inherent fertility, nutrient supplying capacity, and type of material that underlies the useful soil.

Associated land features include steepness of slope, length of slope, direction of exposure, type and degree of soil erosion that has occurred, susceptibility to erosion processes, and the hazards of excess water including risk of overflow and the presence of too much water in the soil.

Most of the soil factors and associated land features are permanent in nature and can be modified only to a limited extent by action of the land user. Features such as sloping land, heavy soil texture, shallow soil, low water-holding capacity, and many others cannot be overcome. The land user can change some of them in some degree, but for the most part he must get along with them as best he can. He can add fertilizers or soil amendments to improve the supply of plant nutrients or improve the physical condition of the soil. He can treat the land to overcome excessive salinity or alkalinity and drain it to remove excess water. He can protect overflow land to some degree by diking. On sloping land he can use a number of practices to slow down runoff and control



Fiure 2. RELIEF MAP OF IDAHO. The elevation of Idaho varies from 700 feet at Lewiston to over 12,000 feet at Mount Borah. Most of the farm land in northern Idaho lies at elevations ranging between 2000 and 3500 feet while the farming area of southern Idaho ranges between 2100 and 6000 feet.

soil erosion. The need for these or other practices or for a combination of them affects the capability of land for cultivation and other uses.

Climate is a major factor which affects capability of the land and its conservation needs. Land in the heavier precipitation belts of Idaho receives enough rain and snow to provide the moisture needed for crop production. Usually such land requires practices to control runoff and protect the soil. In these relatively moist areas the grazing land usually has a good cover of vegetation if it is inherently productive and is managed to allow desirable plants to remain vigorous. In the drier belts vegetation is sparse. The plants make their growth in spring and mature early. Erosion is likely to occur during storms because of insufficient plant cover to protect the soil. Throughout the State, snowfall and rainfall are generally greater at the higher altitudes. Summer rainfall at the lower elevations is almost negligible, but, in the foothills and mountain valleys, summer rainfall is important in crop production. Length of the growing season and velocity of prevailing winds are other significant climatic factors affecting capability of land.

Slope of the land in Idaho ranges from nearly level plains to steep mountains. Figure 2 shows in a general way the relief of the State. Most of the land consists of mountains, hilly land, and foot slopes. Nearly all the farm land occurs on the plains, valleys, and lower foot slopes. The high valleys, upper foot slopes, and plateaus are important ranching areas. Figure 3 shows the general location of irrigated farming and of non-irrigated farming areas in the State. Slightly more than 40 percent of the cropland is irrigated.

Average annual precipitation throughout the State is shown in figure 4. It ranges from less than 10 inches in the Snake river plains to nearly 60 inches in the high mountain ranges along the northeastern boundary of the State.

Problems of soil salinity and alkalinity are associated with irrigated land. The general location of the principal areas affected are shown in figure 5. Saline soils are more extensive than alkali soils. Most of the accumulations of excess salt are the result of poor drainage. Some areas are being reclaimed, but in others the problems are considered at this time to be too complex for economic reclamation.

Land Information as Classified for Use

The inventory of land, to provide basic land facts for planning conservation work on farms and ranches, is made by a trained scientist. He examines topsoil and subsoil, estimates degree of soil erosion, and measures steepness of slope. He digs in the soil to find the depth and moisture capacity of usable material, permeability of the subsoil layers, and other information. He estimates the fertility and soil organic matter. He notes the wet spots, the overflow hazards if any exist, the presence of salts or alkali, and any other

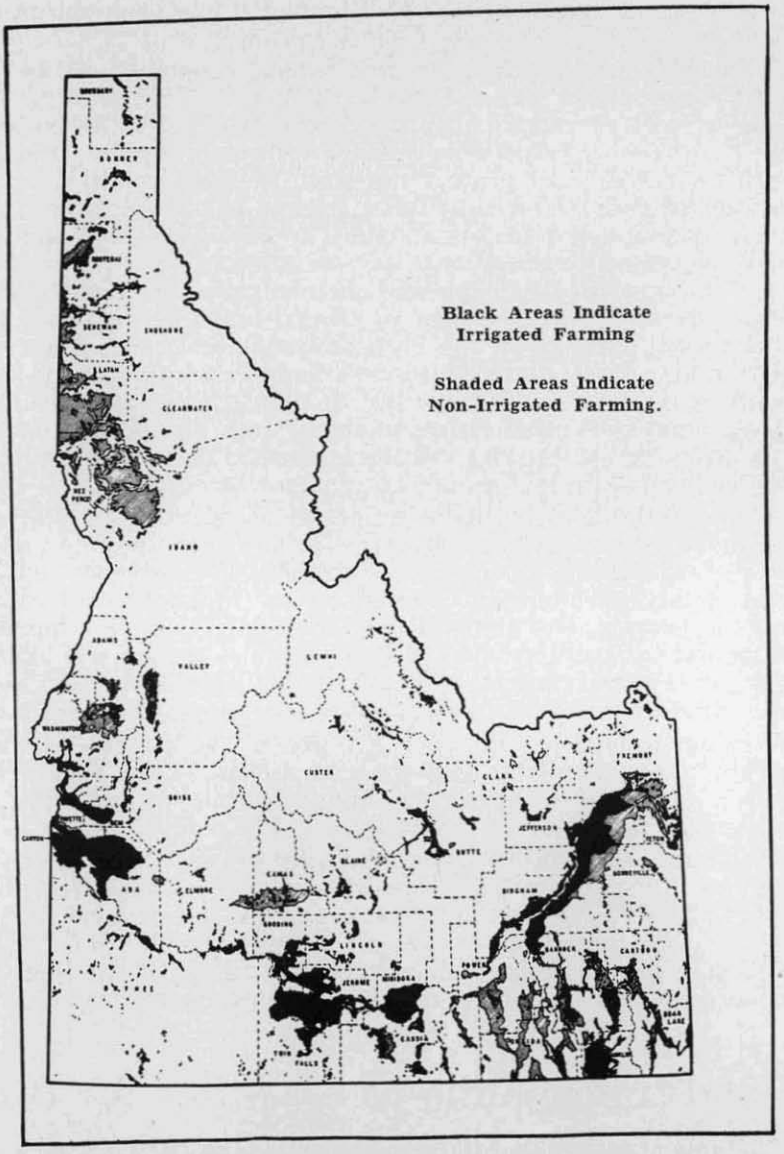


Figure 3. LOCATION OF IRRIGATED AND NON-IRRIGATED FARM LAND. Total area in farms equals 25 percent of the land area of Idaho. Of this farm area, 42 percent represents irrigated and 58 percent non-irrigated farms. Many small isolated farming areas, particularly in the cut-over region of northern Idaho, could not be included on this map.

circumstances that affect the productivity of the land and its need for treatment. He draws boundary lines to show the extent of each kind of land. The base map on which he works is usually an aerial photograph. Each different kind of land is a mapping unit and is identified by a group of symbols which denote the kind of soil, steepness of slope, type and degree of soil erosion, and other factors that have significance. Each mapping unit marked out is one that has significance in using the land and applying conservation measures on the farm or ranch.

Several people study the land facts and decide how each kind of land can be used safely. These people are agronomists, engineers, foresters, range men, biologists, soil scientists, and soil conservationists experienced in farm and ranch conservation planning. They consult with farmers and ranchers and study the results of experiments. They consider the climate of the area and the types of native vegetation. They work out a classification of the capability of each kind of land which shows how the land can be safely used, what kind of treatment it needs and how much. This classification is an interpretation of the land facts as these facts affect physical capability of the land for cultivation, grazing, woodlands, and wildlife.

The basic unit of land that is classified is the land-capability unit. A land-capability unit consists of those mapping units of land that are closely alike with respect to soil features, slope, and other factors that affect the crops that can be grown, the needed treatments, and the expected responses. Land-capability units are grouped in successively broader categories for easy reference. Land-capability units are not shown on the accompanying capability map.

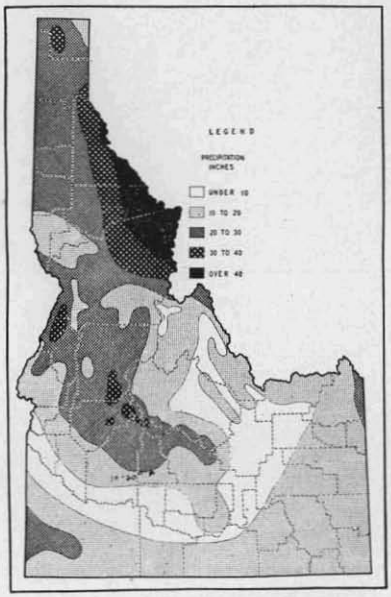


Figure 4. AVERAGE ANNUAL PRECIPITATION. The total annual rainfall varies from slightly more than 7 inches in part of Lemhi County to nearly 60 inches in the high mountain ranges along the northeastern boundary of the State. The main irrigated regions lie in a belt having less than 12 inches annually.

The first grouping is into land-capability sub-classes each of which includes land within a land-capability class that has about the same kind and degree of permanent limitations. The next grouping puts the land into the eight land-capability classes, each of which contains land having about the same degree of limitations. The final and most general grouping divides the land into the two major divisions—land suitable for cultivation and land not suitable for cultivation.

The eight land-capability classes tell the suitability of land in a general way for crops, grazing, woodland, and wildlfe. They are shown by colors on the farm maps, and also on the generalized State map. Classes I, II, III, and IV make up the general division of land suitable for cultivation. Of these, classes I, II, and III contain the land that can be used safely for regular cultivation, and class IV contains the land that can be cultivated safely only occasionally or in some limited way.

Class I land, shown on the map in green, is excellent land in every respect. It is nearly level, easily worked, and not subject to erosion. The soil is deep and has no inherent limitations.

Class II land, shown in yellow, is good land but has some minor limitations not common in class I land; that is, it has more permanent limitations than class I land. It includes the land that is gently sloping and land that is somewhat wet or has other minor deficiencies.

Class III land, shown in red, can be used regularly for cultivation without damage but is subject to major drawbacks or limitations which require regular attention as the land is used. Sloping

Figure 5. Showing general areas where saline and/or alkali conditions have been observed and are affecting crop growth.

land, wet land that requires drainage, and the dry-farmed land that receives just enough moisture to grow crops are examples of class III land.

Class IV land, shown in blue, consists of the land that is steeper or in some other way is less favorable for crop production than the Class III land but can be used for an occasional crop or for certain limited or specialized forms of cultivation.

Classes V, VI, VII, and VIII make up the second major division—land not suitable for cultivation. Class V land (dark green), although not suited for cultivation because of wetness, rock, climate, or other features, is well suited for grazing or for woodlot use. It has little or no physical limitations for such use. It responds well to good range or woodland management.

Class VI land (orange) is well suited for grazing or forestry but has minor hazards and limitations for these uses as a result of steep slopes, susceptibility to erosion, shallow soils, or other conditions.

Class VII land (brown) is fairly well suited for grazing or forestry use and has major hazards or limitations such as very steep slopes, shallow or droughty soils, or advanced erosion.

Class VIII (purple) is not suited for cultivation, grazing, or woodland but often may be used for wildlife, recreational, or watershed purposes.

The land-capability class reflects the degree of limitations in land use or risk to the land that is the result of physical land features. These physical features are of several different kinds. Some land is subject to impoverishing erosion if it is not protected. Other land is naturally wet, so that drains must be installed or maintained if crops are to be grown. Some land is shallow, droughty, or has other soil defects. Still other land occurs in a climate where moisture often is not enough to grow a crop or where the temperature is unsuitable. These four kinds of land limitations make up the four possible sub-classes of land within each of the land-capability classes.

Land-capability sub-classes are designated on the map by small letters, e, w, s, and c. IIe, for example, designates class II land, sub-class e. This is class II land subject to erosion if not protected. The term IIw designates class II land in which the dominant limitation is the risk of excess water. Land that tends to be wet is in the sub-class even if it has been artificially drained. Class II land in which the dominant limitation is shallow soil or some other soil feature is designated by IIs. Class II land in which the dominant limitation is the result of climatic factors is designated as IIc.

Sub-classes are not recognized in class I, since class I land is not subject to any serious natural limitations. Class V does not contain any land dominantly subject to wind or water erosion, but may contain any of the other three sub-classes. All four sub-

classes may occur in land-capability classes II, III, IV, VI, VII, and VIII.

The occurrence of several land-capability classes and sub-classes is shown in figure 6.

Figure 6. How land-capability classes fit the land.

Uses and Practices to Fit Each Kind of Land

The land-capability classification gives a specific basis for recommending land uses and conservation practices to fit each significant type of land. To guide the technical assistance that is furnished to farmers in soil conservation districts, the Soil Conservation Service with the help of the Agricultural Experiment Station and other cooperating technicians prepares: (1) A land-capability classification chart; (2) a list of the land uses and conservation practices recommended for each land-capability unit; and (3) technical specifications for each recommended practice. These documents make up a technical guide for soil and water conservation in the district.

In developing these technical guides, information and assistance of several sources are called upon. Much of the basic information comes from research done by the State agricultural experiment station, cooperative research of the station and the Soil Conservation Service, and from collaboration with the station staff. County extension agents, farmers, field trials, demonstrations, and observations are vital sources of information for improvements of recommendations and specifications based on performance and behavior of each kind of land.

A tabulation of the major conservation practices for the state as a whole is grouped into four management categories listed here. Some of these practices have state-wide coverage; others are applicable to more specific areas. Some fall into more than one of the categories. These practices are:

(1) **Soil Management Practices:** Crop rotation, green manure crops, fertilization of crops, crop residue utilization and rotation seedings.

(2) **Cover Management Practices:** Contour strip cropping, field strip cropping, cover crops, stubble mulch, controlled aftermath grazing, fire protection, shelterbelts and windbreaks, seeding range and pasture, forest protection and improvement, proper range stocking, deferred grazing, dune sand control, wildlife borders, and rotation seedings for hay and pasture.

(3) **Water Management Practices:** Contour plantings, cross slope planting, field and gully plantings, terraces, diversions, outlets and farm waterway courses, farm drains, irrigation and land preparation, farm irrigation systems, irrigation methods and practices, channel cleaning, channel alignment, rough tillage, and water spreading.

(4) **Facilitating Conservation Practices:** Mowing pasture, rotational grazing, scattering droppings, harvest cuttings, improvement cuttings, insect and disease control, farm and ranch ponds, well and spring development, fertilizing pastures and grazing lands, land clearing, salting, brush eradication, and fencing.

The most common recommendations for use and conservation of land are summarized, by land-capability classes and sub-classes, in Table 1. These recommendations are on a generalized basis for the entire State. More specific recommendations, by significant land-capability units, are prepared for the guidance of technicians assisting each of the soil conservation districts.

TABLE I—LAND-CAPABILITY CLASSES, MAJOR KINDS OF LAND, AND PRINCIPAL RECOMMENDED USES AND TREATMENTS

Land-Capability Class	Major Kind of Land (Sub-Class) Within Each Class	Suited For	Principal Recommendations
I. (Light green) Very good cultivable land.	Deep soil, nearly level, little or no erosion.	Cultivation and other uses. Suited for a wide variety of crops. No special difficulties in farming.	Good management for crops, grazing, or other use. **Irrigated cropland:** Crop rotation, fertilizer. **Non-irrigated cropland:** Crop rotation, fertilizers or amendments for special needs only.
II. (Yellow) Good cultivable land. Minor problems.	IIe. Good soil on gentle slope, subject to water erosion; or somewhat sandy and subject to wind erosion.	Cultivation and other uses, with care to control erosion.	**Irrigated cropland:** Crop rotation, fertilizer, amendments if needed; irrigated with care to prevent erosion. **Non-irrigated cropland:** Crop rotation, utilization of stubble and residue; cross-slope cultivation. **Grazing land or woodland:** Manage to maintain good cover and protection.
	IIw. Good soil, wet enough to influence selection of crops or to delay date of planting.	Cultivation and other uses. Crops and cropping practices must be selected with regard for wetness. Usually good land for pasture.	**Irrigated cropland:** Crop rotation. fertilizer, amendments if needed, drainage, avoid over-irrigation. **Non-irrigated cropland:** Select crops that will mature (oats), surface drains, tile drainage where applicable. **Grazing land:** Seed suitable grasses and legumes. Manage to maintain good cover.
	IIs. Soil with minor problems, such as heavy texture, light texture, moderate depth, or slight alkali.	Cultivation and other uses.	**Irrigated cropland:** Crop rotation, fertilizer, amendments probably needed, select method, time, and rate of irrigation to fit soil conditions. **Non-irrigated cropland:** Crop rotation, green-manure crops, fertilizers, or amendments for special needs, special treatment for specific needs such as alkali or saline soils. **Grazing land or woodland:** Manage to maintain good cover and production.
	IIc. Good soil, moisture supply not quite adequate or cool climate, crops subject to frost.	Cultivation and other uses.	**Irrigated cropland:** Select crops that will mature. **Non-irrigated cropland:** Crop rotation, selection of suitable crops. practices for moisture conservation.
III. (Red) Moderately good cultivable land.	IIIe. Good soil, moderate slope, subject to water erosion, or sandy land subject to wind erosion.	Cultivation, with care to prevent erosion; also for other uses.	**Irrigated cropland:** Crop rotation, soil-building crops 60-75 percent of time and row crop not more than one year in rotation cycle of 5-7 years; fertilizer, amendments if needed, irrigate on contour, or with special care to prevent erosion. **Non-irrigated cropland:** Crop rotation, green-manure crops, maintain stubble and residue on surface, fertilizer and amendments as recommended; contour strip cropping. **Grazing land or woodland:** Good management.
	IIIw. Wet land, subject to seepage, flooding or both.	Cultivation and other uses. Good land for pasture or hay.	**Irrigated cropland:** Crop rotation, fertilizer, amendments if needed, drainage, avoid over-irrigation. **Non-irrigated cropland:** Select crops that will mature, usually oats. Wetness interferes with planting in spring. Use long rotation, with several years pasture or hay. **Grazing land or woodland:** Good management.

Table 1 (Continued)

	IIIs. Soil with moderate problems such as very heavy or very light textures, moderate depth or moderate salinity or alkalinity.	Cultivation subject to soil and other limitations, also for other uses.	**Irrigated cropland:** Crop rotation, fertilizer, amendments, careful irrigation, shallow-rooted crops. **Non-irrigated cropland:** Crop rotation, green-manure crops, fertilizers and amendments. **Grazing land or woodland:** Good management.
	IIIc. Good soil, limited by moisture supply, temperature or frost.	Cultivation, subject to climatic limitations and risks; grazing.	**Non-irrigated cropland:** Select suitable short-season crops as wheat, oats, grass. Recognize risk of frost damage. **Grazing land or woodland:** Good management.
IV. (Blue) Fairly good land. Suited for occasional or limited cultivation.	IVe. Moderately steep land, subject to erosion.	Primarily hay or pasture. Can be cultivated occasionally with care to control erosion.	**Irrigated land:** Chiefly hay or pasture, occasional grain crop. Fertilizer, amendments, careful irrigation. **Non-irrigated land:** Chiefly hay or pasture. Grain can be grown when reseeding. Reseed with care. **Grazing land or woodland:** Good management.
	IVw. Bottomland suited for pasture or hay primarily. Too wet for regular cultivation but can cultivate occasionally.	Primarily hay or pasture. Can be cultivated occasionally.	**Pasture or hay:** Land dries out slowly in spring. Dry in late summer and fall. Surface ditches for drainage. **Grazing land or woodland:** Good management.
	IVs. Shallow soil, stony land, gravelly land, or other soil conditions unfavorable but not preventing cultivation.	Primarily for hay or pasture. Some cultivation possible.	**Irrigated land:** Chiefly hay or pasture. Grain can be grown more frequently than on Class IVe land without damage to land, but risks of failure are high. Careful soil management and irrigation. **Non-irrigated land:** Chiefly hay, pasture, grain. Careful soil management including fertilizers and amendments needed to obtain fair yields. **Grazing land or woodland.** Good management.
	IVe. Good or moderately good land. moisture barely enough for wheat or land with high risk of frost.	Grain in long rotation with grass on land limited by moisture. Short-season crops on land with frost risk.	Grow suitable crops and manage with regard for climatic risks.
V. (Dark green) Very well suited for grazing or forestry. Not arable.	Vw. Permanently wet land nearly level.	Grazing or woodland; some hay.	Maintain and improve vegetation by such practices as adjusting season to use, method of grazing, and rate of stocking; and pruning, thinning and methods of cutting on woodland. Grazing plants may respond to fertilization under some conditions. Seed desirable grazing plants where feasible.
	Vs. Alkali land.	Grazing or hay.	Maintain and improve grazing vegetation by practices such as those listed above.
	Vc. Nearly level land, much of it stony, frost prevents cultivation.	Grazing, woodland or hay.	Maintain and improve grazing or woodland vegetation by practices such as those listed above. Grazing plants may respond to fertilization under some conditions. Seed desirable grazing plants where feasible.

Table 1 (Continued)

	VIe. Steep land, suject to erosion.	Grazing, woodland, wildlife.	Maintain or improve vegetation by practices such as adjusting season of use, method of grazing and rate of stocking on grazing land; and pruning, thinning, and improvement cutting on woodland. Protect land from erosion by maintaining adequate cover and litter. Reseeding or planting depleted areas usually practicable.
VI. (Orange) Well suited for grazing or forestry. Not arable.	VIs. Shallow, stony or sandy land.	Grazing, woodland, wildlife.	Maintain or improve vegetation by practices such as those listed above. Amount of improvement expected is probably less than on VIe land. Protect land from erosion by maintaining adequate cover and litter. Possibilities of reseeding or planting somewhat limited because of difficulty of land preparation.
	VIc. Good or fairly good soil, not enough moisture for cultivation.	Grazing, wildlife.	Maintain or improve range vegetation. Protect from erosion by maintaining adequate cover and litter. Reseed depleted areas.
VII. (Brown) Fairly well suited for grazing or forestry. Major limitations or hazards. Not arable.	VIIe. Very steep, or highly erodible land.	Grazing, woodland, wildlife.	Maintain or improve vegetation by the practices listed for VIe land. Use and effectiveness of these practices often limited, however, by steepness, danger of erosion, and low productive capacity.
	VIIs. Very shallow stony, or rough land.	Grazing, woodland, wildlife.	Maintain or improve vegetation by practices such as those listed. Productive capacity usually low. Cover needed for control of erosion. Reseeding or planting seldom practicable.
	VIIc. Good or fairly good soil but just enough moisture to support grazing vegetation.	Some grazing, wildlife.	Maintain or improve vegetation by practices listed. Productive capacity usually low. Cover needed for control of erosion. Reseeding or planting seldom practicable.
VIII. (Purple) Not suited for cultivation, grazing or forestry.	VIIIs. Very rough, rocky, or wet marsh lands.	Some value for wildlife. Not suited for cultivation, grazing or forestry.	Prevent burning or other damage.

The information gathered on the land and water inventories made it possible to assemble total acreages by land-capability and capability sub-classes according to land used for crops, grass, woodlands, and miscellaneous lands. The acreages for the state are given in Table II. These acreage figures will be useful in over-all planning for proper land use programs, estimating fertilizer needs, land clearing and many other uses.

TABLE II

TOTAL ACREAGE OF LAND-CAPABILITY CLASSES AND SUB-CLASSES BY PRESENT LAND USES IN THE ENTIRE STATE[1]

Land-Capability Class and Sub-Class			Cropland	Grassland	Woodland	Miscellaneous
I	Total	159,460	159,460	.....	.....	.....
II	e	595,780	593,990	.....	1,790	.....
	w	35,450	34,450	.....	1,000	.....
	s	457,210	456,470	.....	740	.....
	c	32,490	32,490	.....	.....	.....
II	Total	1,120,930	1,117,400	.....	3,530	.....
III	e	1,386,160	1,356,550	19,240	10,370	.....
	w	37,640	28,140	5,700	3,800	.....
	s	536,010	519,640	10,420	5,950	.....
	c	110,330	109,330	1,000	.....	.....
III	Total	2,070,140	2,013,660	36,360	20,120	.....
IV	e	1,190,770	1,021,060	100,880	68,830	.....
	w	13,430	11,620	1,810	.....	.....
	s	375,640	285,710	52,570	37,360	.....
	c	394,490	283,370	99,395	11,730	.....
IV	Total	1,974,330	1,601,760	254,650	117,920	.....
V	w	383,920	23,920	283,650	76,350	.....
	s	25,530	.....	22,330	3,200	.....
	c	197,970	14,200	134,110	49,660	.....
V	Total	607,420	38,120	440,090	129,210	.....
VI	e	11,852,500	176,680	8,991,510	2,684,310	.....
	w	2,320	.....	2,100	220	.....
	s	2,277,270	6,470	1,395,500	875,310	.....
	c	1,167,730	33,180	1,134,540	.....	.....
VI	Total	15,299,820	216,330	11,523,650	3,559,840	.....
VII	e	22,793,110	1,200	11,867,780	10,924,130	.....
	w	1,000	.....	1,000	.....	.....
	s	649,170	.....	479,180	169,990	.....
	c	295,000	.....	287,100	8,000	.....
VII	Total	23,738,380	1,200	12,635,060	11,102,120	.....
VIII	Total	7,298,080	.....	728,210	424,360	6,145,510
Unclassified		728,560	.....	.....	.....	728,560
TOTAL		52,997,120	5,147,930	25,618,020	15,357,100	6,874,070

(1) County figures are shown on back of the land-capability map accompanying this report.

Land In the Major Watersheds

Idaho, for this report, was divided into five major watersheds. These watershed boundaries conform to the five major sub-divisional watersheds as set up by the United States Department of Agriculture in the drainage basin and sub-divisional map for the 17 western states. The watershed data were compiled from 35 smaller watersheds separated on the county land and water inventories. Figures are presented for each of the five major watersheds (see Fig. 1) along with a description of the area, the kinds of land, and suitable conservation practices.

I. Upper Columbia River Basin

The upper Columbia river drainage in Idaho occupies that portion of the State usually called the Panhandle, and includes the counties of Boundary, Bonner, Kootenai, Shoshone and Benewah. The area is drained by five main rivers which are the Kootenai, Clark Fork, Pend Oreille, St. Joe, and Spokane. The Moyie, Pack, Priest and St. Maries rivers are important tributaries in this area.

The greater part of the area drained by these rivers is mountainous and forested. For the most part, the mountain ridges extend north and south, and the valleys are narrow and "V" shaped. Toward the east, benches and a narrow fringe of sloping foothills border the valleys.

Elevations vary considerably from east to west. The highest elevation is in the Bitter Root range, which forms the southeast portion of the Idaho-Montana line. Coeur d'Alene, Cabinet, and Kaniksu mountain ranges have peaks ranging in elevation from 6000 to 7600 feet. The greater portion of the areas is around 5000 feet. The valleys are approximately 2100 to 2400 feet above sea level.

Figure 7. Close-growing grass and legumes for hay and pasture crop in rotation can prevent erosion and aid in maintaining soil organic matter and soil tilth.

Figure 8. Soil amendments and fertilizers on cut-over land assist in producing maximum yields of legumes in a legume and grass rotation. Plot on left received 200 lb. gypsum and yielded 3½ T; the untreated plot yielded 1¾ per acre.

The length of the growing season for a specific location cannot be taken as representative of a larger area. The increase in elevation toward the east plays an important part in reducing the temperature and shortening the growing season for crops. The length of the growing season at Bonners Ferry is 137 days; Sandpoint, 121; Wallace, 144; Coeur d'Alene, 149; St. Maries, 127. The average date for the last frost in the spring is May 5 to 20, the first fall frost may come at any time from September 2 to October 6. The seasons are generally long enough for maturing such crops as cereals, truck crops, and tree and vine fruits.

The average annual precipitation is 27.40 inches for the area as a whole. Of this approximately 75 percent comes during the

TABLE III
LAND-CAPABILITY AND USE, COLUMBIA BASIN OF IDAHO

Land-Capability Class and Sub-Class		Cropland	Grassland	Woodland	Miscellaneous
I	Total	.....	.....	.....	.....	.....
II	e	15,140	14,740	.....	400	.....
	w	21,430	20,430	.....	1,000	.....
	s	16,920	16,220	.....	700	.....
II	Total	53,490	51,390	.....	2,100	.....
III	e	85,830	74,670	4,100	7,060	.....
	w	23,040	13,540	5,700	3,800	.....
	s	60,000	49,200	5,300	5,500	.....
III	Total	168,870	137,410	15,100	16,360	.....
IV	e	109,140	56,640	21,600	30,900	.....
	w	3,040	2,040	1,000	.....	.....
	s	95,180	37,070	21,050	37,060	.....
	c	2,630	1,970	660	.....	.....
IV	Total	209,990	97,720	44,310	67,960	.....
V	w	89,880	410	47,000	42,470	.....
	s	5,000	.....	3,000	2,000	.....
	c	2,500	.....	1,500	1,000	.....
V.	Total	97,380	410	51,500	45,470	.....
VI	e	907,760	13,240	263,640	630,880	.....
	w	2,320	.....	2,100	220	.....
	s	119,580	1,020	32,960	85,600	.....
	c	570	.....	570	.....	.....
VI	Total	1,030,230	14,260	299,270	716,700	.....
VII	e	2,701,010	.....	561,510	2,139,500	.....
	w	1,000	.....	1,000	.....	.....
	s	37,380	.....	10,000	27,380	.....
VII	Total	2,739,390	.....	572,510	2,166,880	.....
VIII	Total	543,330	.....	.....	15,440	527,890
Unclassified		84,200	.....	.....	.....	84,200
TOTAL		4,926,880	301,190	982,690	3,030,910	612,090

Figure 9. Sprinkler irrigation working on new pasture seeding on very gravelly soil. This provides for efficient water application and irrigation on such soils. This method does not require land leveling.

Figure 10. Open farm ditches are economical and efficient ways to drain wet lands when soil profile permits internal drainage.

winter and fall and 25 percent during the growing season. Snow accounts for the greater portion of the winter precipitation. A general lack of moisture, especially on the uplands and more droughty soils, prevails most years.

Acreages of each kind of land are given in Table III. Of the 432,350 acres suitable for cultivation, all but 145,830 acres are used for crops and hay production. The principal crops are wheat and other cereals, and forage such as alfalfa, clover, and clover-grass. The acreage in forage crops is used for hay and pasture.

Major conservation problems encountered in the watershed include erosion, lack of soil organic matter, low inherent fertility, water conservation, farm drainage, flood control, proper water use, land preparation, deficiency in sulphur and boron on alfalfa and red clover and nitrogen on grain and grass crops, shortage of dairy and livestock animals, lack of pasture and forage planting, cultivable acres per farm too small for economic unit, clearing of land in accordance with its capability for use, protection and improvement of range and forest land, and management and improvement of wet meadow lands.

2C. Lower Snake River Basin

The lower Snake river watershed contains some 15,899,090 acres, the second largest major watershed in the State. The Idaho part includes all or most of Latah, Clearwater, Nez Perce, Lewis, Idaho, Lemhi, Custer, and a small part of Washington, Adams, and Valley Counties. This area is drained by Salmon river and its tributaries, which include the Little Salmon, South Fork, Middle Fork and East Fork of the Salmon, and by Pahsimeroi and Lemhi rivers. These drain the southern and eastern part of the watershed. The Clearwater river and its tributaries include the Lochsa, Selway, North Fork of the Clearwater, and the Potlatch.

The lower Snake river watershed is predominantly mountainous and hilly lands. Many peaks are between 9000 and 11,000 feet elevation. Mt. Borah, the highest point in the State, is 12,655 feet. A high percentage of the land is between 4000 and 8000 feet. Lewiston, with an elevation of 720 feet, is the lowest point in the water-

shed and in the State. The agricultural lands range in elevation from approximately 2100 on the Snake river near Weiser to 3400 at Grangeville. The high valleys have elevations of approximately 5000 feet.

The average growing season of the principal agricultural areas is 173 days, with a range in dates of the last frost in spring from April 5 to May 13 and the first frost in the fall from September 20 to October 6. The high valleys have an average growing season of 100 days or less.

The total precipitation in the watershed is variable. Both the total rainfall and snowfall varies greatly within short distances. The mountain and footslope areas are in the higher precipitation zones. On the average, approximately one-third falls during the growing season and two-thirds during the winter and fall months. With the exception of one or two places the annual precipitation is adequate throughout the area for growing adapted crops. The average annual precipitation ranges from 26.41 inches at Orofino to 7.13 inches at Challis.

Acreages of each kind of land are given in Table IV. Of the 991,280 acres suitable for cultivation, all but 46,730 acres are used for crops. The principal crops are wheat, barley, oats, peas, beans, Austrian peas, tree fruit, alfalfa, small clovers, sweet clovers and truck crops, and hay and pasture in rotation.

Major conservation problems in the watershed are erosion, declining soil organic matter, deficiency in nitrogen, sulphur, and boron in general and especially on the cut-over lands, farm drainage, water conservation, proper use of water, land preparation and lack of stock water, shortage of livestock and dairy animals, retirement of steep and eroded lands to grass and legumes, reduction of acreage normally planted to cereals and increase of grass and legume seedings, clearing of land for cultivation according to its capability for use, production and improvement of range and forest land, and improvement and management of wet meadow lands.

Figure 11. These Black Locust trees were planted for shelterbelt and windbreak purposes on steep eroded hillside. It furnishes the farmstead the desired protection and has also stopped erosion, and yields fence posts.

Figure 12. Contour strip cropping helps prevent erosion on sloping land. Alternating strips of annual crops and grass and legumes are planned in a definite rotation sequence.

TABLE IV

LAND-CAPABILITY AND USE, LOWER SNAKE RIVER BASIN

Land-Capability Class and Sub-Class			Cropland	Grassland	Woodland	Miscellaneous
I	Total	17,240	17,240	.....	.....	.....
II	e	149,910	148,520	.....	1,390	.....
	w	2,880	2,880	.....	.....	.....
	s	54,580	54,580	.....	.....	.....
II	Total	207,370	205,980	.....	1,390	.....
III	e	397,720	389,200	5,210	3,310	.....
	w	2,950	2,950	.....	.....	.....
	s	37,610	37,160	.....	450	.....
III	Total	438,280	429,310	5,210	3,760	.....
IV	e	315,080	239,530	37,950	37,600	.....
	w	7,790	6,980	810	.....	.....
	s	39,650	38,020	1,630	.....	.....
	c	20,290	7,520	1,100	11,670	.....
IV	Total	382,810	292,050	41,490	49,270	.....
V	w	60,390	.....	33,910	26,480	.....
	c	57,680	.....	9,020	48,660	.....
V	Total	118,070	.....	42,930	75,140	.....
VI	e	1,990,010	35,350	814,410	1,140,250	.....
	s	1,052,690	360	416,100	636,230	.....
	c	100	.....	100	.....	.....
VI	Total	3,042,800	35,710	1,230,610	1,776,480	.....
VII	e Total	8,502,280	.....	2,015,880	6,486,400	.....
VIII	Total	3,077,610	.....	85,930	204,800	2,786,880
Unclassified		112,630	.....	.....	.....	112,630
TOTAL		15,899,090	980,290	3,422,050	8,597,240	2,899,510

Figure 13. Rough tillage protects soil from erosion and utilizes the crop residue both in the surface soil layer and on the surface. These conditions will permit the soil to take in and hold more water and resist erosion.

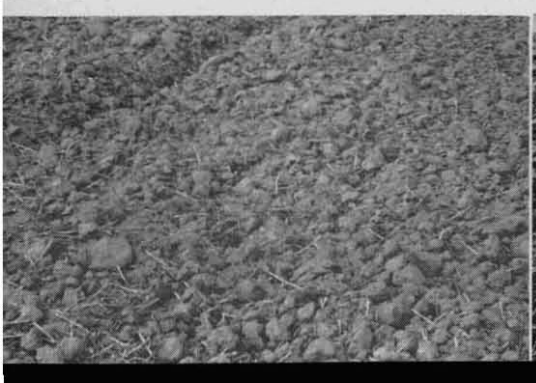


Figure 14. Stubble properly utilized by plowing some under and leaving some on the surface to catch and carry the water into the soil where it will be absorbed. Water running over the surface causes erosion and removes soil organic matter.

2b. Middle Snake River Basin

The Middle Snake river watershed is 22,461,550 acres in extent, making it the largest watershed in the state (see Fig. 1). It includes major parts of Clark, Butte, Jefferson, Blaine, Minidoka, Lincoln, Jerome, Gooding, Twin Falls, Camas, Elmore, Owyhee, Boise, Ada, Canyon, Payette, Washington, Adams, and Gem Counties. Also included are smaller parts of Fremont, Lemhi, Bonneville, Custer, Bingham, Cassia, Power, and Valley Counties.

The watershed is drained by tributaries of the lower Snake, consisting of Little and Big Wood rivers, Salmon Falls creek, the Bruneau river, headwaters of the Owyhee lying in Idaho, the Boise, Payette, and Weiser rivers. Other streams important in the drainage pattern are Little and Big Lost rivers and Birch and Medicine Lodge creeks, whose waters disappear into sinks near the norththern edge of the Snake river plains. Camas creek drains the northeast part and flows into Mud lake.

The Idaho part of this watershed is mostly mountainous, with elevations ranging from 6000 to 9000 feet and some peaks reaching 12,000 feet. High mountain lands occur in the northern part of the watershed where they extend from east to west, and in the Owyhee range in the southwestern part. The intervening area has, in general, a plains-like relief, with a fringe of foothills adjacent to the mountainous lands. The mountain valleys, ranging in elevations from 4800 to 6000 feet, extend generally north and south. The range in elevation of the Snake river valley varies considerably, which is reflected in the length of the growing season. The elevation at Weiser at the southwest end of the watershed is 2123 feet. At Spencer, on the northeast end, the elevation is 5883 feet.

The length of the growing season varies from 177 days at Boise

Figure 15. Sweet clover in rotation on irrigated land furnishes supplemental pasture for cattle and green-manure crop when plowed under. This practice increases soil nitrogen, organic matter, and the deep roots penetrate the subsoil, opening up channels for greater permeability of moisture.

Figure 16. Land preparation is necessary on irrigated lands for even distribution, greater efficiency, and uniformity of application of irrigation water. These conditions make for maximum growth and production so far as moisture is concerned. Erosion losses are negligible.

in the west side of the watershed to 125 days at Dubois in the northeast corner. In the high valleys frost may occur any month of the year. Average date of the last frost in spring ranges from April 30 to May 21. First fall frosts average from September 21 to October 5. The average growing season is 138 days.

Average annual precipitation is 13.98 inches for the watershed, ranging from a low 9.38 inches to a high of 32.55 inches. The agricultural area receives 10.57 inches per year. Of this, approximately one-third comes during the growing season and two-thirds during the non-growing season. Irrigation makes possible the large acreage of cropland in this watershed. The dry-farmed lands are confined to the lower valleys and footslopes where additional moisture from mountain showers and winter precipitation makes wheat farming somewhat favorable.

Acreages of each kind of land are given in Table No. V. Of the 1,525,650 acres of land suitable for crops, all but 45,060 acres now are in cultivation. The principal crops are wheat and other cereals, potatoes, sugar beets, alfalfa and pasture.

The problems in this watershed on cultivated land are divided into those occurring on irrigated and those on dry-farmed lands. The major problems on irrigated lands are erosion on steep slopes or soils of slow permeability, water conservation, slow rate of water intake, farm drainage, salt concentration on bottomlands and some uplands, lack of nitrogen and phosphorus, a deficiency in organic matter, plant malnutrition, land preparation, proper irrigation, farm irrigation systems, frost hazards due to poor air drainage, and a short growing season due to elevation.

On the dry-farmed areas the major problems are erosion, water conservation, and organic matter maintenance. Some lands are being farmed where moisture is not adequate for permanent agriculture. Frost and short growing seasons are local problems in

Figure 17. Pre-planting irrigation. Water being taken from field ditch by tubes emptying into furrows. Amount of water per furrow is regulated by flow through tubes. Erosive head of water is eliminated and time of application is controlled down to each furrow.

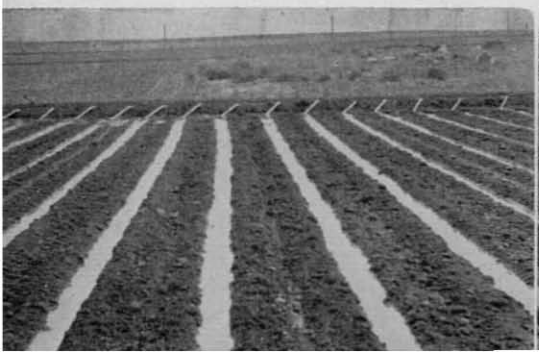


Figure 18. Potatoes planted on the contour on nearly level land and being irrigated by a gated surface pipe. This method of irrigation takes the place of field laterals, permits better head control and eliminates the necessity for drops in open ditches on sloping lands.

high valleys and areas of poor air drainage. Range and forest lands should be managed for erosion control and protection and for improvement of cover.

TABLE V

LAND-CAPABILITY AND USE, MIDDLE SNAKE RIVER BASIN

Land-Capability Class and Sub-Class			Cropland	Grassland	Woodland	Miscellaneous
1	Total	93,410	93,410	.....	.....	.....
II	e	173,970	173,970	.....	.....	.....
	w	500	500	.....	.....	.....
	s	201,420	201,420	.....	.....	.....
	c	2,000	2,000	.....	.....	.....
II	Total	377,890	377,890	.....	.....	.....
III	e	252,930	249,310	3,620	.....	.....
	w	1,500	1,500	.....	.....	.....
	s	213,690	213,440	250	.....	.....
	c	74,850	74,850	.....	.....	.....
III	Total	542,970	539,100	3,870	.....	.....
IV	e	291,840	282,500	9,010	330	.....
	w	100	100	.....	.....	.....
	s	101,360	93,570	7,490	300	.....
	c	118,090	94,030	24,060	.....	.....
IV	Total	511,390	470,200	40,560	630	.....
V	w	153,220	5,690	140,130	7,400	.....
	s	15,140	.....	13,940	1,200	.....
	c	25,880	.....	25,880	.....	.....
V	Total	194,240	5,690	179,950	8,600	.....
VI	e	6,803,970	46,490	6,036,370	721,110	.....
	s	806,990	3,250	726,150	77,590	.....
	c	687,790	13,730	674,060	.....	.....
VI	Total	8,298,750	63,470	7,436,580	798,700	.....
VII	e	8,943,350	1,200	6,976,380	1,965,770	.....
	s	350,310	.....	291,790	58,520	.....
	c	21,110	.....	21,110	.....	.....
VII	Total	9,314,770	1,200	7,289,280	2,024,290	.....
VIII	Total ..	.. 2,778,660	.....	503,010	192,670	2,082,980
Unclassified		349,470	.....	.....	.....	349,470
TOTAL		22,461,550	1,550,960	15,453,250	3,024,890	2,432,450

2a. Upper Snake River Basin

The Snake river rises in Wyoming near the southeastern corner of Yellowstone park. The Idaho part of this drainage basin includes all or the greater part of Fremont, Teton, Madison, Bonneville, Caribou, Bingham, Bannock, Power, and Cassia counties and a lesser part of Jefferson, Minidoka, Blaine, Jerome and Twin Falls counties. The area of upper Snake river watershed in Idaho is 7,460,330 acres.

Physiographically, this watershed ranges from mountainous in the northern Rocky mountains division to nearly level land in the central and upper Snake river plains. Stream valleys are nearly level to undulating. Adjacent to the plains on the south side is a fringe of low foothills with higher hills between it and the mountainous lands. Elevations range from a low of 4180 feet at Burley, toward the west side, to a high of 6300 feet at Island park in northern Fremont county. Driggs, St. Anthony, Idaho Falls, and American Falls are 6097, 4968, 4744, and 4316 feet, respectively, above sea level. The mountainous lands range from 7000 to 8000 feet.

In the higher valleys and areas with poor air drainage, frost may occur any time during the summer. This watershed is somewhat restricted for field crop production. The length of the average growing season at Burley is 130 days; Driggs has a growing season of only 74 days. These are the extremes in growing seasons and frost-free periods for the watershed. Due to frost damage, crops seldom reach maximum growth in some areas. These areas are known to the local people.

Average annual precipitation is 13.72 inches for the watershed, with 5.53 inches falling during the growing season. Big Spring in Fremont county, with 27.28 inches, has the highest amount of annual precipitation, and Aberdeen with 8.66 has the lowest. A large percentage of the annual precipitation comes in the form of snow.

Figure 19. Irrigated contour potatoes planted on land with an 8 percent slope. This method of planting takes the slope out of the field and permits irrigation without erosion, makes cultivation easier, and allows uniform application and better control of water.

Figure 20. Soil improvement by the use of alternate row planting of wheat and sweet clover. The wheat crop is taken off, the sweet clover is plowed down the second year when growth reaches about 20 inches. This is a good irrigated or dry-land practice.

Irrigation is practiced on a large part of the cultivated lands. It is essential on the Snake river plains. Dryland farming is practiced mostly on the lower foot slopes and high valleys, and much dependance is placed on the summer rains.

TABLE VI

LAND-CAPABILITY AND USE, UPPER SNAKE RIVER BASIN

Land-Capability Class and Sub-Class			Cropland	Grassland	Woodland	Miscellaneous
I	Total	44,400	44,400	.....	.....	.....
II	e	226,860	226,860	.....	.....	.....
	w	6,140	6,140	.....	.....	.....
	s	134,190	134,190	.....	.....	.....
	c	13,950	13,950	.....	.....	.....
II	Total	381,140	381,140	.....	.....	.....
III	e	478,690	473,880	4,810	.....	.....
	w	6,700	6,700	.....	.....	.....
	s	180,470	175,600	4,870	.....	.....
	c	19,600	18,600	1,000	.....	.....
III	Total	685,460	674,780	10,680	.....	.....
IV	e	327,030	305,010	22,020	.....	.....
	w	2,500	2,500	.....	.....	.....
	s	109,020	88,520	20,500	.....	.....
	c	195,940	138,340	57,600	.....	.....
IV	Total	634,490	534,370	100,120	.....	.....
V	w	71,070	17,820	53,250	.....	.....
	c	65,480	8,200	57,280	.....	.....
V	Total	136,550	26,020	110,530	.....	.....
VI	e	1,668,700	64,040	1,451,390	152,270	.....
	s	230,310	1,340	153,080	75,890	.....
	c	386,350	13,100	373,250	.....	.....
VI	Total	2,285,360	79,480	1,977,720	228,160	.....
VII	e	2,192,190	.....	1,938,330	253,860	.....
	s	231,950	.....	147,860	84,090	.....
	c	7,310	.....	7,310	.....	.....
VII	Total	2,431,450	.....	2,093,500	337,950	.....
VIII	Total	716,480	.....	128,450	11,450	576,580
Unclassified		145,000	.....	.....	.....	145,000
TOTAL		7,460,330	1,740,190	4,421,000	577,560	721,580

Acreages of each kind of land are given in Table No. VI. Of the 1,745,490 acres suitable for cultivation, all but 110,800 acres are used for crops. The principal crops consist of wheat, oats and barley, alfalfa, potatoes, sugar beets and pasture in rotation.

The problems on irrigated lands are maintenance of organic matter, erosion, nitrogen and phosphorus deficiencies, salt accumu-

Alfalfa, clover and grass occupy a high percent of the cropland and is used for forage.

The major problems in the Bear river watershed are erosion control, water conservation, land preparation, farm irrigation systems, proper use of water, maintenance of organic matter, salt accumulation, lack of nitrogen and phosphorus, proper management of high mountain meadows, and protection and improvement of dry range and forest lands.

SUMMARY

1. Idaho has a land area of some 52,000,000 acres of which 13,000,000 acres are in farms. Land used for crops consists of some 5,000,000 acres of which over 2,000,000 acres are irrigated.

2. There are many problems of land use and erosion control as a result of wide differences in kinds of land, elevation, climatic conditions, and vegetable cover.

3. A generalized land-capability map has been prepared for the state, and on the reverse side are county acreages for each land-capability class and sub-class.

4. Also, a table showing generalized recommended measures and practices by land-capability classes and sub-classes has been prepared. Acreages for the entire state and for each of the five major watersheds has been shown by land-capability classes and sub-classes for the major land uses.

UNIVERSITY OF IDAHO COLLEGE OF AGRICULTURE AND
AGRICULTURAL EXPERIMENT STATION

In cooperation with the
UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE